

Annual Report Format



National Pollutant Discharge Elimination System Stormwater Program MS4 Annual Report Format



Check box if you are submitting an individual Annual Report with one or more cooperative program elements.

Check box if you are submitting an individual Annual Report with individual program elements only.

Check box if this is a new name, address, etc.

1. MS4(s) Information

NMR04A014 City of Albuquerque

Name of MS4

Kathleen

Verhage

Senior Engineer

Name of Contact Person (First)

(Last)

(Title)

(505) 768-3654

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Telephone (including area code)

E-mail

PO Box 1293, City of Albuquerque, Dept of Municipal Development, Attn: Kathy Verhage Rm 301

Mailing Address

Albuquerque

NM

87103

City

State

ZIP code

What size population does your MS4(s) serve? 546,000

NPDES number

What is the reporting period for this report? (mm/dd/yyyy) From Jul 1, 2016 to Jun 30, 2017

2. Water Quality Priorities

A. Does your MS4(s) discharge to waters listed as impaired on a state 303(d) list? Yes No

B. If yes, identify each impaired water, the impairment, whether a TMDL has been approved by EPA for each, and whether the TMDL assigns a wasteload allocation to your MS4(s). Use a new line for each impairment, and attach additional pages as necessary.

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
		Yes	No	Yes	No
Middle Rio Grande	E-coli	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Middle Rio Grande	Temperature	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Middle Rio Grande	Polychlorinated Biphenyls in []	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Middle Rio Grande	Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. B. Continued

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No
		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> No

C. What specific sources contributing to the impairment(s) are you targeting in your stormwater program?

Pet waste, household hazardous waste, trash and debris (including natural vegetation), sediments, automotive fluids including oil and grease, detergents. A "floatables study" and source testing have been performed. Birds are primary

D. Do you discharge to any high-quality waters (e.g., Tier 2, Tier 3, outstanding natural resource waters, or other state or federal designation)? Yes No

E. Are you implementing additional specific provisions to ensure their continued integrity? Yes No

3. Public Education and Public Participation

A. Is your public education program targeting specific pollutants and sources of those pollutants? Yes No

B. If yes, what are the specific sources and/or pollutants addressed by your public education program?

Our public education program targets pet waste, household hazardous waste, trash and debris (including natural vegetation), sediments, automotive fluids, detergents, fertilizers, pesticides

C. Note specific successful outcome(s) (e.g., quantified reduction in fertilizer use; NOT tasks, events, publications) fully or partially attributable to your public education program during this reporting period.

Survey showed that over 90% of individuals understood the importance of pollution prevention and valued improved stormwater quality. Two household hazardous recycling events resulted in the participation of 700 individuals. See

D. Do you have an advisory committee or other body comprised of the public and other stakeholders that provides regular input on your stormwater program? Yes No

4. Construction

A. Do you have an ordinance or other regulatory mechanism stipulating:

Erosion and sediment control requirements? Yes No

Other construction waste control requirements? Yes No

Requirement to submit construction plans for review? Yes No

MS4 enforcement authority? Yes No

B. Do you have written procedures for:

Reviewing construction plans? Yes No

Performing inspections? Yes No

Responding to violations? Yes No

C. Identify the number of active construction sites \geq 1 acre in operation in your jurisdiction at any time during the reporting period.

D. How many of the sites identified in 4.C did you inspect during this reporting period?

E. Describe, on average, the frequency with which your program conducts construction site inspections.

Each site greater than 1 ac is inspected at least once while active. Larger sites with longer active periods are inspected more frequently. On average, the COA performs 36 private development construction inspections per week.

F. Do you prioritize certain construction sites for more frequent inspections? Yes No

If Yes, based on what criteria?

Size, length of time open, direct impervious connection to a water of the US

G. Identify which of the following types of enforcement actions you used during the reporting period for construction activities, indicate the number of actions, or note those for which you do not have authority:

Yes Notice of violation No Authority

Yes Administrative fines No Authority

Yes Stop Work Orders No Authority

Yes Civil penalties No Authority

Yes Criminal actions No Authority

Yes Administrative orders No Authority

Yes Other

H. Do you use an electronic tool (e.g., GIS, data base, spreadsheet) to track the locations, inspection results, and enforcement actions of active construction sites in your jurisdiction? Yes No

I. What are the 3 most common types of violations documented during this reporting period?

1. Sediment BMPs installed incorrectly, not installed, or require maintenance; 2. Track-out, sediment in street or offsite; 3. Cement (concrete, stucco, mortar) pollution

J. How often do municipal employees receive training on the construction program?

5. Illicit Discharge Elimination

A. Have you completed a map of all outfalls and receiving waters of your storm sewer system? Yes No

B. Have you completed a map of all storm drain pipes and other conveyances in the storm sewer system? Yes No

C. Identify the number of outfalls in your storm sewer system.

D. Do you have documented procedures, including frequency, for screening outfalls? Yes No

E. Of the outfalls identified in 5.C, how many were screened for dry weather discharges during this reporting period?

F. Of the outfalls identified in 5.C, how many have been screened for dry weather discharges at any time since you obtained MS4 permit coverage?

G. What is your frequency for screening outfalls for illicit discharges? Describe any variation based on size/type.

Complaints regarding spills are investigated immediately (see item 10). The 37 Dry Weather Screening outfalls are screened annually during the Dry Season--typically sometime in November through March (see item 10 for more

H. Do you have an ordinance or other regulatory mechanism that effectively prohibits illicit discharges? Yes No

I. Do you have an ordinance or other regulatory mechanism that provides authority for you to take enforcement action and/or recover costs for addressing illicit discharges? Yes No

- D. Do you require water quality or quantity design standards or performance standards, either directly or by reference to a state or other standard, be met for new development and re-development? Yes No
- E. Do these performance or design standards require that pre-development hydrology be met for:
- Flow volumes Yes No
- Peak discharge rates Yes No
- Discharge frequency Yes No
- Flow duration Yes No
- F. Please provide the URL/reference where all post-construction stormwater management standards can be found.

www.amlegal.com/albuquerque_nm/

- G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection?
- H. How many of the plans identified in 7.G were approved?
- I. How many privately owned permanent stormwater management practices/facilities were inspected during the reporting period?
- J. How many of the practices/facilities identified in I were found to have inadequate maintenance?
- K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections?
- L. Do you have authority to take enforcement action for failure to properly operate and maintain stormwater practices/facilities? Yes No
- M. How many formal enforcement actions (i.e., more than a verbal or written warning) were taken for failure to adequately operate and/or maintain stormwater management practices?
- N. Do you use an electronic tool (e.g., GIS, database, spreadsheet) to track post-construction BMPs, inspections and maintenance? Yes No
- O. Do all municipal departments and/or staff (as relevant) have access to this tracking system? Yes No
- P. How often do municipal employees receive training on the post-construction program?

8. Program Resources

- A. What was the annual expenditure to implement MS4 permit requirements this reporting period?
- B. What is next year's budget for implementing the requirements of your MS4 NPDES permit?
- C. This year what is/are your source(s) of funding for the stormwater program, and annual revenue (amount or percentage) derived from each?
- | | | | | | |
|---------|--|-----------|---------------------------------------|------|----------------------|
| Source: | <input type="text" value="G.O. Bonds (NPDES, Water Quality Compliance)"/> | Amount \$ | <input type="text" value="1.0 Mill"/> | OR % | <input type="text"/> |
| Source: | <input type="text" value="General Funds (Arroyo and Street Maintenance)"/> | Amount \$ | <input type="text" value="9.8 Mill"/> | OR % | <input type="text"/> |
| Source: | <input type="text" value="Customer Billing (Household Hazardous Waste, etc)"/> | Amount \$ | <input type="text" value="3.9 Mill"/> | OR % | <input type="text"/> |
- D. How many FTEs does your municipality devote to the stormwater program (specifically for implementing the stormwater program; not municipal employees with other primary responsibilities)?

- J. During this reporting period, how many illicit discharges/illegal connections have you discovered?
- K. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated?
- L. How often do municipal employees receive training on the illicit discharge program?

6. Stormwater Management for Municipal Operations

- A. Have stormwater pollution prevention plans (or an equivalent plan) been developed for:
- | | | |
|--|---|--|
| All public parks, ball fields, other recreational facilities and other open spaces | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal construction activities, including those disturbing less than 1 acre | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| All municipal turf grass/landscape management activities | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal vehicle fueling, operation and maintenance activities | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal maintenance yards | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| All municipal waste handling and disposal areas | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |

Other

- B. Are stormwater inspections conducted at these facilities? Yes No

- C. If Yes, at what frequency are inspections conducted?

- D. List activities for which operating procedures or management practices specific to stormwater management have been developed (e.g., road repairs, catch basin cleaning).

- E. Do you prioritize certain municipal activities and/or facilities for more frequent inspection? Yes No

- F. If Yes, which activities and/or facilities receive most frequent inspections?

- G. Do all municipal employees and contractors overseeing planning and implementation of stormwater-related activities receive comprehensive training on stormwater management? Yes No

- H. If yes, do you also provide regular updates and refreshers? Yes No

- I. If so, how frequently and/or under what circumstances?

7. Long-term (Post-Construction) Stormwater Measures

- A. Do you have an ordinance or other regulatory mechanism to require:
- | | | |
|--|---|--|
| Site plan reviews for stormwater/water quality of all new and re-development projects? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No |
| Long-term operation and maintenance of stormwater management controls? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| Retrofitting to incorporate long-term stormwater management controls? | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |

- B. If you have retrofit requirements, what are the circumstances/criteria?

- C. What are your criteria for determining which new/re-development stormwater plans you will review (e.g., all projects, projects disturbing greater than one acre, etc.)?

E. Do you share program implementation responsibilities with any other entities? Yes No

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism
AMAFCA, SCAF	Sampling and Monitoring Wet Weath	Memo of Understanding
AMAFCA, SCAF	Education and Outreach	Memo of Understanding
AMAFCA, SCAF	General Watershed Based Permit Impl	Memo of Understanding

9. Evaluating/Measuring Progress

A. What indicators do you use to evaluate the overall effectiveness of your stormwater management program, how long have you been tracking them, and at what frequency? These are not measurable goals for individual management practices or tasks, but large-scale or long-term metrics for the overall program, such as macroinvertebrate community indices, measures of effective impervious cover in the watershed, indicators of in-stream hydrologic stability, etc.

Indicator	Began Tracking (year)	Frequency	Number of Locations
<i>Example: E. coli</i>	2003	Weekly April–September	20
Industrial Inspections	2014	MSGP required once per permit	76 in FY2017
Student and General Public Education and	2006	Reporting Annually, Events Held	Varies
Dry Weather Screening	2003	Annually	37
Good Housekeeping Inspections	2012	Quarterly to Monthly (if needed)	30
Illicit Discharge Inspections	2016	Applicable businesses once per	301 in FY2017

B. What environmental quality trends have you documented over the duration of your stormwater program? Reports or summaries can be attached electronically, or provide the URL to where they may be found on the Web.

<https://www.cabq.gov/municipaldevelopment/our-department/engineering/storm-water-management/municipal-separate-storm-sewer-system-ms4-permit>.

10. Additional Information

Please attach any additional information on the performance of your MS4 program, including information required in Parts I.C, I.D, and III.B. If providing clarification to any of the questions above, please provide the question number (e.g., 2C) in your response.

Certification Statement and Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Yes No

Federal regulations require this application to be signed as follows: **For a municipal, State, Federal, or other public facility:** by either a principal executive or ranking elected official.

Signature
 Name of Certifying Official, Title Date (mm/dd/yyyy)

CITY OF ALBUQUERQUE
Annual Report for Fiscal Year 2017 (FY17)
July 1, 2016 to June 30, 2017
NPDES PERMIT NMR04A000, Effective Date December 22, 2014
eNOI Application Date June 21, 2015

ITEM 10 Additional Information

I.C. Special Conditions

1. Compliance with Water Quality Standards

d. Dissolved Oxygen (DO): The Arroyo Metropolitan Flood Control Authority (AMAFCA) continues to monitor the DO in the Rio Grande

e. Polychlorinated Biphenyls (PCBs): The COA began a sediment assessment study in FY16 which was completed in FY17. Under this study, soil samples were taken from the 5 outfall locations monitored under the former Phase 1 permit NMS000101 as well as from up and down stream locations along the Rio Grande. These samples were analyzed for PCBs using the Aroclor method. Detection of PCBs at any of these location resulted in further sampling and analysis of upstream areas. Twelve locations were ultimately screened for both PCBs and select metals based upon the results of the original study. The Synthetic Precipitation Leaching Procedure (SPLP) was used to analyze the following metals: aluminum, cadmium, chromium, lead, nickel, and zinc. Both studies are included in Attachment 1.

f. Temperature: AMAFCA continues to monitor temperature in the Rio Grande and at the North Diversion Channel through the deployment of sondes. Analysis of stormwater flows for temperature under the former Phase 1 permit indicates no contribution to temperature exceedances in the Middle Rio Grande and continues to indicate no contribution to any potential temperature exceedances.

2. Discharges to Impaired Waters with and without approved TMDLs

b.(i)(c)B: The Monitoring Cooperative has worked out most of the details of the sampling plan and sample collection. Access to the southernmost collection point, currently on the Isleta Pueblo is somewhat problematic in that it requires Pueblo consent. Access was denied during one rain event despite earlier permission. Hence the group collected an upstream sample but was unable to complete the downstream sampling.

The permittees under NMR04A000 have worked with the New Mexico Environment Department (NMED) staff on a methodology to calculate the bacterial load contributed by the source area during a storm event.

During FY2017, 3 qualifying events were sampled during the wet season from July 1 through October 31, 2016 and 1 qualifying event was sampled during the dry season from

November 1, 2016 through June 30, 2017. Reports that provide and summarize the results of wet and dry season sampling are included in Attachment 2.

Potential e-coli exceedances occurred in both reaches (Angostura Diversion to Non-Pueblo Alameda Street Bridge and Alameda Street Bridge to Isleta Pueblo Boundary) during the wet season. During the dry season, a potential e-coli exceedance was noted in the southern reach from the Alameda Street Bridge to the Isleta Pueblo Boundary. The COA continues its work to reduce e-coli loads through the pet waste education and outreach program. Dog waste had been estimated to contribute about 22% of the bacteria to the MS4 in a previous bacterial source tracking (BST) study performed in 2004. It has also commissioned a new BST study at an estimated cost of \$250,000 for which a Quality Assurance Program Plan (QAPP) and sampling and analysis plan (SAP) have already been prepared.

b.(i)(e)A,C,D,E: The COA continues to work with the Albuquerque Bernalillo County Water Utility Authority (WUA) to make improvements to its pump and lift stations. The COA repaired two residential cross connections that had been illegally discharging to the storm drain system in FY2017. A map showing the locations of the repaired cross connections is included in Attachment 3.

b.(i)(e)C: The Environmental Health Department continues to work with restaurants to reduce waste sources of bacteria from grease traps.

b.(i)(e)D. The storm drainage department continues to work with the Zoo in an effort to ensure that bacteria from animal waste are not discharged to the MS4.

b.(i)(e)E. The COA contributes funding to and participates as a founding member of the Storm Water Quality Team. The Team continues education and outreach efforts to educate residents on bacteria associated with pet waste. The COA also works with the WUA on education of the public with regards to proper oil and grease disposal.

b.(iii)(c): The COA continues to work with Bernalillo County (BernCo) and the NM Department of Transportation (NMDOT) on a joint sampling program in the Tijeras Arroyo. A total maximum daily load for nutrients was approved by the Water Quality Control Commission on September 12, 2017. As a result the COA will begin to develop Best Management Practice (BMP) to minimize impacts, if any, due to potential contributions from the urbanized area that makes up about 1% of the watershed.

3. Endangered Species Act (ESA) Requirements

a.(i) AMAFCA has filled in the former embayment reducing the potential for low DO waters to occur and subsequently discharge from the North Diversion Channel (NDC) to the Rio Grande. The COA continues to install water quality features, such as trash racks and water quality manholes in efforts to collect and reduce trash and debris that contribute to the DO problem.

a.(ii) AMAFCA has submitted a revised strategy for reduction of pollutants contributed by the embayment. As stated above, the embayment has been filled in. Annual Incident Take Reports are submitted by AMAFCA to the EPA and Fish and Wildlife Service (FWS).

b.(i) See also item 1.e. The COA performed 2 Sediment Assessment Studies that included an analysis of PCBs and SPLP metals in soils. The first, finalized in October 2016 assessed sediments from 5 major outfall locations. The second, completed in July

2017, further examined potential upstream sources, if any. No PCBs were reported. Metals in general, with the exceptions of Aluminum (Al) and Zinc (Zn) were present at concentrations below detection limits. Detected Al concentrations ranged from 1.9 to 11 mg/L. Detected Zn concentrations ranged from 0.022 to 0.048 mg/L. The reports are provided in Attachment 1.

I.D. Stormwater Management Program (SWMP)

A copy of the updated SWMP adapted for compliance under NMR04A000 was included with the first full Annual Report on December 1, 2016. A future update will be available on December 1, 2019, the "Year 4" Annual Report. The SWMP is available on the COA's DMD MS4 webpage. Copies are also available on compact disks that will be mailed to regulators, stakeholders, and others upon request.

5b. Post-Construction Stormwater Management in New Development and Redevelopment .

(x)(c)A. Fourteen stormwater quality features have been installed since the WBP effective date of December 22, 2014. Of these, 4 were installed during FY2017. A listing, map, and description of these features is included in Attachment 4.

(x)(c)B. Approximately 205 acres of impervious area (IA) was added to the Albuquerque Metropolitan area last year. Of this, roughly 36% or 74 acres was in residential areas contained by backyard walls and is considered to be disconnected. Therefore the directly connected impervious area (DCIA) added in FY16 was 205 acres minus 74 acres totalling 131 acres. The methodology for estimating impervious area is based on land use codes and was sent to EPA in its 2013 Annual report under the former Phase 1 permit NMS000101.

5d. Industrial and High Risk Runoff

(vi) The COA worked on updating their industrial and high risk program in FY2016. Computer staff created a computer application so that inspectors could download the forms onto cellular phones in the field. In addition, a stormwater quality ordinance was passed on June 20, 2016 that gives COA designated staff authorization to perform inspections as well as enforcement capability. Contractors and newly hired inspectors (1 supervisor and 3 inspectors) performed inspections of 76 facilities that require a Multi-Sector General Permit (MSGP) in FY2017.

5e. Illicit Discharges and Improper Disposal

(i)e The COA implemented a 311 complaint system to report illicit discharges in the mid-2000s. See Attachment 5 for a map showing the locations of discharges and associated inspection forms reported via this system in FY2017.

(iv)A,C The Storm Drainage Section of the Department of Municipal Development (DMD) coordinated with the Solid Waste Department to host 2 Household Hazardous Waste recycling events in FY2017. Seven hundred people participated in the 2 events, held in August 2016 and April 2017 during which approximately 50,000 pounds of materials were collected. In addition, over 10,800 COA residents recycled roughly 875,000 pounds of hazardous materials at the collection facility during FY2017 at a cost of \$860,000.

(vii) In addition to utilizing the 311 complaint system to pinpoint illicit discharges, the COA implemented an Illicit Discharge Detection and Elimination (IDDE) inspection program in FY2016 in order to mitigate the influence of lower risk but potentially higher discharges. The automotive industry was chosen as the sector in which the inspection program was begun. A local environmental firm was hired to supply staff to perform inspections. Contractors performed over 300 IDDE inspections in FY2017. In addition, the COA has hired an inspector supervisor and 3 inspectors as permanent employees to assist in IDDE inspection and data tracking efforts in future years.

5f. Control of Floatables Discharges

(iii). Street Sweeping crews picked up 7100 cubic yards (6800 tons) of dirt and debris from 21,000 miles of COA Right of Way in FY2017. Dirt comprises about 65% of the material picked up by street sweepers with debris making up the remaining 35%. Of the debris, roughly 70% is vegetation. The remaining waste is comprised of plastics (bottles, bags, containers/lids) at 15%, paper and cardboard at 10% and metal at 5%.

In addition, Arroyo Maintenance cleaned 4800 cubic yards (3800 tons) of dirt, trash, debris, and vegetation from the storm drain system during FY2017.

III.A. Monitoring and Assessment

1. Wet Weather Reporting: The COA participates in the Middle Rio Grande monitoring cooperative. During FY2016, the monitoring cooperative, of which the COA is a part, prepared a sampling and analysis plan which was submitted to EPA Region 6 in June 2016 for approval. Permit requirements call for the submission of 7 samples by the end of the permit term. In FY2017, the monitoring cooperative collected 3 samples during the wet season and 1 sample during the dry. Sampling results and a short discussion of the results are provided in Attachment 2. As required in Sections D.1 and D.2, the monitoring results were submitted in the NetDMR system and hard copies are included in Attachment 6.

2. Dry Weather Reporting: Dry weather screening is performed at 37 locations (25 direct discharge points to the Rio Grande and an additional 12 locations to assess subwatersheds). See Attachment 6 for results.

3. Floatables Reporting: See item 5f above. In addition an estimated 20 cubic yards of floatables were removed from the Barelvas Pump Station in FY2017, the COA's selected floatables monitoring location. AMAFCA provides the information on floatables monitoring in the NDC.

4. Industrial and High Risk Reporting: The COA's landfills are located outside of the MS4 and drain to the Rio Puerco rather than the Rio Grande. Nonetheless, the landfills are permitted under the federal MSGP.

4.b COA's transfer stations, solid waste station at Pino Yards and transit stations, all located within the MS4, are classed as sector P and require quarterly visual monitoring only. Because of sporadic localized events that often occur during weekends and other non-work hours, it is often difficult to obtain results. Nonetheless quarterly visual inspections have been scheduled and are completed when possible. See Attachment 7 for the visual monitoring results.

ADDITIONAL INFORMATION TO SUPPLEMENT REPORT FORM

Item 3. Public Participation and Education

C. The COA participates in and contributes \$40,000 in dues to the Stormwater Quality Team (SWQT). Outreach activities performed by the 9 agencies that comprise the SWQT are provided in the Outcomes Report in Attachment 8.

Other education and outreach activities led by COA staff include the organization of 15,790 volunteers in cleanups, trail maintenance, trail building, tree planting and other conservation projects through the Parks and Recreation Department during FY2017. The Storm Drainage Section also provided monetary support to The Nature Conservancy and Earth Force (\$20,000 to each agency) in their efforts to promote public education in the schools and in the adult community in the area of watershed health. In addition, the Storm Drainage Section contributed \$45,000 to the River Xchange Program in an effort to expand the existing program by up to 30 5th grade classes.

Item 5. Illicit Discharges

C. There are 25 discharge points to the Rio Grande. Assessment of the subwatersheds and industry in the Albuquerque Metropolitan area led to the current selection of 12 additional dry weather screening locations. In total, 37 locations have been selected for dry weather screening. See Attachment 5, Dry Weather Screening for the results.

J. During the reporting period from July 1, 2016 through June 30, 2017, approximately 70 improper discharge related complaints were reported to the 311 system and investigated by a City storm drainage engineer. See Attachment 3 for a map indicating location of discharge. During this time period 1 cross connection into the storm drain was repaired.

Item 8. Program Resources

D. 27 full time employees that perform work related to the COA's MS4 include: 19 Arroyo/Storm Drainage Maintenance personnel, 8 Storm Drainage personnel (manager, 3 engineers, 1 supervisor inspector, and 3 inspectors), and 1 Stormwater Quality Engineer in Planning.

This 27 does not include 76 FTE's and 80 full time contractor positions in the Clean City Solid Waste program which picks up trash and floatables nor 21 employees in Street Maintenance that perform street sweeping. This also does not include Parks and Open Space personnel who perform restoration projects, host citizen clean up days, and perform education and outreach.

In addition to FTE's employed by the COA, the Department of Municipal Development, Storm Drainage Section budgets and spends approximately \$600,000 per year on consultants hired solely to perform NPDES permit compliance. This is the equivalent of 6 FTE's.

Attachment 1

City of Albuquerque Sediment Assessments

City of Albuquerque Sediment Assessment

Prepared for

City of Albuquerque, New Mexico

October 17, 2016



Daniel B. Stephens & Associates, Inc.

6020 Academy NE, Suite 100 • Albuquerque, New Mexico 87109

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1. Introduction

The City of Albuquerque (COA) has retained Daniel B. Stephens & Associates, Inc. (DBS&A) to address the requirements of the Sediment Pollutant Load Reduction Strategy (the Strategy) in final watershed-based municipal separate storm sewer system (MS4) permit NMR04A000 (the Permit) (effective date December 22, 2014) and prepare this sediment assessment. The Strategy is to be developed, implemented, and evaluated by the COA to assess and reduce pollutant loads associated with sediment into the receiving water of the Rio Grande. The Strategy must include the following elements:

- Sediment assessment
- Baseline sediment loading estimates
- Targeted controls and best management practices (BMPs)
- Monitoring and interim reporting to assess progress
- Progress evaluation and reporting regarding overall success of the Strategy
- Verification of no adverse effect to the critical habitat of any threatened or endangered species

This report supports the first element of the Strategy, and is based on available data from federal, state, and local studies, supplemented as needed with data collected by COA. The sediment assessment has the following requirements:

- Identify and investigate areas within COA jurisdiction that may be contributing to excessive levels of pollutants in sediment entering the Rio Grande during stormwater discharges
- Identify structural elements, natural or man-made topographical and geographical formations, MS4 operations activities, and areas indicated as potential sources of sediment pollutants

- Record any observed erosion of soil or sediment along ephemeral channels, arroyos, or stream banks, noting as either scouring of sediment or deposition of sediment

Section 2 of this report contains a literature review regarding sediment loading and transport in the Middle Rio Grande. Available water quality and sediment removal data have been compiled, with the results reviewed in Section 3. Section 4 summarizes findings and recommendations for the required Strategy.

2. Background

The mean annual precipitation from 1980 to 2010 recorded at the Albuquerque International Airport weather station was 9.45 inches (WRCC, 2016). The majority of precipitation occurs during the months of July and August as sudden and intense thunderstorms. Elevation in the Albuquerque metropolitan area ranges from 5,000 feet above mean sea level (feet msl) near the Rio Grande to 7,000 feet msl near the Sandia Mountain foothills. Loss of sediment is a continual and natural process, but the approximate 2,000-foot elevational range often translates into massive amounts of sediment being eroded and mobilized during storm events within Albuquerque city limits.

2.1 Sediment Pollutant Loading

The Rio Grande is an alluvial river that has its headwaters in the San Juan Mountains of southwestern Colorado. From there it flows south through New Mexico, then marks the border between Texas and Mexico as it runs southeast toward the Gulf of Mexico.

Historically, the Middle Rio Grande (from Cochiti Dam to Elephant Butte Reservoir) was an aggrading river characterized by a wide, sandy, braided planform with a high sediment load (Scurlock, 1998; Lagasse, 1980). The long dry periods of low peak flows facilitated vegetation encroachment and narrowing, whereas large floods could widen the river channel as “channel reset” events. Today, operation of flood control dams has resulted in a permanently narrower active channel due to the decreased magnitude of upstream peak flows, together with channelization and bank stabilization activities (Makar et al., 2006).

The Middle Rio Grande has some of the most problematic sedimentation issues among rivers of the U.S. Cochiti Dam reduces the suspended sediment loading in the flows downstream of the dam by 87 to 98 percent (USACE et al., 2007; Novak, 2006). However, dam effects diminish downstream because of tributary sediment delivery and in-channel sources of sediment. Excessive channel degradation downstream of the dam can also disconnect the channel from the floodplain, thereby reducing the quality and quantity of in-stream and floodplain habitat and accelerating erosion of the bed and bank. Channel incision downstream of Cochiti Dam and

corresponding increases in the potential for bank collapse are therefore additional sources of sediment.

Sedimentation problems in the Middle Rio Grande also need to be examined in the light of land use, which itself is directly correlated with water quality, hydrologic function, ecosystem health, biodiversity, and the integrity of streams and wetlands. When natural landscapes are converted to urban use, permeable soils are covered with impervious surfaces such as roads, sidewalks, parking lots, and buildings. Increased imperviousness leads to higher volumes and flow velocities of stormwater runoff, often resulting in negative effects on local hydrology, including surface water pollution. Sedimentation from tributaries that drain lands within Albuquerque city limits must therefore be studied in association with potential surface water pollution.

The Permit stipulates that eligible Middle Rio Grande MS4 operators must, in consultation with the New Mexico Environment Department (NMED), the U.S. Environmental Protection Agency (EPA), and affected tribes (if monitoring locations are located on tribal lands), develop and implement a comprehensive monitoring and assessment program designed to meet the following objectives:

- Assess compliance with the permit
- Assess the effectiveness of the permittee's stormwater management program
- Assess the impacts to receiving waters resulting from stormwater discharges
- Characterize stormwater discharges
- Identify sources of elevated pollutant loads and specific pollutants
- Detect and eliminate illicit discharges and illegal connections to the MS4
- Assess the overall health and evaluate long-term trends in receiving water quality

Sedimentation data are valuable in quantifying impacts so that remedial plans can be developed. The terms of the Permit stipulate that "the permittee shall control the discharges of pollutant(s) of concern to impaired waters and waters with approved Total Maximum Daily Loads (TMDLs) . . . , and shall assess the success in controlling those pollutants."

2.2 Naturally Occurring Constituents

Natural drainage to the Rio Grande in the Albuquerque metropolitan area occurs through arroyos (typically dry channels that flow only in response to snowmelt or large rainstorms) that originate on alluvial fans at the foothills of the Sandia Mountains and flow westward to the Rio Grande (Figure 1). In areas west of the Rio Grande, arroyos originate along the West Mesa and flow eastward to the Rio Grande. Many of the arroyos are concrete lined to enhance their capacity to convey storm runoff and prevent erosion, while other arroyos, particularly in the western part of the city, remain natural.

The surface geology on the east side of the Rio Grande includes Sandia granite (pink megacrystic biotite monzogranite and granodiorite) in the higher elevations, and primarily Quaternary-aged sediments from tributary stream-valley alluvium and fluvial terrace deposits (Connell, 2006). The Quaternary deposits are typically composed of sand with varying amounts of clay and gravel. Quaternary alluvium deposits associated with Tijeras Arroyo are composed of variable proportions of subangular to subrounded granite, greenstone, gneiss, limestone, and sandstone derived from the eastern slope of the Sandia Mountains (Connell et al., 1998). The surface geology on the west side of the Rio Grande includes basaltic lavas of the Albuquerque volcanoes, and primarily Quaternary-aged sediments from tributary stream-valley alluvium and fluvial terrace deposits (Connell, 2006). Although metals occur naturally in local soils, concentrations from soil samples within city limits show a possible trend of increasing contamination from upstream sites to the more downstream sites (Martinez, 2015).

2.3 Current Metropolitan Area Stormwater Management

The primary purpose of the Sediment Pollutant Load Reduction Strategy, as required by the Permit, is to reduce pollutant loads associated with sediment in runoff reaching the Rio Grande. The COA and the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) have a comprehensive Storm Water Management Program (SWMP) in place to reduce stormwater pollution to the maximum extent practicable and to eliminate prohibited non-stormwater discharges.

AMAFCA maintains the flood control system by routinely removing sediment from the many portions of the system that have been designed to capture sediment (i.e., detention basins shown on Figure 1). Many different types of detention basins have been put in place within the Albuquerque MS4 system, including some with wetland components that can slow the water down to reduce sediment loading to the Rio Grande. For example the North Pino Pond has a “secondary environmental pond,” or an extended detention pond that slows down stormwater and, because it is lined by vegetation acting as a filter, increases sediment removal. AMAFCA has designed and built many structures that catch debris, sediment, and trash. These structural BMPs, which protect the Rio Grande from pollution, are often modeled in the University of New Mexico (UNM) Hydraulics Laboratory to enhance their debris-capturing capability. The reduction in sediment has resulted in downstream water quality improvements, as much of the pollutant load involved in urban waters is sediment related.

In addition, the COA has recently updated its drainage ordinance. Under the new drainage ordinance, a current stormwater control permit is now required for erosion and sediment control for all construction, demolition, clearing, and grading operations that disturb the soil on 1 acre or more of land. The permit requires submittal of an erosion sediment control plan prepared by a licensed New Mexico Professional Engineer to ensure that minimum design standards are met and to reduce potential pollutants that may result from the demolition and construction activities. The COA Stormwater Quality Planning Section reviews these plans prior to the start of grading and conducts inspections on all construction sites.

3. Data Review

In cooperation with the COA, AMAFCA, the New Mexico Department of Transportation, and UNM, the U.S. Geological Survey (USGS) conducted a sampling study of stormwater in the Albuquerque metropolitan area. The following sample outfall locations, all of which fall under COA jurisdiction, were selected for investigation as areas that could be contributing to pollutants in sediment entering the Rio Grande during stormwater discharges (Figure 1 and Table 1):

- North Diversion Channel (NDC) near Alameda (North Diversion Channel)
- Mariposa Diversion of San Antonio Arroyo (San Antonio Arroyo)
- COA Barelás Lift Station no. 32 (Barelás Pump Station)
- San Jose Drain at Woodward Road at Albuquerque (San Jose Drain)
- South Diversion Channel (SDC) above Tijeras Arroyo (South Diversion Channel)
- Tijeras Arroyo near Albuquerque (Tijeras Arroyo)

All of these outfalls discharge stormwater directly or indirectly to the Rio Grande. They are located at the downstream end of a drainage basin. Concentrations of pollutants measured at each outfall therefore reflect (1) the extent of sedimentation loading and surface water pollution within the corresponding drainage basin and (2) the effectiveness of sediment removal structures. For example, San Antonio Arroyo has a settling pond above the sampling location, while there is a detention pond right above the San Jose Drain sampling location. The NDC embayment at NDC reduces sediment. The baffle chute structure (along the SDC), the NDC embayment (where trash is collected manually by AMAFCA crews), and the Bear Arroyo debris screen represent three other structures designed to help with sediment removal. The USGS *Summary of Urban Stormwater Quality in Albuquerque, New Mexico, 2003–12* (Storms et al., 2015) was used to summarize and review total dissolved solids (TDS) (Section 3.1), total suspended solids (TSS) (Section 3.2), metal concentrations (Section 3.3), and polychlorinated biphenyl (PCB) congeners (Section 3.4). The USGS report concluded that stormwater samples from outfalls with more urban development (industrial, commercial, and residential) had higher median concentrations of selected physical and chemical constituents (e.g., pH, specific

conductance, TDS, TSS) than stormwater samples from outfalls with less urban development (Storms et al., 2015).

Additional available water quality data were downloaded from the online USGS National Water Information System (NWIS) database (USGS, 2016) for the discharge outfalls and for several stream gage locations along the Rio Grande within the greater Albuquerque area (Figure 1). 2015 sediment removal data from the metropolitan flood control system were obtained from AMAFCA, and are discussed in Section 3.5.

3.1 Total Dissolved Solids

Figure 2a shows recent TDS concentrations for samples collected at the six outfall locations. Figure 2b shows recent TDS concentrations for samples collected from the Rio Grande stream gage locations within the greater Albuquerque area.

3.1.1 Outfall Locations

Since 2003, the TDS concentrations in the sampled outfall locations have ranged from not detected (less than 10 milligrams per liter [mg/L], shown as open symbols in Figure 2a for several outfall locations) to 997 mg/L at the San Antonio Arroyo outfall (Figure 2a). The TDS concentrations are highly variable within each of the outfalls, but overall concentrations are generally below 400 mg/L. None of the measured values in the stormwater samples at the six outfalls exceeded the New Mexico water quality standard of 1,500 mg/L for the Rio Grande Basin.

3.1.2 Rio Grande Locations

TDS concentrations since 2003 in the Rio Grande have ranged from 126 mg/L at the Rio Grande at Albuquerque stream gage to 807 mg/L at the Rio Grande at Alameda Bridge stream gage (Figure 2b). TDS concentrations in the Rio Grande typically appear to be between 150 and 300 mg/L. No TDS concentration exceeded the New Mexico water quality standard of 1,500 mg/L for the Rio Grande Basin. Other than the greater number of outliers from outfall

sampling locations, TDS concentrations seem higher overall at Rio Grande sampling locations (more concentrations greater than 200 mg/L and no concentrations below 100 mg/L).

3.2 Total Suspended Solids and Suspended Sediment

Figure 3a shows recent total suspended solids (TSS) or suspended sediment concentrations from samples collected at the six outfall locations. Figure 3b shows recent TSS or suspended sediment concentrations from the Rio Grande within the greater Albuquerque area. Suspended solids can effectively transport sorbed chemicals such as trace elements and some organic compounds (Drever, 1997).

3.2.1 Outfall Locations

Since 2003, the TSS or suspended solids concentrations in the sampled outfall locations have ranged from not detected (less than 1 mg/L, shown as open symbols in Figure 3a for several outfall locations) to 55,300 mg/L at the Tijeras Arroyo outfall (Figure 3a). The outfalls are typically sampled during periods of high flow, which would generally be carrying higher sediment loads than lower flow (Storms et al., 2015). The TSS concentrations vary widely, but the higher sediment loads tend to be contributed by the Tijeras Arroyo, SDC, and NDC outfalls.

3.2.2 Rio Grande Locations

TSS or suspended sediment concentrations since 2003 in the Rio Grande have ranged from not detected (0.5 mg/L) at the Rio Grande at Isleta stream gage to 81,000 mg/L at the Rio Grande at Albuquerque stream gage (Figure 3b). Generally, the suspended sediment concentrations in the Rio Grande appear to range widely, between 100 and 10,000 mg/L, and likely vary based on the source and amount of stormwater contributed to each stream gage location.

3.3 Metal Concentrations

Based on data collected since 2003 from the outfalls and the Rio Grande, available sample data for dissolved and total concentrations were reviewed for the following metals: aluminum,

cadmium, chromium, lead, nickel, and zinc. Figures 4a through 9d show the total and dissolved concentrations for these selected metals.

3.3.1 Outfall Locations

The USGS report determined that stormwater from the Barelás Pump Station, San Jose Drain, and NDC outfalls generally had higher metal concentrations than the other sampled outfalls (Storms et al., 2015). Dissolved and total metal concentrations for the outfalls are presented individually in the following subsections.

3.3.1.1 Aluminum

Recent dissolved aluminum concentrations at the sampled outfall locations have ranged from 0.01 micrograms per liter ($\mu\text{g/L}$) at several outfall locations to 5,540 $\mu\text{g/L}$ at the NDC (Figure 4a). With a few exceptions, the dissolved aluminum concentrations are typically below the New Mexico water quality standard of 87 $\mu\text{g/L}$ for the Rio Grande Basin, but several high dissolved aluminum concentrations were measured, at the San Antonio Arroyo outfall in particular. Total aluminum concentrations have ranged from not detected for several outfall locations to 150,000 $\mu\text{g/L}$ at the Tijeras Arroyo outfall (Figure 4b). The total aluminum concentrations vary widely, but the higher concentrations tend to be contributed by the Tijeras Arroyo, SDC, and NDC outfalls.

3.3.1.2 Cadmium

Recent dissolved cadmium concentrations at the sampled outfall locations have ranged from 0.03 $\mu\text{g/L}$ at the SDC outfall to 2.78 $\mu\text{g/L}$ at the San Jose Drain outfall (Figure 5a). The majority of outfall sample results for dissolved cadmium have been not detected at a detection limit of 0.1 $\mu\text{g/L}$ or lower. Total cadmium concentrations have ranged from not detected at several outfall locations to 58.5 $\mu\text{g/L}$ at the SDC outfall (Figure 5b).

3.3.1.3 Chromium

Recent dissolved chromium concentrations at the sampled outfall locations have ranged from not detected (below 1 or 2 $\mu\text{g/L}$) at several outfall locations to 12.99 $\mu\text{g/L}$ at the NDC outfall (Figure 6a). With one exception, the dissolved chromium concentrations at all outfall locations

are all below 4 µg/L. Total chromium concentrations have ranged from not detected at several outfall locations to 129.57 µg/L at the Tijeras Arroyo outfall (Figure 6b).

3.3.1.4 Lead

Recent dissolved lead concentrations at the sampled outfall locations have ranged from not detected (below 2 µg/L) at all outfall locations to 6.932 µg/L at the NDC outfall (Figure 7a). A total of 11 stormwater samples had dissolved lead concentrations at or above the chronic aquatic life criterion of 2 µg/L. Total lead concentrations have ranged from 0.01 µg/L at several outfall locations to 345.66 µg/L at the SDC outfall (Figure 7b).

3.3.1.5 Nickel

Recent dissolved nickel concentrations at the sampled outfall locations have ranged from not detected (below 5 µg/L) at all outfall locations to 30.5 µg/L at the San Jose Drain (Figure 8a). Total nickel concentrations have ranged from not detected (below 5 or 15 µg/L) at several outfall locations to 244 µg/L at the Tijeras Arroyo outfall (Figure 8b).

3.3.1.6 Zinc

Recent dissolved zinc concentrations in the sampled outfall locations have ranged from not detected (below 5 µg/L) at all outfall locations to 1,380 µg/L at the Barelas Pump Station (Figure 9a). With a few exceptions, the dissolved zinc concentrations are typically below 100 µg/L. Total zinc concentrations have ranged from 0.01 to 2,060 µg/L (Figure 9b).

3.3.2 Rio Grande Locations

Available dissolved and total metal concentration data are summarized in the following subsections for several Rio Grande stream gage locations within the greater Albuquerque area. No total metals data have been collected at the Rio Grande at Albuquerque and Rio Grande at Isleta stream gage locations since prior to 2003.

3.3.2.1 Aluminum

Recent dissolved aluminum concentrations in the Rio Grande in the Albuquerque area have ranged from 1.4 µg/L at the Rio Grande at Albuquerque stream gage to 101 µg/L at the Rio Grande at Alameda Bridge stream gage (Figure 4c). With one exception, the dissolved

aluminum concentrations are all below the New Mexico water quality standard of 87 µg/L for the Rio Grande Basin. Total aluminum concentrations for the Rio Grande have ranged from 350 to 71,500 µg/L, and are typically between 1,000 and 10,000 µg/L (Figure 4d).

3.3.2.2 *Cadmium*

Recent dissolved cadmium concentrations in the Rio Grande in the Albuquerque area are typically below the detection limit (varied from 0.016 to 0.35 µg/L), and the detected concentrations have all been below 0.05 µg/L (Figure 5c). Total cadmium concentrations for the Rio Grande are typically below 0.1 µg/L, and have ranged from 0.023 to 1.78 µg/L (Figure 5d). Total cadmium concentrations appear lower for Rio Grande sampling locations than for the outfalls.

3.3.2.3 *Chromium*

Recent dissolved chromium concentrations in the Rio Grande in the Albuquerque area are typically below the detection limit (varied from 0.04 to 2.1 µg/L), and detected concentrations have been 1 µg/L or lower (Figure 6c). Total chromium concentrations for the Rio Grande have ranged from 0.5 to 29.4 µg/L (Figure 6d).

3.3.2.4 *Lead*

Recent dissolved lead concentrations in the Rio Grande in the Albuquerque area are typically below the detection limit (varied from 0.06 to 2.05 µg/L), and detected concentrations have all been below 0.3 µg/L (Figure 7c). Total lead concentrations for the Rio Grande have ranged from 0.48 to 119 µg/L (Figure 7d). Both dissolved and total lead concentrations at Rio Grande sample locations appear lower than those at outfall sample locations (Figures 7a and 7b).

3.3.2.5 *Nickel*

Recent dissolved nickel concentrations in the Rio Grande in the Albuquerque area are typically below the detection limit (varied from 0.75 to 5 µg/L), and the detected concentrations have all been below 3 µg/L (Figure 8c). Total nickel concentrations for the Rio Grande have ranged from 1.12 to 64.6 µg/L (Figure 8d).

3.3.2.6 Zinc

Recent dissolved zinc concentrations in the Rio Grande in the Albuquerque area are typically below the detection limit (varied from 0.5 to 90.6 µg/L), and detected concentrations have all been below 18 µg/L (Figure 9c). Total zinc concentrations for the Rio Grande have ranged from 4.2 to 279 µg/L (Figure 9d). Both dissolved and total zinc concentrations appear markedly lower from samples from the Rio Grande compared to those collected at the outfall locations.

3.4 Polychlorinated Biphenyl Congeners

There are 209 configurations (congeners) of PCBs that are synthetic organic compounds. Prior to their ban in 1979, PCBs were used in electrical transformers and condensers, paint, hydraulic fluid, pesticides, ink, carbonless paper, and toilet paper (U.S. EPA, 2016). The two common analytical tests for measuring PCB concentrations include the following (Storms et. al., 2015):

- EPA analytical test method 8082
 - Analyzes for aroclors
 - Laboratory detection limits of 0.3 µg/L or above

- EPA analytical test method 1668
 - Analyzes for congeners
 - Laboratory detection limits of 10 picograms per liter (pg/L) or above

Table 2 summarizes recent total PCB concentrations for samples collected from five of the six outfall locations and two Rio Grande locations. The total PCB concentration of the water samples was estimated by summing the individual congener concentrations using EPA method 1668. PCBs were not detected using EPA method 8082.

3.4.1 Outfall Locations

Recent total PCB concentrations in the sampled outfall locations have ranged from not detected at two outfall locations to 0.123699 µg/L at the North Diversion Channel (Table 2). Overall, the total PCB concentrations in stormwater are generally low, although higher concentrations are noted in the samples collected from the NDC and San Jose Drain outfall locations (Table 2).

3.4.2 Rio Grande Locations

Recent total PCB concentrations in the Rio Grande in the Albuquerque area have ranged from not detected at the Rio Grande upstream of the NDC location to 0.000276 µg/L at the Rio Grande near Isleta location (Table 2). The detected total PCB concentration was below the New Mexico and Pueblo of Isleta water quality standard of 0.014 µg/L.

3.5 Sediment Removal from Flood Control System

AMAFCA maintains the flood control system by routinely removing sediment from the many portions of the system that have been designed to capture sediment. Their currently maintained system includes the following (AMAFCA, 2015):

- 21 flood control dams
- 46 smaller flood control ponds
- 68 miles of arroyo channels
- 11 miles of underground conduit structures
- 10 miles of dikes and diversion structures
- 127 stormwater quality debris facilities

During 2015, AMAFCA removed a total of 34,976 cubic yards of sediment from their various channels, diversion structures, flood control dams, and stormwater quality facilities (Chavez, 2016) (Table 3). Approximately 46 percent of the total sediment removed by AMAFCA was taken from the SDC and Water Quality Structure during the months of January through April, July, October, and November (Table 4). The amount removed from the SDC and Water Quality Structure includes sediment collected from structures above and below the confluence of Tijeras Arroyo with the SDC. The amount of sediment removed has not been tracked separately for the two channels, but will be in the future.

In 2015, 2,735 cubic yards of sediment was removed from the NDC for several months during the spring and fall (Table 4). No sediment removal was documented during 2015 from the San Antonio Arroyo.

The Barelmas Pump Station and San Jose Drain sites are maintained by COA and do not have documented sediment removal data. The COA employs several crews that routinely check and clean more than 30,000 storm drains within the city after large storm events. The 14 pump stations and 11 dams the COA maintains are inspected each year in May and June just prior to the monsoon season.

4. Conclusions and Recommendations

Erosion of sediment during storm events is a continual and natural process—especially in the Albuquerque metropolitan area, where stormwater flows toward the Rio Grande over the alluvial fans of the Sandia Mountain foothills and mostly unmodified sandy arroyos that drain the West Mesa. The COA and AMAFCA have a comprehensive plan in place to reduce stormwater pollution to the maximum extent practicable. Many different types of detention basins have been installed within the Albuquerque MS4 system to slow down stormwater and ultimately reduce the amount of sediment reaching the Rio Grande (Figure 1). AMAFCA has designed and built over a hundred water quality structures specifically to catch debris, sediment, and trash from stormwater prior to entering the Rio Grande. Sediment collected in these detention basins and water quality structures is routinely removed as part of ongoing operation and maintenance of these facilities by COA and AMAFCA. Recently completed projects include the following:

- Black Arroyo Dam east branch channel and regional water quality facility
- Boca Negra Dam project
- Calabacillas Arroyo grade control structures 3b and 3c and bank protection project
- East Amole surge pond
- Hahn Arroyo rehabilitation project Phase I
- La Presa Project (included 80 acre-foot detention facility)
- NDC sedimentation basin

The COA has recently updated its drainage ordinance with a significant change requiring a current stormwater control permit for erosion and sediment control for all construction, demolition, clearing, and grading operations that would disturb 1 acre or more of land. The result of this ordinance requirement will be a reduction in sediment erosion from construction sites under its jurisdiction.

In Section 3, recent water quality data for TDS, TSS, metal concentrations, and PCBs from discharge outfalls were reviewed and compared with corresponding data from the Rio Grande within the greater Albuquerque area. In general, TDS and TSS concentrations detected in stormwater samples were similar to those detected in the samples collected from the Rio Grande (Figures 2a through 3b). However, while TDS concentrations from Rio Grande sampling locations exhibited less variability compared to concentrations measured at the outfalls, TDS concentrations in the Rio Grande samples also appeared typically higher, indicating that the detention ponds and other BMPs to reduce sediment loading to the river are working and do reduce the amount of contaminants making it to the river. The TSS concentrations at the outfall locations varied widely, but more sediment was frequently contributed from the Tijeras Arroyo, SDC, and NDC outfalls. Therefore, implementation of additional sediment loading reduction BMPs should be targeted in these drainage areas. Concentrations of lead, cadmium (total concentrations), and zinc appeared higher in outfall samples than in Rio Grande samples, also suggesting that system-wide progress is still possible toward removing those pollutants. PCBs using EPA method 1668 were detected at low concentrations in stormwater samples. The highest PCB concentrations were detected in stormwater from the NDC and San Jose Drain outfalls, while the lowest concentrations were from the San Antonio Arroyo outfall.

The purpose and intent of the Sediment Pollutant Load Reduction Strategy is to encourage entities to look at how to reduce pollutants attached to sediments; based on the above conclusions, this appears to already be working. It is recommended that entities continue the BMPs already in place to reduce sediment loading, and also look into additional ways to reduce sediment loading. In cooperation with other stakeholders (e.g., COA, Bernalillo County), AMAFCA is currently planning the installation of the following infrastructure and/or the implementation of the following studies to improve stormwater quality and decrease the amount of sediment reaching the Rio Grande (AMAFCA, 2015):

- Adobe Acres pump station outfall (includes 10 acre-foot pond)
- Bosque surface water quality outfall improvements for Barelás Pump Station outfall [COA lead agency on this project]
- Barr Main Canal improvements (includes series of inline detention ponds)

- Black Mesa Pump Station outfall upgrade
- Black Mesa storm drain (McCoy)
- Bobby Foster storm drain
- Calabacillas Arroyo bank monitoring and enhancement
- Calabacillas Arroyo prudent line study
- Hahn Arroyo phase II
- Hamilton Dam
- Kirtland Air Force Base 30 acre-foot south detention basin [COA lead agency on this project]
- Karsten Area restudy
- Las Ventanas Dam stormwater quality upgrades
- Marble-Arno pond and pump station [COA lead agency on this project]
- NDC Indian School water quality pond
- NDC outfall stormwater quality facility improvements
- North Fourth Street storm drain
- North Geologic Window Dam (173 acre-foot detention pond)
- Old Coors ponding area
- Pond 2149
- SDC outfall water quality improvements
- Tijeras Arroyo facility plan
- Tijeras Arroyo sediment retention structure (to collect 15,000 to 30,000 cubic yards of sediment and debris before it enters the SDC)
- Upper Snow Vista Channel improvements study
- Valle de Oro drainage and water quality infrastructure
- West I-40 diversion channel

All of these planned infrastructure improvements and studies are recommended to further reduce sediment loading and improve stormwater quality in the Albuquerque metropolitan area.

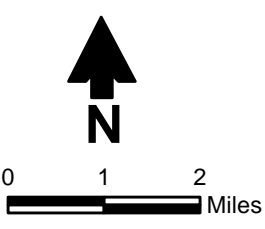
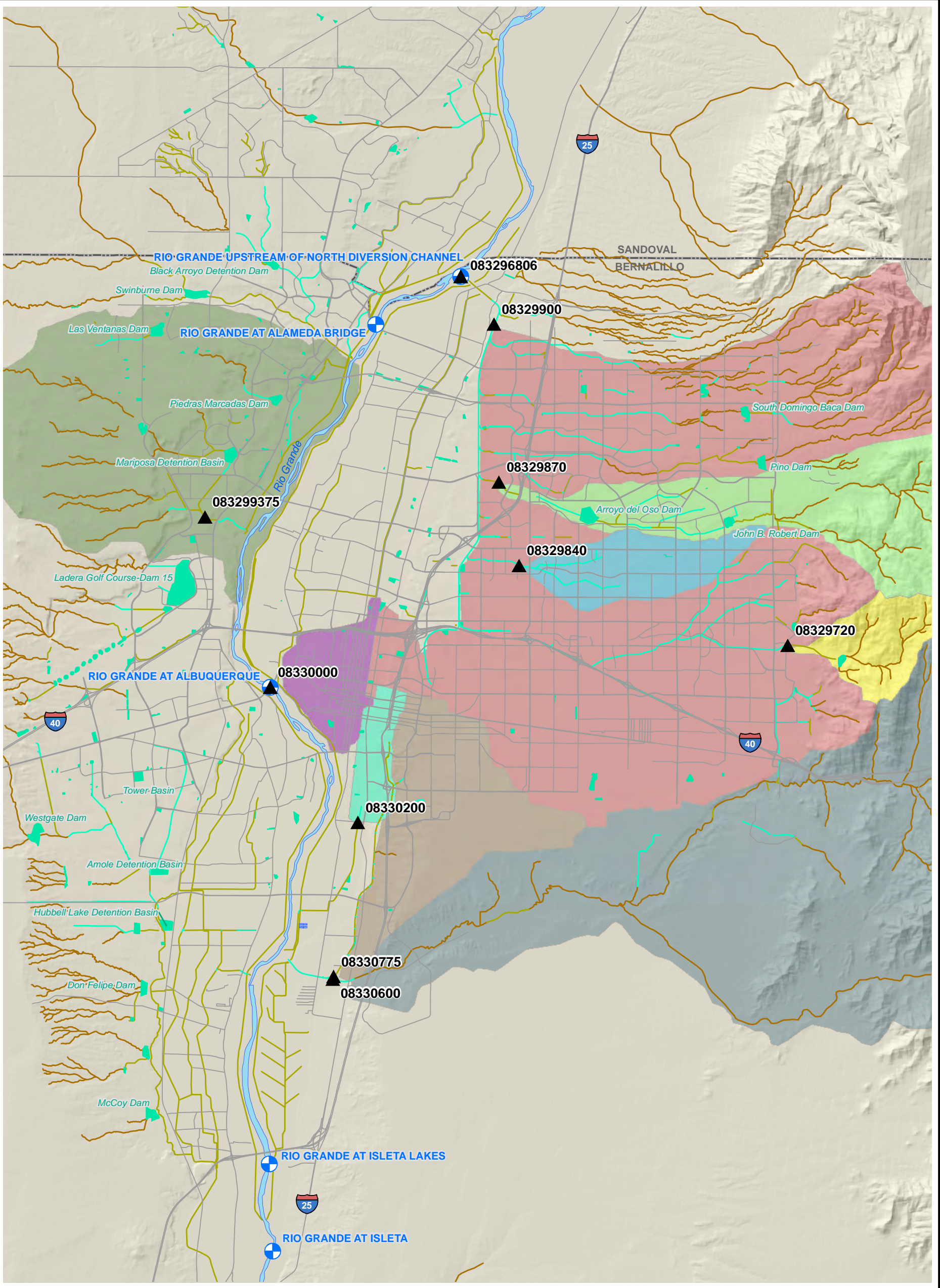
It is further recommended that the City investigate several specific areas within its jurisdiction that may be contributing excessive levels of pollutants in sediment entering the Rio Grande during stormwater discharge events. The recommended investigation would target areas within Tijeras Arroyo (upstream of the concrete-lined area) and other arroyos that are contributing higher sediment loads (e.g., top ranked locations from Table 3). Analytical analyses would be conducted to determine the presence or absence of near-surface PCB and metal concentrations in the collected sediment. In addition, sediment samples should be collected from arroyo locations upgradient of the urbanized area for an estimate of background concentrations. This additional sediment sampling within COA jurisdiction would supplement historical stormwater analytical data, and allow for comparison of PCB and metal concentrations in sediment between the various arroyos and upgradient background locations. The field and laboratory data results could then be evaluated spatially within the City's jurisdiction and compared to the results of the previous investigations summarized in this assessment report.

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Figures



Explanation

- ▲ Sample location
- ⊕ USGS stream gage
- Natural arroyo
- Concrete-lined channel
- Natural or rock-lined channel
- ◡ Detention basin

Drainage basin

- Barelas Pump Station
- Bear Arroyo
- Embudo Arroyo
- Hahn Arroyo
- North Diversion Channel

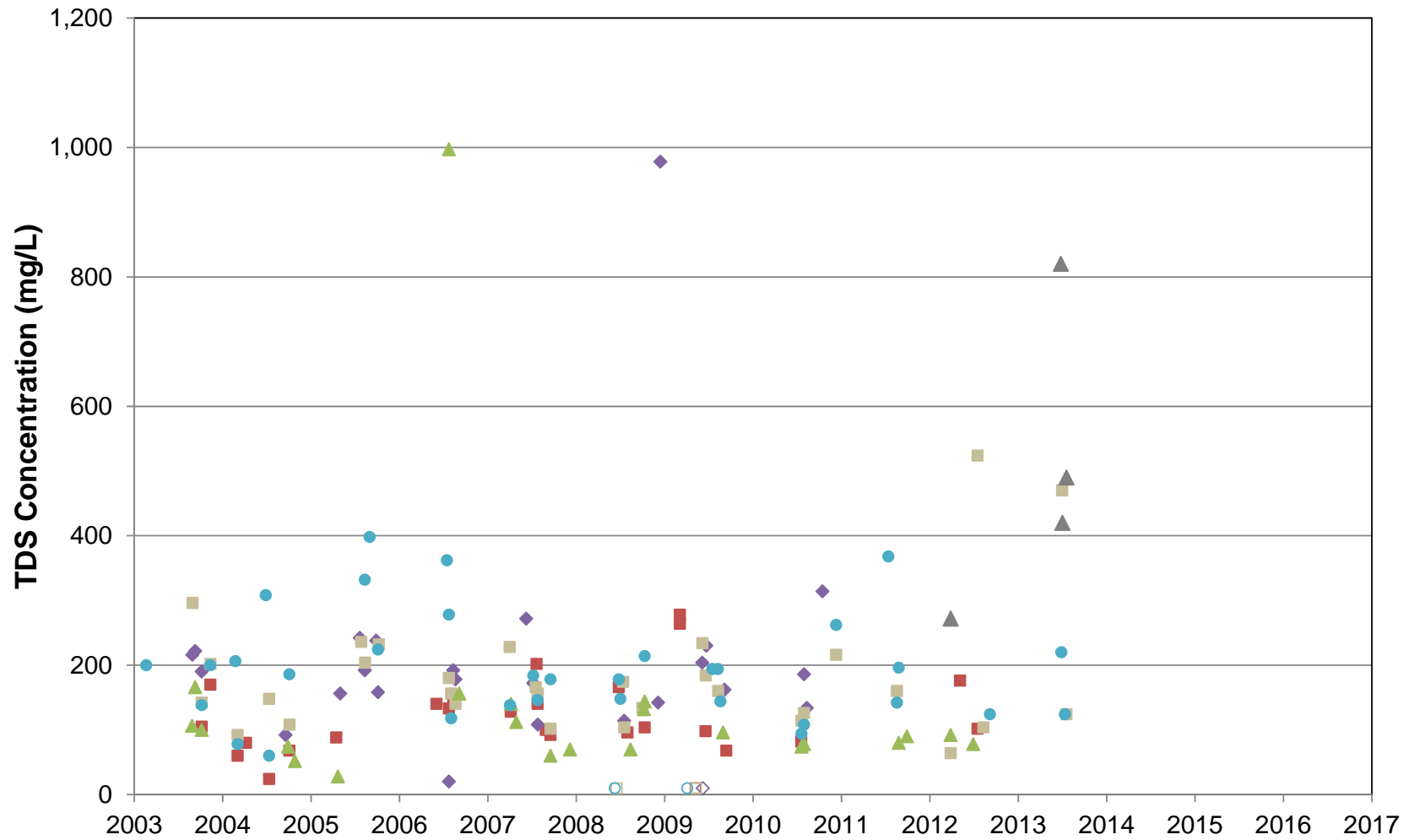
- San Antonio Arroyo
- San Jose Drain
- South Diversion Channel
- Tijeras Arroyo

Figure 1



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9/16/2016 JN WR14.0049

**CITY OF ALBUQUERQUE
Outfall Sampling Location and Stream Gages**

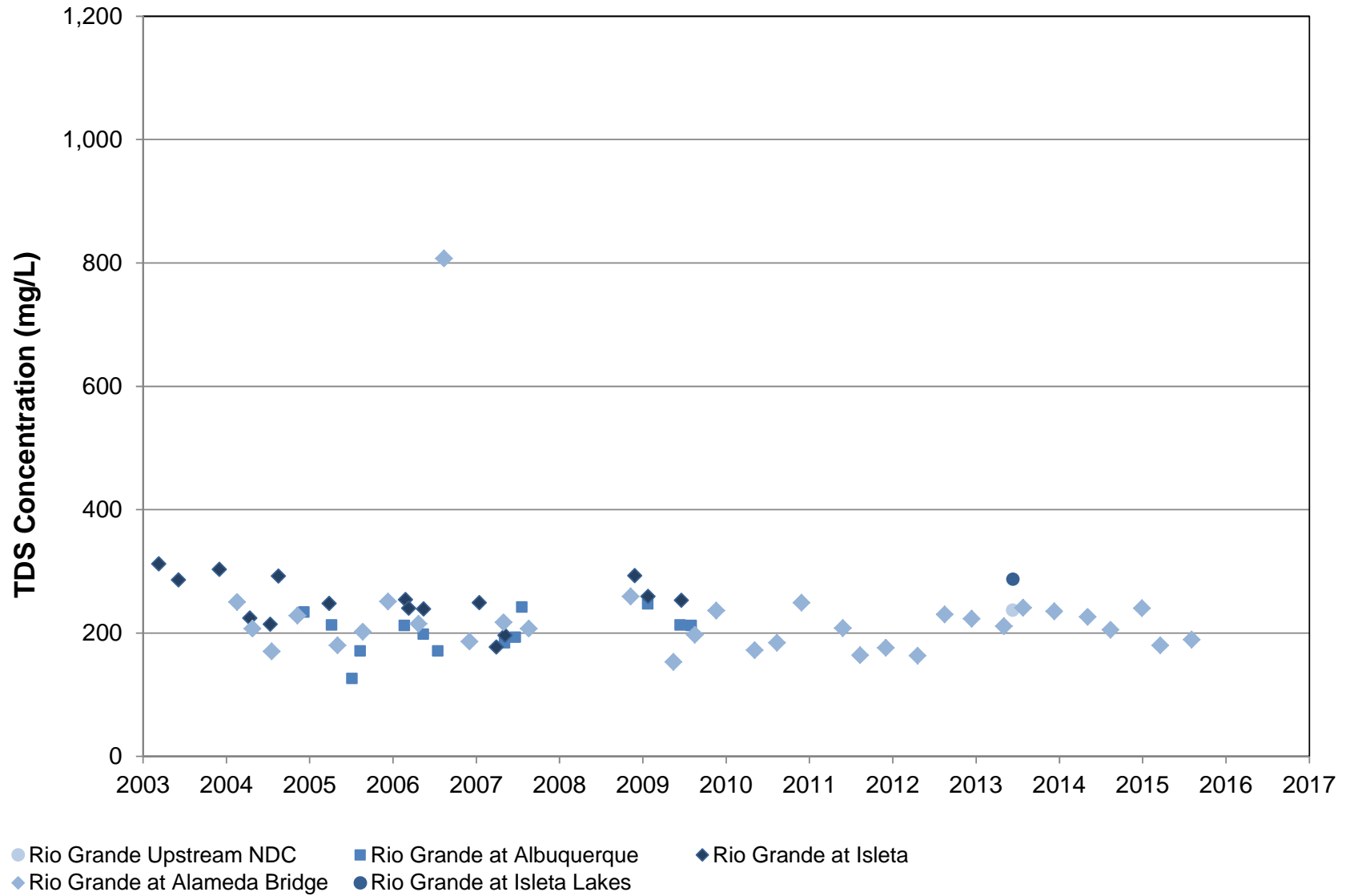


- North Diversion Channel
- San Antonio Arroyo
- Barelmas Pump Station
- San Jose Drain
- South Diversion Channel
- Tijeras Arroyo

Note: Open symbols denote non-detections (at detection limit).
Sources: Storms et al., 2015; USGS, 2016

Figure 2a





Sources: Storms et al., 2015; USGS, 2016

Figure 2b



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CITY OF ALBUQUERQUE

Total Dissolved Solids, Rio Grande Locations



■ North Diversion Channel ◆ Barelas Pump Station ■ South Diversion Channel
▲ San Antonio Arroyo ● San Jose Drain ▲ Tijeras Arroyo

Note: Open symbols denote non-detections (at detection limit).
Sources: Storms et al., 2015; USGS, 2016

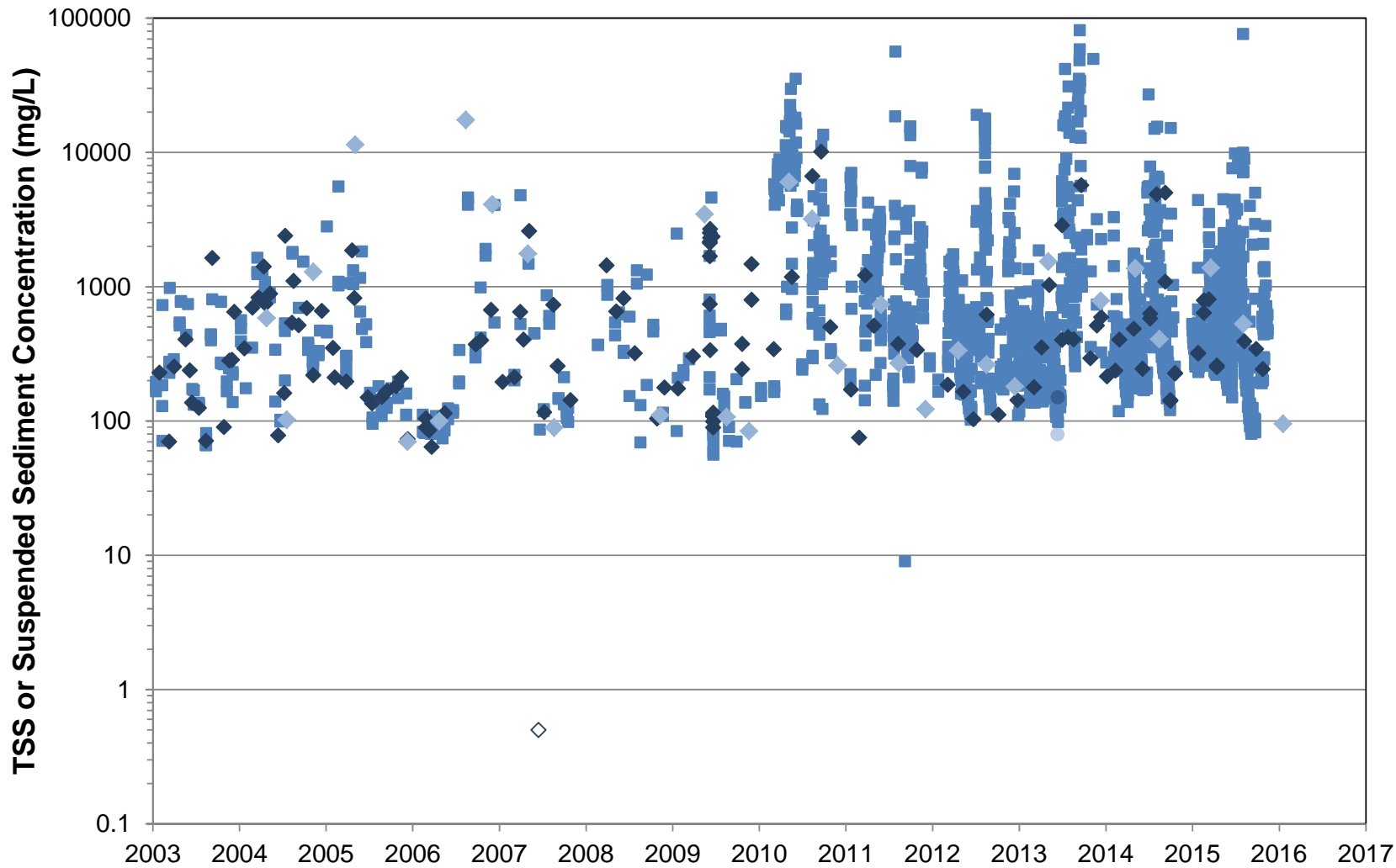
CITY OF ALBUQUERQUE
**Total Suspended Solids or Suspended Sediment
Outfall Locations**

Figure 3a



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● Rio Grande Upstream NDC ■ Rio Grande at Albuquerque ◆ Rio Grande at Isleta
◆ Rio Grande at Alameda Bridge ● Rio Grande at Isleta Lakes

Note: Open symbols denote non-detections (at detection limit).
Sources: Storms et al., 2015; USGS, 2016

CITY OF ALBUQUERQUE
**Total Suspended Solids or Suspended Sediment
Rio Grande Locations**

Figure 3b



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Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 4a

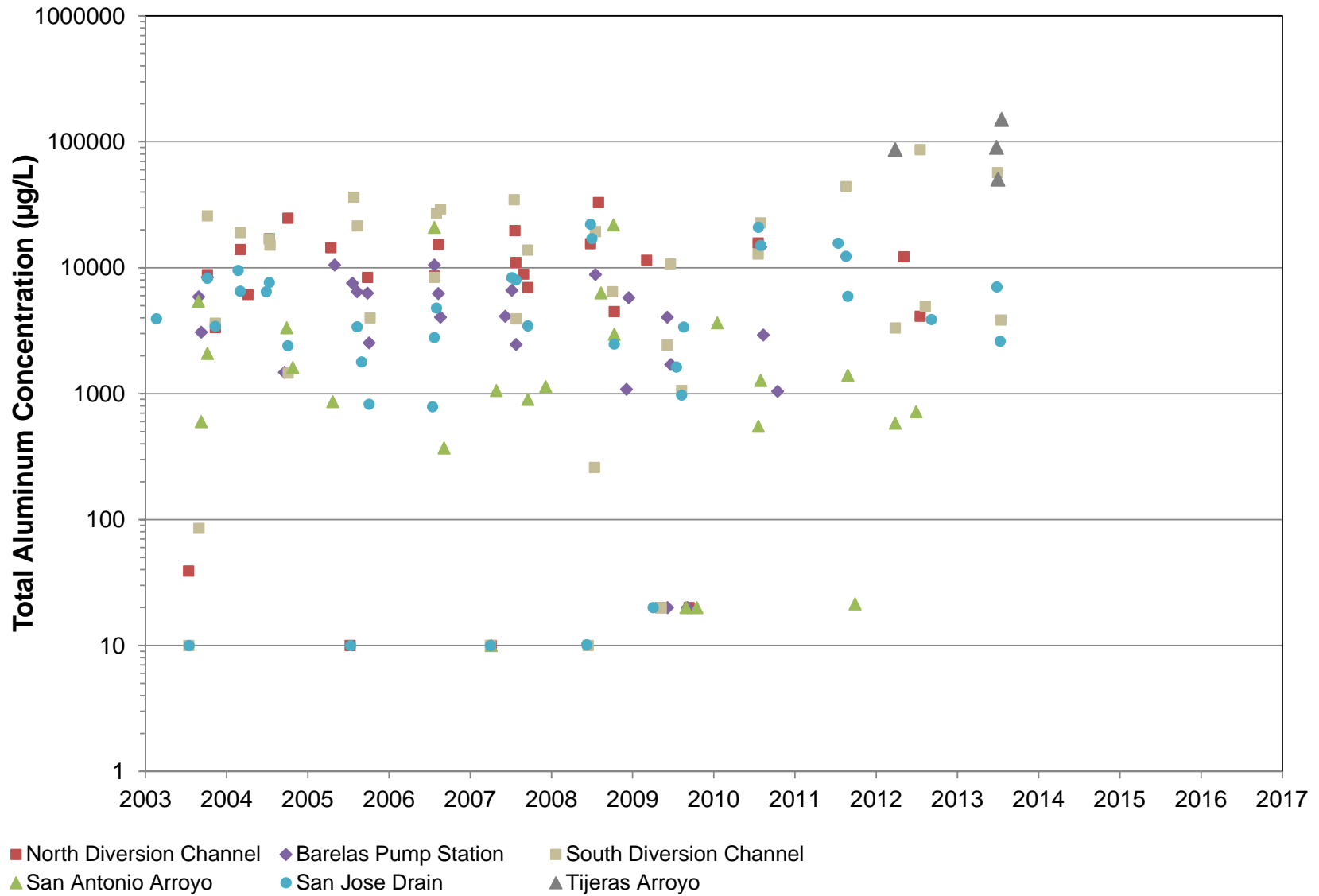


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CITY OF ALBUQUERQUE

Dissolved Aluminum, Outfall Locations



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

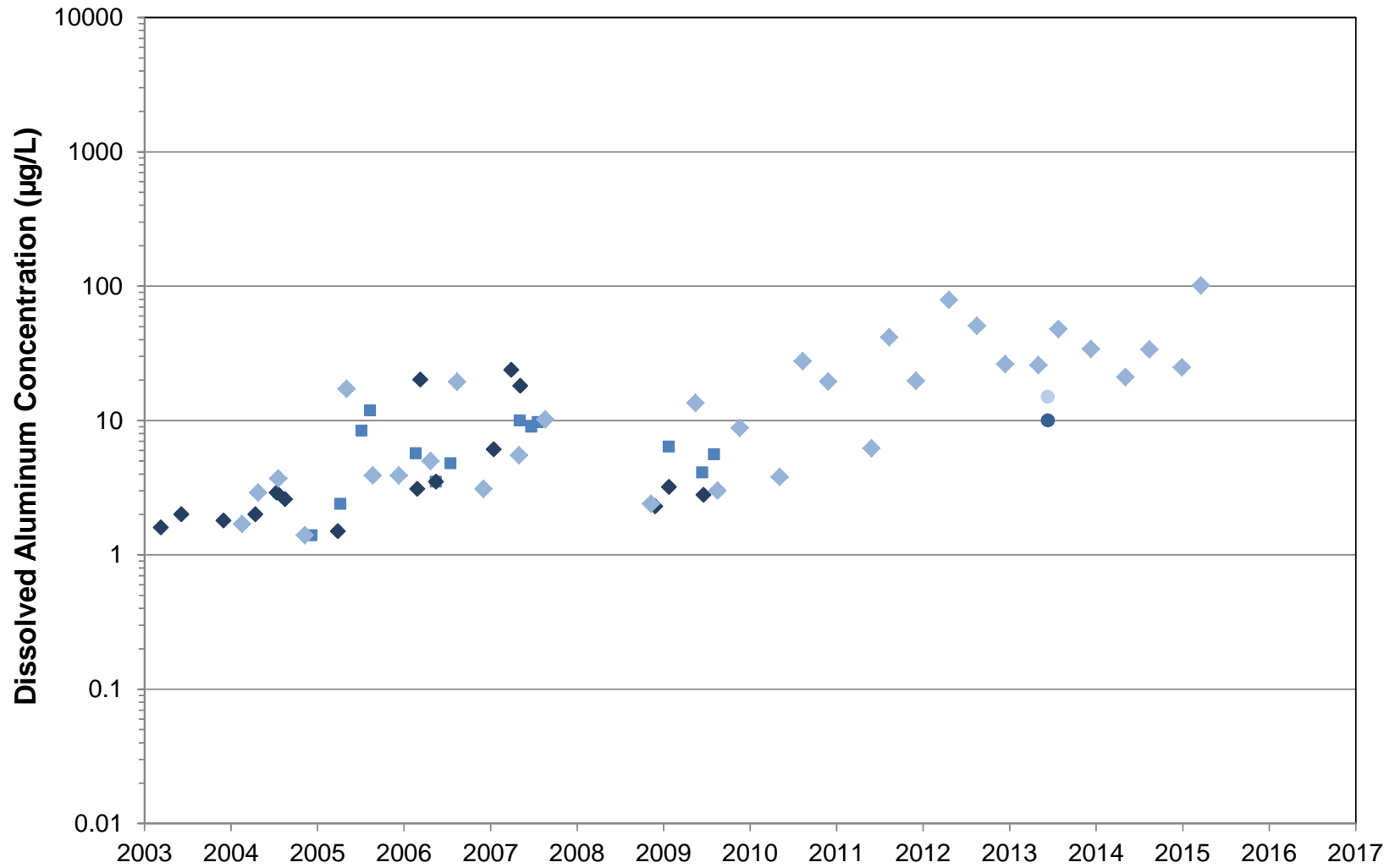
Figure 4b



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CITY OF ALBUQUERQUE
Total Aluminum, Outfall Locations



● Rio Grande Upstream NDC ■ Rio Grande at Albuquerque ◆ Rio Grande at Isleta
◆ Rio Grande at Alameda Bridge ● Rio Grande at Isleta Lakes

Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

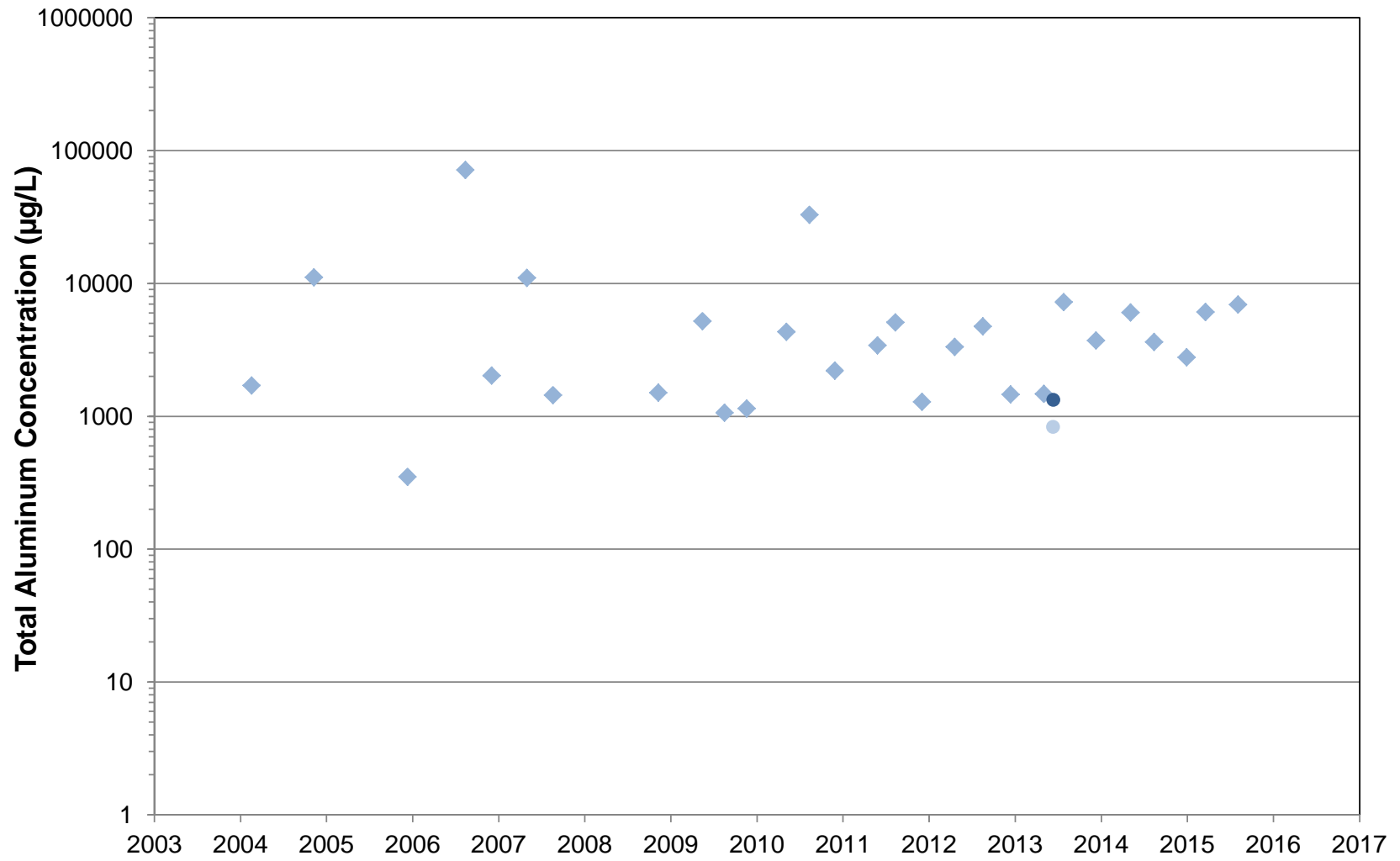
Figure 4c



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CITY OF ALBUQUERQUE
Dissolved Aluminum, Rio Grande Locations



● Rio Grande Upstream NDC ■ Rio Grande at Albuquerque ◆ Rio Grande at Isleta
◆ Rio Grande at Alameda Bridge ● Rio Grande at Isleta Lakes

Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

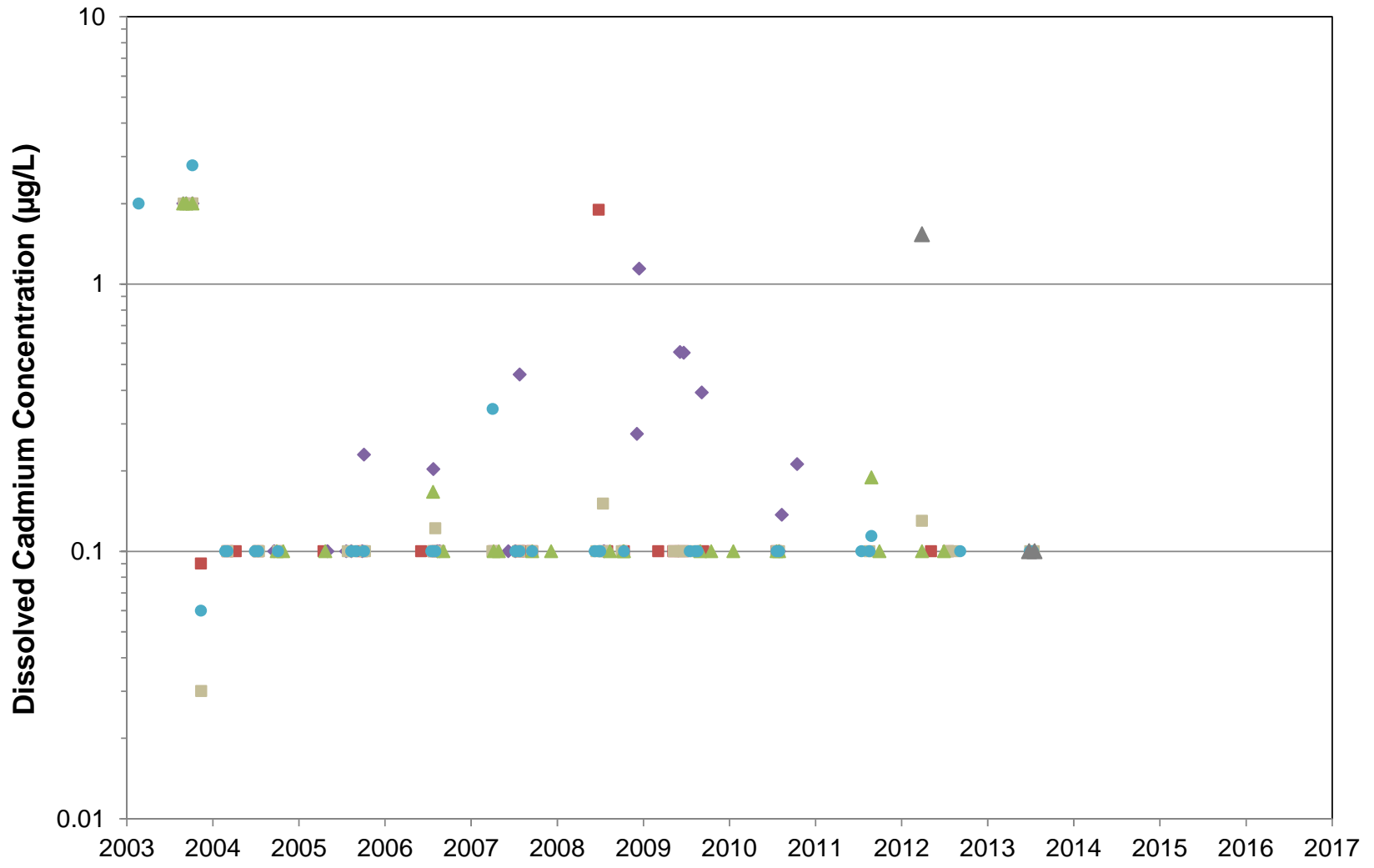
Figure 4d



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CITY OF ALBUQUERQUE
Total Aluminum, Rio Grande Locations



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

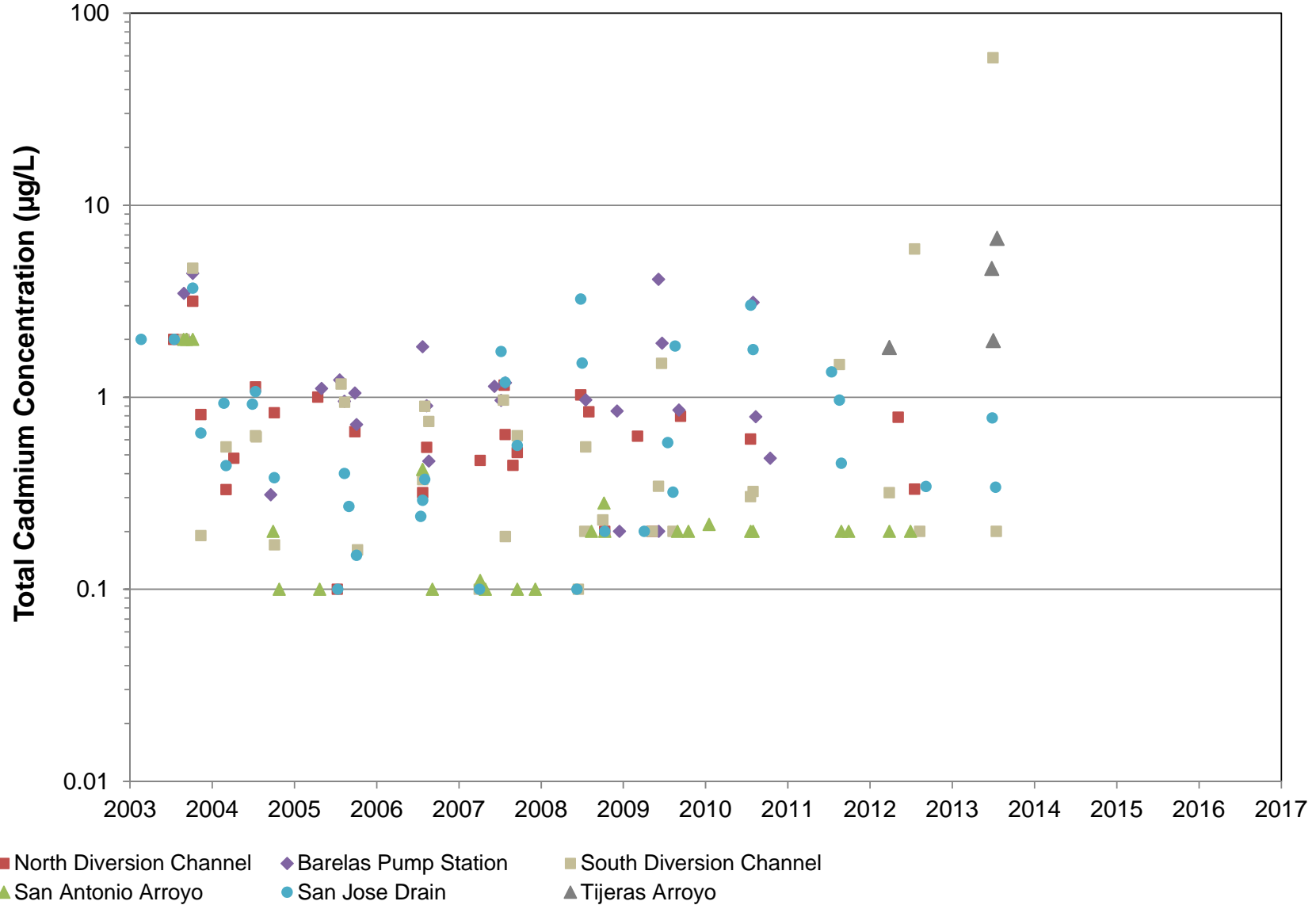
Figure 5a



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CITY OF ALBUQUERQUE
Dissolved Cadmium, Outfall Locations



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

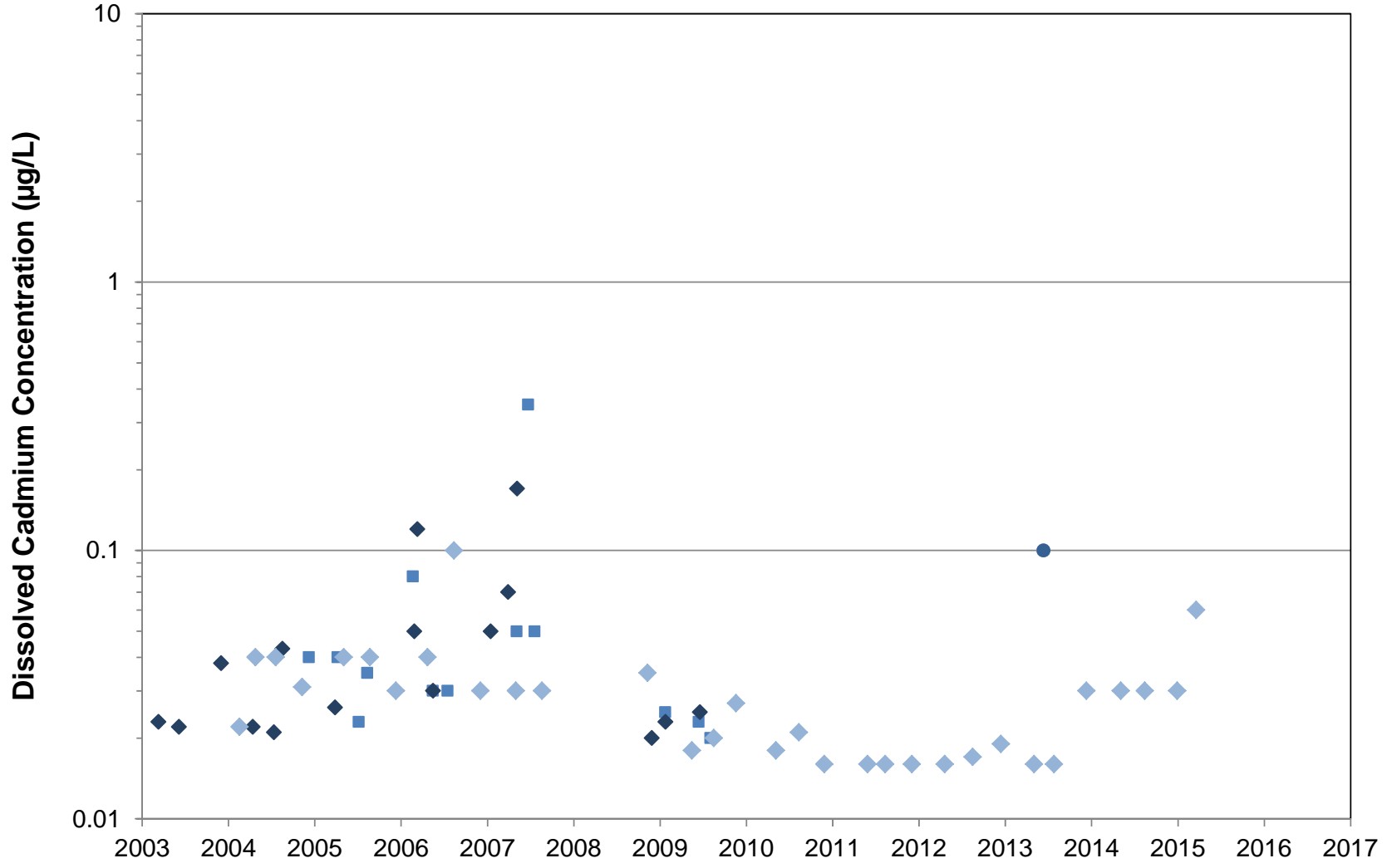
Figure 5b



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CITY OF ALBUQUERQUE
Total Cadmium, Outfall Locations



● Rio Grande Upstream NDC ■ Rio Grande at Albuquerque ◆ Rio Grande at Isleta
◆ Rio Grande at Alameda Bridge ● Rio Grande at Isleta Lakes

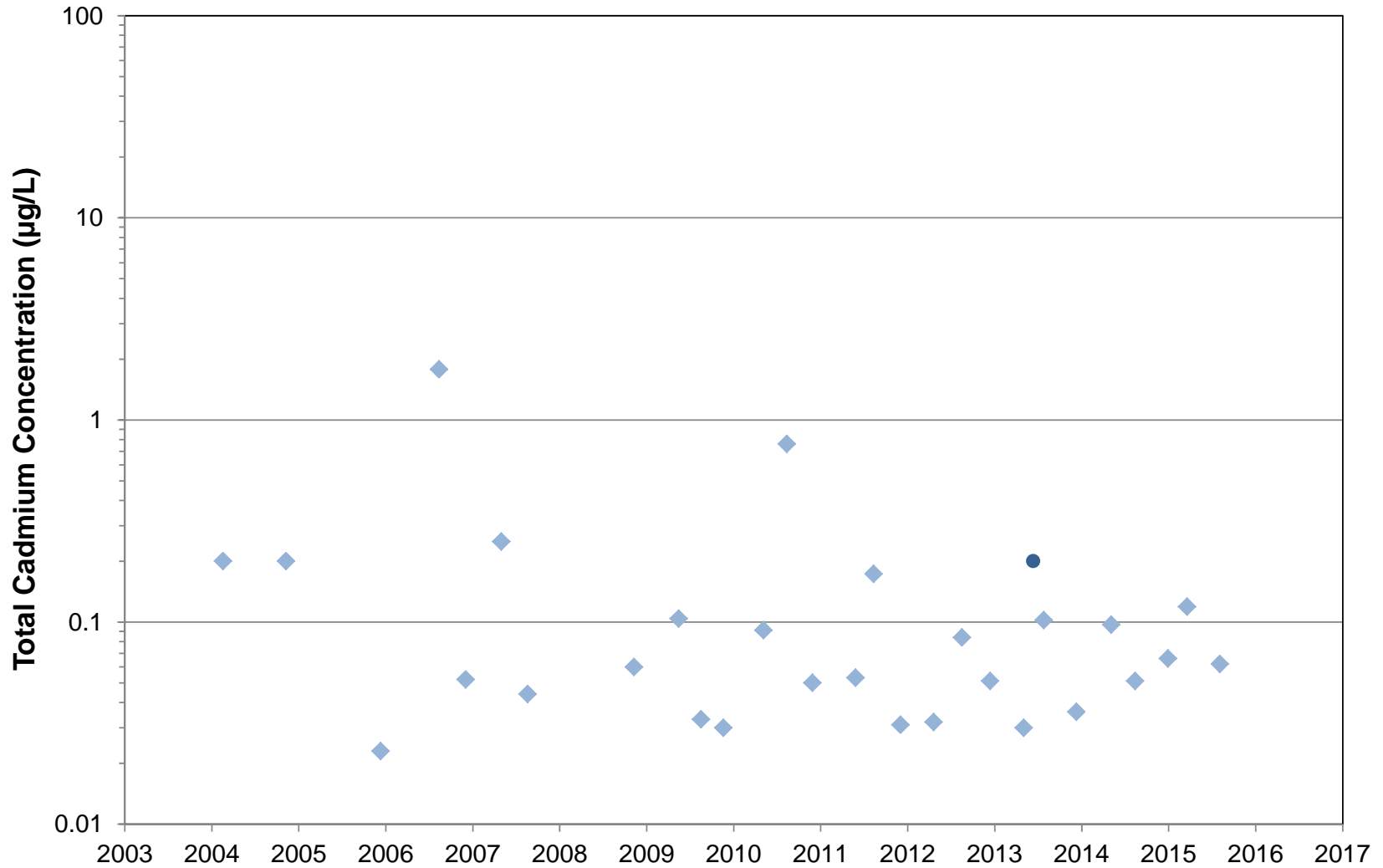
Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 5c



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CITY OF ALBUQUERQUE
Dissolved Cadmium, Rio Grande Locations



- Rio Grande Upstream NDC
- Rio Grande at Albuquerque
- ◆ Rio Grande at Alameda Bridge
- Rio Grande at Isleta Lakes
- ◆ Rio Grande at Isleta

Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

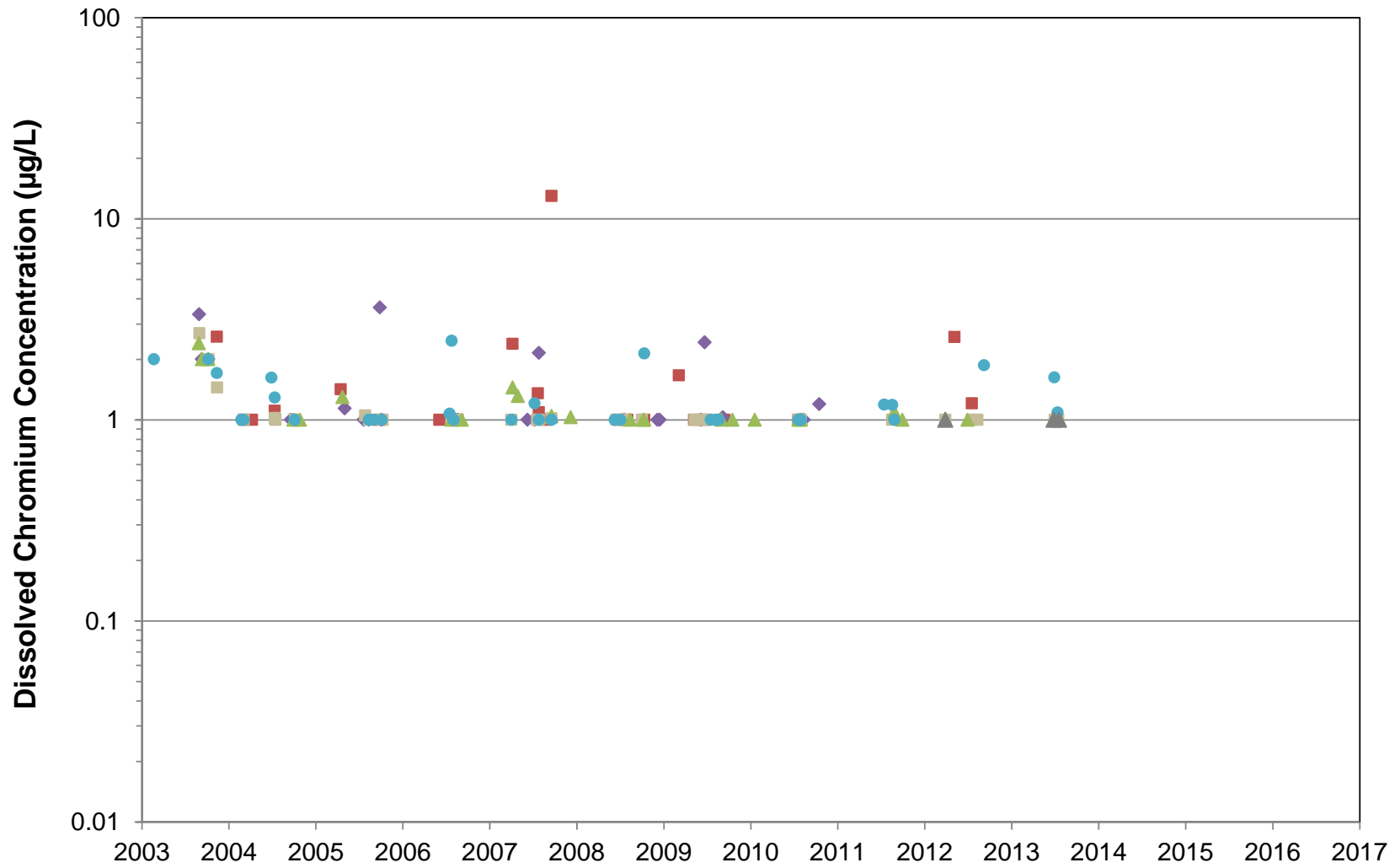
Figure 5d



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CITY OF ALBUQUERQUE
Total Cadmium, Rio Grande Locations



Dissolved Chromium Concentration (µg/L)

- North Diversion Channel
- Barelas Pump Station
- South Diversion Channel
- San Antonio Arroyo
- San Jose Drain
- Tijeras Arroyo

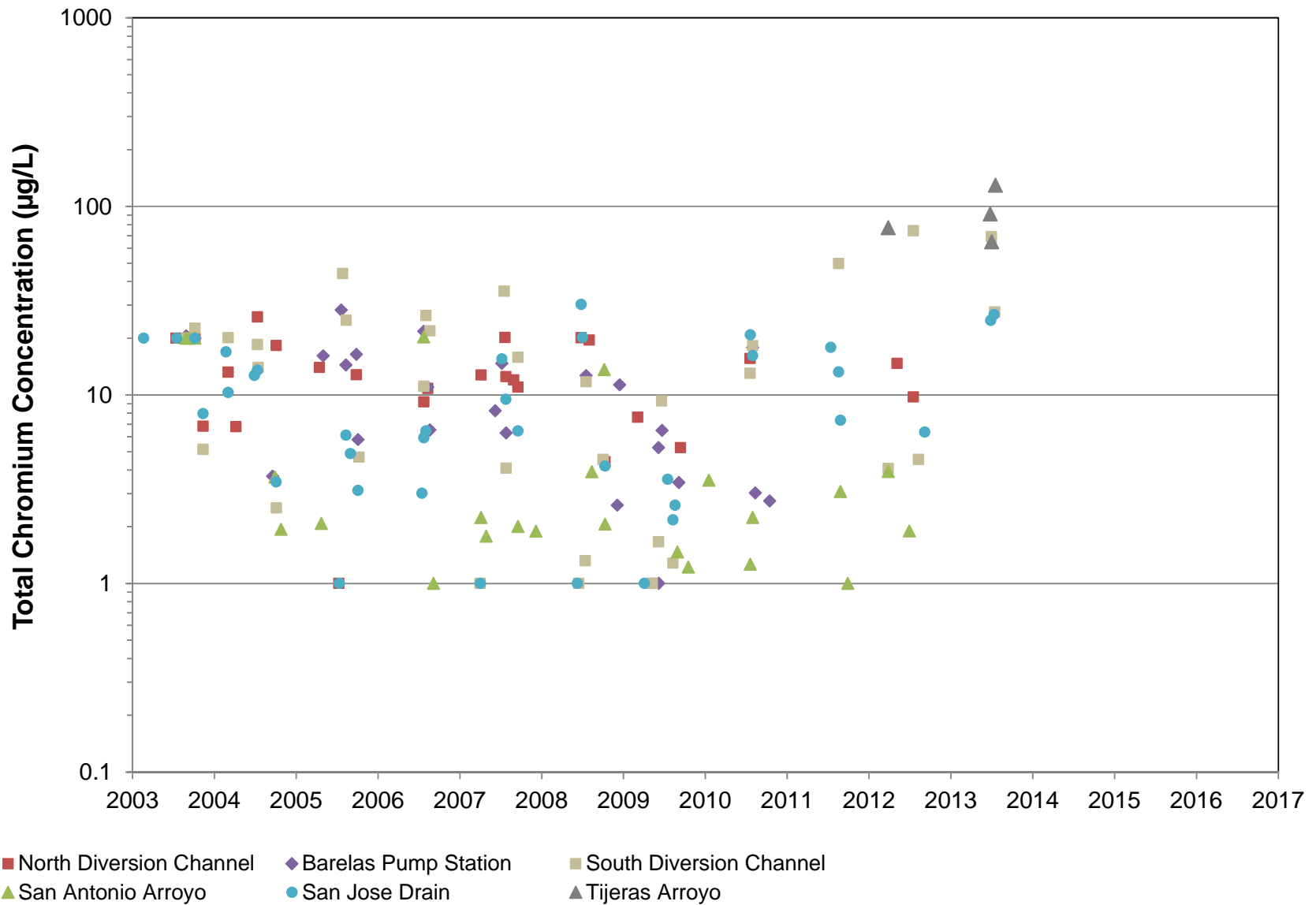
Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 6a



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CITY OF ALBUQUERQUE
Dissolved Chromium, Outfall Locations



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

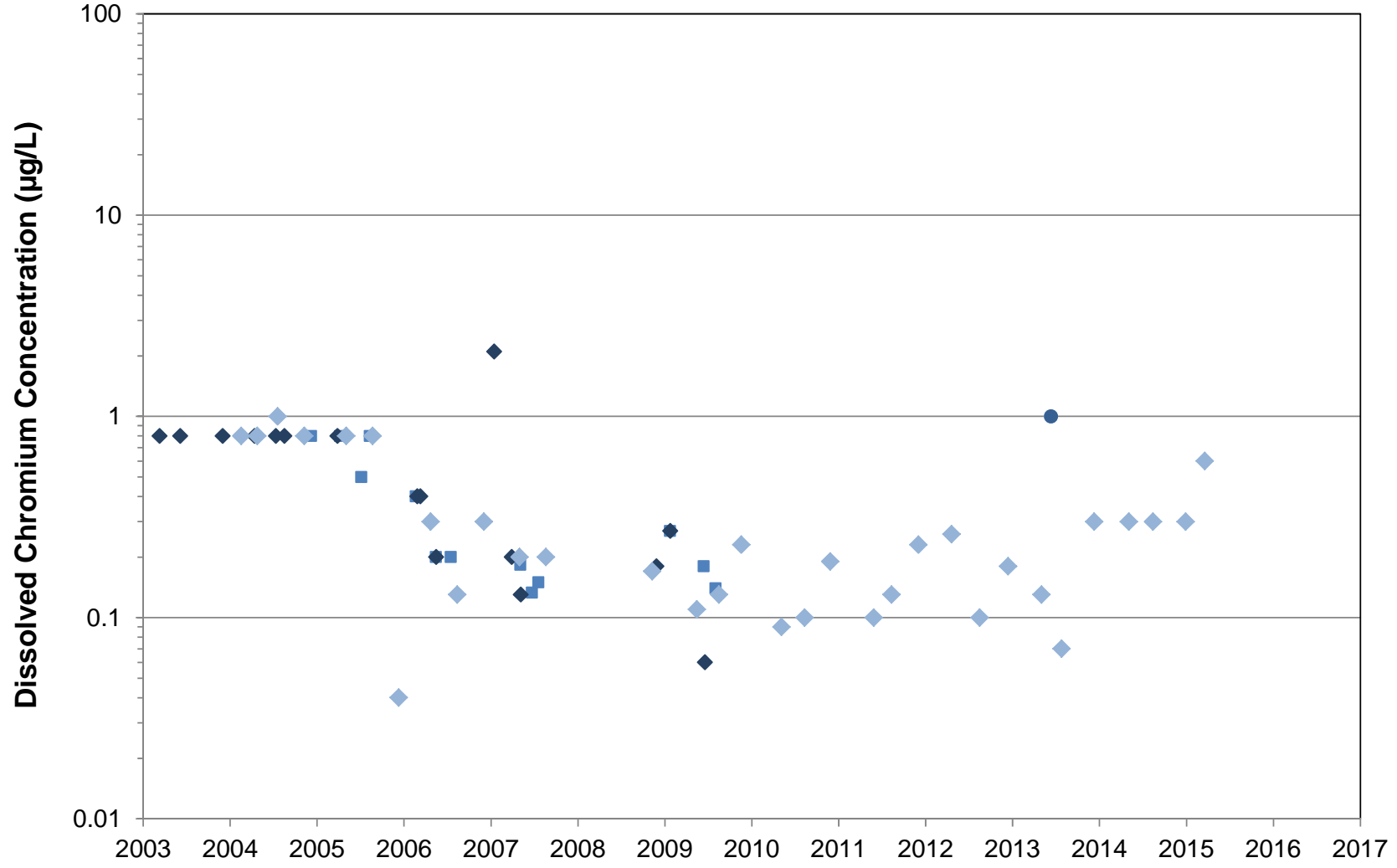
Figure 6b



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CITY OF ALBUQUERQUE
Total Chromium, Outfall Locations



● Rio Grande Upstream NDC ■ Rio Grande at Albuquerque ◆ Rio Grande at Isleta
◆ Rio Grande at Alameda Bridge ● Rio Grande at Isleta Lakes

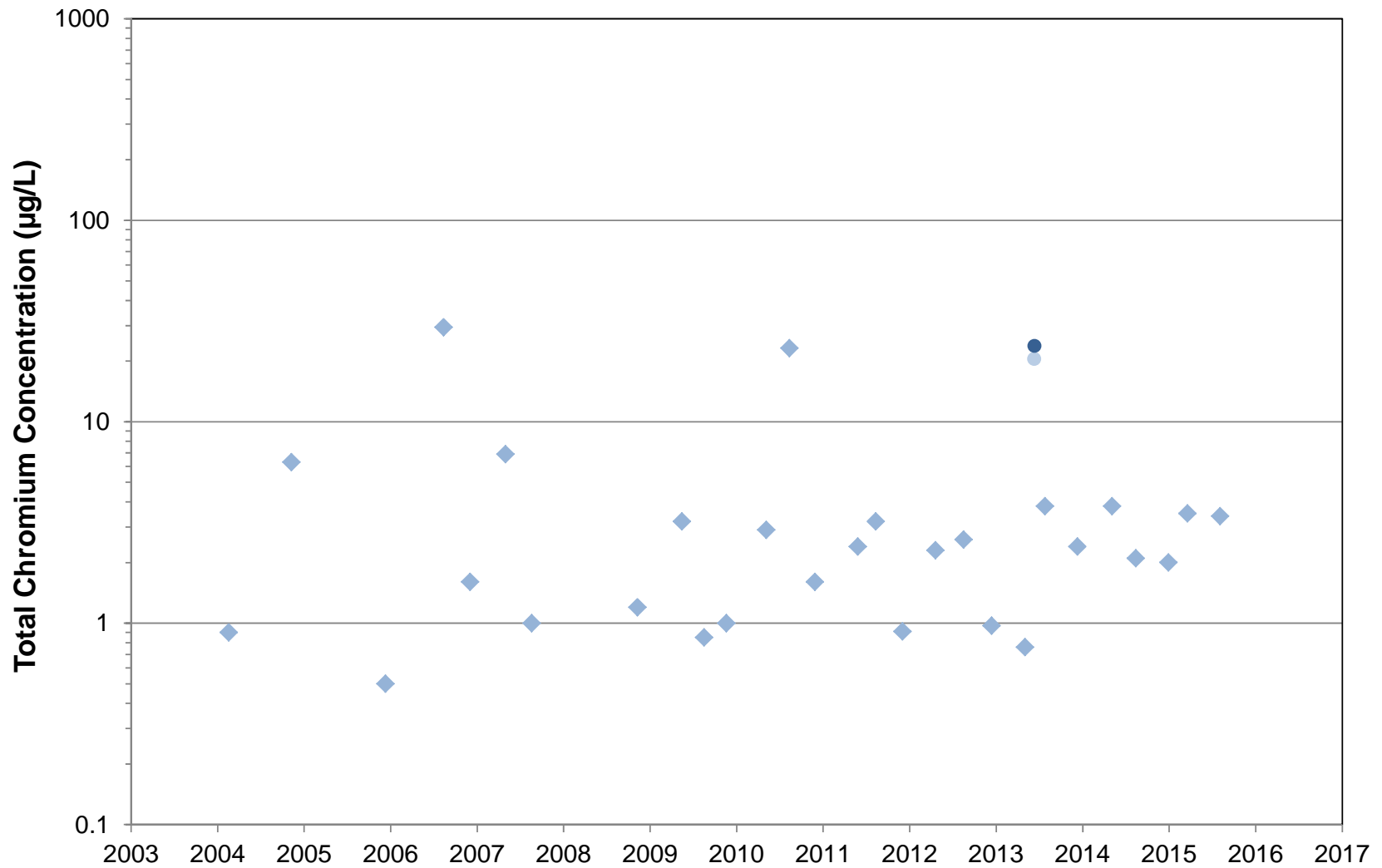
Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 6c



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CITY OF ALBUQUERQUE
Dissolved Chromium, Rio Grande Locations



● Rio Grande Upstream NDC ■ Rio Grande at Albuquerque ◆ Rio Grande at Isleta
◆ Rio Grande at Alameda Bridge ● Rio Grande at Isleta Lakes

Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

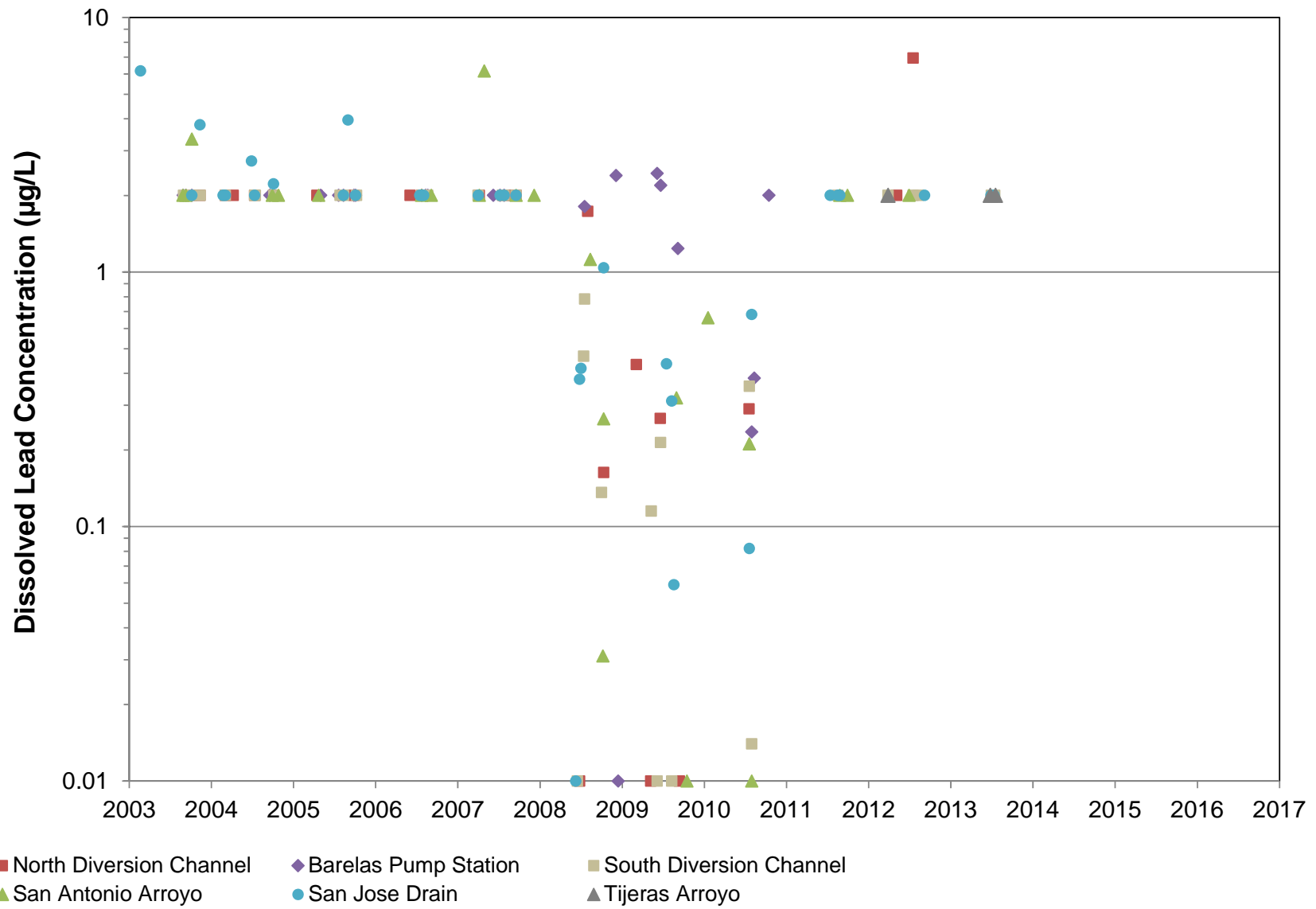
Figure 6d



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CITY OF ALBUQUERQUE
Total Chromium, Rio Grande Locations



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 7a



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CITY OF ALBUQUERQUE
Dissolved Lead, Outfall Locations



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

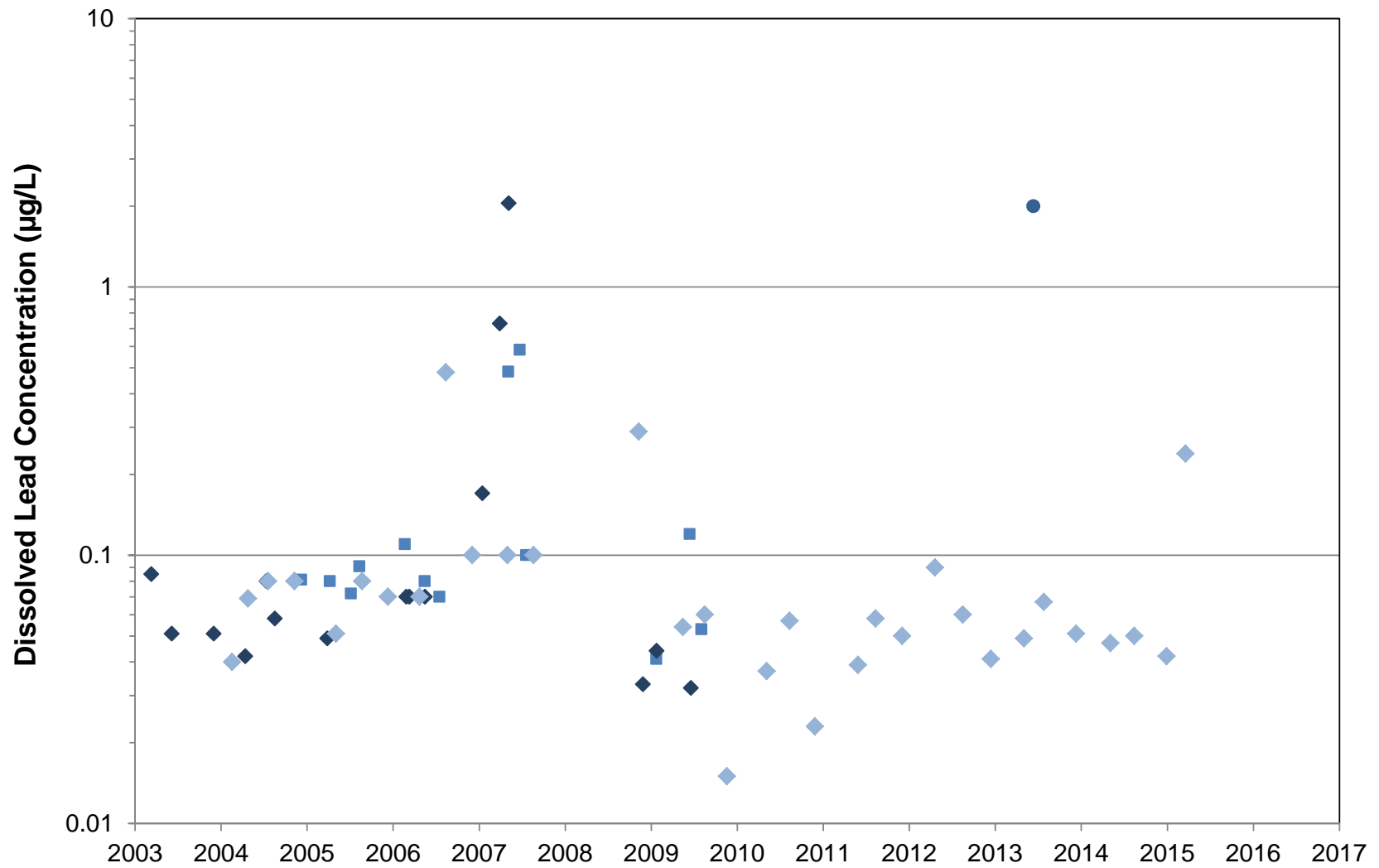
Figure 7b



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CITY OF ALBUQUERQUE
Total Lead, Outfall Locations



● Rio Grande Upstream NDC ■ Rio Grande at Albuquerque ◆ Rio Grande at Isleta
◆ Rio Grande at Alameda Bridge ● Rio Grande at Isleta Lakes

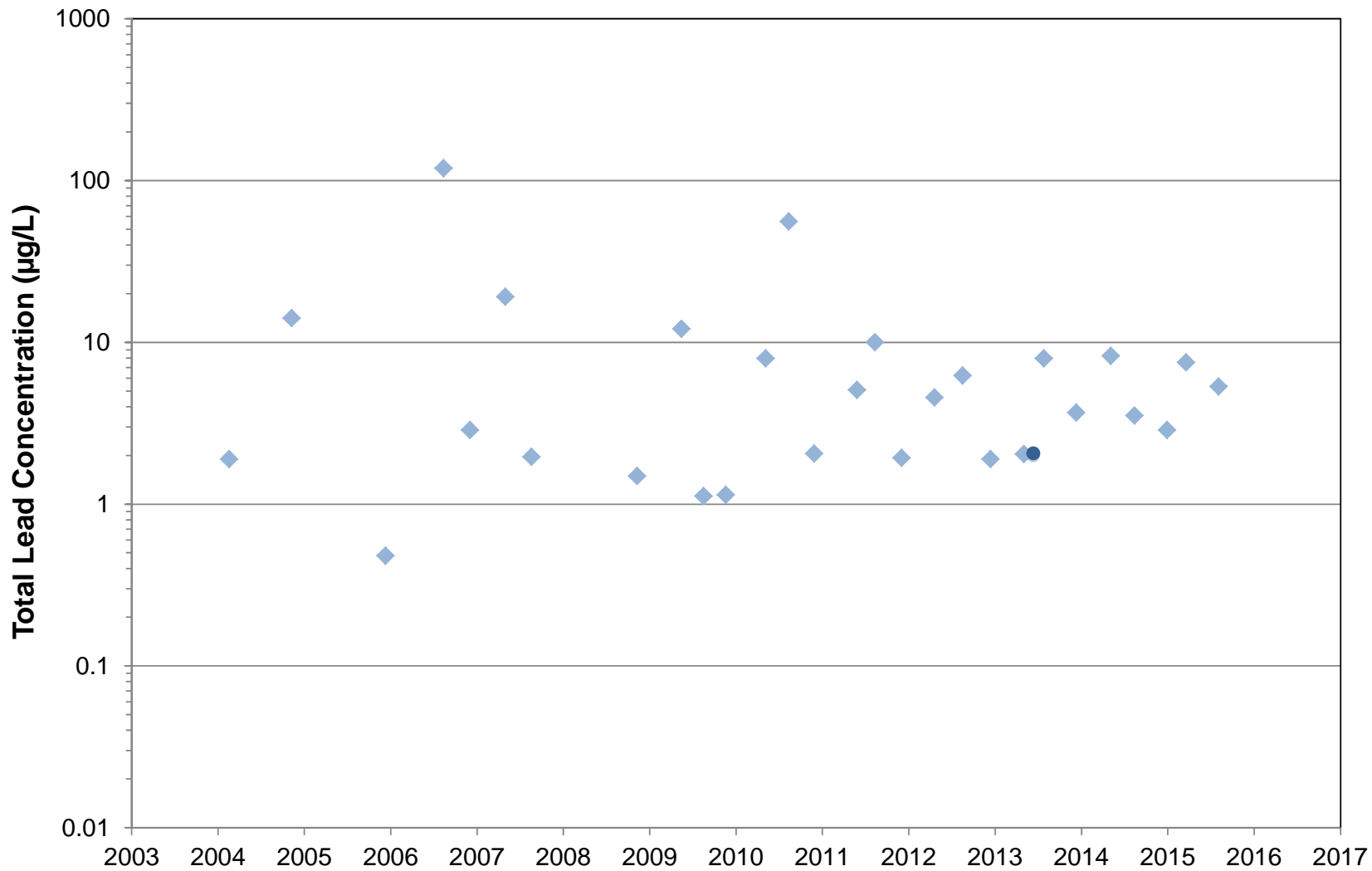
Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 7c



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CITY OF ALBUQUERQUE
Dissolved Lead, Rio Grande Locations



● Rio Grande Upstream NDC ■ Rio Grande at Albuquerque ◆ Rio Grande at Isleta
◆ Rio Grande at Alameda Bridge ● Rio Grande at Isleta Lakes

Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

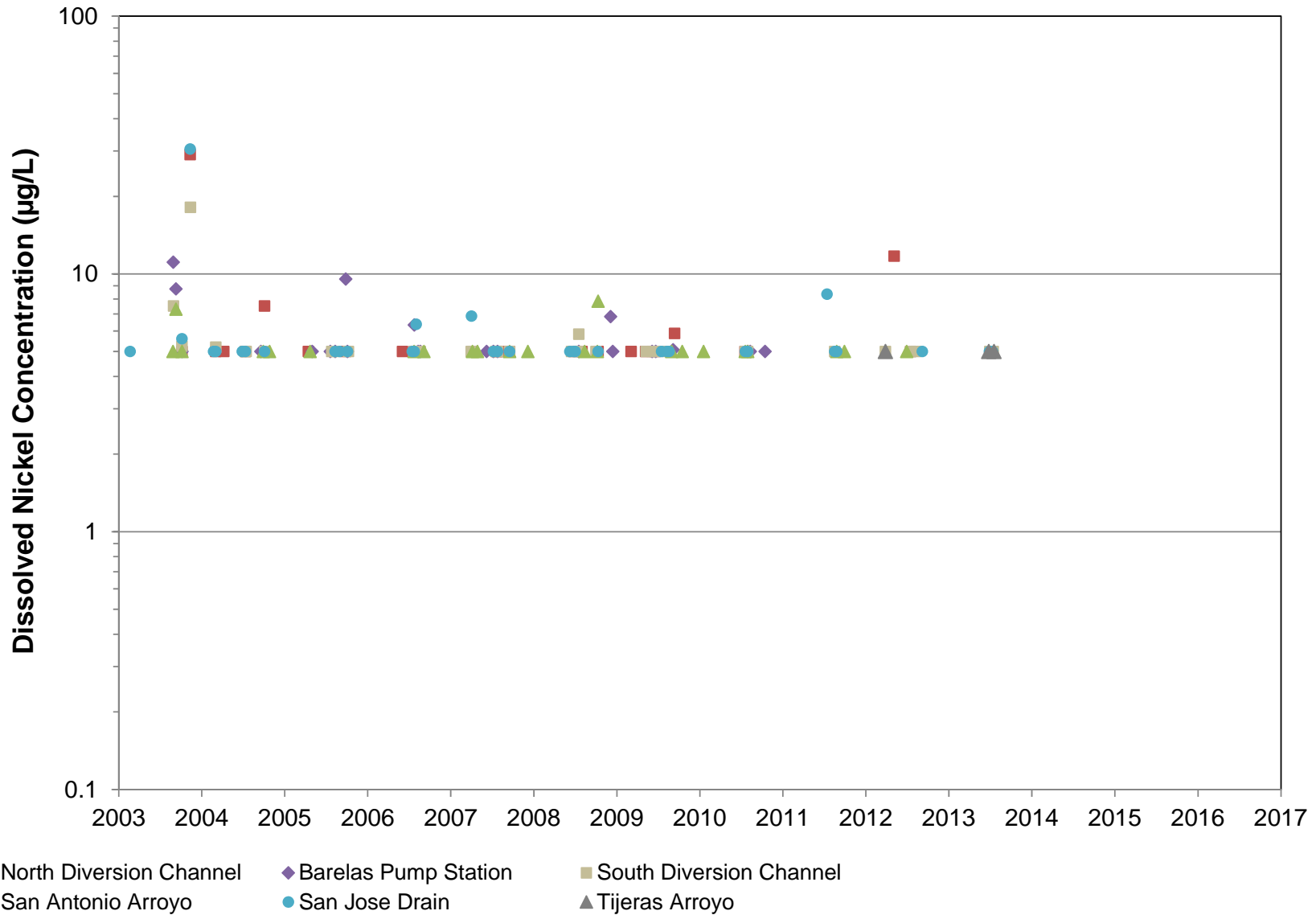
Figure 7d



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CITY OF ALBUQUERQUE
Total Lead, Rio Grande Locations



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

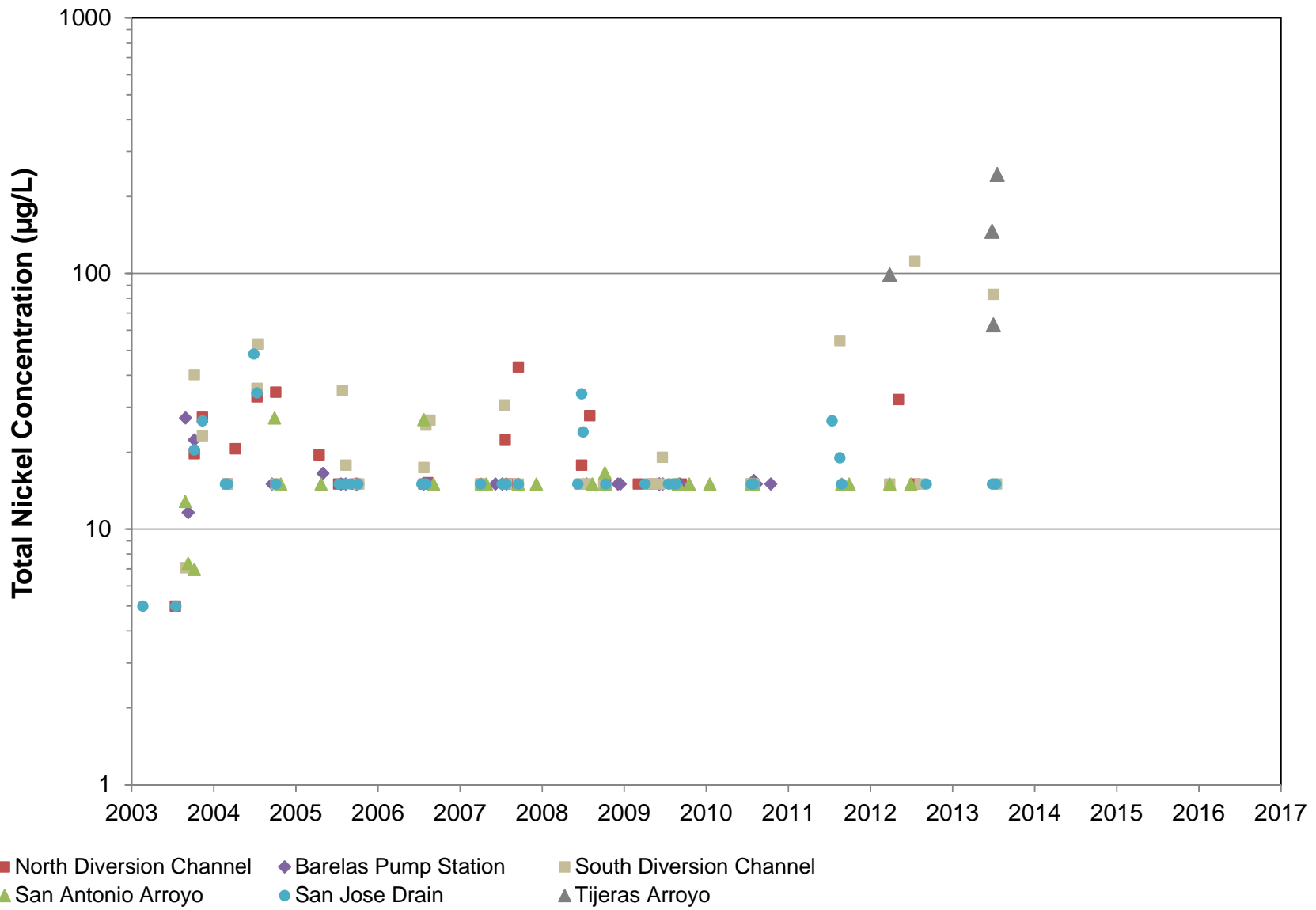
Figure 8a



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CITY OF ALBUQUERQUE
Dissolved Nickel, Outfall Locations



Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

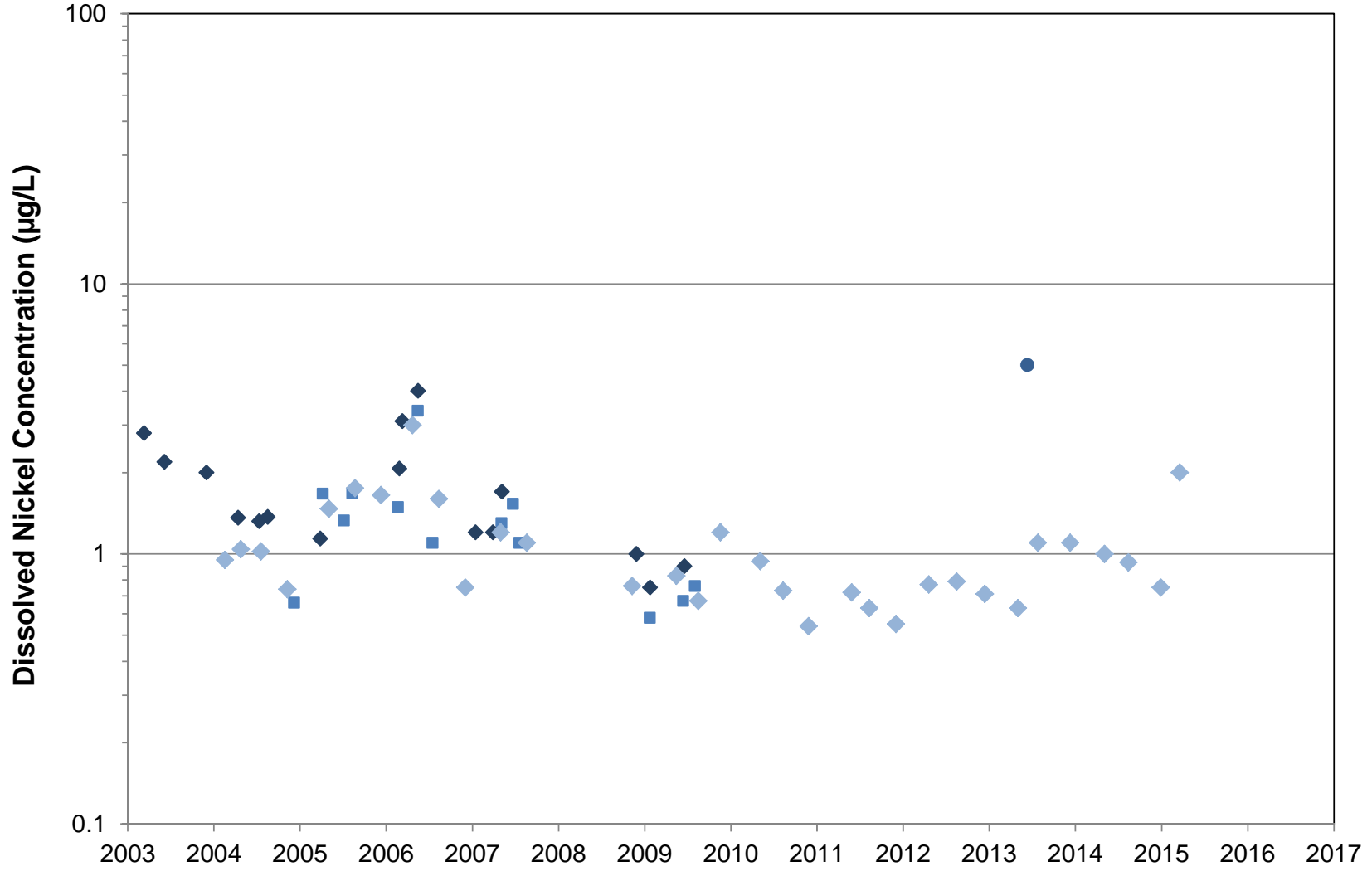
Figure 8b



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CITY OF ALBUQUERQUE
Total Nickel, Outfall Locations



● Rio Grande Upstream NDC ■ Rio Grande at Albuquerque ◆ Rio Grande at Isleta
◆ Rio Grande at Alameda Bridge ● Rio Grande at Isleta Lakes

Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

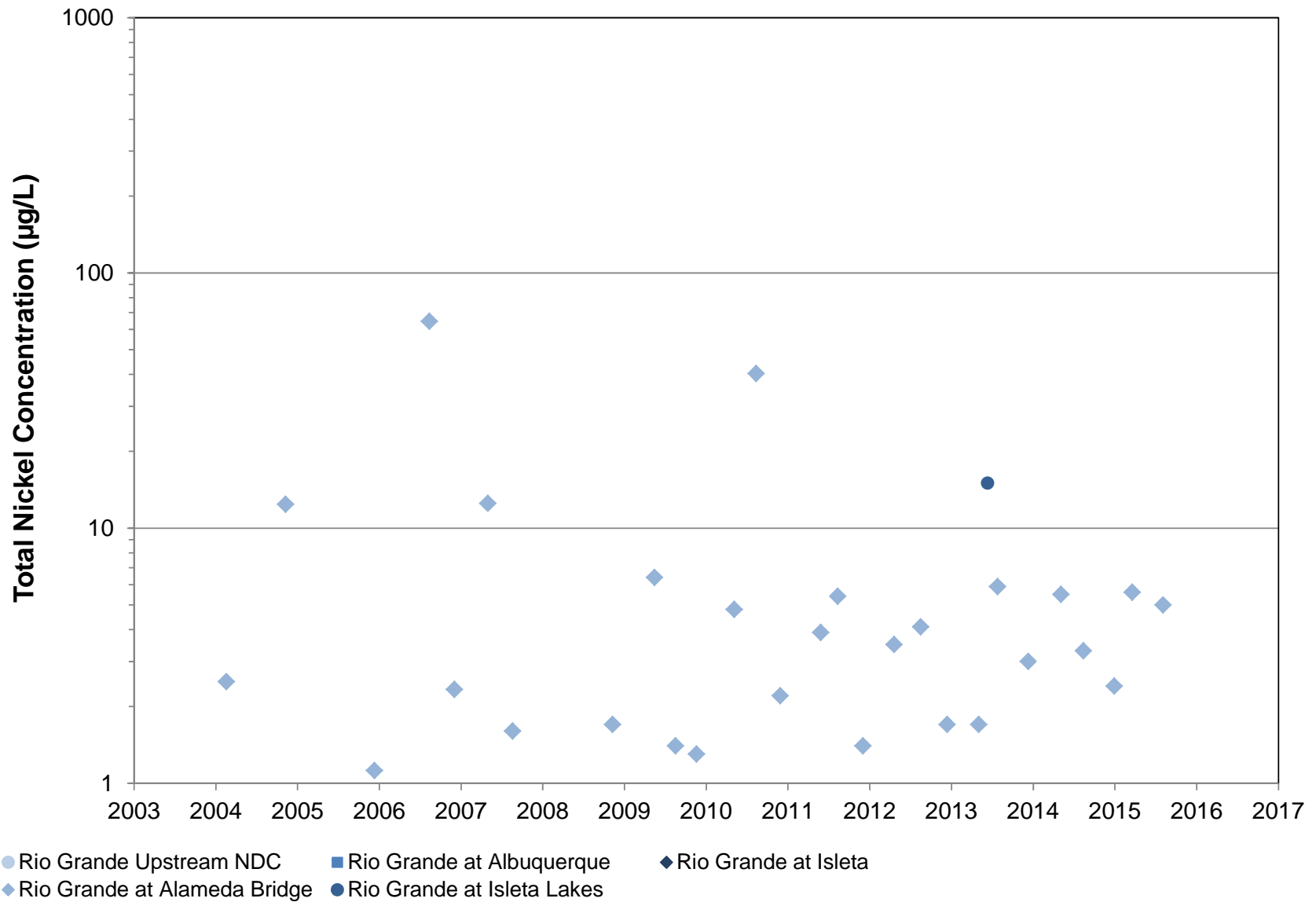
Figure 8c



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CITY OF ALBUQUERQUE
Dissolved Nickel, Rio Grande Locations



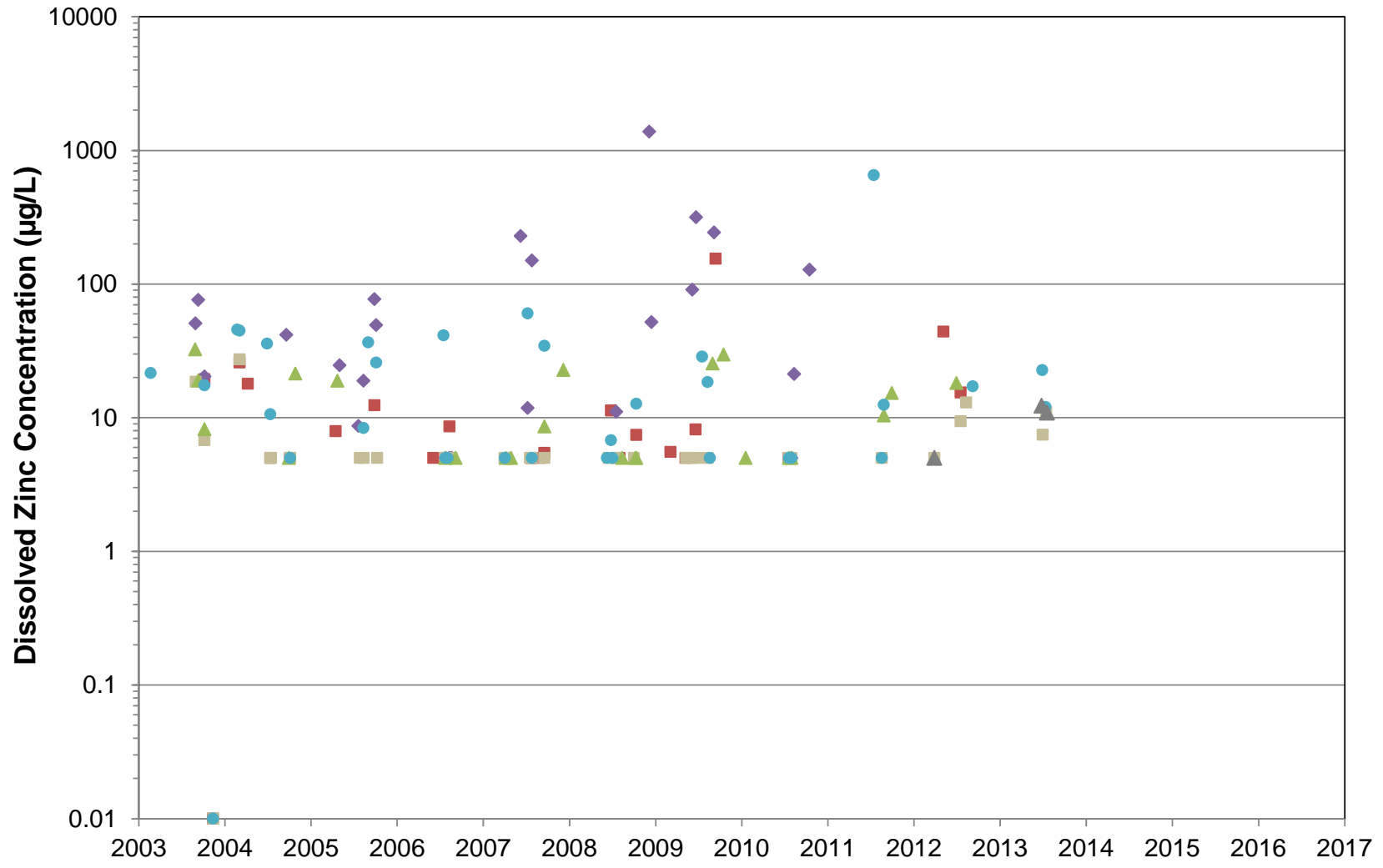
Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 8d



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CITY OF ALBUQUERQUE
Total Nickel, Rio Grande Locations



■ North Diversion Channel ◆ Barelas Pump Station ■ South Diversion Channel
▲ San Antonio Arroyo ● San Jose Drain ▲ Tijeras Arroyo

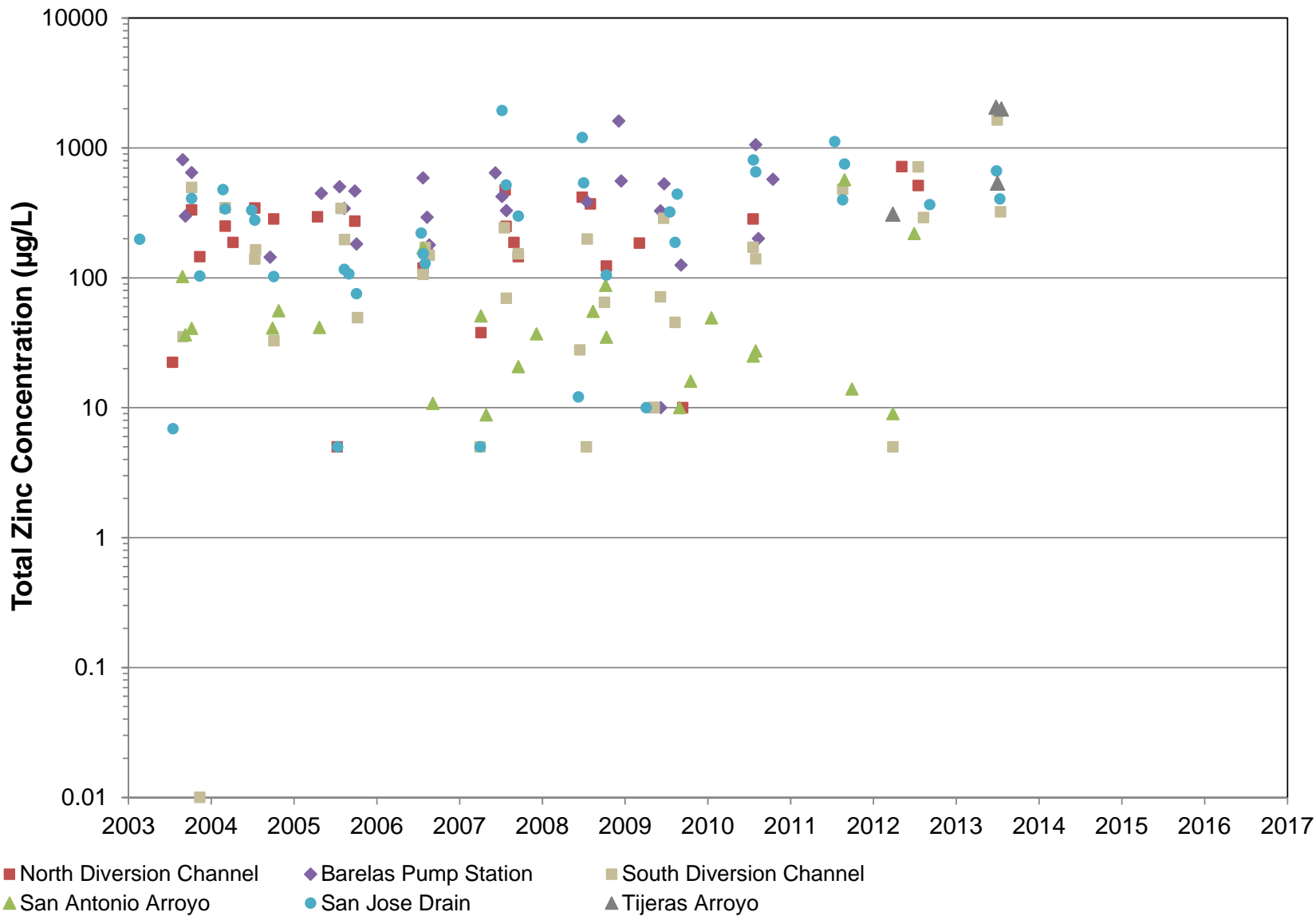
Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 9a



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CITY OF ALBUQUERQUE
Dissolved Zinc, Outfall Locations



Note: Non-detections plotted at detection limit.
 Sources: Storms et al., 2015; USGS, 2016

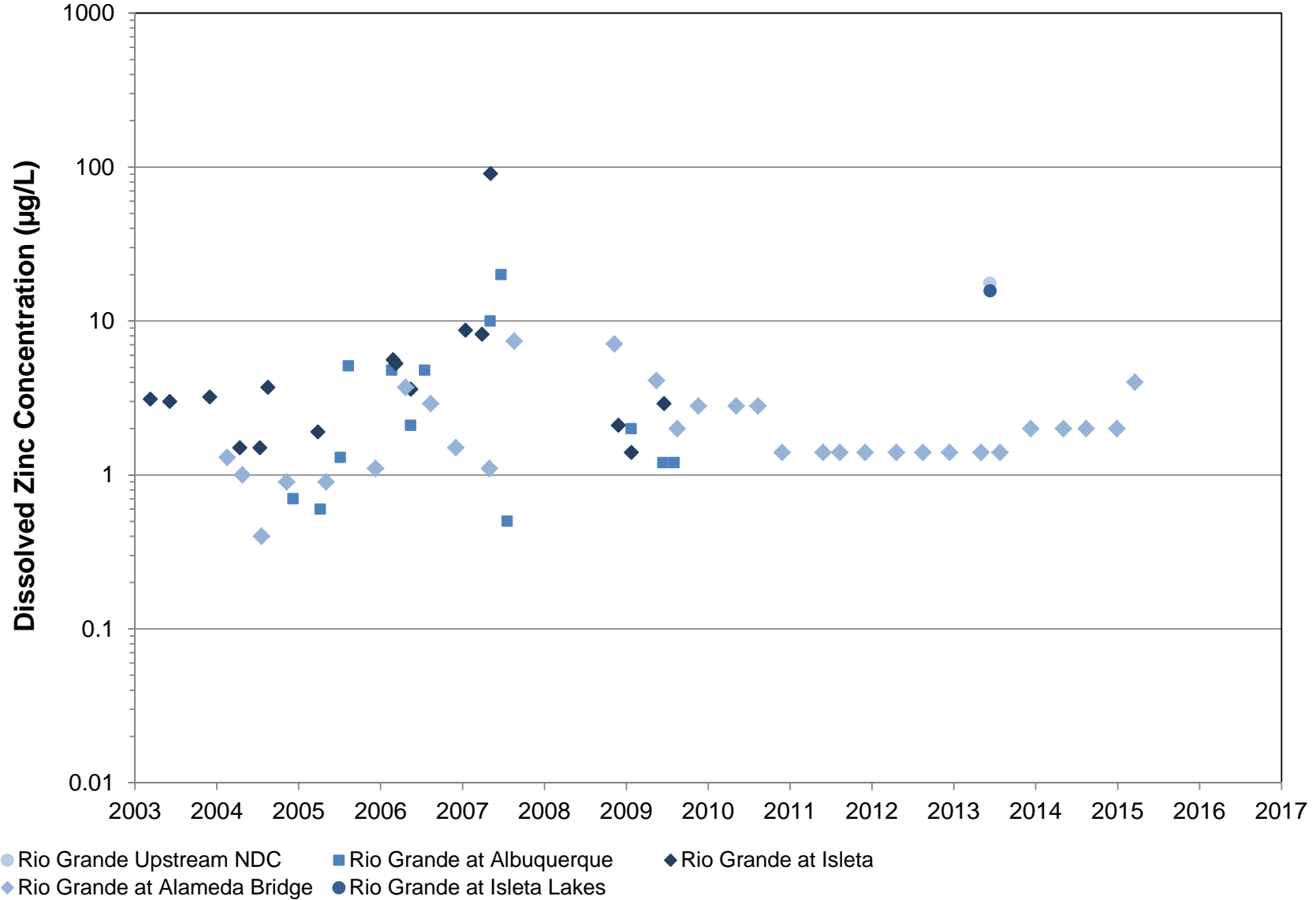
Figure 9b



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CITY OF ALBUQUERQUE
Total Zinc, Outfall Locations



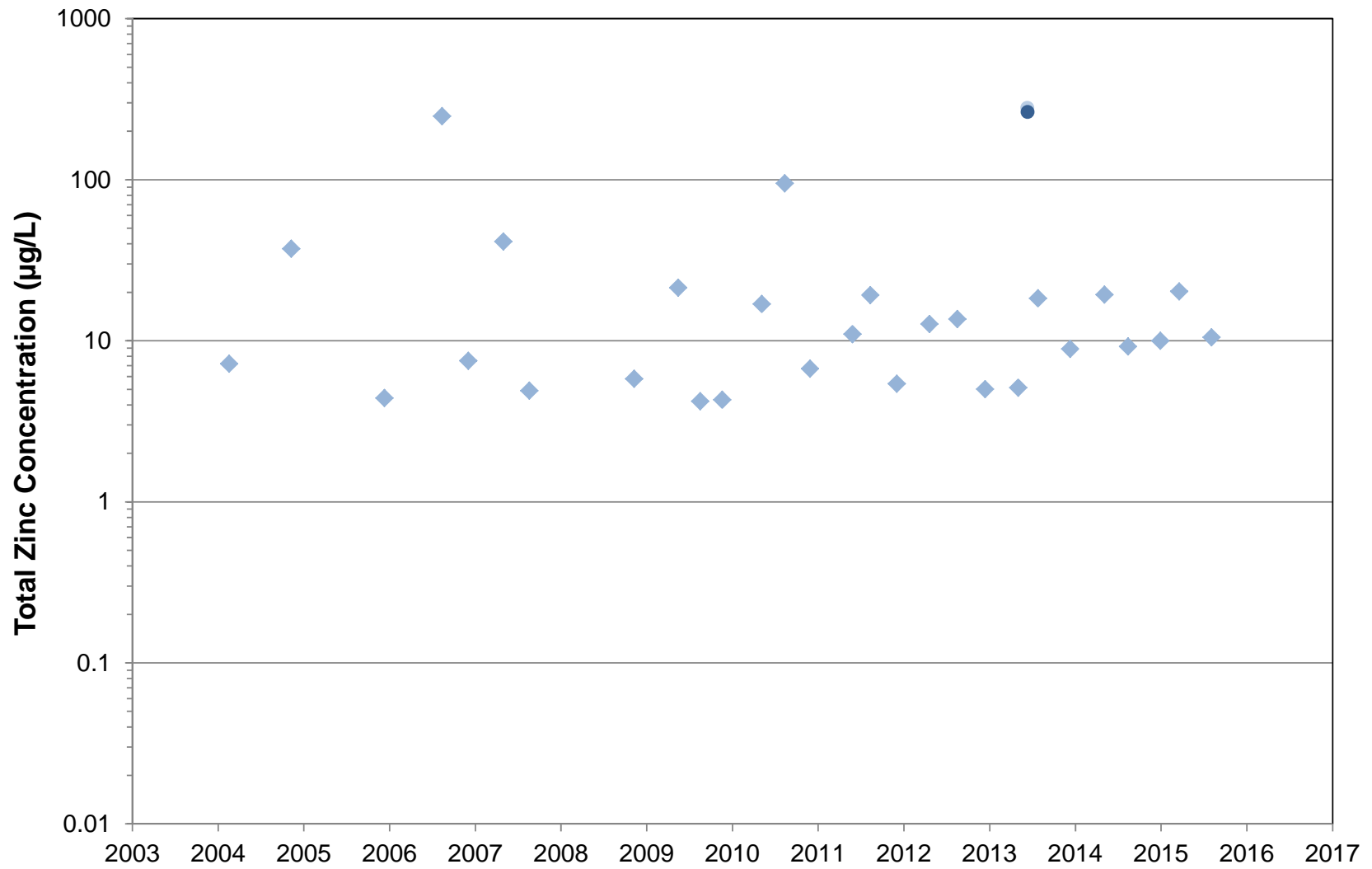
Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 9c



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CITY OF ALBUQUERQUE
Dissolved Zinc, Rio Grande Locations



● Rio Grande Upstream NDC ■ Rio Grande at Albuquerque ◆ Rio Grande at Isleta
◆ Rio Grande at Alameda Bridge ● Rio Grande at Isleta Lakes

Note: Non-detections plotted at detection limit.
Sources: Storms et al., 2015; USGS, 2016

Figure 9d



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CITY OF ALBUQUERQUE
Total Zinc, Rio Grande Locations

Tables

Table 1. Outfall Water Quality Sampling Locations

Site Name	Site Number	USGS Station Number	Drainage Area (mi ²)	Land Use (%)					Station Location
				Agricultural	Commercial	Industrial	Open Space	Residential	
North Diversion Channel	UR-9900	08329900	92	36	15	4	4	41	Concrete-lined channel
San Antonio Arroyo	UR-300	083299375	31	73	1	14	1	11	Natural unlined channel
Barelas Pump Station	UR-400B	NA	4	9	34	10	12	35	Stormwater pumping station
San Jose Drain	UR-500	08330200	2	18	30	9	2	41	Concrete-lined channel
South Diversion Channel	UR-200	08330775	11	30	28	21	8	13	Natural unlined channel
Tijeras Arroyo	UR-330600	08330600	135	—	—	—	90	—	Natural unlined channel

Source: Storms et al., 2015
 USGS = U.S. Geological Survey
 mi² = Square miles
 NA = Not applicable
 — = Not provided

Table 2. Total Polychlorinated Biphenyl Concentrations

Site	Sample Date	Total PCBs ^a		Data Source
		(pg/L)	(µg/L)	
<i>Oufall Locations</i>				
North Diversion Channel	7/20/2011	123,699	0.123699	USGS
	5/11/2012	7,836	0.007836	USGS
	7/23/2012	4,607	0.004607	USGS
	7/6/2015	10,500	0.0105	MS4 Cooperative
San Antonio Arroyo	9/1/2011	1,241	0.001241	USGS
	10/5/2011	ND		USGS
	4/3/2012	134	0.000134	USGS
	7/5/2012	147	0.000147	USGS
	6/10/2015	235	0.000235	MS4 Cooperative
San Jose Drain	7/20/2011	17,580	0.01758	USGS
	8/24/2011	229	0.000229	USGS
	9/1/2011	8,888	0.008888	USGS
	9/12/2012	33,503	0.033503	USGS
	7/6/2015	6,040	0.00604	MS4 Cooperative
South Diversion Channel	8/24/2011	73	0.000073	USGS
	4/3/2012	3,632	0.003632	USGS
	7/23/2012	4,277	0.004277	USGS
	8/16/2012	233	0.000233	USGS
	7/6/2015	7,580	0.00758	MS4 Cooperative
Tijeras Arroyo	8/3/2011	ND		USGS
	4/3/2012	1,583	0.001583	USGS
	7/7/2015	7,140	0.00714	MS4 Cooperative
<i>Rio Grande Locations</i>				
Rio Grande upstream of North Diversion Channel	7/29/2011	ND		USGS
	8/18/2011	ND		USGS
	9/22/2015	ND		MS4 Cooperative
Rio Grande near Isleta	9/22/2015	276	0.000276	MS4 Cooperative

^a Sum of congeners
 pg/L = Picograms per liter
 µg/L = Micrograms per liter
 USGS = U.S. Geological Survey
 ND = Not detected

Table 3. AMAFCA Total Sediment Removal, 2015

AMAFCA Maintained Location	Rank	Sediment Removed (cubic yards)	Percent of Total (%)
Amole Dam	15	144	0.41
Bear Canyon Arroyo	28	6	0.02
Black Arroyo Dam	4	2,564	7.33
Cabezon Channel	18	117	0.33
Candelaria Inlet	27	12	0.03
Corrales Main	6	1,333	3.81
Domingo Baca Water Quality Structure	16	135	0.39
Hahn Channel	26	18	0.05
Hubbel Dam & Spillway	13	361	1.03
Kinney Dam	8	1,026	2.93
La Cueva System & Water Quality Features	24	36	0.10
Ladera System- Dams & Mirehaven	14	291	0.83
Los Padillas Spillway Diversion	25	24	0.07
Mariposa Diversion Channel	23	52	0.15
North Diversion Channel	3	2,735	7.82
North Domingo Baca Dam & Channel	2	3,803	10.87
North Domingo Baca Trailer Park Ponds	10	762	2.18
Piedras Marcadas Dam & Mid Branch PM Channel	7	1,107	3.17
Powerline Channel	19	91	0.26
Raymac Dam	9	869	2.48
Snow Vista Pond and Channel	12	486	1.39
South Diversion Channel & Water Quality Structure	1	16,127	46.11
South Domingo Baca Channel	20	76	0.22
South Pino Channel & Water Quality Facility	17	117	0.33
Southwest Valley Projects	22	52	0.15
Vineyard Channel & Water Quality Structure	21	52	0.15
West Bluff, Laurelwood Ponds & WQ Structure	11	620	1.77
West I-40 Channel & Storm Drains	5	1,960	5.60
Total		34,976	100.00

Source: Chavez, 2016

Table 4. Sediment Removed from North Diversion Channel and South Diversion Channel, 2015

Month	Sediment Removed (cubic yards)	
	North Diversion Channel	South Diversion Channel and Water Quality Structure
January	—	3,113
February	—	304
March	264	3,050
April	387	540
May	540	—
June	—	—
July	—	4,002
August	—	—
September	918	—
October	626	2,358
November	—	2,760
December	—	—
Total	2,735	16,127

Source: Chavez, 2016
 — = No removal



July 10, 2017

Kathy Verhage
City of Albuquerque
Department of Municipal Development, Storm Drainage Design
P.O. Box 1293
Room 301
Albuquerque, New Mexico 87103

Re: Results of Sediment Sampling for PCBs and Metals along Stormwater Channels,
Sediment Outfalls, and Upgradient Arroyo Locations, Albuquerque New Mexico

Dear Ms. Verhage:

Daniel B. Stephens & Associates, Inc. (DBS&A) has prepared this letter report for submittal to the City of Albuquerque (COA or the City) summarizing the sampling event to characterize the presence or absence of near-surface polychlorinated biphenyl (PCB) congeners and metal concentrations in sediment along stormwater channels and outfalls within the Albuquerque metropolitan area. DBS&A personnel conducted the sediment sampling upstream of the concrete-lined areas and in erosion control structures where sediment accumulates and would be in contact during discharge events with stormwater that potentially reaches the Rio Grande. The sampling effort included the collection of background sediment samples from natural arroyo locations upgradient of urbanized development. Pertinent background information, sample locations and collection methods, sample handling and analysis procedures, and reporting information were described in the November 2016 sampling plan.

Background

The City and Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) screen sediments for PCBs at their outfalls as required by the former Albuquerque Metropolitan Area Permit NMS000101 (2012) and the Watershed Based Permit (WBP) NMR04A000 (2014). The City has focused its efforts on the San Jose Drain and Tijeras Arroyo, while AMAFCA continues to conduct soil screening in arroyos that contribute to the North Diversion Channel (NDC). Past soil screening reports include those conducted along the San Jose Drain in 2012 (COA), the Tijeras Arroyo in 2013 (COA), the NDC in 2014 (AMAFCA), and North Camino Channel and the Grant Line Channel in 2016 (AMAFCA).

The purpose of the 2017 sampling event was to determine the presence or absence of near-surface PCBs and metal concentrations in sediment along the Tijeras Arroyo and other channels within the Albuquerque metropolitan area as required by Part 1C-special conditions of the WBP. The sediment sample locations were determined based on a visual screening that focused on areas of sediment deposition (e.g., areas behind erosion control structures and

Daniel B. Stephens & Associates, Inc.

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505-822-9400

areas of low flow velocities) or from areas that potentially contribute sediment during stormwater events to the Rio Grande. For comparison purposes, representative background sediment samples were collected from natural arroyo channels located upgradient of urbanized development.

Sample Collection

Sediment samples for PCB and metals analyses were collected at 12 locations (Figure 1 and Table 1) from channels, arroyos, and sediment outfalls maintained by AMAFCA. A total of 5 of these locations represented background samples collected from natural arroyos upgradient of urbanized development. Following field reconnaissance and discussion with AMAFCA, a sediment sample was not collected at the Alameda Drain location noted in the sampling and analysis plan (SAP). It was determined that the Alameda Drain does not discharge to the Rio Grande.

Sediment samples were collected at or immediately below ground surface, and were stored in sealed containers on ice until delivered to the analytical laboratory with full chain of custody documentation. Photographs and global positioning system coordinates (Table 1) of the sample locations were taken during the sampling event, and the surrounding land use was noted. Photographs of the sample locations are provided in Attachment 1.

Sample Analysis

All samples were submitted to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for analysis of PCBs and selected metals using U.S. Environmental Protection Agency (EPA) methods 8082 and 6010B, respectively. A synthetic precipitation leaching procedure (SPLP) was conducted on the sediment samples to determine the mobility of aluminum, cadmium, chromium, lead, nickel, and zinc. The SPLP simulates exposure of the sediment to rainfall, and is useful in estimating the leaching potential of metals moving from sediment into stormwater.

Sample Location Descriptions

Land use near the sample locations within the study area varies from industrial, undeveloped grass lands to publicly accessible open space properties (Table 1). Sampling locations in the North and South Diversion Channels were selected as close to the outfall to the Rio Grande as possible. Background sampling locations were selected in natural arroyos away from development. The sediment sample locations are described in the following subsections.

Tijeras Arroyo Sampling Location

The Tijeras Arroyo sampling location is located in the unlined section of the arroyo approximately 600 feet before the arroyo becomes concrete-lined, and is upstream of the automobile salvage yards located on Broadway. Upstream of the Tijeras Arroyo sampling to the east is Interstate 25 (I-25). Runoff from I-25 feeds into Tijeras Arroyo upgradient of the sampling location.

South Diversion Sampling Location

This sampling location is downstream of the South Diversion Channel where it crosses Murray Road SE. The sampling location is located in the unlined section of the arroyo approximately 800 feet before the arroyo becomes concrete-lined. The surrounding land use is primarily industrial.

San Jose Sampling Location

The sampling location for San Jose Drain is located along Route 303 in a natural channel approximately 900 feet before the channel enters the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) wastewater treatment plant property and eventually the Rio Grande. The drain is located next to agricultural land to the west and Route 303 and railroad thruway to the east. Land use upstream of the sampling location is a mixture of industrial and urban development.

West I-40 Sampling Location

The sampling location for the West I-40 Diversion Channel is located beneath the I-40 Rio Grande overpass at the terminus where the lined channel discharges into the Rio Grande. Land use upstream of the sampling location is a mixture of industrial and urban development. Evidence of recent vandalism and human habitation was observed in the sampling area.

San Antonio Arroyo Sampling Location

The sampling location for San Antonio Arroyo is located in the Rio Grande Bosque at the terminus where the lined channel discharges into the Rio Grande. Several small sand and gravel sand bars were present in the lined channel above the terminus. Material from the sand bars and arroyo terminus were collected for sampling. Directly upstream of the sample location, several sediment holding basins capture runoff before discharging to the lined arroyo. The holding basins were filled with water at the time of sampling. Land use upstream of the sampling location is a mixture of commercial and urban development.

Calabacillas Arroyo Sampling Location

The sampling location for Calabacillas Arroyo is located in the Rio Grande Bosque Park approximately 200 feet above the terminus where the natural channel discharges into the Rio Grande. Land use upstream of the sampling location is a mixture of commercial and urban development.

North Diversion Channel Sampling Location

The sampling location for the NDC is located approximately 1,200 feet upstream of where the lined channel discharges into the Rio Grande, directly behind the newly constructed AMAFCA equipment crossing. The sample was collected approximately 30 feet behind the crossing, in the middle of the channel. The majority of the natural channel behind the equipment crossing at the time of sampling was submerged. The left bank downstream of the railroad crossing bridge did have sediment accessible for sampling, but it appeared to be

additional fill material, and trash has been dumped at the location. Land use upstream of the sampling location is a mixture of industrial and urban development.

Domingo Baca Arroyo

The location for the Domingo Baca Arroyo background sample is in the Far Northeast Heights of Albuquerque, near the City's boundary with the Sandia National Forest. The sample was collected in a natural arroyo that drains into the South Domingo Baca Channel, which eventually drains into the NDC. The sample was collected approximately 30 feet east of Bighorn Ridge Drive NE, upstream of urban development. Access farther up the arroyo, closer to the City boundary, was hampered by private property boundaries.

Embudo Arroyo

The location for the Embudo Arroyo background sample is in the Northeast Heights of Albuquerque, in the COA Sandia Foothills Open Space. The sample was collected in a natural arroyo that drains into the lined Embudo Arroyo, then the I-40 channel and eventually the NDC. The sample was collected approximately 4,000 feet upstream of the lined channel located near Monte Largo Drive NE.

Four Hills Arroyo

The location for the Four Hills Arroyo background sample is in the Far Southeast Heights of Albuquerque, near the City's boundary with Kirtland Air Force Base (AFB). The sample was collected in a natural arroyo directly above the lined Four Hills Arroyo, which eventually becomes the Tijeras Channel. Access farther up the arroyo, closer to the City boundary, was hampered by Kirtland AFB security fences.

Shamrock Channel

The location for the Shamrock Channel background sample is on Albuquerque's West Mesa, near Central Avenue and I-40. The sample was collected in a natural arroyo located in an undeveloped grassland area that drains directly to the West I-40 Channel. The Shamrock Foods Corporation and several trucking companies are located directly downstream.

North Boca Negra Arroyo

The location for the North Boca Negra Arroyo background sample is on Albuquerque's West Mesa, just east of Atrisco Vista Blvd, near the western extent of Paseo del Norte Boulevard. The sample was collected in a natural arroyo located in an undeveloped grassland area that drains directly to the Boca Negra Arroyo.

Results of Laboratory Analysis

The sediment samples were analyzed by HEAL for PCBs and selected metals using EPA methods 8082 and 6010B, respectively. The results of the laboratory analysis are presented in Table 2. Complete laboratory reports are provided as Attachment 2. For comparison purposes, the background locations have been listed in Table 2 just above the downstream

Kathy Verhage
July 10, 2017
Page 5

sample locations. The detection limits ranged from 0.019 to 0.2 milligrams per kilogram (mg/kg) for the six aroclors analyzed. No PCBs were present in any of the sediment samples at concentrations above these detection limits.

As mentioned above, the SPLP was conducted on the sediment samples to determine the potential release of metals from the sediment into stormwater. Of the six metals analyzed, only aluminum and zinc were detected in the sediment sample leachate. Cadmium, chromium, lead, and nickel concentrations were below the detection limits, which ranged from 0.002 to 5 milligrams per liter (mg/L).

Detected aluminum concentrations ranged from 2.4 to 9.2 mg/L in the background samples and 1.9 to 11 mg/L in the downstream outfall, channel, and arroyo samples. Zinc concentrations were above the detection limits at the Four Hills and Domingo Baca background sample locations only. Detected zinc concentrations ranged from 0.022 to 0.048 mg/L in the downstream outfall, channel, and arroyo samples. The highest concentrations of aluminum (11 mg/L) and zinc (0.048 mg/L) were detected in the San Jose Drain sediment sample leachate.

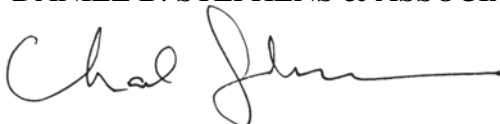
Conclusions

Review of the laboratory analytical data indicates that there are no PCBs present at detectable concentrations in the sediment samples collected along stormwater channels and outfalls within the Albuquerque metropolitan area. Aluminum and zinc were detected in the sediment sample leachate, and may be contributing to stormwater concentrations for these metals.

We appreciate the opportunity to serve COA on this important project. If you have any questions regarding this sediment sampling report, please call me at (505) 822-9400.

Sincerely,

DANIEL B. STEPHENS & ASSOCIATES, INC.

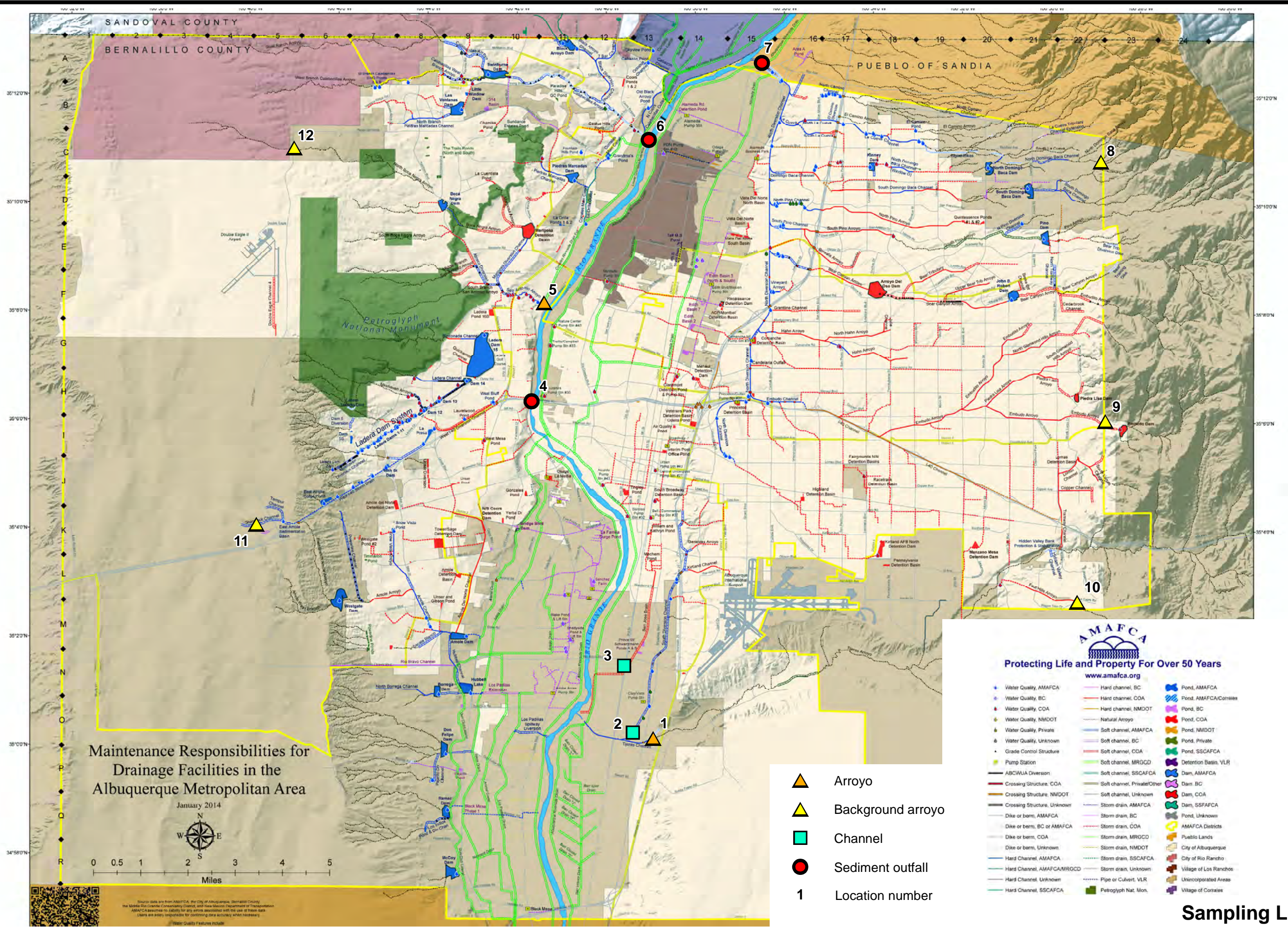
A handwritten signature in black ink, appearing to read "Chad Johannesen". The signature is fluid and cursive, with a long horizontal stroke at the end.

Chad Johannesen
Hydrogeologist

CJ/rpf
Attachments

Figure

S:\PROJECTS\SWR14.0049.01_COA_STORMWATERGIS\AMAFCA FACILITIES_SAMPLING_LOCS_201701.MXD 1/31/2017



Sampling Locations

Figure 1

Tables



Daniel B. Stephens & Associates, Inc.

Table 1. Sample Locations

Location Number	Location Name	Location Type	Surrounding Land Use	Sample Date	Sample Name	UTM Coordinates (13 South)	
						X	Y
1	Tijeras Arroyo	Arroyo	Undeveloped, heavy equipment/ construction in area, evidence of off-road vehicular traffic	1/4/2017	Tijeras_Arroyo_010417	349611	3874573
2	South Diversion Channel	Channel	Industrial complexes	1/4/2017	SDC_010417	348923	3874776
3	San Jose Drain	Channel	Agricultural to west, Route 303 and railway to east	1/4/2017	San_Jose_010417	348653	3877060
4	West I-40 Diversion Channel	Sediment outfall	Urban development, below I-40 highway overpass	1/4/2017	WestI40DC_010417	345614	3886122
5	San Antonio Arroyo	Arroyo	Urban development, Rio Grande Bosque	1/4/2017	SanAntonio_010417	346083	3889473
6	Calabacillas Arroyo	Sediment outfall	Urban development, Rio Grande Bosque	1/5/2017	Calabacillas_010517	349730	3894981
7	North Diversion Channel	Sediment outfall	Urban development, Rio Grande Bosque	1/5/2017	NDC_EQPX_010517	353615	3897560
8	Domingo Baca Arroyo	Background arroyo	Undeveloped, homes located directly downstream	1/10/2017	DomingoBaca_011017	365124	3894029
9	Embudo Arroyo	Background arroyo	Undeveloped, hiking and recreational area	1/10/2017	Embudo_011017	365164	3885183
10	Four Hills Arroyo	Background arroyo	Undeveloped, homes located directly downstream	1/10/2017	Fourhills_011017	364128	3879035
11	Shamrock Channel	Background arroyo	Undeveloped grasslands	1/4/2017	Shamrock_010417	336177	3882048
12	North Boca Negra Arroyo	Background arroyo	Undeveloped grasslands, Atrisco Vista Blvd to west	1/5/2017	NorthBoca_010517	337634	3894860



Table 2. Sediment Analytical Results

Location Name	Location Type	PCBs (EPA Method 8082) (mg/kg)								SPLP Metals (EPA Method 6010B) (mg/L)					
		Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Total PCBs	Aluminum	Cadmium	Chromium	Lead	Nickel	Zinc
Four Hills Arroyo	Background arroyo	<0.02	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	3.6	<0.002	<0.006	<0.005	<0.01	0.022
Tijeras Arroyo	Arroyo	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	8.6	<1.0	<5.0	<5.0	<0.01	0.022
South Diversion Channel	Channel	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	4.8	<1.0	<5.0	<5.0	<0.01	0.024
San Jose Drain	Channel	<0.02	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	11	<1.0	<5.0	<5.0	<0.01	0.048
Shamrock Channel	Background arroyo	<0.02	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	<0.019	2.4	<1.0	<5.0	<5.0	<0.01	<0.02
West 1-40 Diversion Channel	Sediment outfall	<0.02	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	5.1	<1.0	<5.0	<5.0	<0.01	0.038
North Boca Negra Arroyo	Background arroyo	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	9.2	<1.0	<5.0	<5.0	<0.01	<0.02
San Antonio Arroyo	Arroyo	<0.02	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	2.8	<1.0	<5.0	<5.0	<0.01	<0.02
Calabacillas Arroyo	Sediment outfall	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	1.9	<1.0	<5.0	<5.0	<0.01	<0.02
Embudo Arroyo	Background arroyo	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	3.7	<0.002	<0.006	<0.005	<0.01	<0.02
Domingo Baca Arroyo	Background arroyo	<0.02	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	<0.099	8.0	<0.002	<0.006	<0.005	<0.01	0.030
North Diversion Channel	Sediment outfall	<0.02	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	<0.19	4.9	<1.0	<5.0	<5.0	<0.01	0.030

PCBs = Polychlorinated biphenyls
 EPA = U.S. Environmental Protection Agency
 mg/kg = Milligrams per kilogram
 SPLP = Synthetic precipitation leaching procedure
 mg/L = Milligrams per liter

Attachment 1

Photographs



1. Tijeras Arroyo sample location, view to east



2. South Diversion Channel sample location, view to north





3. San Jose Drain sample location, view to west with sample location noted



4. San Jose Drain sample location, view to north





5. West I-40 Diversion Channel sampling location, view to east with sample location noted.



6. West I-40 Diversion Channel sampling location, view to north





7. San Antonio Arroyo sampling location, view to east



8. San Antonio Arroyo sampling location, view to west with sample location noted





9. San Antonio Arroyo sampling location: Sand-gravel bar located upstream of channel terminus, view to east



10. Calabacillas Arroyo sampling location, view to west





11. North Diversion Channel sampling location, view to east



12. Domingo Baca Arroyo sampling location, view to east





13. Embudo Arroyo sampling location, view to east





14. Four Hills sampling location, view to northeast with sample location noted



15. Shamrock Channel sampling location, view to west

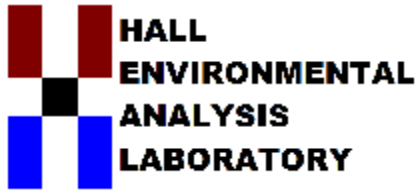




16. North Boca Negra sampling location, view to east



Attachment 2
Laboratory Reports



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 24, 2017

Chad Johannesen

DBS

6020 Academy NE Suite 100

Albuquerque, NM 87109

TEL: (505) 822-9400

FAX (505) 822-8877

RE: PCB Sediment Sampling

OrderNo.: 1701235

Dear Chad Johannesen:

Hall Environmental Analysis Laboratory received 18 sample(s) on 1/6/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701235

Date Reported: 1/24/2017

CLIENT: DBS

Client Sample ID: Tijeras-Arroyo-010417

Project: PCB Sediment Sampling

Collection Date: 1/4/2017 10:30:00 AM

Lab ID: 1701235-001

Matrix: SOIL

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Aroclor 1221	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Aroclor 1232	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Aroclor 1242	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Aroclor 1248	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Aroclor 1254	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Aroclor 1260	ND	0.020		mg/Kg	1	1/16/2017 9:25:00 AM	29659
Surr: Decachlorobiphenyl	80.4	19.7-141		%Rec	1	1/16/2017 9:25:00 AM	29659
Surr: Tetrachloro-m-xylene	94.0	18.5-136		%Rec	1	1/16/2017 9:25:00 AM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701235

Date Reported: 1/24/2017

CLIENT: DBS

Client Sample ID: SDC-010417

Project: PCB Sediment Sampling

Collection Date: 1/4/2017 11:15:00 AM

Lab ID: 1701235-002

Matrix: SOIL

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Aroclor 1221	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Aroclor 1232	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Aroclor 1242	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Aroclor 1248	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Aroclor 1254	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Aroclor 1260	ND	0.020		mg/Kg	1	1/16/2017 9:58:00 AM	29659
Surr: Decachlorobiphenyl	63.6	19.7-141		%Rec	1	1/16/2017 9:58:00 AM	29659
Surr: Tetrachloro-m-xylene	69.2	18.5-136		%Rec	1	1/16/2017 9:58:00 AM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701235

Date Reported: 1/24/2017

CLIENT: DBS

Client Sample ID: San-Jose-010417

Project: PCB Sediment Sampling

Collection Date: 1/4/2017 11:45:00 AM

Lab ID: 1701235-003

Matrix: SOIL

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Aroclor 1221	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Aroclor 1232	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Aroclor 1242	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Aroclor 1248	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Aroclor 1254	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Aroclor 1260	ND	0.20	D	mg/Kg	1	1/16/2017 11:56:00 AM	29659
Surr: Decachlorobiphenyl	0	19.7-141	SD	%Rec	1	1/16/2017 11:56:00 AM	29659
Surr: Tetrachloro-m-xylene	0	18.5-136	SD	%Rec	1	1/16/2017 11:56:00 AM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701235

Date Reported: 1/24/2017

CLIENT: DBS

Client Sample ID: West I40 DC-010417

Project: PCB Sediment Sampling

Collection Date: 1/4/2017 1:45:00 PM

Lab ID: 1701235-004

Matrix: SOIL

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Aroclor 1221	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Aroclor 1232	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Aroclor 1242	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Aroclor 1248	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Aroclor 1254	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Aroclor 1260	ND	0.19	D	mg/Kg	1	1/16/2017 12:29:00 PM	29659
Surr: Decachlorobiphenyl	0	19.7-141	SD	%Rec	1	1/16/2017 12:29:00 PM	29659
Surr: Tetrachloro-m-xylene	0	18.5-136	SD	%Rec	1	1/16/2017 12:29:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701235

Date Reported: 1/24/2017

CLIENT: DBS

Client Sample ID: Shamrock-010417

Project: PCB Sediment Sampling

Collection Date: 1/4/2017 2:30:00 PM

Lab ID: 1701235-005

Matrix: SOIL

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Aroclor 1221	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Aroclor 1232	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Aroclor 1242	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Aroclor 1248	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Aroclor 1254	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Aroclor 1260	ND	0.019		mg/Kg	1	1/16/2017 1:02:00 PM	29659
Surr: Decachlorobiphenyl	81.2	19.7-141		%Rec	1	1/16/2017 1:02:00 PM	29659
Surr: Tetrachloro-m-xylene	88.0	18.5-136		%Rec	1	1/16/2017 1:02:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701235

Date Reported: 1/24/2017

CLIENT: DBS

Client Sample ID: San Antonio-010417

Project: PCB Sediment Sampling

Collection Date: 1/4/2017 3:00:00 PM

Lab ID: 1701235-006

Matrix: SOIL

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Aroclor 1221	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Aroclor 1232	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Aroclor 1242	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Aroclor 1248	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Aroclor 1254	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Aroclor 1260	ND	0.19	D	mg/Kg	1	1/16/2017 1:35:00 PM	29659
Surr: Decachlorobiphenyl	0	19.7-141	SD	%Rec	1	1/16/2017 1:35:00 PM	29659
Surr: Tetrachloro-m-xylene	0	18.5-136	SD	%Rec	1	1/16/2017 1:35:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701235

Date Reported: 1/24/2017

CLIENT: DBS

Client Sample ID: Calabacillas-010517

Project: PCB Sediment Sampling

Collection Date: 1/5/2017 2:00:00 PM

Lab ID: 1701235-007

Matrix: SOIL

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Aroclor 1221	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Aroclor 1232	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Aroclor 1242	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Aroclor 1248	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Aroclor 1254	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Aroclor 1260	ND	0.020		mg/Kg	1	1/16/2017 2:08:00 PM	29659
Surr: Decachlorobiphenyl	84.8	19.7-141		%Rec	1	1/16/2017 2:08:00 PM	29659
Surr: Tetrachloro-m-xylene	88.4	18.5-136		%Rec	1	1/16/2017 2:08:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701235

Date Reported: 1/24/2017

CLIENT: DBS

Client Sample ID: NDC-EQPX-010517

Project: PCB Sediment Sampling

Collection Date: 1/5/2017 2:45:00 PM

Lab ID: 1701235-008

Matrix: SOIL

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Aroclor 1221	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Aroclor 1232	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Aroclor 1242	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Aroclor 1248	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Aroclor 1254	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Aroclor 1260	ND	0.19	D	mg/Kg	1	1/16/2017 2:41:00 PM	29659
Surr: Decachlorobiphenyl	0	19.7-141	SD	%Rec	1	1/16/2017 2:41:00 PM	29659
Surr: Tetrachloro-m-xylene	0	18.5-136	SD	%Rec	1	1/16/2017 2:41:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701235

Date Reported: 1/24/2017

CLIENT: DBS

Client Sample ID: North Boca-010517

Project: PCB Sediment Sampling

Collection Date: 1/5/2017 3:45:00 PM

Lab ID: 1701235-009

Matrix: SOIL

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Aroclor 1221	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Aroclor 1232	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Aroclor 1242	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Aroclor 1248	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Aroclor 1254	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Aroclor 1260	ND	0.020		mg/Kg	1	1/16/2017 3:13:00 PM	29659
Surr: Decachlorobiphenyl	76.4	19.7-141		%Rec	1	1/16/2017 3:13:00 PM	29659
Surr: Tetrachloro-m-xylene	78.0	18.5-136		%Rec	1	1/16/2017 3:13:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701235

Date Reported: 1/24/2017

CLIENT: DBS

Client Sample ID: Tijeras-Arroyo-010417

Project: PCB Sediment Sampling

Collection Date: 1/4/2017 10:30:00 AM

Lab ID: 1701235-010

Matrix: LEACHATE

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS							Analyst: pmf
Aluminum	8.6	0.10		mg/L	5	1/18/2017 4:02:04 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:14:48 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:14:48 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:14:48 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:14:48 PM	29670
Zinc	0.022	0.020		mg/L	1	1/18/2017 3:14:48 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701235

Date Reported: 1/24/2017

CLIENT: DBS

Client Sample ID: SDC-010417

Project: PCB Sediment Sampling

Collection Date: 1/4/2017 11:15:00 AM

Lab ID: 1701235-011

Matrix: LEACHATE

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS							Analyst: pmf
Aluminum	4.8	0.10		mg/L	5	1/18/2017 4:03:35 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:16:18 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:16:18 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:16:18 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:16:18 PM	29670
Zinc	0.024	0.020		mg/L	1	1/18/2017 3:16:18 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS

Client Sample ID: San-Jose-010417

Project: PCB Sediment Sampling

Collection Date: 1/4/2017 11:45:00 AM

Lab ID: 1701235-012

Matrix: LEACHATE

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS							Analyst: pmf
Aluminum	11	0.10		mg/L	5	1/18/2017 4:11:27 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:23:45 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:23:45 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:23:45 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:23:45 PM	29670
Zinc	0.048	0.020		mg/L	1	1/18/2017 3:23:45 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS

Client Sample ID: West I40 DC-010417

Project: PCB Sediment Sampling

Collection Date: 1/4/2017 1:45:00 PM

Lab ID: 1701235-013

Matrix: LEACHATE

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS							Analyst: pmf
Aluminum	5.1	0.10		mg/L	5	1/18/2017 4:13:04 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:25:21 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:25:21 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:25:21 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:25:21 PM	29670
Zinc	0.038	0.020		mg/L	1	1/18/2017 3:25:21 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS

Client Sample ID: Shamrock-010417

Project: PCB Sediment Sampling

Collection Date: 1/4/2017 2:30:00 PM

Lab ID: 1701235-014

Matrix: LEACHATE

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS							Analyst: pmf
Aluminum	2.4	0.020		mg/L	1	1/18/2017 3:26:59 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:26:59 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:26:59 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:26:59 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:26:59 PM	29670
Zinc	ND	0.020		mg/L	1	1/18/2017 3:26:59 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS

Client Sample ID: San Antonio-010417

Project: PCB Sediment Sampling

Collection Date: 1/4/2017 3:00:00 PM

Lab ID: 1701235-015

Matrix: LEACHATE

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS							Analyst: pmf
Aluminum	2.8	0.020		mg/L	1	1/18/2017 3:28:36 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:28:36 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:28:36 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:28:36 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:28:36 PM	29670
Zinc	ND	0.020		mg/L	1	1/18/2017 3:28:36 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS

Client Sample ID: Calabacillas-010517

Project: PCB Sediment Sampling

Collection Date: 1/5/2017 2:00:00 PM

Lab ID: 1701235-016

Matrix: LEACHATE

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS							Analyst: pmf
Aluminum	1.9	0.020		mg/L	1	1/18/2017 3:35:31 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:35:31 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:35:31 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:35:31 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:35:31 PM	29670
Zinc	ND	0.020		mg/L	1	1/18/2017 3:35:31 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS

Client Sample ID: NDC-EQPX-010517

Project: PCB Sediment Sampling

Collection Date: 1/5/2017 2:45:00 PM

Lab ID: 1701235-017

Matrix: LEACHATE

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS							Analyst: pmf
Aluminum	4.9	0.020		mg/L	1	1/18/2017 3:37:07 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:37:07 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:37:07 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:37:07 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:37:07 PM	29670
Zinc	0.030	0.020		mg/L	1	1/18/2017 3:37:07 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: DBS

Client Sample ID: North Boca-010517

Project: PCB Sediment Sampling

Collection Date: 1/5/2017 3:45:00 PM

Lab ID: 1701235-018

Matrix: LEACHATE

Received Date: 1/6/2017 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SPLP METALS							Analyst: pmf
Aluminum	9.2	0.10		mg/L	5	1/18/2017 4:14:53 PM	29670
Cadmium	ND	1.0		mg/L	1	1/18/2017 3:38:44 PM	29670
Chromium	ND	5.0		mg/L	1	1/18/2017 3:38:44 PM	29670
Lead	ND	5.0		mg/L	1	1/18/2017 3:38:44 PM	29670
Nickel	ND	0.010		mg/L	1	1/18/2017 3:38:44 PM	29670
Zinc	ND	0.020		mg/L	1	1/18/2017 3:38:44 PM	29670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701235

24-Jan-17

Client: DBS
Project: PCB Sediment Sampling

Sample ID MB-29659	SampType: MBLK		TestCode: EPA Method 8082: PCB's							
Client ID: PBS	Batch ID: 29659		RunNo: 40011							
Prep Date: 1/12/2017	Analysis Date: 1/16/2017		SeqNo: 1253839		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.020								
Aroclor 1221	ND	0.020								
Aroclor 1232	ND	0.020								
Aroclor 1242	ND	0.020								
Aroclor 1248	ND	0.020								
Aroclor 1254	ND	0.020								
Aroclor 1260	ND	0.020								
Surr: Decachlorobiphenyl	0.034		0.06250		54.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.034		0.06250		54.4	18.5	136			

Sample ID LCS-29659	SampType: LCS		TestCode: EPA Method 8082: PCB's							
Client ID: LCSS	Batch ID: 29659		RunNo: 40011							
Prep Date: 1/12/2017	Analysis Date: 1/16/2017		SeqNo: 1253940		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.069	0.020	0.1250	0	55.0	22.1	258			
Aroclor 1260	0.059	0.020	0.1250	0	47.0	15	217			
Surr: Decachlorobiphenyl	0.036		0.06250		56.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.034		0.06250		54.8	18.5	136			

Sample ID LCS-29659(1221)	SampType: LCS		TestCode: EPA Method 8082: PCB's							
Client ID: LCSS	Batch ID: 29659		RunNo: 40011							
Prep Date: 1/12/2017	Analysis Date: 1/17/2017		SeqNo: 1255028		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1221	0.096	0.020	0.1250	0	77.0	22.1	258			
Surr: Decachlorobiphenyl	0.048		0.06250		76.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.040		0.06250		64.4	18.5	136			

Sample ID LCSD-29659(1221)	SampType: LCSD		TestCode: EPA Method 8082: PCB's							
Client ID: LCSS02	Batch ID: 29659		RunNo: 40011							
Prep Date: 1/12/2017	Analysis Date: 1/17/2017		SeqNo: 1255030		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1221	0.079	0.020	0.1250	0	63.2	22.1	258	19.7	22.6	
Surr: Decachlorobiphenyl	0.046		0.06250		73.2	19.7	141	0	0	
Surr: Tetrachloro-m-xylene	0.038		0.06250		60.4	18.5	136	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701235

24-Jan-17

Client: DBS
Project: PCB Sediment Sampling

Sample ID	LCS-29659(1232)		SampType: LCS	TestCode: EPA Method 8082: PCB's						
Client ID:	LCSS		Batch ID: 29659	RunNo: 40011						
Prep Date:	1/12/2017		Analysis Date: 1/17/2017	SeqNo: 1255048	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1232	0.12	0.020	0.1250	0	97.4	22.1	258			
Surr: Decachlorobiphenyl	0.046		0.06250		73.6	19.7	141			
Surr: Tetrachloro-m-xylene	0.042		0.06250		67.2	18.5	136			

Sample ID	LCSD-29659(1232)		SampType: LCSD	TestCode: EPA Method 8082: PCB's						
Client ID:	LCSS02		Batch ID: 29659	RunNo: 40011						
Prep Date:	1/12/2017		Analysis Date: 1/17/2017	SeqNo: 1255050	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1232	0.15	0.020	0.1250	0	121	22.1	258	21.6	22.6	
Surr: Decachlorobiphenyl	0.046		0.06250		73.6	19.7	141	0	0	
Surr: Tetrachloro-m-xylene	0.041		0.06250		65.6	18.5	136	0	0	

Sample ID	LCS-29659(1242)		SampType: LCS	TestCode: EPA Method 8082: PCB's						
Client ID:	LCSS		Batch ID: 29659	RunNo: 40011						
Prep Date:	1/12/2017		Analysis Date: 1/17/2017	SeqNo: 1255051	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1242	0.092	0.020	0.1250	0	73.8	22.1	258			
Surr: Decachlorobiphenyl	0.036		0.06250		56.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.034		0.06250		54.0	18.5	136			

Sample ID	LCSD-29659(1242)		SampType: LCSD	TestCode: EPA Method 8082: PCB's						
Client ID:	LCSS02		Batch ID: 29659	RunNo: 40011						
Prep Date:	1/12/2017		Analysis Date: 1/17/2017	SeqNo: 1255062	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1242	0.10	0.020	0.1250	0	83.0	22.1	258	11.7	22.6	
Surr: Decachlorobiphenyl	0.038		0.06250		61.6	19.7	141	0	0	
Surr: Tetrachloro-m-xylene	0.036		0.06250		58.0	18.5	136	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701235

24-Jan-17

Client: DBS
Project: PCB Sediment Sampling

Sample ID MB-29670	SampType: MBLK		TestCode: EPA Method 6010B: SPLP Metals							
Client ID: PBW	Batch ID: 29670		RunNo: 40134							
Prep Date: 1/12/2017	Analysis Date: 1/18/2017		SeqNo: 1258060	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Cadmium	ND	1.0								
Chromium	ND	5.0								
Lead	ND	5.0								
Nickel	ND	0.010								
Zinc	ND	0.020								

Sample ID LCS-29670	SampType: LCS		TestCode: EPA Method 6010B: SPLP Metals							
Client ID: LCSW	Batch ID: 29670		RunNo: 40134							
Prep Date: 1/12/2017	Analysis Date: 1/18/2017		SeqNo: 1258061	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.56	0.020	0.5000	0	113	80	120			
Cadmium	ND	1.0	0.5000	0	101	80	120			
Chromium	ND	5.0	0.5000	0	98.7	80	120			
Lead	ND	5.0	0.5000	0	100	80	120			
Nickel	0.48	0.010	0.5000	0	96.7	80	120			
Zinc	0.48	0.020	0.5000	0	96.2	80	120			

Sample ID 1701235-015AMS	SampType: MS		TestCode: EPA Method 6010B: SPLP Metals							
Client ID: San Antonio-010417	Batch ID: 29670		RunNo: 40134							
Prep Date: 1/12/2017	Analysis Date: 1/18/2017		SeqNo: 1258071	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	4.0	0.020	0.5000	2.759	251	75	125			S
Cadmium	ND	1.0	0.5000	0	97.9	75	125			
Chromium	ND	5.0	0.5000	0	96.5	75	125			
Lead	ND	5.0	0.5000	0	97.7	75	125			
Nickel	0.47	0.010	0.5000	0	94.8	75	125			
Zinc	0.48	0.020	0.5000	0	96.7	75	125			

Sample ID 1701235-015AMSD	SampType: MSD		TestCode: EPA Method 6010B: SPLP Metals							
Client ID: San Antonio-010417	Batch ID: 29670		RunNo: 40134							
Prep Date: 1/12/2017	Analysis Date: 1/18/2017		SeqNo: 1258072	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	4.0	0.020	0.5000	2.759	239	75	125	1.49	20	S
Cadmium	ND	1.0	0.5000	0	99.7	75	125	0	20	
Chromium	ND	5.0	0.5000	0	97.4	75	125	0	20	
Lead	ND	5.0	0.5000	0	97.9	75	125	0	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701235

24-Jan-17

Client: DBS
Project: PCB Sediment Sampling

Sample ID	1701235-015AMSD	SampType:	MSD	TestCode:	EPA Method 6010B: SPLP Metals					
Client ID:	San Antonio-010417	Batch ID:	29670	RunNo:	40134					
Prep Date:	1/12/2017	Analysis Date:	1/18/2017	SeqNo:	1258072	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	0.48	0.010	0.5000	0	95.7	75	125	0.934	20	
Zinc	0.50	0.020	0.5000	0	99.1	75	125	2.45	20	

Sample ID	1701235-015APS	SampType:	PS	TestCode:	EPA Method 6010B: SPLP Metals					
Client ID:	San Antonio-010417	Batch ID:	29670	RunNo:	40134					
Prep Date:		Analysis Date:	1/18/2017	SeqNo:	1258073	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	3.6	0.020	0.5000	2.759	171	80	120			S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: DBS

Work Order Number: 1701235

RcptNo: 1

Received by/date: AS 01/06/17

Logged By: **Anne Thorne** 1/6/2017 1:50:00 PM *Anne Thorne*

Completed By: **Anne Thorne** 1/9/2017 8:18:58 AM *Anne Thorne*

Reviewed By: *[Signature]* 01/09/17

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)

of preserved bottles checked for pH: _____
 (<2 or >12 unless noted)
 Adjusted? _____
 Checked by: _____

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good	Not Present			

Chain-of-Custody Record

Client: Daniel B Stephens

Mailing Address: 6020 Academy NE

ABQ, NM 87109

Phone #: 505-822-9400

Email or Fax#: Cjohannesen@dbstephens.com

VQC Package:

Standard Level 4 (Full Validation)

Creditation: NELAP Other

EDD (Type)

Turn-Around Time:

Standard Rush

Project Name:

PCB Sediment Sampling

Project #:

WR14-0049.01.0000014

Project Manager:

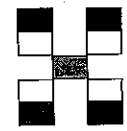
Chad Johannesen

Sampler: Chad Johannesen

On Ice: Yes No

Sample Temperature: 3.90C

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
1/7	1030					1701235
1/7	1030	Soil	Tijeras-Arroyo_010417	2x802	-	leachate -010 -001
	1115		SDC_010417			011 002
	1145		San-Jose_010417			012 003
	1345		West I4@DC_010417			013 004
	1430		Shamrock_010417			014 005
↓	1500		SanAntonio_010417			015 006
1/7	1400		Calabacillas_010517			016 007
	1445		NDC-EQPX_010517			017 008
↓	1545	↓	North Boca_010517	↓	↓	018 009



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	PCB - 8082A (SW-846)	Metals - 6020A (aluminum, cadmium, chromium, nickel, lead and zinc)	Air Bubbles (Y or N)
											X	X	
											X	X	
											X	X	
											X	X	
											X	X	
											X	X	
											X	X	

Date: 1/7/17 Time: 1350 Relinquished by: [Signature] Received by: [Signature] Date: 1/6/17 Time: 1350

Date: Time: Relinquished by: Received by: Date: Time:

Remarks: SPLP - Synthetic Precipitation leaching for metals

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 23, 2017

Chad Johannesen

Daniel B. Stephens & Assoc.
6020 Academy NE Suite 100
Albuquerque, NM 87109
TEL: (505) 822-9400
FAX (505) 822-8877

RE: PCB Sediment Sampling

OrderNo.: 1701387

Dear Chad Johannesen:

Hall Environmental Analysis Laboratory received 6 sample(s) on 1/10/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701387

Date Reported: 1/23/2017

CLIENT: Daniel B. Stephens & Assoc.

Client Sample ID: Domingo Baca-011017

Project: PCB Sediment Sampling

Collection Date: 1/10/2017 12:15:00 PM

Lab ID: 1701387-001

Matrix: SOIL

Received Date: 1/10/2017 2:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Aroclor 1221	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Aroclor 1232	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Aroclor 1242	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Aroclor 1248	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Aroclor 1254	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Aroclor 1260	ND	0.099	D	mg/Kg	1	1/16/2017 3:46:00 PM	29659
Surr: Decachlorobiphenyl	0	19.7-141	SD	%Rec	1	1/16/2017 3:46:00 PM	29659
Surr: Tetrachloro-m-xylene	0	18.5-136	SD	%Rec	1	1/16/2017 3:46:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701387

Date Reported: 1/23/2017

CLIENT: Daniel B. Stephens & Assoc.

Client Sample ID: Embudo-011017

Project: PCB Sediment Sampling

Collection Date: 1/10/2017 1:00:00 PM

Lab ID: 1701387-002

Matrix: SOIL

Received Date: 1/10/2017 2:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Aroclor 1221	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Aroclor 1232	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Aroclor 1242	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Aroclor 1248	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Aroclor 1254	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Aroclor 1260	ND	0.020		mg/Kg	1	1/16/2017 4:19:00 PM	29659
Surr: Decachlorobiphenyl	94.8	19.7-141		%Rec	1	1/16/2017 4:19:00 PM	29659
Surr: Tetrachloro-m-xylene	101	18.5-136		%Rec	1	1/16/2017 4:19:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701387

Date Reported: 1/23/2017

CLIENT: Daniel B. Stephens & Assoc.

Client Sample ID: Fourhills-011017

Project: PCB Sediment Sampling

Collection Date: 1/10/2017 2:00:00 PM

Lab ID: 1701387-003

Matrix: SOIL

Received Date: 1/10/2017 2:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8082: PCB'S							Analyst: SCC
Aroclor 1016	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Aroclor 1221	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Aroclor 1232	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Aroclor 1242	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Aroclor 1248	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Aroclor 1254	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Aroclor 1260	ND	0.20	D	mg/Kg	1	1/16/2017 4:52:00 PM	29659
Surr: Decachlorobiphenyl	0	19.7-141	SD	%Rec	1	1/16/2017 4:52:00 PM	29659
Surr: Tetrachloro-m-xylene	0	18.5-136	SD	%Rec	1	1/16/2017 4:52:00 PM	29659

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701387

Date Reported: 1/23/2017

CLIENT: Daniel B. Stephens & Assoc.

Client Sample ID: Domingo Baca-011017

Project: PCB Sediment Sampling

Collection Date: 1/10/2017 12:15:00 PM

Lab ID: 1701387-004

Matrix: LEACHATE

Received Date: 1/10/2017 2:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: pmf
Aluminum	8.0	0.20		mg/L	10	1/17/2017 6:53:21 PM	29691
Cadmium	ND	0.0020		mg/L	1	1/16/2017 8:05:33 PM	29691
Chromium	ND	0.0060		mg/L	1	1/16/2017 8:05:33 PM	29691
Lead	ND	0.0050		mg/L	1	1/16/2017 8:05:33 PM	29691
Nickel	ND	0.010		mg/L	1	1/16/2017 8:05:33 PM	29691
Zinc	0.030	0.020		mg/L	1	1/16/2017 8:05:33 PM	29691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701387

Date Reported: 1/23/2017

CLIENT: Daniel B. Stephens & Assoc.

Client Sample ID: Embudo-011017

Project: PCB Sediment Sampling

Collection Date: 1/10/2017 1:00:00 PM

Lab ID: 1701387-005

Matrix: LEACHATE

Received Date: 1/10/2017 2:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: pmf
Aluminum	3.7	0.10		mg/L	5	1/16/2017 8:09:46 PM	29691
Cadmium	ND	0.0020		mg/L	1	1/16/2017 8:08:28 PM	29691
Chromium	ND	0.0060		mg/L	1	1/16/2017 8:08:28 PM	29691
Lead	ND	0.0050		mg/L	1	1/16/2017 8:08:28 PM	29691
Nickel	ND	0.010		mg/L	1	1/16/2017 8:08:28 PM	29691
Zinc	ND	0.020		mg/L	1	1/16/2017 8:08:28 PM	29691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1701387

Date Reported: 1/23/2017

CLIENT: Daniel B. Stephens & Assoc.

Client Sample ID: Fourhills-011017

Project: PCB Sediment Sampling

Collection Date: 1/10/2017 2:00:00 PM

Lab ID: 1701387-006

Matrix: LEACHATE

Received Date: 1/10/2017 2:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 6010B: TOTAL RECOVERABLE METALS							Analyst: pmf
Aluminum	3.6	0.10		mg/L	5	1/16/2017 8:17:35 PM	29691
Cadmium	ND	0.0020		mg/L	1	1/16/2017 8:16:13 PM	29691
Chromium	ND	0.0060		mg/L	1	1/16/2017 8:16:13 PM	29691
Lead	ND	0.0050		mg/L	1	1/16/2017 8:16:13 PM	29691
Nickel	ND	0.010		mg/L	1	1/16/2017 8:16:13 PM	29691
Zinc	0.022	0.020		mg/L	1	1/16/2017 8:16:13 PM	29691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701387

23-Jan-17

Client: Daniel B. Stephens & Assoc.

Project: PCB Sediment Sampling

Sample ID	MB-29659	SampType:	MBLK	TestCode:	EPA Method 8082: PCB's					
Client ID:	PBS	Batch ID:	29659	RunNo:	40011					
Prep Date:	1/12/2017	Analysis Date:	1/16/2017	SeqNo:	1253839	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.020								
Aroclor 1221	ND	0.020								
Aroclor 1232	ND	0.020								
Aroclor 1242	ND	0.020								
Aroclor 1248	ND	0.020								
Aroclor 1254	ND	0.020								
Aroclor 1260	ND	0.020								
Surr: Decachlorobiphenyl	0.034		0.06250		54.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.034		0.06250		54.4	18.5	136			

Sample ID	LCS-29659	SampType:	LCS	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS	Batch ID:	29659	RunNo:	40011					
Prep Date:	1/12/2017	Analysis Date:	1/16/2017	SeqNo:	1253940	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.069	0.020	0.1250	0	55.0	22.1	258			
Aroclor 1260	0.059	0.020	0.1250	0	47.0	15	217			
Surr: Decachlorobiphenyl	0.036		0.06250		56.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.034		0.06250		54.8	18.5	136			

Sample ID	LCS-29659(1221)	SampType:	LCS	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS	Batch ID:	29659	RunNo:	40011					
Prep Date:	1/12/2017	Analysis Date:	1/17/2017	SeqNo:	1255028	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1221	0.096	0.020	0.1250	0	77.0	22.1	258			
Surr: Decachlorobiphenyl	0.048		0.06250		76.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.040		0.06250		64.4	18.5	136			

Sample ID	LCSD-29659(1221)	SampType:	LCSD	TestCode:	EPA Method 8082: PCB's					
Client ID:	LCSS02	Batch ID:	29659	RunNo:	40011					
Prep Date:	1/12/2017	Analysis Date:	1/17/2017	SeqNo:	1255030	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1221	0.079	0.020	0.1250	0	63.2	22.1	258	19.7	22.6	
Surr: Decachlorobiphenyl	0.046		0.06250		73.2	19.7	141	0	0	
Surr: Tetrachloro-m-xylene	0.038		0.06250		60.4	18.5	136	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701387

23-Jan-17

Client: Daniel B. Stephens & Assoc.

Project: PCB Sediment Sampling

Sample ID	LCS-29659(1232)		SampType: LCS	TestCode: EPA Method 8082: PCB's						
Client ID:	LCSS		Batch ID: 29659	RunNo: 40011						
Prep Date:	1/12/2017		Analysis Date: 1/17/2017	SeqNo: 1255048	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1232	0.12	0.020	0.1250	0	97.4	22.1	258			
Surr: Decachlorobiphenyl	0.046		0.06250		73.6	19.7	141			
Surr: Tetrachloro-m-xylene	0.042		0.06250		67.2	18.5	136			

Sample ID	LCSD-29659(1232)		SampType: LCSD	TestCode: EPA Method 8082: PCB's						
Client ID:	LCSS02		Batch ID: 29659	RunNo: 40011						
Prep Date:	1/12/2017		Analysis Date: 1/17/2017	SeqNo: 1255050	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1232	0.15	0.020	0.1250	0	121	22.1	258	21.6	22.6	
Surr: Decachlorobiphenyl	0.046		0.06250		73.6	19.7	141	0	0	
Surr: Tetrachloro-m-xylene	0.041		0.06250		65.6	18.5	136	0	0	

Sample ID	LCS-29659(1242)		SampType: LCS	TestCode: EPA Method 8082: PCB's						
Client ID:	LCSS		Batch ID: 29659	RunNo: 40011						
Prep Date:	1/12/2017		Analysis Date: 1/17/2017	SeqNo: 1255051	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1242	0.092	0.020	0.1250	0	73.8	22.1	258			
Surr: Decachlorobiphenyl	0.036		0.06250		56.8	19.7	141			
Surr: Tetrachloro-m-xylene	0.034		0.06250		54.0	18.5	136			

Sample ID	LCSD-29659(1242)		SampType: LCSD	TestCode: EPA Method 8082: PCB's						
Client ID:	LCSS02		Batch ID: 29659	RunNo: 40011						
Prep Date:	1/12/2017		Analysis Date: 1/17/2017	SeqNo: 1255062	Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1242	0.10	0.020	0.1250	0	83.0	22.1	258	11.7	22.6	
Surr: Decachlorobiphenyl	0.038		0.06250		61.6	19.7	141	0	0	
Surr: Tetrachloro-m-xylene	0.036		0.06250		58.0	18.5	136	0	0	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1701387

23-Jan-17

Client: Daniel B. Stephens & Assoc.

Project: PCB Sediment Sampling

Sample ID	MB-29691	SampType:	MBLK	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	PBW	Batch ID:	29691	RunNo:	40089					
Prep Date:	1/13/2017	Analysis Date:	1/17/2017	SeqNo:	1256477	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								

Sample ID	LCS-29691	SampType:	LCS	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW	Batch ID:	29691	RunNo:	40089					
Prep Date:	1/13/2017	Analysis Date:	1/17/2017	SeqNo:	1256478	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	115	80	120			

Sample ID	MB-29691	SampType:	MBLK	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	PBW	Batch ID:	29691	RunNo:	40062					
Prep Date:	1/13/2017	Analysis Date:	1/16/2017	SeqNo:	1259410	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	0.020								
Cadmium	ND	0.0020								
Chromium	ND	0.0060								
Lead	ND	0.0050								
Nickel	ND	0.010								
Zinc	ND	0.020								

Sample ID	LCS-29691	SampType:	LCS	TestCode:	EPA 6010B: Total Recoverable Metals					
Client ID:	LCSW	Batch ID:	29691	RunNo:	40062					
Prep Date:	1/13/2017	Analysis Date:	1/16/2017	SeqNo:	1259411	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.57	0.020	0.5000	0	113	80	120			
Cadmium	0.50	0.0020	0.5000	0	99.6	80	120			
Chromium	0.51	0.0060	0.5000	0	102	80	120			
Lead	0.51	0.0050	0.5000	0	101	80	120			
Nickel	0.49	0.010	0.5000	0	98.5	80	120			
Zinc	0.49	0.020	0.5000	0	97.5	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

Sample Log-In Check List

Client Name: DBS

Work Order Number: 1701387

RcptNo: 1

Received by/date: AS 01/10/17

Logged By: **Anne Thorne** 1/10/2017 2:35:00 PM *Anne Thorne*

Completed By: **Anne Thorne** 1/11/2017 9:39:15 AM *Anne Thorne*

Reviewed By: *[Signature]* 01/11/17

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)

of preserved bottles checked for pH: 3
 (2 or >12 unless noted)
 Adjusted? added 1 mL H₂O₂ to SPLP leachate for acceptable pH
 Checked by: AT 01/12/17 *[Signature]*

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

Chain-of-Custody Record

Client: Daniel B Stephens

Mailing Address: 6020 Academy NE
ABQ NM 87109

Phone #: 505-822-9400

Email or Fax#: Cjohannesen@dbstephens.com

QA/QC Package:
 Standard Level 4 (Full Validation)

Accreditation
 NELAP Other _____

EDD (Type) _____

Turn-Around Time:
 Standard Rush

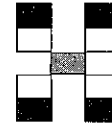
Project Name:
PCB Sediment Sampling

Project #:
WR14.0049.01.0000014

Project Manager:
Chad Johannesen

Sampler: C. Johannesen
On Ice: Yes No

Sample Temperature: 1.0



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	PCB - 8082A (SW-846)	Metals - 6020A (Aluminum)	Cadmium, Chromium	Nickel, lead and zinc	Air Bubbles (Y or N)	
10/17	1215	Soil	Domingo Baca - 011017	20802	—	1701387													X	X			
10/17	1300	Soil	Embudo - 011017	"	—	W5 W2													X	X			
10/17	1400	Soil	Fovhills - 011017	"	—	W6 W3													X	X			

Date: 1/17 Time: 1435 Relinquished by: [Signature]
Received by: [Signature] Date: 1/10/17 Time: 1435

Remarks: SPLP - Synthetic Precipitation leaching for metals

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Attachment 2

Wet and Dry Season Monitoring Results

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM
87109-4335

www.bhinc.com

voice: 505.823.1000



facsimile: 505.798.7988

toll free: 800.877.5332

MEMORANDUM

DATE: July 12, 2017

TO: Jerry Lovato, PE, AMAFCA
Patrick Chavez, PE, AMAFCA

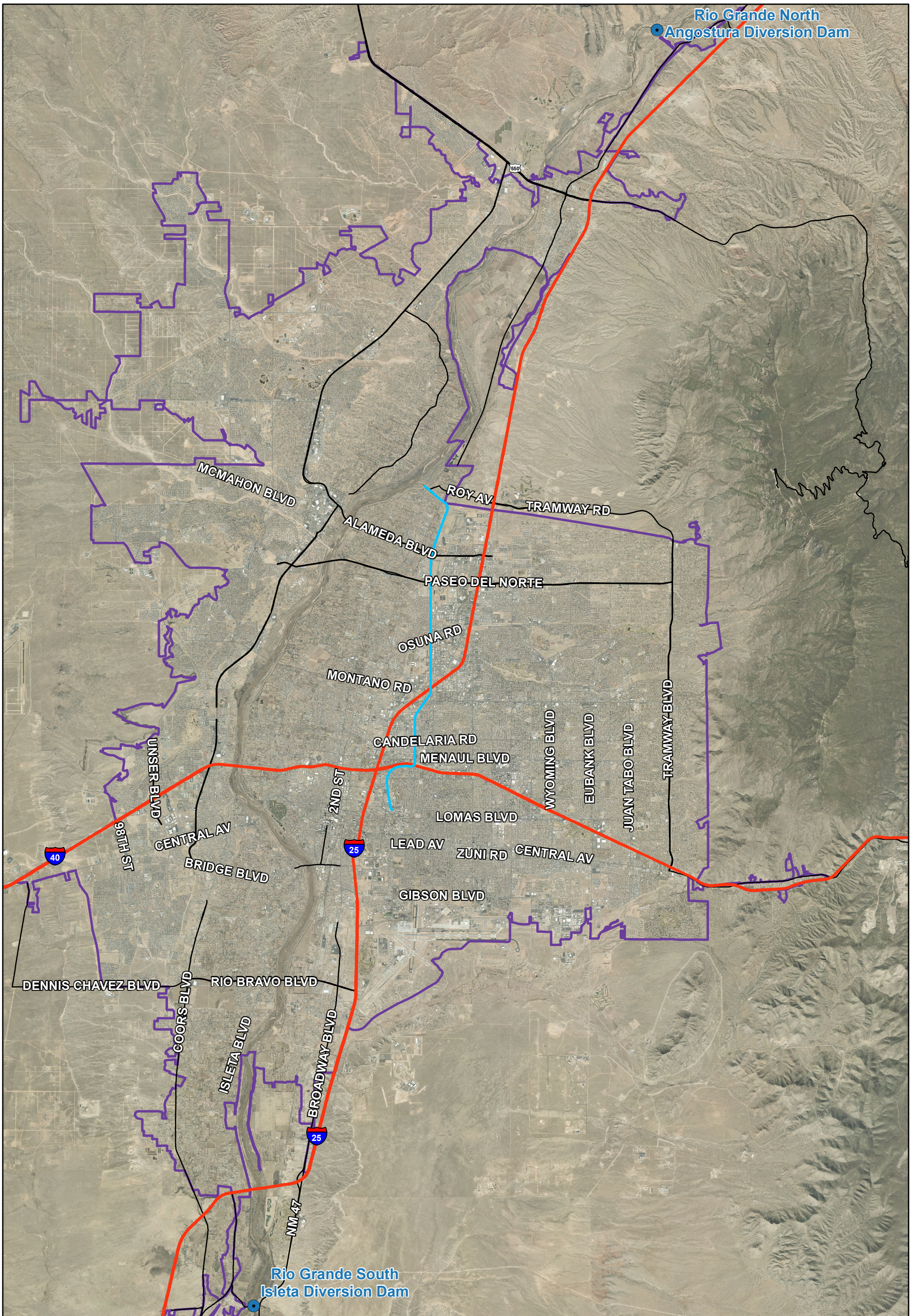
FROM: Craig Hoover, PE 
Sarah Ganley, PE 

SUBJECT: **CMC Dry Season, Wet Weather Stormwater Monitoring
Data Verification, Analysis Results Database, and Reporting
FY 2017 Dry Season (November 1, 2016, to June 30, 2017) Memo**

Overview of Stormwater Monitoring Activity

Bohannon Huston, Inc. (BHI) has been tasked to perform water quality services for the Compliance Monitoring Cooperative (CMC) Stormwater Data Verification, Database, and Reporting for the Wet Weather Stormwater Quality Monitoring Program for Fiscal Year (FY) 2017 (July 1, 2016, to June 30, 2017). The scope of work for this task includes data verification of the stormwater laboratory analysis results, compiling the analysis results into a database, and calculating the E. coli daily loading to compare with the Waste Load Allocation (WLA) for the qualifying storm events. The stormwater compliance monitoring is being conducted separately by Daniel B. Stephens & Associates, Inc. (DBS&A) and is not a part of this on-call task. This task is being conducted to assist the CMC members with their comprehensive monitoring and assessment program for compliance under the 2014 Middle Rio Grande Watershed Based Municipal Separate Storm Sewer System (MS4) Permit, NPDES Permit No. NMR04A000 ("WSB MS4 Permit").

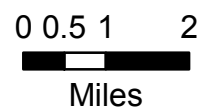
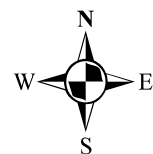
As identified in the CMC Monitoring Plan, the WSB MS4 Permit requires that a minimum of seven (7) storm events be sampled at both the Rio Grande North and Rio Grande South locations (refer to Figure 1, page 2). During the 5-year WSB MS4 Permit term, at least three (3) events must be sampled in the wet season (between July 1 and October 31, 2016) and at least two (2) events in the dry season (between November and June). The remaining two (2) required events can be obtained during either the wet or dry seasons. During the FY 2017 dry season (November 2016 through June 2017) there was one (1) qualifying storm event where samples were collected for both the Rio Grande North and Rio Grande South locations.



Bohannon & Huston
www.bhinc.com 800.877.5332

Legend

- CMC Monitoring Locations
- North Diversion Channel
- Albuquerque Urbanized Area
- Interstate Highway
- U.S. Highway
- State Highway



CMC Monitoring Locations

Figure 1

Summary of the CMC Sampling Plan

Sampling Parameters:

Samples from both the Rio Grande North and Rio Grande South monitoring locations were analyzed for the parameters defined in the EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016. The parameter list for both locations, which is intended to characterize stormwater discharges into the river, is as follows:

- Total Suspended Solids (TSS)
- Total Dissolved Solids (TDS)
- Chemical Oxygen Demand (COD)
- Biological Oxygen Demand – 5-day (BOD₅)
- Dissolved Oxygen (DO)
- Oil & grease (N-Hexane Extractable Material)
- E. coli
- pH
- Total Kjeldahl Nitrogen (TKN)
- Nitrate plus Nitrite
- Dissolved Phosphorus
- Ammonia plus Organic Nitrogen (Nitrogen, Ammonia and Nitrogen, Total)
- Phosphorous (Total Phosphorous)
- Polychlorinated Biphenyls (PCBs – Method 1668A)
- Gross Alpha
- Tetrahydrofuran
- Benzo(a)pyrene
- Benzo(b)fluoranthene (3, 4 Benzofluoranthene)
- Benzo(k)fluoranthene
- Chrysene
- Indeno(1,2,3-cd)pyrene
- Dieldrin
- Pentachlorophenol
- Benzidine
- Benzo(a)anthracene
- Dibenzofuran
- Dibenzo(a, h)anthracene
- Chromium VI (Hexavalent)
- Copper – Dissolved
- Lead – Dissolved
- Bis(2-ethylhexyl)phthalate
- Conductivity
- Temperature
- Hardness (as CaCO₃) – added to allow dissolved metal results to be compared to the applicable water quality standards

DO, pH, conductivity, and temperature are required by the WSB MS4 Permit to be analyzed in the field during sample collection, which was conducted by DBS&A, within fifteen (15) minutes of sample collection. All E. coli samples were submitted to the laboratory within six (6) hours of collection in order to meet the specified hold time.

Sampling Locations:

The sampling locations are shown in Figure 1, page 2.

Rio Grande North – Instream sampling within the Rio Grande was performed upstream of the Angostura Diversion Dam at the north end of the watershed. The location is upstream of all inputs from the Urban Area (UA) to the river and provides the background water conditions.

Rio Grande South – Instream sampling within the Rio Grande was performed at the Isleta Bridge at the south end of the watershed. The location is downstream of all inputs from the UA to the river and provides the downstream water conditions.

These locations have been accepted by EPA and New Mexico Environment Department (NMED) to meet the WSB MS4 Permit requirements in Part III.A. These North and South instream sample locations capture all inputs to the Rio Grande within the UA.

Sample Collection:

As mentioned previously, sample collection for the CMC is being conducted by DBS&A through a separate on-call contract. Since BHI was not involved, this task and memo do not address the details of the methodologies regarding sampling, determining if an event was a qualifying storm event, or determining the timing of the hydrograph at the Rio Grande South location. After the November qualifying storm event sample was obtained, the CMC instructed DBS&A to stop sample collection during the remainder of the dry season.

DBS&A provided BHI with their field notes and field sample data (temperature, DO, specific conductivity, and pH) for the FY 2017 dry season sampling. AMAFCA provided BHI the completed laboratory analysis reports from Hall Environmental Analysis Laboratory (HEAL) for this monitoring season.

Quality Assurance Project Plan (QAPP):

AMAFCA provided BHI with the Draft Quality Assurance Project Plan (QAPP) for the CMC dated June 14, 2016. DBS&A followed this QAPP during sample collection. BHI used this QAPP and the included standard operating procedures (SOPs) for the data verification and validation.

Monitoring Activity & Lab Analysis Summary

The list below provides a chronological summary of the CMC comprehensive monitoring program activities completed by DBS&A for the FY 2017 dry season from November 2016 through June 2017. One (1) qualifying storm event was sampled and analyzed during the FY 2017 dry season.

- **November 3 – Only E. coli for Rio Grande North.** A sample was collected at the Rio Grande North location and sent to the laboratory for an E. coli only test. Based on review of the storm event by the CMC, it was determined this was not a qualifying storm event; therefore, full parameter testing did not occur for the sample collected at the Rio Grande North location.
- **November 21-22 – Qualifying Storm Event – Full Analysis of Samples.** A sample was collected at the Rio Grande North location beginning at 9:30 a.m. on November 21 and sent to the laboratory for an E. coli only test. The CMC determined that the storm event

beginning November 21 was a qualifying storm event. A Rio Grande South sample was collected beginning at 7:00 a.m. on November 22; the samples from the North (from November 21 collection) and South locations were taken to the laboratory for full parameter testing.

Stormwater Quality Database for CMC

As stated previously, there was one (1) qualifying storm event sampled during the FY 2017 dry season, wet weather monitoring which occurred November 21-22, 2016. DBS&A's field notes containing DO, pH, conductivity, and temperature measurements, as well as comments for the sampling done in November, have been received, and field results have been added to the database. Additionally, the HEAL reports for the corresponding time period have been received, added to the database, and are provided with this memo (Attachment 1). The laboratory reports attached to this memo have BHI added comments including the field parameter measurements and other relevant notes related to each laboratory report.

The HEAL analyses for the one (1) qualifying storm event contain the full parameter list for both the Rio Grande North and Rio Grande South sampling locations. There was one other precipitation event in November 2016 that did not evolve into qualifying storm events; however, an E. coli sample was still collected and field data was measured for the Rio Grande North location. The HEAL lab reports are provided with this memo (Attachment 1). Despite not being qualifying storm events, the field and E. coli data collected were added to the database as they provide additional background data for the CMC program.

Database Creation and Data Entry:

An Excel database of the FY 2017 wet weather monitoring data was created for this Task and provided with the March 6, 2017 FY 2017 Wet Season Memo. The November 2016 dry season monitoring data has been added to this database. The database contains sample locations (Rio Grande North and Rio Grande South), sample date, analyses conducted, methods used, applicable surface water quality standards (WQS), WSB MS4 Permit required Minimum Quantification Levels (MQL), and analysis results. Applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4, as well as the Pueblo of Isleta and Pueblo of Sandia WQS, are entered in the Excel database for comparison purposes with testing results. There is an indicator in the database to show if the monitoring results exceed the applicable surface WQS. An exceedance is not a violation of the WSB MS4 Permit, as the Permit does not have numeric discharge limitations. These ">WQ Standard" flags simply and quickly show the CMC members where the results of the lab data exceed the applicable surface WQS.

Upon receipt of the HEAL lab reports, water quality data was entered into the database. All data entered into the database is initially denoted with a "P" to indicate that it is provisional and has not been through the verification and validation process yet. Full parameter analyses of the qualifying storm event for both Rio Grande North and Rio Grande South locations were entered respectively into the database. In addition, the E. coli and field data only samples from the Rio Grande North location, obtained during one non-qualifying storm event, were also entered into the database.

Data Verification and Validation:

The HEAL laboratory analysis reports were provided to BHI by AMAFCA. The lab reports also contain the Chain of Custody for the submitted samples. Field data was requested by and

provided to BHI by DBS&A. Data verification and validation (V & V) was conducted by BHI on all field notes, lab reports, and Chain of Custody documents in accordance with the CMC Water Quality Standard Operating Procedure (SOP) #2, which is part of the existing CMC QAPP, Draft June 14, 2016. These procedures are based on EPA Guidance for Environmental Data Verification and Validation (U.S. EPA, 2008).

As stated in the QAPP, the V & V process was completed by a different person than the one who entered the data into the database. The V & V process included use of the *Data Verification and Validation Worksheet* (provided in the QAPP). For this task, field data was verified first, confirming that all field notes were complete. BHI handled field parameter questions directly with DBS&A. Chemical data verification began as soon as the lab reports were received, checking that all parameters were tested and looking for any obvious exceedances of surface WQS. Other steps listed on the *Data Verification and Validation Worksheet* were completed after all data from the laboratory was received and entered into the database. Sample blank results were reviewed to identify potential contamination during field processing or transport. Replica/duplicate samples were evaluated based on relative percent difference (as described in more detail in the QAPP) to determine the variability of the samples.

There were not any CMC FY 2017 dry season data that did not meet the appropriate QA/QC requirements. If there were any data that did not meet the appropriate QA/QC requirements, it would have been assigned an appropriate laboratory qualifier or validation code. A summary of validation codes is provided in the QAPP.

Once the V & V process was completed, the worksheets were signed. Copies of the V & V worksheets are provided with this memo (Attachment 2). In the database, data that was checked during the V & V process was then changed from being denoted with a "P" for provisional to a "V" for verified, and laboratory qualifiers were added as needed.

CMC FY 2017 Dry Season Assessment and Evaluation of Monitoring Results

The EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016, has thirty-four (34) parameters to monitor at the Rio Grande North and Rio Grande South monitoring locations. Of these thirty-four (34) parameters (which include four field parameters), over half of the parameters—eighteen (18) parameters—were not detected in the FY 2017 dry season samples at either the Rio Grande North or South locations. Refer to Table 1 for a list of the parameters that were not detected.

**Table 1: Parameters Not Detected
 CMC FY 2017 Dry Season Monitoring**

Parameters Not Detected	
Oil and Grease (N-Hexane Extractable Material)	Pentachlorophenol
Ammonia (mg/L as N)	Benzidine
Tetrahydrofuran	Benzo(a)anthracene
Benzo(a)pyrene	Dibenzofuran
Benzo(b)fluoranthene (3, 4 Benzofluoranthene)	Dibenzo(a,h)anthracene
Benzo(k)fluoranthene	Chromium VI (Hexavalent)
Chrysene	Dissolved Copper
Indeno(1,2,3-cd)Pyrene	Dissolved Lead
Dieldren	Bis (2-ethyhexyl) Phthalate

The FY 2017 wet season also had eighteen (18) parameters that were not detected at either the Rio Grande North or South locations. The wet season non-detected parameters differed by two parameters as compared to the dry season; dissolved copper was detected in the wet season samples, and Total Kjeldahl Nitrogen (TKN) was not detected in the wet season samples.

E. coli:

For the remaining sixteen (16) parameters on the CMC monitoring parameter list, only one parameter (*E. coli*) had exceedances of the applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4 and the Pueblo of Isleta and Pueblo of Sandia WQS during the FY 2017 dry season. At the Rio Grande North location (upstream of the Albuquerque UA, at the Angostura Diversion Dam), two (2) samples were collected and tested for *E. coli*, and neither of the samples had results that exceeded the primary contact-single sample Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL). At the Rio Grande South location (downstream of the MS4 UA), one (1) sample was collected and tested for *E. coli*, and this sample's result exceeded the primary contact-single sample NMAC WQS (410 CFU/100 ml) as well as the Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL). As a reminder, the *E. coli* units of MPN/100 mL and CFU/100 mL are considered to be interchangeable; the March 6, 2017 FY 2017 Wet Season Memo provides additional documentation regarding the *E. coli* units.

Dissolved Oxygen, PCB's and Temperature:

Three of the water quality parameters are specifically worth mentioning in this memo because they are listed in the WSB MS4 Permit, Part I.C.1 – Special Conditions: dissolved oxygen, PCBs, and temperature.

Dissolved oxygen is a water quality concern in the Rio Grande if it is below 5 mg/L. None of the samples taken from the Rio Grande during the FY 2017 CMC monitoring program had dissolved oxygen values below 5 mg/L. Refer to Figure 2 for dissolved oxygen results and comparison to applicable surface WQS.

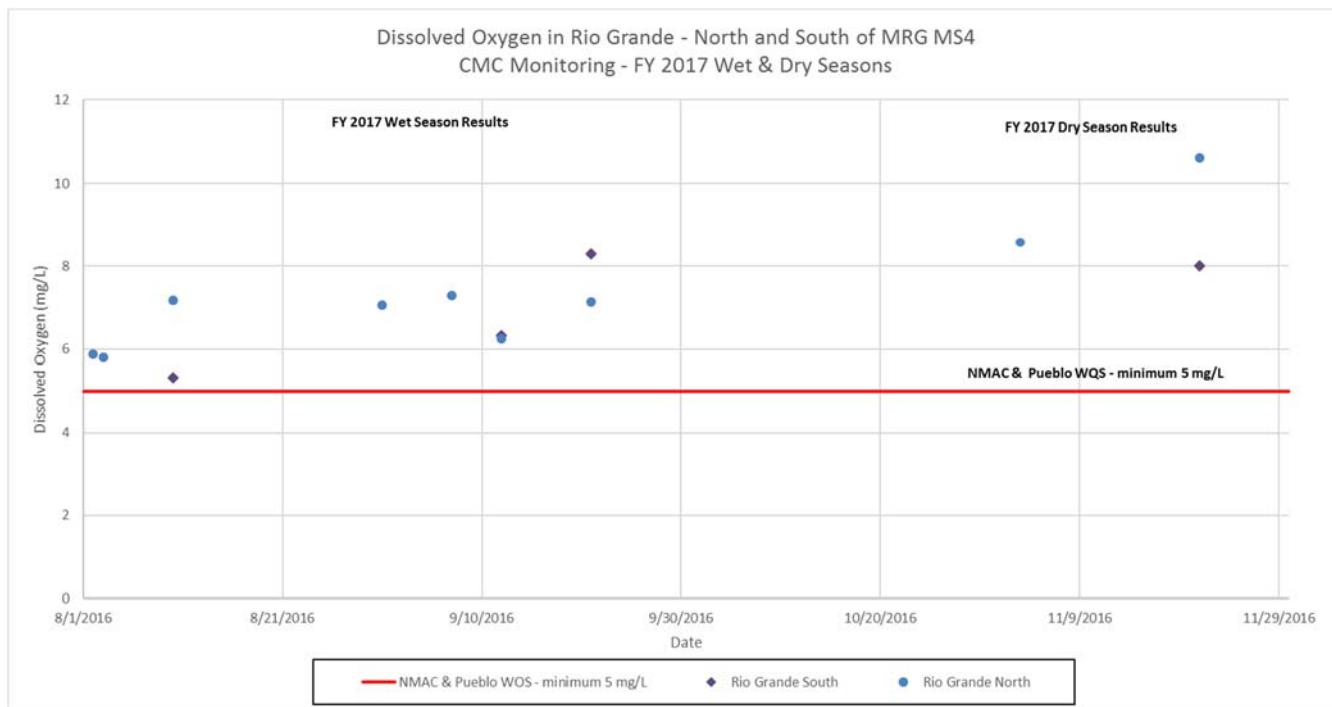


Figure 2: Dissolved Oxygen Results for Rio Grande CMC Monitoring – FY 2017 Wet and Dry Seasons

For the CMC FY 2017 dry season sample, as well as for the three (3) FY 2017 wet season samples, there were no exceedances of WQS for PCBs.

Temperature is listed in the WSB MS4 Permit as a special condition (only applicable to the City of Albuquerque and AMAFCA). Past data submitted to EPA and NMED has proven that stormwater discharges into the Rio Grande are not impacting the Rio Grande temperature above the applicable WQS. The data collected during this FY 2017 dry season monitoring supports this conclusion. All of the temperature field readings taken in the Rio Grande during the CMC FY 2017 dry season were below 32.2°C (90 °F) – the WQS for the State of New Mexico and for the Isleta and Sandia Pueblos.

CMC FY 2017 Wet Season E. coli Loading Calculations and Waste Load Allocation (WLA)

Related to assessing the stormwater results, BHI has calculated the E. coli daily loading and compared it to the aggregate Total Maximum Daily Load (TMDL) Waste Load Allocation (WLA) for the CMC group. A TMDL is the maximum amount of a pollutant (E. coli in this case) that a water body (Rio Grande) can assimilate on a daily basis without violating applicable surface WQS. The total TMDL for a stream segment consists of the multiple WLA for point sources, non-point sources, and natural sources, plus a margin of safety. The CMC MS4 allotted WLA was determined in the US EPA Approved, Total Maximum Daily Load for the Middle Rio Grande Watershed, June 30, 2010, and subsequent communications with NMED. The WLA varies by flow condition in the Rio Grande and by stream segment.

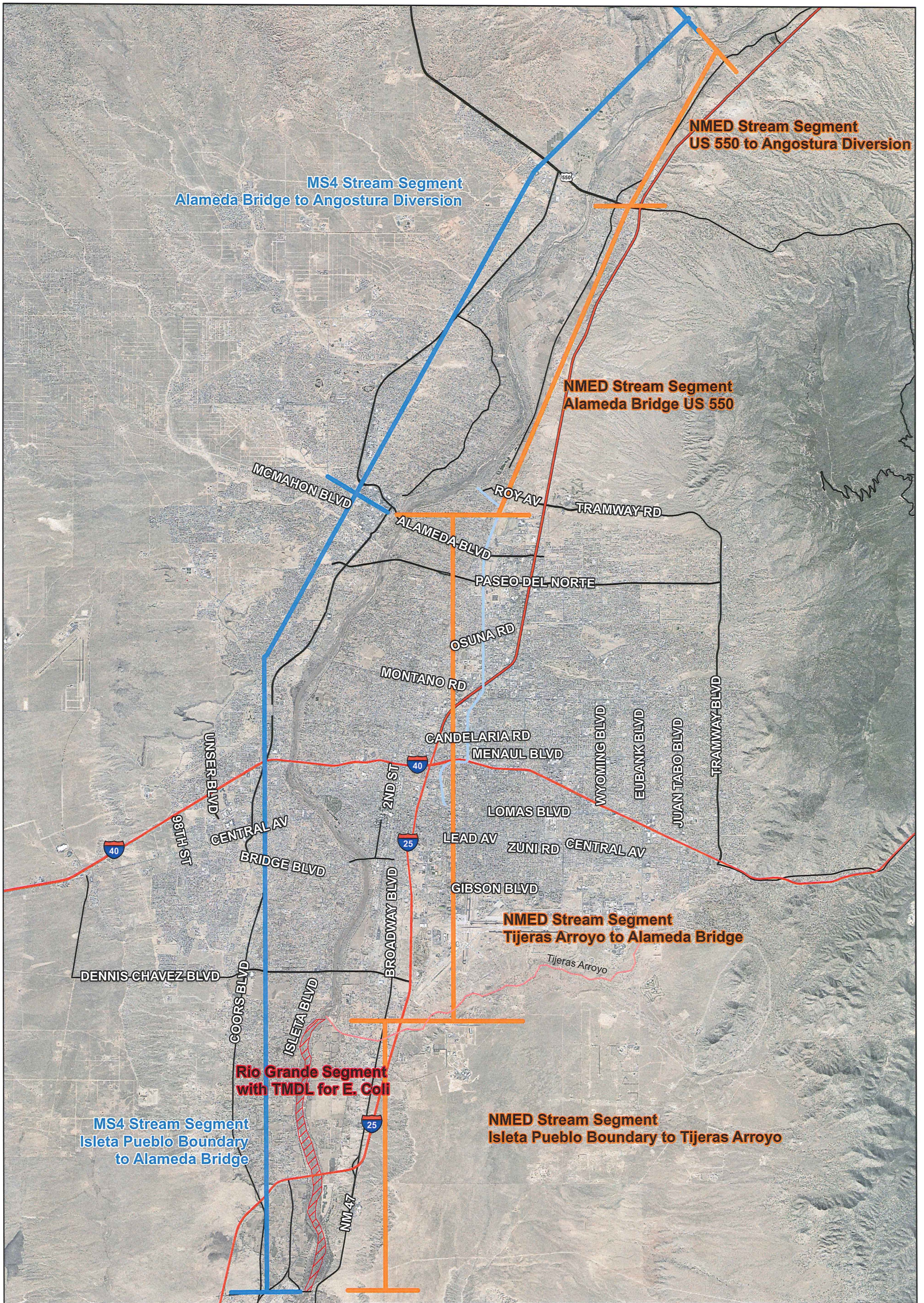
E. coli loading calculations and comparison to the WLA follows the WSB MS4 Permit requirements in “Discharges to Water Quality Impaired Water Bodies with an Approved TMDL,” Part I.C.2.b.(i).(c).B, Appendix B-Total Maximum Daily Loads (TMDLs) Tables of the WSB MS4 Permit, and the NMED guidance provided to the CMC.

Attached to this memo is the WLA Calculation spreadsheet which steps through the E. coli daily loading calculations and assumptions comparing the calculated E. coli loading to the CMC aggregate WLA defined by NMED. BHI provided the draft calculations spreadsheet for review to AMAFCA, who shared this with other CMC members, in both December 2016 and February 2017, related to the wet season monitoring results. The CMC members also met to discuss the E. coli loading calculations with NMED on February 1, 2017. BHI followed up with NMED on February 16, 2017, regarding specific calculation details. The current spreadsheet includes the improvements discussed at the NMED meeting and follow-up phone call.

There are two (2) stream segments defined in the WSB MS4 Permit (Appendix B) for the Middle Rio Grande: Isleta Pueblo Boundary to Alameda Street Bridge (Stream Segment 2105_50) and Non-Pueblo Alameda Bridge to Angostura Diversion (Stream Segment 2105.1_00). These stream segments differ from NMED’s current stream segments defined in “2016-2018 State of New Mexico Clean Water Act Section 303(d)/Section 305(b) Integrated Report,” September 23, 2016. NMED currently has four (4) stream segments instead of the two (2) WSB MS4 stream segments; of the four (4) segments, only one segment has an impairment for E. coli (2105_50 Isleta Pueblo Boundary to Tijeras Arroyo). These various stream segment designations are shown in Figure 3, page 10.

NMED provided clarification at the February 1, 2017, meeting regarding the various stream segment designations. The NMED 303(d)/305(b) 2016-2018 Integrated Report tables show the most recent assessment results, and currently there is only one segment of the Middle Rio Grande (Isleta to Tijeras) within the MS4 boundaries that was found to be impaired for E. coli. However, the TMDL for the other Middle Rio Grande stream segments do not go away even if they are no longer impaired—the TMDL remains in place as a protective measure. TMDLs remain in effect after impairments are removed as protective measures.

The E. coli daily loading associated with the CMC group and comparison to the NMED WLA was completed for the one (1) qualifying event storm event monitored in the FY 2017 dry season—November 21-22, 2016. Refer to Table 2 for a summary of the WLA comparison. A spreadsheet is attached to this memo that provides the detailed calculations for all of FY 2017.



Bohannon & Huston
www.bhinc.com 800.877.5332

Legend

- MS4 Stream Segments
- NMED Stream Segments
- North Diversion Channel
- Rio Grande Segment w/ TMDL for E. Coli
- Interstate Highway
- U.S. Highway
- State Highway

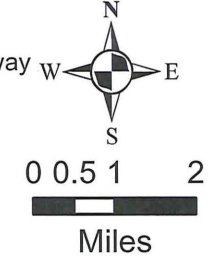


Figure 3
Rio Grande
NMED and MS4 Permit
Stream Segments

Table 2: Summary of CMC Daily E. Coli Loading Compared to WLA for the CMC

Date / Stream Segment	Daily Mean Flow (cfs)	Flow Conditions (cfs) <i>range defined by NMED</i>	CMC Daily E. coli Loading (CFU/day)	NMED WLA for CMC for Stream Segment and Flow Conditions	Loading Compared to WLA Potential Exceedance or Acceptable
November 21-22, 2016 – Rio Grande North E. coli concentration = 43.5 CFU/100 mL and Rio Grande South E. coli concentration = 7,270 CFU/100 mL					
Alameda to Angostura	710	Mid	—	No Value	WLA Acceptable
Isleta to Alameda	881	Mid	1.68E+12	4.22E+10	Potential Exceedance

As Table 2 illustrates, the E. coli loading for the dry season event potentially exceeded the CMC allocated WLA in the southern stream segment (Isleta to Alameda) of the Middle Rio Grande. This sampling and calculation approach is only an estimate of the CMC contribution to the E. coli loading which is why the term “potential exceedance” is used. NMED has not set a TMDL or associated WLA values for the Alameda to Angostura stream segment of the Middle Rio Grande for mid-flow conditions (647 to 992 cfs) because there were not observed E. coli exceedances during this flow regime in the data used to develop the TMDL. Therefore, when a qualifying storm event is monitored during mid-flow regime conditions, like the November 21-21, 2016 event, in the Alameda to Angostura stream segment, the CMC’s WLA will never be in exceedance since there is not set TMDL.

The WSB MS4 Permit implies that the WLA is a measurable goal for the MS4s related to E. coli. Based on extensive review of the US EPA Approved, Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed, June 30, 2010, this seems to be an unattainable goal for MS4s. The 2010 TMDL Report states on page 40, “It is important to remember that the TMDL is a planning tool to be used to achieve water quality standards...Meeting the calculated TMDL may be a difficult objective.” The TMDL/WLA was calculated by NMED to meet the Pueblo (Sandia and Isleta) geometric mean maximum of 47 CFU/100 mL which was done to be “protective of downstream waters” and “to provide an implicit margin of safety (MOS).” A single grab sample E. coli result meeting this very low geometric mean WQS will be very difficult for the MS4s to obtain.

The CMC members discussed the difficulty of using the WLA as a measurable goal with NMED on February 1, 2017. NMED explained that exceeding the WLA does not trigger enforcement. However, NMED strongly encouraged the MS4s to document what they are doing once they realize the WLA is potentially exceeded. The February 1, 2017, meeting and the February 16, 2017, CMC discussion with NMED demonstrate that CMC members are working toward understanding the WLA. In addition, the CMC members and NMED discussed potential refinements to the sampling plan, demonstrating that the CMC is investigating the potential exceedances and improvements to monitor E. coli in the Rio Grande.

Data Entry for Discharge Monitoring Reports

As required in the WSB MS4 Permit, verified stormwater quality data must be submitted annually to the EPA using electronic Discharge Monitoring Report (DMR) forms. Data from the DMRs are uploaded to a comprehensive nation-wide database that contains discharge data for facilities and other point sources that discharge directly to receiving streams. Currently, the CMC members are working with the EPA regarding access and use of the NetDMR system. For this Task, BHI has not been tasked with any data entry related to the EPA DMRs for the FY 2017 wet or dry seasons.

Conclusions and Planning

In FY 2017 four (4) qualifying event samples were obtained. During the FY 2017 wet season (July 1 to October 31, 2016) three (3) qualifying stormwater samples were obtained by the CMC, and during the dry season (November 1, 2016 to June 30, 2017) one (1) qualifying stormwater sample was obtained by the CMC. Lab results have been received for these samples. This data has been entered into the project Excel database. The lab data entered is marked in the spreadsheet as "V" (verified), and data V & V has been completed.

To summarize, monitoring results and E. coli loading calculations for the CMC FY 2017 wet and dry seasons show that:

- Four (4) of the seven (7) required samples in the WSB MS4 Permit Wet Weather Monitoring section were obtained in FY 2017. Seven (7) samples are required during the 5-year Permit term, so this is significant progress for the CMC.
- The CMC has met the required Permit minimum of monitoring three (3) events during the wet season and has obtained one (1) of the two (2) events required in the dry season.
- Over half of the parameters tested were not detected in any of the Rio Grande samples.
- Only E. coli was in exceedance of applicable New Mexico and Pueblos of Sandia and Isleta WQS.
 - All dissolved oxygen results were greater than 5 mg/L (minimum WQS).
 - All temperature results were less than 32.2 °C (maximum WQS).
 - There were no PCB test results exceeding the applicable WQS.
- The calculated E. coli loading for the one (1) qualifying storm event in the dry season shows that the WLA for the CMC members is potentially exceeded for the southern stream segment (Isleta to Alameda). NMED has not set a TMDL for the Alameda to Angostura stream segment of the Middle Rio Grande for mid-flow conditions (647 to 992 cfs); therefore, the monitored dry season storm event did not exceed the WLA.
 - Sources for the E. coli loading measured in the river are not solely attributable to the CMC MS4 members; the E. coli loading calculations serve to provide a reasonable estimate of the CMC contribution to the measured E. coli loading.
 - This sampling and calculation approach is only an estimate of the CMC contribution to the E. coli loading which is why the term "potential exceedance" is used.
 - The in-stream data does not provide the concentration of E. coli contributed by only the CMC MS4s, or any of the other potential sources. By using this percentage calculation approach, if other contributors are in exceedance of the

WLA, then the CMC will likely also be in exceedance since this approach relies on a percentage of a total.

SG/le

Attachments:

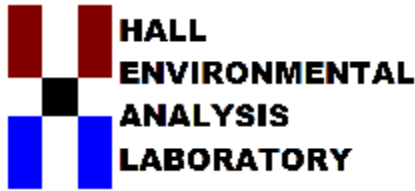
Attachment 1 – Hall Environmental Analysis Laboratory Reports with BHI Notes for FY 2017
Dry Season

Attachment 2 – FY 2017 Dry Season Completed Data Verification and Validation Forms

Spreadsheets Included Separately:

E. coli Loading and Comparison to Waste Load Allocation (WLA) Excel Spreadsheet
Excel CMC Spreadsheet with FY 2017 Stormwater Quality Monitoring Results

ATTACHMENT 1
HALL ENVIRONMENTAL ANALYSIS LABORATORY REPORTS
WITH BHI NOTES FOR FY 2017 DRY SEASON



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 08, 2016

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

RE: CMC

OrderNo.: 1611208

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 11/3/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Field Data - Provided by DBS&A (field notebook & e-mails):

11/3/16 - Rio Grande North

DO = 8.57 mg/L, pH = 8.01, Conductivity = 320 umhos/cm, and Temperature = 14.6°C

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1611208

Date Reported: 11/8/2016

CLIENT: AMAFCA

Client Sample ID: RGN110316

Project: CMC

Collection Date: 11/3/2016 2:10:00 PM

Lab ID: 1611208-001

Matrix: AQUEOUS

Received Date: 11/3/2016 3:02:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: tnc
E. Coli	42.0	1.000		CFU/100ml	1	11/4/2016 4:52:00 PM	28465

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87109
 TEL: 505-345-3975 FAX: 505-345-4107
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **AMAFCA** Work Order Number: **1611208** RcptNo: **1**
 Received by/date: *JGC* **11/03/16**
 Logged By: **Ashley Gallegos** **11/3/2016 3:02:00 PM** *AG*
 Completed By: **Ashley Gallegos** **11/3/2016 3:58:05 PM** *AG*
 Reviewed By: *AS* **11/03/16 @ 1600**

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present ✓
- 2. Is Chain of Custody complete? Yes ✓ No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes ✓ No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No ✓ NA
Samples were collected the same day and chilled.
- 6. Sample(s) in proper container(s)? Yes ✓ No
- 7. Sufficient sample volume for indicated test(s)? Yes ✓ No
- 8. Are samples (except VOA and ONG) properly preserved? Yes ✓ No
- 9. Was preservative added to bottles? Yes No ✓ NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials ✓
- 11. Were any sample containers received broken? Yes No ✓ # of preserved bottles checked for pH: (<2 or >12 unless noted)
- 12. Does paperwork match bottle labels? Yes ✓ No Adjusted?
- (Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes ✓ No
- 14. Is it clear what analyses were requested? Yes ✓ No
- 15. Were all holding times able to be met? Yes ✓ No Checked by:
- (If no, notify customer for authorization.)

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA ✓

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	15.5	Good	Not Present			

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

Email or Fax#:

QA/QC Package:
 Standard Level 4 (Full Validation)

Accreditation:
 NELAP Other _____

EDD (Type) _____

Turn-Around Time:
 Standard Rush

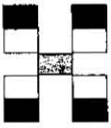
Project Name:
CML

Project #:

Project Manager:
Patrick Chawtz

Sampler:
 On Ice: Yes No

Sample Temperature: 15.5 C



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com
 4901 Hawkins NE - Albuquerque, NM 87109
 Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	E-coli (Num)	Air Bubbles (Y or N)
1/31/16	1410	Water	RGN110316			11011208-001												X	

Date: 1/31/16 Time: 1502 Relinquished by: Alex Sandoz

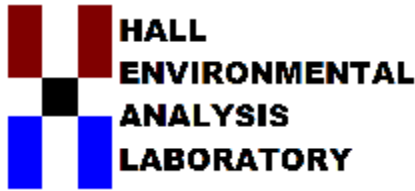
Received by: AM Caldwell Date: 1/31/16 Time: 1502

Remarks:

Date: 3/1/16 Time: 1502 Relinquished by: _____

Received by: _____ Date: _____ Time: _____

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 02, 2016

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

RE: CMC

OrderNo.: 1611B12

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 11/21/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):

11/21/16 - Rio Grande North

DO = 10.62 mg/L, pH = 8.4, Conductivity = 305 umhos/cm, and Temperature = 10.36°C

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1611B12

Date Reported: 12/2/2016

CLIENT: AMAFCA

Client Sample ID: Rio Grande North 112116

Project: CMC

Collection Date: 11/21/2016 9:30:00 AM

Lab ID: 1611B12-001

Matrix: AQUEOUS

Received Date: 11/21/2016 11:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: tnc
E. Coli	43.5	1.000		CFU/100ml	1	11/22/2016 4:34:00 PM	28792

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87109
 TEL: 505-345-3975 FAX: 505-345-4107
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: AMAFCA

Work Order Number: 1611B12

RcptNo: 1

Received by/date: AG 11/21/16

Logged By: Ashley Gallegos 11/21/2016 11:20:00 AM AG

Completed By: Ashley Gallegos 11/21/2016 11:24:06 AM AG

Reviewed By: jc 11/21/16 @ 1230

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 6. Sample(s) in proper container(s)? Yes No **Not required**
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)

of preserved bottles checked for pH: _____
 (<2 or >12 unless noted)
 Adjusted? _____
 Checked by: _____

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	9.7	Good	Not Present			

Chain-of-Custody Record

Turn-Around Time:

Client: AMAFCA

Standard Rush _____

Mailing Address:

Project Name: CMC

Phone #:

Project #: NMIS.0156

email or Fax#:

Project Manager: Patrick Chavez
C. Johanesen

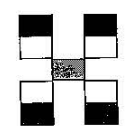
QA/QC Package:
 Standard Level 4 (Full Validation)

Accreditation
 NELAP Other _____

Sampler: E. Bastian
On Ice: Yes No

EDD (Type) _____

Sample Temperature: 9.7



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
11/21/16	9:30	SW	Rio Grande North 11/21/16	1 - 125ml poly		11611B12 -001

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	E. coli										
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Date: 11/21/16 Time: 11:20 Relinquished by: Elizabeth Bastian

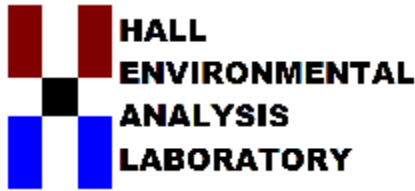
Received by: _____ Date: 11/21/16 Time: 11:20

Date: _____ Time: _____ Relinquished by: _____

Received by: _____ Date: _____ Time: _____

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 23, 2016

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

RE: CMC

OrderNo.: 1611B75

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 3 sample(s) on 11/22/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):

11/21/16 - Rio Grande North

DO = 10.62 mg/L, pH = 8.4, Conductivity = 305 umhos/cm, and Temperature = 10.36°C

11/22/16 - Rio Grande South

DO = 8.01 mg/L, pH = 8.08, Conductivity = 367 umhos/cm, and Temperature = 9.3°C

Analytical Report

Lab Order: **1611B75**

Date Reported: **12/23/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-001B

Client Sample ID: Rio Grande-North-112116
Collection Date: 11/21/2016 9:30:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: SMS
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	11/27/2016 11:09:00 AM	28809

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
 Project: CMC
 Lab ID: 1611B75-001D

Client Sample ID: Rio Grande-North-112116
 Collection Date: 11/21/2016 9:30:00 AM
 Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	11/22/2016 10:29:21 PM	R38938
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	11/22/2016 10:29:21 PM	R38938
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	213	20.0		mg/L	1	11/29/2016 7:42:00 PM	28867
SM 4500 NH3: AMMONIA							Analyst: CJS
Nitrogen, Ammonia	ND	1.0		mg/L	1	12/9/2016 2:11:00 PM	R39298
TOTAL NITROGEN							Analyst: SRM
Nitrogen, Total	ND	1.0		mg/L	1	12/15/2016 4:55:00 PM	R39426
SM4500-H+B: PH							Analyst: JRR
pH	8.10	1.68	H	pH units	1	11/22/2016 4:33:22 PM	R38947
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.042	0.010		mg/L	1	12/2/2016 10:17:24 AM	28952
SM 4500 NORG C: TKN							Analyst: CJS
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	12/13/2016 11:26:00 AM	29132
SM 2540D: TSS							Analyst: KS
Suspended Solids	27	4.0		mg/L	1	11/28/2016 4:20:00 PM	28852

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: **1611B75**

Date Reported: **12/23/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-001E

Client Sample ID: Rio Grande-North-112116
Collection Date: 11/21/2016 9:30:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664A							Analyst: tnc
N-Hexane Extractable Material	ND	10.7		mg/L	1	11/28/2016 9:14:00 AM	28858

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-001F

Client Sample ID: Rio Grande-North-112116
Collection Date: 11/21/2016 9:30:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Copper	ND	0.0010		mg/L	1	12/2/2016 3:56:41 PM	B39114
Lead	ND	0.00050		mg/L	1	12/2/2016 3:56:41 PM	B39114
Uranium	0.0024	0.00050		mg/L	1	12/2/2016 3:56:41 PM	B39114
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO3)	130	6.6		mg/L	1	12/14/2016	R39376
EPA METHOD 200.7: DISSOLVED METALS							Analyst: MED
Calcium	40	1.0		mg/L	1	12/14/2016 9:47:40 AM	A39376
Magnesium	7.3	1.0		mg/L	1	12/14/2016 10:46:06 AM	A39376

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1611B75

Date Reported: 12/23/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-001K

Client Sample ID: Rio Grande-North-112116
Collection Date: 11/21/2016 9:30:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.012	0.010		mg/L	1	12/2/2016 10:21:54 AM	28952

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1611B75

Date Reported: 12/23/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-002A

Client Sample ID: Rio Grande-South-112216
Collection Date: 11/22/2016 7:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: tnc
E. Coli	7270	10.00		CFU/100ml	10	11/23/2016 2:54:00 PM	28825

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1611B75

Date Reported: 12/23/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-002B

Client Sample ID: Rio Grande-South-112216
Collection Date: 11/22/2016 7:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: SMS
Biochemical Oxygen Demand	3.0	2.0		mg/L	1	11/27/2016 11:09:00 AM	28809

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
 Project: CMC
 Lab ID: 1611B75-002D

Client Sample ID: Rio Grande-South-112216
 Collection Date: 11/22/2016 7:00:00 AM
 Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	11/22/2016 9:39:42 PM	R38938
Nitrogen, Nitrate (As N)	0.68	0.50		mg/L	5	11/22/2016 9:39:42 PM	R38938
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	248	40.0	D	mg/L	1	11/29/2016 7:42:00 PM	28867
SM 4500 NH3: AMMONIA							Analyst: CJS
Nitrogen, Ammonia	ND	1.0		mg/L	1	12/9/2016 2:11:00 PM	R39298
TOTAL NITROGEN							Analyst: SRM
Nitrogen, Total	2.9	1.0		mg/L	1	12/15/2016 4:55:00 PM	R39426
SM4500-H+B: PH							Analyst: JRR
pH	8.09	1.68	H	pH units	1	11/22/2016 4:37:41 PM	R38947
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.55	0.010		mg/L	1	12/2/2016 10:23:24 AM	28952
SM 4500 NORG C: TKN							Analyst: CJS
Nitrogen, Kjeldahl, Total	2.2	2.0	D	mg/L	1	12/13/2016 11:26:00 AM	29132
SM 2540D: TSS							Analyst: KS
Suspended Solids	340	4.0		mg/L	1	11/28/2016 4:20:00 PM	28852

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: **1611B75**

Date Reported: **12/23/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-002E

Client Sample ID: Rio Grande-South-112216
Collection Date: 11/22/2016 7:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664A							Analyst: tnc
N-Hexane Extractable Material	ND	10.2		mg/L	1	11/28/2016 9:14:00 AM	28858

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-002F

Client Sample ID: Rio Grande-South-112216
Collection Date: 11/22/2016 7:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Copper	ND	0.0010		mg/L	1	12/2/2016 3:59:45 PM	B39114
Lead	ND	0.00050		mg/L	1	12/2/2016 3:59:45 PM	B39114
Uranium	0.0020	0.00050		mg/L	1	12/2/2016 3:59:45 PM	B39114
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO3)	130	6.6		mg/L	1	12/14/2016	R39376
EPA METHOD 200.7: DISSOLVED METALS							Analyst: MED
Calcium	41	1.0		mg/L	1	12/14/2016 9:51:34 AM	A39376
Magnesium	7.3	1.0		mg/L	1	12/14/2016 10:48:04 AM	A39376

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1611B75

Date Reported: 12/23/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1611B75-002L

Client Sample ID: Rio Grande-South-112216
Collection Date: 11/22/2016 7:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.30	0.010		mg/L	1	12/2/2016 10:29:24 AM	28952
Dissolved Phosphorous							

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 161123012
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1611B75
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 161123012-001 **Sampling Date** 11/22/2016 **Date/Time Received** 11/23/2016 10:45 AM
Client Sample ID 1611B75-001C / RIO GRANDE-NORTH-112116 **Sampling Time** 9:30 AM
Matrix Water
Comments

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	0.5	12/2/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
161123012-001	1,2-Dichlorobenzene-d4	EPA 8260C	97.6	70-130
	4-Bromofluorobenzene	EPA 8260C	97.2	70-130
	Toluene-d8	EPA 8260C	98.4	70-130

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 161123012
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1611B75
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 161123012-004 **Sampling Date** 11/22/2016 **Date/Time Received** 11/23/2016 10:45 AM
Client Sample ID 1611B75-002C / RIO GRANDE-SOUTH-112216 **Sampling Time** 7:00 AM
Matrix Water
Comments

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	0.5	12/2/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
161123012-004	1,2-Dichlorobenzene-d4	EPA 8260C	98.0	70-130
	4-Bromofluorobenzene	EPA 8260C	97.6	70-130
	Toluene-d8	EPA 8260C	97.2	70-130

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 161123012
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1611B75
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

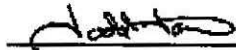
Sample Number 161123012-007 **Sampling Date** 11/22/2016 **Date/Time Received** 11/23/2016 10:45 AM
Client Sample ID 1611B75-003A / TRIP BLANK **Sampling Time**
Matrix Water
Comments

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	0.5	12/2/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
161123012-007	1,2-Dichlorobenzene-d4	EPA 8260C	96.8	70-130
	4-Bromofluorobenzene	EPA 8260C	97.2	70-130
	Toluene-d8	EPA 8260C	100.4	70-130

Authorized Signature



Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0085; FL(NELAP): E871089

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 161123012
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1611B75
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Tetrahydrofuran	8.12	ug/L	10	81.2	70-130	12/2/2016	12/2/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Tetrahydrofuran	ND	ug/L	0.5	12/2/2016	12/2/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 161123012
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1611B75
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 161123012-002 **Sampling Date** 11/22/2016 **Date/Time Received** 11/23/2016 10:45 AM
Client Sample ID 1611B75-001G / RIO GRANDE-NORTH-112116 **Extraction Date** 11/29/2016
Matrix Water **Sampling Time** 9:30 AM
Comments

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Dieldrin	ND	ug/L	0.003	0.01	12/6/2016	MAH	EPA 608	
Benzdine	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.2	0.5	11/29/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	

Surrogate Data

Sample Number 161123012-002

Surrogate Standard	Method	Percent Recovery	Control Limits
DCB	EPA 608	72.4	30-130
2,4,6-Tribromophenol	EPA 625	70.0	53-122
2-Fluorobiphenyl	EPA 625	58.4	12-116
2-Fluorophenol	EPA 625	43.0	10-139
Nitrobenzene-d5	EPA 625	62.4	49-118
Phenol-d5	EPA 625	49.6	28-154
Terphenyl-d14	EPA 625	62.0	20-137

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 161123012
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1611B75
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

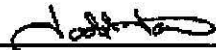
Sample Number 161123012-005 **Sampling Date** 11/22/2016 **Date/Time Received** 11/23/2016 10:45 AM
Client Sample ID 1611B75-002G / RIO GRANDE-SOUTH-112216 **Extraction Date** 11/29/2016
Matrix Water **Sampling Time** 7:00 AM
Comments

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Dieldrin	ND	ug/L	0.003	0.01	12/6/2016	MAH	EPA 608	
Benzidine	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.2	0.5	11/29/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.1	0.5	11/29/2016	HSW	EPA 625	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
161123012-005	DCB	EPA 608	75.2	30-130
	2,4,6-Tribromophenol	EPA 625	115.8	53-122
	2-Fluorobiphenyl	EPA 625	101.2	12-116
	2-Fluorophenol	EPA 625	88.0	10-139
	Nitrobenzene-d5	EPA 625	102.0	49-118
	Phenol-d5	EPA 625	103.6	28-154
	Terphenyl-d14	EPA 625	91.6	20-137

Authorized Signature



Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT: CERT0028; NM: ID00013; NV: ID00013; OR: ID200001-002; WA: C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA: C585; MT: Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
 504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 161123012
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1611B75
 ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dieldrin	0.458	ug/L	0.5	91.6	30-130	11/29/2016	12/5/2016
Pentachlorophenol	6.25	ug/L	5	125.0	22-138	11/28/2016	11/30/2016
bis(2-Ethylhexyl)phthalate	5.14	ug/L	5	102.8	43-148	11/28/2016	11/30/2016

Lab Control Sample Duplicate

Parameter	LCS Result	Units	LCS Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	5.88	ug/L	5	117.6	6.1	0-47	11/28/2016	11/30/2016
bis(2-Ethylhexyl)phthalate	5.51	ug/L	5	110.2	6.9	0-50	11/28/2016	11/30/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
161123012-002	Pentachlorophenol	ND	6.27	ug/L	5	125.4	22-138	11/28/2016	11/30/2016
161123012-002	bis(2-Ethylhexyl)phthalate	ND	4.00	ug/L	5	80.0	43-142	11/28/2016	11/30/2016
161123012-005	Dieldrin	ND	0.505	ug/L	0.5	101.0	30-150	11/29/2016	12/5/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dieldrin	0.508	ug/L	0.5	101.6	0.6	0-30	11/29/2016	12/5/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Benzidine	ND	ug/L	0.5	11/28/2016	11/30/2016
Benzo[a]anthracene	ND	ug/L	0.5	11/28/2016	11/30/2016
Benzo[a]pyrene	ND	ug/L	0.5	11/28/2016	11/30/2016
Benzo[b]fluoranthene	ND	ug/L	0.5	11/28/2016	11/30/2016
Benzo[k]fluoranthene	ND	ug/L	0.5	11/28/2016	11/30/2016
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	11/28/2016	11/30/2016
Chrysene	ND	ug/L	0.5	11/28/2016	11/30/2016
Dibenz[a,h]anthracene	ND	ug/L	0.5	11/28/2016	11/30/2016
Dibenzofuran	ND	ug/L	0.5	11/28/2016	11/30/2016

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595
 Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cer00095; FL(NELAP): E871099

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 161123012
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1611B75
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Dieldrin	ND	ug/L	0.01	11/29/2016	12/5/2016
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	11/28/2016	11/30/2016
Pentachlorophenol	ND	ug/L	0.5	11/28/2016	11/30/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 161123012
Project Name: 1611B75

Analytical Results Report

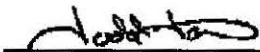
Sample Number 161123012-003 **Sampling Date** 11/22/2016 **Date/Time Received** 11/23/2016 10:45 AM
Client Sample ID 1611B75-0011 / RIO GRANDE-NORTH-112116 **Sampling Time** 9:30 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	16.4	mg/L	5	12/7/2016 1:00:00 PM	JDB	EPA 410.4	

Sample Number 161123012-006 **Sampling Date** 11/22/2016 **Date/Time Received** 11/23/2016 10:45 AM
Client Sample ID 1611B75-0021 / RIO GRANDE-SOUTH-112216 **Sampling Time** 7:00 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	23.1	mg/L	5	12/7/2016 1:00:00 PM	JDB	EPA 410.4	

Authorized Signature



Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 161123012
Project Name: 1611B75

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
COD	102	mg/L	100	102.0	90-110	12/7/2016	12/7/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
161202010-002	COD	<5	109	mg/L	100	109.0	80-120	12/7/2016	12/7/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
COD	104	mg/L	100	104.0	4.7	0-20	12/7/2016	12/7/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
COD	<5	mg/L	5	12/7/2016	12/7/2016

Duplicate

Sample Number	Parameter	Sample Result	Duplicate Result	Units	%RPD	AR %RPD	Prep Date	Analysis Date
161202010-004	COD	15.9	18.0	mg/L	12.4	0-20	12/7/2016	12/7/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C585
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099



Collected date/time: 11/21/16 09:30

L874519

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	11/26/2016 09:41	WG929321

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Incorrectly labeled - 02 is for Rio Grande South

1611B75-002H RIO GRANDE-NORTH-112116

SAMPLE RESULTS - 02

ONE LAB. NATIONWIDE.



Collected date/time: 11/21/16 07:00

L874519

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	11/26/2016 09:52	WG929321

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

WG929321

Wet Chemistry by Method 3500Cr C-2011

QUALITY CONTROL SUMMARY

L874519-01,02

ONE LAB. NATIONWIDE.



Method Blank (MB)

(MB) R3180621-1 11/26/16 07:41

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hexavalent Chromium	U		0.000150	0.000500

L874168-02 Original Sample (OS) • Duplicate (DUP)

(OS) L874168-02 11/26/16 08:24 • (DUP) R3180621-4 11/26/16 08:35

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	ND	ND	1	0.000		20

L874355-01 Original Sample (OS) • Duplicate (DUP)

(OS) L874355-01 11/26/16 10:41 • (DUP) R3180621-7 11/26/16 10:49

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3180621-2 11/26/16 07:49 • (LCSD) R3180621-3 11/26/16 07:57

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.00200	0.00205	0.00205	102	103	90.0-110			0.000	20

L874357-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L874357-01 11/26/16 08:43 • (MS) R3180621-5 11/26/16 08:51 • (MSD) R3180621-6 11/26/16 09:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.0500	ND	0.0521	0.0505	104	101	1	90.0-110			3.00	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gt

8 Al

9 Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L874519

DATE/TIME:

11/29/16 14:51

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1611B75
Pace Project No.: 30203584

Sample: 1611B75-001J Rio Grande- Lab ID: 30203584001 Collected: 11/21/16 09:30 Received: 11/23/16 11:00 Matrix: Water
North-

PWS: Site ID: Sample Type:

Comments: • The sampler's name and signature were not listed on the COC.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	3.11 ± 0.884 (0.826) C:NA T:NA	pCi/L	12/07/16 20:06	12587-46-1	

Sample: 1611B75-002J Rio Grande- Lab ID: 30203584002 Collected: 11/22/16 07:00 Received: 11/23/16 11:00 Matrix: Water
South-

PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	7.26 ± 1.94 (1.74) C:NA T:NA	pCi/L	12/07/16 20:06	12587-46-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1611B75
Pace Project No.: 30203584

QC Batch: 242010	Analysis Method: EPA 900.0
QC Batch Method: EPA 900.0	Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 30203584001, 30203584002	

METHOD BLANK: 1189267	Matrix: Water
Associated Lab Samples: 30203584001, 30203584002	

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	-0.349 ± 0.368 (1.13) C:NA T:NA	pCi/L	12/07/16 19:54	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1611B75
Pace Project No.: 30203584

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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December 21, 2016

Mr. Andy Freeman
Hall Environmental
4901 Hawkins NE
Suite D
Albuquerque, New Mexico 87109

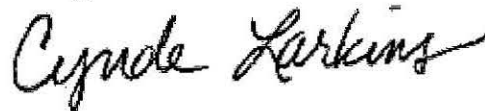
Re: 1668A Water
Work Order: 10146
SDG: 1611B75

Dear Mr. Freeman:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 29, 2016 and November 30, 2016. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,



Cynde Larkins
Project Manager

Enclosures



CHAIN OF CUSTODY RECORD 1 1

Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87109
 TEL: 505-345-3975
 FAX: 505-345-4107
 Website: www.hallenvironmental.com

SUB CONTRACTOR: Cape Fear Analytical		COMPANY: Cape Fear Analytical		PHONE: (910) 795-0421		FAX:	
ADDRESS: 3306 Kitty Hawk Rd Ste 120				ACCOUNT #:		EMAIL:	
CITY, STATE, ZIP: Wilmington, NC 28405							
ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	1611B75-001L	Rio Grande-North-112116	1L Amber	Aqueous	11/21/2016 9:30:00 AM	1	PCB Congeners
2	1611B75-002M	Rio Grande-South-112216	1L Amber	Aqueous	11/22/2016 7:00:00 AM	1	PCB Congeners broken in transi

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports. Please e-mail results to lab@hallenvironmental.com. Please return all coolers and blue ice. Thank you.

CFA WO #10146

Relinquished By:	Date: 11/22/2016	Time: 10:11 AM	Received By:	Date: 11/22/2016	Time: 10:25	REPORT TRANSMITTAL DESIRED: <input type="checkbox"/> HARDCOPY (extra cost) <input type="checkbox"/> FAX <input type="checkbox"/> EMAIL <input type="checkbox"/> ONLINE FOR LAB USE ONLY Temp of samples <u>3.0</u> °C Attempt to Cool? _____ Comments: _____
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	
TAT: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> RUSH Next BD <input type="checkbox"/> 2nd BD <input type="checkbox"/> 3rd BD <input type="checkbox"/>						

1 of 2 broken

SAMPLE RECEIPT CHECKLIST
Cape Fear Analytical

Client: HALL	Work Order: 10146
Shipping Company: Fed Ex	Date/Time Received: 29 Nov 2016 10:25

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Samples identified as Foreign Soil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Samples < 2x background?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Air Witness: _____

#	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
3	Samples requiring cold preservation within 0-6°C?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preservation Method: ice bags <input checked="" type="checkbox"/> blue ice <input type="checkbox"/> dry ice <input type="checkbox"/> none other (describe) 3.0°C
4	Aqueous samples found to have visible solids?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample IDs, containers affected: < 1% solids
5	Samples requiring chemical preservation at proper pH?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample IDs, containers affected and pH observed: pH=7 If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	List type and number of containers / Sample IDs, containers affected: sample -002M broken in transit I-1L WMA for -001L
11	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Comments:

Checklist performed by: Initials: **MJD** Date: **29 Nov 2016**

SAMPLE RECEIPT CHECKLIST
Cape Fear Analytical

Client: HALL	Work Order: 10146
Shipping Company: Fed Ex	Date/Time Received: 30 Nov 2016 10:45

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			—
Samples identified as Foreign Soil?			—

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?			—
Samples < 2x background?			—

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			—

Air Witness: _____

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	—			Circle Applicable: seals broken damaged container leaking container other(describe)
2 Chain of Custody documents included with shipment?	—		✓	No COC sent with replacement sample. Original COC was used for verification.
3 Samples requiring cold preservation within 0-6°C?	—			Preservation method: ice bags blue ice dry ice none other (describe) 4.2 + 0.1 = 4.3 °C
4 Aqueous samples found to have visible solids?	—			Sample IDs, containers affected: 41A
5 Samples requiring chemical preservation at proper pH?		—		Sample IDs, containers affected and pH observed: pH = 7 If preservative added, Lot#:
6 Samples requiring preservation have no residual chlorine?	—			Sample IDs, containers affected: If preservative added, Lot#:
7 Samples received within holding time?	—			Sample IDs, tests affected:
8 Sample IDs on COC match IDs on containers?	—			Sample IDs, containers affected:
9 Date & time of COC match date & time on containers?	—			Sample IDs, containers affected:
10 Number of containers received match number indicated on COC?	—			List type and number of containers / Sample IDs, containers affected: 1-1L WMA
11 COC form is properly signed in relinquished/received sections?	—			

Comments:

* Replacement Sample for broken original received 29 Nov 16.

Checklist performed by: Initials: MJD Date: 30 Nov 2016

CF-UD-F-7

Anne Thorne

From: Cynde Larkins <cynde.larkins@cfanalytical.com>
Sent: Tuesday, November 29, 2016 1:30 PM
To: Anne Thorne
Cc: Melissa O'Dorisio
Subject: 1611B75

Anne,

One of the sample containers we received today at CFA was broken in transit: 1611B75-002M Rio Grande-South-112216. Do you have a replacement sample you could send us?

Thanks,

WO# 10146

--
Cynde Larkins
Project Manager
Cape Fear Analytical, LLC
3306 Kitty Hawk Road Suite 120
Wilmington, NC 28405
(910) 795-0421

Cape Fear Analytical will be closed for Christmas on Monday, December 26, 2016 and New Year's on Monday, January 2, 2017. For sample receiving hours during the holidays please contact the lab.

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PCB Congeners Analysis

Case Narrative

**PCBC Case Narrative
Hall Environmental Analysis Laboratory (HALL)
SDG 1611B75
Work Order 10146**

Method/Analysis Information

Product: PCB Congeners by EPA Method 1668A in Liquids
Analytical Method: EPA Method 1668A
Extraction Method: SW846 3520C
Analytical Batch Number: 33561
Clean Up Batch Number: 33560
Extraction Batch Number: 33559

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
10146001	1611B75-001L Rio Grande-North-112116
10146002	1611B75-002L Rio Grande-South-112116
12017564	Method Blank (MB)
12017565	Laboratory Control Sample (LCS)
12017566	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement

The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries

All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery

The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement

The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation

A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation

A NCR was not required for this SDG.

Manual Integrations

Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration

This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Certificate of Analysis Report for

HALL001 Hall Environmental Analysis Laboratory

Client SDG: 1611B75 CFA Work Order: 10146

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- B The target analyte was detected in the associated blank.
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: 

Name: Heather Patterson

Date: 21 DEC 2016

Title: Group Leader

PCB Congeners
Certificate of Analysis
Sample Summary

Page 1 of 8

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146001	Date Collected: 11/21/2016 09:30	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/29/2016 10:25	
Client ID: 1611B75-001L Rio Grande-North-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 17:07	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-8		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 917 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	7.37	21.8
2051-61-8	2-MoCB	U	ND	pg/L	7.26	21.8
2051-62-9	3-MoCB	U	ND	pg/L	7.26	21.8
13029-08-8	4-DiCB	U	ND	pg/L	7.33	21.8
16605-91-7	5-DiCB	U	ND	pg/L	8.38	21.8
25569-80-6	6-DiCB	U	ND	pg/L	7.90	21.8
33284-50-3	7-DiCB	U	ND	pg/L	7.26	21.8
34883-43-7	8-DiCB	U	ND	pg/L	7.74	21.8
34883-39-1	9-DiCB	U	ND	pg/L	7.26	21.8
33146-45-1	10-DiCB	U	ND	pg/L	7.26	21.8
2050-67-1	11-DiCB	J	41.8	pg/L	12.5	109
2974-92-7	12-DiCB	CU	ND	pg/L	14.5	43.6
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	7.26	21.8
2050-68-2	15-DiCB	J	12.0	pg/L	7.26	21.8
38444-78-9	16-TrCB	U	ND	pg/L	8.79	21.8
37680-66-3	17-TrCB	U	ND	pg/L	7.26	21.8
37680-65-2	18-TrCB	CU	ND	pg/L	14.5	43.6
38444-73-4	19-TrCB	U	ND	pg/L	7.26	21.8
38444-84-7	20-TrCB	CU	ND	pg/L	14.5	43.6
55702-46-0	21-TrCB	CU	ND	pg/L	14.5	43.6
38444-85-8	22-TrCB	U	ND	pg/L	7.26	21.8
55720-44-0	23-TrCB	U	ND	pg/L	7.26	21.8
55702-45-9	24-TrCB	U	ND	pg/L	7.26	21.8
55712-37-3	25-TrCB	U	ND	pg/L	7.26	21.8
38444-81-4	26-TrCB	CU	ND	pg/L	14.5	43.6
38444-76-7	27-TrCB	U	ND	pg/L	7.26	21.8
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	7.26	21.8
38444-77-8	32-TrCB	U	ND	pg/L	7.26	21.8

Comments:

- B** The target analyte was detected in the associated blank.
- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146001	Date Collected: 11/21/2016 09:30	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/29/2016 10:25	
Client ID: 1611B75-001L Rio Grande-North-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 17:07	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-8		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 917 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	7.26	21.8
37680-69-6	35-TrCB	U	ND	pg/L	7.26	21.8
38444-87-0	36-TrCB	U	ND	pg/L	7.26	21.8
38444-90-5	37-TrCB	U	ND	pg/L	7.26	21.8
53555-66-1	38-TrCB	U	ND	pg/L	7.26	21.8
38444-88-1	39-TrCB	U	ND	pg/L	7.26	21.8
38444-93-8	40-TeCB	CU	ND	pg/L	14.5	43.6
52663-59-9	41-TeCB	U	ND	pg/L	7.26	21.8
36559-22-5	42-TeCB	U	ND	pg/L	7.26	21.8
70362-46-8	43-TeCB	U	ND	pg/L	7.26	21.8
41464-39-5	44-TeCB	CU	ND	pg/L	21.8	65.4
70362-45-7	45-TeCB	CU	ND	pg/L	14.5	43.6
41464-47-5	46-TeCB	U	ND	pg/L	7.26	21.8
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	7.26	21.8
41464-40-8	49-TeCB	CU	ND	pg/L	14.5	43.6
62796-65-0	50-TeCB	CU	ND	pg/L	14.5	43.6
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	7.33	pg/L	7.26	21.8
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	7.26	21.8
74338-24-2	55-TeCB	U	ND	pg/L	7.26	21.8
41464-43-1	56-TeCB	U	ND	pg/L	7.26	21.8
70424-67-8	57-TeCB	U	ND	pg/L	7.26	21.8
41464-49-7	58-TeCB	U	ND	pg/L	7.26	21.8
74472-33-6	59-TeCB	CU	ND	pg/L	21.8	65.4
33025-41-1	60-TeCB	U	ND	pg/L	7.26	21.8
33284-53-6	61-TeCB	CU	ND	pg/L	29.0	87.2
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	7.26	21.8
52663-58-8	64-TeCB	U	ND	pg/L	7.26	21.8

Comments:

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146001	Date Collected: 11/21/2016 09:30	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/29/2016 10:25	
Client ID: 1611B75-001L Rio Grande-North-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 17:07	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-8		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 917 mL	

CAS No.	Parname	Qual	Result	Units	MDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	U	ND	pg/L	7.26	21.8
73575-53-8	67-TeCB	U	ND	pg/L	7.26	21.8
73575-52-7	68-TeCB	U	ND	pg/L	7.26	21.8
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	7.26	21.8
74338-23-1	73-TeCB	U	ND	pg/L	7.26	21.8
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	7.26	21.8
70362-49-1	78-TeCB	U	ND	pg/L	7.26	21.8
41464-48-6	79-TeCB	U	ND	pg/L	7.26	21.8
33284-52-5	80-TeCB	U	ND	pg/L	7.26	21.8
70362-50-4	81-TeCB	U	ND	pg/L	7.26	21.8
52663-62-4	82-PeCB	U	ND	pg/L	7.26	21.8
60145-20-2	83-PeCB	U	ND	pg/L	7.26	21.8
52663-60-2	84-PeCB	U	ND	pg/L	7.26	21.8
65510-45-4	85-PeCB	CU	ND	pg/L	21.8	65.4
55312-69-1	86-PeCB	CU	ND	pg/L	43.6	131
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	14.5	43.6
73575-57-2	89-PeCB	U	ND	pg/L	7.26	21.8
68194-07-0	90-PeCB	CU	ND	pg/L	21.8	65.4
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	7.26	21.8
73575-56-1	93-PeCB	CU	ND	pg/L	14.5	43.6
73575-55-0	94-PeCB	U	ND	pg/L	7.26	21.8
38379-99-6	95-PeCB	U	ND	pg/L	7.26	21.8
73575-54-9	96-PeCB	U	ND	pg/L	7.26	21.8

Comments:

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146001	Date Collected: 11/21/2016 09:30	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/29/2016 10:25	
Client ID: 1611B75-001L Rio Grande-North-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 17:07	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-8		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 917 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	14.5	43.6
38380-01-7	99-PeCB	U	ND	pg/L	7.26	21.8
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	7.26	21.8
56558-16-8	104-PeCB	U	ND	pg/L	7.26	21.8
32598-14-4	105-PeCB	U	ND	pg/L	7.26	21.8
70424-69-0	106-PeCB	U	ND	pg/L	7.26	21.8
70424-68-9	107-PeCB	U	ND	pg/L	7.26	21.8
70362-41-3	108-PeCB	CU	ND	pg/L	14.5	43.6
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CU	ND	pg/L	14.5	43.6
39635-32-0	111-PeCB	U	ND	pg/L	7.26	21.8
74472-36-9	112-PeCB	U	ND	pg/L	7.26	21.8
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	7.26	21.8
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	U	ND	pg/L	7.26	21.8
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	7.26	21.8
56558-18-0	121-PeCB	U	ND	pg/L	7.26	21.8
76842-07-4	122-PeCB	U	ND	pg/L	7.26	21.8
65510-44-3	123-PeCB	U	ND	pg/L	7.26	21.8
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	7.26	21.8
39635-33-1	127-PeCB	U	ND	pg/L	7.26	21.8
38380-07-3	128-HxCB	CU	ND	pg/L	14.5	43.6

Comments:

- B** The target analyte was detected in the associated blank.
- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146001	Date Collected: 11/21/2016 09:30	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/29/2016 10:25	
Client ID: 1611B75-001L Rio Grande-North-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 17:07	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-8		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 917 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
55215-18-4	129-HxCB	CU	ND	pg/L	21.8	65.4
52663-66-8	130-HxCB	U	ND	pg/L	7.26	21.8
61798-70-7	131-HxCB	U	ND	pg/L	7.26	21.8
38380-05-1	132-HxCB	U	ND	pg/L	13.9	21.8
35694-04-3	133-HxCB	U	ND	pg/L	7.26	21.8
52704-70-8	134-HxCB	U	ND	pg/L	7.33	21.8
52744-13-5	135-HxCB	CU	ND	pg/L	14.5	43.6
38411-22-2	136-HxCB	U	ND	pg/L	7.26	21.8
35694-06-5	137-HxCB	U	ND	pg/L	7.26	21.8
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	14.5	43.6
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	7.26	21.8
41411-61-4	142-HxCB	U	ND	pg/L	7.26	21.8
68194-15-0	143-HxCB	U	ND	pg/L	7.26	21.8
68194-14-9	144-HxCB	U	ND	pg/L	7.26	21.8
74472-40-5	145-HxCB	U	ND	pg/L	7.26	21.8
51908-16-8	146-HxCB	U	ND	pg/L	7.26	21.8
68194-13-8	147-HxCB	CU	ND	pg/L	14.5	43.6
74472-41-6	148-HxCB	U	ND	pg/L	7.26	21.8
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	7.26	21.8
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	7.26	21.8
35065-27-1	153-HxCB	CU	ND	pg/L	14.5	43.6
60145-22-4	154-HxCB	U	ND	pg/L	7.26	21.8
33979-03-2	155-HxCB	U	ND	pg/L	7.26	21.8
38380-08-4	156-HxCB	CU	ND	pg/L	14.5	43.6
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	7.26	21.8
39635-35-3	159-HxCB	U	ND	pg/L	7.26	21.8
41411-62-5	160-HxCB	U	ND	pg/L	7.26	21.8

Comments:

- B** The target analyte was detected in the associated blank.
- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146001	Date Collected: 11/21/2016 09:30	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/29/2016 10:25	
Client ID: 1611B75-001L Rio Grande-North-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 17:07	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-8		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 917 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	7.26	21.8
39635-34-2	162-HxCB	U	ND	pg/L	7.26	21.8
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	7.26	21.8
74472-46-1	165-HxCB	U	ND	pg/L	7.26	21.8
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	7.26	21.8
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	7.26	21.8
35065-30-6	170-HpCB	U	ND	pg/L	7.26	21.8
52663-71-5	171-HpCB	CU	ND	pg/L	14.5	43.6
52663-74-8	172-HpCB	U	ND	pg/L	7.26	21.8
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	7.26	21.8
40186-70-7	175-HpCB	U	ND	pg/L	7.26	21.8
52663-65-7	176-HpCB	U	ND	pg/L	7.26	21.8
52663-70-4	177-HpCB	U	ND	pg/L	7.26	21.8
52663-67-9	178-HpCB	U	ND	pg/L	7.26	21.8
52663-64-6	179-HpCB	U	ND	pg/L	7.26	21.8
35065-29-3	180-HpCB	CU	ND	pg/L	14.5	43.6
74472-47-2	181-HpCB	U	ND	pg/L	7.26	21.8
60145-23-5	182-HpCB	U	ND	pg/L	7.26	21.8
52663-69-1	183-HpCB	CU	ND	pg/L	14.5	43.6
74472-48-3	184-HpCB	U	ND	pg/L	7.26	21.8
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	7.26	21.8
52663-68-0	187-HpCB	U	ND	pg/L	7.26	21.8
74487-85-7	188-HpCB	U	ND	pg/L	7.26	21.8
39635-31-9	189-HpCB	U	ND	pg/L	7.26	21.8
41411-64-7	190-HpCB	U	ND	pg/L	7.26	21.8
74472-50-7	191-HpCB	U	ND	pg/L	7.26	21.8
74472-51-8	192-HpCB	U	ND	pg/L	7.26	21.8

Comments:

- B** The target analyte was detected in the associated blank.
- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146001	Date Collected: 11/21/2016 09:30	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/29/2016 10:25	
Client ID: 1611B75-001L Rio Grande-North-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 17:07	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-8		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 917 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
69782-91-8	193-HpCB		C180			
35694-08-7	194-OcCB	U	ND	pg/L	7.26	21.8
52663-78-2	195-OcCB	U	ND	pg/L	7.26	21.8
42740-50-1	196-OcCB	U	ND	pg/L	7.26	21.8
33091-17-7	197-OcCB	CU	ND	pg/L	14.5	43.6
68194-17-2	198-OcCB	CU	ND	pg/L	14.5	43.6
52663-75-9	199-OcCB		C198			
52663-73-7	200-OcCB		C197			
40186-71-8	201-OcCB	U	ND	pg/L	7.26	21.8
2136-99-4	202-OcCB	U	ND	pg/L	7.26	21.8
52663-76-0	203-OcCB	U	ND	pg/L	7.26	21.8
74472-52-9	204-OcCB	U	ND	pg/L	7.26	21.8
74472-53-0	205-OcCB	U	ND	pg/L	7.26	21.8
40186-72-9	206-NoCB	U	ND	pg/L	7.26	21.8
52663-79-3	207-NoCB	U	ND	pg/L	7.26	21.8
52663-77-1	208-NoCB	U	ND	pg/L	7.26	21.8
2051-24-3	209-DeCB	U	ND	pg/L	7.26	21.8
1336-36-3	Total PCB Congeners	B	61.1	pg/L	7.26	21.8

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		952	2180	pg/L	43.6	(15%-150%)
13C-3-MoCB		1120	2180	pg/L	51.5	(15%-150%)
13C-4-DiCB		1090	2180	pg/L	49.9	(25%-150%)
13C-15-DiCB		2100	2180	pg/L	96.5	(25%-150%)
13C-19-TrCB		1520	2180	pg/L	69.9	(25%-150%)
13C-37-TrCB		1750	2180	pg/L	80.1	(25%-150%)
13C-54-TeCB		1360	2180	pg/L	62.5	(25%-150%)
13C-77-TeCB		2010	2180	pg/L	92.0	(25%-150%)
13C-81-TeCB		2020	2180	pg/L	92.8	(25%-150%)
13C-104-PeCB		1530	2180	pg/L	70.2	(25%-150%)
13C-105-PeCB		1820	2180	pg/L	83.4	(25%-150%)
13C-114-PeCB		1800	2180	pg/L	82.3	(25%-150%)
13C-118-PeCB		1870	2180	pg/L	85.8	(25%-150%)
13C-123-PeCB		1910	2180	pg/L	87.6	(25%-150%)
13C-126-PeCB		1780	2180	pg/L	81.7	(25%-150%)
13C-155-HxCB		1620	2180	pg/L	74.4	(25%-150%)
13C-156-HxCB	C	3230	4360	pg/L	74.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1700	2180	pg/L	78.1	(25%-150%)
13C-169-HxCB		1570	2180	pg/L	71.9	(25%-150%)
13C-188-HpCB		2050	2180	pg/L	93.8	(25%-150%)
13C-189-HpCB		1800	2180	pg/L	82.7	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146001	Date Collected: 11/21/2016 09:30	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/29/2016 10:25	
Client ID: 1611B75-001L Rio Grande-North-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 17:07	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-8		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 917 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-202-OcCB			2110	2180	pg/L	96.9 (25%-150%)
13C-205-OcCB			1980	2180	pg/L	90.8 (25%-150%)
13C-206-NoCB			1950	2180	pg/L	89.2 (25%-150%)
13C-208-NoCB			1990	2180	pg/L	91.2 (25%-150%)
13C-209-DeCB			2160	2180	pg/L	99.1 (25%-150%)
13C-28-TrCB			1540	2180	pg/L	70.7 (30%-135%)
13C-111-PeCB			1910	2180	pg/L	87.4 (30%-135%)
13C-178-HpCB			2050	2180	pg/L	94.0 (30%-135%)

Comments:

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- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146002	Date Collected: 11/22/2016 07:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/30/2016 10:45	
Client ID: 1611B75-002L Rio Grande-South-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 18:13	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-9		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 903.4 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	7.48	22.1
2051-61-8	2-MoCB	U	ND	pg/L	7.37	22.1
2051-62-9	3-MoCB	U	ND	pg/L	7.37	22.1
13029-08-8	4-DiCB	U	ND	pg/L	7.44	22.1
16605-91-7	5-DiCB	U	ND	pg/L	8.50	22.1
25569-80-6	6-DiCB	U	ND	pg/L	8.01	22.1
33284-50-3	7-DiCB	U	ND	pg/L	7.37	22.1
34883-43-7	8-DiCB	U	ND	pg/L	7.86	22.1
34883-39-1	9-DiCB	U	ND	pg/L	7.37	22.1
33146-45-1	10-DiCB	U	ND	pg/L	7.37	22.1
2050-67-1	11-DiCB	J	78.4	pg/L	12.7	111
2974-92-7	12-DiCB	CU	ND	pg/L	14.7	44.3
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	7.37	22.1
2050-68-2	15-DiCB	J	13.0	pg/L	7.37	22.1
38444-78-9	16-TrCB	U	ND	pg/L	8.92	22.1
37680-66-3	17-TrCB	U	ND	pg/L	7.37	22.1
37680-65-2	18-TrCB	CU	ND	pg/L	14.7	44.3
38444-73-4	19-TrCB	U	ND	pg/L	7.37	22.1
38444-84-7	20-TrCB	CJ	20.2	pg/L	14.7	44.3
55702-46-0	21-TrCB	CU	ND	pg/L	14.7	44.3
38444-85-8	22-TrCB	U	ND	pg/L	7.37	22.1
55720-44-0	23-TrCB	U	ND	pg/L	7.37	22.1
55702-45-9	24-TrCB	U	ND	pg/L	7.37	22.1
55712-37-3	25-TrCB	U	ND	pg/L	7.37	22.1
38444-81-4	26-TrCB	CU	ND	pg/L	14.7	44.3
38444-76-7	27-TrCB	U	ND	pg/L	7.37	22.1
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	J	13.4	pg/L	7.37	22.1
38444-77-8	32-TrCB	U	ND	pg/L	7.37	22.1

Comments:

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146002	Date Collected: 11/22/2016 07:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/30/2016 10:45	
Client ID: 1611B75-002L Rio Grande-South-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 18:13	Analyst: MJC	Instrument: HRP791
Data File: e16dec16a-9		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 903.4 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	7.37	22.1
37680-69-6	35-TrCB	U	ND	pg/L	7.37	22.1
38444-87-0	36-TrCB	U	ND	pg/L	7.37	22.1
38444-90-5	37-TrCB	J	9.05	pg/L	7.37	22.1
53555-66-1	38-TrCB	U	ND	pg/L	7.37	22.1
38444-88-1	39-TrCB	U	ND	pg/L	7.37	22.1
38444-93-8	40-TeCB	CU	ND	pg/L	14.7	44.3
52663-59-9	41-TeCB	U	ND	pg/L	7.37	22.1
36559-22-5	42-TeCB	U	ND	pg/L	7.37	22.1
70362-46-8	43-TeCB	U	ND	pg/L	7.37	22.1
41464-39-5	44-TeCB	CJ	27.1	pg/L	22.1	66.4
70362-45-7	45-TeCB	CU	ND	pg/L	14.7	44.3
41464-47-5	46-TeCB	U	ND	pg/L	7.37	22.1
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	7.37	22.1
41464-40-8	49-TeCB	CU	ND	pg/L	14.7	44.3
62796-65-0	50-TeCB	CU	ND	pg/L	14.7	44.3
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		37.5	pg/L	7.37	22.1
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	7.37	22.1
74338-24-2	55-TeCB	U	ND	pg/L	7.37	22.1
41464-43-1	56-TeCB	J	11.2	pg/L	7.37	22.1
70424-67-8	57-TeCB	U	ND	pg/L	7.37	22.1
41464-49-7	58-TeCB	U	ND	pg/L	7.37	22.1
74472-33-6	59-TeCB	CU	ND	pg/L	22.1	66.4
33025-41-1	60-TeCB	U	ND	pg/L	7.37	22.1
33284-53-6	61-TeCB	CJ	45.1	pg/L	29.4	88.6
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	7.37	22.1
52663-58-8	64-TeCB	J	9.32	pg/L	7.37	22.1

Comments:

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146002	Date Collected: 11/22/2016 07:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/30/2016 10:45	
Client ID: 1611B75-002L Rio Grande-South-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 18:13	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-9		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 903.4 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	17.4	pg/L	7.37	22.1
73575-53-8	67-TeCB	U	ND	pg/L	7.37	22.1
73575-52-7	68-TeCB	U	ND	pg/L	7.37	22.1
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	7.37	22.1
74338-23-1	73-TeCB	U	ND	pg/L	7.37	22.1
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	7.37	22.1
70362-49-1	78-TeCB	U	ND	pg/L	7.37	22.1
41464-48-6	79-TeCB	U	ND	pg/L	7.37	22.1
33284-52-5	80-TeCB	U	ND	pg/L	7.37	22.1
70362-50-4	81-TeCB	U	ND	pg/L	7.37	22.1
52663-62-4	82-PeCB	J	7.68	pg/L	7.37	22.1
60145-20-2	83-PeCB	U	ND	pg/L	7.37	22.1
52663-60-2	84-PeCB	J	14.1	pg/L	7.37	22.1
65510-45-4	85-PeCB	CU	ND	pg/L	22.1	66.4
55312-69-1	86-PeCB	CJ	46.6	pg/L	44.3	133
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	14.7	44.3
73575-57-2	89-PeCB	U	ND	pg/L	7.37	22.1
68194-07-0	90-PeCB	CJ	65.4	pg/L	22.1	66.4
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	11.8	pg/L	7.37	22.1
73575-56-1	93-PeCB	CU	ND	pg/L	14.7	44.3
73575-55-0	94-PeCB	U	ND	pg/L	7.37	22.1
38379-99-6	95-PeCB		43.8	pg/L	7.37	22.1
73575-54-9	96-PeCB	U	ND	pg/L	7.37	22.1

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146002	Date Collected: 11/22/2016 07:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/30/2016 10:45	
Client ID: 1611B75-002L Rio Grande-South-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 18:13	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-9		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 903.4 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	14.7	44.3
38380-01-7	99-PeCB		26.8	pg/L	7.37	22.1
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	7.37	22.1
56558-16-8	104-PeCB	U	ND	pg/L	7.37	22.1
32598-14-4	105-PeCB		33.8	pg/L	7.37	22.1
70424-69-0	106-PeCB	U	ND	pg/L	7.37	22.1
70424-68-9	107-PeCB	U	ND	pg/L	7.37	22.1
70362-41-3	108-PeCB	CU	ND	pg/L	14.7	44.3
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	92.3	pg/L	14.7	44.3
39635-32-0	111-PeCB	U	ND	pg/L	7.37	22.1
74472-36-9	112-PeCB	U	ND	pg/L	7.37	22.1
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	7.37	22.1
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		68.0	pg/L	7.37	22.1
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	7.37	22.1
56558-18-0	121-PeCB	U	ND	pg/L	7.37	22.1
76842-07-4	122-PeCB	U	ND	pg/L	7.37	22.1
65510-44-3	123-PeCB	U	ND	pg/L	7.37	22.1
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	7.37	22.1
39635-33-1	127-PeCB	U	ND	pg/L	7.37	22.1
38380-07-3	128-HxCB	CJ	19.9	pg/L	14.7	44.3

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75
 Lab Sample ID: 10146002
 Client Sample: 1668A Water
 Client ID: 1611B75-002L **Rio Grande-South-11**
 Batch ID: 33561
 Run Date: 12/16/2016 18:13
 Data File: c16dec16a-9
 Prep Batch: 33559
 Prep Date: 13-DEC-16

Client: HALL001
 Date Collected: 11/22/2016 07:00
 Date Received: 11/30/2016 10:45
 Method: EPA Method 1668A
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 903.4 mL

Project: HALL00114
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
55215-18-4	129-HxCB	C	160	pg/L	22.1	66.4
52663-66-8	130-HxCB	J	8.66	pg/L	7.37	22.1
61798-70-7	131-HxCB	U	ND	pg/L	7.37	22.1
38380-05-1	132-HxCB		43.1	pg/L	14.1	22.1
35694-04-3	133-HxCB	U	ND	pg/L	7.37	22.1
52704-70-8	134-HxCB	U	ND	pg/L	7.44	22.1
52744-13-5	135-HxCB	CJ	39.2	pg/L	14.7	44.3
38411-22-2	136-HxCB	J	12.4	pg/L	7.37	22.1
35694-06-5	137-HxCB	U	ND	pg/L	7.37	22.1
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	14.7	44.3
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		24.0	pg/L	7.37	22.1
41411-61-4	142-HxCB	U	ND	pg/L	7.37	22.1
68194-15-0	143-HxCB	U	ND	pg/L	7.37	22.1
68194-14-9	144-HxCB	U	ND	pg/L	7.37	22.1
74472-40-5	145-HxCB	U	ND	pg/L	7.37	22.1
51908-16-8	146-HxCB	J	17.0	pg/L	7.37	22.1
68194-13-8	147-HxCB	C	95.3	pg/L	14.7	44.3
74472-41-6	148-HxCB	U	ND	pg/L	7.37	22.1
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	7.37	22.1
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	7.37	22.1
35065-27-1	153-HxCB	C	116	pg/L	14.7	44.3
60145-22-4	154-HxCB	U	ND	pg/L	7.37	22.1
33979-03-2	155-HxCB	U	ND	pg/L	7.37	22.1
38380-08-4	156-HxCB	CJ	16.8	pg/L	14.7	44.3
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	14.4	pg/L	7.37	22.1
39635-35-3	159-HxCB	U	ND	pg/L	7.37	22.1
41411-62-5	160-HxCB	U	ND	pg/L	7.37	22.1

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146002	Date Collected: 11/22/2016 07:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/30/2016 10:45	
Client ID: 1611B75-002L Rio Grande-South-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	Instrument: HRP791
Run Date: 12/16/2016 18:13	Analyst: MJC	Dilution: 1
Data File: c16dec16a-9		Prep SOP Ref: CF-OA-E-001
Prep Batch: 33559	Prep Method: SW846 3520C	
Prep Date: 13-DEC-16	Prep Aliquot: 903.4 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	7.37	22.1
39635-34-2	162-HxCB	U	ND	pg/L	7.37	22.1
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	10.2	pg/L	7.37	22.1
74472-46-1	165-HxCB	U	ND	pg/L	7.37	22.1
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	7.37	22.1
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	7.37	22.1
35065-30-6	170-HpCB		44.1	pg/L	7.37	22.1
52663-71-5	171-HpCB	CU	ND	pg/L	14.7	44.3
52663-74-8	172-HpCB	J	8.55	pg/L	7.37	22.1
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		43.2	pg/L	7.37	22.1
40186-70-7	175-HpCB	U	ND	pg/L	7.37	22.1
52663-65-7	176-HpCB	U	ND	pg/L	7.37	22.1
52663-70-4	177-HpCB		26.6	pg/L	7.37	22.1
52663-67-9	178-HpCB	J	9.25	pg/L	7.37	22.1
52663-64-6	179-HpCB	J	15.5	pg/L	7.37	22.1
35065-29-3	180-HpCB	C	99.8	pg/L	14.7	44.3
74472-47-2	181-HpCB	U	ND	pg/L	7.37	22.1
60145-23-5	182-HpCB	U	ND	pg/L	7.37	22.1
52663-69-1	183-HpCB	CJ	29.5	pg/L	14.7	44.3
74472-48-3	184-HpCB	U	ND	pg/L	7.37	22.1
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	7.37	22.1
52663-68-0	187-HpCB		55.3	pg/L	7.37	22.1
74487-85-7	188-HpCB	U	ND	pg/L	7.37	22.1
39635-31-9	189-HpCB	U	ND	pg/L	7.37	22.1
41411-64-7	190-HpCB	J	8.55	pg/L	7.37	22.1
74472-50-7	191-HpCB	U	ND	pg/L	7.37	22.1
74472-51-8	192-HpCB	U	ND	pg/L	7.37	22.1

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146002	Date Collected: 11/22/2016 07:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/30/2016 10:45	
Client ID: 1611B75-002L Rio Grande-South-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 18:13	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-9		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 903.4 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	21.1	pg/L	7.37	22.1
52663-78-2	195-OcCB	J	8.15	pg/L	7.37	22.1
42740-50-1	196-OcCB	J	10.8	pg/L	7.37	22.1
33091-17-7	197-OcCB	CU	ND	pg/L	14.7	44.3
68194-17-2	198-OcCB	CJ	25.9	pg/L	14.7	44.3
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	7.37	22.1
2136-99-4	202-OcCB	U	ND	pg/L	7.37	22.1
52663-76-0	203-OcCB	J	17.3	pg/L	7.37	22.1
74472-52-9	204-OcCB	U	ND	pg/L	7.37	22.1
74472-53-0	205-OcCB	U	ND	pg/L	7.37	22.1
40186-72-9	206-NoCB	J	13.6	pg/L	7.37	22.1
52663-79-3	207-NoCB	U	ND	pg/L	7.37	22.1
52663-77-1	208-NoCB	U	ND	pg/L	7.37	22.1
2051-24-3	209-DeCB	J	12.2	pg/L	7.37	22.1
1336-36-3	Total PCB Congeners		1720	pg/L	7.37	22.1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1240	2210	pg/L	56.0	(15%-150%)
13C-3-MoCB		1410	2210	pg/L	63.6	(15%-150%)
13C-4-DiCB		1360	2210	pg/L	61.6	(25%-150%)
13C-15-DiCB		2580	2210	pg/L	117	(25%-150%)
13C-19-TrCB		1850	2210	pg/L	83.6	(25%-150%)
13C-37-TrCB		2010	2210	pg/L	90.9	(25%-150%)
13C-54-TeCB		1510	2210	pg/L	68.3	(25%-150%)
13C-77-TeCB		2290	2210	pg/L	103	(25%-150%)
13C-81-TeCB		2320	2210	pg/L	105	(25%-150%)
13C-104-PeCB		1680	2210	pg/L	75.7	(25%-150%)
13C-105-PeCB		2010	2210	pg/L	90.7	(25%-150%)
13C-114-PeCB		1980	2210	pg/L	89.3	(25%-150%)
13C-118-PeCB		2040	2210	pg/L	92.0	(25%-150%)
13C-123-PeCB		2060	2210	pg/L	93.0	(25%-150%)
13C-126-PeCB		2020	2210	pg/L	91.2	(25%-150%)
13C-155-HxCB		1780	2210	pg/L	80.3	(25%-150%)
13C-156-HxCB	C	3640	4430	pg/L	82.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1920	2210	pg/L	86.6	(25%-150%)
13C-169-HxCB		1780	2210	pg/L	80.6	(25%-150%)
13C-188-HpCB		2130	2210	pg/L	96.3	(25%-150%)
13C-189-HpCB		1990	2210	pg/L	90.0	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 10146002	Date Collected: 11/22/2016 07:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 11/30/2016 10:45	
Client ID: 1611B75-002L Rio Grande-South-11		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	Instrument: HRP791
Run Date: 12/16/2016 18:13	Analyst: MJC	Dilution: 1
Data File: c16dec16a-9		Prep SOP Ref: CF-OA-E-001
Prep Batch: 33559	Prep Method: SW846 3520C	
Prep Date: 13-DEC-16	Prep Aliquot: 903.4 mL	

CAS No.	Parname	Qual	Result	Units	MDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-202-OcCB			2270	2210	pg/L	103 (25%-150%)
13C-205-OcCB			2140	2210	pg/L	96.5 (25%-150%)
13C-206-NoCB			2100	2210	pg/L	94.7 (25%-150%)
13C-208-NoCB			2150	2210	pg/L	96.9 (25%-150%)
13C-209-DeCB			2320	2210	pg/L	105 (25%-150%)
13C-28-TrCB			1630	2210	pg/L	73.6 (30%-135%)
13C-111-PeCB			2030	2210	pg/L	91.5 (30%-135%)
13C-178-HpCB			2190	2210	pg/L	99.0 (30%-135%)

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

PCB Congeners
Surrogate Recovery Report

SDG Number: 1611B75

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits	
12017565	LCS for batch 33559	13C-1-MoCB		46.8	(15%-140%)	
		13C-3-MoCB		52.3	(15%-140%)	
		13C-4-DiCB		54.2	(30%-140%)	
		13C-15-DiCB		89.2	(30%-140%)	
		13C-19-TrCB		72.1	(30%-140%)	
		13C-37-TrCB		77.9	(30%-140%)	
		13C-54-TeCB		68.5	(30%-140%)	
		13C-77-TeCB		88.4	(30%-140%)	
		13C-81-TeCB		90.4	(30%-140%)	
		13C-104-PeCB		73.7	(30%-140%)	
		13C-105-PeCB		82.4	(30%-140%)	
		13C-114-PeCB		81.6	(30%-140%)	
		13C-118-PeCB		83.9	(30%-140%)	
		13C-123-PeCB		84.9	(30%-140%)	
		13C-126-PeCB		78.7	(30%-140%)	
		13C-155-HxCB		79.9	(30%-140%)	
		13C-156-HxCB		75.5	(30%-140%)	
		13C-157-HxCB				
		13C-167-HxCB		C	79.4	(30%-140%)
		13C-169-HxCB		C156L	72.2	(30%-140%)
		13C-188-HpCB			104	(30%-140%)
		13C-189-HpCB			85.8	(30%-140%)
		13C-202-OcCB			106	(30%-140%)
		13C-205-OcCB			93.5	(30%-140%)
		13C-206-NoCB			94.5	(30%-140%)
		13C-208-NoCB			97.6	(30%-140%)
		13C-209-DeCB			107	(30%-140%)
		13C-28-TrCB			74.6	(40%-125%)
13C-111-PeCB			88.8	(40%-125%)		
13C-178-HpCB			101	(40%-125%)		
12017566	LCSD for batch 33559	13C-1-MoCB		43.9	(15%-140%)	
		13C-3-MoCB		51.9	(15%-140%)	
		13C-4-DiCB		50.1	(30%-140%)	
		13C-15-DiCB		90.3	(30%-140%)	
		13C-19-TrCB		69.3	(30%-140%)	
		13C-37-TrCB		72.0	(30%-140%)	
		13C-54-TeCB		58.8	(30%-140%)	
		13C-77-TeCB		79.7	(30%-140%)	
		13C-81-TeCB		81.5	(30%-140%)	
		13C-104-PeCB		65.8	(30%-140%)	
		13C-105-PeCB		74.2	(30%-140%)	
		13C-114-PeCB		72.7	(30%-140%)	
		13C-118-PeCB		75.3	(30%-140%)	
		13C-123-PeCB		76.0	(30%-140%)	
		13C-126-PeCB		71.6	(30%-140%)	
		13C-155-HxCB		69.7	(30%-140%)	
		13C-156-HxCB		C	67.1	(30%-140%)
		13C-157-HxCB		C156L		
		13C-167-HxCB			71.1	(30%-140%)
		13C-169-HxCB			64.2	(30%-140%)
13C-188-HpCB			91.6	(30%-140%)		
13C-189-HpCB			76.7	(30%-140%)		

PCB Congeners
Surrogate Recovery Report

SDG Number: 1611B75

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017566	LCSD for batch 33559	13C-202-OcCB		93.2	(30%-140%)
		13C-205-OcCB		83.4	(30%-140%)
		13C-206-NoCB		83.3	(30%-140%)
		13C-208-NoCB		85.8	(30%-140%)
		13C-209-DeCB		94.5	(30%-140%)
		13C-28-TrCB		71.9	(40%-125%)
		13C-111-PeCB		88.7	(40%-125%)
		13C-178-HpCB		98.6	(40%-125%)
12017564	MB for batch 33559	13C-1-MoCB		54.3	(15%-150%)
		13C-3-MoCB		57.6	(15%-150%)
		13C-4-DiCB		57.4	(25%-150%)
		13C-15-DiCB		109	(25%-150%)
		13C-19-TrCB		80.5	(25%-150%)
		13C-37-TrCB		90.8	(25%-150%)
		13C-54-TeCB		67.3	(25%-150%)
		13C-77-TeCB		103	(25%-150%)
		13C-81-TeCB		105	(25%-150%)
		13C-104-PeCB		72.9	(25%-150%)
		13C-105-PeCB		86.7	(25%-150%)
		13C-114-PeCB		85.3	(25%-150%)
		13C-118-PeCB		87.2	(25%-150%)
		13C-123-PeCB		88.4	(25%-150%)
		13C-126-PeCB		84.9	(25%-150%)
		13C-155-HxCB		82.0	(25%-150%)
		13C-156-HxCB	C	78.6	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		83.7	(25%-150%)
		13C-169-HxCB		74.8	(25%-150%)
		13C-188-HpCB		106	(25%-150%)
		13C-189-HpCB		88.4	(25%-150%)
		13C-202-OcCB		108	(25%-150%)
		13C-205-OcCB		95.1	(25%-150%)
		13C-206-NoCB		95.2	(25%-150%)
		13C-208-NoCB		100	(25%-150%)
		13C-209-DeCB		108	(25%-150%)
13C-28-TrCB		74.3	(30%-135%)		
13C-111-PeCB		93.9	(30%-135%)		
13C-178-HpCB		106	(30%-135%)		
10146001	1611B75-001L Rio Grande-North-112116	13C-1-MoCB		43.6	(15%-150%)
		13C-3-MoCB		51.5	(15%-150%)
		13C-4-DiCB		49.9	(25%-150%)
		13C-15-DiCB		96.5	(25%-150%)
		13C-19-TrCB		69.9	(25%-150%)
		13C-37-TrCB		80.1	(25%-150%)
		13C-54-TeCB		62.5	(25%-150%)
		13C-77-TeCB		92.0	(25%-150%)
		13C-81-TeCB		92.8	(25%-150%)
		13C-104-PeCB		70.2	(25%-150%)
		13C-105-PeCB		83.4	(25%-150%)
		13C-114-PeCB		82.3	(25%-150%)
13C-118-PeCB		85.8	(25%-150%)		

PCB Congeners
Surrogate Recovery Report

SDG Number: 1611B75

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
10146001	1611B75-001L Rio Grande-North-112116	13C-123-PeCB		87.6	(25%-150%)
		13C-126-PeCB		81.7	(25%-150%)
		13C-155-HxCB		74.4	(25%-150%)
		13C-156-HxCB	C C156L	74.1	(25%-150%)
		13C-157-HxCB			
		13C-167-HxCB		78.1	(25%-150%)
		13C-169-HxCB		71.9	(25%-150%)
		13C-188-HpCB		93.8	(25%-150%)
		13C-189-HpCB		82.7	(25%-150%)
		13C-202-OcCB		96.9	(25%-150%)
		13C-205-OcCB		90.8	(25%-150%)
		13C-206-NoCB		89.2	(25%-150%)
		13C-208-NoCB		91.2	(25%-150%)
		13C-209-DeCB		99.1	(25%-150%)
		13C-28-TrCB		70.7	(30%-135%)
		13C-111-PeCB		87.4	(30%-135%)
		13C-178-HpCB		94.0	(30%-135%)
10146002	1611B75-002L Rio Grande-South-112116	13C-1-MoCB		56.0	(15%-150%)
		13C-3-MoCB		63.6	(15%-150%)
		13C-4-DiCB		61.6	(25%-150%)
		13C-15-DiCB		117	(25%-150%)
		13C-19-TrCB		83.6	(25%-150%)
		13C-37-TrCB		90.9	(25%-150%)
		13C-54-TeCB		68.3	(25%-150%)
		13C-77-TeCB		103	(25%-150%)
		13C-81-TeCB		105	(25%-150%)
		13C-104-PeCB		75.7	(25%-150%)
		13C-105-PeCB		90.7	(25%-150%)
		13C-114-PeCB		89.3	(25%-150%)
		13C-118-PeCB		92.0	(25%-150%)
		13C-123-PeCB		93.0	(25%-150%)
		13C-126-PeCB		91.2	(25%-150%)
		13C-155-HxCB		80.3	(25%-150%)
		13C-156-HxCB	C C156L	82.1	(25%-150%)
		13C-157-HxCB			
		13C-167-HxCB		86.6	(25%-150%)
		13C-169-HxCB		80.6	(25%-150%)
		13C-188-HpCB		96.3	(25%-150%)
		13C-189-HpCB		90.0	(25%-150%)
		13C-202-OcCB		103	(25%-150%)
13C-205-OcCB		96.5	(25%-150%)		
13C-206-NoCB		94.7	(25%-150%)		
13C-208-NoCB		96.9	(25%-150%)		
13C-209-DeCB		105	(25%-150%)		
13C-28-TrCB		73.6	(30%-135%)		
13C-111-PeCB		91.5	(30%-135%)		
13C-178-HpCB		99.0	(30%-135%)		

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

PCB Congeners
Quality Control Summary
Spike Recovery Report

SDG Number: 1611B75

Sample Type: Laboratory Control Sample

Client ID: LCS for batch 33559

Matrix: WATER

Lab Sample ID: 12017565

Instrument: HRP791

Analysis Date: 12/16/2016 10:30

Dilution: 1

Analyst: MJC

Prep Batch ID: 33559

Batch ID: 33561

CAS No.	Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS 1-MoCB	500	547	109	50-150
2051-62-9	LCS 3-MoCB	500	600	120	50-150
13029-08-8	LCS 4-DiCB	500	471	94.1	50-150
2050-68-2	LCS 15-DiCB	500	584	117	50-150
38444-73-4	LCS 19-TrCB	500	502	100	50-150
38444-90-5	LCS 37-TrCB	500	512	102	50-150
15968-05-5	LCS 54-TeCB	1000	977	97.7	50-150
32598-13-3	LCS 77-TeCB	1000	1000	100	50-150
70362-50-4	LCS 81-TeCB	1000	1140	114	50-150
56558-16-8	LCS 104-PeCB	1000	1070	107	50-150
32598-14-4	LCS 105-PeCB	1000	1260	126	50-150
74472-37-0	LCS 114-PeCB	1000	1140	114	50-150
31508-00-6	LCS 118-PeCB	1000	1070	107	50-150
65510-44-3	LCS 123-PeCB	1000	1050	105	50-150
57465-28-8	LCS 126-PeCB	1000	1180	118	50-150
33979-03-2	LCS 155-HxCB	1000	1000	100	50-150
38380-08-4	LCS 156-HxCB	2000	2380	119	50-150
69782-90-7	LCS 157-HxCB		C C156		
52663-72-6	LCS 167-HxCB	1000	1240	124	50-150
32774-16-6	LCS 169-HxCB	1000	1110	111	50-150
74487-85-7	LCS 188-HpCB	1000	1020	102	50-150
39635-31-9	LCS 189-HpCB	1000	1100	110	50-150
2136-99-4	LCS 202-OcCB	1500	1490	99.1	50-150
74472-53-0	LCS 205-OcCB	1500	1440	95.9	50-150
40186-72-9	LCS 206-NoCB	1500	1470	98.3	50-150
52663-77-1	LCS 208-NoCB	1500	1580	106	50-150
2051-24-3	LCS 209-DeCB	1500	1440	95.9	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 1611B75
 Client ID: LCSD for batch 33559
 Lab Sample ID: 12017566
 Instrument: HRP791
 Analyst: MJC

Sample Type: Laboratory Control Sample Duplicate
 Matrix: WATER
 Analysis Date: 12/16/2016 11:36 Dilution: 1
 Prep Batch ID:33559
 Batch ID: 33561

CAS No.	Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD 1-MoCB	500	539	108	50-150	1.48	0-20
2051-62-9	LCSD 3-MoCB	500	582	116	50-150	2.95	0-20
13029-08-8	LCSD 4-DiCB	500	472	94.3	50-150	0.225	0-20
2050-68-2	LCSD 15-DiCB	500	577	115	50-150	1.26	0-20
38444-73-4	LCSD 19-TrCB	500	508	102	50-150	1.19	0-20
38444-90-5	LCSD 37-TrCB	500	520	104	50-150	1.42	0-20
15968-05-5	LCSD 54-TeCB	1000	967	96.7	50-150	1.05	0-20
32598-13-3	LCSD 77-TeCB	1000	1010	101	50-150	0.951	0-20
70362-50-4	LCSD 81-TeCB	1000	1140	114	50-150	0.263	0-20
56558-16-8	LCSD 104-PeCB	1000	1080	108	50-150	0.775	0-20
32598-14-4	LCSD 105-PeCB	1000	1280	128	50-150	1.14	0-20
74472-37-0	LCSD 114-PeCB	1000	1150	115	50-150	1.09	0-20
31508-00-6	LCSD 118-PeCB	1000	1050	105	50-150	1.52	0-20
65510-44-3	LCSD 123-PeCB	1000	1040	104	50-150	1.06	0-20
57465-28-8	LCSD 126-PeCB	1000	1190	119	50-150	1.07	0-20
33979-03-2	LCSD 155-HxCB	1000	992	99.2	50-150	1.08	0-20
38380-08-4	LCSD 156-HxCB	2000	2390	120	50-150	0.627	0-20
69782-90-7	LCSD 157-HxCB						
52663-72-6	LCSD 167-HxCB	1000	1230	123	50-150	0.497	0-20
32774-16-6	LCSD 169-HxCB	1000	1120	112	50-150	0.674	0-20
74487-85-7	LCSD 188-HpCB	1000	1010	101	50-150	0.458	0-20
39635-31-9	LCSD 189-HpCB	1000	1080	108	50-150	1.46	0-20
2136-99-4	LCSD 202-OcCB	1500	1470	98.3	50-150	0.805	0-20
74472-53-0	LCSD 205-OcCB	1500	1430	95.1	50-150	0.842	0-20
40186-72-9	LCSD 206-NoCB	1500	1480	98.5	50-150	0.186	0-20
52663-77-1	LCSD 208-NoCB	1500	1570	105	50-150	0.500	0-20
2051-24-3	LCSD 209-DeCB	1500	1430	95.2	50-150	0.680	0-20

Method Blank Summary

SDG Number: 1611B75
Client ID: MB for batch 33559
Lab Sample ID: 12017564
Column:

Client: HALL001
Instrument ID: HRP791
Prep Date: 13-DEC-16

Matrix: WATER
Data File: c16dec16a-4
Analyzed: 12/16/16 12:42

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 33559	12017565	c16dec16a-2	12/16/16	1030
02 LCSD for batch 33559	12017566	c16dec16a-3	12/16/16	1136
03 1611B75-001L Rio Grande-North-112116	10146001	c16dec16a-8	12/16/16	1707
04 1611B75-002L Rio Grande-South-112116	10146002	c16dec16a-9	12/16/16	1813

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 12017564		Matrix: WATER
Client Sample: QC for batch 33559		
Client ID: MB for batch 33559		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 12:42	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-4		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	6.76	20.0
2051-61-8	2-MoCB	U	ND	pg/L	6.66	20.0
2051-62-9	3-MoCB	U	ND	pg/L	6.66	20.0
13029-08-8	4-DiCB	U	ND	pg/L	6.72	20.0
16605-91-7	5-DiCB	U	ND	pg/L	7.68	20.0
25569-80-6	6-DiCB	U	ND	pg/L	7.24	20.0
33284-50-3	7-DiCB	U	ND	pg/L	6.66	20.0
34883-43-7	8-DiCB	U	ND	pg/L	7.10	20.0
34883-39-1	9-DiCB	U	ND	pg/L	6.66	20.0
33146-45-1	10-DiCB	U	ND	pg/L	6.66	20.0
2050-67-1	11-DiCB	J	35.2	pg/L	11.5	100
2974-92-7	12-DiCB	CU	ND	pg/L	13.3	40.0
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	6.66	20.0
2050-68-2	15-DiCB	U	ND	pg/L	6.66	20.0
38444-78-9	16-TrCB	U	ND	pg/L	8.06	20.0
37680-66-3	17-TrCB	U	ND	pg/L	6.66	20.0
37680-65-2	18-TrCB	CU	ND	pg/L	13.3	40.0
38444-73-4	19-TrCB	U	ND	pg/L	6.66	20.0
38444-84-7	20-TrCB	CU	ND	pg/L	13.3	40.0
55702-46-0	21-TrCB	CU	ND	pg/L	13.3	40.0
38444-85-8	22-TrCB	U	ND	pg/L	6.66	20.0
55720-44-0	23-TrCB	U	ND	pg/L	6.66	20.0
55702-45-9	24-TrCB	U	ND	pg/L	6.66	20.0
55712-37-3	25-TrCB	U	ND	pg/L	6.66	20.0
38444-81-4	26-TrCB	CU	ND	pg/L	13.3	40.0
38444-76-7	27-TrCB	U	ND	pg/L	6.66	20.0
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	ND	pg/L	6.66	20.0
38444-77-8	32-TrCB	U	ND	pg/L	6.66	20.0

Comments:
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 12017564		Matrix: WATER
Client Sample: QC for batch 33559		
Client ID: MB for batch 33559		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 12:42	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-4		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	6.66	20.0
37680-69-6	35-TrCB	U	ND	pg/L	6.66	20.0
38444-87-0	36-TrCB	U	ND	pg/L	6.66	20.0
38444-90-5	37-TrCB	U	ND	pg/L	6.66	20.0
53555-66-1	38-TrCB	U	ND	pg/L	6.66	20.0
38444-88-1	39-TrCB	U	ND	pg/L	6.66	20.0
38444-93-8	40-TeCB	CU	ND	pg/L	13.3	40.0
52663-59-9	41-TeCB	U	ND	pg/L	6.66	20.0
36559-22-5	42-TeCB	U	ND	pg/L	6.66	20.0
70362-46-8	43-TeCB	U	ND	pg/L	6.66	20.0
41464-39-5	44-TeCB	CU	ND	pg/L	20.0	60.0
70362-45-7	45-TeCB	CU	ND	pg/L	13.3	40.0
41464-47-5	46-TeCB	U	ND	pg/L	6.66	20.0
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	6.66	20.0
41464-40-8	49-TeCB	CU	ND	pg/L	13.3	40.0
62796-65-0	50-TeCB	CU	ND	pg/L	13.3	40.0
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	U	ND	pg/L	6.66	20.0
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	6.66	20.0
74338-24-2	55-TeCB	U	ND	pg/L	6.66	20.0
41464-43-1	56-TeCB	U	ND	pg/L	6.66	20.0
70424-67-8	57-TeCB	U	ND	pg/L	6.66	20.0
41464-49-7	58-TeCB	U	ND	pg/L	6.66	20.0
74472-33-6	59-TeCB	CU	ND	pg/L	20.0	60.0
33025-41-1	60-TeCB	U	ND	pg/L	6.66	20.0
33284-53-6	61-TeCB	CU	ND	pg/L	26.6	80.0
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	6.66	20.0
52663-58-8	64-TeCB	U	ND	pg/L	6.66	20.0

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
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**PCB Congeners
Certificate of Analysis
Sample Summary**

Page 3 of 8

SDG Number: 1611B75
Lab Sample ID: 12017564
Client Sample: QC for batch 33559
Client ID: MB for batch 33559
Batch ID: 33561
Run Date: 12/16/2016 12:42
Data File: c16dec16a-4
Prep Batch: 33559
Prep Date: 13-DEC-16

Client: HALL001
Method: EPA Method 1668A
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 1000 mL

Project: HALL00114
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	U	ND	pg/L	6.66	20.0
73575-53-8	67-TeCB	U	ND	pg/L	6.66	20.0
73575-52-7	68-TeCB	U	ND	pg/L	6.66	20.0
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	ND	pg/L	6.66	20.0
74338-23-1	73-TeCB	U	ND	pg/L	6.66	20.0
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	ND	pg/L	6.66	20.0
70362-49-1	78-TeCB	U	ND	pg/L	6.66	20.0
41464-48-6	79-TeCB	U	ND	pg/L	6.66	20.0
33284-52-5	80-TeCB	U	ND	pg/L	6.66	20.0
70362-50-4	81-TeCB	U	ND	pg/L	6.66	20.0
52663-62-4	82-PeCB	U	ND	pg/L	6.66	20.0
60145-20-2	83-PeCB	U	ND	pg/L	6.66	20.0
52663-60-2	84-PeCB	U	ND	pg/L	6.66	20.0
65510-45-4	85-PeCB	CU	ND	pg/L	20.0	60.0
55312-69-1	86-PeCB	CU	ND	pg/L	40.0	120
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	13.3	40.0
73575-57-2	89-PeCB	U	ND	pg/L	6.66	20.0
68194-07-0	90-PeCB	CU	ND	pg/L	20.0	60.0
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	6.66	20.0
73575-56-1	93-PeCB	CU	ND	pg/L	13.3	40.0
73575-55-0	94-PeCB	U	ND	pg/L	6.66	20.0
38379-99-6	95-PeCB	U	ND	pg/L	6.66	20.0
73575-54-9	96-PeCB	U	ND	pg/L	6.66	20.0

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75
 Lab Sample ID: 12017564
 Client Sample: QC for batch 33559
 Client ID: MB for batch 33559
 Batch ID: 33561
 Run Date: 12/16/2016 12:42
 Data File: c16dec16a-4
 Prep Batch: 33559
 Prep Date: 13-DEC-16

Client: HALL001
 Method: EPA Method 1668A
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 1000 mL

Project: HALL00114
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	13.3	40.0
38380-01-7	99-PeCB	U	ND	pg/L	6.66	20.0
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	ND	pg/L	6.66	20.0
56558-16-8	104-PeCB	U	ND	pg/L	6.66	20.0
32598-14-4	105-PeCB	U	ND	pg/L	6.66	20.0
70424-69-0	106-PeCB	U	ND	pg/L	6.66	20.0
70424-68-9	107-PeCB	U	ND	pg/L	6.66	20.0
70362-41-3	108-PeCB	CU	ND	pg/L	13.3	40.0
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CU	ND	pg/L	13.3	40.0
39635-32-0	111-PeCB	U	ND	pg/L	6.66	20.0
74472-36-9	112-PeCB	U	ND	pg/L	6.66	20.0
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	6.66	20.0
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	U	ND	pg/L	6.66	20.0
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	6.66	20.0
56558-18-0	121-PeCB	U	ND	pg/L	6.66	20.0
76842-07-4	122-PeCB	U	ND	pg/L	6.66	20.0
65510-44-3	123-PeCB	U	ND	pg/L	6.66	20.0
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	6.66	20.0
39635-33-1	127-PeCB	U	ND	pg/L	6.66	20.0
38380-07-3	128-HxCB	CU	ND	pg/L	13.3	40.0

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75
Lab Sample ID: 12017564
Client Sample: QC for batch 33559
Client ID: MB for batch 33559
Batch ID: 33561
Run Date: 12/16/2016 12:42
Data File: c16dec16a-4
Prep Batch: 33559
Prep Date: 13-DEC-16

Client: HALL001

Method: EPA Method 1668A
Analyst: MJC

Prep Method: SW846 3520C
Prep Aliquot: 1000 mL

Project: HALL00114
Matrix: WATER

Prep Basis: As Received

Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
55215-18-4	129-HxCB	CU	ND	pg/L	20.0	60.0
52663-66-8	130-HxCB	U	ND	pg/L	6.66	20.0
61798-70-7	131-HxCB	U	ND	pg/L	6.66	20.0
38380-05-1	132-HxCB	U	ND	pg/L	12.7	20.0
35694-04-3	133-HxCB	U	ND	pg/L	6.66	20.0
52704-70-8	134-HxCB	U	ND	pg/L	6.72	20.0
52744-13-5	135-HxCB	CU	ND	pg/L	13.3	40.0
38411-22-2	136-HxCB	U	ND	pg/L	6.66	20.0
35694-06-5	137-HxCB	U	ND	pg/L	6.66	20.0
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	13.3	40.0
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	6.66	20.0
41411-61-4	142-HxCB	U	ND	pg/L	6.66	20.0
68194-15-0	143-HxCB	U	ND	pg/L	6.66	20.0
68194-14-9	144-HxCB	U	ND	pg/L	6.66	20.0
74472-40-5	145-HxCB	U	ND	pg/L	6.66	20.0
51908-16-8	146-HxCB	U	ND	pg/L	6.66	20.0
68194-13-8	147-HxCB	CU	ND	pg/L	13.3	40.0
74472-41-6	148-HxCB	U	ND	pg/L	6.66	20.0
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	6.66	20.0
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	6.66	20.0
35065-27-1	153-HxCB	CU	ND	pg/L	13.3	40.0
60145-22-4	154-HxCB	U	ND	pg/L	6.66	20.0
33979-03-2	155-HxCB	U	ND	pg/L	6.66	20.0
38380-08-4	156-HxCB	CU	ND	pg/L	13.3	40.0
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	6.66	20.0
39635-35-3	159-HxCB	U	ND	pg/L	6.66	20.0
41411-62-5	160-HxCB	U	ND	pg/L	6.66	20.0

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 12017564		Matrix: WATER
Client Sample: QC for batch 33559		
Client ID: MB for batch 33559		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	Instrument: HRP791
Run Date: 12/16/2016 12:42	Analyst: MJC	Dilution: 1
Data File: c16dec16a-4		Prep SOP Ref: CF-OA-E-001
Prep Batch: 33559	Prep Method: SW846 3520C	
Prep Date: 13-DEC-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	6.66	20.0
39635-34-2	162-HxCB	U	ND	pg/L	6.66	20.0
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	6.66	20.0
74472-46-1	165-HxCB	U	ND	pg/L	6.66	20.0
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	6.66	20.0
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	6.66	20.0
35065-30-6	170-HpCB	U	ND	pg/L	6.66	20.0
52663-71-5	171-HpCB	CU	ND	pg/L	13.3	40.0
52663-74-8	172-HpCB	U	ND	pg/L	6.66	20.0
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	6.66	20.0
40186-70-7	175-HpCB	U	ND	pg/L	6.66	20.0
52663-65-7	176-HpCB	U	ND	pg/L	6.66	20.0
52663-70-4	177-HpCB	U	ND	pg/L	6.66	20.0
52663-67-9	178-HpCB	U	ND	pg/L	6.66	20.0
52663-64-6	179-HpCB	U	ND	pg/L	6.66	20.0
35065-29-3	180-HpCB	CU	ND	pg/L	13.3	40.0
74472-47-2	181-HpCB	U	ND	pg/L	6.66	20.0
60145-23-5	182-HpCB	U	ND	pg/L	6.66	20.0
52663-69-1	183-HpCB	CU	ND	pg/L	13.3	40.0
74472-48-3	184-HpCB	U	ND	pg/L	6.66	20.0
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	6.66	20.0
52663-68-0	187-HpCB	U	ND	pg/L	6.66	20.0
74487-85-7	188-HpCB	U	ND	pg/L	6.66	20.0
39635-31-9	189-HpCB	U	ND	pg/L	6.66	20.0
41411-64-7	190-HpCB	U	ND	pg/L	6.66	20.0
74472-50-7	191-HpCB	U	ND	pg/L	6.66	20.0
74472-51-8	192-HpCB	U	ND	pg/L	6.66	20.0

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75
 Lab Sample ID: 12017564
 Client Sample: QC for batch 33559
 Client ID: MB for batch 33559
 Batch ID: 33561
 Run Date: 12/16/2016 12:42
 Data File: c16dec16a-4
 Prep Batch: 33559
 Prep Date: 13-DEC-16

Client: HALL001
 Method: EPA Method 1668A
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 1000 mL

Project: HALL00114
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
69782-91-8	193-HpCB		C180			
35694-08-7	194-OcCB	U	ND	pg/L	6.66	20.0
52663-78-2	195-OcCB	U	ND	pg/L	6.66	20.0
42740-50-1	196-OcCB	U	ND	pg/L	6.66	20.0
33091-17-7	197-OcCB	CU	ND	pg/L	13.3	40.0
68194-17-2	198-OcCB	CU	ND	pg/L	13.3	40.0
52663-75-9	199-OcCB		C198			
52663-73-7	200-OcCB		C197			
40186-71-8	201-OcCB	U	ND	pg/L	6.66	20.0
2136-99-4	202-OcCB	U	ND	pg/L	6.66	20.0
52663-76-0	203-OcCB	U	ND	pg/L	6.66	20.0
74472-52-9	204-OcCB	U	ND	pg/L	6.66	20.0
74472-53-0	205-OcCB	U	ND	pg/L	6.66	20.0
40186-72-9	206-NoCB	U	ND	pg/L	6.66	20.0
52663-79-3	207-NoCB	U	ND	pg/L	6.66	20.0
52663-77-1	208-NoCB	U	ND	pg/L	6.66	20.0
2051-24-3	209-DeCB	U	ND	pg/L	6.66	20.0
1336-36-3	Total PCB Congeners		35.2	pg/L	6.66	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1090	2000	pg/L	54.3	(15%-150%)
13C-3-MoCB		1150	2000	pg/L	57.6	(15%-150%)
13C-4-DiCB		1150	2000	pg/L	57.4	(25%-150%)
13C-15-DiCB		2190	2000	pg/L	109	(25%-150%)
13C-19-TrCB		1610	2000	pg/L	80.5	(25%-150%)
13C-37-TrCB		1820	2000	pg/L	90.8	(25%-150%)
13C-54-TeCB		1350	2000	pg/L	67.3	(25%-150%)
13C-77-TeCB		2050	2000	pg/L	103	(25%-150%)
13C-81-TeCB		2100	2000	pg/L	105	(25%-150%)
13C-104-PeCB		1460	2000	pg/L	72.9	(25%-150%)
13C-105-PeCB		1730	2000	pg/L	86.7	(25%-150%)
13C-114-PeCB		1710	2000	pg/L	85.3	(25%-150%)
13C-118-PeCB		1740	2000	pg/L	87.2	(25%-150%)
13C-123-PeCB		1770	2000	pg/L	88.4	(25%-150%)
13C-126-PeCB		1700	2000	pg/L	84.9	(25%-150%)
13C-155-HxCB		1640	2000	pg/L	82.0	(25%-150%)
13C-156-HxCB	C	3140	4000	pg/L	78.6	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1670	2000	pg/L	83.7	(25%-150%)
13C-169-HxCB		1500	2000	pg/L	74.8	(25%-150%)
13C-188-HpCB		2120	2000	pg/L	106	(25%-150%)
13C-189-HpCB		1770	2000	pg/L	88.4	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 12017564		Matrix: WATER
Client Sample: QC for batch 33559		
Client ID: MB for batch 33559		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 12:42	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-4		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-202-OcCB			2160	2000	pg/L	108 (25%-150%)
13C-205-OcCB			1900	2000	pg/L	95.1 (25%-150%)
13C-206-NoCB			1900	2000	pg/L	95.2 (25%-150%)
13C-208-NoCB			2010	2000	pg/L	100 (25%-150%)
13C-209-DeCB			2160	2000	pg/L	108 (25%-150%)
13C-28-TrCB			1490	2000	pg/L	74.3 (30%-135%)
13C-111-PeCB			1880	2000	pg/L	93.9 (30%-135%)
13C-178-HpCB			2120	2000	pg/L	106 (30%-135%)

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 12017565		Matrix: WATER
Client Sample: QC for batch 33559		
Client ID: LCS for batch 33559		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 10:30	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-2		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
2051-60-7	1-MoCB		547	pg/L	6.76	20.0
2051-62-9	3-MoCB		600	pg/L	6.66	20.0
13029-08-8	4-DiCB		471	pg/L	6.72	20.0
2050-68-2	15-DiCB		584	pg/L	6.66	20.0
38444-73-4	19-TrCB		502	pg/L	6.66	20.0
38444-90-5	37-TrCB		512	pg/L	6.66	20.0
15968-05-5	54-TeCB		977	pg/L	6.66	20.0
32598-13-3	77-TeCB		1000	pg/L	6.66	20.0
70362-50-4	81-TeCB		1140	pg/L	6.66	20.0
56558-16-8	104-PeCB		1070	pg/L	6.66	20.0
32598-14-4	105-PeCB		1260	pg/L	6.66	20.0
74472-37-0	114-PeCB		1140	pg/L	6.66	20.0
31508-00-6	118-PeCB		1070	pg/L	6.66	20.0
65510-44-3	123-PeCB		1050	pg/L	6.66	20.0
57465-28-8	126-PeCB		1180	pg/L	6.66	20.0
33979-03-2	155-HxCB		1000	pg/L	6.66	20.0
38380-08-4	156-HxCB	C	2380	pg/L	13.3	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1240	pg/L	6.66	20.0
32774-16-6	169-HxCB		1110	pg/L	6.66	20.0
74487-85-7	188-HpCB		1020	pg/L	6.66	20.0
39635-31-9	189-HpCB		1100	pg/L	6.66	20.0
2136-99-4	202-OcCB		1490	pg/L	6.66	20.0
74472-53-0	205-OcCB		1440	pg/L	6.66	20.0
40186-72-9	206-NoCB		1470	pg/L	6.66	20.0
52663-77-1	208-NoCB		1580	pg/L	6.66	20.0
2051-24-3	209-DeCB		1440	pg/L	6.66	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		937	2000	pg/L	46.8	(15%-140%)
13C-3-MoCB		1050	2000	pg/L	52.3	(15%-140%)
13C-4-DiCB		1080	2000	pg/L	54.2	(30%-140%)
13C-15-DiCB		1780	2000	pg/L	89.2	(30%-140%)
13C-19-TrCB		1440	2000	pg/L	72.1	(30%-140%)
13C-37-TrCB		1560	2000	pg/L	77.9	(30%-140%)
13C-54-TeCB		1370	2000	pg/L	68.5	(30%-140%)
13C-77-TeCB		1770	2000	pg/L	88.4	(30%-140%)
13C-81-TeCB		1810	2000	pg/L	90.4	(30%-140%)
13C-104-PeCB		1470	2000	pg/L	73.7	(30%-140%)
13C-105-PeCB		1650	2000	pg/L	82.4	(30%-140%)
13C-114-PeCB		1630	2000	pg/L	81.6	(30%-140%)
13C-118-PeCB		1680	2000	pg/L	83.9	(30%-140%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 12017565		Matrix: WATER
Client Sample: QC for batch 33559		
Client ID: LCS for batch 33559		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 10:30	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-2		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 1000 mL	

CAS No.	Parname	Qual	Result	Units	MDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-123-PeCB			1700	2000	pg/L	84.9 (30%-140%)
13C-126-PeCB			1570	2000	pg/L	78.7 (30%-140%)
13C-155-HxCB			1600	2000	pg/L	79.9 (30%-140%)
13C-156-HxCB		C	3020	4000	pg/L	75.5 (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			1590	2000	pg/L	79.4 (30%-140%)
13C-169-HxCB			1440	2000	pg/L	72.2 (30%-140%)
13C-188-HpCB			2070	2000	pg/L	104 (30%-140%)
13C-189-HpCB			1720	2000	pg/L	85.8 (30%-140%)
13C-202-OcCB			2120	2000	pg/L	106 (30%-140%)
13C-205-OcCB			1870	2000	pg/L	93.5 (30%-140%)
13C-206-NoCB			1890	2000	pg/L	94.5 (30%-140%)
13C-208-NoCB			1950	2000	pg/L	97.6 (30%-140%)
13C-209-DeCB			2150	2000	pg/L	107 (30%-140%)
13C-28-TrCB			1490	2000	pg/L	74.6 (40%-125%)
13C-111-PeCB			1780	2000	pg/L	88.8 (40%-125%)
13C-178-HpCB			2010	2000	pg/L	101 (40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75
 Lab Sample ID: 12017566
 Client Sample: QC for batch 33559
 Client ID: LCSD for batch 33559
 Batch ID: 33561
 Run Date: 12/16/2016 11:36
 Data File: c16dec16a-3
 Prep Batch: 33559
 Prep Date: 13-DEC-16

Client: HALL001
 Method: EPA Method 1668A
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 1000 mL

Project: HALL00114
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	Units	MDL	PQL
2051-60-7	1-MoCB		539	pg/L	6.76	20.0
2051-62-9	3-MoCB		582	pg/L	6.66	20.0
13029-08-8	4-DiCB		472	pg/L	6.72	20.0
2050-68-2	15-DiCB		577	pg/L	6.66	20.0
38444-73-4	19-TrCB		508	pg/L	6.66	20.0
38444-90-5	37-TrCB		520	pg/L	6.66	20.0
15968-05-5	54-TeCB		967	pg/L	6.66	20.0
32598-13-3	77-TeCB		1010	pg/L	6.66	20.0
70362-50-4	81-TeCB		1140	pg/L	6.66	20.0
56558-16-8	104-PeCB		1080	pg/L	6.66	20.0
32598-14-4	105-PeCB		1280	pg/L	6.66	20.0
74472-37-0	114-PeCB		1150	pg/L	6.66	20.0
31508-00-6	118-PeCB		1050	pg/L	6.66	20.0
65510-44-3	123-PeCB		1040	pg/L	6.66	20.0
57465-28-8	126-PeCB		1190	pg/L	6.66	20.0
33979-03-2	155-HxCB		992	pg/L	6.66	20.0
38380-08-4	156-HxCB	C	2390	pg/L	13.3	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1230	pg/L	6.66	20.0
32774-16-6	169-HxCB		1120	pg/L	6.66	20.0
74487-85-7	188-HpCB		1010	pg/L	6.66	20.0
39635-31-9	189-HpCB		1080	pg/L	6.66	20.0
2136-99-4	202-OcCB		1470	pg/L	6.66	20.0
74472-53-0	205-OcCB		1430	pg/L	6.66	20.0
40186-72-9	206-NoCB		1480	pg/L	6.66	20.0
52663-77-1	208-NoCB		1570	pg/L	6.66	20.0
2051-24-3	209-DeCB		1430	pg/L	6.66	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		877	2000	pg/L	43.9	(15%-140%)
13C-3-MoCB		1040	2000	pg/L	51.9	(15%-140%)
13C-4-DiCB		1000	2000	pg/L	50.1	(30%-140%)
13C-15-DiCB		1810	2000	pg/L	90.3	(30%-140%)
13C-19-TrCB		1390	2000	pg/L	69.3	(30%-140%)
13C-37-TrCB		1440	2000	pg/L	72.0	(30%-140%)
13C-54-TeCB		1180	2000	pg/L	58.8	(30%-140%)
13C-77-TeCB		1590	2000	pg/L	79.7	(30%-140%)
13C-81-TeCB		1630	2000	pg/L	81.5	(30%-140%)
13C-104-PeCB		1320	2000	pg/L	65.8	(30%-140%)
13C-105-PeCB		1480	2000	pg/L	74.2	(30%-140%)
13C-114-PeCB		1450	2000	pg/L	72.7	(30%-140%)
13C-118-PeCB		1510	2000	pg/L	75.3	(30%-140%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1611B75	Client: HALL001	Project: HALL00114
Lab Sample ID: 12017566		Matrix: WATER
Client Sample: QC for batch 33559		
Client ID: LCSD for batch 33559		Prep Basis: As Received
Batch ID: 33561	Method: EPA Method 1668A	
Run Date: 12/16/2016 11:36	Analyst: MJC	Instrument: HRP791
Data File: c16dec16a-3		Dilution: 1
Prep Batch: 33559	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 13-DEC-16	Prep Aliquot: 1000 mL	

CAS No.	Parname	Qual	Result	Units	MDL	PQL
Surrogate/Tracer recovery						
		Qual	Result	Nominal	Units	Recovery%
						Acceptable Limits
13C-123-PeCB			1520	2000	pg/L	76.0 (30%-140%)
13C-126-PeCB			1430	2000	pg/L	71.6 (30%-140%)
13C-155-HxCB			1390	2000	pg/L	69.7 (30%-140%)
13C-156-HxCB		C	2680	4000	pg/L	67.1 (30%-140%)
13C-157-HxCB		C156L				
13C-167-HxCB			1420	2000	pg/L	71.1 (30%-140%)
13C-169-HxCB			1280	2000	pg/L	64.2 (30%-140%)
13C-188-HpCB			1830	2000	pg/L	91.6 (30%-140%)
13C-189-HpCB			1530	2000	pg/L	76.7 (30%-140%)
13C-202-OcCB			1860	2000	pg/L	93.2 (30%-140%)
13C-205-OcCB			1670	2000	pg/L	83.4 (30%-140%)
13C-206-NoCB			1670	2000	pg/L	83.3 (30%-140%)
13C-208-NoCB			1720	2000	pg/L	85.8 (30%-140%)
13C-209-DeCB			1890	2000	pg/L	94.5 (30%-140%)
13C-28-TrCB			1440	2000	pg/L	71.9 (40%-125%)
13C-111-PeCB			1770	2000	pg/L	88.7 (40%-125%)
13C-178-HpCB			1970	2000	pg/L	98.6 (40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1611B75

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	MB-28858	SampType:	MBLK	TestCode:	EPA Method 1664A					
Client ID:	PBW	Batch ID:	28858	RunNo:	39004					
Prep Date:	11/28/2016	Analysis Date:	11/28/2016	SeqNo:	1219830	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	ND	10.0								

Sample ID	LCS-28858	SampType:	LCS	TestCode:	EPA Method 1664A					
Client ID:	LCSW	Batch ID:	28858	RunNo:	39004					
Prep Date:	11/28/2016	Analysis Date:	11/28/2016	SeqNo:	1219831	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	39.4	10.0	40.00	0	98.5	78	114			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1611B75

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-A	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: A39376		RunNo: 39376							
Prep Date:	Analysis Date: 12/14/2016		SeqNo: 1232681		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								

Sample ID LCS-A	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: A39376		RunNo: 39376							
Prep Date:	Analysis Date: 12/14/2016		SeqNo: 1232682		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	99.4	85	115			
Magnesium	51	1.0	50.00	0	102	85	115			

Sample ID LLLCS-A	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: A39376		RunNo: 39376							
Prep Date:	Analysis Date: 12/14/2016		SeqNo: 1232683		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	108	50	150			
Magnesium	ND	1.0	0.5000	0	112	50	150			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1611B75

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID LCS	SampType: LCS		TestCode: EPA 200.8: Dissolved Metals							
Client ID: LCSW	Batch ID: B39114		RunNo: 39114							
Prep Date:	Analysis Date: 12/2/2016		SeqNo: 1224351		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.025	0.0010	0.02500	0	99.7	85	115			
Lead	0.012	0.00050	0.01250	0	99.0	85	115			
Uranium	0.012	0.00050	0.01250	0	95.6	85	115			

Sample ID LLCS	SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals							
Client ID: BatchQC	Batch ID: B39114		RunNo: 39114							
Prep Date:	Analysis Date: 12/2/2016		SeqNo: 1224353		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010	0.001000	0	72.4	50	150			
Lead	ND	0.00050	0.0005000	0	95.5	50	150			
Uranium	ND	0.00050	0.0005000	0	92.0	50	150			

Sample ID MB	SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals							
Client ID: PBW	Batch ID: B39114		RunNo: 39114							
Prep Date:	Analysis Date: 12/2/2016		SeqNo: 1224355		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								
Lead	ND	0.00050								
Uranium	ND	0.00050								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1611B75

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R38938		RunNo: 38938							
Prep Date:	Analysis Date: 11/22/2016		SeqNo: 1217522		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R38938		RunNo: 38938							
Prep Date:	Analysis Date: 11/22/2016		SeqNo: 1217523		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.92	0.10	1.000	0	92.4	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.3	90	110			

Sample ID 1611B75-001DMS	SampType: MS		TestCode: EPA Method 300.0: Anions							
Client ID: Rio Grande-North-1	Batch ID: R38938		RunNo: 38938							
Prep Date:	Analysis Date: 11/22/2016		SeqNo: 1217529		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.88	0.10	1.000	0	88.2	76.7	103			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.04580	96.5	84.9	115			

Sample ID 1611B75-001DMSD	SampType: MSD		TestCode: EPA Method 300.0: Anions							
Client ID: Rio Grande-North-1	Batch ID: R38938		RunNo: 38938							
Prep Date:	Analysis Date: 11/22/2016		SeqNo: 1217530		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.90	0.10	1.000	0	89.6	76.7	103	1.59	20	
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.04580	98.2	84.9	115	1.77	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1611B75

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-28809	SampType: MBLK		TestCode: SM5210B: BOD							
Client ID: PBW	Batch ID: 28809		RunNo: 39012							
Prep Date: 11/22/2016	Analysis Date: 11/27/2016		SeqNo: 1220182	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID MB--28809	SampType: MBLK		TestCode: SM5210B: BOD							
Client ID: PBW	Batch ID: 28809		RunNo: 39012							
Prep Date: 11/22/2016	Analysis Date: 11/27/2016		SeqNo: 1220183	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID LCS-28809	SampType: LCS		TestCode: SM5210B: BOD							
Client ID: LCSW	Batch ID: 28809		RunNo: 39012							
Prep Date: 11/22/2016	Analysis Date: 11/27/2016		SeqNo: 1220184	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	210	2.0	198.0	0	109	59.3	123			

Sample ID LCSD-28809	SampType: LCSD		TestCode: SM5210B: BOD							
Client ID: LCSS02	Batch ID: 28809		RunNo: 39012							
Prep Date: 11/22/2016	Analysis Date: 11/27/2016		SeqNo: 1220185	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	220	2.0	198.0	0	111	59.3	123	1.84	29.9	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1611B75

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	MB-28825	SampType:	MBLK	TestCode:	SM 9223B Fecal Indicator: E. coli MPN					
Client ID:	PBW	Batch ID:	28825	RunNo:	38956					
Prep Date:	11/22/2016	Analysis Date:	11/23/2016	SeqNo:	1217926	Units:	CFU/100ml			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1611B75

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB	SampType: MBLK		TestCode: SM 4500 NH3: Ammonia							
Client ID: PBW	Batch ID: R39298		RunNo: 39298							
Prep Date:	Analysis Date: 12/9/2016		SeqNo: 1229981		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID LCS	SampType: LCS		TestCode: SM 4500 NH3: Ammonia							
Client ID: LCSW	Batch ID: R39298		RunNo: 39298							
Prep Date:	Analysis Date: 12/9/2016		SeqNo: 1229982		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	9.8	1.0	10.00	0	98.0	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1611B75

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-28952	SampType: MBLK		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: PBW	Batch ID: 28952		RunNo: 39106							
Prep Date: 12/1/2016	Analysis Date: 12/2/2016		SeqNo: 1223359	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.010								

Sample ID LCS-28952	SampType: LCS		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: LCSW	Batch ID: 28952		RunNo: 39106							
Prep Date: 12/1/2016	Analysis Date: 12/2/2016		SeqNo: 1223360	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.25	0.010	0.2500	0	98.9	90	110			

Sample ID 1611B75-001DMS	SampType: MS		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: Rio Grande-North-1	Batch ID: 28952		RunNo: 39106							
Prep Date: 12/1/2016	Analysis Date: 12/2/2016		SeqNo: 1223365	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.29	0.010	0.2500	0.04180	99.0	90	110			

Sample ID 1611B75-001DMSD	SampType: MSD		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: Rio Grande-North-1	Batch ID: 28952		RunNo: 39106							
Prep Date: 12/1/2016	Analysis Date: 12/2/2016		SeqNo: 1223366	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.29	0.010	0.2500	0.04180	98.0	90	110	0.937	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1611B75

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-28867	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 28867	RunNo: 39028								
Prep Date: 11/28/2016	Analysis Date: 11/29/2016	SeqNo: 1220776	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID LCS-28867	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 28867	RunNo: 39028								
Prep Date: 11/28/2016	Analysis Date: 11/29/2016	SeqNo: 1220777	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1611B75

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-29132	SampType: MBLK	TestCode: SM 4500 Norg C: TKN								
Client ID: PBW	Batch ID: 29132	RunNo: 39357								
Prep Date: 12/12/2016	Analysis Date: 12/13/2016	SeqNo: 1231859	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID LCS-29132	SampType: LCS	TestCode: SM 4500 Norg C: TKN								
Client ID: LCSW	Batch ID: 29132	RunNo: 39357								
Prep Date: 12/12/2016	Analysis Date: 12/13/2016	SeqNo: 1231860	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	10	1.0	10.00	0	102	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1611B75

23-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	MB-28852	SampType:	MBLK	TestCode:	SM 2540D: TSS					
Client ID:	PBW	Batch ID:	28852	RunNo:	39013					
Prep Date:	11/23/2016	Analysis Date:	11/28/2016	SeqNo:	1220216	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID	LCS-28852	SampType:	LCS	TestCode:	SM 2540D: TSS					
Client ID:	LCSW	Batch ID:	28852	RunNo:	39013					
Prep Date:	11/23/2016	Analysis Date:	11/28/2016	SeqNo:	1220217	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	94	4.0	92.50	0	102	83.35	118.92			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87109
 TEL: 505-345-3975 FAX: 505-345-4107
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: AMAFCA

Work Order Number: 1611B75

RcptNo: 1

Received by/date: MF 11/22/16

Logged By: Lindsay Mangin 11/22/2016 9:15:00 AM *Lindsay Mangin*

Completed By: Lindsay Mangin 11/22/2016 9:41:52 AM *Lindsay Mangin*

Reviewed By: *Je* 11/22/16 *1130*

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes No
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes No

of preserved bottles checked for pH: 12

Adjusted? or >12 unless noted NO

Checked by: Re

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____

By Whom: _____ Via: eMail Phone Fax In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.9	Good	Not Present			

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

Email or Fax#: pchavez@amafca.org

QA/QC Package:
 Standard Level 4 (Full Validation)

Accreditation
 NELAP Other _____

EDD (Type) _____

Turn-Around Time:
 Standard Rush _____

Project Name:
CMC

Project #:
NM15.0156

Project Manager:
Patrick Chavez
C. Johansen

Sampler:
 On Ice: Yes No

Sample Temperature: 5.9°C



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270: SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₂ , NO ₃ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	See attached table	Ecol: Non	Air Bubbles (Y or N)	
4/21/16	0930	AQ	Rio Grande North 112116	Numerous	Numerous	1611375 -001													+		
12/2/16	0700	AQ	Rio Grande South 112216	"	"	-002													+	X	

Date:	Time:	Relinquished by:	Received by:	Date:	Time:
11/22/16	0915	<i>[Signature]</i>	<i>[Signature]</i>	11/22/16	0915
Date:	Time:	Relinquished by:	Received by:	Date:	Time:

Remarks:
 PCB analysis by 1668
 Tetrahydrofuran by 8260C

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly noted on the analytical report.

**Collaborative Monitoring Cooperative - Analyses List
Attach to Chain of Custody**

sub

Analyte (Bold Indicates WQS)	CAS #	Fraction	Method #	MDL (µg/L)
Hardness (Ca + Mg)	NA	Total	200.7	2.4
Lead	7439-92-1	Dissolved	200.8	0.09
Copper	7440-50-8	Dissolved	200.8	1.06
Ammonia + organic nitrogen	7664-41-7	Total	350.1	31.32
Total Kjehldal Nitrogen	17778-88-0	Total	351.2	58.78
Nitrate + Nitrite	14797-55-8	Total	353.2	10.17
Polychlorinated biphenyls (PCBs)	1336-36-3	Total	1668	N/A 1014
Tetrahydrofuran (THF)	109-99-9	Total	8260C	7.9
bis(2-Ethylhexyl)phthalate	117-81-7	Total	8270D	0.2
Dibenzofuran	132-64-9	Total	8270D	0.2
Indeno(1,2,3-cd)pyrene	193-39-5	Total	8270D	0.2
Benzo(b)fluoranthene	205-99-2	Total	8270D	0.1
Benzo(k)fluoranthene	207-08-9	Total	8270D	0.1
Chrysene	218-01-9	Total	8270D	0.2
Benzo(a)pyrene	50-32-8	Total	8270D	0.3
Dibenzo(a,h)anthracene	53-70-3	Total	8270D	0.3
Benzo(a)anthracene	56-55-3	Total	8270D	0.2
Dieldrin	60-57-1	Total	8270D	0.1
Pentachlorophenol	87-86-5	Total	8270D	0.2
Benzidine	92-87-5	Total	8270D	0.1
Chemical Oxygen Demand	E1641638 ²	Total	HACH	5100
Gross alpha (adjusted)	NA	Total	Method 900	0.1 pCi/L
Total Dissolved Solids	E1642222 ²	Total	SM 2540C	60.4
Total Suspended Solids	NA	Total	SM 2540D	3450
Biological Oxygen Demand	N/A	Total	Standard Methods	930
Oil and Grease		Total	1664A	5000
Ecoli			SM 9223B	
pH			SM 4500	
Phosphorus		Dissolved	365.1	100
Phosphorus		Total	365.1	100
Chromium IV		Total	3500Cr C-2011	100

This sheet just for detection levels.

Appendix F - Minimum Quantification Levels (MQL's)

The following Minimum Quantification Levels (MQL's) are to be used for reporting pollutant data for NPDES permit applications and/or compliance reporting.

POLLUTANTS	MQL µg/l	POLLUTANTS	MQL µg/l
METALS, RADIOACTIVITY, CYANIDE and CHLORINE			
Aluminum	2.5	Molybdenum	10
Antimony	60	Nickel	0.5
Arsenic	0.5	Selenium	5
Barium	100	Silver	0.5
Beryllium	0.5	Thallium	0.5
Boron	100	Uranium	0.1
Cadmium	1	Vanadium	50
Chromium	10	Zinc	20
Cobalt	50	Cyanide	10
Copper	0.5	Cyanide, weak acid dissociable	10
Lead	0.5	Total Residual Chlorine	33
Mercury (*)	0.0005 0.005		
DIOXIN			
2,3,7,8-TCDD	0.00001		
VOLATILE COMPOUNDS			
Acrolein	50	1,3-Dichloropropylene	10
Acrylonitrile	20	Ethylbenzene	10
Benzene	10	Methyl Bromide	50
Bromoform	10	Methylene Chloride	20
Carbon Tetrachloride	2	1,1,2,2-Tetrachloroethane	10
Chlorobenzene	10	Tetrachloroethylene	10
Chlorodibromomethane	10	Toluene	10
Chloroform	50	1,2-trans-Dichloroethylene	10
Dichlorobromomethane	10	1,1,2-Trichloroethane	10
1,2-Dichloroethane	10	Trichloroethylene	10
1,1-Dichloroethylene	10	Vinyl Chloride	10
1,2-Dichloropropane	10		
ACID COMPOUNDS			
2-Chlorophenol	10	2,4-Dinitrophenol	50
2,4-Dichlorophenol	10	Pentachlorophenol	5
2,4-Dimethylphenol	10	Phenol	10
4,6-Dinitro-o-Cresol	50	2,4,6-Trichlorophenol	10

ATTACHMENT 2
FY 2017 DRY SEASON COMPLETED DATA VERIFICATION AND
VALIDATION FORMS

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (November 2016 – Dry Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande North – 11/3/16 – E. coli Only Sample – Was Not Qualifying Storm Event

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJK Date: 1/20/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJG Date: 1/20/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

Step 3 Completed *Initials: SJG Date: 1/20/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken

*Note – HEAL Lab report order number – 1611208_v1

Total number of occurrences: 0

Step 4 Completed Initials: SJG Date: 1/20/17

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed Initials: SJG Date: 1/20/17

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed *Initials: SJG Date: 1/20/17*

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed *Initials: SJG Date: 1/20/16*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/20/17

Data Verifier/Validator Signature

Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (November 2016 – Dry Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande North – 11/21/16 and 11/22/16

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJG Date: 1/20/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

*Note – Lab report identifies “Dissolved Phosphorous” as “Total Phosphorous” and does not distinguish this as a filtered sample, as prior lab reports have done. Lower value of “Total Phosphorous” reported as the “Dissolved Phosphorous” result.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJG Date: 1/20/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

Step 3 Completed *Initials: SJG Date: 1/20/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
<u>Rio Grande North & South</u>	<u>11/22/16</u>	<u>Lab report provides two "Total Phosphorous" results, and no "Dissolved Phosphorous" results. Used lower value as "Dissolved Phosphorous".</u>	<u>Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.</u>

*Note – HEAL Lab report order number – 1611B12_v1 and 1611B75_v2

Total number of occurrences: 1

Step 4 Completed Initials: SJG Date: 1/20/17

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed Initials: SJG Date: 1/20/17

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed *Initials: SJG Date: 1/20/17*

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed *Initials: SJG Date: 1/20/16*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/20/17

Data Verifier/Validator Signature

Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that "V V in STORET" be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (November 2016 – Dry Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande South – 11/22/16

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJK Date: 1/20/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

*Note – Lab report identifies “Dissolved Phosphorous” as “Total Phosphorous” and does not distinguish this as a filtered sample, as prior lab reports have done. Lower value of “Total Phosphorous” reported as the “Dissolved Phosphorous” result.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJK* *Date: 1/20/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable
 Step 3 Completed *Initials: SJK* *Date: 1/20/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
<u>Rio Grande North & South</u>	<u>11/22/16</u>	<u>Lab report provides two "Total Phosphorous" results, and no "Dissolved Phosphorous" results. Used lower value as "Dissolved Phosphorous".</u>	<u>Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.</u>
<u>Rio Grande South</u>	<u>11/22/16</u>	<u>Hexavalent Chromium for Rio Grande South (02) incorrectly labeled in lab report as Rio Grande North</u>	<u>Notified AMAFCA and of this and requested that lab more clearly report data.</u>

*Note – HEAL Lab report order number – 1611B75_v2

Total number of occurrences: 2

Step 4 Completed Initials: SJG Date: 1/20/17

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed *Initials: SJG Date: 1/20/17*

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed *Initials: SJG Date: 1/20/17*

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed *Initials: SJG Date: 1/20/16*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/20/17

Data Verifier/Validator Signature

Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that "V V in STORET" be added to the project title.

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BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

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MEMORANDUM

DATE: March 6, 2017

TO: Jerry Lovato, PE, AMAFCA
Patrick Chavez, PE, AMAFCA

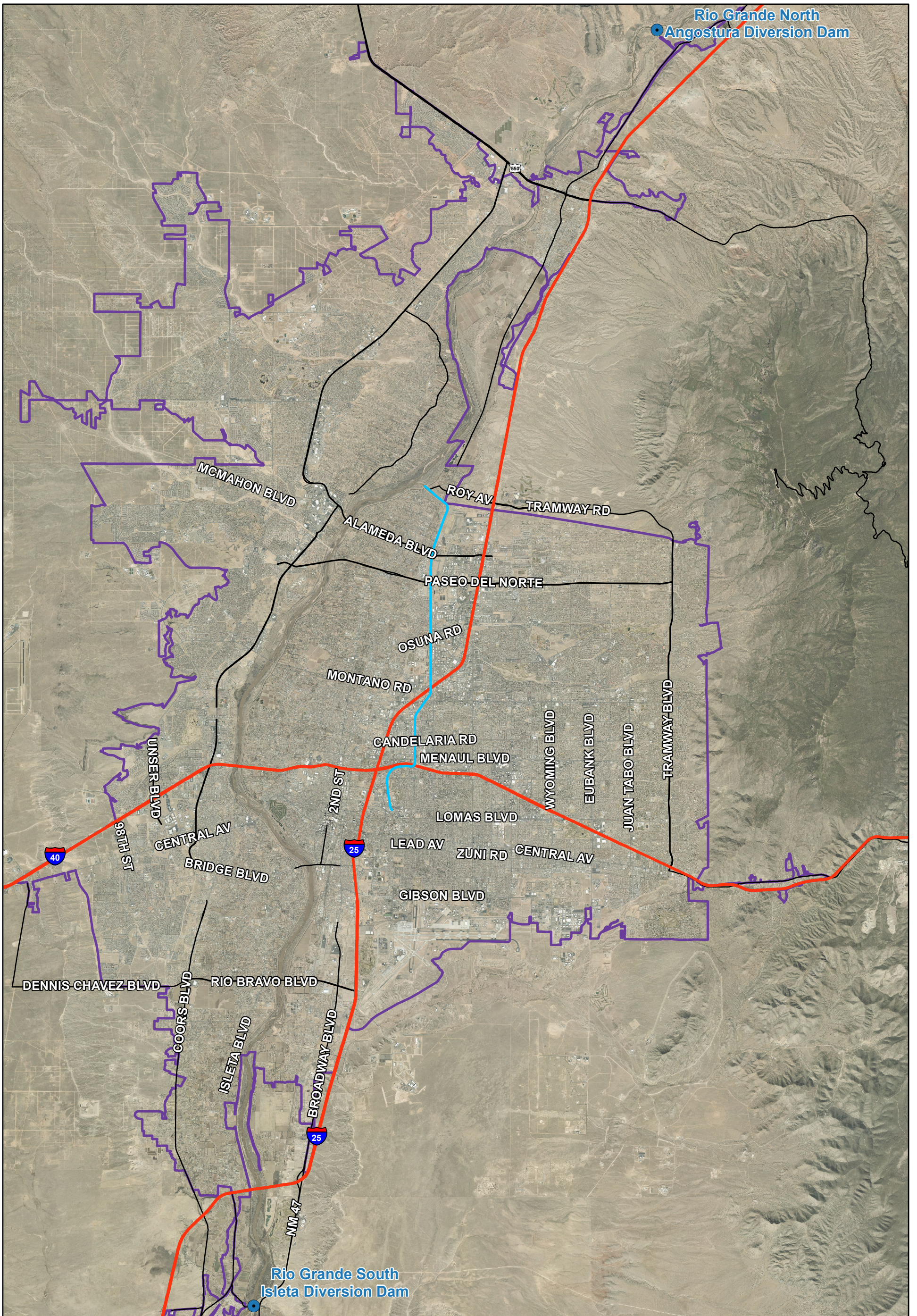
FROM: Craig Hoover, PE
Sarah Ganley, PE *sig*
Angie Bacigalupa, EI *AMB*

SUBJECT: **CMC Wet Season, Wet Weather Stormwater Monitoring Data Verification, Analysis Results Database, and Reporting FY 2017 Wet Season (July 1 to October 31, 2016) Memo**

Overview of Stormwater Monitoring Activity

Bohannon Huston, Inc. (BHI) has been tasked to perform water quality services for the Compliance Monitoring Cooperative (CMC) Stormwater Data Verification, Database, and Reporting for the Wet Weather Stormwater Quality Monitoring Program for Fiscal Year (FY) 2017 (July 1, 2016 to June 30, 2017). The scope of work for this task includes data verification of the stormwater laboratory analysis results, compiling the analysis results into a database, and calculating the E. coli daily loading to compare with the Waste Load Allocation (WLA) for the qualifying storm events. The stormwater compliance monitoring is being conducted separately by Daniel B. Stephens & Associates, Inc. (DBS&A) and is not a part of this on-call task. This task is being conducted to assist the CMC members with their comprehensive monitoring and assessment program for compliance under the 2014 Middle Rio Grande Watershed Based Municipal Separate Storm Sewer System (MS4) Permit, NPDES Permit No. NMR04A000 ("WSB MS4 Permit").

As identified in the CMC Monitoring Plan, the WSB MS4 Permit requires that a minimum of seven (7) storm events be sampled at both the Rio Grande North and Rio Grande South locations (refer to Figure 1, page 2). During the 5-year WSB MS4 Permit term, at least three (3) events must be sampled in the wet season (between July 1 and October 31, 2016) and at least two (2) events in the dry season (between November and June). The remaining two (2) required events can be obtained during either the wet or dry seasons. During the FY 2017 wet season (July to October 2016) there were three (3) qualifying storm events where samples were collected for both the Rio Grande North and Rio Grande South locations.



Rio Grande North
 ● Angostura Diversion Dam

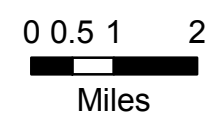
Rio Grande South
 ● Isleta Diversion Dam



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Legend

- CMC Monitoring Locations
- North Diversion Channel
- Albuquerque Urbanized Area
- Interstate Highway
- U.S. Highway
- State Highway



CMC Monitoring Locations

Figure 1

Summary of the CMC Sampling Plan

Sampling Parameters:

Samples from both the Rio Grande North and Rio Grande South monitoring locations were analyzed for the parameters defined in the EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016. The parameter list for both the locations, which is intended to characterize stormwater discharges into the river, is as follows:

- Total Suspended Solids (TSS)
- Total Dissolved Solids (TDS)
- Chemical Oxygen Demand (COD)
- Biological Oxygen Demand – 5-day (BOD₅)
- Dissolved Oxygen (DO)
- Oil & grease (N-Hexane Extractable Material)
- E. coli
- pH
- Total Kjeldahl Nitrogen (TKN)
- Nitrate plus Nitrite
- Dissolved Phosphorus
- Ammonia plus Organic Nitrogen (Nitrogen, Ammonia and Nitrogen, Total)
- Phosphorous (Total Phosphorous)
- Polychlorinated Biphenyls (PCBs - Method 1668A)
- Gross Alpha
- Tetrahydrofuran
- Benzo(a)pyrene
- Benzo(b)fluoranthene (3, 4 Benzofluoranthene)
- Benzo(k)fluoranthene
- Chrysene
- Indeno(1,2,3-cd)pyrene
- Dieldrin
- Pentachlorophenol
- Benzidine
- Benzo(a)anthracene
- Dibenzofuran
- Dibenzo(a, h)anthracene
- Chromium VI (Hexavalent)
- Copper- Dissolved
- Lead- Dissolved
- Bis(2-ethylhexyl)phthalate
- Conductivity
- Temperature
- Hardness (as CaCO₃) – added to allow dissolved metal results to be compared to the applicable water quality standards

DO, pH, conductivity, and temperature are required by the WSB MS4 Permit to be analyzed in the field during sample collection, which was conducted by DBS&A, within fifteen (15) minutes of sample collection. All E. coli samples were submitted to the laboratory within six (6) hours of collection in order to meet the specified hold time.

Sampling Locations:

The sampling locations are shown in Figure 1, page 2.

Rio Grande North – Instream sampling within the Rio Grande was performed upstream of the Angostura Diversion Dam at the north end of the watershed. The location is upstream of all inputs from the Urban Area (UA) to the river and provides the background water conditions.

Rio Grande South – Instream sampling within the Rio Grande was performed at the Isleta Bridge at the south end of the watershed. The location is downstream of all inputs from the UA to the river and provides the downstream water conditions.

These locations have been accepted by EPA and New Mexico Environment Department (NMED) to meet the WSB MS4 Permit requirements in Part III.A. These North and South instream sample locations capture all inputs to the Rio Grande within the UA.

Sample Collection:

As mentioned previously, sample collection for the CMC is being conducted by DBS&A through a separate on-call contract. Since BHI was not involved, this task and memo do not address the details of the methodologies regarding sampling, determining if an event was a qualifying storm event, or determining the timing of the hydrograph at the Rio Grande South location.

DBS&A provided BHI with their field notes and field sample data (temperature, DO, specific conductivity, and pH) for the FY 2017 wet season sampling. AMAFCA provided BHI the completed laboratory analysis reports from Hall Environmental Analysis Laboratory (HEAL) for this monitoring season.

Quality Assurance Project Plan (QAPP):

AMAFCA provided BHI with the Draft Quality Assurance Project Plan (QAPP) for the CMC dated June 14, 2016. DBS&A followed this QAPP during sample collection. BHI used this QAPP and the included standard operating procedures (SOPs) for the data verification and validation.

Monitoring Activity & Lab Analysis Summary

The list below provides a chronological summary of the CMC comprehensive monitoring program activities completed by DBS&A for the FY 2017 wet season from July 2016 through October 2016. Three (3) qualifying storm events were sampled and analyzed during the FY 2017 wet season. In addition, there were four (4) other precipitation events during this wet season that did not evolve into qualifying storm events; however, an E. coli sample was still collected and field data was measured for the Rio Grande North location.

- **August 2 – Only E. coli for Rio Grande North.** A sample was collected at the Rio Grande North location and sent to the laboratory for an E. coli only test. Based on review of the storm event by the CMC, it was determined this was not a qualifying storm event; therefore, full parameter testing did not occur for the sample collected at the Rio Grande North location.
- **August 3 – Only E. coli for Rio Grande North.** A sample was collected at the Rio Grande North location and sent to the laboratory for an E. coli only test. Based on review

of the storm event by the CMC, it was determined this was not a qualifying storm event; therefore, full parameter testing did not occur for the sample collected at the Rio Grande North location.

- **August 10-11 – Qualifying Storm Event – Full Analysis of Samples.** A sample was collected at the Rio Grande North location beginning at noon on August 10 and sent to the laboratory for an E. coli only test. The CMC determined that the storm event beginning August 10 was a qualifying storm event. A Rio Grande South sample was collected beginning at 10:30 a.m. on August 11; the samples from the North (from August 10 collection) and South locations were taken to the laboratory for full parameter testing.

Due to miscommunication with the laboratory, analysis for PCBs for the August 10-11 samples were conducted using EPA Method 608. The results from this qualifying event do not have EPA Method 1668 results for PCBs. A footnote in Appendix F of the WSB MS4 Permit states that “EPA Method 1668 should be utilized when PCB water column monitoring is conducted to determine compliance with Permit requirements.”

- **August 31 – Only E. coli for Rio Grande North.** A sample was collected at the Rio Grande North location and sent to the laboratory for an E. coli only test. Based on review of the storm event by the CMC, it was determined this was not a qualifying storm event; therefore, full parameter testing did not occur for the sample collected at the Rio Grande North location.
- **September 7 – Only E. coli for Rio Grande North.** A sample was collected at the Rio Grande North location and sent to the laboratory for an E. coli only test. Based on review of the storm event by the CMC, it was determined this was not a qualifying storm event; therefore, full parameter testing did not occur for the sample collected at the Rio Grande North location.
- **September 12-13 – Qualifying Storm Event – Full Analysis of Samples.** A sample was collected at the Rio Grande North location beginning at 11:00 a.m. on September 12 and sent to the laboratory for an E. coli only test. The CMC determined that the storm event beginning September 12 was a qualifying storm event. A Rio Grande South sample was collected beginning at 7:15 a.m. on September 13; the samples from the North (from September 12 collection) and South locations were taken to the laboratory for full parameter testing. Analysis for PCBs for the September 12-13 samples were conducted using both EPA Method 608 and Method 1668.
- **September 21-22 – Qualifying Storm Event – Full Analysis of Samples.** A sample was collected at the Rio Grande North location beginning at 12:15 p.m. on September 21 and sent to the laboratory for an E. coli only test. The CMC determined that the storm event beginning September 21 was a qualifying storm event. A Rio Grande South sample was collected beginning at 11:00 a.m. on September 22; the samples from the North (from September 21 collection) and South locations were taken to the laboratory for full parameter testing. Analysis for PCBs for the September 21-22 samples were conducted using both EPA Method 608 and Method 1668.

Stormwater Quality Database for CMC

As stated previously, there were three (3) qualifying storm events during the FY 2017 wet season, wet weather monitoring which occurred August 10-11, September 12-13, and September 21-22. DBS&A’s field notes containing DO, pH, conductivity, and temperature measurements, as well as comments for the sampling done in August and September have been received, and field results

have been added to the database. Additionally, the HEAL reports for the corresponding time period have been received, added to the database, and are provided with this memo (Attachment 1). The laboratory reports attached to this memo have BHI added comments including the field parameter measurements and other relevant notes related to the laboratory report.

The HEAL analyses for these three (3) qualifying storm events contain the full parameter list for both the Rio Grande North and Rio Grande South sampling locations. There were several other precipitation events that did not evolve into qualifying storm events; however, an E. coli sample was still collected and field data was measured for the Rio Grande North location. These HEAL lab reports are also provided with this memo (Attachment 1). Despite not being qualifying storm events, the field and E. coli data collected were added to the database as they provide additional background data for the CMC program.

Database Creation and Data Entry:

An Excel database of the FY 2017 wet season, wet weather monitoring data was created for this Task. The database contains sample locations (Rio Grande North and Rio Grande South), sample date, analyses conducted, methods used, applicable surface water quality standards (WQS), WSB MS4 Permit required Minimum Quantification Levels (MQL), and analysis results. Applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4 as well as the Pueblo of Isleta and Pueblo of Sandia WQS are entered in the Excel database for comparison purposes with testing results. There is an indicator in the database to show if the monitoring results exceed the applicable surface WQS. An exceedance is not a violation of the WSB MS4 Permit, as the Permit does not have numeric discharge limitations. These ">WQ Standard" flags simply and quickly show the CMC members where the results of the lab data exceed the applicable WQS.

Upon receipt of the HEAL lab reports, water quality data was entered in to the database. All data entered in to the database is initially denoted with a "P" to indicate that it is provisional and has not been through the verification and validation process yet. Full parameter analyses of qualifying storm events for both Rio Grande North and Rio Grande South locations were entered respectively into the database. In addition, the E. coli and field data only samples from the Rio Grande North location, obtained during non-qualifying storm events, were also entered into the database. The database also contains Rio Grande monitoring results from two prior storm events occurring on July 15, 2014, and September 22, 2015, which were obtained during previous BHI/DBS&A tasks with AMAFCA. These were included in the database for comparison purposes, and they may assist the CMC with future analyses.

Data Verification and Validation:

The HEAL laboratory analysis reports were provided to BHI by AMAFCA. The lab reports also contain the Chain of Custody for the submitted samples. Field data was requested by and provided to BHI by DBS&A. Data verification and validation (V&V) was conducted by BHI on all field notes, lab reports, and Chain of Custody documents in accordance with the CMC Water Quality Standard Operating Procedure (SOP) #2, which is part of the existing CMC QAPP, Draft June 14, 2016. These procedures are based on EPA Guidance for Environmental Data Verification and Validation (U.S. EPA, 2008).

As stated in the QAPP, the V&V process was completed by a different person than the one who entered the data into the database. The V & V process included use of the *Data Verification and Validation Worksheet* (provided in the QAPP). For this task, field data was verified first, confirming that all field notes were complete. BHI handled field parameter questions directly with DBS&A. Chemical data verification began as soon as the lab reports were received, checking that all parameters were tested and looking for any obvious exceedances of WQS. Other steps listed on the *Data Verification and Validation Worksheet* were completed after all data from the laboratory was received and entered into the database. Sample blank results were reviewed to identify potential contamination during field processing or transport. Replica/duplicate samples were evaluated based on relative percent difference (as described in more detail in the QAPP) to determine the variability of the samples.

As the CMC members are aware, the August 10-11, 2016, sample was tested for PCBs using EPA Method 608 only. The other two qualifying storm event samples used both EPA Method 608 and Method 1668 for PCB testing.

In addition, in January 2017 the CMC members were made aware that the E. coli units reported in colony forming units (CFU)/100 milliliters (mL) in the HEAL reports should have been reported as most probable number (MPN) per 100 mL. The laboratory method used by HEAL is an EPA approved method that produces results in MPN/100 mL. After review and discussion with NMED, the units MPN/100 mL and CFU/100 mL are considered to be interchangeable for the purposes of this stormwater quality monitoring reporting. The New Mexico and Pueblo WQS for E. coli are currently in units of CFU/100 mL. Documentation related to the E. coli units is provided in Attachment 3 of this memo.

There were not any CMC FY 2017 wet season data that did not meet the appropriate QA/QC requirements. If there were any data that did not meet the appropriate QA/QC requirements, it would have been assigned an appropriate laboratory qualifier or validation codes. A summary of validation codes is provided in the QAPP.

Once the V&V process was completed, the worksheets were signed. Copies of the V&V worksheets are provided with this memo (Attachment 2). In the database, data that was checked during the V&V process was then changed from being denoted with a "P" for provisional to a "V" for verified, and laboratory qualifiers were added, as needed.

CMC FY 2017 Wet Season Assessment and Evaluation of Monitoring Results

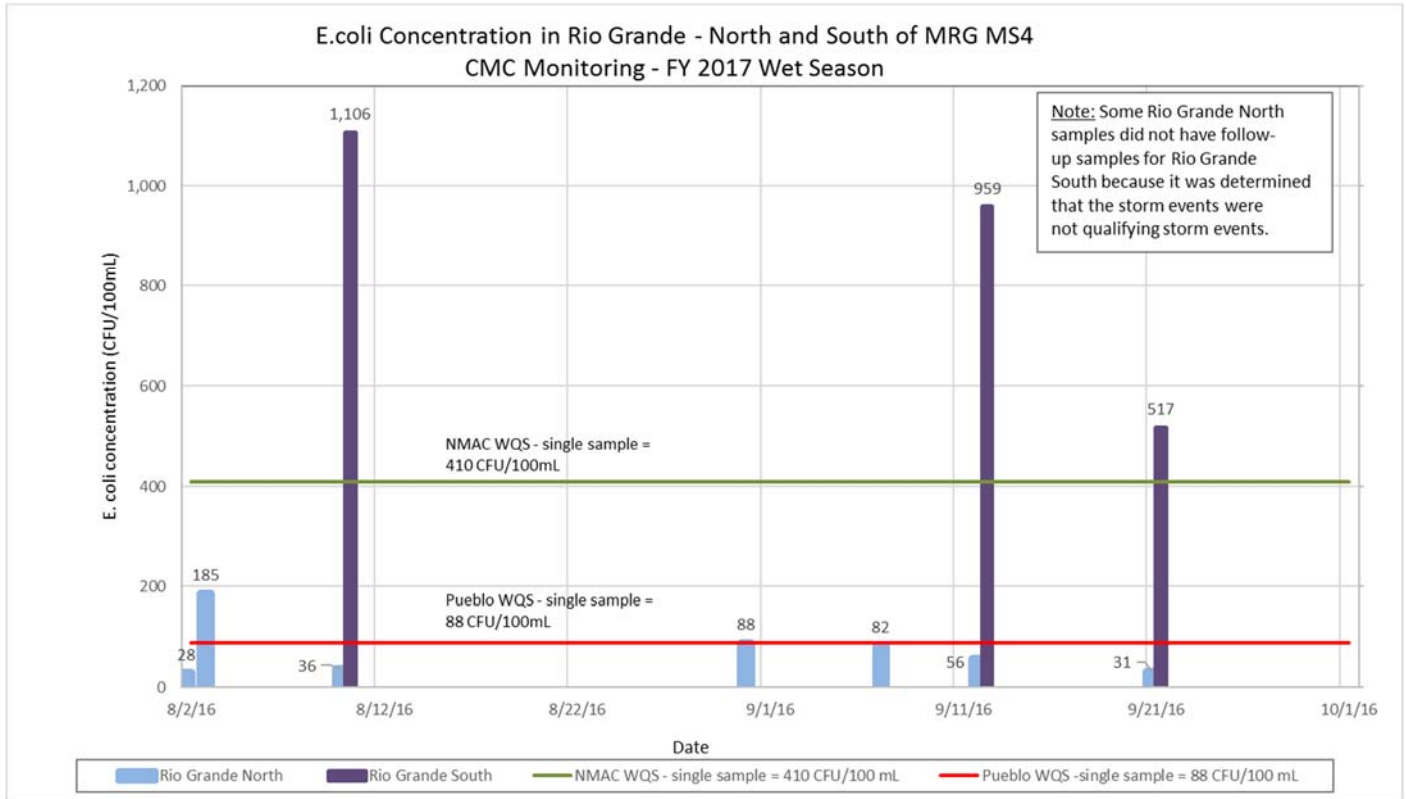
The EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016, has thirty-four (34) parameters to monitor at the Rio Grande North and Rio Grande South monitoring locations. Of these thirty-four (34) parameters, over half of the parameters—eighteen (18) parameters—were not detected in any of the FY 2017 wet season samples at either the Rio Grande North or South locations. Refer to Table 1 for a list of the parameters that were not detected.

**Table 1: Parameters Not Detected
 CMC FY 2017 Wet Season Monitoring**

Parameters Not Detected	
Oil and Grease (N-Hexane Extractable Material)	Dieldren
Total Kjeldahl Nitrogen (TKN)	Pentachlorophenol
Ammonia (mg/L as N)	Benzidine
Tetrahydrofuran	Benzo(a)anthracene
Benzo(a)pyrene	Dibenzofuran
Benzo(b)fluoranthene (3, 4 Benzofluoranthene)	Dibenzo(a,h)anthracene
Benzo(k)fluoranthene	Chromium VI (Hexavalent)
Chrysene	Dissolved Lead
Indeno(1,2,3-cd)Pyrene	Bis (2-ethyhexyl) Phthalate

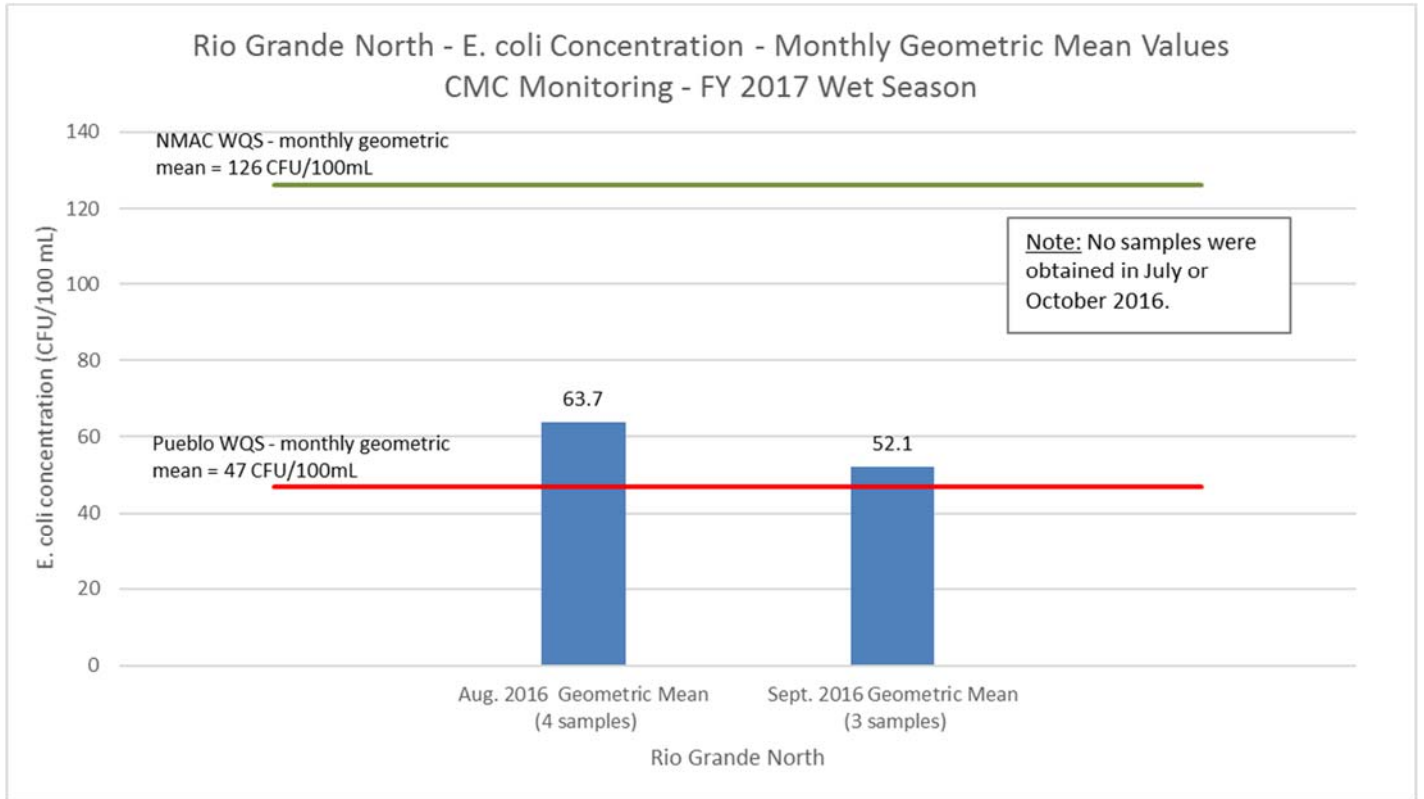
E. coli:

For the remaining sixteen (16) parameters on the CMC monitoring parameter list, only one parameter (*E. coli*) had exceedances of the applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4 and the Pueblo of Isleta and Pueblo of Sandia WQS during the FY 2017 wet season. At the Rio Grande North location (upstream of the Albuquerque UA, at the Angostura Diversion Dam), seven (7) samples were collected and tested for *E. coli*, and two (2) of the samples had results that exceeded the primary contact-single sample Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL). At the Rio Grande South location (downstream of the MS4 UA), three (3) samples were collected and tested for *E. coli*, and all of these samples had results that exceeded the primary contact-single sample NMAC WQS (410 CFU/100 ml) as well as the Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL). As a reminder, the *E. coli* units of MPN/100 mL and CFU/100 mL are considered to be interchangeable. The graphs presented in this section use units of CFU/100 mL to be consistent with the WQSs units. Refer to Figure 2 for a graphical representation of Wet Season *E. coli* results.

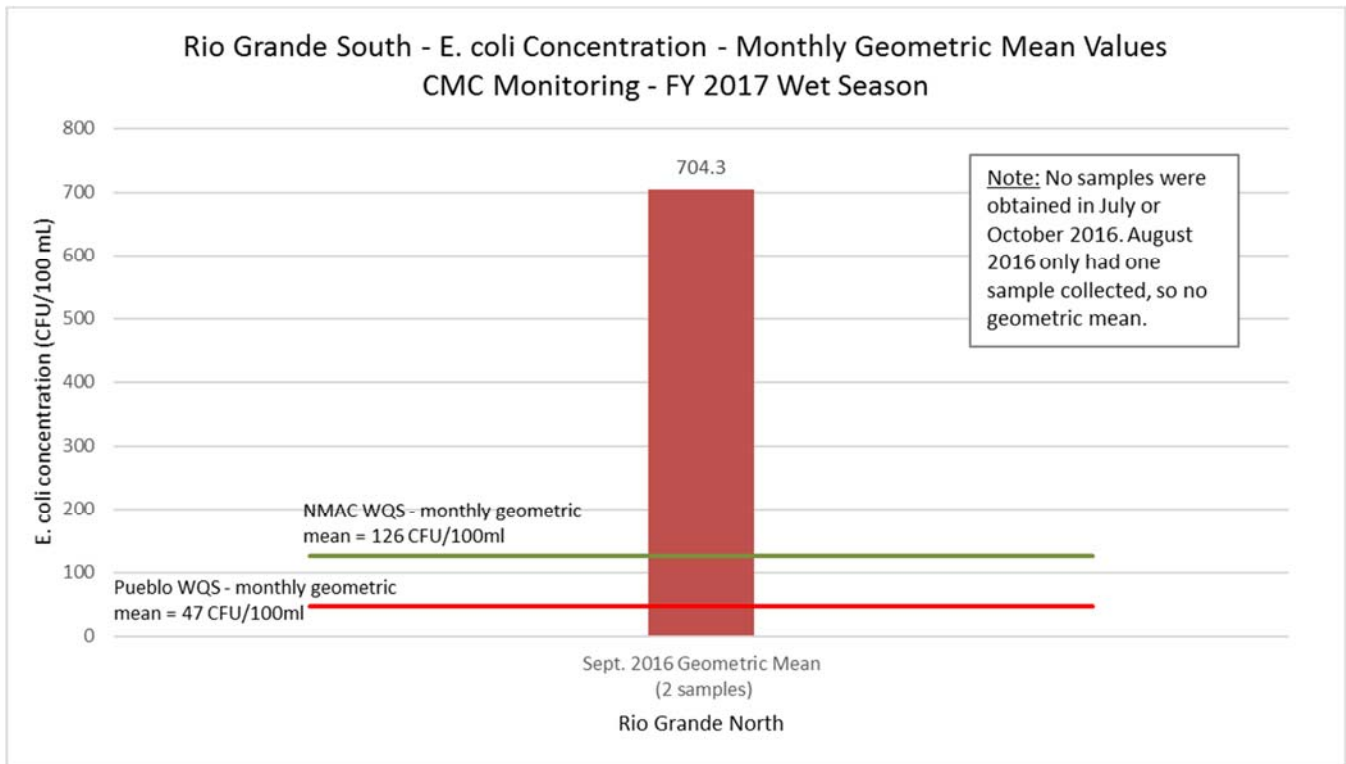


**Figure 2: E. coli Results
 CMC Monitoring – FY 2017 Wet Season**

No E. coli samples in the Rio Grande under this monitoring program were obtained in July 2016 or October 2016. In August 2016, multiple samples were obtained for the Rio Grande North location and one (1) sample for the Rio Grande South location. In September 2016, multiple samples were obtained for the Rio Grande North and South locations. A geometric mean of the collected data was calculated for each month (August and September 2016), and these were compared to the E. coli monthly geometric mean WQS (NMAC monthly geometric mean = 126 CFU/100 mL and Pueblo monthly geometric mean = 47 CFU/100 mL). Refer to Figures 3 and 4 for the geometric mean results and comparison to applicable WQS.



**Figure 3: E. coli Geometric Mean Results for Rio Grande North
CMC Monitoring – FY 2017 Wet Season**



**Figure 4: E. coli Geometric Mean Results for Rio Grande South
 CMC Monitoring – FY 2017 Wet Season**

Dissolved Oxygen, PCB's and Temperature:

Three of the water quality parameters are specifically worth mentioning in this memo because they are listed in the WSB MS4 Permit, Part I.C.1 – Special Conditions: dissolved oxygen, PCBs, and temperature.

Dissolved oxygen is a water quality concern in the Rio Grande if it is below 5 mg/L. None of the samples taken from the Rio Grande during the FY 2017 wet season monitoring had dissolved oxygen values below 5 mg/L. This provides the MS4s with specific monitoring data showing that stormwater did not cause or contribute to exceedances of applicable dissolved oxygen water quality standards in the Rio Grande during the FY 2017 wet season. Refer to Figure 5 for dissolved oxygen results and comparison to applicable WQS.

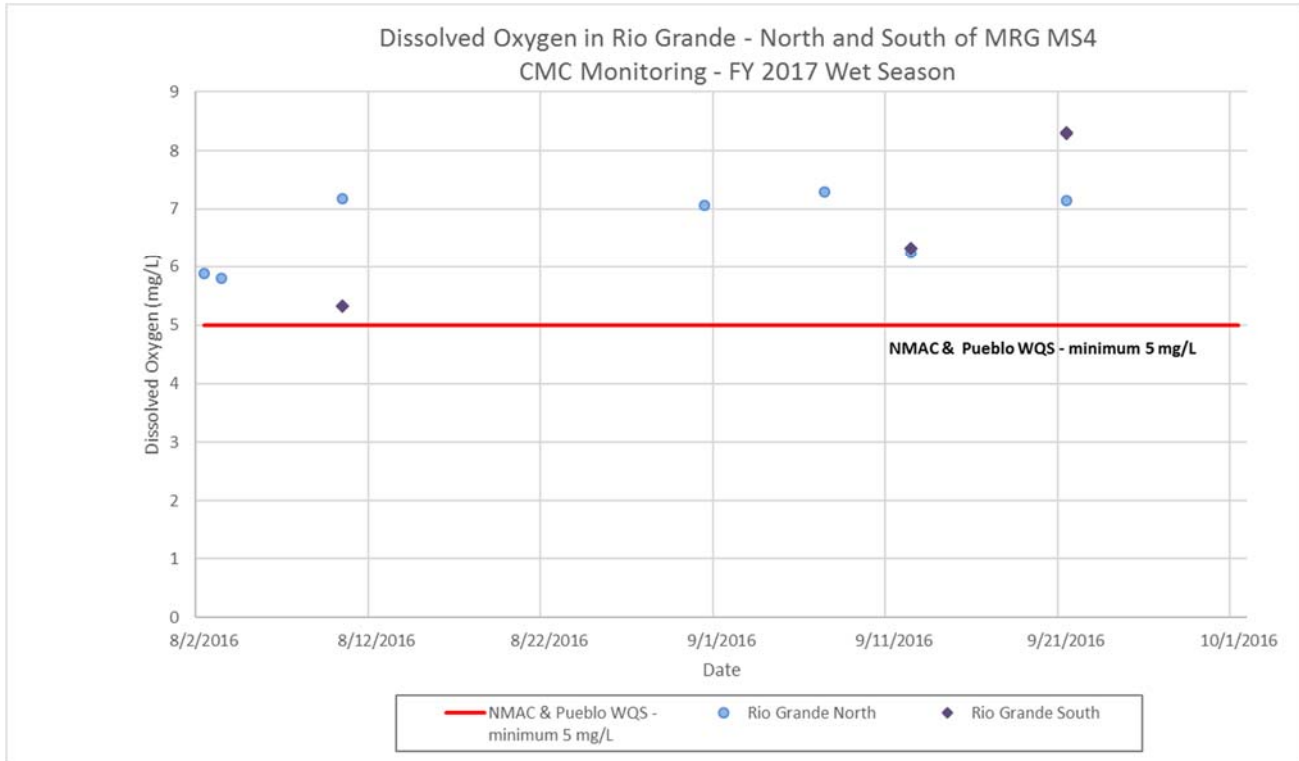


Figure 5: Dissolved Oxygen Results for Rio Grande CMC Monitoring – FY 2017 Wet Season

For the CMC FY 2017 wet season samples, there were no exceedances of WQS for PCBs. This data can be used by the CMC members to demonstrate that stormwater discharges are not contributing to exceedances of applicable PCB water quality standards in the Rio Grande.

Temperature is listed in the WSB MS4 Permit as a special condition (only applicable to the City of Albuquerque and AMAFCA). Past data submitted to EPA and NMED has proven that stormwater discharges into the Rio Grande are not raising the Rio Grande temperature above the water quality standards. The data collected during this FY 2017 wet season monitoring supports this conclusion. All of the temperature field readings taken in the Rio Grande during the CMC FY 2017 wet season were below 32.2°C (90 °F) – the WQS for the State of New Mexico and for the Isleta and Sandia Pueblos. Refer to Figure 6 for temperature results and comparison to applicable WQS.

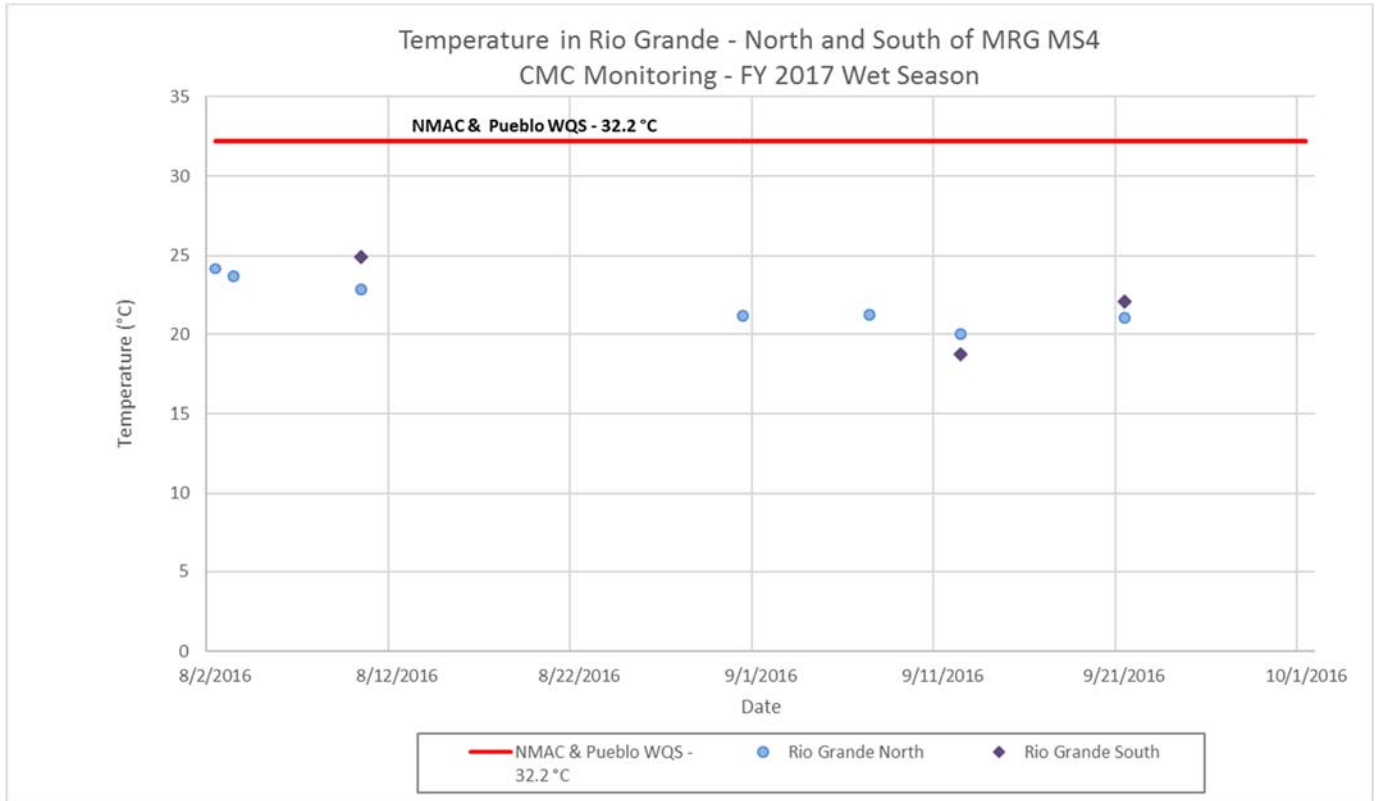


Figure 6: Temperature Monitoring Results in Rio Grande CMC Monitoring – FY 2017 Wet Season

CMC FY 2017 Wet Season E. coli Loading Calculations and Waste Load Allocation (WLA)

Related to assessing the stormwater results, BHI has calculated the E. coli daily loading and compared it to the aggregate Total Maximum Daily Load (TMDL) Waste Load Allocation (WLA) for the CMC group. A TMDL is the maximum amount of a pollutant (E. coli in this case) that a water body (Rio Grande) can assimilate on a daily basis without violating applicable surface WQS. The total TMDL for a stream segment consists of the multiple WLA for point sources, non-point sources, and natural sources, plus a margin of safety. The CMC MS4 allotted WLA was determined in the US EPA Approved, Total Maximum Daily Load for the Middle Rio Grande Watershed, June 30, 2010, and subsequent communications with NMED. The WLA varies by flow condition in the Rio Grande and by stream segment.

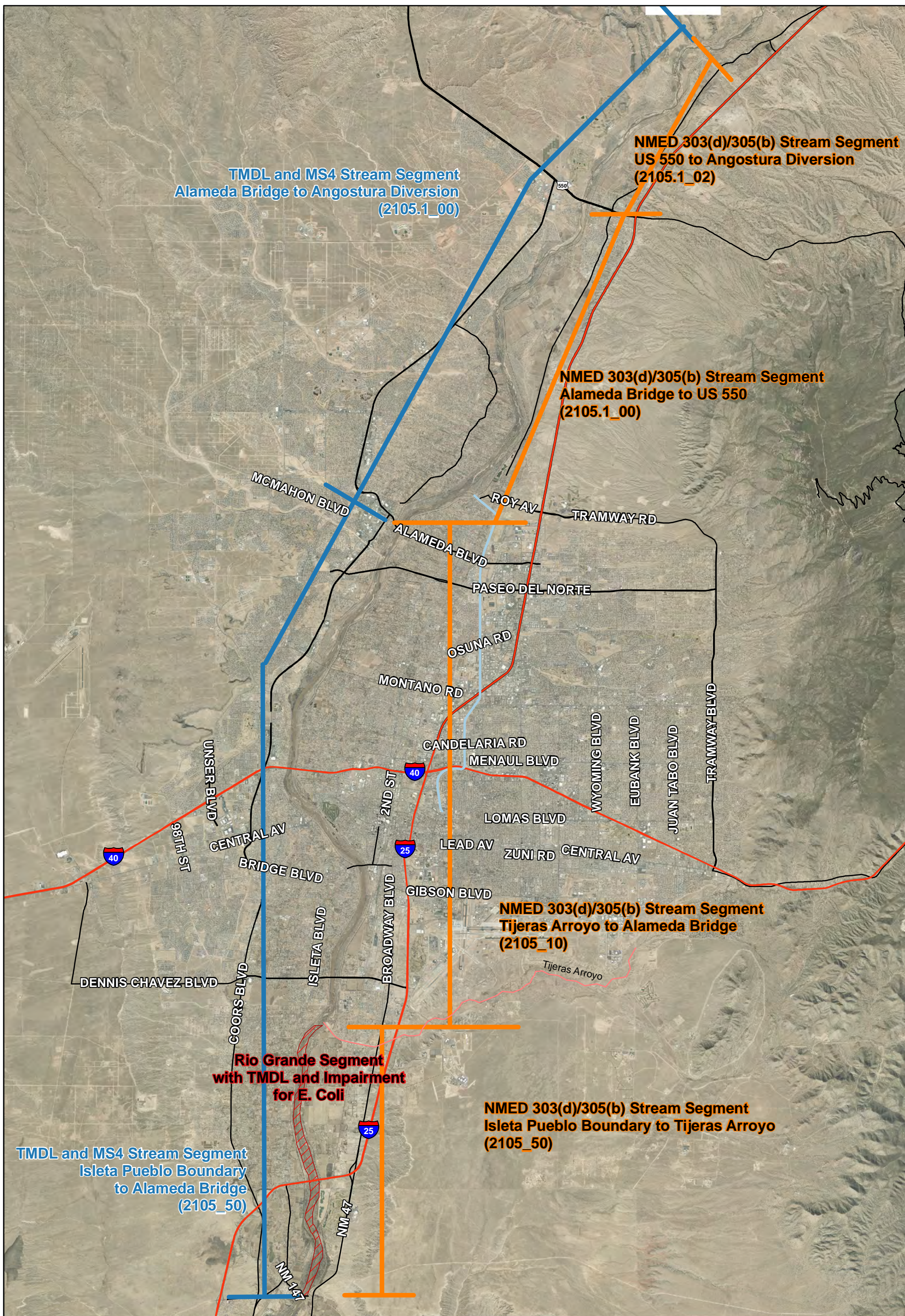
E. coli loading calculations and comparison to the WLA follows the WSB MS4 Permit requirements in "Discharges to Water Quality Impaired Water Bodies with an Approved TMDL," Part I.C.2.b.(i).(c).B, Appendix B-Total Maximum Daily Loads (TMDLs) Tables of the WSB MS4 Permit, and the NMED guidance provided to the CMC. AMAFCA also provided guidance to BHI related to the E. coli loading calculation procedure and provided an example calculation from July 2016.

Attached to this memo is the WLA Calculation spreadsheet which steps through the E. coli daily loading calculations and assumptions comparing the calculated E. coli loading to the CMC aggregate WLA defined by NMED. BHI provided the draft calculations spreadsheet for review to AMAFCA, who shared this with other CMC members, in both December 2016 and February 2017. The CMC members also met to discuss the E. coli loading calculations with NMED on February 1, 2017. Meeting minutes are included as Attachment 4 to this memo. BHI followed up with NMED on February 16, 2017, regarding specific calculation details. The current spreadsheet includes the improvements discussed at the NMED meeting and follow-up phone call. An email summarizing the February 16, 2017, conference call was sent to NMED and EPA on March 2, 2017, and a copy of this is included in Attachment 4 to this memo.

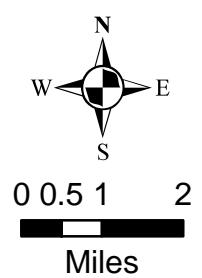
There are two (2) stream segments defined in the WSB MS4 Permit (Appendix B): Isleta Pueblo Boundary to Alameda Street Bridge (Stream Segment 2105_50) and Non-Pueblo Alameda Bridge to Angostura Diversion (Stream Segment 2105.1_00). These stream segments differ from NMED's current stream segments defined in "2016-2018 State of New Mexico Clean Water Act Section 303(d)/Section 305(b) Integrated Report," September 23, 2016. NMED currently has four (4) stream segments instead of the two (2) WSB MS4 stream segments; of the four (4) segments, only one segment has an impairment for E. coli (2105_50 Isleta Pueblo Boundary to Tijeras Arroyo). These various stream segment designations are shown in Figure 7, page 15.

NMED provided clarification at the February 1, 2017, meeting regarding the various stream segment designations. The NMED 303(d)/305(b) 2016-2018 Integrated Report tables show the most recent assessment results, and currently there is only one segment of the Rio Grande (Isleta to Tijeras) that was found to be impaired for E. coli. However, the TMDL for the other stream segments do not go away even if they are no longer impaired – the TMDL remains in place as a protective measure. TMDLs remain in effect after impairments are removed as protective measures.

The E. coli daily loading associated with the CMC group and comparison to the NMED WLA was completed for the three (3) qualifying event wet season storm events – August 10-11, 2016, September 12-13, 2016, and September 21-22, 2016. Refer to Table 2 for a summary of the WLA comparison results. A spreadsheet is attached to this memo that provides the detailed calculations.



- Legend**
- TMDL/MS4 Stream Segments
 - NMED Stream Segments
 - North Diversion Channel
 - Rio Grande Segment w/ TMDL and Impairment for E. Coli
 - Interstate Highway
 - U.S. Highway
 - State Highway



CMC Monitoring
Figure 7
Rio Grande
NMED and MS4 Permit
Stream Segments

Table 2: Summary of CMC Daily E. Coli Loading Compared to WLA for the CMC

Date / Stream Segment	Daily Mean Flow (cfs)	Flow Conditions (cfs) <i>range defined by NMED</i>	CMC Daily E. coli Loading (CFU/day)	NMED WLA for CMC for Stream Segment and Flow Conditions	Loading Compared to WLA Potential Exceedance or Acceptable
August 10-11, 2016 – Rio Grande North E. coli concentration = 35.9 CFU/100 mL and Rio Grande South E. coli Concentration = 1,106 CFU/100 mL					
Alameda to Angostura	639	Dry	8.32E+11	3.24E+10	Potential Exceedance
Isleta to Alameda	703	Mid	2.34E+11	4.22E+10	Potential Exceedance
September 12-13, 2016 – Rio Grande North E. coli concentration = 55.6 CFU/100 mL and Rio Grande South E. coli Concentration = 959 CFU/100 mL					
Alameda to Angostura	435	Dry	4.67E+11	3.24E+10	Potential Exceedance
Isleta to Alameda	467	Dry	1.02E+11	1.57E+10	Potential Exceedance
September 21-22, 2016 – Rio Grande North E. coli concentration = 31.1 CFU/100 mL and Rio Grande South E. coli Concentration = 517 CFU/100 mL					
Alameda to Angostura	350	Low	1.29E+11	1.68E+10	Potential Exceedance
Isleta to Alameda	251	Low	1.22E+10	3.42E+09	Potential Exceedance

As Table 2 illustrates, the E. coli loading for the three wet season events all potentially exceeded the CMC allocated WLA. The WSB MS4 Permit implies that the WLA is a measurable goal for the MS4s related to E. coli. Based on extensive review of the US EPA Approved, Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed, June 30, 2010, this seems to be an unattainable goal for MS4s. The 2010 TMDL Report states on page 40, “It is important to remember that the TMDL is a planning tool to be used to achieve water quality standards...Meeting the calculated TMDL may be a difficult objective.” The TMDL/WLA was calculated by NMED to meet the Pueblo (Sandia and Isleta) geometric mean maximum of 47 CFU/100 mL which was done to be “protective of downstream waters” and “to provide an implicit margin of safety (MOS).” A single grab sample E. coli result meeting this very low geometric mean WQS will be very difficult for the MS4s to obtain.

The CMC members discussed the difficulty of using the WLA as a measurable goal with NMED on February 1, 2017. NMED explained that exceeding the WLA does not trigger enforcement. However, NMED strongly encouraged the MS4s to document what they are doing once they realize the WLA is potentially exceeded. The February 1, 2017, meeting and the February 16, 2017, CMC discussion with NMED demonstrate that CMC members are working toward understanding the WLA. In addition, the CMC members and NMED discussed potential

refinements to the sampling plan, demonstrating that the CMC is investigating the potential exceedances and improvements to monitor E. coli in the Rio Grande.

Data Entry for Discharge Monitoring Reports

As required in the WSB MS4 Permit, verified stormwater quality data must be submitted annually to the EPA using electronic Discharge Monitoring Report (DMR) forms. Data from the DMRs are uploaded to a comprehensive nation-wide database that contains discharge data for facilities and other point sources that discharge directly to receiving streams. Currently, the CMC members are working with the EPA regarding access and use of the NetDMR system. For this Task, BHI has not completed any data entry related to the EPA DMRs for the FY 2017 wet season.

Conclusions and Planning

During the FY 2017 wet season (July 1 to October 31, 2016), three (3) qualifying stormwater samples were obtained by the CMC. Lab results have been received for all of these samples. This data has been entered into the project Excel database. The lab data entered is marked in the spreadsheet as "V" (verified), and data V&V has been completed (refer to Attachment 2).

To summarize, monitoring results and E. coli loading calculations for the FY 2017 wet season show that:

- Three (3) of the seven (7) required samples in the WSB MS4 Permit Wet Weather Monitoring section were obtained. Seven (7) samples are required during the 5-year Permit term, so this is significant progress for the CMC. The CMC also met the required Permit minimum of three (3) events during the wet season.
- Over half of the parameters tested (18 of the 34) were not detected in any of the Rio Grande samples.
- Only E. coli was in exceedance of applicable New Mexico and Pueblos of Sandia and Isleta WQS.
 - All dissolved oxygen results were greater than 5 mg/L (minimum WQS).
 - All temperature results were less than 32.2 °C (maximum WQS).
 - There were no PCB test results exceeding the applicable WQS.
- The calculated E. coli loading for the three qualifying storm events show that the WLA for the CMC members is potentially exceeded for all three events.
 - Sources for the E. coli loading measured in the river are not solely attributable to the CMC MS4 members; the E. coli loading calculations serve to provide a reasonable estimate of the CMC contribution to the measured E. coli loading.
 - This sampling and calculation approach is only an estimate of the CMC contribution to the E. coli loading which is why the term "potential exceedance" is used.
 - The in-stream data does not provide the concentration of E. coli contributed by only the CMC MS4s, or any of the other potential sources. By using this percentage calculation approach, if other contributors are in exceedance of the WLA, then the CMC will likely also be in exceedance since this approach relies on a percentage of a total.

- A meeting was held with CMC members and NMED on February 1, 2017, to discuss the E. coli loading and WLA calculations.
- A follow-up conference call occurred with NMED on February 16, 2017, discussing details related to the E. coli loading calculations.

The dry season monitoring results and E. coli loading calculations will be summarized by BHI for the CMC in a memo due July 20, 2017.

SG/le

Attachments:

Attachment 1 – Hall Environmental Analysis Laboratory Reports with BHI Notes for FY 2017 Wet Season

Attachment 2 – FY 2017 Wet Season Completed Data Verification and Validation Forms

Attachment 3 – Documentation Related to E. coli Units MPN/100 mL and CFU/100 mL

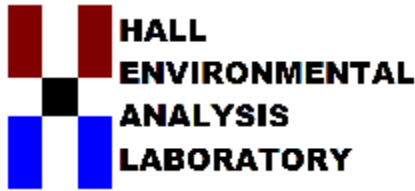
Attachment 4 – Documentation of NMED Coordination Regarding E. coli Loading Calculations and CMC MS4 Waste Load Allocation

Spreadsheets Included Separately:

E. coli Loading and Comparison to Waste Load Allocation (WLA) Excel Spreadsheet

Excel CMC Spreadsheet with FY 2017 Wet Season Stormwater Quality Monitoring Results

ATTACHMENT 1
HALL ENVIRONMENTAL ANALYSIS LABORATORY
REPORTS WITH BHI NOTES FOR FY 2017 WET SEASON



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 09, 2016

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

RE: CMC

OrderNo.: 1608105

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/2/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):

8/2/16 - Rio Grande North

DO = 5.89 mg/L, pH = 8.05, Conductivity = 256 umhos/cm, and Temperature = 24.15 °C

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1608105

Date Reported: 8/9/2016

CLIENT: AMAFCA

Client Sample ID: Rio Grande North

Project: CMC

Collection Date: 8/2/2016 1:10:00 PM

Lab ID: 1608105-001

Matrix: AQUEOUS

Received Date: 8/2/2016 2:20:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: tnc
E. Coli	28.1	1.000		CFU/100ml	1	8/3/2016 5:16:00 PM	26757

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: AMAFCA

Work Order Number: 1608105

RcptNo: 1

Received by/date: [Signature] 08/02/16

Logged By: Lindsay Mangin 8/2/2016 2:20:00 PM [Signature]

Completed By: Lindsay Mangin 8/2/2016 2:21:10 PM [Signature]

Reviewed By: [Signature] 08/02/16 @ 1530

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
Samples were collected the same day and chilled.
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vals
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? Yes No
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? Yes No

of preserved bottles checked for pH: _____
 (<2 or >12 unless noted)
 Adjusted? _____
 Checked by: _____

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	24.2	Good	Not Present			

Chain-of-Custody Record

Ident:

AMAFCA

Mailing Address:

Turn-Around Time:

Standard Rush

Project Name:

CMC

Project #:

Phone #:

Mail or Fax#: pchavez@amafca.org

QC Package:

Standard Level 4 (Full Validation)

Credentiation

NELAP Other

EDD (Type)

Project Manager:

Patrick Chavez

Sampler:

C. Johannesen

On Ice: Yes No

Sample Temperature: 24.2

Container Type and #

Preservative Type

HEAL No. 1608105

Date Time Matrix Sample Request ID

2-16 1310

A&A

Rio Grande - North

1-poly Nuzels - 001

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
										E. coli: E. coli Fosterly	
										X	

Analysis Request

Date Time

2-16 1420

Relinquished by:

[Signature]

Received by:

[Signature]

Date Time

2-16 1420

Remarks:

Date Time

Relinquished by:

Received by:

Date Time

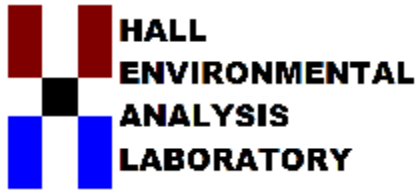


HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 09, 2016

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

RE: AMAFCA-CMC

OrderNo.: 1608171

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/3/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):

8/3/16 - Rio Grande North

DO = 5.8 mg/L, pH = 8.6, Conductivity = 270 umhos/cm, and Temperature = 23.67 °C

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1608171

Date Reported: 8/9/2016

CLIENT: AMAFCA

Client Sample ID: Rio Grande-North

Project: AMAFCA-CMC

Collection Date: 8/3/2016 12:15:00 PM

Lab ID: 1608171-001

Matrix: AQUEOUS

Received Date: 8/3/2016 1:15:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: tnc
E. Coli	185	10.00		CFU/100ml	10	8/4/2016 4:04:00 PM	26777

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87109
 TEL: 505-345-3975 FAX: 505-345-4107
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **AMAFCA**

Work Order Number: **1608171**

RcptNo: 1

Received by/date:

AT *08/03/16*

Logged By: **Lindsay Mangin**

8/3/2016 1:15:00 PM

Lindsay Mangin

Completed By: **Lindsay Mangin**

8/3/2016 1:19:08 PM

Lindsay Mangin

Reviewed By:

JO *8/03/16 @ 1330*

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
Samples were collected the same day and chilled.
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
 # of preserved bottles checked for pH:
- 12. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes No Adjusted?
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? Yes No Checked by:
 (If no, notify customer for authorization.)

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	14.3	Good	Not Present			

Chain-of-Custody Record

Client: AMAFLA

Turn-Around Time:
 Standard Rush

Project Name:

AMAFLA - CMC

Mailing Address:

Project #:

Phone #:

email or Fax#: pchavez@amafla.org

QA/QC Package:

Standard Level 4 (Full Validation)

Accreditation

NELAP Other _____

EDD (Type) _____

Project Manager:

Patrick Chavez

Sampler: Chad Johannesen

On Ice: Yes No

Sample Temperature: 14.3

Date Time Matrix Sample Request ID

3-16 1215 A&A Rio Grande-North 1-poly

Container Type and #

1608171

Preservative Type

-

HEAL No.

-001

BTEX + MTBE + TMBs (8021)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCBs

8260B (VOA)

8270 (Semi-VOA)

Air Bubbles (Y or N)

X

Date:

3-16

Relinquished by:

[Signature]

Received by:

[Signature]

Date

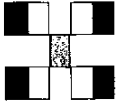
08/03/10

Time

1315

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 16, 2016

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

RE: CMC

OrderNo.: 1608623

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/10/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Field Data - Provided by DBS&A (field notebook & e-mails):

8/10/16 - Rio Grande North

DO = 7.18 mg/L, pH = 8.73, Conductivity = 280 umhos/cm, and Temperature = 22.8 °C

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1608623

Date Reported: 8/16/2016

CLIENT: AMAFCA

Client Sample ID: Rio Grande North

Project: CMC

Collection Date: 8/10/2016 12:50:00 PM

Lab ID: 1608623-001

Matrix: AQUEOUS

Received Date: 8/10/2016 1:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: tnc
E. Coli	35.9	1.000		CFU/100ml	1	8/11/2016 3:35:00 PM	26899

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: **AMAFCA**

Work Order Number: **1608623**

RcptNo: **1**

Received by/date: LM 08/10/16

Logged By: **Ashley Gallegos** 8/10/2016 1:50:00 PM *AG*

Completed By: **Ashley Gallegos** 8/10/2016 2:04:58 PM *AG*

Reviewed By: *AG* 08/10/16 @ 15:00

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)

of preserved bottles checked for pH: _____
 (<2 or >12 unless noted)
 Adjusted? _____
 Checked by: _____

Special Handling (if applicable)

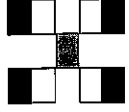
- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	18.4	Good	Not Present			



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Chain-of-Custody Record

Turn-Around Time:

Standard Rush

Project Name:

CMC

Project #:

Project Manager:

Patrick Chavez

Sampler: C. Johannesen

On Ice: Yes No

Sample Temperature: 18.4

Container Type and #

HEAL No.

10081003

-001

1-poly

Sample Request ID

Matrix

10-16 1750 AQ RioGrande -North

Date

Time

Date

Time

Received by:

Date

Time

Date

Time

Received by:

Date

Time

Remarks:

Analysis Request

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCBs

8260B (VOA)

8270 (Semi-VOA)

X E-Coli Num

Air Bubbles (Y or N)

Relinquished by:

Signature

Date

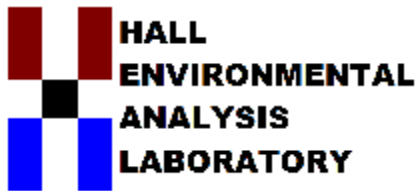
Time

Relinquished by:

Signature

Date

Time



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 29, 2016

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

RE: CMC

OrderNo.: 1608678

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/11/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):

8/10/16 - Rio Grande North

DO = 7.18 mg/L, pH = 8.73, Conductivity = 280 umhos/cm, and Temperature = 22.8 °C

8/11/16 - Rio Grande South

DO = 5.33 mg/L, pH = 8.7, Conductivity = 326 umhos/cm, and Temperature = 24.9 °C

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1608678

Date Reported: 11/29/2016

CLIENT: AMAFCA
 Project: CMC
 Lab ID: 1608678-001

Client Sample ID: **Rio Grande-North**
 Collection Date: 8/10/2016 12:50:00 PM
 Received Date: 8/11/2016 1:00:00 PM

Matrix: AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Copper	0.0012	0.0010		mg/L	1	8/24/2016 9:43:30 PM	C36740
Lead	ND	0.00050		mg/L	1	8/24/2016 9:43:30 PM	C36740
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO3)	110	6.6		mg/L	1	9/6/2016 11:18:00 AM	R37002
SM5210B: BOD							Analyst: SMS
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	8/16/2016 3:42:00 PM	26933
EPA METHOD 1664A							Analyst: tnc
N-Hexane Extractable Material	ND	11		mg/L	1	8/15/2016 11:15:00 AM	26986
EPA METHOD 300.0: ANIONS							Analyst: LGT
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/28/2016 6:49:42 PM	R36824
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	230	40.0	D	mg/L	1	8/16/2016 1:30:00 PM	26970
SM 4500 NH3: AMMONIA							Analyst: CJS
Nitrogen, Ammonia	ND	1.0		mg/L	1	8/18/2016 2:36:00 PM	R36607
TOTAL NITROGEN							Analyst: SRM
Nitrogen, Total	ND	1.0		mg/L	1	8/30/2016 11:53:00 AM	R36856
SM4500-H+B: PH							Analyst: JRR
pH	8.20	1.68	H	pH units	1	8/15/2016 8:14:03 PM	R36527
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.081	0.010		mg/L	1	8/24/2016 11:37:37 AM	27121
SM 4500 NORG C: TKN							Analyst: CJS
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	8/19/2016 2:28:00 PM	27057
SM 2540D: TSS							Analyst: KS
Suspended Solids	41	4.0		mg/L	1	8/14/2016 12:11:00 PM	26969
EPA METHOD 200.7: DISSOLVED METALS							Analyst: MED
Calcium	36	1.0		mg/L	1	9/6/2016 7:41:04 PM	D37002
Magnesium	6.1	1.0		mg/L	1	9/6/2016 7:41:04 PM	D37002

See lab report 1608623 for Rio Grande North E. coli results.

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1608678

Date Reported: 11/29/2016

CLIENT: AMAFCA
 Project: CMC
 Lab ID: 1608678-002

Matrix: AQUEOUS

Client Sample ID: **Rio Grande-South**
 Collection Date: 8/11/2016 11:30:00 AM
 Received Date: 8/11/2016 1:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Copper	0.0012	0.0010		mg/L	1	8/24/2016 9:46:33 PM	C36740
Lead	ND	0.00050		mg/L	1	8/24/2016 9:46:33 PM	C36740
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO3)	130	6.6		mg/L	1	9/6/2016 11:18:00 AM	R37002
SM5210B: BOD							Analyst: SMS
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	8/16/2016 3:42:00 PM	26933
SM 9223B FECAL INDICATOR: E. COLI MPN Equivalent to MPN/100 mL							Analyst: tnc
E. Coli	1106	10.00		CFU/100ml	10	8/12/2016 3:37:00 PM	26941
EPA METHOD 1664A							Analyst: tnc
N-Hexane Extractable Material	ND	10		mg/L	1	8/15/2016 11:15:00 AM	26986
EPA METHOD 300.0: ANIONS							Analyst: LGT
Nitrate+Nitrite as N	ND	1.0		mg/L	5	8/28/2016 7:02:07 PM	R36824
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	305	100	D	mg/L	1	8/16/2016 1:30:00 PM	26970
SM 4500 NH3: AMMONIA							Analyst: CJS
Nitrogen, Ammonia	ND	2.0	D	mg/L	2	8/18/2016 2:36:00 PM	R36607
TOTAL NITROGEN							Analyst: SRM
Nitrogen, Total	<2	1.0		mg/L	1	8/30/2016 11:53:00 AM	R36856
SM4500-H+B: PH							Analyst: JRR
pH	8.24	1.68	H	pH units	1	8/15/2016 8:18:14 PM	R36527
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.38	0.010		mg/L	1	8/24/2016 11:42:07 AM	27121
SM 4500 NORG C: TKN							Analyst: CJS
Nitrogen, Kjeldahl, Total	ND	2.0	D	mg/L	1	8/19/2016 2:28:00 PM	27057
SM 2540D: TSS							Analyst: KS
Suspended Solids	330	4.0		mg/L	1	8/14/2016 12:11:00 PM	26969
EPA METHOD 200.7: DISSOLVED METALS							Analyst: MED
Calcium	40	1.0		mg/L	1	9/6/2016 7:53:00 PM	D37002
Magnesium	6.5	1.0		mg/L	1	9/6/2016 7:53:00 PM	D37002

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1608678

Date Reported: 11/29/2016

CLIENT: AMAFCA

Client Sample ID: Rio Grande-North Filtered

Project: CMC

Collection Date: 8/10/2016 12:50:00 PM

Lab ID: 1608678-003

Matrix: AQUEOUS

Received Date: 8/11/2016 1:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.030	0.010		mg/L	1	8/24/2016 11:43:37 AM	27121

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1608678

Date Reported: 11/29/2016

CLIENT: AMAFCA

Client Sample ID: Rio Grande-South Filtered

Project: CMC

Collection Date: 8/11/2016 11:30:00 AM

Lab ID: 1608678-004

Matrix: AQUEOUS

Received Date: 8/11/2016 1:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.17	0.010		mg/L	1	8/24/2016 11:45:07 AM	27121

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160817078
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1608678
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 160817078-001 **Sampling Date** 8/10/2016 **Date/Time Received** 8/17/2016 1:30 PM
Client Sample ID 1608678-001C / RIO GRANDE-NORTH **Sampling Time** 12:50 PM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	8/24/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160817078-001	1,2-Dichlorobenzene-d4	EPA 8260C	99.2	70-130
	4-Bromofluorobenzene	EPA 8260C	94.8	70-130
	Toluene-d8	EPA 8260C	98.8	70-130

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160817078
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1608678
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 160817078-004 **Sampling Date** 8/11/2016 **Date/Time Received** 8/17/2016 1:30 PM
Client Sample ID 1608678-002C / RIO GRANDE-SOUTH **Sampling Time** 11:30 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	8/24/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160817078-004	1,2-Dichlorobenzene-d4	EPA 8260C	101.2	70-130
	4-Bromofluorobenzene	EPA 8260C	96.0	70-130
	Toluene-d8	EPA 8260C	98.8	70-130

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160817078
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1608678
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

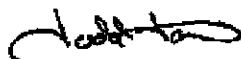
Sample Number 160817078-007 **Sampling Date** 8/10/2016 **Date/Time Received** 8/17/2016 1:30 PM
Client Sample ID 1608678-005A / TRIP BLANK **Sampling Time**
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	8/24/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160817078-007	1,2-Dichlorobenzene-d4	EPA 8260C	100.4	70-130
	4-Bromofluorobenzene	EPA 8260C	95.2	70-130
	Toluene-d8	EPA 8260C	91.2	70-130

Authorized Signature



Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160817078
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1608678
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Tetrahydrofuran	8.46	ug/L	10	84.6	70-130	8/24/2016	8/24/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Tetrahydrofuran	ND	ug/L	0.5	8/24/2016	8/24/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160817078
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1608678
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 160817078-002 **Sampling Date** 8/10/2016 **Date/Time Received** 8/17/2016 1:30 PM
Client Sample ID 1608678-001G / RIO GRANDE-NORTH **Sampling Time** 12:50 PM **Extraction Date** 8/17/2016
Matrix Water
Comments

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Aroclor 1016 (PCB-1016)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Aroclor 1221 (PCB-1221)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Aroclor 1232 (PCB-1232)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Aroclor 1242 (PCB-1242)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Aroclor 1248 (PCB-1248)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Aroclor 1254 (PCB-1254)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Aroclor 1260 (PCB-1260)	ND	ug/L	0.1	0.2	8/31/2016	MAH	EPA 608	
Dieldrin	ND	ug/L	0.003	0.01	8/31/2016	MAH	EPA 608	

Surrogate Data

Sample Number 160817078-002

Surrogate Standard	Method	Percent Recovery	Control Limits
DCB	EPA 608	95.6	30-130

Screening Method for PCBS (Method 608) was used. There was not enough volume of sample remaining to test for PCBs using Method 1668.

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160817078
Project Name: 1608678

Analytical Results Report

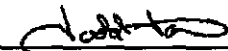
Sample Number 160817078-005 **Sampling Date** 8/11/2016 **Date/Time Received** 8/17/2016 1:30 PM
Client Sample ID 1608678-002G / RIO GRANDE-SOUTH **Sampling Time** 11:30 AM **Extraction Date** 8/17/2016
Matrix Water
Comments

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Aroclor 1016 (PCB-1016)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Aroclor 1221 (PCB-1221)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Aroclor 1232 (PCB-1232)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Aroclor 1242 (PCB-1242)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Aroclor 1248 (PCB-1248)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Aroclor 1254 (PCB-1254)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Aroclor 1260 (PCB-1260)	ND	ug/L	0.1	0.8	8/31/2016	MAH	EPA 608	
Dieldrin	ND	ug/L	0.003	0.04	8/31/2016	MAH	EPA 608	

Surrogate Data

Sample Number 160817078-005
Surrogate Standard DCB **Method** EPA 608 **Percent Recovery** 92.2 **Control Limits** 30-130

Authorized Signature



Todd Taruscio, Lab Manager

Screening Method for PCBS (Method 608) was used. There was not enough volume of sample remaining to test for PCBs using Method 1668.

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160817078
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1608678
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dieldrin	0.475	ug/L	0.5	95.0	30-130	8/17/2016	8/31/2016
Aroclor 1260 (PCB-1260)	6.33	ug/L	5	126.6	50-130	8/17/2016	8/31/2016
Aroclor 1016 (PCB-1016)	4.67	ug/L	5	93.4	50-130	8/17/2016	8/31/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160817078-002	Dieldrin	ND	0.455	ug/L	0.5	91.0	30-150	8/17/2016	8/31/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dieldrin	0.451	ug/L	0.5	90.2	0.9	0-30	8/17/2016	8/31/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Aroclor 1016 (PCB-1016)	ND	ug/L	0.2	8/17/2016	8/31/2016
Aroclor 1221 (PCB-1221)	ND	ug/L	0.2	8/17/2016	8/31/2016
Aroclor 1232 (PCB-1232)	ND	ug/L	0.2	8/17/2016	8/31/2016
Aroclor 1242 (PCB-1242)	ND	ug/L	0.2	8/17/2016	8/31/2016
Aroclor 1248 (PCB-1248)	ND	ug/L	0.2	8/17/2016	8/31/2016
Aroclor 1254 (PCB-1254)	ND	ug/L	0.2	8/17/2016	8/31/2016
Aroclor 1260 (PCB-1260)	ND	ug/L	0.2	8/17/2016	8/31/2016
Dieldrin	ND	ug/L	0.01	8/17/2016	8/31/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160817078
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1608678
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 160817078-002 **Sampling Date** 8/10/2016 **Date/Time Received** 8/17/2016 1:30 PM
Client Sample ID 1608678-001G / RIO GRANDE-NORTH **Sampling Time** 12:50 PM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160817078-002	2,4,6-Tribromophenol	EPA 625	82.8	53-122
	2-Fluorobiphenyl	EPA 625	94.4	12-116
	2-Fluorophenol	EPA 625	85.4	10-139
	Nitrobenzene-d5	EPA 625	95.2	54-118
	Phenol-d5	EPA 625	73.0	28-154
	Terphenyl-d14	EPA 625	54.8	20-137

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160817078
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1608678
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

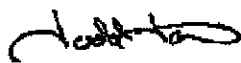
Sample Number 160817078-005 **Sampling Date** 8/11/2016 **Date/Time Received** 8/17/2016 1:30 PM
Client Sample ID 1608678-002G / RIO GRANDE-SOUTH **Sampling Time** 11:30 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.5	8/23/2016	HSW	EPA 625	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160817078-005	2,4,6-Tribromophenol	EPA 625	85.4	53-122
	2-Fluorobiphenyl	EPA 625	96.0	12-116
	2-Fluorophenol	EPA 625	90.6	10-139
	Nitrobenzene-d5	EPA 625	99.2	54-118
	Phenol-d5	EPA 625	78.8	28-154
	Terphenyl-d14	EPA 625	47.6	20-137

Authorized Signature



Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160817078
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1608678
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Pentachlorophenol	3.80	ug/L	5	76.0	22-138	8/16/2016	8/23/2016
bis(2-Ethylhexyl)phthalate	4.59	ug/L	5	91.8	51-149	8/16/2016	8/23/2016

Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	3.52	ug/L	5	70.4	7.7	0-47	8/16/2016	8/23/2016
bis(2-Ethylhexyl)phthalate	4.94	ug/L	5	98.8	7.3	0-50	8/16/2016	8/23/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160816052-001	Pentachlorophenol	ND	4.34	ug/L	5	86.8	22-138	8/16/2016	8/23/2016
160816052-001	bis(2-Ethylhexyl)phthalate	ND	5.55	ug/L	5	111.0	51-149	8/16/2016	8/23/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	4.37	ug/L	5	87.4	0.7	0-47	8/16/2016	8/23/2016
bis(2-Ethylhexyl)phthalate	5.12	ug/L	5	102.4	8.1	0-50	8/16/2016	8/23/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Benzidine	ND	ug/L	0.5	8/16/2016	8/23/2016
Benzo[a]anthracene	ND	ug/L	0.5	8/16/2016	8/23/2016
Benzo[a]pyrene	ND	ug/L	0.5	8/16/2016	8/23/2016
Benzo[b]fluoranthene	ND	ug/L	0.5	8/16/2016	8/23/2016
Benzo[k]fluoranthene	ND	ug/L	0.5	8/16/2016	8/23/2016
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	8/16/2016	8/23/2016
Chrysene	ND	ug/L	0.5	8/16/2016	8/23/2016
Dibenz[a,h]anthracene	ND	ug/L	0.5	8/16/2016	8/23/2016
Dibenzofuran	ND	ug/L	0.5	8/16/2016	8/23/2016
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	8/16/2016	8/23/2016

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:Cert0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160817078
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1608678
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Pentachlorophenol	ND	ug/L	0.5	8/16/2016	8/23/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0029; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160817078
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1608678
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

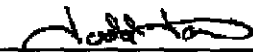
Sample Number 160817078-003 **Sampling Date** 8/10/2016 **Date/Time Received** 8/17/2016 1:30 PM
Client Sample ID 1608678-0011 / RIO GRANDE-NORTH **Sampling Time** 12:50 PM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	16.2	mg/L	5	8/22/2016 11:30:00 AM	JDB	EPA 410.4	

Sample Number 160817078-006 **Sampling Date** 8/11/2016 **Date/Time Received** 8/17/2016 1:30 PM
Client Sample ID 1608678-0021 / RIO GRANDE-SOUTH **Sampling Time** 11:30 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	17.0	mg/L	5	8/22/2016 11:30:00 AM	JDB	EPA 410.4	

Authorized Signature


Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871039

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160817078
Project Name: 1608678

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
COD	99.4	mg/L	100	99.4	90-110	8/22/2016	8/22/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160817087-002	COD	6.75	103	mg/L	100	96.3	80-120	8/22/2016	8/22/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
COD	108	mg/L	100	101.3	4.7	0-15	8/22/2016	8/22/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
COD	<5	mg/L	5	8/22/2016	8/22/2016

Duplicate

Sample Number	Parameter	Sample Result	Duplicate Result	Units	%RPD	AR %RPD	Prep Date	Analysis Date
160817045-002	COD	13.2	13.9	mg/L	5.2	0-20	8/22/2016	8/22/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099



Collected date/time: 08/10/16 12:50

L853638

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date/time	Batch
Hexavalent Chromium	mg/l	ND	0.000500	1	08/18/2016 20:41	WG899360

- 1 Cr
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 08/10/16 11:30

L853638

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	08/18/2016 20:49	WG899360

- 1 Cl
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc

Method Blank (MB)

(MB) R3157886-1 08/18/16 16:02

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Hexavalent Chromium	U		0.000150	0.000500

L853001-01 Original Sample (OS) • Duplicate (DUP)

(OS) L853001-01 08/18/16 16:46 • (DUP) R3157886-4 08/18/16 16:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Hexavalent Chromium	ND	ND	1	0.000		20

L854015-02 Original Sample (OS) • Duplicate (DUP)

(OS) L854015-02 08/18/16 20:58 • (DUP) R3157886-7 08/18/16 21:06

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

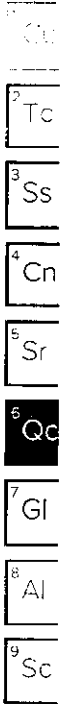
(LCS) R3157886-2 08/18/16 16:10 • (LCSD) R3157886-3 08/18/16 16:19

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Hexavalent Chromium	0.00200	0.00201	0.00200	100	100	90.0-110			0.000	20

L853262-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L853262-02 08/18/16 17:51 • (MS) R3157886-5 08/18/16 18:02 • (MSD) R3157886-6 08/18/16 18:10

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Hexavalent Chromium	0.0500	ND	0.0509	0.0506	102	101	1	90.0-110			1.00	20





Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description
-----------	-------------

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

Cu

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1608678
Pace Project No.: 30193392

Sample: **1608678-001J Rio- Grande-North** Lab ID: 30193392001 Collected: 08/10/16 12:50 Received: 08/17/16 10:10 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • Sample Acceptance Policy Waiver on file from the client.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	3.72 ± 1.97 (2.97) C:NA T:NA	pCi/L	08/24/16 09:55	12587-46-1	

Sample: **1608678-002J Rio- Grande-South** Lab ID: 30193392002 Collected: 08/11/16 11:30 Received: 08/17/16 10:10 Matrix: Water

PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	10.6 ± 3.61 (2.54) C:NA T:NA	pCi/L	08/26/16 18:05	12587-46-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1608678
Pace Project No.: 30193392

QC Batch: 231147	Analysis Method: EPA 900.0
QC Batch Method: EPA 900.0	Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 30193392002	

METHOD BLANK: 1132561 Matrix: Water
Associated Lab Samples: 30193392002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	0.417 ± 0.907 (2.12) C:NA T:NA	pCi/L	08/27/16 09:44	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1608678
 Pace Project No.: 30193392

QC Batch: 230572	Analysis Method: EPA 900.0
QC Batch Method: EPA 900.0	Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 30193392001	

METHOD BLANK: 1129987 Matrix: Water
 Associated Lab Samples: 30193392001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	0.227 ± 0.547 (1.31) C:NA T:NA	pCi/L	08/24/16 09:51	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1608678
Pace Project No.: 30193392

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
PQL - Practical Quantitation Limit.
RL - Reporting Limit.
S - Surrogate
1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Act - Activity
Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).
Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)
(MDC) - Minimum Detectable Concentration
Trac - Tracer Recovery (%)
Carr - Carrier Recovery (%)
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608678

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID MB-26986	SampType: MBLK	TestCode: EPA Method 1664A								
Client ID: PBW	Batch ID: 26986	RunNo: 36530								
Prep Date: 8/15/2016	Analysis Date: 8/15/2016	SeqNo: 1131319	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	ND	10								
Silica Gel Treated N-Hexane Extrac	ND	10								

Sample ID LCS-26986	SampType: LCS	TestCode: EPA Method 1664A								
Client ID: LCSW	Batch ID: 26986	RunNo: 36530								
Prep Date: 8/15/2016	Analysis Date: 8/15/2016	SeqNo: 1131320	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	40	10	40.00	0	100	78	114			
Silica Gel Treated N-Hexane Extrac	18	10	20.00	0	89.0	64	132			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608678

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID MB-D	SampType: MBLK		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: PBW	Batch ID: D37002		RunNo: 37002							
Prep Date:	Analysis Date: 9/6/2016		SeqNo: 1146735		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								

Sample ID LCS-D	SampType: LCS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: LCSW	Batch ID: D37002		RunNo: 37002							
Prep Date:	Analysis Date: 9/6/2016		SeqNo: 1146739		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	55	1.0	50.00	0	109	85	115			
Magnesium	55	1.0	50.00	0	109	85	115			

Sample ID LLLCS-D	SampType: LCSLL		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: BatchQC	Batch ID: D37002		RunNo: 37002							
Prep Date:	Analysis Date: 9/6/2016		SeqNo: 1146740		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	110	50	150			
Magnesium	ND	1.0	0.5000	0	110	50	150			

Sample ID 1608678-001FMS	SampType: MS		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: Rio Grande-North	Batch ID: D37002		RunNo: 37002							
Prep Date:	Analysis Date: 9/6/2016		SeqNo: 1147153		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	85	1.0	50.00	35.97	98.9	70	130			
Magnesium	57	1.0	50.00	6.083	102	70	130			

Sample ID 1608678-001FMSD	SampType: MSD		TestCode: EPA Method 200.7: Dissolved Metals							
Client ID: Rio Grande-North	Batch ID: D37002		RunNo: 37002							
Prep Date:	Analysis Date: 9/6/2016		SeqNo: 1147154		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	85	1.0	50.00	35.97	97.9	70	130	0.611	20	
Magnesium	57	1.0	50.00	6.083	101	70	130	1.14	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608678

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID LCS	SampType: LCS		TestCode: EPA 200.8: Dissolved Metals							
Client ID: LCSW	Batch ID: C36740		RunNo: 36740							
Prep Date:	Analysis Date: 8/24/2016		SeqNo: 1138765		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.025	0.0010	0.02500	0	98.5	85	115			
Lead	0.012	0.00050	0.01250	0	98.3	85	115			

Sample ID LLCS	SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals							
Client ID: BatchQC	Batch ID: C36740		RunNo: 36740							
Prep Date:	Analysis Date: 8/24/2016		SeqNo: 1138767		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0010	0.0010	0.001000	0	102	50	150			
Lead	ND	0.00050	0.0005000	0	99.3	50	150			

Sample ID MB	SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals							
Client ID: PBW	Batch ID: C36740		RunNo: 36740							
Prep Date:	Analysis Date: 8/24/2016		SeqNo: 1138769		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								
Lead	ND	0.00050								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608678

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R36824		RunNo: 36824							
Prep Date:	Analysis Date: 8/28/2016		SeqNo: 1141482		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R36824		RunNo: 36824							
Prep Date:	Analysis Date: 8/28/2016		SeqNo: 1141483		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	98.5	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608678

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID MB-26933	SampType: MBLK		TestCode: SM5210B: BOD							
Client ID: PBW	Batch ID: 26933		RunNo: 36639							
Prep Date: 8/11/2016	Analysis Date: 8/16/2016		SeqNo: 1134895		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID MB--26933	SampType: MBLK		TestCode: SM5210B: BOD							
Client ID: PBW	Batch ID: 26933		RunNo: 36639							
Prep Date: 8/11/2016	Analysis Date: 8/16/2016		SeqNo: 1134896		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID LCS-26933	SampType: LCS		TestCode: SM5210B: BOD							
Client ID: LCSW	Batch ID: 26933		RunNo: 36639							
Prep Date: 8/11/2016	Analysis Date: 8/16/2016		SeqNo: 1134897		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	190	2.0	198.0	0	94.8	56.9	131			

Sample ID LCSD-26933	SampType: LCSD		TestCode: SM5210B: BOD							
Client ID: LCSS02	Batch ID: 26933		RunNo: 36639							
Prep Date: 8/11/2016	Analysis Date: 8/16/2016		SeqNo: 1134898		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	180	2.0	198.0	0	88.5	56.9	131	6.89	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608678

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID	MB-26941	SampType:	MBLK	TestCode:	SM 9223B Fecal Indicator: E. coli MPN					
Client ID:	PBW	Batch ID:	26941	RunNo:	36490					
Prep Date:	8/11/2016	Analysis Date:	8/12/2016	SeqNo:	1130017	Units:	CFU/100ml			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608678

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID MB	SampType: MBLK		TestCode: SM 4500 NH3: Ammonia							
Client ID: PBW	Batch ID: R36607		RunNo: 36607							
Prep Date:	Analysis Date: 8/18/2016		SeqNo: 1133963		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID LCS	SampType: LCS		TestCode: SM 4500 NH3: Ammonia							
Client ID: LCSW	Batch ID: R36607		RunNo: 36607							
Prep Date:	Analysis Date: 8/18/2016		SeqNo: 1133964		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	10	1.0	10.00	0	101	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608678

29-Nov-16

Client: AMAFCA
Project: CMC

Sample ID MB-27121	SampType: MBLK		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: PBW	Batch ID: 27121		RunNo: 36723							
Prep Date: 8/23/2016	Analysis Date: 8/24/2016		SeqNo: 1138062	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.010								

Sample ID LCS-27121	SampType: LCS		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: LCSW	Batch ID: 27121		RunNo: 36723							
Prep Date: 8/23/2016	Analysis Date: 8/24/2016		SeqNo: 1138063	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.25	0.010	0.2500	0	98.6	90	110			

Sample ID 1608678-001DMS	SampType: MS		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: Rio Grande-North	Batch ID: 27121		RunNo: 36723							
Prep Date: 8/23/2016	Analysis Date: 8/24/2016		SeqNo: 1138065	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.33	0.010	0.2500	0.08070	98.0	90	110			

Sample ID 1608678-001DMSD	SampType: MSD		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: Rio Grande-North	Batch ID: 27121		RunNo: 36723							
Prep Date: 8/23/2016	Analysis Date: 8/24/2016		SeqNo: 1138066	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.33	0.010	0.2500	0.08070	99.1	90	110	0.825	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608678

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID	MB-26970	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	26970	RunNo:	36538					
Prep Date:	8/14/2016	Analysis Date:	8/16/2016	SeqNo:	1131506	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-26970	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	26970	RunNo:	36538					
Prep Date:	8/14/2016	Analysis Date:	8/16/2016	SeqNo:	1131507	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	995	20.0	1000	0	99.5	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608678

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID MB-27057	SampType: MBLK	TestCode: SM 4500 Norg C: TKN								
Client ID: PBW	Batch ID: 27057	RunNo: 36645								
Prep Date: 8/18/2016	Analysis Date: 8/19/2016	SeqNo: 1134995	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID LCS-27057	SampType: LCS	TestCode: SM 4500 Norg C: TKN								
Client ID: LCSW	Batch ID: 27057	RunNo: 36645								
Prep Date: 8/18/2016	Analysis Date: 8/19/2016	SeqNo: 1134996	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	10	1.0	10.00	0	105	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608678

29-Nov-16

Client: AMAFCA

Project: CMC

Sample ID MB-26969	SampType: MBLK		TestCode: SM 2540D: TSS							
Client ID: PBW	Batch ID: 26969		RunNo: 36514							
Prep Date: 8/13/2016	Analysis Date: 8/14/2016		SeqNo: 1130650				Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID LCS-26969	SampType: LCS		TestCode: SM 2540D: TSS							
Client ID: LCSW	Batch ID: 26969		RunNo: 36514							
Prep Date: 8/13/2016	Analysis Date: 8/14/2016		SeqNo: 1130651				Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	94	4.0	92.50	0	102	83.35	118.92			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

Client Name: **AMAFCA** Work Order Number: **1608678** RcptNo: **1**

Received by/date: af 08/11/16

Logged By: **Ashley Gallegos** 8/11/2016 1:00:00 PM AG

Completed By: **Ashley Gallegos** 8/11/2016 1:44:34 PM AG

Reviewed By: as/ag 08/11/16 @ 1455

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes No
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes No

Samples were collected the same day and chilled.

of preserved bottles checked for pH: 12
(≤ or >12 unless noted)

Adjusted? NO

Checked by: jc

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____

By Whom: _____ Via: eMail Phone Fax In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.4	Good	Not Present			

Chain-of-Custody Record

Client: **AMAFLA**

Mailing Address:

Phone #:

email or Fax#: **pchavez@amafla.org**

QA/QC Package:

Standard Level 4 (Full Validation)

Accreditation

NELAP Other _____

EDD (Type) _____

Turn-Around Time:

Standard Rush _____

Project Name:

CMC

Project #:

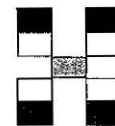
Project Manager:

Patrick Chavez

Sampler: **C. Johanson**

On Ice: Yes No

Sample Temperature: **5.9°C**



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	See table	E-Coli. Num	Diss Phos.	Air Bubbles (Y or N)	
10-16	1250	AQ	Rio Grande-North	Numerals		1008678 10083109													X			
11-16	1130	AQ	Rio Grande-South	"															X	X		
-	-	AQ	Trip Blank	2 Vials	HCL																	
			Rio Grande-North	Filtered																		
			Rio Grande-South																			

Date: **11-16** Time: **1300** Relinquished by: **[Signature]**

Received by: **[Signature]** Date: **8/11/16** Time: **1300**

Remarks:

Date: _____ Time: _____ Relinquished by: _____

Received by: _____ Date: _____ Time: _____

AMAFCA and CMC samples

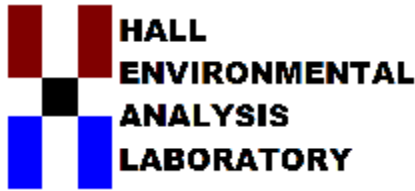
Hardness
TSS
TDS
COD
BOD
DO
Oil & grease
E. coli
pH
Total kjeldahl nitrogen
Nitrate plus nitrite
Dissolved phosphorus
Ammonia plus organic nitrogen
Total Phosphorus
Chromium IV
Copper-dissolved
Lead-dissolved
PCBs
Gross Alpha
Tetrahydrofuran
Benzo(a)pyrene
Benzo(b)fluoranthene, alternate name 3, 4 Benzofluoranthene
Benzo(k)fluoranthene
Chrysene
Indeno(1,2,3-cd)pyrene
Dieldrin
Pentachlorophenol
Benzidine
Benzo(a)anthracene
Pentachlorophenol
Dibenzofuran
Dibenzo(a,h)anthracene
Bis(2-ethylhexyl)phthalate

AMAFCA E.Coli only sites:

- Bear Arroyo
- Main Hanh Arroyo
- Embudo

7/8/2016

\\ss6abq\DataS\Projects\WR14.0074_AMAFCA_Stormwater\Docs\WQ Monitoring\Field documents\AMAFCA and CMC sample list Wet 2016 .docx



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 06, 2016

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

RE: CMC

OrderNo.: 1608H83

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/31/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Field Data - Provided by DBS&A (field notebook & e-mails):

8/31/16 - Rio Grande North

DO = 7.06 mg/L, pH = 9.03, Conductivity = 305 umhos/cm, and Temperature = 21.18 °C

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1608H83

Date Reported: 9/6/2016

CLIENT: AMAFCA

Client Sample ID: Rio Grande-North-0831-16

Project: CMC

Collection Date: 8/31/2016 11:45:00 AM

Lab ID: 1608H83-001

Matrix: AQUEOUS

Received Date: 8/31/2016 1:35:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: tnc
E. Coli	88.2	1.000		CFU/100ml	1	9/1/2016 4:31:00 PM	27292

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87109
 TEL: 505-345-3975 FAX: 505-345-4107
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **AMAFCA**

Work Order Number: **1608H83**

ReptNo: **1**

Received by/date:

[Signature]

08/31/16

Logged By: **Lindsay Mangin**

8/31/2016 1:35:00 PM

[Signature]

Completed By: **Lindsay Mangin**

8/31/2016 2:39:04 PM

[Signature]

Reviewed By: *je* *08/31/16*

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
 - 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
 - 6. Sample(s) in proper container(s)? Yes No
 - 7. Sufficient sample volume for indicated test(s)? Yes No
 - 8. Are samples (except VOA and ONG) properly preserved? Yes No
 - 9. Was preservative added to bottles? Yes No NA
 - 10. VOA vials have zero headspace? Yes No No VOA Vials
 - 11. Were any sample containers received broken? Yes No
 - 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes No
 - 13. Are matrices correctly identified on Chain of Custody? Yes No
 - 14. Is it clear what analyses were requested? Yes No
 - 15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes No
- # of preserved bottles checked for pH:
 (<2 or >12 unless noted)
 Adjusted?
 Checked by:

Special Handling (if applicable)

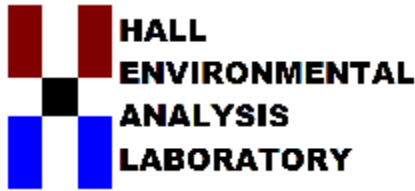
- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.7	Good	Not Present			



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 13, 2016

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

RE: CMC

OrderNo.: 1609289

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/7/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):

9/7/16 - Rio Grande North

DO = 7.29 mg/L, pH = 8.07, Conductivity = 319 umhos/cm, and Temperature = 21.19 °C

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609289

Date Reported: 9/13/2016

CLIENT: AMAFCA

Client Sample ID: Rio Grande North 090716

Project: CMC

Collection Date: 9/7/2016 1:00:00 PM

Lab ID: 1609289-001

Matrix: AQUEOUS

Received Date: 9/7/2016 3:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: tnc
E. Coli	82.0	1.000		CFU/100ml	1	9/8/2016 4:56:00 PM	27390

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: **AMAFCA**

Work Order Number: **1609289**

RcptNo: **1**

Received by/date:

ASm

Logged By: **Ashley Gallegos**

09/07/16
 9/7/2016 1:00:00 PM
 3 *5:18-16*

ASg

Completed By: **Ashley Gallegos**

9/7/2016 3:02:19 PM

ASg

Reviewed By:

Jc 09/07/16

@ 1530

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
Samples were collected the same day and chilled.
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

of preserved bottles checked for pH:
 (<2 or >12 unless noted)
 Adjusted?

Checked by:

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified:

Date

By Whom:

Via: eMail Phone Fax In Person

Regarding:

Client Instructions:

17. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	17.4	Good	Not Present			

Chain-of-Custody Record

Client: **AMAFCA**

Mailing Address:

Phone #:

Email or Fax#: **pcharvz@amafca.org**

VQC Package: Level 4 (Full Validation)

Standard: Other

Accreditation: NELAP Other

EDD (Type):

Sampler: **C. Johannesen**

On Ice: Yes No

Sample Temperature: **17.1**

Container Type and #

Preservative Type

HEAL No

110092289

-001

Project Manager:
Patrick Charvz

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

BTEX + MTBE + TMB's (8021)	
BTEX + MTBE + TPH (Gas only)	
TPH 8015B (GRO / DRO / MRO)	
TPH (Method 418.1)	
EDB (Method 504.1)	
PAH's (8310 or 8270 SIMS)	
RCRA 8 Metals	
Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	
8081 Pesticides / 8082 PCB's	
8260B (VOA)	
8270 (Semi-VOA)	X
8270 (Semi-VOA)	E. Coli - num
Air Bubbles (Y or N)	

Date Time

Relinquished by:

Date Time

Received by:

Date Time

Relinquished by:

Date Time

Received by:

Date Time

Remarks:

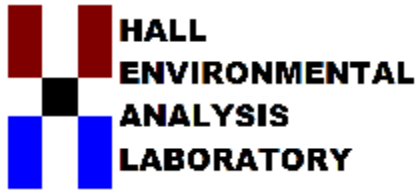
110 1520

09/07/16 1500

110 1520

09/07/16 1500

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 19, 2016

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

RE: CMC

OrderNo.: 1609527

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/12/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):

9/12/16 - Rio Grande North

DO = 6.24 mg/L, pH = 8.53, Conductivity = 318 umhos/cm, and Temperature = 20.01°C

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609527

Date Reported: 9/19/2016

CLIENT: AMAFCA

Client Sample ID: Rio Grande North 091216

Project: CMC

Collection Date: 9/12/2016 11:00:00 AM

Lab ID: 1609527-001

Matrix: AQUEOUS

Received Date: 9/12/2016 1:10:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: tnc
E. Coli	55.6	1.000		CFU/100ml	1	9/13/2016 5:02:00 PM	27458

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87109
 TEL: 505-345-3975 FAX: 505-345-4107
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **AMAFCA**

Work Order Number: **1809527**

RcptNo: **1**

Received by/date:

AM

09/12/16

Logged By: **Lindsay Mangin**

9/12/2016 1:10:00 PM

Lindsay Mangin

Completed By: **Lindsay Mangin**

9/12/2016 1:35:49 PM

Lindsay Mangin

Reviewed By:

AS

09/12/16

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
Samples were collected the same day and chilled.
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes No
of preserved bottles checked for pH: Adjusted? (<2 or >12 unless noted)
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)
 Checked by:

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	7.0	Good	Not Present			

Chain-of-Custody Record

Client: AMAFA

Standard Rush

Project Name: _____

Mailing Address: _____

CMC

Project #:

Phone #:

email or Fax#: pchavez@amafa.org

QA/QC Package:
 Standard Level 4 (Full Validation)

Sampler:

Accreditation

On Ice: Yes No

NELAP Other _____

Sample Temperature: 7.0

Date Time Matrix Sample Request ID

Container Type and #

Preservative Type

HEAL No.

-12-16 1100 AQ Rio Grande North - 091216

1

[Signature]

16091527
-001

Date: 12-10

Time: 1310

Relinquished by: *[Signature]*

Received by: *[Signature]*

Date: 02/12/10

Time: 1310

Remarks:



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RORA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCBs	8260B (VOA)	8270 (Semi-VOA)	F. Coli - Num	Air Bubbles (Y or N)
											<input checked="" type="checkbox"/>	

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 02, 2016

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

RE: CMC

OrderNo.: 1609609

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/13/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued October 18, 2016.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,<<>>

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):

9/12/16 - Rio Grande North

DO = 6.24 mg/L, pH = 8.53, Conductivity = 318 umhos/cm, and Temperature = 20.01°C

9/13/16 - Rio Grande South

DO = 6.32 mg/L, pH = 8.45, Conductivity = 412 umhos/cm, and Temperature = 18.7 °C



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: 1609609
Date: 12/2/2016

CLIENT: AMAFCA
Project: CMC

Analytical Notes Regarding EPA method 1668

The sample ID equivalents are listed below.

1609609-001G = Rio Grande-North 091216

1609609-002G = Rio Grande-South 091316

Analytical Report

Lab Order: **1609609**

Date Reported: **12/2/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-001B

Client Sample ID: Rio Grande-North 091216
Collection Date: 9/12/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: SMS
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	9/19/2016 12:12:00 PM	27487

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
 Project: CMC
 Lab ID: 1609609-001D

Client Sample ID: Rio Grande-North 091216
 Collection Date: 9/12/2016 11:00:00 AM
 Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/13/2016 5:23:31 PM	R37171
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	9/13/2016 5:23:31 PM	R37171
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	201	20.0		mg/L	1	9/19/2016 11:25:00 AM	27539
SM 4500 NH3: AMMONIA							Analyst: CJS
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/4/2016 2:28:00 PM	R37673
TOTAL NITROGEN							Analyst: SRM
Nitrogen, Total	ND	1.0		mg/L	1	10/6/2016 10:37:00 AM	R37732
SM4500-H+B: PH							Analyst: JRR
pH	8.25	1.68	H	pH units	1	9/13/2016 2:02:43 PM	R37155
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.052	0.010		mg/L	1	9/27/2016 11:43:24 AM	27693
SM 4500 NORG C: TKN							Analyst: CJS
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	10/3/2016 2:12:00 PM	27768
SM 2540D: TSS							Analyst: KS
Suspended Solids	29	4.0		mg/L	1	9/16/2016 10:58:00 AM	27523

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1609609

Date Reported: 12/2/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-001E

Client Sample ID: Rio Grande-North 091216
Collection Date: 9/12/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664A							Analyst: tnc
N-Hexane Extractable Material	ND	9.4		mg/L	1	9/14/2016 9:45:00 AM	27492

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-001F

Client Sample ID: Rio Grande-North 091216
Collection Date: 9/12/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Copper	0.0024	0.0010		mg/L	1	9/30/2016 4:35:12 PM	C37623
Lead	ND	0.00050		mg/L	1	9/30/2016 4:35:12 PM	C37623
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO3)	130	6.6		mg/L	1	10/5/2016 12:00:00 PM	R37699
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Calcium	41	1.0		mg/L	1	10/4/2016 12:35:44 AM	D37643
Magnesium	6.7	1.0		mg/L	1	10/5/2016 8:28:16 PM	B37699

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: **1609609**

Date Reported: **12/2/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-002A

Client Sample ID: Rio Grande-South 091316
Collection Date: 9/13/2016 7:15:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: tnc
E. Coli	959	10.00		CFU/100ml	10	9/14/2016 1:25:00 PM	27474

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: **1609609**

Date Reported: **12/2/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-002B

Client Sample ID: Rio Grande-South 091316
Collection Date: 9/13/2016 7:15:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: SMS
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	9/19/2016 12:12:00 PM	27487

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
 Project: CMC
 Lab ID: 1609609-002D

Client Sample ID: Rio Grande-South 091316
 Collection Date: 9/13/2016 7:15:00 AM
 Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/13/2016 6:13:09 PM	R37171
Nitrogen, Nitrate (As N)	0.83	0.10		mg/L	1	9/13/2016 6:13:09 PM	R37171
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	288	40.0	D	mg/L	1	9/19/2016 11:25:00 AM	27539
SM 4500 NH3: AMMONIA							Analyst: CJS
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/4/2016 2:28:00 PM	R37673
TOTAL NITROGEN							Analyst: SRM
Nitrogen, Total	ND	1.0		mg/L	1	10/6/2016 10:37:00 AM	R37732
SM4500-H+B: PH							Analyst: JRR
pH	8.12	1.68	H	pH units	1	9/13/2016 2:06:57 PM	R37155
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.65	0.010		mg/L	1	9/27/2016 11:47:54 AM	27693
SM 4500 NORG C: TKN							Analyst: CJS
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	10/3/2016 2:12:00 PM	27768
SM 2540D: TSS							Analyst: KS
Suspended Solids	130	4.0		mg/L	1	9/16/2016 10:58:00 AM	27523

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: **1609609**

Date Reported: **12/2/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-002E

Client Sample ID: Rio Grande-South 091316
Collection Date: 9/13/2016 7:15:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664A							Analyst: tnc
N-Hexane Extractable Material	ND	11		mg/L	1	9/14/2016 9:45:00 AM	27492

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-002F

Client Sample ID: Rio Grande-South 091316
Collection Date: 9/13/2016 7:15:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Copper	0.0016	0.0010		mg/L	1	9/30/2016 4:38:16 PM	C37623
Lead	ND	0.00050		mg/L	1	9/30/2016 4:38:16 PM	C37623
SM2340B: HARDNESS							Analyst: MED
Hardness (As CaCO3)	150	6.6		mg/L	1	10/5/2016 12:00:00 PM	R37699
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Calcium	46	1.0		mg/L	1	10/4/2016 12:39:56 AM	D37643
Magnesium	7.3	1.0		mg/L	1	10/5/2016 8:32:03 PM	B37699

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: **1609609**

Date Reported: **12/2/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-003A

Client Sample ID: Rio Grande-North 091216 Filtere
Collection Date: 9/12/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.018	0.010		mg/L	1	9/27/2016 11:49:24 AM	27693

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1609609

Date Reported: 12/2/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609609-004A

Client Sample ID: Rio Grande-South 091316 Filtere
Collection Date: 9/13/2016 7:15:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.50	0.010		mg/L	1	9/27/2016 11:50:54 AM	27693

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160915048
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609609
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 160915048-001 **Sampling Date** 9/12/2016 **Date/Time Received** 9/15/2016 11:50 AM
Client Sample ID 1609609-001C / RIO GRANDE-NORTH 091216 **Sampling Time** 11:00 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	9/20/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160915048-001	1,2-Dichlorobenzene-d4	EPA 8260C	99.2	70-130
	4-Bromofluorobenzene	EPA 8260C	99.2	70-130
	Toluene-d8	EPA 8260C	102.0	70-130

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160915048
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609609
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 160915048-004 **Sampling Date** 9/13/2016 **Date/Time Received** 9/15/2016 11:50 AM
Client Sample ID 1609609-002C / RIO GRANDE-SOUTH 091316 **Sampling Time** 7:15 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	9/20/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160915048-004	1,2-Dichlorobenzene-d4	EPA 8260C	98.0	70-130
	4-Bromofluorobenzene	EPA 8260C	97.6	70-130
	Toluene-d8	EPA 8260C	92.4	70-130

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160915048
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609609
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

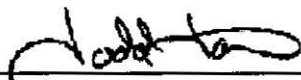
Sample Number 160915048-007 **Sampling Date** 9/13/2016 **Date/Time Received** 9/15/2016 11:50 AM
Client Sample ID 1609609-005A / TRIP BLANK **Sampling Time**
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	9/20/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160915048-007	1,2-Dichlorobenzene-d4	EPA 8260C	100.0	70-130
	4-Bromofluorobenzene	EPA 8260C	99.6	70-130
	Toluene-d8	EPA 8260C	99.2	70-130

Authorized Signature



Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160915048
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609609
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Tetrahydrofuran	11.4	ug/L	10	114.0	70-130	9/20/2016	9/20/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Tetrahydrofuran	ND	ug/L	0.5	9/20/2016	9/20/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160915048
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609609
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Also tested with Method 1668
-results are included later in
lab report

Analytical Results Report

Sample Number 160915048-002 **Sampling Date** 9/12/2016 **Date/Time Received** 9/15/2016 11:50 AM
Client Sample ID 1609609-001G / RIO GRANDE-NORTH 091216
Matrix Water **Sampling Time** 11:00 AM **Extraction Date** 9/19/2016
Comments

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Aroclor 1016 (PCB-1016)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Aroclor 1221 (PCB-1221)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Aroclor 1232 (PCB-1232)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Aroclor 1242 (PCB-1242)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Aroclor 1248 (PCB-1248)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Aroclor 1254 (PCB-1254)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Aroclor 1260 (PCB-1260)	ND	ug/L	0.1	0.2	9/29/2016	MAH	EPA 608	
Dieldrin	ND	ug/L	0.003	0.01	9/29/2016	MAH	EPA 608	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160915048-002	DCB	EPA 608	97.2	30-130

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Address: 4901 HAWKINS NE SUITE D
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Attn: ANDY FREEMAN

Batch #: 160915048
Project Name: 1609609

Also tested with Method 1668
-results are included later in
lab report

Analytical Results Report

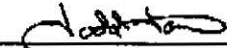
Sample Number 160915048-005 **Sampling Date** 9/13/2016 **Date/Time Received** 9/15/2016 11:50 AM
Client Sample ID 1609609-002G / RIO GRANDE-SOUTH 091316
Matrix Water **Sampling Time** 7:15 AM **Extraction Date** 9/20/2016
Comments

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Aroclor 1016 (PCB-1016)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Aroclor 1221 (PCB-1221)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Aroclor 1232 (PCB-1232)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Aroclor 1242 (PCB-1242)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Aroclor 1248 (PCB-1248)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Aroclor 1254 (PCB-1254)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Aroclor 1260 (PCB-1260)	ND	ug/L	0.1	0.2	9/26/2016	MAH	EPA 608	
Dieldrin	ND	ug/L	0.003	0.01	9/26/2016	MAH	EPA 608	

Surrogate Data

Sample Number 160915048-005
Surrogate Standard DCB **Method** EPA 608 **Percent Recovery** 71.2 **Control Limits** 30-130

Authorized Signature



Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160915048
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609609
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dieldrin	0.420	ug/L	0.5	84.0	30-130	9/20/2016	9/26/2016
Aroclor 1260 (PCB-1260)	5.03	ug/L	5	100.6	50-130	9/20/2016	9/26/2016
Aroclor 1016 (PCB-1016)	4.79	ug/L	5	95.8	50-130	9/20/2016	9/26/2016
Dieldrin	0.472	ug/L	0.5	94.4	30-130	9/19/2016	9/28/2016
Aroclor 1260 (PCB-1260)	6.16	ug/L	5	123.2	50-130	9/19/2016	9/28/2016
Aroclor 1016 (PCB-1016)	4.73	ug/L	5	94.6	50-130	9/19/2016	9/28/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160915048-005	Dieldrin	ND	0.420	ug/L	0.5	84.0	30-150	9/20/2016	9/26/2016
160915048-002	Dieldrin	ND	0.508	ug/L	0.5	101.6	30-150	9/19/2016	9/28/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dieldrin	0.420	ug/L	0.5	84.0	0.0	0-30	9/20/2016	9/26/2016
Dieldrin	0.485	ug/L	0.5	97.0	4.6	0-30	9/19/2016	9/28/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Aroclor 1016 (PCB-1016)	ND	ug/L	0.2	9/20/2016	9/26/2016
Aroclor 1016 (PCB-1016)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1221 (PCB-1221)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1221 (PCB-1221)	ND	ug/L	0.2	9/20/2016	9/26/2016
Aroclor 1232 (PCB-1232)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1232 (PCB-1232)	ND	ug/L	0.2	9/20/2016	9/26/2016
Aroclor 1242 (PCB-1242)	ND	ug/L	0.2	9/20/2016	9/26/2016
Aroclor 1242 (PCB-1242)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1248 (PCB-1248)	ND	ug/L	0.2	9/20/2016	9/26/2016
Aroclor 1248 (PCB-1248)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1254 (PCB-1254)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1254 (PCB-1254)	ND	ug/L	0.2	9/20/2016	9/26/2016

Comments:

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C595; MT:Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB
Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160915048
Project Name: 1609609

Analytical Results Report Quality Control Data

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Aroclor 1260 (PCB-1260)	ND	ug/L	0.2	9/19/2016	9/28/2016
Aroclor 1260 (PCB-1260)	ND	ug/L	0.2	9/20/2016	9/26/2016
Dieldrin	ND	ug/L	0.01	9/20/2016	9/26/2016
Dieldrin	ND	ug/L	0.01	9/19/2016	9/28/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA.ID00013; AZ.0701; FL(NELAP):E87893; ID.ID00013; MT.CERT0028; NM: ID00013; NV.ID00013; OR.ID200001-002; WA.C595
Certifications held by Anatek Labs WA: EPA.WA00169; ID.WA00169; WA.C585; MT.Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160915048
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609609
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 160915048-002 **Sampling Date** 9/12/2016 **Date/Time Received** 9/15/2016 11:50 AM
Client Sample ID 1609609-001G / RIO GRANDE-NORTH 091216 **Extraction Date** 9/19/2016
Matrix Water **Sampling Time** 11:00 AM
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	

Surrogate Data

Sample Number 160915048-002

Surrogate Standard	Method	Percent Recovery	Control Limits
2,4,6-Tribromophenol	EPA 625	78.8	53-122
2-Fluorobiphenyl	EPA 625	90.0	12-116
2-Fluorophenol	EPA 625	56.2	10-139
Nitrobenzene-d5	EPA 625	92.8	54-118
Phenol-d5	EPA 625	65.6	28-154
Terphenyl-d14	EPA 625	83.6	20-137

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Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160915048
Project Name: 1609609

Analytical Results Report

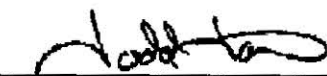
Sample Number 160915048-005 **Sampling Date** 9/13/2016 **Date/Time Received** 9/15/2016 11:50 AM
Client Sample ID 1609609-002G / RIO GRANDE-SOUTH 091316 **Extraction Date** 9/19/2016
Matrix Water **Sampling Time** 7:15 AM
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.5	9/23/2016	HSW	EPA 625	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160915048-005	2,4,6-Tribromophenol	EPA 625	89.0	53-122
	2-Fluorobiphenyl	EPA 625	94.4	12-116
	2-Fluorophenol	EPA 625	63.2	10-139
	Nitrobenzene-d5	EPA 625	94.4	54-118
	Phenol-d5	EPA 625	76.0	28-154
	Terphenyl-d14	EPA 625	81.2	20-137

Authorized Signature



Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160915048
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609609
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Pentachlorophenol	3.59	ug/L	5	71.8	22-138	9/19/2016	9/23/2016
bis(2-Ethylhexyl)phthalate	5.47	ug/L	5	109.4	43-148	9/19/2016	9/23/2016

Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	4.19	ug/L	5	83.8	15.4	0-47	9/19/2016	9/23/2016
bis(2-Ethylhexyl)phthalate	5.11	ug/L	5	102.2	6.8	0-50	9/19/2016	9/23/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Benzidine	ND	ug/L	0.5	9/19/2016	9/23/2016
Benzo[a]anthracene	ND	ug/L	0.5	9/19/2016	9/23/2016
Benzo[a]pyrene	ND	ug/L	0.5	9/19/2016	9/23/2016
Benzo[b]fluoranthene	ND	ug/L	0.5	9/19/2016	9/23/2016
Benzo[k]fluoranthene	ND	ug/L	0.5	9/19/2016	9/23/2016
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	9/19/2016	9/23/2016
Chrysene	ND	ug/L	0.5	9/19/2016	9/23/2016
Dibenz[a,h]anthracene	ND	ug/L	0.5	9/19/2016	9/23/2016
Dibenzofuran	ND	ug/L	0.5	9/19/2016	9/23/2016
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	9/19/2016	9/23/2016
Pentachlorophenol	ND	ug/L	0.5	9/19/2016	9/23/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

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Attn: ANDY FREEMAN

Analytical Results Report

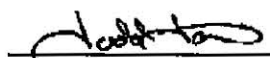
Sample Number 160915048-003 **Sampling Date** 9/12/2016 **Date/Time Received** 9/15/2016 11:50 AM
Client Sample ID 1609609-0011 / RIO GRANDE-NORTH 091216 **Sampling Time** 11:00 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	12.3	mg/L	5	9/20/2016 1:30:00 PM	JDB	EPA 410.4	

Sample Number 160915048-006 **Sampling Date** 9/13/2016 **Date/Time Received** 9/15/2016 11:50 AM
Client Sample ID 1609609-0021 / RIO GRANDE-SOUTH 091316 **Sampling Time** 7:15 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	18.6	mg/L	5	9/20/2016 1:30:00 PM	JDB	EPA 410.4	

Authorized Signature



Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:CERT0028; NM:ID00013; NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cer10095; FL(NELAP); E871099

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160915048
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609609
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
COD	100	mg/L	100	100.0	90-110	9/20/2016	9/20/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160908039-002	COD	<5	105	mg/L	100	105.0	80-120	9/20/2016	9/20/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
COD	101	mg/L	100	101.0	3.9	0-15	9/20/2016	9/20/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
COD	<5	mg/L	5	9/20/2016	9/20/2016

Duplicate

Sample Number	Parameter	Sample Result	Duplicate Result	Units	%RPD	AR %RPD	Prep Date	Analysis Date
160908039-004	COD	<5	<5	mg/L	0.0	0-20	9/20/2016	9/20/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013, AZ:0701; FL(NELAP):E87893, ID:ID00013, MT:CERT0028, NM: ID00013, NV:ID00013, OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169, WA:C585; MT:Cert0095; FL(NELAP): E871099



Collected date/time: 09/12/16 11:00

L859721

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	09/21/2016 10:04	WG909188





Collected date/time: 09/13/16 07:15

L859721

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	09/21/2016 10:15	WG909188

10

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

WG909188

QUALITY CONTROL SUMMARY

ONE LAB. NATIONWIDE.



Wet Chemistry by Method 3500Cr C-2011

L859721-01,02

Method Blank (MB)

(MB) R3165101-1 09/21/16 08:20

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hexavalent Chromium	U		0.000150	0.000500

L859362-02 Original Sample (OS) • Duplicate (DUP)

(OS) L859362-02 09/21/16 09:13 • (DUP) R3165101-4 09/21/16 09:21

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3165101-2 09/21/16 08:29 • (LCSD) R3165101-3 09/21/16 08:37

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.00200	0.00198	0.00199	99.0	100	90.0-110			0.000	20

L860098-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L860098-02 09/21/16 10:31 • (MS) R3165101-5 09/21/16 10:40 • (MSD) R3165101-6 09/21/16 10:48

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Hexavalent Chromium	0.0500	ND	0.0514	0.0507	103	101	1	90.0-110			1.00	20

²Tc

³Ss

⁴Cn

⁵Sr

⁵Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Hall Environmental Analysis Laboratory

PROJECT:

SDG:

L859721

DATE/TIME:

09/21/16 15:12



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.





ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1609609
Pace Project No.: 30196687 **Rio Grande North**

Sample: 1609609-001J **Lab ID:** 30196687001 Collected: 09/12/16 11:00 Received: 09/21/16 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Comments: • Sample Acceptance Policy Waiver on file from the client.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	2.32 ± 1.47 (1.84) C:NA T:NA	pCi/L	10/14/16 08:15	12587-46-1	

Rio Grande South

Sample: 1609609-002J **Lab ID:** 30196687002 Collected: 09/13/16 07:15 Received: 09/21/16 10:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	6.16 ± 2.62 (2.53) C:NA T:NA	pCi/L	10/14/16 08:15	12587-46-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1609609
Pace Project No.: 30196687

QC Batch: 236514 Analysis Method: EPA 900.0
QC Batch Method: EPA 900.0 Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 30196687001, 30196687002

METHOD BLANK: 1161992 Matrix: Water
Associated Lab Samples: 30196687001, 30196687002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	-0.388 ± 0.644 (1.98) C:NA T:NA	pCi/L	10/14/16 08:04	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1609609
Pace Project No.: 30196687

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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November 18, 2016

Ms. Jodey Kougioulis
New Mexico Environment Department
121 Tijeras Avenue NE
Suite 1000
Albuquerque, New Mexico 87102

Re: HiSol PCB's and Dioxins
Work Order: 9998
SDG: 1609609_1609C98

Dear Ms. Kougioulis:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 28, 2016. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,



Cynde Larkins
Project Manager

Enclosures



Chain of Custody Record

1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246
 504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

WO # 9998
 Anatek Log-In #

Company Name: **HALL ENVIRONMENTAL** Project Manager: **ANDY FREEMAN**
 Address: **4901 HAWKINS NE SUITE D** Project Name & # :
 City: **ALBUQUERQUE** State: **NM** Zip: **87109** Email Address : **andy@hallenvironmental.com**
 Phone: **(505) 345-3975** Purchase Order #:
 Fax: **(505) 345-4107** Sampler Name & phone:

Turn Around Time & Reporting
 Please refer to our normal turn around times at:
<http://www.anateklabs.com/services/guidelines/reporting.asp>
 Normal *All rush order requests must be prior approved. Phone
 Next Day* Mail
 2nd Day* Fax
 Other* Email

Provide Sample Description				List Analyses Requested							Note Special Instructions/Comments	
Lab ID	Sample Identification	Sampling Date/Time	Matrix	# of Containers	Sample Volume	PCB EPA 1688						
	1609609-001G	9/12/16 11:00am	WATER	1	1L	X						CALL ANDY FREEMAN @ HALL ENVIRONMENTAL WITH QUESTIONS
	1609609-002G	9/13/16 7:15am	WATER	1	1L	X						REPORT AND BILL TO HALL ENVIRONMENTAL
	1609C98-001G	9/21/16 12:15pm	WATER	1	1L	X						
	1609C98-002G	9/22/16 11:00am	WATER	1	1L	X						

Inspection Checklist

Received Intact? Y N
 Labels & Chains Agree? Y N
 Containers Sealed? Y N
 VOC Head Space? Y N

	Printed Name	Signature	Company	Date	Time
Relinquished by	TICUS/Heane	<i>TICUS/Heane</i>	Anatek	10/27/16	11:15
Received by	Melissa O'Donoghue	<i>Melissa O'Donoghue</i>	CFA	28 Oct 16	14:15
Relinquished by		<i>[Signature]</i>			
Received by					
Relinquished by					
Received by					

Temperature (°C): 10.2°C
 Preservative: _____
 Date & Time: _____
 Inspected By: _____

10.2°C

MJD 28 Oct 16

SAMPLE RECEIPT CHECKLIST
Cape Fear Analytical

Client: HALL NMED	Work Order: 9998
--------------------------	-------------------------

Shipping Company: Fed Ex	Date/Time Received: 28 Oct 2016 14:15
---------------------------------	--

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			<input checked="" type="checkbox"/>
Samples identified as Foreign Soil?			<input checked="" type="checkbox"/>

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?	<input checked="" type="checkbox"/>		
Samples < 2x background?	<input checked="" type="checkbox"/>		

* Notify RSO of any responses in this column immediately.

MJD 28 Oct 16

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			<input checked="" type="checkbox"/>

Air Witness: _____

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other(describe)
2 Chain of Custody documents included with shipment?	<input checked="" type="checkbox"/>			
3 Samples requiring cold preservation within 0-6°C?			<input checked="" type="checkbox"/>	Preservation Method: ice bags blue ice dry ice none other (describe) 10.2°C
4 Aqueous samples found to have visible solids?	<input checked="" type="checkbox"/>			Sample IDs, containers affected: < 1/6 all samples
5 Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample IDs, containers affected and pH observed: pH=7 for all samples If preservative added, Lot#:
6 Samples requiring preservation have no residual chlorine?	<input checked="" type="checkbox"/>			Sample IDs, containers affected: If preservative added, Lot#:
7 Samples received within holding time?	<input checked="" type="checkbox"/>			Sample IDs, tests affected:
8 Sample IDs on COC match IDs on containers?	<input checked="" type="checkbox"/>			Sample IDs, containers affected:
9 Date & time of COC match date & time on containers?	<input checked="" type="checkbox"/>			Sample IDs, containers affected:
10 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			List type and number of containers / Sample IDs, containers affected: 1- 1L WMA each
11 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			

Comments:

Checklist performed by: Initials: **MJD** Date: **28 Oct 2016**

Subject: RE: 1609609_1609C98
From: Anne Thorne <anne@hallenvironmental.com>
Date: 11/7/2016 9:36 AM
To: Cynde Larkins <cynde.larkins@cfanalytical.com>

Good morning Cynde

Please proceed with analysis.

at

From: Cynde Larkins [mailto:cynde.larkins@cfanalytical.com]
Sent: Friday, November 04, 2016 8:41 PM
To: Anne Thorne <anne@hallenvironmental.com>
Cc: Melissa O'Dorisio <mel00770@cfanalytical.com>
Subject: 1609609_1609C98

Anne,

The samples for 1609609_1609C98 were received at a temperature of 10.2°C. Do we have your permission to proceed with extraction and analysis?

Thanks,

--

Cynde Larkins
Project Manager
Cape Fear Analytical, LLC
3306 Kitty Hawk Road Suite 120
Wilmington, NC 28405
(910) 795-0421

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PCB Congeners Analysis

Case Narrative

**PCBC Case Narrative
New Mexico Environment Department (NMED)
SDG 1609609_1609C98
Work Order 9998**

Method/Analysis Information

Product: PCB Congeners Method 1668A High Solids Prep for Liquids
Analytical Method: EPA Method 1668A HS
Extraction Method: SW846 3520C, 3540C
Analytical Batch Number: 33209
Clean Up Batch Number: 33208
Extraction Batch Number: 33207

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A HS:

Sample ID	Client ID
9998001	1609609-001G
9998002	1609609-002G
9998003	1609C98-001G
9998004	1609C98-002G
12017259	Method Blank (MB)
12017260	Laboratory Control Sample (LCS)
12017261	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information**Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement

The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries

Several surrogates recovered above the acceptance limits, however all native analytes still met acceptance criteria. 12017261 (LCSD).

Several surrogates recovered below the acceptance limits. Recovery issues may be matrix-related, as all other samples in the batch had acceptable recoveries. No further sample was available for re-extraction, therefore the data is reported. 9998001 (1609609-001G), 9998002 (1609609-002G), 9998003 (1609C98-001G) and 9998004 (1609C98-002G).

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery

The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement

The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation

A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information**Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information**Nonconformance (NCR) Documentation**

A NCR was not required for this SDG.

Manual Integrations

Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration

This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report for

NMED001 New Mexico Environment Department

Client SDG: 1609609_1609C98 CFA Work Order: 9998

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- B The target analyte was detected in the associated blank.
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- K Estimated Maximum Possible Concentration
- U Analyte was analyzed for, but not detected above the specified detection limit.
- h Preparation or preservation holding time was exceeded
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: 

Name: Heather Patterson

Date: 18 NOV 2016

Title: Group Leader

Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
Lab Sample ID: 9998001
Client Sample: 1668A Water
Client ID: 1609609-001G
Batch ID: 33209
Run Date: 11/10/2016 06:06
Data File: c09nov16a_2-3
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED001
Date Collected: 09/12/2016 11:00
Date Received: 10/28/2016 14:15
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 810.9 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	21.1	17.3	pg/L	8.14	49.3
2051-61-8	PCB-2	J	15.7	12.8	pg/L	7.50	49.3
2051-62-9	PCB-3	J	22.5	19.9	pg/L	7.37	49.3
13029-08-8	PCB-4	J	46.5	37.3	pg/L	13.4	49.3
16605-91-7	PCB-5	U	8.19	8.19	pg/L	8.19	49.3
25569-80-6	PCB-6	J	12.2	8.12	pg/L	5.97	49.3
33284-50-3	PCB-7	U	6.76	6.76	pg/L	6.76	49.3
34883-43-7	PCB-8	BJ	38.5	34.7	pg/L	5.43	49.3
34883-39-1	PCB-9	U	6.71	6.71	pg/L	6.71	24.7
33146-45-1	PCB-10	U	4.56	4.56	pg/L	4.56	24.7
2050-67-1	PCB-11	B	808	803	pg/L	7.08	49.3
PCB-12/13	PCB-12/PCB-13	CU	7.35	7.35	pg/L	7.35	49.3
34883-41-5	PCB-14	U	6.61	6.61	pg/L	6.61	49.3
2050-68-2	PCB-15	J	40.1	34.9	pg/L	6.88	49.3
38444-78-9	PCB-16	J	10.1	6.84	pg/L	3.87	24.7
37680-66-3	PCB-17	BJ	11.8	8.62	pg/L	3.28	24.7
PCB-18/30	PCB-18/PCB-30	BCJ	25.2	22.8	pg/L	2.74	49.3
38444-73-4	PCB-19	J	23.3	19.8	pg/L	8.93	24.7
PCB-20/28	PCB-20/PCB-28	BCJ	46.9	44.5	pg/L	2.42	49.3
PCB-21/33	PCB-21/PCB-33	BCJ	22.6	20.4	pg/L	2.37	49.3
38444-85-8	PCB-22	J	17.1	14.6	pg/L	2.66	24.7
55720-44-0	PCB-23	U	2.44	2.44	pg/L	2.44	24.7
55702-45-9	PCB-24	U	2.52	2.52	pg/L	2.52	24.7
55712-37-3	PCB-25	U	2.32	2.32	pg/L	2.32	24.7
PCB-26/29	PCB-26/PCB-29	CJ	8.39	6.21	pg/L	2.24	49.3
38444-76-7	PCB-27	U	4.12	2.32	pg/L	2.32	24.7
16606-02-3	PCB-31		34.2	32.2	pg/L	2.20	24.7
38444-77-8	PCB-32	J	6.36	4.48	pg/L	2.12	24.7
37680-68-5	PCB-34	U	2.34	2.34	pg/L	2.34	24.7
37680-69-6	PCB-35	BJ	9.13	6.03	pg/L	4.61	49.3
38444-87-0	PCB-36	U	4.09	4.09	pg/L	4.09	24.7
38444-90-5	PCB-37	BJ	12.4	9.3	pg/L	4.22	24.7

Comments:

- B** The target analyte was detected in the associated blank.
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- U** Analyte was analyzed for, but not detected above the specified detection limit.

Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998001
 Client Sample: 1668A Water
 Client ID: 1609609-001G
 Batch ID: 33209
 Run Date: 11/10/2016 06:06
 Data File: c09nov16a_2-3
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/12/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 810.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	4.17	4.17	pg/L	4.17	24.7
38444-88-1	PCB-39	U	4.29	4.29	pg/L	4.29	24.7
PCB-40/71	PCB-40/PCB-71	CU	5.23	2.44	pg/L	2.44	49.3
52663-59-9	PCB-41	U	3.6	3.6	pg/L	3.60	49.3
36559-22-5	PCB-42	U	3.01	3.01	pg/L	3.01	49.3
70362-46-8	PCB-43	U	3.38	3.38	pg/L	3.38	49.3
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CJ	21.0	17.8	pg/L	2.61	74.0
PCB-45/51	PCB-45/PCB-51	BCJ	4.76	1.58	pg/L	1.41	49.3
41464-47-5	PCB-46	U	1.65	1.48	pg/L	1.48	24.7
70362-47-9	PCB-48	U	3.77	2.91	pg/L	2.91	24.7
PCB-49/69	PCB-49/PCB-69	BCJ	9.64	6.81	pg/L	2.44	49.3
PCB-50/53	PCB-50/PCB-53	BCU	2.66	1.31	pg/L	1.31	49.3
35693-99-3	PCB-52	J	23.1	19.9	pg/L	2.64	24.7
15968-05-5	PCB-54	U	5.72	5.72	pg/L	5.72	24.7
74338-24-2	PCB-55	U	2.15	2.15	pg/L	2.15	24.7
41464-43-1	PCB-56	BJK	6.34	3.13	pg/L	2.29	24.7
70424-67-8	PCB-57	U	1.9	1.9	pg/L	1.90	24.7
41464-49-7	PCB-58	U	2.1	2.1	pg/L	2.10	24.7
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	2.07	2.07	pg/L	2.07	74.0
33025-41-1	PCB-60	U	4.27	2.15	pg/L	2.15	24.7
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	25.0	22.2	pg/L	2.02	98.7
74472-34-7	PCB-63	U	1.8	1.8	pg/L	1.80	24.7
52663-58-8	PCB-64	J	6.29	3.61	pg/L	2.22	24.7
32598-10-0	PCB-66	BJ	11.7	8.89	pg/L	1.92	24.7
73575-53-8	PCB-67	U	1.7	1.7	pg/L	1.70	24.7
73575-52-7	PCB-68	KU	2.07	1.87	pg/L	1.87	24.7
41464-42-0	PCB-72	U	1.8	1.8	pg/L	1.80	24.7
74338-23-1	PCB-73	U	2.2	2.2	pg/L	2.20	24.7
32598-13-3	PCB-77	U	1.78	1.78	pg/L	1.78	24.7
70362-49-1	PCB-78	U	2.05	2.05	pg/L	2.05	24.7
41464-48-6	PCB-79	U	1.73	1.73	pg/L	1.73	24.7
33284-52-5	PCB-80	U	1.75	1.75	pg/L	1.75	24.7

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998001
 Client Sample: 1668A Water
 Client ID: 1609609-001G
 Batch ID: 33209
 Run Date: 11/10/2016 06:06
 Data File: c09nov16a_2-3
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/12/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 810.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.8	1.8	pg/L	1.80	24.7
52663-62-4	PCB-82	U	2.12	2.12	pg/L	2.12	24.7
60145-20-2	PCB-83	U	2.2	2.2	pg/L	2.20	24.7
52663-60-2	PCB-84	U	2.76	2.07	pg/L	2.07	24.7
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	1.95	1.6	pg/L	1.60	74.0
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	BCJ	8.21	5.1	pg/L	1.70	148
PCB-88/91	PCB-88/PCB-91	CU	2	2	pg/L	2.00	49.3
73575-57-2	PCB-89	U	1.97	1.97	pg/L	1.97	24.7
PCB-90-113	PCB-90/PCB-101/PCB-113	BCJ	8.26	5.21	pg/L	1.68	74.0
52663-61-3	PCB-92	U	1.9	1.9	pg/L	1.90	24.7
PCB-93/100	PCB-93/PCB-100	CU	2	2	pg/L	2.00	49.3
73575-55-0	PCB-94	U	2.2	2.2	pg/L	2.20	24.7
38379-99-6	PCB-95	BJ	5.85	2.77	pg/L	1.78	24.7
73575-54-9	PCB-96	U	.863	.863	pg/L	0.863	24.7
PCB-98/102	PCB-98/PCB-102	CU	2.05	2.05	pg/L	2.05	49.3
38380-01-7	PCB-99	BU	3.77	1.97	pg/L	1.97	24.7
60145-21-3	PCB-103	U	1.7	1.7	pg/L	1.70	24.7
56558-16-8	PCB-104	U	4.04	4.04	pg/L	4.04	24.7
32598-14-4	PCB-105	U	2.49	1.58	pg/L	1.58	24.7
70424-69-0	PCB-106	U	1.53	1.53	pg/L	1.53	24.7
70424-68-9	PCB-107	U	1.5	1.5	pg/L	1.50	24.7
PCB-108/124	PCB-108/PCB-124	CU	1.68	1.68	pg/L	1.68	49.3
PCB-110/115	PCB-110/PCB-115	BCJ	7.55	4.57	pg/L	1.60	49.3
39635-32-0	PCB-111	U	1.5	1.5	pg/L	1.50	24.7
74472-36-9	PCB-112	U	1.31	1.31	pg/L	1.31	24.7
74472-37-0	PCB-114	U	1.65	1.65	pg/L	1.65	24.7
31508-00-6	PCB-118	BU	4.41	1.53	pg/L	1.53	24.7
68194-12-7	PCB-120	U	1.26	1.26	pg/L	1.26	24.7
56558-18-0	PCB-121	U	1.53	1.53	pg/L	1.53	24.7
76842-07-4	PCB-122	U	1.7	1.7	pg/L	1.70	24.7
65510-44-3	PCB-123	U	1.6	1.6	pg/L	1.60	24.7
57465-28-8	PCB-126	U	1.7	1.7	pg/L	1.70	24.7

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
Lab Sample ID: 9998001
Client Sample: 1668A Water
Client ID: 1609609-001G
Batch ID: 33209
Run Date: 11/10/2016 06:06
Data File: c09nov16a_2-3
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED001
Date Collected: 09/12/2016 11:00
Date Received: 10/28/2016 14:15
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 810.9 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.63	1.63	pg/L	1.63	24.7
PCB-128/166	PCB-128/PCB-166	CU	1.48	1.48	pg/L	1.48	49.3
PCB-129-163	PCB-129/PCB-138/PCB-163	BCJ	6.56	2.34	pg/L	1.68	74.0
52663-66-8	PCB-130	U	1.8	1.8	pg/L	1.80	24.7
61798-70-7	PCB-131	U	2.12	2.12	pg/L	2.12	24.7
38380-05-1	PCB-132	BKU	2.17	1.95	pg/L	1.95	24.7
35694-04-3	PCB-133	U	1.73	1.73	pg/L	1.73	24.7
52704-70-8	PCB-134	U	2.2	2.2	pg/L	2.20	24.7
PCB-135/151	PCB-135/PCB-151	BCU	2.66	1.06	pg/L	1.06	49.3
38411-22-2	PCB-136	BU	1.23	.765	pg/L	0.765	24.7
35694-06-5	PCB-137	U	1.9	1.9	pg/L	1.90	24.7
PCB-139/140	PCB-139/PCB-140	CU	1.63	1.63	pg/L	1.63	49.3
52712-04-6	PCB-141	U	1.55	1.55	pg/L	1.55	24.7
41411-61-4	PCB-142	U	1.8	1.8	pg/L	1.80	24.7
68194-15-0	PCB-143	U	1.65	1.65	pg/L	1.65	24.7
68194-14-9	PCB-144	U	.937	.937	pg/L	0.937	24.7
74472-40-5	PCB-145	U	.863	.863	pg/L	0.863	24.7
51908-16-8	PCB-146	U	1.31	1.31	pg/L	1.31	24.7
PCB-147/149	PCB-147/PCB-149	BCU	4.88	1.6	pg/L	1.60	49.3
74472-41-6	PCB-148	U	1.01	1.01	pg/L	1.01	24.7
68194-08-1	PCB-150	U	.839	.839	pg/L	0.839	24.7
68194-09-2	PCB-152	U	.765	.765	pg/L	0.765	24.7
PCB-153/168	PCB-153/PCB-168	BCU	4.88	1.38	pg/L	1.38	49.3
60145-22-4	PCB-154	U	.839	.839	pg/L	0.839	24.7
33979-03-2	PCB-155	U	1.26	1.26	pg/L	1.26	24.7
PCB-156/157	PCB-156/PCB-157	BCKU	1.28	1.09	pg/L	1.09	49.3
74472-42-7	PCB-158	U	1.13	1.13	pg/L	1.13	24.7
39635-35-3	PCB-159	U	.863	.863	pg/L	0.863	24.7
41411-62-5	PCB-160	U	1.41	1.41	pg/L	1.41	24.7
74472-43-8	PCB-161	U	1.21	1.21	pg/L	1.21	24.7
39635-34-2	PCB-162	U	.937	.937	pg/L	0.937	24.7
74472-45-0	PCB-164	U	1.18	1.18	pg/L	1.18	24.7

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
Lab Sample ID: 9998001
Client Sample: 1668A Water
Client ID: 1609609-001G
Batch ID: 33209
Run Date: 11/10/2016 06:06
Data File: c09nov16a_2-3
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED001
Date Collected: 09/12/2016 11:00
Date Received: 10/28/2016 14:15
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 810.9 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.5	1.5	pg/L	1.50	24.7
52663-72-6	PCB-167	U	.814	.814	pg/L	0.814	24.7
32774-16-6	PCB-169	U	.913	.913	pg/L	0.913	24.7
35065-30-6	PCB-170	BU	1.31	1.09	pg/L	1.09	24.7
PCB-171/173	PCB-171/PCB-173	CU	1.09	1.09	pg/L	1.09	49.3
52663-74-8	PCB-172	U	1.11	1.11	pg/L	1.11	24.7
38411-25-5	PCB-174	BU	1.95	1.04	pg/L	1.04	24.7
40186-70-7	PCB-175	U	.913	.913	pg/L	0.913	24.7
52663-65-7	PCB-176	U	.715	.715	pg/L	0.715	24.7
52663-70-4	PCB-177	BU	1.28	1.11	pg/L	1.11	24.7
52663-67-9	PCB-178	U	.962	.962	pg/L	0.962	24.7
52663-64-6	PCB-179	BKU	1.06	.715	pg/L	0.715	24.7
PCB-180/193	PCB-180/PCB-193	CU	.962	.962	pg/L	0.962	49.3
74472-47-2	PCB-181	U	1.13	1.13	pg/L	1.13	24.7
60145-23-5	PCB-182	U	.888	.888	pg/L	0.888	24.7
PCB-183/185	PCB-183/PCB-185	BCU	1.87	1.04	pg/L	1.04	49.3
74472-48-3	PCB-184	U	.715	.715	pg/L	0.715	24.7
74472-49-4	PCB-186	U	.789	.789	pg/L	0.789	24.7
52663-68-0	PCB-187	BU	2.42	.937	pg/L	0.937	24.7
74487-85-7	PCB-188	U	.814	.814	pg/L	0.814	24.7
39635-31-9	PCB-189	U	.962	.962	pg/L	0.962	24.7
41411-64-7	PCB-190	U	.814	.814	pg/L	0.814	24.7
74472-50-7	PCB-191	U	.814	.814	pg/L	0.814	24.7
74472-51-8	PCB-192	U	.962	.962	pg/L	0.962	24.7
35694-08-7	PCB-194	BU	1.78	.814	pg/L	0.814	24.7
52663-78-2	PCB-195	U	.863	.863	pg/L	0.863	24.7
42740-50-1	PCB-196	U	1.04	.863	pg/L	0.863	24.7
PCB-197/200	PCB-197/PCB-200	CU	.715	.715	pg/L	0.715	49.3
PCB-198/199	PCB-198/PCB-199	BCU	2.07	.913	pg/L	0.913	49.3
40186-71-8	PCB-201	U	.666	.666	pg/L	0.666	24.7
2136-99-4	PCB-202	U	.715	.715	pg/L	0.715	24.7
52663-76-0	PCB-203	BU	0.913	.888	pg/L	0.888	24.7

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
Lab Sample ID: 9998001
Client Sample: 1668A Water
Client ID: 1609609-001G
Batch ID: 33209
Run Date: 11/10/2016 06:06
Data File: c09nov16a_2-3
Prep Batch: 33207
Prep Date: 08-NOV-16

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Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 810.9 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.691	.691	pg/L	0.691	24.7
74472-53-0	PCB-205	U	.691	.691	pg/L	0.691	24.7
40186-72-9	PCB-206	U	.913	.913	pg/L	0.913	24.7
52663-79-3	PCB-207	U	.666	.666	pg/L	0.666	24.7
52663-77-1	PCB-208	U	.691	.691	pg/L	0.691	24.7
2051-24-3	PCB-209	BU	2.32	.839	pg/L	0.839	24.7
27323-18-8	Total monoCB		59.4	50	pg/L		
25512-42-9	Total diCB		945	918	pg/L		
25323-68-6	Total triCB		232	196	pg/L		
26914-33-0	Total tetraCB		119	80.8	pg/L		
25429-29-2	Total pentaCB		45.3	17.6	pg/L		
26601-64-9	Total hexaCB		20.2	2.34	pg/L		
28655-71-2	Total heptaCB	U	8.83	0	pg/L		
55722-26-4	Total octaCB	U	5.80	0	pg/L		
53742-07-7	Total nonaCB	U	0	0	pg/L		
DECACB(Tot)	Total decaCB	U	2.32	0	pg/L		
1336-36-3	Total PCB		1440	1260	pg/L	=0.0014 ug/L	
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.0994		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.000207		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		278	2470	pg/L	11.3 *	(15%-150%)
13C-3-MoCB		302	2470	pg/L	12.3 *	(15%-150%)
13C-4-DiCB		282	2470	pg/L	11.4 *	(25%-150%)
13C-15-DiCB		787	2470	pg/L	31.9	(25%-150%)
13C-19-TrCB		379	2470	pg/L	15.4 *	(25%-150%)
13C-37-TrCB		1030	2470	pg/L	41.7	(25%-150%)
13C-54-TeCB		182	2470	pg/L	7.40 *	(25%-150%)
13C-77-TeCB		2010	2470	pg/L	81.6	(25%-150%)
13C-81-TeCB		1870	2470	pg/L	75.6	(25%-150%)
13C-104-PeCB		243	2470	pg/L	9.85 *	(25%-150%)
13C-105-PeCB		1770	2470	pg/L	71.9	(25%-150%)
13C-114-PeCB		1620	2470	pg/L	65.7	(25%-150%)
13C-118-PeCB		1690	2470	pg/L	68.4	(25%-150%)
13C-123-PeCB		1670	2470	pg/L	67.9	(25%-150%)
13C-126-PeCB		1920	2470	pg/L	78.0	(25%-150%)
13C-155-HxCB		705	2470	pg/L	28.6	(25%-150%)
13C-156-HxCB	C	3470	4930	pg/L	70.4	(25%-150%)
13C-167-HxCB		1780	2470	pg/L	72.0	(25%-150%)
13C-169-HxCB		1820	2470	pg/L	73.8	(25%-150%)
13C-188-HpCB		1570	2470	pg/L	63.5	(25%-150%)
13C-189-HpCB		1950	2470	pg/L	79.1	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 9998001	Date Collected: 09/12/2016 11:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 10/28/2016 14:15	
Client ID: 1609609-001G		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/10/2016 06:06	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a_2-3		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 810.9 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB			1930	2470	pg/L	78.4	(25%-150%)
13C-205-OcCB			2210	2470	pg/L	89.7	(25%-150%)
13C-206-NoCB			2170	2470	pg/L	88.1	(25%-150%)
13C-208-NoCB			2050	2470	pg/L	83.0	(25%-150%)
13C-209-DeCB			2220	2470	pg/L	89.8	(25%-150%)
13C-28-TrCB			1520	2470	pg/L	61.7	(30%-135%)
13C-111-PeCB			2020	2470	pg/L	81.8	(30%-135%)
13C-178-HpCB			2070	2470	pg/L	84.0	(30%-135%)

Comments:

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- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
Lab Sample ID: 9998002
Client Sample: 1668A Water
Client ID: 1609609-002G
Batch ID: 33209
Run Date: 11/10/2016 07:13
Data File: c09nov16a_2-4
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED001
Date Collected: 09/13/2016 07:15
Date Received: 10/28/2016 14:15
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 777.8 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	21.3	17.5	pg/L	8.95	51.4
2051-61-8	PCB-2	J	15.1	12.2	pg/L	8.56	51.4
2051-62-9	PCB-3	J	15.3	12.6	pg/L	8.72	51.4
13029-08-8	PCB-4	J	48.3	39.2	pg/L	12.5	51.4
16605-91-7	PCB-5	C	9.08	9.08	pg/L	9.08	51.4
25569-80-6	PCB-6	J	12.7	8.62	pg/L	6.61	51.4
33284-50-3	PCB-7	U	7.51	7.51	pg/L	7.51	51.4
34883-43-7	PCB-8	BJ	36.7	33	pg/L	6.02	51.4
34883-39-1	PCB-9	U	7.43	7.43	pg/L	7.43	25.7
33146-45-1	PCB-10	U	4.27	4.27	pg/L	4.27	25.7
2050-67-1	PCB-11	B	863	859	pg/L	7.84	51.4
PCB-12/13	PCB-12/PCB-13	CU	8.15	8.15	pg/L	8.15	51.4
34883-41-5	PCB-14	U	7.33	7.33	pg/L	7.33	51.4
2050-68-2	PCB-15	BJ	34.1	28.8	pg/L	7.79	51.4
38444-78-9	PCB-16	J	10.6	7.35	pg/L	3.39	25.7
37680-66-3	PCB-17	BJ	14.0	10.8	pg/L	2.88	25.7
PCB-18/30	PCB-18/PCB-30	BCJ	26.8	24.5	pg/L	2.39	51.4
38444-73-4	PCB-19	J	11.6	8.1	pg/L	7.74	25.7
PCB-20/28	PCB-20/PCB-28	BCJ	51.9	49.6	pg/L	2.11	51.4
PCB-21/33	PCB-21/PCB-33	BCJ	21.3	19.2	pg/L	2.08	51.4
38444-85-8	PCB-22	J	18.0	15.5	pg/L	2.31	25.7
55720-44-0	PCB-23	U	2.13	2.13	pg/L	2.13	25.7
55702-45-9	PCB-24	U	2.21	2.21	pg/L	2.21	25.7
55712-37-3	PCB-25	U	2.03	2.03	pg/L	2.03	25.7
PCB-26/29	PCB-26/PCB-29	CJ	8.00	5.82	pg/L	1.98	51.4
38444-76-7	PCB-27	U	2.03	2.03	pg/L	2.03	25.7
16606-02-3	PCB-31		36.1	34.1	pg/L	1.93	25.7
38444-77-8	PCB-32	J	7.17	5.29	pg/L	1.88	25.7
37680-68-5	PCB-34	U	2.06	2.06	pg/L	2.06	25.7
37680-69-6	PCB-35	BJ	9.85	6.75	pg/L	5.50	51.4
38444-87-0	PCB-36	U	4.91	4.91	pg/L	4.91	25.7
38444-90-5	PCB-37	BJ	17.8	14.8	pg/L	5.12	25.7

Comments:

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998002
 Client Sample: 1668A Water
 Client ID: 1609609-002G
 Batch ID: 33209
 Run Date: 11/10/2016 07:13
 Data File: c09nov16a_2-4
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/13/2016 07:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 777.8 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	4.99	4.99	pg/L	4.99	25.7
38444-88-1	PCB-39	U	5.12	5.12	pg/L	5.12	25.7
PCB-40/71	PCB-40/PCB-71	CJ	7.82	4.58	pg/L	2.06	51.4
52663-59-9	PCB-41	U	3.01	3.01	pg/L	3.01	51.4
36559-22-5	PCB-42	J	7.64	3.95	pg/L	2.52	51.4
70362-46-8	PCB-43	U	2.83	2.83	pg/L	2.83	51.4
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CU	2.19	2.19	pg/L	2.19	77.1
PCB-45/51	PCB-45/PCB-51	BCJ	5.50	2.32	pg/L	1.34	51.4
41464-47-5	PCB-46	U	1.41	1.41	pg/L	1.41	25.7
70362-47-9	PCB-48	U	5.35	2.42	pg/L	2.42	25.7
PCB-49/69	PCB-49/PCB-69	BCJ	15.3	12.5	pg/L	2.06	51.4
PCB-50/53	PCB-50/PCB-53	BCU	3.11	1.26	pg/L	1.26	51.4
35693-99-3	PCB-52		42.1	38.9	pg/L	2.21	25.7
15968-05-5	PCB-54	U	5.14	5.14	pg/L	5.14	25.7
74338-24-2	PCB-55	U	1.83	1.83	pg/L	1.83	25.7
41464-43-1	PCB-56	BJ	12.2	8.96	pg/L	1.98	25.7
70424-67-8	PCB-57	U	1.62	1.62	pg/L	1.62	25.7
41464-49-7	PCB-58	U	1.88	1.8	pg/L	1.80	25.7
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	2.78	1.72	pg/L	1.72	77.1
33025-41-1	PCB-60	J	7.64	4.5	pg/L	1.85	25.7
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	50.3	47.5	pg/L	1.75	103
74472-34-7	PCB-63	U	1.54	1.54	pg/L	1.54	25.7
52663-58-8	PCB-64	J	11.3	8.61	pg/L	1.85	25.7
32598-10-0	PCB-66	BJ	22.8	20	pg/L	1.65	25.7
73575-53-8	PCB-67	U	1.47	1.47	pg/L	1.47	25.7
73575-52-7	PCB-68	U	1.62	1.62	pg/L	1.62	25.7
41464-42-0	PCB-72	U	1.54	1.54	pg/L	1.54	25.7
74338-23-1	PCB-73	U	1.83	1.83	pg/L	1.83	25.7
32598-13-3	PCB-77	BU	3.88	1.54	pg/L	1.54	25.7
70362-49-1	PCB-78	U	1.75	1.75	pg/L	1.75	25.7
41464-48-6	PCB-79	U	1.49	1.49	pg/L	1.49	25.7
33284-52-5	PCB-80	U	1.52	1.52	pg/L	1.52	25.7

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998002
 Client Sample: 1668A Water
 Client ID: 1609609-002G
 Batch ID: 33209
 Run Date: 11/10/2016 07:13
 Data File: c09nov16a_2-4
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/13/2016 07:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 777.8 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.57	1.57	pg/L	1.57	25.7
52663-62-4	PCB-82	U	4.83	2.7	pg/L	2.70	25.7
60145-20-2	PCB-83	U	2.8	2.8	pg/L	2.80	25.7
52663-60-2	PCB-84	J	9.51	5.51	pg/L	2.62	25.7
PCB-85-117	PCB-85/PCB-116/PCB-117	CJ	8.18	5	pg/L	2.03	77.1
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	CJ	32.3	29.2	pg/L	2.19	154
PCB-88/91	PCB-88/PCB-91	CU	5.25	2.52	pg/L	2.52	51.4
73575-57-2	PCB-89	U	2.49	2.49	pg/L	2.49	25.7
PCB-90-113	PCB-90/PCB-101/PCB-113	CJ	52.5	49.5	pg/L	2.13	77.1
52663-61-3	PCB-92	J	8.90	5.4	pg/L	2.39	25.7
PCB-93/100	PCB-93/PCB-100	CU	2.52	2.52	pg/L	2.52	51.4
73575-55-0	PCB-94	U	2.78	2.78	pg/L	2.78	25.7
38379-99-6	PCB-95		31.8	28.8	pg/L	2.26	25.7
73575-54-9	PCB-96	U	.746	.746	pg/L	0.746	25.7
PCB-98/102	PCB-98/PCB-102	CU	2.6	2.6	pg/L	2.60	51.4
38380-01-7	PCB-99	J	18.9	15.4	pg/L	2.52	25.7
60145-21-3	PCB-103	U	2.16	2.16	pg/L	2.16	25.7
56558-16-8	PCB-104	U	3.34	3.34	pg/L	3.34	25.7
32598-14-4	PCB-105	J	15.0	11.4	pg/L	1.77	25.7
70424-69-0	PCB-106	U	1.72	1.72	pg/L	1.72	25.7
70424-68-9	PCB-107	U	3.39	1.67	pg/L	1.67	25.7
PCB-108/124	PCB-108/PCB-124	CU	2.60	1.88	pg/L	1.88	51.4
PCB-110/115	PCB-110/PCB-115	C	65.4	62.4	pg/L	2.03	51.4
39635-32-0	PCB-111	U	1.9	1.9	pg/L	1.90	25.7
74472-36-9	PCB-112	U	1.67	1.67	pg/L	1.67	25.7
74472-37-0	PCB-114	U	1.88	1.88	pg/L	1.88	25.7
31508-00-6	PCB-118		34.4	31.1	pg/L	1.67	25.7
68194-12-7	PCB-120	U	1.62	1.62	pg/L	1.62	25.7
56558-18-0	PCB-121	U	1.93	1.93	pg/L	1.93	25.7
76842-07-4	PCB-122	U	1.9	1.9	pg/L	1.90	25.7
65510-44-3	PCB-123	U	1.77	1.77	pg/L	1.77	25.7
57465-28-8	PCB-126	U	1.93	1.93	pg/L	1.93	25.7

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
Lab Sample ID: 9998002
Client Sample: 1668A Water
Client ID: 1609609-002G
Batch ID: 33209
Run Date: 11/10/2016 07:13
Data File: c09nov16a_2-4
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED001
Date Collected: 09/13/2016 07:15
Date Received: 10/28/2016 14:15
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 777.8 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.83	1.83	pg/L	1.83	25.7
PCB-128/166	PCB-128/PCB-166	CJ	11.8	7.84	pg/L	1.29	51.4
PCB-129-163	PCB-129/PCB-138/PCB-163	C	138	134	pg/L	1.47	77.1
52663-66-8	PCB-130	U	5.45	1.59	pg/L	1.59	25.7
61798-70-7	PCB-131	U	1.85	1.85	pg/L	1.85	25.7
38380-05-1	PCB-132		35.5	30	pg/L	1.70	25.7
35694-04-3	PCB-133	U	1.52	1.52	pg/L	1.52	25.7
52704-70-8	PCB-134	U	4.91	1.93	pg/L	1.93	25.7
PCB-135/151	PCB-135/PCB-151	CJ	41.5	36	pg/L	1.08	51.4
38411-22-2	PCB-136	J	12.7	9.08	pg/L	0.797	25.7
35694-06-5	PCB-137	U	3.11	1.67	pg/L	1.67	25.7
PCB-139/140	PCB-139/PCB-140	CU	1.41	1.41	pg/L	1.41	51.4
52712-04-6	PCB-141	J	24.8	19.7	pg/L	1.36	25.7
41411-61-4	PCB-142	U	1.57	1.57	pg/L	1.57	25.7
68194-15-0	PCB-143	U	1.44	1.44	pg/L	1.44	25.7
68194-14-9	PCB-144	U	5.37	.977	pg/L	0.977	25.7
74472-40-5	PCB-145	U	.9	.9	pg/L	0.900	25.7
51908-16-8	PCB-146	J	14.4	10.1	pg/L	1.13	25.7
PCB-147/149	PCB-147/PCB-149	C	95.5	90.8	pg/L	1.41	51.4
74472-41-6	PCB-148	U	1.03	1.03	pg/L	1.03	25.7
68194-08-1	PCB-150	U	.849	.849	pg/L	0.849	25.7
68194-09-2	PCB-152	U	.771	.771	pg/L	0.771	25.7
PCB-153/168	PCB-153/PCB-168	C	116	112	pg/L	1.21	51.4
60145-22-4	PCB-154	KU	1.31	.849	pg/L	0.849	25.7
33979-03-2	PCB-155	U	1.21	1.21	pg/L	1.21	25.7
PCB-156/157	PCB-156/PCB-157	BCJ	9.36	4.44	pg/L	1.44	51.4
74472-42-7	PCB-158	J	11.3	7.75	pg/L	1.00	25.7
39635-35-3	PCB-159	U	1.13	1.13	pg/L	1.13	25.7
41411-62-5	PCB-160	U	1.23	1.23	pg/L	1.23	25.7
74472-43-8	PCB-161	U	1.05	1.05	pg/L	1.05	25.7
39635-34-2	PCB-162	U	1.23	1.23	pg/L	1.23	25.7
74472-45-0	PCB-164	J	8.49	4.74	pg/L	1.03	25.7

Comments:

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- U** Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998002
 Client Sample: 1668A Water
 Client ID: **1609609-002G**
 Batch ID: 33209
 Run Date: 11/10/2016 07:13
 Data File: c09nov16a_2-4
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/13/2016 07:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 777.8 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.31	1.31	pg/L	1.31	25.7
52663-72-6	PCB-167	BU	4.50	1.11	pg/L	1.11	25.7
32774-16-6	PCB-169	U	1.18	1.18	pg/L	1.18	25.7
35065-30-6	PCB-170		46.6	42.4	pg/L	1.34	25.7
PCB-171/173	PCB-171/PCB-173	CJ	14.9	10.4	pg/L	1.34	51.4
52663-74-8	PCB-172	J	9.36	5.01	pg/L	1.36	25.7
38411-25-5	PCB-174		49.8	45.2	pg/L	1.26	25.7
40186-70-7	PCB-175	U	2.39	.9	pg/L	0.900	25.7
52663-65-7	PCB-176	J	5.37	1.56	pg/L	0.694	25.7
52663-70-4	PCB-177	J	29.8	25.4	pg/L	1.36	25.7
52663-67-9	PCB-178	J	10.2	5.01	pg/L	0.951	25.7
52663-64-6	PCB-179	J	18.0	14.1	pg/L	0.694	25.7
PCB-180/193	PCB-180/PCB-193	CU	1.16	1.16	pg/L	1.16	51.4
74472-47-2	PCB-181	U	1.39	1.39	pg/L	1.39	25.7
60145-23-5	PCB-182	U	.9	.9	pg/L	0.900	25.7
PCB-183/185	PCB-183/PCB-185	CJ	34.7	30.7	pg/L	1.29	51.4
74472-48-3	PCB-184	U	.72	.72	pg/L	0.720	25.7
74472-49-4	PCB-186	U	.797	.797	pg/L	0.797	25.7
52663-68-0	PCB-187		63.4	58.4	pg/L	0.951	25.7
74487-85-7	PCB-188	U	.797	.797	pg/L	0.797	25.7
39635-31-9	PCB-189	BU	2.34	.977	pg/L	0.977	25.7
41411-64-7	PCB-190	J	10.2	7.03	pg/L	1.00	25.7
74472-50-7	PCB-191	U	1.90	.977	pg/L	0.977	25.7
74472-51-8	PCB-192	U	1.18	1.18	pg/L	1.18	25.7
35694-08-7	PCB-194	J	20.8	16.5	pg/L	0.771	25.7
52663-78-2	PCB-195	J	9.44	4.8	pg/L	0.849	25.7
42740-50-1	PCB-196	J	11.5	6.04	pg/L	1.08	25.7
PCB-197/200	PCB-197/PCB-200	CU	4.11	.9	pg/L	0.900	51.4
PCB-198/199	PCB-198/PCB-199	CJ	24.3	18.4	pg/L	1.16	51.4
40186-71-8	PCB-201	U	2.93	.849	pg/L	0.849	25.7
2136-99-4	PCB-202	U	4.63	.926	pg/L	0.926	25.7
52663-76-0	PCB-203	J	15.0	9.46	pg/L	1.11	25.7

Comments:

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**PCB Congeners
Certificate of Analysis
Sample Summary**

Rio Grande South

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 9998002	Date Collected: 09/13/2016 07:15	Matrix: WATER
Client Sample: 1668A Water	Date Received: 10/28/2016 14:15	
Client ID: 1609609-002G		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/10/2016 07:13	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a_2-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 777.8 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.874	.874	pg/L	0.874	25.7
74472-53-0	PCB-205	BU	1.57	.669	pg/L	0.669	25.7
40186-72-9	PCB-206	U	6.53	1.21	pg/L	1.21	25.7
52663-79-3	PCB-207	U	1.34	.9	pg/L	0.900	25.7
52663-77-1	PCB-208	U	1.83	.951	pg/L	0.951	25.7
2051-24-3	PCB-209	BU	2.96	.926	pg/L	0.926	25.7
27323-18-8	Total monoCB		51.7	42.3	pg/L		
25512-42-9	Total diCB		995	968	pg/L		
25323-68-6	Total triCB		233	202	pg/L		
26914-33-0	Total tetraCB		200	152	pg/L		
25429-29-2	Total pentaCB		293	244	pg/L		
26601-64-9	Total hexaCB		543	466	pg/L		
28655-71-2	Total heptaCB		299	245	pg/L		
55722-26-4	Total octaCB		94.3	55.2	pg/L		
53742-07-7	Total nonaCB	U	9.69	0	pg/L		
DECACB(Tot)	Total decaCB	U	2.96	0	pg/L		
1336-36-3	Total PCB		2720	2370	pg/L	=0.0027 ug/L	
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.117		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.00235		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		296	2570	pg/L	11.5 *	(15%-150%)
13C-3-MoCB		325	2570	pg/L	12.7 *	(15%-150%)
13C-4-DiCB		307	2570	pg/L	11.9 *	(25%-150%)
13C-15-DiCB		927	2570	pg/L	36.0	(25%-150%)
13C-19-TrCB		452	2570	pg/L	17.6 *	(25%-150%)
13C-37-TrCB		1180	2570	pg/L	46.1	(25%-150%)
13C-54-TeCB		216	2570	pg/L	8.41 *	(25%-150%)
13C-77-TeCB		2310	2570	pg/L	89.8	(25%-150%)
13C-81-TeCB		2150	2570	pg/L	83.6	(25%-150%)
13C-104-PeCB		310	2570	pg/L	12.1 *	(25%-150%)
13C-105-PeCB		2040	2570	pg/L	79.2	(25%-150%)
13C-114-PeCB		1870	2570	pg/L	72.5	(25%-150%)
13C-118-PeCB		1930	2570	pg/L	75.2	(25%-150%)
13C-123-PeCB		1930	2570	pg/L	75.2	(25%-150%)
13C-126-PeCB		2170	2570	pg/L	84.4	(25%-150%)
13C-155-HxCB		849	2570	pg/L	33.0	(25%-150%)
13C-156-HxCB	C	3800	5140	pg/L	73.9	(25%-150%)
13C-167-HxCB		1950	2570	pg/L	75.9	(25%-150%)
13C-169-HxCB		1990	2570	pg/L	77.4	(25%-150%)
13C-188-HpCB		1760	2570	pg/L	68.4	(25%-150%)
13C-189-HpCB		2130	2570	pg/L	82.9	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 9998002	Date Collected: 09/13/2016 07:15	Matrix: WATER
Client Sample: 1668A Water	Date Received: 10/28/2016 14:15	
Client ID: 1609609-002G		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/10/2016 07:13	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a_2-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 777.8 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB			2100	2570	pg/L	81.7	(25%-150%)
13C-205-OcCB			2400	2570	pg/L	93.4	(25%-150%)
13C-206-NoCB			2320	2570	pg/L	90.4	(25%-150%)
13C-208-NoCB			2210	2570	pg/L	86.0	(25%-150%)
13C-209-DeCB			2370	2570	pg/L	92.1	(25%-150%)
13C-28-TrCB			1640	2570	pg/L	63.8	(30%-135%)
13C-111-PeCB			2210	2570	pg/L	86.0	(30%-135%)
13C-178-HpCB			2240	2570	pg/L	87.1	(30%-135%)

Comments:

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- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998003
 Client Sample: 1668A Water
 Client ID: 1609C98-001G
 Batch ID: 33209
 Run Date: 11/10/2016 08:19
 Data File: c09nov16a_2-5
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/21/2016 12:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 852.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	26.9	23.1	pg/L	8.65	46.9
2051-61-8	PCB-2	U	8.14	8.14	pg/L	8.14	46.9
2051-62-9	PCB-3	J	18.4	15.7	pg/L	8.16	46.9
13029-08-8	PCB-4	J	44.9	35.7	pg/L	12.8	46.9
16605-91-7	PCB-5	U	9.15	9.15	pg/L	9.15	46.9
25569-80-6	PCB-6	JK	13.5	9.35	pg/L	6.66	46.9
33284-50-3	PCB-7	U	7.55	7.55	pg/L	7.55	46.9
34883-43-7	PCB-8	BJ	36.0	32.2	pg/L	6.05	46.9
34883-39-1	PCB-9	U	7.48	7.48	pg/L	7.48	23.4
33146-45-1	PCB-10	U	4.34	4.34	pg/L	4.34	23.4
2050-67-1	PCB-11	B	852	847	pg/L	7.90	46.9
PCB-12/13	PCB-12/PCB-13	CU	8.21	8.21	pg/L	8.21	46.9
34883-41-5	PCB-14	U	7.36	7.36	pg/L	7.36	46.9
2050-68-2	PCB-15	J	44.9	39.7	pg/L	7.81	46.9
38444-78-9	PCB-16	J	10.2	6.96	pg/L	3.85	23.4
37680-66-3	PCB-17	BJ	13.8	10.6	pg/L	3.26	23.4
PCB-18/30	PCB-18/PCB-30	BCJ	27.6	25.3	pg/L	2.72	46.9
38444-73-4	PCB-19	JK	26.5	23	pg/L	8.86	23.4
PCB-20/28	PCB-20/PCB-28	BC	49.6	47.2	pg/L	2.39	46.9
PCB-21/33	PCB-21/PCB-33	BCJ	23.0	20.8	pg/L	2.34	46.9
38444-85-8	PCB-22	J	18.6	16.1	pg/L	2.65	23.4
55720-44-0	PCB-23	U	2.42	2.42	pg/L	2.42	23.4
55702-45-9	PCB-24	U	2.51	2.51	pg/L	2.51	23.4
55712-37-3	PCB-25	U	2.3	2.3	pg/L	2.30	23.4
PCB-26/29	PCB-26/PCB-29	CJ	8.11	5.94	pg/L	2.25	46.9
38444-76-7	PCB-27	U	3.87	2.32	pg/L	2.32	23.4
16606-02-3	PCB-31	U	2.2	2.2	pg/L	2.20	23.4
38444-77-8	PCB-32	J	6.54	4.66	pg/L	2.11	23.4
37680-68-5	PCB-34	U	2.32	2.32	pg/L	2.32	23.4
37680-69-6	PCB-35	BU	7.81	4.99	pg/L	4.99	46.9
38444-87-0	PCB-36	U	4.43	4.43	pg/L	4.43	23.4
38444-90-5	PCB-37	BJ	14.5	11.5	pg/L	4.57	23.4

Comments:

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- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 9998003	Date Collected: 09/21/2016 12:15	Matrix: WATER
Client Sample: 1668A Water	Date Received: 10/28/2016 14:15	
Client ID: 1609C98-001G		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/10/2016 08:19	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a_2-5		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 852.9 mL	

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	4.53	4.53	pg/L	4.53	23.4
38444-88-1	PCB-39	U	4.64	4.64	pg/L	4.64	23.4
PCB-40/71	PCB-40/PCB-71	CJ	5.49	2.25	pg/L	1.69	46.9
52663-59-9	PCB-41	U	2.49	2.49	pg/L	2.49	46.9
36559-22-5	PCB-42	U	4.41	2.06	pg/L	2.06	46.9
70362-46-8	PCB-43	U	2.34	2.34	pg/L	2.34	46.9
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CJ	24.3	21.1	pg/L	1.81	70.3
PCB-45/51	PCB-45/PCB-51	BCJ	4.99	1.82	pg/L	1.24	46.9
41464-47-5	PCB-46	U	1.31	1.31	pg/L	1.31	23.4
70362-47-9	PCB-48	U	3.66	1.99	pg/L	1.99	23.4
PCB-49/69	PCB-49/PCB-69	BCJ	9.36	6.52	pg/L	1.69	46.9
PCB-50/53	PCB-50/PCB-53	BCU	1.83	1.17	pg/L	1.17	46.9
35693-99-3	PCB-52	J	23.4	20.2	pg/L	1.83	23.4
15968-05-5	PCB-54	U	5.49	5.49	pg/L	5.49	23.4
74338-24-2	PCB-55	U	1.59	1.59	pg/L	1.59	23.4
41464-43-1	PCB-56	BJ	7.08	3.88	pg/L	1.71	23.4
70424-67-8	PCB-57	U	1.41	1.41	pg/L	1.41	23.4
41464-49-7	PCB-58	U	1.57	1.57	pg/L	1.57	23.4
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	1.43	1.43	pg/L	1.43	70.3
33025-41-1	PCB-60	U	3.68	1.59	pg/L	1.59	23.4
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	28.8	26	pg/L	1.52	93.8
74472-34-7	PCB-63	U	1.34	1.34	pg/L	1.34	23.4
52663-58-8	PCB-64	J	6.68	4.01	pg/L	1.52	23.4
32598-10-0	PCB-66	BJ	13.2	10.5	pg/L	1.43	23.4
73575-53-8	PCB-67	U	1.27	1.27	pg/L	1.27	23.4
73575-52-7	PCB-68	U	2.09	1.41	pg/L	1.41	23.4
41464-42-0	PCB-72	U	1.36	1.36	pg/L	1.36	23.4
74338-23-1	PCB-73	U	1.52	1.52	pg/L	1.52	23.4
32598-13-3	PCB-77	BKU	1.66	1.29	pg/L	1.29	23.4
70362-49-1	PCB-78	U	1.52	1.52	pg/L	1.52	23.4
41464-48-6	PCB-79	U	1.29	1.29	pg/L	1.29	23.4
33284-52-5	PCB-80	U	1.31	1.31	pg/L	1.31	23.4

Comments:

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- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998003
 Client Sample: 1668A Water
 Client ID: 1609C98-001G
 Batch ID: 33209
 Run Date: 11/10/2016 08:19
 Data File: c09nov16a_2-5
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/21/2016 12:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 852.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.38	1.38	pg/L	1.38	23.4
52663-62-4	PCB-82	U	1.78	1.5	pg/L	1.50	23.4
60145-20-2	PCB-83	U	1.57	1.57	pg/L	1.57	23.4
52663-60-2	PCB-84	U	3.26	1.48	pg/L	1.48	23.4
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	1.45	1.15	pg/L	1.15	70.3
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	BCJ	8.14	5.02	pg/L	1.22	141
PCB-88/91	PCB-88/PCB-91	CU	1.85	1.41	pg/L	1.41	46.9
73575-57-2	PCB-89	U	1.41	1.41	pg/L	1.41	23.4
PCB-90-113	PCB-90/PCB-101/PCB-113	BCJ	11.4	8.32	pg/L	1.20	70.3
52663-61-3	PCB-92	U	2.02	1.34	pg/L	1.34	23.4
PCB-93/100	PCB-93/PCB-100	CU	1.41	1.41	pg/L	1.41	46.9
73575-55-0	PCB-94	U	1.55	1.55	pg/L	1.55	23.4
38379-99-6	PCB-95	BJ	8.56	5.48	pg/L	1.27	23.4
73575-54-9	PCB-96	U	.633	.633	pg/L	0.633	23.4
PCB-98/102	PCB-98/PCB-102	CU	1.45	1.45	pg/L	1.45	46.9
38380-01-7	PCB-99	BU	4.83	1.41	pg/L	1.41	23.4
60145-21-3	PCB-103	U	1.22	1.22	pg/L	1.22	23.4
56558-16-8	PCB-104	U	5.02	5.02	pg/L	5.02	23.4
32598-14-4	PCB-105	U	3.63	1.57	pg/L	1.57	23.4
70424-69-0	PCB-106	U	1.59	1.59	pg/L	1.59	23.4
70424-68-9	PCB-107	U	1.57	1.57	pg/L	1.57	23.4
PCB-108/124	PCB-108/PCB-124	CU	1.76	1.76	pg/L	1.76	46.9
PCB-110/115	PCB-110/PCB-115	BCJ	12.7	9.71	pg/L	1.15	46.9
39635-32-0	PCB-111	U	1.08	1.08	pg/L	1.08	23.4
74472-36-9	PCB-112	U	.938	.938	pg/L	0.938	23.4
74472-37-0	PCB-114	U	1.71	1.71	pg/L	1.71	23.4
31508-00-6	PCB-118	BJ	8.00	4.77	pg/L	1.57	23.4
68194-12-7	PCB-120	U	.891	.891	pg/L	0.891	23.4
56558-18-0	PCB-121	U	1.08	1.08	pg/L	1.08	23.4
76842-07-4	PCB-122	U	1.81	1.81	pg/L	1.81	23.4
65510-44-3	PCB-123	U	1.69	1.69	pg/L	1.69	23.4
57465-28-8	PCB-126	U	1.62	1.62	pg/L	1.62	23.4

Comments:

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- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998003
 Client Sample: 1668A Water
 Client ID: 1609C98-001G
 Batch ID: 33209
 Run Date: 11/10/2016 08:19
 Data File: c09nov16a_2-5
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/21/2016 12:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 852.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.71	1.71	pg/L	1.71	23.4
PCB-128/166	PCB-128/PCB-166	CU	1.45	1.34	pg/L	1.34	46.9
PCB-129-163	PCB-129/PCB-138/PCB-163	BCJ	9.07	4.86	pg/L	1.52	70.3
52663-66-8	PCB-130	U	1.64	1.64	pg/L	1.64	23.4
61798-70-7	PCB-131	U	1.92	1.92	pg/L	1.92	23.4
38380-05-1	PCB-132	BU	2.81	1.76	pg/L	1.76	23.4
35694-04-3	PCB-133	U	1.57	1.57	pg/L	1.57	23.4
52704-70-8	PCB-134	U	1.99	1.99	pg/L	1.99	23.4
PCB-135/151	PCB-135/PCB-151	BCU	3.21	868	pg/L	0.868	46.9
38411-22-2	PCB-136	BU	1.34	.633	pg/L	0.633	23.4
35694-06-5	PCB-137	U	1.71	1.71	pg/L	1.71	23.4
PCB-139/140	PCB-139/PCB-140	CU	1.48	1.48	pg/L	1.48	46.9
52712-04-6	PCB-141	KU	1.62	1.41	pg/L	1.41	23.4
41411-61-4	PCB-142	U	1.64	1.64	pg/L	1.64	23.4
68194-15-0	PCB-143	U	1.5	1.5	pg/L	1.50	23.4
68194-14-9	PCB-144	U	0.844	.774	pg/L	0.774	23.4
74472-40-5	PCB-145	U	.727	.727	pg/L	0.727	23.4
51908-16-8	PCB-146	U	1.17	1.17	pg/L	1.17	23.4
PCB-147/149	PCB-147/PCB-149	BCJ	6.43	1.74	pg/L	1.45	46.9
74472-41-6	PCB-148	U	.844	.844	pg/L	0.844	23.4
68194-08-1	PCB-150	U	.68	.68	pg/L	0.680	23.4
68194-09-2	PCB-152	U	.61	.61	pg/L	0.610	23.4
PCB-153/168	PCB-153/PCB-168	BCJ	7.13	3.43	pg/L	1.24	46.9
60145-22-4	PCB-154	U	.68	.68	pg/L	0.680	23.4
33979-03-2	PCB-155	U	1.55	1.55	pg/L	1.55	23.4
PCB-156/157	PCB-156/PCB-157	BCU	1.22	1.03	pg/L	1.03	46.9
74472-42-7	PCB-158	U	1.03	1.03	pg/L	1.03	23.4
39635-35-3	PCB-159	U	.868	.868	pg/L	0.868	23.4
41411-62-5	PCB-160	U	1.27	1.27	pg/L	1.27	23.4
74472-43-8	PCB-161	U	1.08	1.08	pg/L	1.08	23.4
39635-34-2	PCB-162	U	.938	.938	pg/L	0.938	23.4
74472-45-0	PCB-164	U	1.08	1.08	pg/L	1.08	23.4

Comments:

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- U** Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998003
 Client Sample: 1668A Water
 Client ID: 1609C98-001G
 Batch ID: 33209
 Run Date: 11/10/2016 08:19
 Data File: c09nov16a_2-5
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/21/2016 12:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 852.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.36	1.36	pg/L	1.36	23.4
52663-72-6	PCB-167	U	.774	.774	pg/L	0.774	23.4
32774-16-6	PCB-169	U	.844	.844	pg/L	0.844	23.4
35065-30-6	PCB-170	BU	1.83	1.15	pg/L	1.15	23.4
PCB-171/173	PCB-171/PCB-173	CU	1.15	1.15	pg/L	1.15	46.9
52663-74-8	PCB-172	U	1.17	1.17	pg/L	1.17	23.4
38411-25-5	PCB-174	BU	2.44	1.08	pg/L	1.08	23.4
40186-70-7	PCB-175	U	.821	.821	pg/L	0.821	23.4
52663-65-7	PCB-176	U	.633	.633	pg/L	0.633	23.4
52663-70-4	PCB-177	BU	1.27	1.15	pg/L	1.15	23.4
52663-67-9	PCB-178	U	.868	.868	pg/L	0.868	23.4
52663-64-6	PCB-179	BU	1.03	.633	pg/L	0.633	23.4
PCB-180/193	PCB-180/PCB-193	CU	.985	.985	pg/L	0.985	46.9
74472-47-2	PCB-181	U	1.2	1.2	pg/L	1.20	23.4
60145-23-5	PCB-182	U	.821	.821	pg/L	0.821	23.4
PCB-183/185	PCB-183/PCB-185	BCU	1.95	1.1	pg/L	1.10	46.9
74472-48-3	PCB-184	U	.657	.657	pg/L	0.657	23.4
74472-49-4	PCB-186	U	.727	.727	pg/L	0.727	23.4
52663-68-0	PCB-187	BU	3.02	.868	pg/L	0.868	23.4
74487-85-7	PCB-188	U	.774	.774	pg/L	0.774	23.4
39635-31-9	PCB-189	U	.844	.844	pg/L	0.844	23.4
41411-64-7	PCB-190	U	.868	.868	pg/L	0.868	23.4
74472-50-7	PCB-191	U	.844	.844	pg/L	0.844	23.4
74472-51-8	PCB-192	U	1.01	1.01	pg/L	1.01	23.4
35694-08-7	PCB-194	BU	1.10	.68	pg/L	0.680	23.4
52663-78-2	PCB-195	U	.727	.727	pg/L	0.727	23.4
42740-50-1	PCB-196	U	.68	.68	pg/L	0.680	23.4
PCB-197/200	PCB-197/PCB-200	CU	.563	.563	pg/L	0.563	46.9
PCB-198/199	PCB-198/PCB-199	BCU	1.13	.75	pg/L	0.750	46.9
40186-71-8	PCB-201	U	.539	.539	pg/L	0.539	23.4
2136-99-4	PCB-202	U	.586	.586	pg/L	0.586	23.4
52663-76-0	PCB-203	BU	0.961	.703	pg/L	0.703	23.4

Comments:

- B** The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
K Estimated Maximum Possible Concentration
U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 9998003	Date Collected: 09/21/2016 12:15	Matrix: WATER
Client Sample: 1668A Water	Date Received: 10/28/2016 14:15	
Client ID: 1609C98-001G		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/10/2016 08:19	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a_2-5		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 852.9 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.563	.563	pg/L	0.563	23.4
74472-53-0	PCB-205	U	.563	.563	pg/L	0.563	23.4
40186-72-9	PCB-206	U	.797	.797	pg/L	0.797	23.4
52663-79-3	PCB-207	U	.586	.586	pg/L	0.586	23.4
52663-77-1	PCB-208	U	.633	.633	pg/L	0.633	23.4
2051-24-3	PCB-209	BU	1.78	.703	pg/L	0.703	23.4
27323-18-8	Total monoCB		45.3	38.8	pg/L		
25512-42-9	Total diCB		978	955	pg/L		
25323-68-6	Total triCB		184	149	pg/L		
26914-33-0	Total tetraCB		139	96.2	pg/L		
25429-29-2	Total pentaCB		67.6	33.3	pg/L		
26601-64-9	Total hexaCB		33.5	10	pg/L		
28655-71-2	Total heptaCB	U	11.5	0	pg/L		
55722-26-4	Total octaCB	U	3.19	0	pg/L		
53742-07-7	Total nonaCB	U	0	0	pg/L		
DECACB(Tot)	Total decaCB	U	1.78	0	pg/L		
1336-36-3	Total PCB		1460	1280	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.0943		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.000386		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		230	2340	pg/L	9.80 *	(15%-150%)
13C-3-MoCB		262	2340	pg/L	11.2 *	(15%-150%)
13C-4-DiCB		240	2340	pg/L	10.2 *	(25%-150%)
13C-15-DiCB		710	2340	pg/L	30.3	(25%-150%)
13C-19-TrCB		336	2340	pg/L	14.3 *	(25%-150%)
13C-37-TrCB		839	2340	pg/L	35.8	(25%-150%)
13C-54-TeCB		150	2340	pg/L	6.41 *	(25%-150%)
13C-77-TeCB		1860	2340	pg/L	79.4	(25%-150%)
13C-81-TeCB		1650	2340	pg/L	70.6	(25%-150%)
13C-104-PeCB		138	2340	pg/L	5.91 *	(25%-150%)
13C-105-PeCB		1680	2340	pg/L	71.8	(25%-150%)
13C-114-PeCB		1470	2340	pg/L	62.6	(25%-150%)
13C-118-PeCB		1540	2340	pg/L	65.6	(25%-150%)
13C-123-PeCB		1510	2340	pg/L	64.4	(25%-150%)
13C-126-PeCB		1890	2340	pg/L	80.6	(25%-150%)
13C-155-HxCB		452	2340	pg/L	19.3 *	(25%-150%)
13C-156-HxCB	C	3350	4690	pg/L	71.5	(25%-150%)
13C-167-HxCB		1690	2340	pg/L	72.0	(25%-150%)
13C-169-HxCB		1790	2340	pg/L	76.1	(25%-150%)
13C-188-HpCB		1340	2340	pg/L	57.1	(25%-150%)
13C-189-HpCB		1920	2340	pg/L	81.8	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 9998003	Date Collected: 09/21/2016 12:15	Matrix: WATER
Client Sample: 1668A Water	Date Received: 10/28/2016 14:15	
Client ID: 1609C98-001G		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/10/2016 08:19	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a_2-5		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 852.9 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB			1800	2340	pg/L	76.7	(25%-150%)
13C-205-OcCB			2150	2340	pg/L	91.6	(25%-150%)
13C-206-NoCB			2130	2340	pg/L	90.9	(25%-150%)
13C-208-NoCB			1940	2340	pg/L	82.8	(25%-150%)
13C-209-DeCB			2180	2340	pg/L	93.1	(25%-150%)
13C-28-TrCB			1430	2340	pg/L	61.0	(30%-135%)
13C-111-PeCB			1920	2340	pg/L	81.9	(30%-135%)
13C-178-HpCB			1950	2340	pg/L	83.1	(30%-135%)

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 9998004	Date Collected: 09/22/2016 11:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 10/28/2016 14:15	
Client ID: 1609C98-002G		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/10/2016 09:25	Analyst: MJC	Instrument: HRP791
Data File: e09nov16a_2-6		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 929.1 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	22.5	18.7	pg/L	11.2	43.1
2051-61-8	PCB-2	J	14.0	11.1	pg/L	10.2	43.1
2051-62-9	PCB-3	JK	27.7	25	pg/L	9.90	43.1
13029-08-8	PCB-4		53.9	44.8	pg/L	14.3	43.1
16605-91-7	PCB-5	U	10.1	10.1	pg/L	10.1	43.1
25569-80-6	PCB-6	JK	12.8	8.72	pg/L	7.34	43.1
33284-50-3	PCB-7	U	8.31	8.31	pg/L	8.31	43.1
34883-43-7	PCB-8	BJ	36.2	32.4	pg/L	6.67	43.1
34883-39-1	PCB-9	U	8.24	8.24	pg/L	8.24	21.5
33146-45-1	PCB-10	U	4.69	4.69	pg/L	4.69	21.5
2050-67-1	PCB-11	B	1100	1100	pg/L	8.70	43.1
PCB-12/13	PCB-12/PCB-13	CU	9.04	9.04	pg/L	9.04	43.1
34883-41-5	PCB-14	U	8.12	8.12	pg/L	8.12	43.1
2050-68-2	PCB-15	BJ	32.7	27.4	pg/L	8.52	43.1
38444-78-9	PCB-16	J	15.5	12.3	pg/L	4.82	21.5
37680-66-3	PCB-17	BJ	12.9	9.7	pg/L	4.09	21.5
PCB-18/30	PCB-18/PCB-30	BCJ	23.2	20.9	pg/L	3.40	43.1
38444-73-4	PCB-19	J	14.2	10.7	pg/L	9.15	21.5
PCB-20/28	PCB-20/PCB-28	BC	62.5	60.2	pg/L	3.01	43.1
PCB-21/33	PCB-21/PCB-33	BCJ	28.7	26.5	pg/L	2.95	43.1
38444-85-8	PCB-22	J	22.2	19.7	pg/L	3.32	21.5
55720-44-0	PCB-23	U	3.04	3.04	pg/L	3.04	21.5
55702-45-9	PCB-24	U	3.14	3.14	pg/L	3.14	21.5
55712-37-3	PCB-25	J	5.23	3.26	pg/L	2.88	21.5
PCB-26/29	PCB-26/PCB-29	CU	2.82	2.82	pg/L	2.82	43.1
38444-76-7	PCB-27	U	3.90	2.91	pg/L	2.91	21.5
16606-02-3	PCB-31	U	2.76	2.76	pg/L	2.76	21.5
38444-77-8	PCB-32	J	8.63	6.75	pg/L	2.65	21.5
37680-68-5	PCB-34	U	2.93	2.93	pg/L	2.93	21.5
37680-69-6	PCB-35	BJ	11.5	8.4	pg/L	6.54	43.1
38444-87-0	PCB-36	U	5.83	5.83	pg/L	5.83	21.5
38444-90-5	PCB-37	BJ	22.0	19	pg/L	6.29	21.5

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- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998004
 Client Sample: 1668A Water
 Client ID: 1609C98-002G
 Batch ID: 33209
 Run Date: 11/10/2016 09:25
 Data File: c09nov16a_2-6
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/22/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 929.1 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	5.92	5.92	pg/L	5.92	21.5
38444-88-1	PCB-39	U	6.09	6.09	pg/L	6.09	21.5
PCB-40/71	PCB-40/PCB-71	CJ	9.00	5.76	pg/L	2.13	43.1
52663-59-9	PCB-41	U	3.14	3.14	pg/L	3.14	43.1
36559-22-5	PCB-42	U	5.92	2.6	pg/L	2.60	43.1
70362-46-8	PCB-43	U	2.95	2.95	pg/L	2.95	43.1
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CU	2.28	2.28	pg/L	2.28	64.6
PCB-45/51	PCB-45/PCB-51	BCJ	6.46	3.28	pg/L	1.40	43.1
41464-47-5	PCB-46	U	1.49	1.49	pg/L	1.49	21.5
70362-47-9	PCB-48	U	2.54	2.54	pg/L	2.54	21.5
PCB-49/69	PCB-49/PCB-69	BCJ	15.0	12.2	pg/L	2.13	43.1
PCB-50/53	PCB-50/PCB-53	BCU	2.88	1.31	pg/L	1.31	43.1
35693-99-3	PCB-52		38.3	35.1	pg/L	2.30	21.5
15968-05-5	PCB-54	U	6.05	6.05	pg/L	6.05	21.5
74338-24-2	PCB-55	U	2.32	2.32	pg/L	2.32	21.5
41464-43-1	PCB-56	BJ	11.6	8.42	pg/L	2.50	21.5
70424-67-8	PCB-57	U	2.07	2.07	pg/L	2.07	21.5
41464-49-7	PCB-58	U	2.28	2.28	pg/L	2.28	21.5
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	1.79	1.79	pg/L	1.79	64.6
33025-41-1	PCB-60	J	6.50	3.36	pg/L	2.32	21.5
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	46.2	43.4	pg/L	2.20	86.1
74472-34-7	PCB-63	U	1.96	1.96	pg/L	1.96	21.5
52663-58-8	PCB-64	J	10.6	7.96	pg/L	1.94	21.5
32598-10-0	PCB-66	BJ	20.6	17.9	pg/L	2.09	21.5
73575-53-8	PCB-67	U	1.83	1.83	pg/L	1.83	21.5
73575-52-7	PCB-68	U	2.04	2.04	pg/L	2.04	21.5
41464-42-0	PCB-72	U	1.96	1.96	pg/L	1.96	21.5
74338-23-1	PCB-73	U	1.92	1.92	pg/L	1.92	21.5
32598-13-3	PCB-77	BU	3.19	1.83	pg/L	1.83	21.5
70362-49-1	PCB-78	U	2.22	2.22	pg/L	2.22	21.5
41464-48-6	PCB-79	U	1.89	1.89	pg/L	1.89	21.5
33284-52-5	PCB-80	U	1.92	1.92	pg/L	1.92	21.5

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998004
 Client Sample: 1668A Water
 Client ID: 1609C98-002G
 Batch ID: 33209
 Run Date: 11/10/2016 09:25
 Data File: c09nov16a_2-6
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/22/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 929.1 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	2.11	2.11	pg/L	2.11	21.5
52663-62-4	PCB-82	U	3.21	2.3	pg/L	2.30	21.5
60145-20-2	PCB-83	KU	2.76	2.39	pg/L	2.39	21.5
52663-60-2	PCB-84	U	5.60	2.24	pg/L	2.24	21.5
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	4.50	1.74	pg/L	1.74	64.6
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	BCJ	18.6	15.5	pg/L	1.85	129
PCB-88/91	PCB-88/PCB-91	CU	3.75	2.15	pg/L	2.15	43.1
73575-57-2	PCB-89	U	2.13	2.13	pg/L	2.13	21.5
PCB-90-113	PCB-90/PCB-101/PCB-113	CJ	29.0	26	pg/L	1.83	64.6
52663-61-3	PCB-92	U	5.14	2.04	pg/L	2.04	21.5
PCB-93/100	PCB-93/PCB-100	CU	2.17	2.17	pg/L	2.17	43.1
73575-55-0	PCB-94	U	2.39	2.39	pg/L	2.39	21.5
38379-99-6	PCB-95	J	17.1	14.1	pg/L	1.94	21.5
73575-54-9	PCB-96	U	.818	.818	pg/L	0.818	21.5
PCB-98/102	PCB-98/PCB-102	CU	2.24	2.24	pg/L	2.24	43.1
38380-01-7	PCB-99	BJ	11.5	8.02	pg/L	2.15	21.5
60145-21-3	PCB-103	U	1.85	1.85	pg/L	1.85	21.5
56558-16-8	PCB-104	U	8.59	8.59	pg/L	8.59	21.5
32598-14-4	PCB-105	J	7.32	3.7	pg/L	1.83	21.5
70424-69-0	PCB-106	U	1.96	1.96	pg/L	1.96	21.5
70424-68-9	PCB-107	U	1.92	1.92	pg/L	1.92	21.5
PCB-108/124	PCB-108/PCB-124	CU	2.13	2.13	pg/L	2.13	43.1
PCB-110/115	PCB-110/PCB-115	CJ	33.3	30.3	pg/L	1.74	43.1
39635-32-0	PCB-111	U	1.64	1.64	pg/L	1.64	21.5
74472-36-9	PCB-112	U	1.42	1.42	pg/L	1.42	21.5
74472-37-0	PCB-114	U	2.09	2.09	pg/L	2.09	21.5
31508-00-6	PCB-118	BJ	18.6	15.4	pg/L	1.92	21.5
68194-12-7	PCB-120	U	1.38	1.38	pg/L	1.38	21.5
56558-18-0	PCB-121	U	1.66	1.66	pg/L	1.66	21.5
76842-07-4	PCB-122	U	2.17	2.17	pg/L	2.17	21.5
65510-44-3	PCB-123	U	2.07	2.07	pg/L	2.07	21.5
57465-28-8	PCB-126	U	1.85	1.85	pg/L	1.85	21.5

Comments:

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998004
 Client Sample: 1668A Water
 Client ID: 1609C98-002G
 Batch ID: 33209
 Run Date: 11/10/2016 09:25
 Data File: c09nov16a_2-6
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/22/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 929.1 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	2.09	2.09	pg/L	2.09	21.5
PCB-128/166	PCB-128/PCB-166	CJ	5.34	1.4	pg/L	1.23	43.1
PCB-129-163	PCB-129/PCB-138/PCB-163	CJ	53.3	49.1	pg/L	1.40	64.6
52663-66-8	PCB-130	U	2.48	1.51	pg/L	1.51	21.5
61798-70-7	PCB-131	U	1.77	1.77	pg/L	1.77	21.5
38380-05-1	PCB-132	J	13.8	8.32	pg/L	1.61	21.5
35694-04-3	PCB-133	U	1.44	1.44	pg/L	1.44	21.5
52704-70-8	PCB-134	U	2.35	1.83	pg/L	1.83	21.5
PCB-135/151	PCB-135/PCB-151	CJ	15.9	10.4	pg/L	1.08	43.1
38411-22-2	PCB-136	J	5.53	1.91	pg/L	0.796	21.5
35694-06-5	PCB-137	U	1.79	1.57	pg/L	1.57	21.5
PCB-139/140	PCB-139/PCB-140	CU	1.36	1.36	pg/L	1.36	43.1
52712-04-6	PCB-141	J	8.52	3.43	pg/L	1.29	21.5
41411-61-4	PCB-142	U	1.51	1.51	pg/L	1.51	21.5
68194-15-0	PCB-143	U	1.38	1.38	pg/L	1.38	21.5
68194-14-9	PCB-144	U	1.96	.969	pg/L	0.969	21.5
74472-40-5	PCB-145	U	.883	.883	pg/L	0.883	21.5
51908-16-8	PCB-146	J	5.83	1.51	pg/L	1.10	21.5
PCB-147/149	PCB-147/PCB-149	CJ	38.0	33.3	pg/L	1.33	43.1
74472-41-6	PCB-148	U	1.1	1.1	pg/L	1.10	21.5
68194-08-1	PCB-150	U	.861	.861	pg/L	0.861	21.5
68194-09-2	PCB-152	U	.775	.775	pg/L	0.775	21.5
PCB-153/168	PCB-153/PCB-168	CJ	43.4	39.7	pg/L	1.14	43.1
60145-22-4	PCB-154	U	.861	.861	pg/L	0.861	21.5
33979-03-2	PCB-155	U	3.1	3.1	pg/L	3.10	21.5
PCB-156/157	PCB-156/PCB-157	BCU	3.92	1.27	pg/L	1.27	43.1
74472-42-7	PCB-158	J	4.54	1.03	pg/L	0.947	21.5
39635-35-3	PCB-159	U	1.1	1.1	pg/L	1.10	21.5
41411-62-5	PCB-160	U	1.16	1.16	pg/L	1.16	21.5
74472-43-8	PCB-161	U	.99	.99	pg/L	0.990	21.5
39635-34-2	PCB-162	U	1.18	1.18	pg/L	1.18	21.5
74472-45-0	PCB-164	U	3.40	.99	pg/L	0.990	21.5

Comments:

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- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
Lab Sample ID: 9998004
Client Sample: 1668A Water
Client ID: 1609C98-002G
Batch ID: 33209
Run Date: 11/10/2016 09:25
Data File: c09nov16a_2-6
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED001
Date Collected: 09/22/2016 11:00
Date Received: 10/28/2016 14:15
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 929.1 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.25	1.25	pg/L	1.25	21.5
52663-72-6	PCB-167	BU	1.66	.947	pg/L	0.947	21.5
32774-16-6	PCB-169	U	1.01	1.01	pg/L	1.01	21.5
35065-30-6	PCB-170	J	17.0	12.7	pg/L	1.68	21.5
PCB-171/173	PCB-171/PCB-173	CJ	6.67	2.2	pg/L	1.70	43.1
52663-74-8	PCB-172	U	3.70	1.72	pg/L	1.72	21.5
38411-25-5	PCB-174	J	19.1	14.4	pg/L	1.59	21.5
40186-70-7	PCB-175	U	1.05	1.05	pg/L	1.05	21.5
52663-65-7	PCB-176	U	1.87	.818	pg/L	0.818	21.5
52663-70-4	PCB-177	J	11.8	7.42	pg/L	1.70	21.5
52663-67-9	PCB-178	U	3.94	1.12	pg/L	1.12	21.5
52663-64-6	PCB-179	J	7.47	3.56	pg/L	0.818	21.5
PCB-180/193	PCB-180/PCB-193	CU	1.46	1.46	pg/L	1.46	43.1
74472-47-2	PCB-181	U	1.77	1.77	pg/L	1.77	21.5
60145-23-5	PCB-182	U	1.03	1.03	pg/L	1.03	21.5
PCB-183/185	PCB-183/PCB-185	CJ	13.3	9.24	pg/L	1.61	43.1
74472-48-3	PCB-184	U	.84	.84	pg/L	0.840	21.5
74472-49-4	PCB-186	U	.926	.926	pg/L	0.926	21.5
52663-68-0	PCB-187	J	24.7	19.7	pg/L	1.10	21.5
74487-85-7	PCB-188	U	1.1	1.1	pg/L	1.10	21.5
39635-31-9	PCB-189	U	.861	.861	pg/L	0.861	21.5
41411-64-7	PCB-190	U	3.66	1.27	pg/L	1.27	21.5
74472-50-7	PCB-191	U	1.25	1.25	pg/L	1.25	21.5
74472-51-8	PCB-192	U	1.49	1.49	pg/L	1.49	21.5
35694-08-7	PCB-194	BJ	6.46	2.2	pg/L	0.883	21.5
52663-78-2	PCB-195	U	3.32	.947	pg/L	0.947	21.5
42740-50-1	PCB-196	U	3.62	.99	pg/L	0.990	21.5
PCB-197/200	PCB-197/PCB-200	CU	1.46	.818	pg/L	0.818	43.1
PCB-198/199	PCB-198/PCB-199	CJ	8.57	2.64	pg/L	1.05	43.1
40186-71-8	PCB-201	U	1.21	.775	pg/L	0.775	21.5
2136-99-4	PCB-202	U	1.72	.883	pg/L	0.883	21.5
52663-76-0	PCB-203	U	4.63	1.01	pg/L	1.01	21.5

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- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998004
 Client Sample: 1668A Water
 Client ID: 1609C98-002G
 Batch ID: 33209
 Run Date: 11/10/2016 09:25
 Data File: c09nov16a_2-6
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/22/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 929.1 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Paramname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.796	.796	pg/L	0.796	21.5
74472-53-0	PCB-205	U	.71	.71	pg/L	0.710	21.5
40186-72-9	PCB-206	U	2.30	.861	pg/L	0.861	21.5
52663-79-3	PCB-207	U	.646	.646	pg/L	0.646	21.5
52663-77-1	PCB-208	U	1.01	.689	pg/L	0.689	21.5
2051-24-3	PCB-209	BU	2.69	.689	pg/L	0.689	21.5
27323-18-8	Total monoCB		36.5	29.8	pg/L		
25512-42-9	Total diCB		1230	1200	pg/L		
25323-68-6	Total triCB		231	197	pg/L		
26914-33-0	Total tetraCB		176	137	pg/L		
25429-29-2	Total pentaCB		158	113	pg/L		
26601-64-9	Total hexaCB		212	150	pg/L		
28655-71-2	Total heptaCB		113	69.3	pg/L		
55722-26-4	Total octaCB		31.0	4.84	pg/L		
53742-07-7	Total nonaCB	U	3.32	0	pg/L		
DECACB(Tot)	Total decaCB	U	2.69	0	pg/L		
1336-36-3	Total PCB		2190	1910	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.109		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.00126		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		175	2150	pg/L	8.15 *	(15%-150%)
13C-3-MoCB		190	2150	pg/L	8.84 *	(15%-150%)
13C-4-DiCB		184	2150	pg/L	8.56 *	(25%-150%)
13C-15-DiCB		566	2150	pg/L	26.3	(25%-150%)
13C-19-TrCB		270	2150	pg/L	12.5 *	(25%-150%)
13C-37-TrCB		572	2150	pg/L	26.6	(25%-150%)
13C-54-TeCB		113	2150	pg/L	5.25 *	(25%-150%)
13C-77-TeCB		1440	2150	pg/L	66.8	(25%-150%)
13C-81-TeCB		1200	2150	pg/L	55.6	(25%-150%)
13C-104-PeCB		84.4	2150	pg/L	3.92 *	(25%-150%)
13C-105-PeCB		1410	2150	pg/L	65.5	(25%-150%)
13C-114-PeCB		1180	2150	pg/L	54.6	(25%-150%)
13C-118-PeCB		1230	2150	pg/L	57.2	(25%-150%)
13C-123-PeCB		1190	2150	pg/L	55.5	(25%-150%)
13C-126-PeCB		1650	2150	pg/L	76.7	(25%-150%)
13C-155-HxCB		232	2150	pg/L	10.8 *	(25%-150%)
13C-156-HxCB	C	2920	4310	pg/L	67.8	(25%-150%)
13C-167-HxCB		1470	2150	pg/L	68.2	(25%-150%)
13C-169-HxCB		1560	2150	pg/L	72.7	(25%-150%)
13C-188-HpCB		979	2150	pg/L	45.5	(25%-150%)
13C-189-HpCB		1670	2150	pg/L	77.8	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 9998004	Date Collected: 09/22/2016 11:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 10/28/2016 14:15	
Client ID: 1609C98-002G		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A IIS	
Run Date: 11/10/2016 09:25	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a_2-6		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 929.1 mL	

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB			1530	2150	pg/L	71.0	(25%-150%)
13C-205-OcCB			1900	2150	pg/L	88.3	(25%-150%)
13C-206-NoCB			1850	2150	pg/L	86.0	(25%-150%)
13C-208-NoCB			1720	2150	pg/L	80.1	(25%-150%)
13C-209-DeCB			1910	2150	pg/L	88.7	(25%-150%)
13C-28-TrCB			1290	2150	pg/L	59.8	(30%-135%)
13C-111-PeCB			1930	2150	pg/L	89.7	(30%-135%)
13C-178-HpCB			1930	2150	pg/L	89.8	(30%-135%)

Comments:

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- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

PCB Congeners
Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017260	LCS for batch 33207	13C-1-MoCB		55.0	(15%-140%)
		13C-3-MoCB		51.8	(15%-140%)
		13C-4-DiCB		52.1	(30%-140%)
		13C-15-DiCB		89.3	(30%-140%)
		13C-19-TrCB		81.3	(30%-140%)
		13C-37-TrCB		72.9	(30%-140%)
		13C-54-TeCB		54.8	(30%-140%)
		13C-77-TeCB		94.6	(30%-140%)
		13C-81-TeCB		95.3	(30%-140%)
		13C-104-PeCB		58.4	(30%-140%)
		13C-105-PeCB		82.9	(30%-140%)
		13C-114-PeCB		80.7	(30%-140%)
		13C-118-PeCB		82.8	(30%-140%)
		13C-123-PeCB		84.1	(30%-140%)
		13C-126-PeCB		85.5	(30%-140%)
		13C-155-HxCB		66.4	(30%-140%)
		13C-156-HxCB	C	74.3	(30%-140%)
		13C-167-HxCB		76.9	(30%-140%)
		13C-169-HxCB		77.2	(30%-140%)
		13C-188-HpCB		77.6	(30%-140%)
		13C-189-HpCB		78.5	(30%-140%)
		13C-202-OcCB		84.9	(30%-140%)
		13C-205-OcCB		97.1	(30%-140%)
		13C-206-NoCB		101	(30%-140%)
		13C-208-NoCB		90.5	(30%-140%)
		13C-209-DeCB		108	(30%-140%)
13C-28-TrCB		63.8	(40%-125%)		
13C-111-PeCB		81.4	(40%-125%)		
13C-178-HpCB		85.5	(40%-125%)		
12017261	LCSD for batch 33207	13C-1-MoCB		52.3	(15%-140%)
		13C-3-MoCB		48.6	(15%-140%)
		13C-4-DiCB		49.2	(30%-140%)
		13C-15-DiCB		153 *	(30%-140%)
		13C-19-TrCB		97.5	(30%-140%)
		13C-37-TrCB		110	(30%-140%)
		13C-54-TeCB		55.8	(30%-140%)
		13C-77-TeCB		146 *	(30%-140%)
		13C-81-TeCB		146 *	(30%-140%)
		13C-104-PeCB		75.8	(30%-140%)
		13C-105-PeCB		126	(30%-140%)
		13C-114-PeCB		122	(30%-140%)
		13C-118-PeCB		124	(30%-140%)
		13C-123-PeCB		126	(30%-140%)
		13C-126-PeCB		134	(30%-140%)
		13C-155-HxCB		87.5	(30%-140%)
		13C-156-HxCB	C	110	(30%-140%)
		13C-167-HxCB		114	(30%-140%)
		13C-169-HxCB		117	(30%-140%)
		13C-188-HpCB		108	(30%-140%)
13C-189-HpCB		116	(30%-140%)		
13C-202-OcCB		122	(30%-140%)		
13C-205-OcCB		140	(30%-140%)		

PCB Congeners
Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017261	LCSD for batch 33207	13C-206-NoCB		146 *	(30%-140%)
		13C-208-NoCB		131	(30%-140%)
		13C-209-DeCB		158 *	(30%-140%)
		13C-28-TrCB		72.9	(40%-125%)
		13C-111-PeCB		101	(40%-125%)
		13C-178-HpCB		104	(40%-125%)
12017259	MB for batch 33207	13C-1-MoCB		33.1	(15%-150%)
		13C-3-MoCB		33.0	(15%-150%)
		13C-4-DiCB		31.7	(25%-150%)
		13C-15-DiCB		83.7	(25%-150%)
		13C-19-TrCB		59.1	(25%-150%)
		13C-37-TrCB		64.3	(25%-150%)
		13C-54-TeCB		36.1	(25%-150%)
		13C-77-TeCB		86.3	(25%-150%)
		13C-81-TeCB		85.3	(25%-150%)
		13C-104-PeCB		45.4	(25%-150%)
		13C-105-PeCB		75.7	(25%-150%)
		13C-114-PeCB		72.4	(25%-150%)
		13C-118-PeCB		74.1	(25%-150%)
		13C-123-PeCB		74.2	(25%-150%)
		13C-126-PeCB		81.2	(25%-150%)
		13C-155-HxCB		53.4	(25%-150%)
		13C-156-HxCB	C	67.7	(25%-150%)
		13C-167-HxCB		69.6	(25%-150%)
		13C-169-HxCB		72.5	(25%-150%)
		13C-188-HpCB		66.4	(25%-150%)
		13C-189-HpCB		71.0	(25%-150%)
		13C-202-OcCB		75.9	(25%-150%)
		13C-205-OcCB		86.1	(25%-150%)
		13C-206-NoCB		89.2	(25%-150%)
13C-208-NoCB		80.8	(25%-150%)		
13C-209-DeCB		96.6	(25%-150%)		
13C-28-TrCB		60.9	(30%-135%)		
13C-111-PeCB		81.0	(30%-135%)		
13C-178-HpCB		84.7	(30%-135%)		
9998001	1609609-001G	13C-1-MoCB		11.3 *	(15%-150%)
		13C-3-MoCB		12.3 *	(15%-150%)
		13C-4-DiCB		11.4 *	(25%-150%)
		13C-15-DiCB		31.9	(25%-150%)
		13C-19-TrCB		15.4 *	(25%-150%)
		13C-37-TrCB		41.7	(25%-150%)
		13C-54-TeCB		7.40 *	(25%-150%)
		13C-77-TeCB		81.6	(25%-150%)
		13C-81-TeCB		75.6	(25%-150%)
		13C-104-PeCB		9.85 *	(25%-150%)
		13C-105-PeCB		71.9	(25%-150%)
		13C-114-PeCB		65.7	(25%-150%)
		13C-118-PeCB		68.4	(25%-150%)
		13C-123-PeCB		67.9	(25%-150%)
		13C-126-PeCB		78.0	(25%-150%)
13C-155-HxCB		28.6	(25%-150%)		

PCB Congeners
Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9998001	1609609-001G	13C-156-HxCB	C	70.4	(25%-150%)
		13C-167-HxCB		72.0	(25%-150%)
		13C-169-HxCB		73.8	(25%-150%)
		13C-188-HpCB		63.5	(25%-150%)
		13C-189-HpCB		79.1	(25%-150%)
		13C-202-OcCB		78.4	(25%-150%)
		13C-205-OcCB		89.7	(25%-150%)
		13C-206-NoCB		88.1	(25%-150%)
		13C-208-NoCB		83.0	(25%-150%)
		13C-209-DeCB		89.8	(25%-150%)
		13C-28-TrCB		61.7	(30%-135%)
		13C-111-PeCB		81.8	(30%-135%)
		13C-178-HpCB		84.0	(30%-135%)
9998002	1609609-002G	13C-1-MoCB	C	11.5 *	(15%-150%)
		13C-3-MoCB		12.7 *	(15%-150%)
		13C-4-DiCB		11.9 *	(25%-150%)
		13C-15-DiCB		36.0	(25%-150%)
		13C-19-TrCB		17.6 *	(25%-150%)
		13C-37-TrCB		46.1	(25%-150%)
		13C-54-TeCB		8.41 *	(25%-150%)
		13C-77-TeCB		89.8	(25%-150%)
		13C-81-TeCB		83.6	(25%-150%)
		13C-104-PeCB		12.1 *	(25%-150%)
		13C-105-PeCB		79.2	(25%-150%)
		13C-114-PeCB		72.5	(25%-150%)
		13C-118-PeCB		75.2	(25%-150%)
		13C-123-PeCB		75.2	(25%-150%)
		13C-126-PeCB		84.4	(25%-150%)
		13C-155-HxCB		33.0	(25%-150%)
		13C-156-HxCB		73.9	(25%-150%)
		13C-167-HxCB		75.9	(25%-150%)
		13C-169-HxCB		77.4	(25%-150%)
		13C-188-HpCB		68.4	(25%-150%)
		13C-189-HpCB		82.9	(25%-150%)
		13C-202-OcCB		81.7	(25%-150%)
		13C-205-OcCB		93.4	(25%-150%)
13C-206-NoCB	90.4	(25%-150%)			
13C-208-NoCB	86.0	(25%-150%)			
13C-209-DeCB	92.1	(25%-150%)			
13C-28-TrCB	63.8	(30%-135%)			
13C-111-PeCB	86.0	(30%-135%)			
13C-178-HpCB	87.1	(30%-135%)			
9998003	1609C98-001G	13C-1-MoCB	C	9.80 *	(15%-150%)
		13C-3-MoCB		11.2 *	(15%-150%)
		13C-4-DiCB		10.2 *	(25%-150%)
		13C-15-DiCB		30.3	(25%-150%)
		13C-19-TrCB		14.3 *	(25%-150%)
		13C-37-TrCB		35.8	(25%-150%)
		13C-54-TeCB		6.41 *	(25%-150%)
		13C-77-TeCB		79.4	(25%-150%)
		13C-81-TeCB		70.6	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9998003	1609C98-001G	13C-104-PeCB		5.91 *	(25%-150%)
		13C-105-PeCB		71.8	(25%-150%)
		13C-114-PeCB		62.6	(25%-150%)
		13C-118-PeCB		65.6	(25%-150%)
		13C-123-PeCB		64.4	(25%-150%)
		13C-126-PeCB		80.6	(25%-150%)
		13C-155-HxCB		19.3 *	(25%-150%)
		13C-156-HxCB	C	71.5	(25%-150%)
		13C-167-HxCB		72.0	(25%-150%)
		13C-169-HxCB		76.1	(25%-150%)
		13C-188-HpCB		57.1	(25%-150%)
		13C-189-HpCB		81.8	(25%-150%)
		13C-202-OcCB		76.7	(25%-150%)
		13C-205-OcCB		91.6	(25%-150%)
		13C-206-NoCB		90.9	(25%-150%)
		13C-208-NoCB		82.8	(25%-150%)
		13C-209-DeCB		93.1	(25%-150%)
		13C-28-TrCB		61.0	(30%-135%)
13C-111-PeCB		81.9	(30%-135%)		
13C-178-HpCB		83.1	(30%-135%)		
9998004	1609C98-002G	13C-1-MoCB		8.15 *	(15%-150%)
		13C-3-MoCB		8.84 *	(15%-150%)
		13C-4-DiCB		8.56 *	(25%-150%)
		13C-15-DiCB		26.3	(25%-150%)
		13C-19-TrCB		12.5 *	(25%-150%)
		13C-37-TrCB		26.6	(25%-150%)
		13C-54-TeCB		5.25 *	(25%-150%)
		13C-77-TeCB		66.8	(25%-150%)
		13C-81-TeCB		55.6	(25%-150%)
		13C-104-PeCB		3.92 *	(25%-150%)
		13C-105-PeCB		65.5	(25%-150%)
		13C-114-PeCB		54.6	(25%-150%)
		13C-118-PeCB		57.2	(25%-150%)
		13C-123-PeCB		55.5	(25%-150%)
		13C-126-PeCB		76.7	(25%-150%)
		13C-155-HxCB		10.8 *	(25%-150%)
		13C-156-HxCB	C	67.8	(25%-150%)
		13C-167-HxCB		68.2	(25%-150%)
		13C-169-HxCB		72.7	(25%-150%)
		13C-188-HpCB		45.5	(25%-150%)
		13C-189-HpCB		77.8	(25%-150%)
		13C-202-OcCB		71.0	(25%-150%)
		13C-205-OcCB		88.3	(25%-150%)
		13C-206-NoCB		86.0	(25%-150%)
13C-208-NoCB		80.1	(25%-150%)		
13C-209-DeCB		88.7	(25%-150%)		
13C-28-TrCB		59.8	(30%-135%)		
13C-111-PeCB		89.7	(30%-135%)		
13C-178-HpCB		89.8	(30%-135%)		

* Recovery outside Acceptance Limits

PCB Congeners
Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
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* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

**PCB Congeners
Quality Control Summary
Spike Recovery Report**

SDG Number: 1609609_1609C98
Client ID: LCS for batch 33207
Lab Sample ID: 12017260
Instrument: HRP791
Analyst: MJC

Sample Type: Laboratory Control Sample
Matrix: WATER
Analysis Date: 11/09/2016 16:41 **Dilution:** 1
Prep Batch ID: 33207
Batch ID: 33209

CAS No.	Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS PCB-1	500	518	104	50-150
2051-62-9	LCS PCB-3	500	604	121	50-150
13029-08-8	LCS PCB-4	500	499	99.7	50-150
2050-68-2	LCS PCB-15	500	523	105	50-150
38444-73-4	LCS PCB-19	500	494	98.8	50-150
38444-90-5	LCS PCB-37	500	484	96.8	50-150
15968-05-5	LCS PCB-54	1000	1000	100	50-150
32598-13-3	LCS PCB-77	1000	942	94.2	50-150
70362-50-4	LCS PCB-81	1000	1120	112	50-150
56558-16-8	LCS PCB-104	1000	1060	106	50-150
32598-14-4	LCS PCB-105	1000	1180	118	50-150
74472-37-0	LCS PCB-114	1000	1020	102	50-150
31508-00-6	LCS PCB-118	1000	977	97.7	50-150
65510-44-3	LCS PCB-123	1000	916	91.6	50-150
57465-28-8	LCS PCB-126	1000	1010	101	50-150
33979-03-2	LCS PCB-155	1000	980	98	50-150
38380-08-4	LCS PCB-156/PCB-157	2000	C 2230	111	50-150
52663-72-6	LCS PCB-167	1000	1150	115	50-150
32774-16-6	LCS PCB-169	1000	1010	101	50-150
74487-85-7	LCS PCB-188	1000	972	97.2	50-150
39635-31-9	LCS PCB-189	1000	971	97.1	50-150
2136-99-4	LCS PCB-202	1500	1430	95	50-150
74472-53-0	LCS PCB-205	1500	1290	85.7	50-150
40186-72-9	LCS PCB-206	1500	1410	93.7	50-150
52663-77-1	LCS PCB-208	1500	1490	99.4	50-150
2051-24-3	LCS PCB-209	1500	1380	91.8	50-150

PCB Congeners
Quality Control Summary
Spike Recovery Report

SDG Number: 1609609_1609C98
Client ID: LCSD for batch 33207
Lab Sample ID: 12017261
Instrument: HRP791
Analyst: MJC

Sample Type: Laboratory Control Sample Duplicate
Matrix: WATER
Analysis Date: 11/09/2016 17:47
Prep Batch ID: 33207
Batch ID: 33209
Dilution: 1

CAS No.	Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD PCB-1	500	454	90.9	50-150	13.2	0-20
2051-62-9	LCSD PCB-3	500	544	109	50-150	10.5	0-20
13029-08-8	LCSD PCB-4	500	424	84.7	50-150	16.2	0-20
2050-68-2	LCSD PCB-15	500	473	94.6	50-150	9.99	0-20
38444-73-4	LCSD PCB-19	500	447	89.5	50-150	9.89	0-20
38444-90-5	LCSD PCB-37	500	420	84.1	50-150	14.1	0-20
15968-05-5	LCSD PCB-54	1000	876	87.6	50-150	13.3	0-20
32598-13-3	LCSD PCB-77	1000	826	82.6	50-150	13.2	0-20
70362-50-4	LCSD PCB-81	1000	968	96.8	50-150	14.7	0-20
56558-16-8	LCSD PCB-104	1000	920	92	50-150	13.9	0-20
32598-14-4	LCSD PCB-105	1000	1030	103	50-150	12.9	0-20
74472-37-0	LCSD PCB-114	1000	888	88.8	50-150	13.9	0-20
31508-00-6	LCSD PCB-118	1000	842	84.2	50-150	14.9	0-20
65510-44-3	LCSD PCB-123	1000	793	79.3	50-150	14.4	0-20
57465-28-8	LCSD PCB-126	1000	906	90.6	50-150	10.9	0-20
33979-03-2	LCSD PCB-155	1000	873	87.3	50-150	11.6	0-20
38380-08-4	LCSD PCB-156/PCB-157	2000	C 1920	95.9	50-150	14.9	0-20
52663-72-6	LCSD PCB-167	1000	996	99.6	50-150	14.4	0-20
32774-16-6	LCSD PCB-169	1000	864	86.4	50-150	15.6	0-20
74487-85-7	LCSD PCB-188	1000	834	83.4	50-150	15.3	0-20
39635-31-9	LCSD PCB-189	1000	831	83.1	50-150	15.5	0-20
2136-99-4	LCSD PCB-202	1500	1220	81.3	50-150	15.5	0-20
74472-53-0	LCSD PCB-205	1500	1110	74.2	50-150	14.4	0-20
40186-72-9	LCSD PCB-206	1500	1200	79.8	50-150	16.1	0-20
52663-77-1	LCSD PCB-208	1500	1290	85.7	50-150	14.8	0-20
2051-24-3	LCSD PCB-209	1500	1190	79.2	50-150	14.8	0-20

Method Blank Summary

SDG Number: 1609609_1609C98
Client ID: MB for batch 33207
Lab Sample ID: 12017259
Column:

Client: NMED001
Instrument ID: HRP791
Prep Date: 08-NOV-16

Matrix: WATER
Data File: c09nov16a-4
Analyzed: 11/09/16 18:53

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 33207	12017260	c09nov16a-2	11/09/16	1641
02 LCSD for batch 33207	12017261	c09nov16a-3	11/09/16	1747
03 1609609-001G	9998001	c09nov16a_2-3	11/10/16	0606
04 1609609-002G	9998002	c09nov16a_2-4	11/10/16	0713
05 1609C98-001G	9998003	c09nov16a_2-5	11/10/16	0819
06 1609C98-002G	9998004	c09nov16a_2-6	11/10/16	0925

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 18:53	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	KU	5.92	4.76	pg/L	4.76	40.0
2051-61-8	PCB-2	U	4.74	4.74	pg/L	4.74	40.0
2051-62-9	PCB-3	U	4.62	4.62	pg/L	4.62	40.0
13029-08-8	PCB-4	U	5.28	5.28	pg/L	5.28	40.0
16605-91-7	PCB-5	U	4.24	4.24	pg/L	4.24	40.0
25569-80-6	PCB-6	U	3.04	3.04	pg/L	3.04	40.0
33284-50-3	PCB-7	U	3.44	3.44	pg/L	3.44	40.0
34883-43-7	PCB-8	J	10.3	6.58	pg/L	2.76	40.0
34883-39-1	PCB-9	U	3.44	3.44	pg/L	3.44	20.0
33146-45-1	PCB-10	U	1.86	1.86	pg/L	1.86	20.0
2050-67-1	PCB-11		317	312	pg/L	3.70	40.0
PCB-12/13	PCB-12/PCB-13	CU	3.88	3.88	pg/L	3.88	40.0
34883-41-5	PCB-14	U	3.44	3.44	pg/L	3.44	40.0
2050-68-2	PCB-15	U	7.74	3.36	pg/L	3.36	40.0
38444-78-9	PCB-16	U	1.98	1.98	pg/L	1.98	20.0
37680-66-3	PCB-17	U	4.12	1.74	pg/L	1.74	20.0
PCB-18/30	PCB-18/PCB-30	CJ	6.62	4.31	pg/L	1.46	40.0
38444-73-4	PCB-19	U	2.36	2.36	pg/L	2.36	20.0
PCB-20/28	PCB-20/PCB-28	CJ	17.6	15.2	pg/L	1.30	40.0
PCB-21/33	PCB-21/PCB-33	CJ	10.3	8.17	pg/L	1.34	40.0
38444-85-8	PCB-22	U	1.44	1.44	pg/L	1.44	20.0
55720-44-0	PCB-23	U	1.36	1.36	pg/L	1.36	20.0
55702-45-9	PCB-24	U	2.92	1.4	pg/L	1.40	20.0
55712-37-3	PCB-25	U	1.26	1.26	pg/L	1.26	20.0
PCB-26/29	PCB-26/PCB-29	CU	1.26	1.26	pg/L	1.26	40.0
38444-76-7	PCB-27	U	1.26	1.26	pg/L	1.26	20.0
16606-02-3	PCB-31	U	1.18	1.18	pg/L	1.18	20.0
38444-77-8	PCB-32	U	1.14	1.14	pg/L	1.14	20.0
37680-68-5	PCB-34	U	1.3	1.3	pg/L	1.30	20.0
37680-69-6	PCB-35	U	3.66	2.76	pg/L	2.76	40.0
38444-87-0	PCB-36	U	3.20	2.44	pg/L	2.44	20.0
38444-90-5	PCB-37	U	4.98	2.64	pg/L	2.64	20.0

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- K Estimated Maximum Possible Concentration
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 18:53	Analyst: MJC	Instrument: HRP791
Data File: e09nov16a-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	2.52	2.52	pg/L	2.52	20.0
38444-88-1	PCB-39	U	2.56	2.56	pg/L	2.56	20.0
PCB-40/71	PCB-40/PCB-71	CU	2.32	2.32	pg/L	2.32	40.0
52663-59-9	PCB-41	U	3.1	3.1	pg/L	3.10	40.0
36559-22-5	PCB-42	U	2.9	2.9	pg/L	2.90	40.0
70362-46-8	PCB-43	U	2.98	2.98	pg/L	2.98	40.0
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CU	2.4	2.4	pg/L	2.40	60.0
PCB-45/51	PCB-45/PCB-51	CU	2.26	1.1	pg/L	1.10	40.0
41464-47-5	PCB-46	U	1.16	1.16	pg/L	1.16	20.0
70362-47-9	PCB-48	U	2.72	2.72	pg/L	2.72	20.0
PCB-49/69	PCB-49/PCB-69	CU	4.96	2.24	pg/L	2.24	40.0
PCB-50/53	PCB-50/PCB-53	CU	1.08	1.04	pg/L	1.04	40.0
35693-99-3	PCB-52	U	2.38	2.38	pg/L	2.38	20.0
15968-05-5	PCB-54	U	1.4	1.4	pg/L	1.40	20.0
74338-24-2	PCB-55	U	1.52	1.52	pg/L	1.52	20.0
41464-43-1	PCB-56	U	4.32	1.58	pg/L	1.58	20.0
70424-67-8	PCB-57	U	1.34	1.34	pg/L	1.34	20.0
41464-49-7	PCB-58	U	1.5	1.5	pg/L	1.50	20.0
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	1.9	1.9	pg/L	1.90	60.0
33025-41-1	PCB-60	U	1.5	1.5	pg/L	1.50	20.0
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	CJ	16.0	13.2	pg/L	1.42	80.0
74472-34-7	PCB-63	U	1.28	1.28	pg/L	1.28	20.0
52663-58-8	PCB-64	U	2.04	2.04	pg/L	2.04	20.0
32598-10-0	PCB-66	J	7.58	4.8	pg/L	1.34	20.0
73575-53-8	PCB-67	U	1.2	1.2	pg/L	1.20	20.0
73575-52-7	PCB-68	U	1.32	1.32	pg/L	1.32	20.0
41464-42-0	PCB-72	U	1.26	1.26	pg/L	1.26	20.0
74338-23-1	PCB-73	U	2.1	2.1	pg/L	2.10	20.0
32598-13-3	PCB-77	U	1.68	1.32	pg/L	1.32	20.0
70362-49-1	PCB-78	U	1.44	1.44	pg/L	1.44	20.0
41464-48-6	PCB-79	U	1.22	1.22	pg/L	1.22	20.0
33284-52-5	PCB-80	U	1.2	1.2	pg/L	1.20	20.0

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	Instrument: HRP791
Run Date: 11/09/2016 18:53	Analyst: MJC	Dilution: 1
Data File: e09nov16a-4		Prep SOP Ref: CF-OA-E-001
Prep Batch: 33207	Prep Method: SW846 3520C	
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.28	1.28	pg/L	1.28	20.0
52663-62-4	PCB-82	U	1.62	1.62	pg/L	1.62	20.0
60145-20-2	PCB-83	U	1.74	1.74	pg/L	1.74	20.0
52663-60-2	PCB-84	U	1.6	1.6	pg/L	1.60	20.0
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	1.22	1.22	pg/L	1.22	60.0
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	CJ	4.42	1.3	pg/L	1.30	120
PCB-88/91	PCB-88/PCB-91	CU	1.52	1.52	pg/L	1.52	40.0
73575-57-2	PCB-89	U	1.52	1.52	pg/L	1.52	20.0
PCB-90-113	PCB-90/PCB-101/PCB-113	CJ	5.62	2.56	pg/L	1.28	60.0
52663-61-3	PCB-92	U	1.46	1.46	pg/L	1.46	20.0
PCB-93/100	PCB-93/PCB-100	CU	1.5	1.5	pg/L	1.50	40.0
73575-55-0	PCB-94	U	1.66	1.66	pg/L	1.66	20.0
38379-99-6	PCB-95	U	3.20	1.4	pg/L	1.40	20.0
73575-54-9	PCB-96	U	.68	.68	pg/L	0.680	20.0
PCB-98/102	PCB-98/PCB-102	CU	1.6	1.6	pg/L	1.60	40.0
38380-01-7	PCB-99	U	2.48	1.42	pg/L	1.42	20.0
60145-21-3	PCB-103	U	1.32	1.32	pg/L	1.32	20.0
56558-16-8	PCB-104	U	.94	.94	pg/L	0.940	20.0
32598-14-4	PCB-105	U	1.84	1.84	pg/L	1.84	20.0
70424-69-0	PCB-106	U	1.66	1.66	pg/L	1.66	20.0
70424-68-9	PCB-107	U	1.56	1.56	pg/L	1.56	20.0
PCB-108/124	PCB-108/PCB-124	CU	1.78	1.78	pg/L	1.78	40.0
PCB-110/115	PCB-110/PCB-115	CJ	4.54	1.57	pg/L	1.22	40.0
39635-32-0	PCB-111	U	1.16	1.16	pg/L	1.16	20.0
74472-36-9	PCB-112	U	1.04	1.04	pg/L	1.04	20.0
74472-37-0	PCB-114	U	1.8	1.8	pg/L	1.80	20.0
31508-00-6	PCB-118	U	4.12	1.7	pg/L	1.70	20.0
68194-12-7	PCB-120	U	1.04	1.04	pg/L	1.04	20.0
56558-18-0	PCB-121	U	1.18	1.18	pg/L	1.18	20.0
76842-07-4	PCB-122	U	1.78	1.78	pg/L	1.78	20.0
65510-44-3	PCB-123	U	1.76	1.76	pg/L	1.76	20.0
57465-28-8	PCB-126	U	1.98	1.98	pg/L	1.98	20.0

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 18:53	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.68	1.68	pg/L	1.68	20.0
PCB-128/166	PCB-128/PCB-166	CU	1.3	1.3	pg/L	1.30	40.0
PCB-129-163	PCB-129/PCB-138/PCB-163	CJ	6.20	1.98	pg/L	1.46	60.0
52663-66-8	PCB-130	U	1.58	1.58	pg/L	1.58	20.0
61798-70-7	PCB-131	U	1.9	1.9	pg/L	1.90	20.0
38380-05-1	PCB-132	U	2.36	1.72	pg/L	1.72	20.0
35694-04-3	PCB-133	U	1.52	1.52	pg/L	1.52	20.0
52704-70-8	PCB-134	U	2.14	2.14	pg/L	2.14	20.0
PCB-135/151	PCB-135/PCB-151	CU	2.82	1.04	pg/L	1.04	40.0
38411-22-2	PCB-136	U	0.860	.76	pg/L	0.760	20.0
35694-06-5	PCB-137	U	1.64	1.64	pg/L	1.64	20.0
PCB-139/140	PCB-139/PCB-140	CU	1.46	1.46	pg/L	1.46	40.0
52712-04-6	PCB-141	U	1.4	1.4	pg/L	1.40	20.0
41411-61-4	PCB-142	U	1.62	1.62	pg/L	1.62	20.0
68194-15-0	PCB-143	U	1.44	1.44	pg/L	1.44	20.0
68194-14-9	PCB-144	U	.96	.96	pg/L	0.960	20.0
74472-40-5	PCB-145	U	.84	.84	pg/L	0.840	20.0
51908-16-8	PCB-146	U	1.2	1.2	pg/L	1.20	20.0
PCB-147/149	PCB-147/PCB-149	CU	4.98	1.44	pg/L	1.44	40.0
74472-41-6	PCB-148	U	.96	.96	pg/L	0.960	20.0
68194-08-1	PCB-150	U	.82	.82	pg/L	0.820	20.0
68194-09-2	PCB-152	U	.72	.72	pg/L	0.720	20.0
PCB-153/168	PCB-153/PCB-168	CU	4.28	1.22	pg/L	1.22	40.0
60145-22-4	PCB-154	U	.86	.86	pg/L	0.860	20.0
33979-03-2	PCB-155	U	.76	.76	pg/L	0.760	20.0
PCB-156/157	PCB-156/PCB-157	CU	2.14	1.48	pg/L	1.48	40.0
74472-42-7	PCB-158	U	1	1	pg/L	1.00	20.0
39635-35-3	PCB-159	U	1.1	1.1	pg/L	1.10	20.0
41411-62-5	PCB-160	U	1.26	1.26	pg/L	1.26	20.0
74472-43-8	PCB-161	U	1.06	1.06	pg/L	1.06	20.0
39635-34-2	PCB-162	U	1.16	1.16	pg/L	1.16	20.0
74472-45-0	PCB-164	U	1.08	1.08	pg/L	1.08	20.0

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 18:53	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.32	1.32	pg/L	1.32	20.0
52663-72-6	PCB-167	U	1.14	1.1	pg/L	1.10	20.0
32774-16-6	PCB-169	U	1.2	1.2	pg/L	1.20	20.0
35065-30-6	PCB-170	U	2.24	1.08	pg/L	1.08	20.0
PCB-171/173	PCB-171/PCB-173	CU	1.20	1.1	pg/L	1.10	40.0
52663-74-8	PCB-172	U	1.1	1.1	pg/L	1.10	20.0
38411-25-5	PCB-174	U	3.08	1.04	pg/L	1.04	20.0
40186-70-7	PCB-175	U	.8	.8	pg/L	0.800	20.0
52663-65-7	PCB-176	U	.64	.64	pg/L	0.640	20.0
52663-70-4	PCB-177	U	1.22	1.12	pg/L	1.12	20.0
52663-67-9	PCB-178	U	.84	.84	pg/L	0.840	20.0
52663-64-6	PCB-179	U	0.660	.64	pg/L	0.640	20.0
PCB-180/193	PCB-180/PCB-193	CU	.92	.92	pg/L	0.920	40.0
74472-47-2	PCB-181	U	1.14	1.14	pg/L	1.14	20.0
60145-23-5	PCB-182	U	.78	.78	pg/L	0.780	20.0
PCB-183/185	PCB-183/PCB-185	CU	1.78	1.06	pg/L	1.06	40.0
74472-48-3	PCB-184	U	.64	.64	pg/L	0.640	20.0
74472-49-4	PCB-186	U	.72	.72	pg/L	0.720	20.0
52663-68-0	PCB-187	U	3.04	.84	pg/L	0.840	20.0
74487-85-7	PCB-188	U	.68	.68	pg/L	0.680	20.0
39635-31-9	PCB-189	U	1.30	1.08	pg/L	1.08	20.0
41411-64-7	PCB-190	U	.82	.82	pg/L	0.820	20.0
74472-50-7	PCB-191	U	.8	.8	pg/L	0.800	20.0
74472-51-8	PCB-192	U	.96	.96	pg/L	0.960	20.0
35694-08-7	PCB-194	U	1.52	.72	pg/L	0.720	20.0
52663-78-2	PCB-195	U	.78	.78	pg/L	0.780	20.0
42740-50-1	PCB-196	U	.8	.8	pg/L	0.800	20.0
PCB-197/200	PCB-197/PCB-200	CU	.66	.66	pg/L	0.660	40.0
PCB-198/199	PCB-198/PCB-199	CKU	1.18	.84	pg/L	0.840	40.0
40186-71-8	PCB-201	U	.64	.64	pg/L	0.640	20.0
2136-99-4	PCB-202	U	.7	.7	pg/L	0.700	20.0
52663-76-0	PCB-203	U	0.920	.82	pg/L	0.820	20.0

Comments:

- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- K Estimated Maximum Possible Concentration
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 18:53	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.64	.64	pg/L	0.640	20.0
74472-53-0	PCB-205	U	0.640	.62	pg/L	0.620	20.0
40186-72-9	PCB-206	U	1.06	1.06	pg/L	1.06	20.0
52663-79-3	PCB-207	U	.78	.78	pg/L	0.780	20.0
52663-77-1	PCB-208	U	.84	.84	pg/L	0.840	20.0
2051-24-3	PCB-209	U	1.22	.68	pg/L	0.680	20.0
27323-18-8	Total monoCB	U	0	0	pg/L		
25512-42-9	Total diCB		335	319	pg/L		
25323-68-6	Total triCB		53.5	27.7	pg/L		
26914-33-0	Total tetraCB		37.9	18	pg/L		
25429-29-2	Total pentaCB		24.4	5.43	pg/L		
26601-64-9	Total hexaCB		24.8	1.98	pg/L		
28655-71-2	Total heptaCB	U	14.5	0	pg/L		
55722-26-4	Total octaCB	U	3.08	0	pg/L		
53742-07-7	Total nonaCB	U	0	0	pg/L		
DECACB(Tot)	Total decaCB	U	1.22	0	pg/L		
1336-36-3	Total PCB		495	372	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.118		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.000429		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		661	2000	pg/L	33.1	(15%-150%)
13C-3-MoCB		660	2000	pg/L	33.0	(15%-150%)
13C-4-DiCB		635	2000	pg/L	31.7	(25%-150%)
13C-15-DiCB		1670	2000	pg/L	83.7	(25%-150%)
13C-19-TrCB		1180	2000	pg/L	59.1	(25%-150%)
13C-37-TrCB		1290	2000	pg/L	64.3	(25%-150%)
13C-54-TeCB		721	2000	pg/L	36.1	(25%-150%)
13C-77-TeCB		1730	2000	pg/L	86.3	(25%-150%)
13C-81-TeCB		1710	2000	pg/L	85.3	(25%-150%)
13C-104-PeCB		908	2000	pg/L	45.4	(25%-150%)
13C-105-PeCB		1510	2000	pg/L	75.7	(25%-150%)
13C-114-PeCB		1450	2000	pg/L	72.4	(25%-150%)
13C-118-PeCB		1480	2000	pg/L	74.1	(25%-150%)
13C-123-PeCB		1480	2000	pg/L	74.2	(25%-150%)
13C-126-PeCB		1620	2000	pg/L	81.2	(25%-150%)
13C-155-HxCB		1070	2000	pg/L	53.4	(25%-150%)
13C-156-HxCB	C	2710	4000	pg/L	67.7	(25%-150%)
13C-167-HxCB		1390	2000	pg/L	69.6	(25%-150%)
13C-169-HxCB		1450	2000	pg/L	72.5	(25%-150%)
13C-188-HpCB		1330	2000	pg/L	66.4	(25%-150%)
13C-189-HpCB		1420	2000	pg/L	71.0	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 18:53	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB			1520	2000	pg/L	75.9	(25%-150%)
13C-205-OcCB			1720	2000	pg/L	86.1	(25%-150%)
13C-206-NoCB			1780	2000	pg/L	89.2	(25%-150%)
13C-208-NoCB			1620	2000	pg/L	80.8	(25%-150%)
13C-209-DeCB			1930	2000	pg/L	96.6	(25%-150%)
13C-28-TrCB			1220	2000	pg/L	60.9	(30%-135%)
13C-111-PeCB			1620	2000	pg/L	81.0	(30%-135%)
13C-178-HpCB			1690	2000	pg/L	84.7	(30%-135%)

Comments:

- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
Lab Sample ID: 12017260
Client Sample: QC for batch 33207
Client ID: LCS for batch 33207
Batch ID: 33209
Run Date: 11/09/2016 16:41
Data File: c09nov16a-2
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED001
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 1000 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1		522	518	pg/L	5.74	40.0
2051-62-9	PCB-3		606	604	pg/L	4.96	40.0
13029-08-8	PCB-4		508	499	pg/L	4.28	40.0
2050-68-2	PCB-15		528	523	pg/L	4.74	40.0
38444-73-4	PCB-19		497	494	pg/L	2.40	20.0
38444-90-5	PCB-37		487	484	pg/L	6.88	20.0
15968-05-5	PCB-54		1000	1000	pg/L	1.16	20.0
32598-13-3	PCB-77		945	942	pg/L	4.18	20.0
70362-50-4	PCB-81		1120	1120	pg/L	3.92	20.0
56558-16-8	PCB-104		1060	1060	pg/L	1.18	20.0
32598-14-4	PCB-105		1180	1180	pg/L	5.10	20.0
74472-37-0	PCB-114		1020	1020	pg/L	5.02	20.0
31508-00-6	PCB-118		981	977	pg/L	4.70	20.0
65510-44-3	PCB-123		920	916	pg/L	4.86	20.0
57465-28-8	PCB-126		1020	1010	pg/L	5.84	20.0
33979-03-2	PCB-155		983	980	pg/L	0.720	20.0
PCB-156/157	PCB-156/PCB-157	C	2230	2230	pg/L	6.24	40.0
52663-72-6	PCB-167		1150	1150	pg/L	4.52	20.0
32774-16-6	PCB-169		1020	1010	pg/L	5.24	20.0
74487-85-7	PCB-188		975	972	pg/L	0.920	20.0
39635-31-9	PCB-189		977	971	pg/L	2.34	20.0
2136-99-4	PCB-202		1430	1430	pg/L	1.02	20.0
74472-53-0	PCB-205		1290	1290	pg/L	1.32	20.0
40186-72-9	PCB-206		1410	1410	pg/L	1.42	20.0
52663-77-1	PCB-208		1500	1490	pg/L	1.12	20.0
2051-24-3	PCB-209		1380	1380	pg/L	0.880	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1100	2000	pg/L	55.0	(15%-140%)
13C-3-MoCB		1040	2000	pg/L	51.8	(15%-140%)
13C-4-DiCB		1040	2000	pg/L	52.1	(30%-140%)
13C-15-DiCB		1790	2000	pg/L	89.3	(30%-140%)
13C-19-TrCB		1630	2000	pg/L	81.3	(30%-140%)
13C-37-TrCB		1460	2000	pg/L	72.9	(30%-140%)
13C-54-TeCB		1100	2000	pg/L	54.8	(30%-140%)
13C-77-TeCB		1890	2000	pg/L	94.6	(30%-140%)
13C-81-TeCB		1910	2000	pg/L	95.3	(30%-140%)
13C-104-PeCB		1170	2000	pg/L	58.4	(30%-140%)
13C-105-PeCB		1660	2000	pg/L	82.9	(30%-140%)
13C-114-PeCB		1610	2000	pg/L	80.7	(30%-140%)
13C-118-PeCB		1660	2000	pg/L	82.8	(30%-140%)
13C-123-PeCB		1680	2000	pg/L	84.1	(30%-140%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017260		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: LCS for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 16:41	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-2		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB			1710	2000	pg/L	85.5	(30%-140%)
13C-155-HxCB			1330	2000	pg/L	66.4	(30%-140%)
13C-156-HxCB		C	2970	4000	pg/L	74.3	(30%-140%)
13C-167-HxCB			1540	2000	pg/L	76.9	(30%-140%)
13C-169-HxCB			1540	2000	pg/L	77.2	(30%-140%)
13C-188-HpCB			1550	2000	pg/L	77.6	(30%-140%)
13C-189-HpCB			1570	2000	pg/L	78.5	(30%-140%)
13C-202-OcCB			1700	2000	pg/L	84.9	(30%-140%)
13C-205-OcCB			1940	2000	pg/L	97.1	(30%-140%)
13C-206-NoCB			2010	2000	pg/L	101	(30%-140%)
13C-208-NoCB			1810	2000	pg/L	90.5	(30%-140%)
13C-209-DeCB			2160	2000	pg/L	108	(30%-140%)
13C-28-TrCB			1280	2000	pg/L	63.8	(40%-125%)
13C-111-PeCB			1630	2000	pg/L	81.4	(40%-125%)
13C-178-HpCB			1710	2000	pg/L	85.5	(40%-125%)

Comments:

- B** The target analyte was detected in the associated blank.
- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017261		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: LCSO for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 17:47	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-3		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1		458	454	pg/L	5.08	40.0
2051-62-9	PCB-3		546	544	pg/L	4.68	40.0
13029-08-8	PCB-4		433	424	pg/L	5.84	40.0
2050-68-2	PCB-15		478	473	pg/L	3.62	40.0
38444-73-4	PCB-19		451	447	pg/L	2.06	20.0
38444-90-5	PCB-37		423	420	pg/L	2.02	20.0
15968-05-5	PCB-54		879	876	pg/L	1.08	20.0
32598-13-3	PCB-77		829	826	pg/L	2.42	20.0
70362-50-4	PCB-81		970	968	pg/L	2.34	20.0
56558-16-8	PCB-104		923	920	pg/L	0.680	20.0
32598-14-4	PCB-105		1040	1030	pg/L	3.62	20.0
74472-37-0	PCB-114		892	888	pg/L	3.56	20.0
31508-00-6	PCB-118		845	842	pg/L	3.34	20.0
65510-44-3	PCB-123		797	793	pg/L	3.50	20.0
57465-28-8	PCB-126		910	906	pg/L	3.98	20.0
33979-03-2	PCB-155		876	873	pg/L	0.540	20.0
PCB-156/157	PCB-156/PCB-157	C	1920	1920	pg/L	3.62	40.0
52663-72-6	PCB-167		999	996	pg/L	2.72	20.0
32774-16-6	PCB-169		869	864	pg/L	3.00	20.0
74487-85-7	PCB-188		837	834	pg/L	0.560	20.0
39635-31-9	PCB-189		837	831	pg/L	1.20	20.0
2136-99-4	PCB-202		1220	1220	pg/L	0.680	20.0
74472-53-0	PCB-205		1120	1110	pg/L	0.800	20.0
40186-72-9	PCB-206		1200	1200	pg/L	0.900	20.0
52663-77-1	PCB-208		1290	1290	pg/L	0.740	20.0
2051-24-3	PCB-209		1200	1190	pg/L	0.500	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1050	2000	pg/L	52.3	(15%-140%)
13C-3-MoCB		971	2000	pg/L	48.6	(15%-140%)
13C-4-DiCB		984	2000	pg/L	49.2	(30%-140%)
13C-15-DiCB		3070	2000	pg/L	153 *	(30%-140%)
13C-19-TrCB		1950	2000	pg/L	97.5	(30%-140%)
13C-37-TrCB		2200	2000	pg/L	110	(30%-140%)
13C-54-TeCB		1120	2000	pg/L	55.8	(30%-140%)
13C-77-TeCB		2920	2000	pg/L	146 *	(30%-140%)
13C-81-TeCB		2920	2000	pg/L	146 *	(30%-140%)
13C-104-PeCB		1520	2000	pg/L	75.8	(30%-140%)
13C-105-PeCB		2520	2000	pg/L	126	(30%-140%)
13C-114-PeCB		2440	2000	pg/L	122	(30%-140%)
13C-118-PeCB		2480	2000	pg/L	124	(30%-140%)
13C-123-PeCB		2510	2000	pg/L	126	(30%-140%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017261		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: LCSD for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 17:47	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-3		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB			2680	2000	pg/L	134	(30%-140%)
13C-155-HxCB			1750	2000	pg/L	87.5	(30%-140%)
13C-156-HxCB	C		4400	4000	pg/L	110	(30%-140%)
13C-167-HxCB			2290	2000	pg/L	114	(30%-140%)
13C-169-HxCB			2340	2000	pg/L	117	(30%-140%)
13C-188-HpCB			2170	2000	pg/L	108	(30%-140%)
13C-189-HpCB			2320	2000	pg/L	116	(30%-140%)
13C-202-OcCB			2440	2000	pg/L	122	(30%-140%)
13C-205-OcCB			2800	2000	pg/L	140	(30%-140%)
13C-206-NoCB			2920	2000	pg/L	146 *	(30%-140%)
13C-208-NoCB			2620	2000	pg/L	131	(30%-140%)
13C-209-DeCB			3150	2000	pg/L	158 *	(30%-140%)
13C-28-TrCB			1460	2000	pg/L	72.9	(40%-125%)
13C-111-PeCB			2010	2000	pg/L	101	(40%-125%)
13C-178-HpCB			2080	2000	pg/L	104	(40%-125%)

Comments:

- B** The target analyte was detected in the associated blank.
- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609609

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-27492	SampType: MBLK	TestCode: EPA Method 1664A								
Client ID: PBW	Batch ID: 27492	RunNo: 37211								
Prep Date: 9/14/2016	Analysis Date: 9/14/2016	SeqNo: 1154883	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	ND	10								

Sample ID LCS-27492	SampType: LCS	TestCode: EPA Method 1664A								
Client ID: LCSW	Batch ID: 27492	RunNo: 37211								
Prep Date: 9/14/2016	Analysis Date: 9/14/2016	SeqNo: 1154884	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	39	10	40.00	0	98.0	78	114			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609609

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	MBLK-D	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	D37643	RunNo:	37643					
Prep Date:		Analysis Date:	10/3/2016	SeqNo:	1171903	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								

Sample ID	MB-B	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	B37699	RunNo:	37699					
Prep Date:		Analysis Date:	10/5/2016	SeqNo:	1174283	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	ND	1.0								

Sample ID	LCS-B	SampType:	LCS	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	LCSW	Batch ID:	B37699	RunNo:	37699					
Prep Date:		Analysis Date:	10/5/2016	SeqNo:	1174284	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	52	1.0	50.00	0	104	85	115			

Sample ID	LLLCS-B	SampType:	LCSLL	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	BatchQC	Batch ID:	B37699	RunNo:	37699					
Prep Date:		Analysis Date:	10/5/2016	SeqNo:	1174285	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Magnesium	ND	1.0	0.5000	0	113	50	150			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609609

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID LCS	SampType: LCS		TestCode: EPA 200.8: Dissolved Metals							
Client ID: LCSW	Batch ID: C37623		RunNo: 37623							
Prep Date:	Analysis Date: 9/30/2016		SeqNo: 1171239		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.024	0.0010	0.02500	0	95.1	85	115			
Lead	0.012	0.00050	0.01250	0	94.9	85	115			

Sample ID LLCS	SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals							
Client ID: BatchQC	Batch ID: C37623		RunNo: 37623							
Prep Date:	Analysis Date: 9/30/2016		SeqNo: 1171246		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0011	0.0010	0.001000	0	114	50	150			
Lead	0.00050	0.00050	0.0005000	0	100	50	150			

Sample ID MB	SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals							
Client ID: PBW	Batch ID: C37623		RunNo: 37623							
Prep Date:	Analysis Date: 9/30/2016		SeqNo: 1171252		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								
Lead	ND	0.00050								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609609

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R37171		RunNo: 37171							
Prep Date:	Analysis Date: 9/13/2016		SeqNo: 1153024		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R37171		RunNo: 37171							
Prep Date:	Analysis Date: 9/13/2016		SeqNo: 1153025		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	95.2	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.2	90	110			

Sample ID 1609609-001DMS	SampType: MS		TestCode: EPA Method 300.0: Anions							
Client ID: Rio Grande-North 0	Batch ID: R37171		RunNo: 37171							
Prep Date:	Analysis Date: 9/13/2016		SeqNo: 1153037		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.94	0.10	1.000	0	94.0	79.8	108			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.08590	97.5	82.9	118			

Sample ID 1609609-001DMSD	SampType: MSD		TestCode: EPA Method 300.0: Anions							
Client ID: Rio Grande-North 0	Batch ID: R37171		RunNo: 37171							
Prep Date:	Analysis Date: 9/13/2016		SeqNo: 1153038		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	94.6	79.8	108	0.636	20	
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0.08590	98.0	82.9	118	0.569	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609609

02-Dec-16

Client: AMAFCA
Project: CMC

Sample ID MB-27487	SampType: MBLK		TestCode: SM5210B: BOD							
Client ID: PBW	Batch ID: 27487		RunNo: 37444							
Prep Date: 9/14/2016	Analysis Date: 9/19/2016		SeqNo: 1164081	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID MB--27487	SampType: MBLK		TestCode: SM5210B: BOD							
Client ID: PBW	Batch ID: 27487		RunNo: 37444							
Prep Date: 9/14/2016	Analysis Date: 9/19/2016		SeqNo: 1164082	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID LCS-27487	SampType: LCS		TestCode: SM5210B: BOD							
Client ID: LCSW	Batch ID: 27487		RunNo: 37444							
Prep Date: 9/14/2016	Analysis Date: 9/19/2016		SeqNo: 1164083	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	180	2.0	198.0	0	88.7	56.9	131			

Sample ID LCSD-27487	SampType: LCSD		TestCode: SM5210B: BOD							
Client ID: LCSS02	Batch ID: 27487		RunNo: 37444							
Prep Date: 9/14/2016	Analysis Date: 9/19/2016		SeqNo: 1164084	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	170	2.0	198.0	0	84.7	56.9	131	4.66	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609609

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	MB-27474	SampType:	MBLK	TestCode:	SM 9223B Fecal Indicator: E. coli MPN					
Client ID:	PBW	Batch ID:	27474	RunNo:	37218					
Prep Date:	9/13/2016	Analysis Date:	9/14/2016	SeqNo:	1154952	Units:	CFU/100ml			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609609

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB	SampType: MBLK		TestCode: SM 4500 NH3: Ammonia							
Client ID: PBW	Batch ID: R37673		RunNo: 37673							
Prep Date:	Analysis Date: 10/4/2016		SeqNo: 1173090		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID LCS	SampType: LCS		TestCode: SM 4500 NH3: Ammonia							
Client ID: LCSW	Batch ID: R37673		RunNo: 37673							
Prep Date:	Analysis Date: 10/4/2016		SeqNo: 1173091		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	9.7	1.0	10.00	0	96.6	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609609

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-27693	SampType: MBLK		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: PBW	Batch ID: 27693		RunNo: 37505							
Prep Date: 9/26/2016	Analysis Date: 9/27/2016		SeqNo: 1166156	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.010								

Sample ID LCS-27693	SampType: LCS		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: LCSW	Batch ID: 27693		RunNo: 37505							
Prep Date: 9/26/2016	Analysis Date: 9/27/2016		SeqNo: 1166157	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.25	0.010	0.2500	0	98.0	90	110			

Sample ID 1609609-001DMS	SampType: MS		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: Rio Grande-North 0	Batch ID: 27693		RunNo: 37505							
Prep Date: 9/26/2016	Analysis Date: 9/27/2016		SeqNo: 1166159	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.30	0.010	0.2500	0.05240	99.5	90	110			

Sample ID 1609609-001DMSD	SampType: MSD		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: Rio Grande-North 0	Batch ID: 27693		RunNo: 37505							
Prep Date: 9/26/2016	Analysis Date: 9/27/2016		SeqNo: 1166160	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.30	0.010	0.2500	0.05240	100	90	110	0.530	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609609

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-27539	SampType: MBLK	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: PBW	Batch ID: 27539	RunNo: 37290								
Prep Date: 9/16/2016	Analysis Date: 9/19/2016	SeqNo: 1157797	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID LCS-27539	SampType: LCS	TestCode: SM2540C MOD: Total Dissolved Solids								
Client ID: LCSW	Batch ID: 27539	RunNo: 37290								
Prep Date: 9/16/2016	Analysis Date: 9/19/2016	SeqNo: 1157798	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609609

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-27768	SampType: MBLK	TestCode: SM 4500 Norg C: TKN								
Client ID: PBW	Batch ID: 27768	RunNo: 37637								
Prep Date: 9/28/2016	Analysis Date: 10/3/2016	SeqNo: 1171460	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID LCS-27768	SampType: LCS	TestCode: SM 4500 Norg C: TKN								
Client ID: LCSW	Batch ID: 27768	RunNo: 37637								
Prep Date: 9/28/2016	Analysis Date: 10/3/2016	SeqNo: 1171461	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	9.8	1.0	10.00	0	98.0	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609609

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-27523	SampType: MBLK		TestCode: SM 2540D: TSS							
Client ID: PBW	Batch ID: 27523		RunNo: 37265							
Prep Date: 9/15/2016	Analysis Date: 9/16/2016		SeqNo: 1157022		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID LCS-27523	SampType: LCS		TestCode: SM 2540D: TSS							
Client ID: LCSW	Batch ID: 27523		RunNo: 37265							
Prep Date: 9/15/2016	Analysis Date: 9/16/2016		SeqNo: 1157023		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	110	4.0	92.50	0	114	83.35	118.92			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |



Hall Environmental Analysis Laboratory
 4901 Hawkins NE
 Albuquerque, NM 87109
 TEL: 505-345-3975 FAX: 505-345-4107
 Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **AMAFCA**

Work Order Number: **1609609**

RcptNo: **1**

Received by/date: AF 09/13/14

Logged By: **Ashley Gallegos** 9/13/2016 10:35:00 AM *AG*

Completed By: **Ashley Gallegos** 9/13/2016 12:09:06 PM *AG*

Reviewed By: AS 09/13/14 @ 1230

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)

of preserved bottles checked for pH: _____
 (<2 or >12 unless noted)
 Adjusted? _____
 Checked by: _____

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Not Present			

Chain-of-Custody Record

Client: AMAFLA

Mailing Address:

Phone #:

email or Fax#: pchavez@AMAFLA.ORG

QA/QC Package:
 Standard Level 4 (Full Validation)

Accreditation
 NELAP Other _____

EDD (Type) _____

Turn-Around Time:

Standard Rush

Project Name:

CMC

Project #:

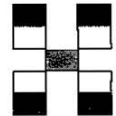
Project Manager:

Patrick Chavez

Sampler: C. Johannesen

On Ice: Yes No

Sample Temperature: 2. +0.5-2.6



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	See Attacher Table	G. coli - num	Diss Phos	Air Bubbles (Y or N)	
9-12-16	1100	AQ	Rio Grande-North-091216		N/Ambros	-001													X			
9-13-16	0715	AQ	Rio Grande-South-091316			-002													X	X		
-	-	AQ	Tr. p bien K	-3	HCL	-003/5													X			
09/12	1100	AQ	Rio Grande North 091216 Filtered			-004 3	50															
09/13	0715	AQ	Rio Grande South 091316 Filtered			-005 4	91316															X

Date: 9-13-16 Time: 1030 Relinquished by: [Signature] Received by: [Signature] Date: 9/13/16 Time: 10:35

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

AMAFCA and CMC samples

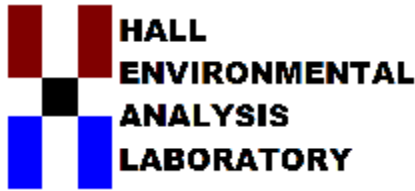
Hardness
TSS
TDS
COD
BOD
DO
Oil & grease
E. coli
pH
Total kjeldahl nitrogen
Nitrate plus nitrite
Dissolved phosphorus
Ammonia plus organic nitrogen
Total Phosphorus
Chromium IV
Copper-dissolved
Lead-dissolved
PCBs
Gross Alpha
Tetrahydrofuran
Benzo(a)pyrene
Benzo(b)fluoranthene, alternate name 3, 4 Benzofluoranthene
Benzo(k)fluoranthene
Chrysene
Indeno(1,2,3-cd)pyrene
Dieldrin
Pentachlorophenol
Benzidine
Benzo(a)anthracene
Pentachlorophenol
Dibenzofuran
Dibenzo(a,h)anthracene
Bis(2-ethylhexyl)phthalate

AMAFCA E.Coli only sites:

- Bear Arroyo
- Main Hanh Arroyo
- Embudo

7/8/2016

\\ss6abq\DataS\Projects\WR14.0074_AMAFCA_Stormwater\Docs\WQ Monitoring\Field documents\AMAFCA and CMC sample list Wet 2016 .docx



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 03, 2016

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

RE: CMC

OrderNo.: 1609B94

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/21/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):

9/21/16 - Rio Grande North

DO = 7.14 mg/L, pH = 8.96, Conductivity = 298 umhos/cm, and Temperature = 20.99°C

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609B94

Date Reported: 10/3/2016

CLIENT: AMAFCA

Client Sample ID: Rio Grande-North-092116

Project: CMC

Collection Date: 9/21/2016 12:15:00 PM

Lab ID: 1609B94-001

Matrix: AQUEOUS

Received Date: 9/21/2016 2:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: tnc
E. Coli	31.1	1.000		CFU/100ml	1	9/22/2016 3:52:00 PM	27644

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: **AMAFCA**

Work Order Number: **1609B94**

RcptNo: **1**

Received by/date: AF 09/21/16

Logged By: **Michelle Garcia** 9/21/2016 2:00:00 PM *Michelle Garcia*

Completed By: **Michelle Garcia** 9/21/2016 2:30:00 PM *Michelle Garcia*

Reviewed By: AS 09/21/16

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
Samples were collected the same day and chilled.
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? Yes No
 (Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? Yes No
 (If no, notify customer for authorization.)

of preserved bottles checked for pH: _____
 (<2 or >12 unless noted)
 Adjusted? _____
 Checked by: _____

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____
 By Whom: _____ Via: eMail Phone Fax In Person
 Regarding: _____
 Client Instructions: _____

17. Additional remarks:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	18	Good	Not Present			

Chain-of-Custody Record

Client: **AMAFCA**

Billing Address:

Phone #:

E-mail or Fax#: **pchavez@amafca.org**

Lab/OC Package:

Standard Level 4 (Full Validation)

Accreditation

NELAP Other

EDD (Type)

Date

Time

Matrix

Sample Request ID

Container Type and #

Preservative Type

HEAL No.

1-16

12:15

AQ

Rio Grande North-092116

11609B94

-001

Relinquished by:

Time: 1:40

Received by:

Date: 9/21/16

Time: 1:40

Relinquished by:

Time:

Received by:

Date:

Time:

Remarks:

Turn-Around Time:

Standard Rush

Project Name:

C MC

Project #:

Project Manager:

Patrick Chavez

Sampler:

C. Johannesen

On Ice: Yes No

Sample Temperature: 18°C

BTEX + MTBE + TMBs (8021)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH's (8310 or 8270 SIMS)

RCRA 8 Metals

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

8081 Pesticides / 8082 PCB's

8260B (VOA)

8270 (Semi-VOA)

X Ecol: Num

Air Bubbles (Y or N)



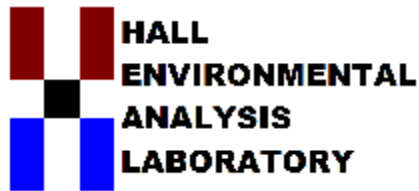
HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 02, 2016

Patrick Chavez

AMAFCA

2600 Prospect Ave NE

Albuquerque, NM 87107

TEL: (505) 884-2215

FAX

RE: CMC

OrderNo.: 1609C98

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/22/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued October 27, 2016.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,<<>>

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a white background.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Field Data - Provided by DBS&A (field notebook & e-mails):

9/21/16 - Rio Grande North

DO = 7.14 mg/L, pH = 8.96, Conductivity = 298 umhos/cm, and Temperature = 20.99°C

9/22/16 - Rio Grande South

DO = 8.29 mg/L, pH = 9.03, Conductivity = 436 umhos/cm, and Temperature = 22.03 °C



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Case Narrative

WO#: 1609C98
Date: 12/2/2016

CLIENT: AMAFCA
Project: CMC

Analytical Notes Regarding EPA method 1668

The sample ID equivalents are listed below.

1609C98-001G = Rio Grande-North-092116

1609C98-002G = Rio Grande-South-092216

Analytical Report

Lab Order: 1609C98

Date Reported: 12/2/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-001B

Client Sample ID: Rio Grande-North-092116
Collection Date: 9/21/2016 12:15:00 PM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: SMS
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	9/27/2016 2:30:00 PM	27653

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
 Project: CMC
 Lab ID: 1609C98-001D

Client Sample ID: Rio Grande-North-092116
 Collection Date: 9/21/2016 12:15:00 PM
 Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: MRA
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/23/2016 11:28:54 AM	A37430
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	9/23/2016 11:28:54 AM	A37430
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: SRM
Total Dissolved Solids	215	20.0		mg/L	1	9/30/2016 12:29:00 PM	27761
SM 4500 NH3: AMMONIA							Analyst: CJS
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/12/2016 2:42:00 PM	R37892
TOTAL NITROGEN							Analyst: SRM
Nitrogen, Total	ND	1.0		mg/L	1	10/25/2016 10:29:00 AM	R38181
SM4500-H+B: PH							Analyst: JRR
pH	8.46	1.68	H	pH units	1	9/23/2016 1:22:25 PM	R37460
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.042	0.010		mg/L	1	10/12/2016 3:53:36 PM	28009
SM 4500 NORG C: TKN							Analyst: CJS
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	10/13/2016 10:18:00 AM	28008
SM 2540D: TSS							Analyst: KS
Suspended Solids	26	4.0		mg/L	1	9/29/2016 4:56:00 PM	27741

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: **1609C98**

Date Reported: **12/2/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-001E

Client Sample ID: Rio Grande-North-092116
Collection Date: 9/21/2016 12:15:00 PM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664A							Analyst: tnc
N-Hexane Extractable Material	ND	9.5		mg/L	1	9/26/2016 10:34:00 AM	27691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-001F

Client Sample ID: Rio Grande-North-092116
Collection Date: 9/21/2016 12:15:00 PM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Copper	0.0013	0.0010		mg/L	1	10/13/2016 8:24:11 PM	B37945
Lead	ND	0.00050		mg/L	1	10/13/2016 8:24:11 PM	B37945
SM2340B: HARDNESS							Analyst: ELS
Hardness (As CaCO3)	130	6.6		mg/L	1	10/3/2016 12:20:00 PM	R37643
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Calcium	42	1.0		mg/L	1	10/4/2016 1:25:20 AM	D37643
Magnesium	7.1	1.0		mg/L	1	10/4/2016 1:25:20 AM	D37643

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1609C98

Date Reported: 12/2/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-001K

Client Sample ID: Rio Grande-North-092116
Collection Date: 9/21/2016 12:15:00 PM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.016	0.010		mg/L	1	10/12/2016 3:58:06 PM	28009

Dissolved Phosphorous

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1609C98

Date Reported: 12/2/2016

CLIENT: AMAFCA
 Project: CMC
 Lab ID: 1609C98-002A

Client Sample ID: Rio Grande-South-092216
 Collection Date: 9/22/2016 11:00:00 AM
 Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: tnc
E. Coli	517.2	1.000		CFU/100ml	1	9/23/2016 5:15:00 PM	27666

Equivalent to MPN/100 mL

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1609C98

Date Reported: 12/2/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-002B

Client Sample ID: Rio Grande-South-092216
Collection Date: 9/22/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
SM5210B: BOD							Analyst: SMS
Biochemical Oxygen Demand	DO Depletion<2.0	2.0		mg/L	1	9/28/2016 3:30:00 PM	27670

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
 Project: CMC
 Lab ID: 1609C98-002D

Client Sample ID: Rio Grande-South-092216
 Collection Date: 9/22/2016 11:00:00 AM
 Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: MRA
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	9/23/2016 9:02:48 AM	B37435
Nitrogen, Nitrate (As N)	0.95	0.10		mg/L	1	9/23/2016 9:02:48 AM	B37435
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: SRM
Total Dissolved Solids	301	20.0		mg/L	1	9/30/2016 12:29:00 PM	27761
SM 4500 NH3: AMMONIA							Analyst: CJS
Nitrogen, Ammonia	ND	1.0		mg/L	1	10/12/2016 2:42:00 PM	R37892
TOTAL NITROGEN							Analyst: SRM
Nitrogen, Total	ND	1.0		mg/L	1	10/25/2016 10:29:00 AM	R38181
SM4500-H+B: PH							Analyst: JRR
pH	8.41	1.68	H	pH units	1	9/23/2016 1:26:43 PM	R37460
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.42	0.010		mg/L	1	10/12/2016 3:59:36 PM	28009
SM 4500 NORG C: TKN							Analyst: CJS
Nitrogen, Kjeldahl, Total	ND	1.0		mg/L	1	10/13/2016 10:18:00 AM	28008
SM 2540D: TSS							Analyst: KS
Suspended Solids	60	4.0		mg/L	1	9/29/2016 4:56:00 PM	27741

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1609C98

Date Reported: 12/2/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-002E

Client Sample ID: Rio Grande-South-092216
Collection Date: 9/22/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 1664A							Analyst: tnc
N-Hexane Extractable Material	ND	9.6		mg/L	1	9/26/2016 10:34:00 AM	27691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-002F

Client Sample ID: Rio Grande-South-092216
Collection Date: 9/22/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA 200.8: DISSOLVED METALS							Analyst: JLF
Copper	0.0012	0.0010		mg/L	1	10/13/2016 8:29:19 PM	B37945
Lead	ND	0.00050		mg/L	1	10/13/2016 8:29:19 PM	B37945
SM2340B: HARDNESS							Analyst: ELS
Hardness (As CaCO3)	150	6.6		mg/L	1	10/3/2016 12:20:00 PM	R37643
EPA METHOD 200.7: DISSOLVED METALS							Analyst: ELS
Calcium	48	1.0		mg/L	1	10/4/2016 1:29:32 AM	D37643
Magnesium	8.1	1.0		mg/L	1	10/4/2016 1:29:32 AM	D37643

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report

Lab Order: 1609C98

Date Reported: 12/2/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Project: CMC
Lab ID: 1609C98-002L

Client Sample ID: Rio Grande-South-092216
Collection Date: 9/22/2016 11:00:00 AM
Matrix: Aqueous

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: JRR
Phosphorus, Total (As P)	0.32	0.010		mg/L	1	10/12/2016 4:01:06 PM	28009
Dissolved Phosphorous							

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:			
*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160929003
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609C98
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 160929003-001 **Sampling Date** 9/21/2016 **Date/Time Received** 9/27/2016 11:10 AM
Client Sample ID 1609C98-001C / RIO GRANDE-NORTH-092116 **Sampling Time** 12:15 PM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	10/4/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160929003-001	1,2-Dichlorobenzene-d4	EPA 8260C	97.6	70-130
	4-Bromofluorobenzene	EPA 8260C	94.8	70-130
	Toluene-d8	EPA 8260C	99.2	70-130

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160929003
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609C98
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 160929003-004 **Sampling Date** 9/22/2016 **Date/Time Received** 9/27/2016 11:10 AM
Client Sample ID 1609C98-002C / RIO GRANDE-SOUTH-092216 **Sampling Time** 11:00 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	ND	ug/L	0.5	10/4/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160929003-004	1,2-Dichlorobenzene-d4	EPA 8260C	96.0	70-130
	4-Bromofluorobenzene	EPA 8260C	90.0	70-130
	Toluene-d8	EPA 8260C	99.2	70-130

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160929003
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609C98
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

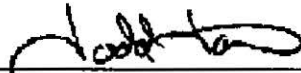
Sample Number 160929003-007 **Sampling Date** 9/22/2016 **Date/Time Received** 9/27/2016 11:10 AM
Client Sample ID 1609C98-003A / TRIP BLANK **Sampling Time**
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Tetrahydrofuran	0.90	ug/L	0.5	10/4/2016	SAT	EPA 8260C	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160929003-007	1,2-Dichlorobenzene-d4	EPA 8260C	98.8	70-130
	4-Bromofluorobenzene	EPA 8260C	94.0	70-130
	Toluene-d8	EPA 8260C	98.8	70-130

Authorized Signature


Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT: Cert0095; FL(NELAP): E871099

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160929003
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609C98
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Tetrahydrofuran	9.12	ug/L	10	91.2	70-130	10/5/2016	10/5/2016

Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Tetrahydrofuran	9.53	ug/L	10	95.3	4.4	0-25	10/5/2016	10/5/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Tetrahydrofuran	ND	ug/L	0.5	10/5/2016	10/5/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013, AZ:0701, FL(NELAP):E87893, ID:ID00013, MT:CERT0028, NM: ID00013,NV:ID00013, OR:ID200001-002, WA:C595
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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160929003
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609C98
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 160929003-002 **Sampling Date** 9/21/2016 **Date/Time Received** 9/27/2016 11:10 AM
Client Sample ID 1609C98-001G / RIO GRANDE-NORTH-092116
Matrix Water **Sampling Time** 12:15 PM **Extraction Date** 9/29/2016
Comments

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Aroclor 1016 (PCB-1016)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Aroclor 1221 (PCB-1221)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Aroclor 1232 (PCB-1232)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Aroclor 1242 (PCB-1242)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Aroclor 1248 (PCB-1248)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Aroclor 1254 (PCB-1254)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Aroclor 1260 (PCB-1260)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	H6
Dieldrin	ND	ug/L	0.003	0.01	10/10/2016	MAH	EPA 608	H6

Surrogate Data

Sample Number 160929003-002

Surrogate Standard	Method	Percent Recovery	Control Limits
DCB	EPA 608	102.6	30-130

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Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160929003
Project Name: 1609C98

Analytical Results Report

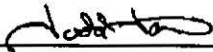
Sample Number 160929003-005 **Sampling Date** 9/22/2016 **Date/Time Received** 9/27/2016 11:10 AM
Client Sample ID 1609C98-002G / RIO GRANDE-SOUTH-092216
Matrix Water **Sampling Time** 11:00 AM **Extraction Date** 9/29/2016
Comments

Parameter	Result	Units	MDL	PQL	Analysis Date	Analyst	Method	Qualifier
Aroclor 1016 (PCB-1016)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Aroclor 1221 (PCB-1221)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Aroclor 1232 (PCB-1232)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Aroclor 1242 (PCB-1242)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Aroclor 1248 (PCB-1248)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Aroclor 1254 (PCB-1254)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Aroclor 1260 (PCB-1260)	ND	ug/L	0.1	0.2	10/10/2016	MAH	EPA 608	
Dieldrin	ND	ug/L	0.003	0.01	10/10/2016	MAH	EPA 608	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160929003-005	DCB	EPA 608	108.4	30-130

Authorized Signature


Todd Taruscio, Lab Manager

H6 Sample was received and extracted past extraction holding time, but analyzed within analysis hold time.
MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160929003
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609C98
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Dieldrin	0.510	ug/L	0.5	102.0	30-130	9/29/2016	10/10/2016
Aroclor 1260 (PCB-1260)	4.55	ug/L	5	91.0	50-130	9/29/2016	10/10/2016
Aroclor 1016 (PCB-1016)	5.00	ug/L	5	100.0	50-130	9/29/2016	10/10/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
160929003-002	Dieldrin	ND	0.498	ug/L	0.5	99.6	30-150	9/29/2016	10/10/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Dieldrin	0.508	ug/L	0.5	101.6	2.0	0-30	9/29/2016	10/10/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Aroclor 1016 (PCB-1016)	ND	ug/L	0.2	9/29/2016	10/10/2016
Aroclor 1221 (PCB-1221)	ND	ug/L	0.2	9/29/2016	10/10/2016
Aroclor 1232 (PCB-1232)	ND	ug/L	0.2	9/29/2016	10/10/2016
Aroclor 1242 (PCB-1242)	ND	ug/L	0.2	9/29/2016	10/10/2016
Aroclor 1248 (PCB-1248)	ND	ug/L	0.2	9/29/2016	10/10/2016
Aroclor 1254 (PCB-1254)	ND	ug/L	0.2	9/29/2016	10/10/2016
Aroclor 1260 (PCB-1260)	ND	ug/L	0.2	9/29/2016	10/10/2016
Dieldrin	ND	ug/L	0.01	9/29/2016	10/10/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013, AZ:0701; FL(NELAP):E87893; ID:ID00013; MT:Cert0028; NM: ID00013,NV:ID00013; OR:ID20001-002, WA:C595
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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160929003
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609C98
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

Sample Number 160929003-002 **Sampling Date** 9/21/2016 **Date/Time Received** 9/27/2016 11:10 AM
Client Sample ID 1609C98-001G / RIO GRANDE-NORTH-092116 **Extraction Date** 9/27/2016
Matrix Water **Sampling Time** 12:15 PM
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.5	10/1/2016	HSW	EPA 625	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160929003-002	2,4,6-Tribromophenol	EPA 625	77.2	53-122
	2-Fluorobiphenyl	EPA 625	94.0	12-116
	2-Fluorophenol	EPA 625	33.8	10-139
	Nitrobenzene-d5	EPA 625	92.4	54-118
	Phenol-d5	EPA 625	50.0	28-154
	Terphenyl-d14	EPA 625	84.0	20-137

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160929003
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609C98
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

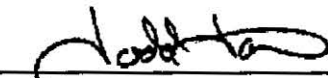
Sample Number 160929003-005 **Sampling Date** 9/22/2016 **Date/Time Received** 9/27/2016 11:10 AM
Client Sample ID 1609C98-002G / RIO GRANDE-SOUTH-092216 **Extraction Date** 09/29/2016
Matrix Water **Sampling Time** 11:00 AM
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
Benzidine	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Benzo[a]anthracene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Benzo[a]pyrene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Benzo[b]fluoranthene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Benzo[k]fluoranthene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Chrysene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Dibenz[a,h]anthracene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Dibenzofuran	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	
Pentachlorophenol	ND	ug/L	0.5	10/14/2016	HSW	EPA 625	

Surrogate Data

Sample Number	Surrogate Standard	Method	Percent Recovery	Control Limits
160929003-005	2,4,6-Tribromophenol	EPA 625	77.2	53-122
	2-Fluorobiphenyl	EPA 625	74.8	12-116
	2-Fluorophenol	EPA 625	33.8	10-139
	Nitrobenzene-d5	EPA 625	62.4	54-118
	Phenol-d5	EPA 625	50.2	28-154
	Terphenyl-d14	EPA 625	96.4	20-137

Authorized Signature



Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160929003
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609C98
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Pentachlorophenol	3.49	ug/L	5	69.8	22-138	9/27/2016	10/1/2016
bis(2-Ethylhexyl)phthalate	5.15	ug/L	5	103.0	43-148	9/27/2016	10/1/2016

Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	3.36	ug/L	5	67.2	3.8	0-47	9/27/2016	10/1/2016
bis(2-Ethylhexyl)phthalate	4.97	ug/L	5	99.4	3.6	0-50	9/27/2016	10/1/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Benzidine	ND	ug/L	0.5	9/27/2016	10/1/2016
Benzo[a]anthracene	ND	ug/L	0.5	9/27/2016	10/1/2016
Benzo[a]pyrene	ND	ug/L	0.5	9/27/2016	10/1/2016
Benzo[b]fluoranthene	ND	ug/L	0.5	9/27/2016	10/1/2016
Benzo[k]fluoranthene	ND	ug/L	0.5	9/27/2016	10/1/2016
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	9/27/2016	10/1/2016
Chrysene	ND	ug/L	0.5	9/27/2016	10/1/2016
Dibenz[a,h]anthracene	ND	ug/L	0.5	9/27/2016	10/1/2016
Dibenzofuran	ND	ug/L	0.5	9/27/2016	10/1/2016
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	9/27/2016	10/1/2016
Pentachlorophenol	ND	ug/L	0.5	9/27/2016	10/1/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA:ID00013; AZ:0701; FL:(NELAP) E87893; ID:ID00013; MT:CERT0028; NM: ID00013; NV:ID00013; OR:ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL:(NELAP): E871099

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Address: 4901 HAWKINS NE SUITE D
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Batch #: 160929003
Project Name: 1609C98

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
Pentachlorophenol	4.53	ug/L	5	90.6	22-138	9/29/2016	10/14/2016
bis(2-Ethylhexyl)phthalate	4.59	ug/L	5	91.8	43-148	9/29/2016	10/14/2016

Lab Control Sample Duplicate

Parameter	LCSD Result	Units	LCSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
Pentachlorophenol	4.34	ug/L	5	86.8	4.3	0-47	9/29/2016	10/14/2016
bis(2-Ethylhexyl)phthalate	4.50	ug/L	5	90.0	2.0	0-50	9/29/2016	10/14/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
Benzidine	ND	ug/L	0.5	9/29/2016	10/14/2016
Benzo[a]anthracene	ND	ug/L	0.5	9/29/2016	10/14/2016
Benzo[a]pyrene	ND	ug/L	0.5	9/29/2016	10/14/2016
Benzo[b]fluoranthene	ND	ug/L	0.5	9/29/2016	10/14/2016
Benzo[k]fluoranthene	ND	ug/L	0.5	9/29/2016	10/14/2016
bis(2-Ethylhexyl)phthalate	ND	ug/L	0.5	9/29/2016	10/14/2016
Chrysene	ND	ug/L	0.5	9/29/2016	10/14/2016
Dibenz[a,h]anthracene	ND	ug/L	0.5	9/29/2016	10/14/2016
Dibenzofuran	ND	ug/L	0.5	9/29/2016	10/14/2016
Indeno[1,2,3-cd]pyrene	ND	ug/L	0.5	9/29/2016	10/14/2016
Pentachlorophenol	ND	ug/L	0.5	9/29/2016	10/14/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA.ID00013; AZ.0701; FL(NELAP):E87893; ID.ID00013; MT.CERT0028; NM: ID00013; NV.ID00013; OR.ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA.WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099

Anatek Labs, Inc.

1282 Alturas Drive • Moscow, ID 83843 • (208) 883-2839 • Fax (208) 882-9246 • email moscow@anateklabs.com
504 E Sprague Ste. D • Spokane WA 99202 • (509) 838-3999 • Fax (509) 838-4433 • email spokane@anateklabs.com

Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160929003
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609C98
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report

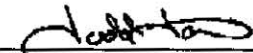
Sample Number 160929003-003 **Sampling Date** 9/21/2016 **Date/Time Received** 9/27/2016 11:10 AM
Client Sample ID 1609C98-0011 / RIO GRANDE-NORTH-092116 **Sampling Time** 12:15 PM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	8.49	mg/L	5	10/6/2016 3:00:00 PM	JDB	EPA 410.4	

Sample Number 160929003-006 **Sampling Date** 9/22/2016 **Date/Time Received** 9/27/2016 11:10 AM
Client Sample ID 1609C98-0021 / RIO GRANDE-SOUTH-092216 **Sampling Time** 11:00 AM
Matrix Water
Comments

Parameter	Result	Units	PQL	Analysis Date	Analyst	Method	Qualifier
COD	10.6	mg/L	5	10/6/2016 3:00:00 PM	JDB	EPA 410.4	

Authorized Signature



Todd Taruscio, Lab Manager

MCL EPA's Maximum Contaminant Level
ND Not Detected
PQL Practical Quantitation Limit

This report shall not be reproduced except in full, without the written approval of the laboratory.
The results reported relate only to the samples indicated.
Soil/solid results are reported on a dry-weight basis unless otherwise noted.

Certifications held by Anatek Labs ID: EPA.ID00013; AZ.0701; FL(NELAP).E87893; ID.ID00013; MT.CERT0028; NM: ID00013; NV.ID00013; OR.ID200001-002; WA.C595
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Client: HALL ENVIRONMENTAL ANALYSIS LAB **Batch #:** 160929003
Address: 4901 HAWKINS NE SUITE D **Project Name:** 1609C98
ALBUQUERQUE, NM 87109
Attn: ANDY FREEMAN

Analytical Results Report Quality Control Data

Lab Control Sample

Parameter	LCS Result	Units	LCS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
COD	99.8	mg/L	100	99.8	90-110	10/6/2016	10/6/2016

Matrix Spike

Sample Number	Parameter	Sample Result	MS Result	Units	MS Spike	%Rec	AR %Rec	Prep Date	Analysis Date
161004080-002	COD	<1.84	99.7	mg/L	100	99.7	80-120	10/6/2016	10/6/2016

Matrix Spike Duplicate

Parameter	MSD Result	Units	MSD Spike	%Rec	%RPD	AR %RPD	Prep Date	Analysis Date
COD	96.6	mg/L	100	96.6	3.2	0-15	10/6/2016	10/6/2016

Method Blank

Parameter	Result	Units	PQL	Prep Date	Analysis Date
COD	<5	mg/L	5	10/6/2016	10/6/2016

Duplicate

Sample Number	Parameter	Sample Result	Duplicate Result	Units	%RPD	AR %RPD	Prep Date	Analysis Date
161005042-002	COD	<1.84	<5	mg/L	0.0	0-20	10/6/2016	10/6/2016

AR Acceptable Range
ND Not Detected
PQL Practical Quantitation Limit
RPD Relative Percentage Difference

Comments:

Certifications held by Anatek Labs ID: EPA.ID00013; AZ:0701; FL(NELAP):E87893; ID.ID00013; MT.CERT0028; NM: ID00013; NV.ID00013; OR.ID200001-002; WA:C595
Certifications held by Anatek Labs WA: EPA:WA00169; ID:WA00169; WA:C585; MT:Cert0095; FL(NELAP): E871099



Collected date/time: 09/21/16 12:15

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	09/28/2016 14:03	WG911779

- 1 Cr
- 2 Tc
- 3 Ss
- 4 Cn
- 5 Sr
- 6 Qc
- 7 Gl
- 8 Al
- 9 Sc



Collected date/time: 09/22/16 11:00

L862074

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		0.000500	1	09/28/2016 14:11	WG911779



WG911779

Wet Chemistry by Method 3500Cr C-2011

QUALITY CONTROL SUMMARY

L862074-01.02

ONE LAB. NATIONWIDE.



Method Blank (MB)

(MB) R3166742-1 09/28/16 10:25

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Hexavalent Chromium	U		0.000150	0.000500

L861521-01 Original Sample (OS) • Duplicate (DUP)

(OS) L861521-01 09/28/16 11:26 • (DUP) R3166742-4 09/28/16 11:35

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Hexavalent Chromium	U	ND	1	0.000		20

L862074-02 Original Sample (OS) • Duplicate (DUP)

(OS) L862074-02 09/28/16 14:11 • (DUP) R3166742-7 09/28/16 14:19

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Hexavalent Chromium	ND	ND	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3166742-2 09/28/16 10:33 • (LCSD) R3166742-3 09/28/16 10:41

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Hexavalent Chromium	0.00200	0.00199	0.00198	100	99.0	90.0-110			0.000	20

L861789-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L861789-01 09/28/16 12:21 • (MS) R3166742-5 09/28/16 12:29 • (MSD) R3166742-6 09/28/16 12:38

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Hexavalent Chromium	0.0500	ND	0.0502	0.0512	100	102	1	90.0-110			2.00	20

2 To

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Rec.	Recovery.

Qualifier	Description
-----------	-------------

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.



ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1609C98
Pace Project No.: 30197182

Sample: **1609C98-001J Rio Grande-North** Lab ID: 30197182001 Collected: 09/21/16 12:15 Received: 09/27/16 09:50 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • Sample Acceptance Policy Waiver on file from the client.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	5.68 ± 2.38 (2.78) C:NA T:NA	pCi/L	10/19/16 09:58	12587-46-1	

Based on ID - Assumed this is South and Lad Report is mislabeled

Sample: **1609C98-002J Rio Grande-North** Lab ID: 30197182002 Collected: 09/22/16 11:00 Received: 09/27/16 09:50 Matrix: Water

PWS: Site ID: Sample Type:

Comments: • Sample Acceptance Policy Waiver on file from the client.

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Gross Alpha	EPA 900.0	2.25 ± 1.60 (2.84) C:NA T:NA	pCi/L	10/19/16 09:58	12587-46-1	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: 1609C98
Pace Project No.: 30197182

QC Batch: 236518 Analysis Method: EPA 900.0
QC Batch Method: EPA 900.0 Analysis Description: 900.0 Gross Alpha/Beta
Associated Lab Samples: 30197182001, 30197182002

METHOD BLANK: 1161996 Matrix: Water
Associated Lab Samples: 30197182001, 30197182002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	-0.045 ± 0.657 (1.80) C:NA T:NA	pCi/L	10/19/16 09:57	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 1609C98
Pace Project No.: 30197182

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval).

Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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November 18, 2016

Ms. Jodey Kougioulis
New Mexico Environment Department
121 Tijeras Avenue NE
Suite 1000
Albuquerque, New Mexico 87102

Re: HiSol PCB's and Dioxins
Work Order: 9998
SDG: 1609609_1609C98

Dear Ms. Kougioulis:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 28, 2016. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins
Project Manager

Enclosures



Chain of Custody Record

1282 Alturas Drive, Moscow ID 83843 (208) 883-2839 FAX 882-9246
 504 E Sprague Ste D, Spokane WA 99202 (509) 838-3999 FAX 838-4433

WO # 9998

Anatek Log-In #

Company Name: HALL ENVIRONMENTAL				Project Manager: ANDY FREEMAN																																																																																																					
Address: 4901 HAWKINS NE SUITE D				Project Name & #:																																																																																																					
City: ALBUQUERQUE State: NM Zip: 87109				Email Address: andy@hallenvironmental.com																																																																																																					
Phone: (505) 345-3975				Purchase Order #:																																																																																																					
Fax: (505) 345-4107				Sampler Name & phone:																																																																																																					
Provide Sample Description				List Analyses Requested																																																																																																					
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10.2°C

MJD 28Oct16

SAMPLE RECEIPT CHECKLIST
Cape Fear Analytical

Client: HALL NMED	Work Order: 9998
Shipping Company: Fed Ex	Date/Time Received: 28Oct2016 14:15

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			<input checked="" type="checkbox"/>
Samples identified as Foreign Soil?			<input checked="" type="checkbox"/>

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?	<input checked="" type="checkbox"/>		
Samples < 2x background?	<input checked="" type="checkbox"/>		

* Notify RSO of any responses in this column immediately.

MJD 28Oct16

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			<input checked="" type="checkbox"/>

Air Witness: _____

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: seals broken damaged container leaking container other(describe)
2 Chain of Custody documents included with shipment?	<input checked="" type="checkbox"/>			
3 Samples requiring cold preservation within 0-6°C?			<input checked="" type="checkbox"/>	Preservation Method: ice bags blue ice dry ice none other (describe) 10.2°C
4 Aqueous samples found to have visible solids?	<input checked="" type="checkbox"/>			Sample IDs, containers affected: < 1% all samples
5 Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample IDs, containers affected and pH observed: pH=7 for all samples If preservative added, Lot#: _____
6 Samples requiring preservation have no residual chlorine?	<input checked="" type="checkbox"/>			Sample IDs, containers affected: If preservative added, Lot#: _____
7 Samples received within holding time?	<input checked="" type="checkbox"/>			Sample IDs, tests affected:
8 Sample IDs on COC match IDs on containers?	<input checked="" type="checkbox"/>			Sample IDs, containers affected:
9 Date & time of COC match date & time on containers?	<input checked="" type="checkbox"/>			Sample IDs, containers affected:
10 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			List type and number of containers / Sample IDs, containers affected: 1-1L WMA each
11 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			

Comments:

Checklist performed by: Initials: MJD Date: 28Oct2016

CF-UD-F-7

Subject: RE: 1609609_1609C98
From: Anne Thorne <anne@hallenenvironmental.com>
Date: 11/7/2016 9:36 AM
To: Cynde Larkins <cynde.larkins@cfanalytical.com>

Good morning Cynde

Please proceed with analysis.

at

From: Cynde Larkins [mailto:cynde.larkins@cfanalytical.com]
Sent: Friday, November 04, 2016 8:41 PM
To: Anne Thorne <anne@hallenenvironmental.com>
Cc: Melissa O'Doriso <mel00770@cfanalytical.com>
Subject: 1609609_1609C98

Anne,

The samples for 1609609_1609C98 were received at a temperature of 10.2°C. Do we have your permission to proceed with extraction and analysis?

Thanks,

--

Cynde Larkins
Project Manager
Cape Fear Analytical, LLC
3306 Kitty Hawk Road Suite 120
Wilmington, NC 28405
(910) 795-0421

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PCB Congeners Analysis

Case Narrative

**PCBC Case Narrative
New Mexico Environment Department (NMED)
SDG 1609609_1609C98
Work Order 9998**

Method/Analysis Information

Product: PCB Congeners Method 1668A High Solids Prep for Liquids
Analytical Method: EPA Method 1668A HS
Extraction Method: SW846 3520C, 3540C
Analytical Batch Number: 33209
Clean Up Batch Number: 33208
Extraction Batch Number: 33207

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A HS:

Sample ID	Client ID
9998001	1609609-001G
9998002	1609609-002G
9998003	1609C98-001G
9998004	1609C98-002G
12017259	Method Blank (MB)
12017260	Laboratory Control Sample (LCS)
12017261	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information**Certification Statement**

The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement

The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries

Several surrogates recovered above the acceptance limits, however all native analytes still met acceptance criteria. 12017261 (LCSD).

Several surrogates recovered below the acceptance limits. Recovery issues may be matrix-related, as all other samples in the batch had acceptable recoveries. No further sample was available for re-extraction, therefore the data is reported. 9998001 (1609609-001G), 9998002 (1609609-002G), 9998003 (1609C98-001G) and 9998004 (1609C98-002G).

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery

The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement

The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation

A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information**Holding Time Specifications**

CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information**Nonconformance (NCR) Documentation**

A NCR was not required for this SDG.

Manual Integrations

Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration

This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report for

NMED001 New Mexico Environment Department

Client SDG: 1609609_1609C98 CFA Work Order: 9998

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- B The target analyte was detected in the associated blank.
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- K Estimated Maximum Possible Concentration
- U Analyte was analyzed for, but not detected above the specified detection limit.
- h Preparation or preservation holding time was exceeded

- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: 

Name: Heather Patterson

Date: 18 NOV 2016

Title: Group Leader

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998001
 Client Sample: 1668A Water
 Client ID: 1609609-001G
 Batch ID: 33209
 Run Date: 11/10/2016 06:06
 Data File: c09nov16a_2-3
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/12/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 810.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	21.1	17.3	pg/L	8.14	49.3
2051-61-8	PCB-2	J	15.7	12.8	pg/L	7.50	49.3
2051-62-9	PCB-3	J	22.5	19.9	pg/L	7.37	49.3
13029-08-8	PCB-4	J	46.5	37.3	pg/L	13.4	49.3
16605-91-7	PCB-5	U	8.19	8.19	pg/L	8.19	49.3
25569-80-6	PCB-6	J	12.2	8.12	pg/L	5.97	49.3
33284-50-3	PCB-7	U	6.76	6.76	pg/L	6.76	49.3
34883-43-7	PCB-8	BJ	38.5	34.7	pg/L	5.43	49.3
34883-39-1	PCB-9	U	6.71	6.71	pg/L	6.71	24.7
33146-45-1	PCB-10	U	4.56	4.56	pg/L	4.56	24.7
2050-67-1	PCB-11	B	808	803	pg/L	7.08	49.3
PCB-12/13	PCB-12/PCB-13	CU	7.35	7.35	pg/L	7.35	49.3
34883-41-5	PCB-14	U	6.61	6.61	pg/L	6.61	49.3
2050-68-2	PCB-15	J	40.1	34.9	pg/L	6.88	49.3
38444-78-9	PCB-16	J	10.1	6.84	pg/L	3.87	24.7
37680-66-3	PCB-17	BJ	11.8	8.62	pg/L	3.28	24.7
PCB-18/30	PCB-18/PCB-30	BCJ	25.2	22.8	pg/L	2.74	49.3
38444-73-4	PCB-19	J	23.3	19.8	pg/L	8.93	24.7
PCB-20/28	PCB-20/PCB-28	BCJ	46.9	44.5	pg/L	2.42	49.3
PCB-21/33	PCB-21/PCB-33	BCJ	22.6	20.4	pg/L	2.37	49.3
38444-85-8	PCB-22	J	17.1	14.6	pg/L	2.66	24.7
55720-44-0	PCB-23	U	2.44	2.44	pg/L	2.44	24.7
55702-45-9	PCB-24	U	2.52	2.52	pg/L	2.52	24.7
55712-37-3	PCB-25	U	2.32	2.32	pg/L	2.32	24.7
PCB-26/29	PCB-26/PCB-29	CJ	8.39	6.21	pg/L	2.24	49.3
38444-76-7	PCB-27	U	4.12	2.32	pg/L	2.32	24.7
16606-02-3	PCB-31		34.2	32.2	pg/L	2.20	24.7
38444-77-8	PCB-32	J	6.36	4.48	pg/L	2.12	24.7
37680-68-5	PCB-34	U	2.34	2.34	pg/L	2.34	24.7
37680-69-6	PCB-35	BJ	9.13	6.03	pg/L	4.61	49.3
38444-87-0	PCB-36	U	4.09	4.09	pg/L	4.09	24.7
38444-90-5	PCB-37	BJ	12.4	9.3	pg/L	4.22	24.7

Comments:

- B** The target analyte was detected in the associated blank.
- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J** Value is estimated
- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998001
 Client Sample: 1668A Water
 Client ID: 1609609-001G
 Batch ID: 33209
 Run Date: 11/10/2016 06:06
 Data File: c09nov16a_2-3
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/12/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 810.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	4.17	4.17	pg/L	4.17	24.7
38444-88-1	PCB-39	U	4.29	4.29	pg/L	4.29	24.7
PCB-40/71	PCB-40/PCB-71	CU	5.23	2.44	pg/L	2.44	49.3
52663-59-9	PCB-41	U	3.6	3.6	pg/L	3.60	49.3
36559-22-5	PCB-42	U	3.01	3.01	pg/L	3.01	49.3
70362-46-8	PCB-43	U	3.38	3.38	pg/L	3.38	49.3
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CJ	21.0	17.8	pg/L	2.61	74.0
PCB-45/51	PCB-45/PCB-51	BCJ	4.76	1.58	pg/L	1.41	49.3
41464-47-5	PCB-46	U	1.65	1.48	pg/L	1.48	24.7
70362-47-9	PCB-48	U	3.77	2.91	pg/L	2.91	24.7
PCB-49/69	PCB-49/PCB-69	BCJ	9.64	6.81	pg/L	2.44	49.3
PCB-50/53	PCB-50/PCB-53	BCU	2.66	1.31	pg/L	1.31	49.3
35693-99-3	PCB-52	J	23.1	19.9	pg/L	2.64	24.7
15968-05-5	PCB-54	U	5.72	5.72	pg/L	5.72	24.7
74338-24-2	PCB-55	U	2.15	2.15	pg/L	2.15	24.7
41464-43-1	PCB-56	BJK	6.34	3.13	pg/L	2.29	24.7
70424-67-8	PCB-57	U	1.9	1.9	pg/L	1.90	24.7
41464-49-7	PCB-58	U	2.1	2.1	pg/L	2.10	24.7
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	2.07	2.07	pg/L	2.07	74.0
33025-41-1	PCB-60	U	4.27	2.15	pg/L	2.15	24.7
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	25.0	22.2	pg/L	2.02	98.7
74472-34-7	PCB-63	U	1.8	1.8	pg/L	1.80	24.7
52663-58-8	PCB-64	J	6.29	3.61	pg/L	2.22	24.7
32598-10-0	PCB-66	BJ	11.7	8.89	pg/L	1.92	24.7
73575-53-8	PCB-67	U	1.7	1.7	pg/L	1.70	24.7
73575-52-7	PCB-68	KU	2.07	1.87	pg/L	1.87	24.7
41464-42-0	PCB-72	U	1.8	1.8	pg/L	1.80	24.7
74338-23-1	PCB-73	U	2.2	2.2	pg/L	2.20	24.7
32598-13-3	PCB-77	U	1.78	1.78	pg/L	1.78	24.7
70362-49-1	PCB-78	U	2.05	2.05	pg/L	2.05	24.7
41464-48-6	PCB-79	U	1.73	1.73	pg/L	1.73	24.7
33284-52-5	PCB-80	U	1.75	1.75	pg/L	1.75	24.7

Comments:

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998001
 Client Sample: 1668A Water
 Client ID: 1609609-001G
 Batch ID: 33209
 Run Date: 11/10/2016 06:06
 Data File: c09nov16a_2-3
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/12/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 810.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.8	1.8	pg/L	1.80	24.7
52663-62-4	PCB-82	U	2.12	2.12	pg/L	2.12	24.7
60145-20-2	PCB-83	U	2.2	2.2	pg/L	2.20	24.7
52663-60-2	PCB-84	U	2.76	2.07	pg/L	2.07	24.7
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	1.95	1.6	pg/L	1.60	74.0
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	BCJ	8.21	5.1	pg/L	1.70	148
PCB-88/91	PCB-88/PCB-91	CU	2	2	pg/L	2.00	49.3
73575-57-2	PCB-89	U	1.97	1.97	pg/L	1.97	24.7
PCB-90-113	PCB-90/PCB-101/PCB-113	BCJ	8.26	5.21	pg/L	1.68	74.0
52663-61-3	PCB-92	U	1.9	1.9	pg/L	1.90	24.7
PCB-93/100	PCB-93/PCB-100	CU	2	2	pg/L	2.00	49.3
73575-55-0	PCB-94	U	2.2	2.2	pg/L	2.20	24.7
38379-99-6	PCB-95	BJ	5.85	2.77	pg/L	1.78	24.7
73575-54-9	PCB-96	U	.863	.863	pg/L	0.863	24.7
PCB-98/102	PCB-98/PCB-102	CU	2.05	2.05	pg/L	2.05	49.3
38380-01-7	PCB-99	BU	3.77	1.97	pg/L	1.97	24.7
60145-21-3	PCB-103	U	1.7	1.7	pg/L	1.70	24.7
56558-16-8	PCB-104	U	4.04	4.04	pg/L	4.04	24.7
32598-14-4	PCB-105	U	2.49	1.58	pg/L	1.58	24.7
70424-69-0	PCB-106	U	1.53	1.53	pg/L	1.53	24.7
70424-68-9	PCB-107	U	1.5	1.5	pg/L	1.50	24.7
PCB-108/124	PCB-108/PCB-124	CU	1.68	1.68	pg/L	1.68	49.3
PCB-110/115	PCB-110/PCB-115	BCJ	7.55	4.57	pg/L	1.60	49.3
39635-32-0	PCB-111	U	1.5	1.5	pg/L	1.50	24.7
74472-36-9	PCB-112	U	1.31	1.31	pg/L	1.31	24.7
74472-37-0	PCB-114	U	1.65	1.65	pg/L	1.65	24.7
31508-00-6	PCB-118	BU	4.41	1.53	pg/L	1.53	24.7
68194-12-7	PCB-120	U	1.26	1.26	pg/L	1.26	24.7
56558-18-0	PCB-121	U	1.53	1.53	pg/L	1.53	24.7
76842-07-4	PCB-122	U	1.7	1.7	pg/L	1.70	24.7
65510-44-3	PCB-123	U	1.6	1.6	pg/L	1.60	24.7
57465-28-8	PCB-126	U	1.7	1.7	pg/L	1.70	24.7

Comments:

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- U** Analyte was analyzed for, but not detected above the specified detection limit.

Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 9998001	Date Collected: 09/12/2016 11:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 10/28/2016 14:15	Prep Basis: As Received
Client ID: 1609609-001G	Method: EPA Method 1668A HS	Instrument: HRP791
Batch ID: 33209	Analyst: MJC	Dilution: 1
Run Date: 11/10/2016 06:06	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Data File: c09nov16a_2-3	Prep Aliquot: 810.9 mL	
Prep Batch: 33207		
Prep Date: 08-NOV-16		

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.63	1.63	pg/L	1.63	24.7
PCB-128/166	PCB-128/PCB-166	CU	1.48	1.48	pg/L	1.48	49.3
PCB-129-163	PCB-129/PCB-138/PCB-163	BCJ	6.56	2.34	pg/L	1.68	74.0
52663-66-8	PCB-130	U	1.8	1.8	pg/L	1.80	24.7
61798-70-7	PCB-131	U	2.12	2.12	pg/L	2.12	24.7
38380-05-1	PCB-132	BKU	2.17	1.95	pg/L	1.95	24.7
35694-04-3	PCB-133	U	1.73	1.73	pg/L	1.73	24.7
52704-70-8	PCB-134	U	2.2	2.2	pg/L	2.20	24.7
PCB-135/151	PCB-135/PCB-151	BCU	2.66	1.06	pg/L	1.06	49.3
38411-22-2	PCB-136	BU	1.23	.765	pg/L	0.765	24.7
35694-06-5	PCB-137	U	1.9	1.9	pg/L	1.90	24.7
PCB-139/140	PCB-139/PCB-140	CU	1.63	1.63	pg/L	1.63	49.3
52712-04-6	PCB-141	U	1.55	1.55	pg/L	1.55	24.7
41411-61-4	PCB-142	U	1.8	1.8	pg/L	1.80	24.7
68194-15-0	PCB-143	U	1.65	1.65	pg/L	1.65	24.7
68194-14-9	PCB-144	U	.937	.937	pg/L	0.937	24.7
74472-40-5	PCB-145	U	.863	.863	pg/L	0.863	24.7
51908-16-8	PCB-146	U	1.31	1.31	pg/L	1.31	24.7
PCB-147/149	PCB-147/PCB-149	BCU	4.88	1.6	pg/L	1.60	49.3
74472-41-6	PCB-148	U	1.01	1.01	pg/L	1.01	24.7
68194-08-1	PCB-150	U	.839	.839	pg/L	0.839	24.7
68194-09-2	PCB-152	U	.765	.765	pg/L	0.765	24.7
PCB-153/168	PCB-153/PCB-168	BCU	4.88	1.38	pg/L	1.38	49.3
60145-22-4	PCB-154	U	.839	.839	pg/L	0.839	24.7
33979-03-2	PCB-155	U	1.26	1.26	pg/L	1.26	24.7
PCB-156/157	PCB-156/PCB-157	BCKU	1.28	1.09	pg/L	1.09	49.3
74472-42-7	PCB-158	U	1.13	1.13	pg/L	1.13	24.7
39635-35-3	PCB-159	U	.863	.863	pg/L	0.863	24.7
41411-62-5	PCB-160	U	1.41	1.41	pg/L	1.41	24.7
74472-43-8	PCB-161	U	1.21	1.21	pg/L	1.21	24.7
39635-34-2	PCB-162	U	.937	.937	pg/L	0.937	24.7
74472-45-0	PCB-164	U	1.18	1.18	pg/L	1.18	24.7

Comments:

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
Lab Sample ID: 9998001
Client Sample: 1668A Water
Client ID: 1609609-001G
Batch ID: 33209
Run Date: 11/10/2016 06:06
Data File: c09nov16a_2-3
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED001
Date Collected: 09/12/2016 11:00
Date Received: 10/28/2016 14:15
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 810.9 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.5	1.5	pg/L	1.50	24.7
52663-72-6	PCB-167	U	.814	.814	pg/L	0.814	24.7
32774-16-6	PCB-169	U	.913	.913	pg/L	0.913	24.7
35065-30-6	PCB-170	BU	1.31	1.09	pg/L	1.09	24.7
PCB-171/173	PCB-171/PCB-173	CU	1.09	1.09	pg/L	1.09	49.3
52663-74-8	PCB-172	U	1.11	1.11	pg/L	1.11	24.7
38411-25-5	PCB-174	BU	1.95	1.04	pg/L	1.04	24.7
40186-70-7	PCB-175	U	.913	.913	pg/L	0.913	24.7
52663-65-7	PCB-176	U	.715	.715	pg/L	0.715	24.7
52663-70-4	PCB-177	BU	1.28	1.11	pg/L	1.11	24.7
52663-67-9	PCB-178	U	.962	.962	pg/L	0.962	24.7
52663-64-6	PCB-179	BKU	1.06	.715	pg/L	0.715	24.7
PCB-180/193	PCB-180/PCB-193	CU	.962	.962	pg/L	0.962	49.3
74472-47-2	PCB-181	U	1.13	1.13	pg/L	1.13	24.7
60145-23-5	PCB-182	U	.888	.888	pg/L	0.888	24.7
PCB-183/185	PCB-183/PCB-185	BCU	1.87	1.04	pg/L	1.04	49.3
74472-48-3	PCB-184	U	.715	.715	pg/L	0.715	24.7
74472-49-4	PCB-186	U	.789	.789	pg/L	0.789	24.7
52663-68-0	PCB-187	BU	2.42	.937	pg/L	0.937	24.7
74487-85-7	PCB-188	U	.814	.814	pg/L	0.814	24.7
39635-31-9	PCB-189	U	.962	.962	pg/L	0.962	24.7
41411-64-7	PCB-190	U	.814	.814	pg/L	0.814	24.7
74472-50-7	PCB-191	U	.814	.814	pg/L	0.814	24.7
74472-51-8	PCB-192	U	.962	.962	pg/L	0.962	24.7
35694-08-7	PCB-194	BU	1.78	.814	pg/L	0.814	24.7
52663-78-2	PCB-195	U	.863	.863	pg/L	0.863	24.7
42740-50-1	PCB-196	U	1.04	.863	pg/L	0.863	24.7
PCB-197/200	PCB-197/PCB-200	CU	.715	.715	pg/L	0.715	49.3
PCB-198/199	PCB-198/PCB-199	BCU	2.07	.913	pg/L	0.913	49.3
40186-71-8	PCB-201	U	.666	.666	pg/L	0.666	24.7
2136-99-4	PCB-202	U	.715	.715	pg/L	0.715	24.7
52663-76-0	PCB-203	BU	0.913	.888	pg/L	0.888	24.7

Comments:

- B The target analyte was detected in the associated blank.
- C Congener has coeluters. When Cxxx, refer to congener number xxx for data
- J Value is estimated
- K Estimated Maximum Possible Concentration
- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998001
 Client Sample: 1668A Water
 Client ID: 1609609-001G
 Batch ID: 33209
 Run Date: 11/10/2016 06:06
 Data File: c09nov16a_2-3
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/12/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 810.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.691	.691	pg/L	0.691	24.7
74472-53-0	PCB-205	U	.691	.691	pg/L	0.691	24.7
40186-72-9	PCB-206	U	.913	.913	pg/L	0.913	24.7
52663-79-3	PCB-207	U	.666	.666	pg/L	0.666	24.7
52663-77-1	PCB-208	U	.691	.691	pg/L	0.691	24.7
2051-24-3	PCB-209	BU	2.32	839	pg/L	0.839	24.7
27323-18-8	Total monoCB		59.4	50	pg/L		
25512-42-9	Total diCB		945	918	pg/L		
25323-68-6	Total triCB		232	196	pg/L		
26914-33-0	Total tetraCB		119	80.8	pg/L		
25429-29-2	Total pentaCB		45.3	17.6	pg/L		
26601-64-9	Total hexaCB		20.2	2.34	pg/L		
28655-71-2	Total heptaCB	U	8.83	0	pg/L		
55722-26-4	Total octaCB	U	5.80	0	pg/L		
53742-07-7	Total nonaCB	U	0	0	pg/L		
DECACB(Tot)	Total decaCB	U	2.32	0	pg/L		
1336-36-3	Total PCB		1440	1260	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.0994		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.000207		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		278	2470	pg/L	11.3 *	(15%-150%)
13C-3-MoCB		302	2470	pg/L	12.3 *	(15%-150%)
13C-4-DiCB		282	2470	pg/L	11.4 *	(25%-150%)
13C-15-DiCB		787	2470	pg/L	31.9	(25%-150%)
13C-19-TrCB		379	2470	pg/L	15.4 *	(25%-150%)
13C-37-TrCB		1030	2470	pg/L	41.7	(25%-150%)
13C-54-TeCB		182	2470	pg/L	7.40 *	(25%-150%)
13C-77-TeCB		2010	2470	pg/L	81.6	(25%-150%)
13C-81-TeCB		1870	2470	pg/L	75.6	(25%-150%)
13C-104-PeCB		243	2470	pg/L	9.85 *	(25%-150%)
13C-105-PeCB		1770	2470	pg/L	71.9	(25%-150%)
13C-114-PeCB		1620	2470	pg/L	65.7	(25%-150%)
13C-118-PeCB		1690	2470	pg/L	68.4	(25%-150%)
13C-123-PeCB		1670	2470	pg/L	67.9	(25%-150%)
13C-126-PeCB		1920	2470	pg/L	78.0	(25%-150%)
13C-155-HxCB		705	2470	pg/L	28.6	(25%-150%)
13C-156-HxCB	C	3470	4930	pg/L	70.4	(25%-150%)
13C-167-HxCB		1780	2470	pg/L	72.0	(25%-150%)
13C-169-HxCB		1820	2470	pg/L	73.8	(25%-150%)
13C-188-HpCB		1570	2470	pg/L	63.5	(25%-150%)
13C-189-HpCB		1950	2470	pg/L	79.1	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 9998001	Date Collected: 09/12/2016 11:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 10/28/2016 14:15	
Client ID: 1609609-001G		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/10/2016 06:06	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a_2-3		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 810.9 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB			1930	2470	pg/L	78.4	(25%-150%)
13C-205-OcCB			2210	2470	pg/L	89.7	(25%-150%)
13C-206-NoCB			2170	2470	pg/L	88.1	(25%-150%)
13C-208-NoCB			2050	2470	pg/L	83.0	(25%-150%)
13C-209-DeCB			2220	2470	pg/L	89.8	(25%-150%)
13C-28-TrCB			1520	2470	pg/L	61.7	(30%-135%)
13C-111-PeCB			2020	2470	pg/L	81.8	(30%-135%)
13C-178-HpCB			2070	2470	pg/L	84.0	(30%-135%)

Comments:
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K Estimated Maximum Possible Concentration
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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
Lab Sample ID: 9998002
Client Sample: 1668A Water
Client ID: 1609609-002G
Batch ID: 33209
Run Date: 11/10/2016 07:13
Data File: c09nov16a_2-4
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED001
Date Collected: 09/13/2016 07:15
Date Received: 10/28/2016 14:15
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 777.8 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	21.3	17.5	pg/L	8.95	51.4
2051-61-8	PCB-2	J	15.1	12.2	pg/L	8.56	51.4
2051-62-9	PCB-3	J	15.3	12.6	pg/L	8.72	51.4
13029-08-8	PCB-4	J	48.3	39.2	pg/L	12.5	51.4
16605-91-7	PCB-5	U	9.08	9.08	pg/L	9.08	51.4
25569-80-6	PCB-6	J	12.7	8.62	pg/L	6.61	51.4
33284-50-3	PCB-7	U	7.51	7.51	pg/L	7.51	51.4
34883-43-7	PCB-8	BJ	36.7	33	pg/L	6.02	51.4
34883-39-1	PCB-9	U	7.43	7.43	pg/L	7.43	25.7
33146-45-1	PCB-10	U	4.27	4.27	pg/L	4.27	25.7
2050-67-1	PCB-11	B	863	859	pg/L	7.84	51.4
PCB-12/13	PCB-12/PCB-13	CU	8.15	8.15	pg/L	8.15	51.4
34883-41-5	PCB-14	U	7.33	7.33	pg/L	7.33	51.4
2050-68-2	PCB-15	BJ	34.1	28.8	pg/L	7.79	51.4
38444-78-9	PCB-16	J	10.6	7.35	pg/L	3.39	25.7
37680-66-3	PCB-17	BJ	14.0	10.8	pg/L	2.88	25.7
PCB-18/30	PCB-18/PCB-30	BCJ	26.8	24.5	pg/L	2.39	51.4
38444-73-4	PCB-19	J	11.6	8.1	pg/L	7.74	25.7
PCB-20/28	PCB-20/PCB-28	BCJ	51.9	49.6	pg/L	2.11	51.4
PCB-21/33	PCB-21/PCB-33	BCJ	21.3	19.2	pg/L	2.08	51.4
38444-85-8	PCB-22	J	18.0	15.5	pg/L	2.31	25.7
55720-44-0	PCB-23	U	2.13	2.13	pg/L	2.13	25.7
55702-45-9	PCB-24	U	2.21	2.21	pg/L	2.21	25.7
55712-37-3	PCB-25	U	2.03	2.03	pg/L	2.03	25.7
PCB-26/29	PCB-26/PCB-29	CJ	8.00	5.82	pg/L	1.98	51.4
38444-76-7	PCB-27	U	2.03	2.03	pg/L	2.03	25.7
16606-02-3	PCB-31		36.1	34.1	pg/L	1.93	25.7
38444-77-8	PCB-32	J	7.17	5.29	pg/L	1.88	25.7
37680-68-5	PCB-34	U	2.06	2.06	pg/L	2.06	25.7
37680-69-6	PCB-35	BJ	9.85	6.75	pg/L	5.50	51.4
38444-87-0	PCB-36	U	4.91	4.91	pg/L	4.91	25.7
38444-90-5	PCB-37	BJ	17.8	14.8	pg/L	5.12	25.7

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- U Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

Rio Grande South

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998002
 Client Sample: 1668A Water
 Client ID: 1609609-002G
 Batch ID: 33209
 Run Date: 11/10/2016 07:13
 Data File: c09nov16a_2-4
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/13/2016 07:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 777.8 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	4.99	4.99	pg/L	4.99	25.7
38444-88-1	PCB-39	U	5.12	5.12	pg/L	5.12	25.7
PCB-40/71	PCB-40/PCB-71	CJ	7.82	4.58	pg/L	2.06	51.4
52663-59-9	PCB-41	U	3.01	3.01	pg/L	3.01	51.4
36559-22-5	PCB-42	J	7.64	3.95	pg/L	2.52	51.4
70362-46-8	PCB-43	U	2.83	2.83	pg/L	2.83	51.4
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CU	2.19	2.19	pg/L	2.19	77.1
PCB-45/51	PCB-45/PCB-51	BCJ	5.50	2.32	pg/L	1.34	51.4
41464-47-5	PCB-46	U	1.41	1.41	pg/L	1.41	25.7
70362-47-9	PCB-48	U	5.35	2.42	pg/L	2.42	25.7
PCB-49/69	PCB-49/PCB-69	BCJ	15.3	12.5	pg/L	2.06	51.4
PCB-50/53	PCB-50/PCB-53	BCU	3.11	1.26	pg/L	1.26	51.4
35693-99-3	PCB-52		42.1	38.9	pg/L	2.21	25.7
15968-05-5	PCB-54	U	5.14	5.14	pg/L	5.14	25.7
74338-24-2	PCB-55	U	1.83	1.83	pg/L	1.83	25.7
41464-43-1	PCB-56	BJ	12.2	8.96	pg/L	1.98	25.7
70424-67-8	PCB-57	U	1.62	1.62	pg/L	1.62	25.7
41464-49-7	PCB-58	U	1.88	1.8	pg/L	1.80	25.7
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	2.78	1.72	pg/L	1.72	77.1
33025-41-1	PCB-60	J	7.64	4.5	pg/L	1.85	25.7
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	50.3	47.5	pg/L	1.75	103
74472-34-7	PCB-63	U	1.54	1.54	pg/L	1.54	25.7
52663-58-8	PCB-64	J	11.3	8.61	pg/L	1.85	25.7
32598-10-0	PCB-66	BJ	22.8	20	pg/L	1.65	25.7
73575-53-8	PCB-67	U	1.47	1.47	pg/L	1.47	25.7
73575-52-7	PCB-68	U	1.62	1.62	pg/L	1.62	25.7
41464-42-0	PCB-72	U	1.54	1.54	pg/L	1.54	25.7
74338-23-1	PCB-73	U	1.83	1.83	pg/L	1.83	25.7
32598-13-3	PCB-77	BU	3.88	1.54	pg/L	1.54	25.7
70362-49-1	PCB-78	U	1.75	1.75	pg/L	1.75	25.7
41464-48-6	PCB-79	U	1.49	1.49	pg/L	1.49	25.7
33284-52-5	PCB-80	U	1.52	1.52	pg/L	1.52	25.7

Comments:

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- U** Analyte was analyzed for, but not detected above the specified detection limit.

Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998002
 Client Sample: 1668A Water
 Client ID: 1609609-002G
 Batch ID: 33209
 Run Date: 11/10/2016 07:13
 Data File: c09nov16a_2-4
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/13/2016 07:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 777.8 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.57	1.57	pg/L	1.57	25.7
52663-62-4	PCB-82	U	4.83	2.7	pg/L	2.70	25.7
60145-20-2	PCB-83	U	2.8	2.8	pg/L	2.80	25.7
52663-60-2	PCB-84	J	9.51	5.51	pg/L	2.62	25.7
PCB-85-117	PCB-85/PCB-116/PCB-117	CJ	8.18	5	pg/L	2.03	77.1
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	CJ	32.3	29.2	pg/L	2.19	154
PCB-88/91	PCB-88/PCB-91	CU	5.25	2.52	pg/L	2.52	51.4
73575-57-2	PCB-89	U	2.49	2.49	pg/L	2.49	25.7
PCB-90-113	PCB-90/PCB-101/PCB-113	CJ	52.5	49.5	pg/L	2.13	77.1
52663-61-3	PCB-92	J	8.90	5.4	pg/L	2.39	25.7
PCB-93/100	PCB-93/PCB-100	CU	2.52	2.52	pg/L	2.52	51.4
73575-55-0	PCB-94	U	2.78	2.78	pg/L	2.78	25.7
38379-99-6	PCB-95		31.8	28.8	pg/L	2.26	25.7
73575-54-9	PCB-96	U	.746	.746	pg/L	0.746	25.7
PCB-98/102	PCB-98/PCB-102	CU	2.6	2.6	pg/L	2.60	51.4
38380-01-7	PCB-99	J	18.9	15.4	pg/L	2.52	25.7
60145-21-3	PCB-103	U	2.16	2.16	pg/L	2.16	25.7
56558-16-8	PCB-104	U	3.34	3.34	pg/L	3.34	25.7
32598-14-4	PCB-105	J	15.0	11.4	pg/L	1.77	25.7
70424-69-0	PCB-106	U	1.72	1.72	pg/L	1.72	25.7
70424-68-9	PCB-107	U	3.39	1.67	pg/L	1.67	25.7
PCB-108/124	PCB-108/PCB-124	CU	2.60	1.88	pg/L	1.88	51.4
PCB-110/115	PCB-110/PCB-115	C	65.4	62.4	pg/L	2.03	51.4
39635-32-0	PCB-111	U	1.9	1.9	pg/L	1.90	25.7
74472-36-9	PCB-112	U	1.67	1.67	pg/L	1.67	25.7
74472-37-0	PCB-114	U	1.88	1.88	pg/L	1.88	25.7
31508-00-6	PCB-118		34.4	31.1	pg/L	1.67	25.7
68194-12-7	PCB-120	U	1.62	1.62	pg/L	1.62	25.7
56558-18-0	PCB-121	U	1.93	1.93	pg/L	1.93	25.7
76842-07-4	PCB-122	U	1.9	1.9	pg/L	1.90	25.7
65510-44-3	PCB-123	U	1.77	1.77	pg/L	1.77	25.7
57465-28-8	PCB-126	U	1.93	1.93	pg/L	1.93	25.7

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**PCB Congeners
Certificate of Analysis
Sample Summary**

Rio Grande South

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998002
 Client Sample: 1668A Water
 Client ID: 1609609-002G
 Batch ID: 33209
 Run Date: 11/10/2016 07:13
 Data File: c09nov16a_2-4
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/13/2016 07:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 777.8 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.83	1.83	pg/L	1.83	25.7
PCB-128/166	PCB-128/PCB-166	CJ	11.8	7.84	pg/L	1.29	51.4
PCB-129-163	PCB-129/PCB-138/PCB-163	C	138	134	pg/L	1.47	77.1
52663-66-8	PCB-130	U	5.45	1.59	pg/L	1.59	25.7
61798-70-7	PCB-131	U	1.85	1.85	pg/L	1.85	25.7
38380-05-1	PCB-132		35.5	30	pg/L	1.70	25.7
35694-04-3	PCB-133	U	1.52	1.52	pg/L	1.52	25.7
52704-70-8	PCB-134	U	4.91	1.93	pg/L	1.93	25.7
PCB-135/151	PCB-135/PCB-151	CJ	41.5	36	pg/L	1.08	51.4
38411-22-2	PCB-136	J	12.7	9.08	pg/L	0.797	25.7
35694-06-5	PCB-137	U	3.11	1.67	pg/L	1.67	25.7
PCB-139/140	PCB-139/PCB-140	CU	1.41	1.41	pg/L	1.41	51.4
52712-04-6	PCB-141	J	24.8	19.7	pg/L	1.36	25.7
41411-61-4	PCB-142	U	1.57	1.57	pg/L	1.57	25.7
68194-15-0	PCB-143	U	1.44	1.44	pg/L	1.44	25.7
68194-14-9	PCB-144	U	5.37	.977	pg/L	0.977	25.7
74472-40-5	PCB-145	U	.9	.9	pg/L	0.900	25.7
51908-16-8	PCB-146	J	14.4	10.1	pg/L	1.13	25.7
PCB-147/149	PCB-147/PCB-149	C	95.5	90.8	pg/L	1.41	51.4
74472-41-6	PCB-148	U	1.03	1.03	pg/L	1.03	25.7
68194-08-1	PCB-150	U	.849	.849	pg/L	0.849	25.7
68194-09-2	PCB-152	U	.771	.771	pg/L	0.771	25.7
PCB-153/168	PCB-153/PCB-168	C	116	112	pg/L	1.21	51.4
60145-22-4	PCB-154	KU	1.31	.849	pg/L	0.849	25.7
33979-03-2	PCB-155	U	1.21	1.21	pg/L	1.21	25.7
PCB-156/157	PCB-156/PCB-157	BCJ	9.36	4.44	pg/L	1.44	51.4
74472-42-7	PCB-158	J	11.3	7.75	pg/L	1.00	25.7
39635-35-3	PCB-159	U	1.13	1.13	pg/L	1.13	25.7
41411-62-5	PCB-160	U	1.23	1.23	pg/L	1.23	25.7
74472-43-8	PCB-161	U	1.05	1.05	pg/L	1.05	25.7
39635-34-2	PCB-162	U	1.23	1.23	pg/L	1.23	25.7
74472-45-0	PCB-164	J	8.49	4.74	pg/L	1.03	25.7

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

Rio Grande South

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998002
 Client Sample: 1668A Water
 Client ID: 1609609-002G
 Batch ID: 33209
 Run Date: 11/10/2016 07:13
 Data File: c09nov16a_2-4
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/13/2016 07:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 777.8 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Permname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.31	1.31	pg/L	1.31	25.7
52663-72-6	PCB-167	BU	4.50	1.11	pg/L	1.11	25.7
32774-16-6	PCB-169	U	1.18	1.18	pg/L	1.18	25.7
35065-30-6	PCB-170		46.6	42.4	pg/L	1.34	25.7
PCB-171/173	PCB-171/PCB-173	CJ	14.9	10.4	pg/L	1.34	51.4
52663-74-8	PCB-172	J	9.36	5.01	pg/L	1.36	25.7
38411-25-5	PCB-174		49.8	45.2	pg/L	1.26	25.7
40186-70-7	PCB-175	U	2.39	.9	pg/L	0.900	25.7
52663-65-7	PCB-176	J	5.37	1.56	pg/L	0.694	25.7
52663-70-4	PCB-177	J	29.8	25.4	pg/L	1.36	25.7
52663-67-9	PCB-178	J	10.2	5.01	pg/L	0.951	25.7
52663-64-6	PCB-179	J	18.0	14.1	pg/L	0.694	25.7
PCB-180/193	PCB-180/PCB-193	CU	1.16	1.16	pg/L	1.16	51.4
74472-47-2	PCB-181	U	1.39	1.39	pg/L	1.39	25.7
60145-23-5	PCB-182	U	.9	.9	pg/L	0.900	25.7
PCB-183/185	PCB-183/PCB-185	CJ	34.7	30.7	pg/L	1.29	51.4
74472-48-3	PCB-184	U	.72	.72	pg/L	0.720	25.7
74472-49-4	PCB-186	U	.797	.797	pg/L	0.797	25.7
52663-68-0	PCB-187		63.4	58.4	pg/L	0.951	25.7
74487-85-7	PCB-188	U	.797	.797	pg/L	0.797	25.7
39635-31-9	PCB-189	BU	2.34	.977	pg/L	0.977	25.7
41411-64-7	PCB-190	J	10.2	7.03	pg/L	1.00	25.7
74472-50-7	PCB-191	U	1.90	.977	pg/L	0.977	25.7
74472-51-8	PCB-192	U	1.18	1.18	pg/L	1.18	25.7
35694-08-7	PCB-194	J	20.8	16.5	pg/L	0.771	25.7
52663-78-2	PCB-195	J	9.44	4.8	pg/L	0.849	25.7
42740-50-1	PCB-196	J	11.5	6.04	pg/L	1.08	25.7
PCB-197/200	PCB-197/PCB-200	CU	4.11	.9	pg/L	0.900	51.4
PCB-198/199	PCB-198/PCB-199	CJ	24.3	18.4	pg/L	1.16	51.4
40186-71-8	PCB-201	U	2.93	.849	pg/L	0.849	25.7
2136-99-4	PCB-202	U	4.63	.926	pg/L	0.926	25.7
52663-76-0	PCB-203	J	15.0	9.46	pg/L	1.11	25.7

Comments:

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- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

Rio Grande South

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998002
 Client Sample: 1668A Water
 Client ID: 1609609-002G
 Batch ID: 33209
 Run Date: 11/10/2016 07:13
 Data File: c09nov16a_2-4
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/13/2016 07:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 777.8 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.874	.874	pg/L	0.874	25.7
74472-53-0	PCB-205	BU	1.57	.669	pg/L	0.669	25.7
40186-72-9	PCB-206	U	6.53	1.21	pg/L	1.21	25.7
52663-79-3	PCB-207	U	1.34	.9	pg/L	0.900	25.7
52663-77-1	PCB-208	U	1.83	.951	pg/L	0.951	25.7
2051-24-3	PCB-209	BU	2.96	.926	pg/L	0.926	25.7
27323-18-8	Total monoCB		51.7	42.3	pg/L		
25512-42-9	Total diCB		995	968	pg/L		
25323-68-6	Total triCB		233	202	pg/L		
26914-33-0	Total tetraCB		200	152	pg/L		
25429-29-2	Total pentaCB		293	244	pg/L		
26601-64-9	Total hexaCB		543	466	pg/L		
28655-71-2	Total heptaCB		299	245	pg/L		
55722-26-4	Total octaCB		94.3	55.2	pg/L		
53742-07-7	Total nonaCB	U	9.69	0	pg/L		
DECACB(Tot)	Total decaCB	U	2.96	0	pg/L		
1336-36-3	Total PCB		2720	2370	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.117		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.00235		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		296	2570	pg/L	11.5 *	(15%-150%)
13C-3-MoCB		325	2570	pg/L	12.7 *	(15%-150%)
13C-4-DiCB		307	2570	pg/L	11.9 *	(25%-150%)
13C-15-DiCB		927	2570	pg/L	36.0	(25%-150%)
13C-19-TrCB		452	2570	pg/L	17.6 *	(25%-150%)
13C-37-TrCB		1180	2570	pg/L	46.1	(25%-150%)
13C-54-TeCB		216	2570	pg/L	8.41 *	(25%-150%)
13C-77-TeCB		2310	2570	pg/L	89.8	(25%-150%)
13C-81-TeCB		2150	2570	pg/L	83.6	(25%-150%)
13C-104-PeCB		310	2570	pg/L	12.1 *	(25%-150%)
13C-105-PeCB		2040	2570	pg/L	79.2	(25%-150%)
13C-114-PeCB		1870	2570	pg/L	72.5	(25%-150%)
13C-118-PeCB		1930	2570	pg/L	75.2	(25%-150%)
13C-123-PeCB		1930	2570	pg/L	75.2	(25%-150%)
13C-126-PeCB		2170	2570	pg/L	84.4	(25%-150%)
13C-155-HxCB		849	2570	pg/L	33.0	(25%-150%)
13C-156-HxCB	C	3800	5140	pg/L	73.9	(25%-150%)
13C-167-HxCB		1950	2570	pg/L	75.9	(25%-150%)
13C-169-HxCB		1990	2570	pg/L	77.4	(25%-150%)
13C-188-HpCB		1760	2570	pg/L	68.4	(25%-150%)
13C-189-HpCB		2130	2570	pg/L	82.9	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 9998002	Date Collected: 09/13/2016 07:15	Matrix: WATER
Client Sample: 1668A Water	Date Received: 10/28/2016 14:15	
Client ID: 1609609-002G		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/10/2016 07:13	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a_2-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 777.8 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB			2100	2570	pg/L	81.7	(25%-150%)
13C-205-OcCB			2400	2570	pg/L	93.4	(25%-150%)
13C-206-NoCB			2320	2570	pg/L	90.4	(25%-150%)
13C-208-NoCB			2210	2570	pg/L	86.0	(25%-150%)
13C-209-DeCB			2370	2570	pg/L	92.1	(25%-150%)
13C-28-TrCB			1640	2570	pg/L	63.8	(30%-135%)
13C-111-PeCB			2210	2570	pg/L	86.0	(30%-135%)
13C-178-HpCB			2240	2570	pg/L	87.1	(30%-135%)

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- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

**PCB Congeners
Certificate of Analysis
Sample Summary**

Rio Grande North

SDG Number: 1609609_1609C98
Lab Sample ID: 9998003
Client Sample: 1668A Water
Client ID: 1609C98-001G
Batch ID: 33209
Run Date: 11/10/2016 08:19
Data File: c09nov16a_2-5
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED001
Date Collected: 09/21/2016 12:15
Date Received: 10/28/2016 14:15
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 852.9 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	26.9	23.1	pg/L	8.65	46.9
2051-61-8	PCB-2	U	8.14	8.14	pg/L	8.14	46.9
2051-62-9	PCB-3	J	18.4	15.7	pg/L	8.16	46.9
13029-08-8	PCB-4	J	44.9	35.7	pg/L	12.8	46.9
16605-91-7	PCB-5	U	9.15	9.15	pg/L	9.15	46.9
25569-80-6	PCB-6	JK	13.5	9.35	pg/L	6.66	46.9
33284-50-3	PCB-7	U	7.55	7.55	pg/L	7.55	46.9
34883-43-7	PCB-8	BJ	36.0	32.2	pg/L	6.05	46.9
34883-39-1	PCB-9	U	7.48	7.48	pg/L	7.48	23.4
33146-45-1	PCB-10	U	4.34	4.34	pg/L	4.34	23.4
2050-67-1	PCB-11	B	852	847	pg/L	7.90	46.9
PCB-12/13	PCB-12/PCB-13	CU	8.21	8.21	pg/L	8.21	46.9
34883-41-5	PCB-14	U	7.36	7.36	pg/L	7.36	46.9
2050-68-2	PCB-15	J	44.9	39.7	pg/L	7.81	46.9
38444-78-9	PCB-16	J	10.2	6.96	pg/L	3.85	23.4
37680-66-3	PCB-17	BJ	13.8	10.6	pg/L	3.26	23.4
PCB-18/30	PCB-18/PCB-30	BCJ	27.6	25.3	pg/L	2.72	46.9
38444-73-4	PCB-19	JK	26.5	23	pg/L	8.86	23.4
PCB-20/28	PCB-20/PCB-28	BC	49.6	47.2	pg/L	2.39	46.9
PCB-21/33	PCB-21/PCB-33	BCJ	23.0	20.8	pg/L	2.34	46.9
38444-85-8	PCB-22	J	18.6	16.1	pg/L	2.65	23.4
55720-44-0	PCB-23	U	2.42	2.42	pg/L	2.42	23.4
55702-45-9	PCB-24	U	2.51	2.51	pg/L	2.51	23.4
55712-37-3	PCB-25	U	2.3	2.3	pg/L	2.30	23.4
PCB-26/29	PCB-26/PCB-29	CJ	8.11	5.94	pg/L	2.25	46.9
38444-76-7	PCB-27	U	3.87	2.32	pg/L	2.32	23.4
16606-02-3	PCB-31	U	2.2	2.2	pg/L	2.20	23.4
38444-77-8	PCB-32	J	6.54	4.66	pg/L	2.11	23.4
37680-68-5	PCB-34	U	2.32	2.32	pg/L	2.32	23.4
37680-69-6	PCB-35	BU	7.81	4.99	pg/L	4.99	46.9
38444-87-0	PCB-36	U	4.43	4.43	pg/L	4.43	23.4
38444-90-5	PCB-37	BJ	14.5	11.5	pg/L	4.57	23.4

Comments:

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- U** Analyte was analyzed for, but not detected above the specified detection limit.

Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998003
 Client Sample: 1668A Water
 Client ID: 1609C98-001G
 Batch ID: 33209
 Run Date: 11/10/2016 08:19
 Data File: c09nov16a_2-5
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/21/2016 12:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 852.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	4.53	4.53	pg/L	4.53	23.4
38444-88-1	PCB-39	U	4.64	4.64	pg/L	4.64	23.4
PCB-40/71	PCB-40/PCB-71	CJ	5.49	2.25	pg/L	1.69	46.9
52663-59-9	PCB-41	U	2.49	2.49	pg/L	2.49	46.9
36559-22-5	PCB-42	U	4.41	2.06	pg/L	2.06	46.9
70362-46-8	PCB-43	U	2.34	2.34	pg/L	2.34	46.9
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CJ	24.3	21.1	pg/L	1.81	70.3
PCB-45/51	PCB-45/PCB-51	BCJ	4.99	1.82	pg/L	1.24	46.9
41464-47-5	PCB-46	U	1.31	1.31	pg/L	1.31	23.4
70362-47-9	PCB-48	U	3.66	1.99	pg/L	1.99	23.4
PCB-49/69	PCB-49/PCB-69	BCJ	9.36	6.52	pg/L	1.69	46.9
PCB-50/53	PCB-50/PCB-53	BCU	1.83	1.17	pg/L	1.17	46.9
35693-99-3	PCB-52	J	23.4	20.2	pg/L	1.83	23.4
15968-05-5	PCB-54	U	5.49	5.49	pg/L	5.49	23.4
74338-24-2	PCB-55	U	1.59	1.59	pg/L	1.59	23.4
41464-43-1	PCB-56	BJ	7.08	3.88	pg/L	1.71	23.4
70424-67-8	PCB-57	U	1.41	1.41	pg/L	1.41	23.4
41464-49-7	PCB-58	U	1.57	1.57	pg/L	1.57	23.4
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	1.43	1.43	pg/L	1.43	70.3
33025-41-1	PCB-60	U	3.68	1.59	pg/L	1.59	23.4
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	28.8	26	pg/L	1.52	93.8
74472-34-7	PCB-63	U	1.34	1.34	pg/L	1.34	23.4
52663-58-8	PCB-64	J	6.68	4.01	pg/L	1.52	23.4
32598-10-0	PCB-66	BJ	13.2	10.5	pg/L	1.43	23.4
73575-53-8	PCB-67	U	1.27	1.27	pg/L	1.27	23.4
73575-52-7	PCB-68	U	2.09	1.41	pg/L	1.41	23.4
41464-42-0	PCB-72	U	1.36	1.36	pg/L	1.36	23.4
74338-23-1	PCB-73	U	1.52	1.52	pg/L	1.52	23.4
32598-13-3	PCB-77	BKU	1.66	1.29	pg/L	1.29	23.4
70362-49-1	PCB-78	U	1.52	1.52	pg/L	1.52	23.4
41464-48-6	PCB-79	U	1.29	1.29	pg/L	1.29	23.4
33284-52-5	PCB-80	U	1.31	1.31	pg/L	1.31	23.4

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- U** Analyte was analyzed for, but not detected above the specified detection limit.

Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998003
 Client Sample: 1668A Water
 Client ID: 1609C98-001G
 Batch ID: 33209
 Run Date: 11/10/2016 08:19
 Data File: c09nov16a_2-5
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/21/2016 12:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 852.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.38	1.38	pg/L	1.38	23.4
52663-62-4	PCB-82	U	1.78	1.5	pg/L	1.50	23.4
60145-20-2	PCB-83	U	1.57	1.57	pg/L	1.57	23.4
52663-60-2	PCB-84	U	3.26	1.48	pg/L	1.48	23.4
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	1.45	1.15	pg/L	1.15	70.3
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	BCJ	8.14	5.02	pg/L	1.22	141
PCB-88/91	PCB-88/PCB-91	CU	1.85	1.41	pg/L	1.41	46.9
73575-57-2	PCB-89	U	1.41	1.41	pg/L	1.41	23.4
PCB-90-113	PCB-90/PCB-101/PCB-113	BCJ	11.4	8.32	pg/L	1.20	70.3
52663-61-3	PCB-92	U	2.02	1.34	pg/L	1.34	23.4
PCB-93/100	PCB-93/PCB-100	CU	1.41	1.41	pg/L	1.41	46.9
73575-55-0	PCB-94	U	1.55	1.55	pg/L	1.55	23.4
38379-99-6	PCB-95	BJ	8.56	5.48	pg/L	1.27	23.4
73575-54-9	PCB-96	U	.633	.633	pg/L	0.633	23.4
PCB-98/102	PCB-98/PCB-102	CU	1.45	1.45	pg/L	1.45	46.9
38380-01-7	PCB-99	BU	4.83	1.41	pg/L	1.41	23.4
60145-21-3	PCB-103	U	1.22	1.22	pg/L	1.22	23.4
56558-16-8	PCB-104	U	5.02	5.02	pg/L	5.02	23.4
32598-14-4	PCB-105	U	3.63	1.57	pg/L	1.57	23.4
70424-69-0	PCB-106	U	1.59	1.59	pg/L	1.59	23.4
70424-68-9	PCB-107	U	1.57	1.57	pg/L	1.57	23.4
PCB-108/124	PCB-108/PCB-124	CU	1.76	1.76	pg/L	1.76	46.9
PCB-110/115	PCB-110/PCB-115	BCJ	12.7	9.71	pg/L	1.15	46.9
39635-32-0	PCB-111	U	1.08	1.08	pg/L	1.08	23.4
74472-36-9	PCB-112	U	.938	.938	pg/L	0.938	23.4
74472-37-0	PCB-114	U	1.71	1.71	pg/L	1.71	23.4
31508-00-6	PCB-118	BJ	8.00	4.77	pg/L	1.57	23.4
68194-12-7	PCB-120	U	.891	.891	pg/L	0.891	23.4
56558-18-0	PCB-121	U	1.08	1.08	pg/L	1.08	23.4
76842-07-4	PCB-122	U	1.81	1.81	pg/L	1.81	23.4
65510-44-3	PCB-123	U	1.69	1.69	pg/L	1.69	23.4
57465-28-8	PCB-126	U	1.62	1.62	pg/L	1.62	23.4

Comments:

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- K** Estimated Maximum Possible Concentration
- U** Analyte was analyzed for, but not detected above the specified detection limit.

Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998003
 Client Sample: 1668A Water
 Client ID: 1609C98-001G
 Batch ID: 33209
 Run Date: 11/10/2016 08:19
 Data File: c09nov16a_2-5
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/21/2016 12:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 852.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.71	1.71	pg/L	1.71	23.4
PCB-128/166	PCB-128/PCB-166	CU	1.45	1.34	pg/L	1.34	46.9
PCB-129-163	PCB-129/PCB-138/PCB-163	BCJ	9.07	4.86	pg/L	1.52	70.3
52663-66-8	PCB-130	U	1.64	1.64	pg/L	1.64	23.4
61798-70-7	PCB-131	U	1.92	1.92	pg/L	1.92	23.4
38380-05-1	PCB-132	BU	2.81	1.76	pg/L	1.76	23.4
35694-04-3	PCB-133	U	1.57	1.57	pg/L	1.57	23.4
52704-70-8	PCB-134	U	1.99	1.99	pg/L	1.99	23.4
PCB-135/151	PCB-135/PCB-151	BCU	3.21	.868	pg/L	0.868	46.9
38411-22-2	PCB-136	BU	1.34	.633	pg/L	0.633	23.4
35694-06-5	PCB-137	U	1.71	1.71	pg/L	1.71	23.4
PCB-139/140	PCB-139/PCB-140	CU	1.48	1.48	pg/L	1.48	46.9
52712-04-6	PCB-141	KU	1.62	1.41	pg/L	1.41	23.4
41411-61-4	PCB-142	U	1.64	1.64	pg/L	1.64	23.4
68194-15-0	PCB-143	U	1.5	1.5	pg/L	1.50	23.4
68194-14-9	PCB-144	U	0.844	.774	pg/L	0.774	23.4
74472-40-5	PCB-145	U	.727	.727	pg/L	0.727	23.4
51908-16-8	PCB-146	U	1.17	1.17	pg/L	1.17	23.4
PCB-147/149	PCB-147/PCB-149	BCJ	6.43	1.74	pg/L	1.45	46.9
74472-41-6	PCB-148	U	.844	.844	pg/L	0.844	23.4
68194-08-1	PCB-150	U	.68	.68	pg/L	0.680	23.4
68194-09-2	PCB-152	U	.61	.61	pg/L	0.610	23.4
PCB-153/168	PCB-153/PCB-168	BCJ	7.13	3.43	pg/L	1.24	46.9
60145-22-4	PCB-154	U	.68	.68	pg/L	0.680	23.4
33979-03-2	PCB-155	U	1.55	1.55	pg/L	1.55	23.4
PCB-156/157	PCB-156/PCB-157	BCU	1.22	1.03	pg/L	1.03	46.9
74472-42-7	PCB-158	U	1.03	1.03	pg/L	1.03	23.4
39635-35-3	PCB-159	U	.868	.868	pg/L	0.868	23.4
41411-62-5	PCB-160	U	1.27	1.27	pg/L	1.27	23.4
74472-43-8	PCB-161	U	1.08	1.08	pg/L	1.08	23.4
39635-34-2	PCB-162	U	.938	.938	pg/L	0.938	23.4
74472-45-0	PCB-164	U	1.08	1.08	pg/L	1.08	23.4

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Rio Grande North

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998003
 Client Sample: 1668A Water
 Client ID: 1609C98-001G
 Batch ID: 33209
 Run Date: 11/10/2016 08:19
 Data File: c09nov16a_2-5
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/21/2016 12:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 852.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.36	1.36	pg/L	1.36	23.4
52663-72-6	PCB-167	U	.774	.774	pg/L	0.774	23.4
32774-16-6	PCB-169	U	.844	.844	pg/L	0.844	23.4
35065-30-6	PCB-170	BU	1.83	1.15	pg/L	1.15	23.4
PCB-171/173	PCB-171/PCB-173	CU	1.15	1.15	pg/L	1.15	46.9
52663-74-8	PCB-172	U	1.17	1.17	pg/L	1.17	23.4
38411-25-5	PCB-174	BU	2.44	1.08	pg/L	1.08	23.4
40186-70-7	PCB-175	U	.821	.821	pg/L	0.821	23.4
52663-65-7	PCB-176	U	.633	.633	pg/L	0.633	23.4
52663-70-4	PCB-177	BU	1.27	1.15	pg/L	1.15	23.4
52663-67-9	PCB-178	U	.868	.868	pg/L	0.868	23.4
52663-64-6	PCB-179	BU	1.03	.633	pg/L	0.633	23.4
PCB-180/193	PCB-180/PCB-193	CU	.985	.985	pg/L	0.985	46.9
74472-47-2	PCB-181	U	1.2	1.2	pg/L	1.20	23.4
60145-23-5	PCB-182	U	.821	.821	pg/L	0.821	23.4
PCB-183/185	PCB-183/PCB-185	BCU	1.95	1.1	pg/L	1.10	46.9
74472-48-3	PCB-184	U	.657	.657	pg/L	0.657	23.4
74472-49-4	PCB-186	U	.727	.727	pg/L	0.727	23.4
52663-68-0	PCB-187	BU	3.02	.868	pg/L	0.868	23.4
74487-85-7	PCB-188	U	.774	.774	pg/L	0.774	23.4
39635-31-9	PCB-189	U	.844	.844	pg/L	0.844	23.4
41411-64-7	PCB-190	U	.868	.868	pg/L	0.868	23.4
74472-50-7	PCB-191	U	.844	.844	pg/L	0.844	23.4
74472-51-8	PCB-192	U	1.01	1.01	pg/L	1.01	23.4
35694-08-7	PCB-194	BU	1.10	.68	pg/L	0.680	23.4
52663-78-2	PCB-195	U	.727	.727	pg/L	0.727	23.4
42740-50-1	PCB-196	U	.68	.68	pg/L	0.680	23.4
PCB-197/200	PCB-197/PCB-200	CU	.563	.563	pg/L	0.563	46.9
PCB-198/199	PCB-198/PCB-199	BCU	1.13	.75	pg/L	0.750	46.9
40186-71-8	PCB-201	U	.539	.539	pg/L	0.539	23.4
2136-99-4	PCB-202	U	.586	.586	pg/L	0.586	23.4
52663-76-0	PCB-203	BU	0.961	.703	pg/L	0.703	23.4

Comments:

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**PCB Congeners
Certificate of Analysis
Sample Summary**

Rio Grande North

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998003
 Client Sample: 1668A Water
 Client ID: 1609C98-001G
 Batch ID: 33209
 Run Date: 11/10/2016 08:19
 Data File: c09nov16a_2-5
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/21/2016 12:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 852.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.563	.563	pg/L	0.563	23.4
74472-53-0	PCB-205	U	.563	.563	pg/L	0.563	23.4
40186-72-9	PCB-206	U	.797	.797	pg/L	0.797	23.4
52663-79-3	PCB-207	U	.586	.586	pg/L	0.586	23.4
52663-77-1	PCB-208	U	.633	.633	pg/L	0.633	23.4
2051-24-3	PCB-209	BU	1.78	.703	pg/L	0.703	23.4
27323-18-8	Total monoCB		45.3	38.8	pg/L		
25512-42-9	Total diCB		978	955	pg/L		
25323-68-6	Total triCB		184	149	pg/L		
26914-33-0	Total tetraCB		139	96.2	pg/L		
25429-29-2	Total pentaCB		67.6	33.3	pg/L		
26601-64-9	Total hexaCB		33.5	10	pg/L		
28655-71-2	Total heptaCB	U	11.5	0	pg/L		
55722-26-4	Total octaCB	U	3.19	0	pg/L		
53742-07-7	Total nonaCB	U	0	0	pg/L		
DECACB(Tot)	Total decaCB	U	1.78	0	pg/L		
1336-36-3	Total PCB		1460	1280	pg/L		=0.00146 ug/L
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.0943		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.000386		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		230	2340	pg/L	9.80 *	(15%-150%)
13C-3-MoCB		262	2340	pg/L	11.2 *	(15%-150%)
13C-4-DiCB		240	2340	pg/L	10.2 *	(25%-150%)
13C-15-DiCB		710	2340	pg/L	30.3	(25%-150%)
13C-19-TrCB		336	2340	pg/L	14.3 *	(25%-150%)
13C-37-TrCB		839	2340	pg/L	35.8	(25%-150%)
13C-54-TeCB		150	2340	pg/L	6.41 *	(25%-150%)
13C-77-TeCB		1860	2340	pg/L	79.4	(25%-150%)
13C-81-TeCB		1650	2340	pg/L	70.6	(25%-150%)
13C-104-PeCB		138	2340	pg/L	5.91 *	(25%-150%)
13C-105-PeCB		1680	2340	pg/L	71.8	(25%-150%)
13C-114-PeCB		1470	2340	pg/L	62.6	(25%-150%)
13C-118-PeCB		1540	2340	pg/L	65.6	(25%-150%)
13C-123-PeCB		1510	2340	pg/L	64.4	(25%-150%)
13C-126-PeCB		1890	2340	pg/L	80.6	(25%-150%)
13C-155-HxCB		452	2340	pg/L	19.3 *	(25%-150%)
13C-156-HxCB	C	3350	4690	pg/L	71.5	(25%-150%)
13C-167-HxCB		1690	2340	pg/L	72.0	(25%-150%)
13C-169-HxCB		1790	2340	pg/L	76.1	(25%-150%)
13C-188-HpCB		1340	2340	pg/L	57.1	(25%-150%)
13C-189-HpCB		1920	2340	pg/L	81.8	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998003
 Client Sample: 1668A Water
 Client ID: 1609C98-001G
 Batch ID: 33209
 Run Date: 11/10/2016 08:19
 Data File: c09nov16a_2-5
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/21/2016 12:15
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 852.9 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB			1800	2340	pg/L	76.7	(25%-150%)
13C-205-OcCB			2150	2340	pg/L	91.6	(25%-150%)
13C-206-NoCB			2130	2340	pg/L	90.9	(25%-150%)
13C-208-NoCB			1940	2340	pg/L	82.8	(25%-150%)
13C-209-DeCB			2180	2340	pg/L	93.1	(25%-150%)
13C-28-TrCB			1430	2340	pg/L	61.0	(30%-135%)
13C-111-PeCB			1920	2340	pg/L	81.9	(30%-135%)
13C-178-HpCB			1950	2340	pg/L	83.1	(30%-135%)

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- U** Analyte was analyzed for, but not detected above the specified detection limit.

Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998004
 Client Sample: 1668A Water
 Client ID: 1609C98-002G
 Batch ID: 33209
 Run Date: 11/10/2016 09:25
 Data File: c09nov16a_2-6
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/22/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 929.1 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	BJ	22.5	18.7	pg/L	11.2	43.1
2051-61-8	PCB-2	J	14.0	11.1	pg/L	10.2	43.1
2051-62-9	PCB-3	JK	27.7	25	pg/L	9.90	43.1
13029-08-8	PCB-4		53.9	44.8	pg/L	14.3	43.1
16605-91-7	PCB-5	U	10.1	10.1	pg/L	10.1	43.1
25569-80-6	PCB-6	JK	12.8	8.72	pg/L	7.34	43.1
33284-50-3	PCB-7	U	8.31	8.31	pg/L	8.31	43.1
34883-43-7	PCB-8	BJ	36.2	32.4	pg/L	6.67	43.1
34883-39-1	PCB-9	U	8.24	8.24	pg/L	8.24	21.5
33146-45-1	PCB-10	U	4.69	4.69	pg/L	4.69	21.5
2050-67-1	PCB-11	B	1100	1100	pg/L	8.70	43.1
PCB-12/13	PCB-12/PCB-13	CU	9.04	9.04	pg/L	9.04	43.1
34883-41-5	PCB-14	U	8.12	8.12	pg/L	8.12	43.1
2050-68-2	PCB-15	BJ	32.7	27.4	pg/L	8.52	43.1
38444-78-9	PCB-16	J	15.5	12.3	pg/L	4.82	21.5
37680-66-3	PCB-17	BJ	12.9	9.7	pg/L	4.09	21.5
PCB-18/30	PCB-18/PCB-30	BCJ	23.2	20.9	pg/L	3.40	43.1
38444-73-4	PCB-19	J	14.2	10.7	pg/L	9.15	21.5
PCB-20/28	PCB-20/PCB-28	BC	62.5	60.2	pg/L	3.01	43.1
PCB-21/33	PCB-21/PCB-33	BCJ	28.7	26.5	pg/L	2.95	43.1
38444-85-8	PCB-22	J	22.2	19.7	pg/L	3.32	21.5
55720-44-0	PCB-23	U	3.04	3.04	pg/L	3.04	21.5
55702-45-9	PCB-24	U	3.14	3.14	pg/L	3.14	21.5
55712-37-3	PCB-25	J	5.23	3.26	pg/L	2.88	21.5
PCB-26/29	PCB-26/PCB-29	CU	2.82	2.82	pg/L	2.82	43.1
38444-76-7	PCB-27	U	3.90	2.91	pg/L	2.91	21.5
16606-02-3	PCB-31	U	2.76	2.76	pg/L	2.76	21.5
38444-77-8	PCB-32	J	8.63	6.75	pg/L	2.65	21.5
37680-68-5	PCB-34	U	2.93	2.93	pg/L	2.93	21.5
37680-69-6	PCB-35	BJ	11.5	8.4	pg/L	6.54	43.1
38444-87-0	PCB-36	U	5.83	5.83	pg/L	5.83	21.5
38444-90-5	PCB-37	BJ	22.0	19	pg/L	6.29	21.5

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998004
 Client Sample: 1668A Water
 Client ID: 1609C98-002G
 Batch ID: 33209
 Run Date: 11/10/2016 09:25
 Data File: c09nov16a_2-6
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/22/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 929.1 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	5.92	5.92	pg/L	5.92	21.5
38444-88-1	PCB-39	U	6.09	6.09	pg/L	6.09	21.5
PCB-40/71	PCB-40/PCB-71	CJ	9.00	5.76	pg/L	2.13	43.1
52663-59-9	PCB-41	U	3.14	3.14	pg/L	3.14	43.1
36559-22-5	PCB-42	U	5.92	2.6	pg/L	2.60	43.1
70362-46-8	PCB-43	U	2.95	2.95	pg/L	2.95	43.1
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CU	2.28	2.28	pg/L	2.28	64.6
PCB-45/51	PCB-45/PCB-51	BCJ	6.46	3.28	pg/L	1.40	43.1
41464-47-5	PCB-46	U	1.49	1.49	pg/L	1.49	21.5
70362-47-9	PCB-48	U	2.54	2.54	pg/L	2.54	21.5
PCB-49/69	PCB-49/PCB-69	BCJ	15.0	12.2	pg/L	2.13	43.1
PCB-50/53	PCB-50/PCB-53	BCU	2.88	1.31	pg/L	1.31	43.1
35693-99-3	PCB-52		38.3	35.1	pg/L	2.30	21.5
15968-05-5	PCB-54	U	6.05	6.05	pg/L	6.05	21.5
74338-24-2	PCB-55	U	2.32	2.32	pg/L	2.32	21.5
41464-43-1	PCB-56	BJ	11.6	8.42	pg/L	2.50	21.5
70424-67-8	PCB-57	U	2.07	2.07	pg/L	2.07	21.5
41464-49-7	PCB-58	U	2.28	2.28	pg/L	2.28	21.5
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	1.79	1.79	pg/L	1.79	64.6
33025-41-1	PCB-60	J	6.50	3.36	pg/L	2.32	21.5
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	BCJ	46.2	43.4	pg/L	2.20	86.1
74472-34-7	PCB-63	U	1.96	1.96	pg/L	1.96	21.5
52663-58-8	PCB-64	J	10.6	7.96	pg/L	1.94	21.5
32598-10-0	PCB-66	BJ	20.6	17.9	pg/L	2.09	21.5
73575-53-8	PCB-67	U	1.83	1.83	pg/L	1.83	21.5
73575-52-7	PCB-68	U	2.04	2.04	pg/L	2.04	21.5
41464-42-0	PCB-72	U	1.96	1.96	pg/L	1.96	21.5
74338-23-1	PCB-73	U	1.92	1.92	pg/L	1.92	21.5
32598-13-3	PCB-77	BU	3.19	1.83	pg/L	1.83	21.5
70362-49-1	PCB-78	U	2.22	2.22	pg/L	2.22	21.5
41464-48-6	PCB-79	U	1.89	1.89	pg/L	1.89	21.5
33284-52-5	PCB-80	U	1.92	1.92	pg/L	1.92	21.5

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
Lab Sample ID: 9998004
Client Sample: 1668A Water
Client ID: 1609C98-002G
Batch ID: 33209
Run Date: 11/10/2016 09:25
Data File: c09nov16a_2-6
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED001
Date Collected: 09/22/2016 11:00
Date Received: 10/28/2016 14:15
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 929.1 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	2.11	2.11	pg/L	2.11	21.5
52663-62-4	PCB-82	U	3.21	2.3	pg/L	2.30	21.5
60145-20-2	PCB-83	KU	2.76	2.39	pg/L	2.39	21.5
52663-60-2	PCB-84	U	5.60	2.24	pg/L	2.24	21.5
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	4.50	1.74	pg/L	1.74	64.6
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	BCJ	18.6	15.5	pg/L	1.85	129
PCB-88/91	PCB-88/PCB-91	CU	3.75	2.15	pg/L	2.15	43.1
73575-57-2	PCB-89	U	2.13	2.13	pg/L	2.13	21.5
PCB-90-113	PCB-90/PCB-101/PCB-113	CJ	29.0	26	pg/L	1.83	64.6
52663-61-3	PCB-92	U	5.14	2.04	pg/L	2.04	21.5
PCB-93/100	PCB-93/PCB-100	CU	2.17	2.17	pg/L	2.17	43.1
73575-55-0	PCB-94	U	2.39	2.39	pg/L	2.39	21.5
38379-99-6	PCB-95	J	17.1	14.1	pg/L	1.94	21.5
73575-54-9	PCB-96	U	.818	.818	pg/L	0.818	21.5
PCB-98/102	PCB-98/PCB-102	CU	2.24	2.24	pg/L	2.24	43.1
38380-01-7	PCB-99	BJ	11.5	8.02	pg/L	2.15	21.5
60145-21-3	PCB-103	U	1.85	1.85	pg/L	1.85	21.5
56558-16-8	PCB-104	U	8.59	8.59	pg/L	8.59	21.5
32598-14-4	PCB-105	J	7.32	3.7	pg/L	1.83	21.5
70424-69-0	PCB-106	U	1.96	1.96	pg/L	1.96	21.5
70424-68-9	PCB-107	U	1.92	1.92	pg/L	1.92	21.5
PCB-108/124	PCB-108/PCB-124	CU	2.13	2.13	pg/L	2.13	43.1
PCB-110/115	PCB-110/PCB-115	CJ	33.3	30.3	pg/L	1.74	43.1
39635-32-0	PCB-111	U	1.64	1.64	pg/L	1.64	21.5
74472-36-9	PCB-112	U	1.42	1.42	pg/L	1.42	21.5
74472-37-0	PCB-114	U	2.09	2.09	pg/L	2.09	21.5
31508-00-6	PCB-118	BJ	18.6	15.4	pg/L	1.92	21.5
68194-12-7	PCB-120	U	1.38	1.38	pg/L	1.38	21.5
56558-18-0	PCB-121	U	1.66	1.66	pg/L	1.66	21.5
76842-07-4	PCB-122	U	2.17	2.17	pg/L	2.17	21.5
65510-44-3	PCB-123	U	2.07	2.07	pg/L	2.07	21.5
57465-28-8	PCB-126	U	1.85	1.85	pg/L	1.85	21.5

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
Lab Sample ID: 9998004
Client Sample: 1668A Water
Client ID: 1609C98-002G
Batch ID: 33209
Run Date: 11/10/2016 09:25
Data File: c09nov16a_2-6
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED001
Date Collected: 09/22/2016 11:00
Date Received: 10/28/2016 14:15
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 929.1 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	2.09	2.09	pg/L	2.09	21.5
PCB-128/166	PCB-128/PCB-166	CJ	5.34	1.4	pg/L	1.23	43.1
PCB-129-163	PCB-129/PCB-138/PCB-163	CJ	53.3	49.1	pg/L	1.40	64.6
52663-66-8	PCB-130	U	2.48	1.51	pg/L	1.51	21.5
61798-70-7	PCB-131	U	1.77	1.77	pg/L	1.77	21.5
38380-05-1	PCB-132	J	13.8	8.32	pg/L	1.61	21.5
35694-04-3	PCB-133	U	1.44	1.44	pg/L	1.44	21.5
52704-70-8	PCB-134	U	2.35	1.83	pg/L	1.83	21.5
PCB-135/151	PCB-135/PCB-151	CJ	15.9	10.4	pg/L	1.08	43.1
38411-22-2	PCB-136	J	5.53	1.91	pg/L	0.796	21.5
35694-06-5	PCB-137	U	1.79	1.57	pg/L	1.57	21.5
PCB-139/140	PCB-139/PCB-140	CU	1.36	1.36	pg/L	1.36	43.1
52712-04-6	PCB-141	J	8.52	3.43	pg/L	1.29	21.5
41411-61-4	PCB-142	U	1.51	1.51	pg/L	1.51	21.5
68194-15-0	PCB-143	U	1.38	1.38	pg/L	1.38	21.5
68194-14-9	PCB-144	U	1.96	.969	pg/L	0.969	21.5
74472-40-5	PCB-145	U	.883	.883	pg/L	0.883	21.5
51908-16-8	PCB-146	J	5.83	1.51	pg/L	1.10	21.5
PCB-147/149	PCB-147/PCB-149	CJ	38.0	33.3	pg/L	1.33	43.1
74472-41-6	PCB-148	U	1.1	1.1	pg/L	1.10	21.5
68194-08-1	PCB-150	U	.861	.861	pg/L	0.861	21.5
68194-09-2	PCB-152	U	.775	.775	pg/L	0.775	21.5
PCB-153/168	PCB-153/PCB-168	CJ	43.4	39.7	pg/L	1.14	43.1
60145-22-4	PCB-154	U	.861	.861	pg/L	0.861	21.5
33979-03-2	PCB-155	U	3.1	3.1	pg/L	3.10	21.5
PCB-156/157	PCB-156/PCB-157	BCU	3.92	1.27	pg/L	1.27	43.1
74472-42-7	PCB-158	J	4.54	1.03	pg/L	0.947	21.5
39635-35-3	PCB-159	U	1.1	1.1	pg/L	1.10	21.5
41411-62-5	PCB-160	U	1.16	1.16	pg/L	1.16	21.5
74472-43-8	PCB-161	U	.99	.99	pg/L	0.990	21.5
39635-34-2	PCB-162	U	1.18	1.18	pg/L	1.18	21.5
74472-45-0	PCB-164	U	3.40	.99	pg/L	0.990	21.5

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
 Lab Sample ID: 9998004
 Client Sample: 1668A Water
 Client ID: 1609C98-002G
 Batch ID: 33209
 Run Date: 11/10/2016 09:25
 Data File: c09nov16a_2-6
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Date Collected: 09/22/2016 11:00
 Date Received: 10/28/2016 14:15
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 929.1 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.25	1.25	pg/L	1.25	21.5
52663-72-6	PCB-167	BU	1.66	.947	pg/L	0.947	21.5
32774-16-6	PCB-169	U	1.01	1.01	pg/L	1.01	21.5
35065-30-6	PCB-170	J	17.0	12.7	pg/L	1.68	21.5
PCB-171/173	PCB-171/PCB-173	CJ	6.67	2.2	pg/L	1.70	43.1
52663-74-8	PCB-172	U	3.70	1.72	pg/L	1.72	21.5
38411-25-5	PCB-174	J	19.1	14.4	pg/L	1.59	21.5
40186-70-7	PCB-175	U	1.05	1.05	pg/L	1.05	21.5
52663-65-7	PCB-176	U	1.87	.818	pg/L	0.818	21.5
52663-70-4	PCB-177	J	11.8	7.42	pg/L	1.70	21.5
52663-67-9	PCB-178	U	3.94	1.12	pg/L	1.12	21.5
52663-64-6	PCB-179	J	7.47	3.56	pg/L	0.818	21.5
PCB-180/193	PCB-180/PCB-193	CU	1.46	1.46	pg/L	1.46	43.1
74472-47-2	PCB-181	U	1.77	1.77	pg/L	1.77	21.5
60145-23-5	PCB-182	U	1.03	1.03	pg/L	1.03	21.5
PCB-183/185	PCB-183/PCB-185	CJ	13.3	9.24	pg/L	1.61	43.1
74472-48-3	PCB-184	U	.84	.84	pg/L	0.840	21.5
74472-49-4	PCB-186	U	.926	.926	pg/L	0.926	21.5
52663-68-0	PCB-187	J	24.7	19.7	pg/L	1.10	21.5
74487-85-7	PCB-188	U	1.1	1.1	pg/L	1.10	21.5
39635-31-9	PCB-189	U	.861	.861	pg/L	0.861	21.5
41411-64-7	PCB-190	U	3.66	1.27	pg/L	1.27	21.5
74472-50-7	PCB-191	U	1.25	1.25	pg/L	1.25	21.5
74472-51-8	PCB-192	U	1.49	1.49	pg/L	1.49	21.5
35694-08-7	PCB-194	BJ	6.46	2.2	pg/L	0.883	21.5
52663-78-2	PCB-195	U	3.32	.947	pg/L	0.947	21.5
42740-50-1	PCB-196	U	3.62	.99	pg/L	0.990	21.5
PCB-197/200	PCB-197/PCB-200	CU	1.46	.818	pg/L	0.818	43.1
PCB-198/199	PCB-198/PCB-199	CJ	8.57	2.64	pg/L	1.05	43.1
40186-71-8	PCB-201	U	1.21	.775	pg/L	0.775	21.5
2136-99-4	PCB-202	U	1.72	.883	pg/L	0.883	21.5
52663-76-0	PCB-203	U	4.63	1.01	pg/L	1.01	21.5

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Rio Grande South

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98
Lab Sample ID: 9998004
Client Sample: 1668A Water
Client ID: 1609C98-002G
Batch ID: 33209
Run Date: 11/10/2016 09:25
Data File: c09nov16a_2-6
Prep Batch: 33207
Prep Date: 08-NOV-16

Client: NMED901
Date Collected: 09/22/2016 11:00
Date Received: 10/28/2016 14:15
Method: EPA Method 1668A HS
Analyst: MJC
Prep Method: SW846 3520C
Prep Aliquot: 929.1 mL

Project: NMED00113
Matrix: WATER
Prep Basis: As Received
Instrument: HRP791
Dilution: 1
Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	FQL
74472-52-9	PCB-204	U	.796	.796	pg/L	0.796	21.5
74472-53-0	PCB-205	U	.71	.71	pg/L	0.710	21.5
40186-72-9	PCB-206	U	2.30	.861	pg/L	0.861	21.5
52663-79-3	PCB-207	U	.646	.646	pg/L	0.646	21.5
52663-77-1	PCB-208	U	1.01	.689	pg/L	0.689	21.5
2051-24-3	PCB-209	BU	2.69	.689	pg/L	0.689	21.5
27323-18-8	Total monoCB		36.5	29.8	pg/L		
25512-42-9	Total diCB		1230	1200	pg/L		
25323-68-6	Total triCB		231	197	pg/L		
26914-33-0	Total tetraCB		176	137	pg/L		
25429-29-2	Total pentaCB		158	113	pg/L		
26601-64-9	Total hexaCB		212	150	pg/L		
28655-71-2	Total heptaCB		113	69.3	pg/L		
55722-26-4	Total octaCB		31.0	4.84	pg/L		
53742-07-7	Total nonaCB	U	3.52	0	pg/L		
DECACB(Tot)	Total decaCB	U	2.69	0	pg/L		
1336-36-3	Total PCB		2190	1910	pg/L		=0.00219 ug/L
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.109		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.00126		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		175	2150	pg/L	8.15 *	(15%-150%)
13C-3-MoCB		190	2150	pg/L	8.84 *	(15%-150%)
13C-4-DiCB		184	2150	pg/L	8.56 *	(25%-150%)
13C-15-DiCB		566	2150	pg/L	26.3	(25%-150%)
13C-19-TrCB		270	2150	pg/L	12.5 *	(25%-150%)
13C-37-TrCB		572	2150	pg/L	26.6	(25%-150%)
13C-54-TeCB		113	2150	pg/L	5.25 *	(25%-150%)
13C-77-TeCB		1440	2150	pg/L	66.8	(25%-150%)
13C-81-TeCB		1200	2150	pg/L	55.6	(25%-150%)
13C-104-PeCB		84.4	2150	pg/L	3.92 *	(25%-150%)
13C-105-PeCB		1410	2150	pg/L	65.5	(25%-150%)
13C-114-PeCB		1180	2150	pg/L	54.6	(25%-150%)
13C-118-PeCB		1230	2150	pg/L	57.2	(25%-150%)
13C-123-PeCB		1190	2150	pg/L	55.5	(25%-150%)
13C-126-PeCB		1650	2150	pg/L	76.7	(25%-150%)
13C-155-HxCB		232	2150	pg/L	10.8 *	(25%-150%)
13C-156-HxCB	C	2920	4310	pg/L	67.8	(25%-150%)
13C-167-HxCB		1470	2150	pg/L	68.2	(25%-150%)
13C-169-HxCB		1560	2150	pg/L	72.7	(25%-150%)
13C-188-HpCB		979	2150	pg/L	45.5	(25%-150%)
13C-189-HpCB		1670	2150	pg/L	77.8	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609669_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 9998004	Date Collected: 09/22/2016 11:00	Matrix: WATER
Client Sample: 1668A Water	Date Received: 10/28/2016 14:15	
Client ID: 1609C98-002G		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/10/2016 09:25	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a_2-6		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 929.1 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB			1530	2150	pg/L	71.0	(25%-150%)
13C-205-OcCB			1900	2150	pg/L	88.3	(25%-150%)
13C-206-NoCB			1850	2150	pg/L	86.0	(25%-150%)
13C-208-NoCB			1720	2150	pg/L	80.1	(25%-150%)
13C-209-DeCB			1910	2150	pg/L	88.7	(25%-150%)
13C-28-TrCB			1290	2150	pg/L	59.8	(30%-135%)
13C-111-PeCB			1930	2150	pg/L	89.7	(30%-135%)
13C-178-HpCB			1930	2150	pg/L	89.8	(30%-135%)

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Quality Control Summary

PCB Congeners

Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017260	LCS for batch 33207	13C-1-MoCB		55.0	(15%-140%)
		13C-3-MoCB		51.8	(15%-140%)
		13C-4-DiCB		52.1	(30%-140%)
		13C-15-DiCB		89.3	(30%-140%)
		13C-19-TrCB		81.3	(30%-140%)
		13C-37-TrCB		72.9	(30%-140%)
		13C-54-TeCB		54.8	(30%-140%)
		13C-77-TeCB		94.6	(30%-140%)
		13C-81-TeCB		95.3	(30%-140%)
		13C-104-PeCB		58.4	(30%-140%)
		13C-105-PeCB		82.9	(30%-140%)
		13C-114-PeCB		80.7	(30%-140%)
		13C-118-PeCB		82.8	(30%-140%)
		13C-123-PeCB		84.1	(30%-140%)
		13C-126-PeCB		85.5	(30%-140%)
		13C-155-HxCB		66.4	(30%-140%)
		13C-156-HxCB	C	74.3	(30%-140%)
		13C-167-HxCB		76.9	(30%-140%)
		13C-169-HxCB		77.2	(30%-140%)
		13C-188-HpCB		77.6	(30%-140%)
		13C-189-HpCB		78.5	(30%-140%)
		13C-202-OcCB		84.9	(30%-140%)
		13C-205-OcCB		97.1	(30%-140%)
		13C-206-NoCB		101	(30%-140%)
		13C-208-NoCB		90.5	(30%-140%)
		13C-209-DeCB		108	(30%-140%)
13C-28-TrCB		63.8	(40%-125%)		
13C-111-PeCB		81.4	(40%-125%)		
13C-178-HpCB		85.5	(40%-125%)		
12017261	LCSD for batch 33207	13C-1-MoCB		52.3	(15%-140%)
		13C-3-MoCB		48.6	(15%-140%)
		13C-4-DiCB		49.2	(30%-140%)
		13C-15-DiCB		153 *	(30%-140%)
		13C-19-TrCB		97.5	(30%-140%)
		13C-37-TrCB		110	(30%-140%)
		13C-54-TeCB		55.8	(30%-140%)
		13C-77-TeCB		146 *	(30%-140%)
		13C-81-TeCB		146 *	(30%-140%)
		13C-104-PeCB		75.8	(30%-140%)
		13C-105-PeCB		126	(30%-140%)
		13C-114-PeCB		122	(30%-140%)
		13C-118-PeCB		124	(30%-140%)
		13C-123-PeCB		126	(30%-140%)
		13C-126-PeCB		134	(30%-140%)
		13C-155-HxCB		87.5	(30%-140%)
		13C-156-HxCB	C	110	(30%-140%)
		13C-167-HxCB		114	(30%-140%)
		13C-169-HxCB		117	(30%-140%)
		13C-188-HpCB		108	(30%-140%)
13C-189-HpCB		116	(30%-140%)		
13C-202-OcCB		122	(30%-140%)		
13C-205-OcCB		140	(30%-140%)		

PCB Congeners
Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017261	LCSD for batch 33207	13C-206-NoCB		146 *	(30%-140%)
		13C-208-NoCB		131	(30%-140%)
		13C-209-DeCB		158 *	(30%-140%)
		13C-28-TrCB		72.9	(40%-125%)
		13C-111-PeCB		101	(40%-125%)
		13C-178-HpCB		104	(40%-125%)
12017259	MB for batch 33207	13C-1-MoCB		33.1	(15%-150%)
		13C-3-MoCB		33.0	(15%-150%)
		13C-4-DiCB		31.7	(25%-150%)
		13C-15-DiCB		83.7	(25%-150%)
		13C-19-TrCB		59.1	(25%-150%)
		13C-37-TrCB		64.3	(25%-150%)
		13C-54-TeCB		36.1	(25%-150%)
		13C-77-TeCB		86.3	(25%-150%)
		13C-81-TeCB		85.3	(25%-150%)
		13C-104-PeCB		45.4	(25%-150%)
		13C-105-PeCB		75.7	(25%-150%)
		13C-114-PeCB		72.4	(25%-150%)
		13C-118-PeCB		74.1	(25%-150%)
		13C-123-PeCB		74.2	(25%-150%)
		13C-126-PeCB		81.2	(25%-150%)
		13C-155-HxCB		53.4	(25%-150%)
		13C-156-HxCB	C	67.7	(25%-150%)
		13C-167-HxCB		69.6	(25%-150%)
		13C-169-HxCB		72.5	(25%-150%)
		13C-188-HpCB		66.4	(25%-150%)
		13C-189-HpCB		71.0	(25%-150%)
13C-202-OcCB		75.9	(25%-150%)		
13C-205-OcCB		86.1	(25%-150%)		
13C-206-NoCB		89.2	(25%-150%)		
13C-208-NoCB		80.8	(25%-150%)		
13C-209-DeCB		96.6	(25%-150%)		
13C-28-TrCB		60.9	(30%-135%)		
13C-111-PeCB		81.0	(30%-135%)		
13C-178-HpCB		84.7	(30%-135%)		
9998001	1609609-001G	13C-1-MoCB		11.3 *	(15%-150%)
		13C-3-MoCB		12.3 *	(15%-150%)
		13C-4-DiCB		11.4 *	(25%-150%)
		13C-15-DiCB		31.9	(25%-150%)
		13C-19-TrCB		15.4 *	(25%-150%)
		13C-37-TrCB		41.7	(25%-150%)
		13C-54-TeCB		7.40 *	(25%-150%)
		13C-77-TeCB		81.6	(25%-150%)
		13C-81-TeCB		75.6	(25%-150%)
		13C-104-PeCB		9.85 *	(25%-150%)
		13C-105-PeCB		71.9	(25%-150%)
		13C-114-PeCB		65.7	(25%-150%)
		13C-118-PeCB		68.4	(25%-150%)
		13C-123-PeCB		67.9	(25%-150%)
		13C-126-PeCB		78.0	(25%-150%)
13C-155-HxCB		28.6	(25%-150%)		

PCB Congeners
Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9998001	1609609-001G	13C-156-HxCB	C	70.4	(25%-150%)
		13C-167-HxCB		72.0	(25%-150%)
		13C-169-HxCB		73.8	(25%-150%)
		13C-188-HpCB		63.5	(25%-150%)
		13C-189-HpCB		79.1	(25%-150%)
		13C-202-OcCB		78.4	(25%-150%)
		13C-205-OcCB		89.7	(25%-150%)
		13C-206-NoCB		88.1	(25%-150%)
		13C-208-NoCB		83.0	(25%-150%)
		13C-209-DeCB		89.8	(25%-150%)
		13C-28-TrCB		61.7	(30%-135%)
		13C-111-PeCB		81.8	(30%-135%)
		13C-178-HpCB		84.0	(30%-135%)
		9998002		1609609-002G	13C-1-MoCB
13C-3-MoCB	12.7 *		(15%-150%)		
13C-4-DiCB	11.9 *		(25%-150%)		
13C-15-DiCB	36.0		(25%-150%)		
13C-19-TrCB	17.6 *		(25%-150%)		
13C-37-TrCB	46.1		(25%-150%)		
13C-54-TeCB	8.41 *		(25%-150%)		
13C-77-TeCB	89.8		(25%-150%)		
13C-81-TeCB	83.6		(25%-150%)		
13C-104-PeCB	12.1 *		(25%-150%)		
13C-105-PeCB	79.2		(25%-150%)		
13C-114-PeCB	72.5		(25%-150%)		
13C-118-PeCB	75.2		(25%-150%)		
13C-123-PeCB	75.2		(25%-150%)		
13C-126-PeCB	84.4		(25%-150%)		
13C-155-HxCB	33.0		(25%-150%)		
13C-156-HxCB	73.9		(25%-150%)		
13C-167-HxCB	75.9		(25%-150%)		
13C-169-HxCB	77.4		(25%-150%)		
13C-188-HpCB	68.4		(25%-150%)		
13C-189-HpCB	82.9		(25%-150%)		
13C-202-OcCB	81.7		(25%-150%)		
13C-205-OcCB	93.4		(25%-150%)		
13C-206-NoCB	90.4		(25%-150%)		
13C-208-NoCB	86.0		(25%-150%)		
13C-209-DeCB	92.1		(25%-150%)		
13C-28-TrCB	63.8	(30%-135%)			
13C-111-PeCB	86.0	(30%-135%)			
13C-178-HpCB	87.1	(30%-135%)			
9998003	1609C98-001G	13C-1-MoCB	C	9.80 *	(15%-150%)
		13C-3-MoCB		11.2 *	(15%-150%)
		13C-4-DiCB		10.2 *	(25%-150%)
		13C-15-DiCB		30.3	(25%-150%)
		13C-19-TrCB		14.3 *	(25%-150%)
		13C-37-TrCB		35.8	(25%-150%)
		13C-54-TeCB		6.41 *	(25%-150%)
		13C-77-TeCB		79.4	(25%-150%)
		13C-81-TeCB		70.6	(25%-150%)

PCB Congeners
Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9998003	1609C98-001G	13C-104-PeCB		5.91 *	(25%-150%)
		13C-105-PeCB		71.8	(25%-150%)
		13C-114-PeCB		62.6	(25%-150%)
		13C-118-PeCB		65.6	(25%-150%)
		13C-123-PeCB		64.4	(25%-150%)
		13C-126-PeCB		80.6	(25%-150%)
		13C-155-HxCB		19.3 *	(25%-150%)
		13C-156-HxCB	C	71.5	(25%-150%)
		13C-167-HxCB		72.0	(25%-150%)
		13C-169-HxCB		76.1	(25%-150%)
		13C-188-HpCB		57.1	(25%-150%)
		13C-189-HpCB		81.8	(25%-150%)
		13C-202-OcCB		76.7	(25%-150%)
		13C-205-OcCB		91.6	(25%-150%)
		13C-206-NoCB		90.9	(25%-150%)
		13C-208-NoCB		82.8	(25%-150%)
		13C-209-DeCB		93.1	(25%-150%)
		13C-28-TrCB		61.0	(30%-135%)
		13C-111-PeCB		81.9	(30%-135%)
		13C-178-HpCB		83.1	(30%-135%)
9998004	1609C98-002G	13C-1-MoCB		8.15 *	(15%-150%)
		13C-3-MoCB		8.84 *	(15%-150%)
		13C-4-DiCB		8.56 *	(25%-150%)
		13C-15-DiCB		26.3	(25%-150%)
		13C-19-TrCB		12.5 *	(25%-150%)
		13C-37-TrCB		26.6	(25%-150%)
		13C-54-TeCB		5.25 *	(25%-150%)
		13C-77-TeCB		66.8	(25%-150%)
		13C-81-TeCB		55.6	(25%-150%)
		13C-104-PeCB		3.92 *	(25%-150%)
		13C-105-PeCB		65.5	(25%-150%)
		13C-114-PeCB		54.6	(25%-150%)
		13C-118-PeCB		57.2	(25%-150%)
		13C-123-PeCB		55.5	(25%-150%)
		13C-126-PeCB		76.7	(25%-150%)
		13C-155-HxCB		10.8 *	(25%-150%)
		13C-156-HxCB	C	67.8	(25%-150%)
		13C-167-HxCB		68.2	(25%-150%)
		13C-169-HxCB		72.7	(25%-150%)
		13C-188-HpCB		45.5	(25%-150%)
13C-189-HpCB		77.8	(25%-150%)		
13C-202-OcCB		71.0	(25%-150%)		
13C-205-OcCB		88.3	(25%-150%)		
13C-206-NoCB		86.0	(25%-150%)		
13C-208-NoCB		80.1	(25%-150%)		
13C-209-DeCB		88.7	(25%-150%)		
13C-28-TrCB		59.8	(30%-135%)		
13C-111-PeCB		89.7	(30%-135%)		
13C-178-HpCB		89.8	(30%-135%)		

* Recovery outside Acceptance Limits

PCB Congeners
Surrogate Recovery Report

SDG Number: 1609609_1609C98

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
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* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 1609609_1609C98
 Client ID: LCS for batch 33207
 Lab Sample ID: 12017260
 Instrument: HRP791
 Analyst: MJC

Sample Type: Laboratory Control Sample
 Matrix: WATER
 Analysis Date: 11/09/2016 16:41 Dilution: 1
 Prep Batch ID:33207
 Batch ID: 33209

CAS No.	Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS PCB-1	500	518	104	50-150
2051-62-9	LCS PCB-3	500	604	121	50-150
13029-08-8	LCS PCB-4	500	499	99.7	50-150
2050-68-2	LCS PCB-15	500	523	105	50-150
38444-73-4	LCS PCB-19	500	494	98.8	50-150
38444-90-5	LCS PCB-37	500	484	96.8	50-150
15968-05-5	LCS PCB-54	1000	1000	100	50-150
32598-13-3	LCS PCB-77	1000	942	94.2	50-150
70362-50-4	LCS PCB-81	1000	1120	112	50-150
56558-16-8	LCS PCB-104	1000	1060	106	50-150
32598-14-4	LCS PCB-105	1000	1180	118	50-150
74472-37-0	LCS PCB-114	1000	1020	102	50-150
31508-00-6	LCS PCB-118	1000	977	97.7	50-150
65510-44-3	LCS PCB-123	1000	916	91.6	50-150
57465-28-8	LCS PCB-126	1000	1010	101	50-150
33979-03-2	LCS PCB-155	1000	980	98	50-150
38380-08-4	LCS PCB-156/PCB-157	2000	C 2230	111	50-150
52663-72-6	LCS PCB-167	1000	1150	115	50-150
32774-16-6	LCS PCB-169	1000	1010	101	50-150
74487-85-7	LCS PCB-188	1000	972	97.2	50-150
39635-31-9	LCS PCB-189	1000	971	97.1	50-150
2136-99-4	LCS PCB-202	1500	1430	95	50-150
74472-53-0	LCS PCB-205	1500	1290	85.7	50-150
40186-72-9	LCS PCB-206	1500	1410	93.7	50-150
52663-77-1	LCS PCB-208	1500	1490	99.4	50-150
2051-24-3	LCS PCB-209	1500	1380	91.8	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 1609609_1609C98
Client ID: LCSD for batch 33207
Lab Sample ID: 12017261
Instrument: HRP791
Analyst: MJC

Sample Type: Laboratory Control Sample Duplicate
Matrix: WATER
Analysis Date: 11/09/2016 17:47
Prep Batch ID:33207
Batch ID: 33209
Dilution: 1

CAS No.	Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD PCB-1	500	454	90.9	50-150	13.2	0-20
2051-62-9	LCSD PCB-3	500	544	109	50-150	10.5	0-20
13029-08-8	LCSD PCB-4	500	424	84.7	50-150	16.2	0-20
2050-68-2	LCSD PCB-15	500	473	94.6	50-150	9.99	0-20
38444-73-4	LCSD PCB-19	500	447	89.5	50-150	9.89	0-20
38444-90-5	LCSD PCB-37	500	420	84.1	50-150	14.1	0-20
15968-05-5	LCSD PCB-54	1000	876	87.6	50-150	13.3	0-20
32598-13-3	LCSD PCB-77	1000	826	82.6	50-150	13.2	0-20
70362-50-4	LCSD PCB-81	1000	968	96.8	50-150	14.7	0-20
56558-16-8	LCSD PCB-104	1000	920	92	50-150	13.9	0-20
32598-14-4	LCSD PCB-105	1000	1030	103	50-150	12.9	0-20
74472-37-0	LCSD PCB-114	1000	888	88.8	50-150	13.9	0-20
31508-00-6	LCSD PCB-118	1000	842	84.2	50-150	14.9	0-20
65510-44-3	LCSD PCB-123	1000	793	79.3	50-150	14.4	0-20
57465-28-8	LCSD PCB-126	1000	906	90.6	50-150	10.9	0-20
33979-03-2	LCSD PCB-155	1000	873	87.3	50-150	11.6	0-20
38380-08-4	LCSD PCB-156/PCB-157	2000	C 1920	95.9	50-150	14.9	0-20
52663-72-6	LCSD PCB-167	1000	996	99.6	50-150	14.4	0-20
32774-16-6	LCSD PCB-169	1000	864	86.4	50-150	15.6	0-20
74487-85-7	LCSD PCB-188	1000	834	83.4	50-150	15.3	0-20
39635-31-9	LCSD PCB-189	1000	831	83.1	50-150	15.5	0-20
2136-99-4	LCSD PCB-202	1500	1220	81.3	50-150	15.5	0-20
74472-53-0	LCSD PCB-205	1500	1110	74.2	50-150	14.4	0-20
40186-72-9	LCSD PCB-206	1500	1200	79.8	50-150	16.1	0-20
52663-77-1	LCSD PCB-208	1500	1290	85.7	50-150	14.8	0-20
2051-24-3	LCSD PCB-209	1500	1190	79.2	50-150	14.8	0-20

Method Blank Summary

SDG Number: 1609609_1609C98
 Client ID: MB for batch 33207
 Lab Sample ID: 12017259
 Column:

Client: NMED001
 Instrument ID: HRP791
 Prep Date: 08-NOV-16

Matrix: WATER
 Data File: c09nov16a-4
 Analyzed: 11/09/16 18:53

This method blank applies to the following samples and quality control samples:

Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01 LCS for batch 33207	12017260	c09nov16a-2	11/09/16	1641
02 LCSD for batch 33207	12017261	c09nov16a-3	11/09/16	1747
03 1609609-001G	9998001	c09nov16a_2-3	11/10/16	0606
04 1609609-002G	9998002	c09nov16a_2-4	11/10/16	0713
05 1609C98-001G	9998003	c09nov16a_2-5	11/10/16	0819
06 1609C98-002G	9998004	c09nov16a_2-6	11/10/16	0925

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 12017259
 Client Sample: QC for batch 33207
 Client ID: MB for batch 33207
 Batch ID: 33209
 Run Date: 11/09/2016 18:53
 Data File: c09nov16a-4
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 1000 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1	KU	5.92	4.76	pg/L	4.76	40.0
2051-61-8	PCB-2	U	4.74	4.74	pg/L	4.74	40.0
2051-62-9	PCB-3	U	4.62	4.62	pg/L	4.62	40.0
13029-08-8	PCB-4	U	5.28	5.28	pg/L	5.28	40.0
16605-91-7	PCB-5	U	4.24	4.24	pg/L	4.24	40.0
25569-80-6	PCB-6	U	3.04	3.04	pg/L	3.04	40.0
33284-50-3	PCB-7	U	3.44	3.44	pg/L	3.44	40.0
34883-43-7	PCB-8	J	10.3	6.58	pg/L	2.76	40.0
34883-39-1	PCB-9	U	3.44	3.44	pg/L	3.44	20.0
33146-45-1	PCB-10	U	1.86	1.86	pg/L	1.86	20.0
2050-67-1	PCB-11		317	312	pg/L	3.70	40.0
PCB-12/13	PCB-12/PCB-13	CU	3.88	3.88	pg/L	3.88	40.0
34883-41-5	PCB-14	U	3.44	3.44	pg/L	3.44	40.0
2050-68-2	PCB-15	U	7.74	3.36	pg/L	3.36	40.0
38444-78-9	PCB-16	U	1.98	1.98	pg/L	1.98	20.0
37680-66-3	PCB-17	U	4.12	1.74	pg/L	1.74	20.0
PCB-18/30	PCB-18/PCB-30	CJ	6.62	4.31	pg/L	1.46	40.0
38444-73-4	PCB-19	U	2.36	2.36	pg/L	2.36	20.0
PCB-20/28	PCB-20/PCB-28	CJ	17.6	15.2	pg/L	1.30	40.0
PCB-21/33	PCB-21/PCB-33	CJ	10.3	8.17	pg/L	1.34	40.0
38444-85-8	PCB-22	U	1.44	1.44	pg/L	1.44	20.0
55720-44-0	PCB-23	U	1.36	1.36	pg/L	1.36	20.0
55702-45-9	PCB-24	U	2.92	1.4	pg/L	1.40	20.0
55712-37-3	PCB-25	U	1.26	1.26	pg/L	1.26	20.0
PCB-26/29	PCB-26/PCB-29	CU	1.26	1.26	pg/L	1.26	40.0
38444-76-7	PCB-27	U	1.26	1.26	pg/L	1.26	20.0
16606-02-3	PCB-31	U	1.18	1.18	pg/L	1.18	20.0
38444-77-8	PCB-32	U	1.14	1.14	pg/L	1.14	20.0
37680-68-5	PCB-34	U	1.3	1.3	pg/L	1.30	20.0
37680-69-6	PCB-35	U	3.66	2.76	pg/L	2.76	40.0
38444-87-0	PCB-36	U	3.20	2.44	pg/L	2.44	20.0
38444-90-5	PCB-37	U	4.98	2.64	pg/L	2.64	20.0

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 18:53	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
53555-66-1	PCB-38	U	2.52	2.52	pg/L	2.52	20.0
38444-88-1	PCB-39	U	2.56	2.56	pg/L	2.56	20.0
PCB-40/71	PCB-40/PCB-71	CU	2.32	2.32	pg/L	2.32	40.0
52663-59-9	PCB-41	U	3.1	3.1	pg/L	3.10	40.0
36559-22-5	PCB-42	U	2.9	2.9	pg/L	2.90	40.0
70362-46-8	PCB-43	U	2.98	2.98	pg/L	2.98	40.0
PCB-44/47/65	PCB-44/PCB-65/PCB-47	CU	2.4	2.4	pg/L	2.40	60.0
PCB-45/51	PCB-45/PCB-51	CU	2.26	1.1	pg/L	1.10	40.0
41464-47-5	PCB-46	U	1.16	1.16	pg/L	1.16	20.0
70362-47-9	PCB-48	U	2.72	2.72	pg/L	2.72	20.0
PCB-49/69	PCB-49/PCB-69	CU	4.96	2.24	pg/L	2.24	40.0
PCB-50/53	PCB-50/PCB-53	CU	1.08	1.04	pg/L	1.04	40.0
35693-99-3	PCB-52	U	2.38	2.38	pg/L	2.38	20.0
15968-05-5	PCB-54	U	1.4	1.4	pg/L	1.40	20.0
74338-24-2	PCB-55	U	1.52	1.52	pg/L	1.52	20.0
41464-43-1	PCB-56	U	4.32	1.58	pg/L	1.58	20.0
70424-67-8	PCB-57	U	1.34	1.34	pg/L	1.34	20.0
41464-49-7	PCB-58	U	1.5	1.5	pg/L	1.50	20.0
PCB-59/62/75	PCB-59/PCB-62/PCB-75	CU	1.9	1.9	pg/L	1.90	60.0
33025-41-1	PCB-60	U	1.5	1.5	pg/L	1.50	20.0
PCB-61-76	PCB-61/PCB-70/PCB-74/PCB-76	CJ	16.0	13.2	pg/L	1.42	80.0
74472-34-7	PCB-63	U	1.28	1.28	pg/L	1.28	20.0
52663-58-8	PCB-64	U	2.04	2.04	pg/L	2.04	20.0
32598-10-0	PCB-66	J	7.58	4.8	pg/L	1.34	20.0
73575-53-8	PCB-67	U	1.2	1.2	pg/L	1.20	20.0
73575-52-7	PCB-68	U	1.32	1.32	pg/L	1.32	20.0
41464-42-0	PCB-72	U	1.26	1.26	pg/L	1.26	20.0
74338-23-1	PCB-73	U	2.1	2.1	pg/L	2.10	20.0
32598-13-3	PCB-77	U	1.68	1.32	pg/L	1.32	20.0
70362-49-1	PCB-78	U	1.44	1.44	pg/L	1.44	20.0
41464-48-6	PCB-79	U	1.22	1.22	pg/L	1.22	20.0
33284-52-5	PCB-80	U	1.2	1.2	pg/L	1.20	20.0

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 18:53	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
70362-50-4	PCB-81	U	1.28	1.28	pg/L	1.28	20.0
52663-62-4	PCB-82	U	1.62	1.62	pg/L	1.62	20.0
60145-20-2	PCB-83	U	1.74	1.74	pg/L	1.74	20.0
52663-60-2	PCB-84	U	1.6	1.6	pg/L	1.60	20.0
PCB-85-117	PCB-85/PCB-116/PCB-117	CU	1.22	1.22	pg/L	1.22	60.0
PCB-86-125	PCB-86/PCB-87/PCB-97/PCB-109/PCB-119/PCB-	CJ	4.42	1.3	pg/L	1.30	120
PCB-88/91	PCB-88/PCB-91	CU	1.52	1.52	pg/L	1.52	40.0
73575-57-2	PCB-89	U	1.52	1.52	pg/L	1.52	20.0
PCB-90-113	PCB-90/PCB-101/PCB-113	CJ	5.62	2.56	pg/L	1.28	60.0
52663-61-3	PCB-92	U	1.46	1.46	pg/L	1.46	20.0
PCB-93/100	PCB-93/PCB-100	CU	1.5	1.5	pg/L	1.50	40.0
73575-55-0	PCB-94	U	1.66	1.66	pg/L	1.66	20.0
38379-99-6	PCB-95	U	3.20	1.4	pg/L	1.40	20.0
73575-54-9	PCB-96	U	.68	.68	pg/L	0.680	20.0
PCB-98/102	PCB-98/PCB-102	CU	1.6	1.6	pg/L	1.60	40.0
38380-01-7	PCB-99	U	2.48	1.42	pg/L	1.42	20.0
60145-21-3	PCB-103	U	1.32	1.32	pg/L	1.32	20.0
56558-16-8	PCB-104	U	.94	.94	pg/L	0.940	20.0
32598-14-4	PCB-105	U	1.84	1.84	pg/L	1.84	20.0
70424-69-0	PCB-106	U	1.66	1.66	pg/L	1.66	20.0
70424-68-9	PCB-107	U	1.56	1.56	pg/L	1.56	20.0
PCB-108/124	PCB-108/PCB-124	CU	1.78	1.78	pg/L	1.78	40.0
PCB-110/115	PCB-110/PCB-115	CJ	4.54	1.57	pg/L	1.22	40.0
39635-32-0	PCB-111	U	1.16	1.16	pg/L	1.16	20.0
74472-36-9	PCB-112	U	1.04	1.04	pg/L	1.04	20.0
74472-37-0	PCB-114	U	1.8	1.8	pg/L	1.80	20.0
31508-00-6	PCB-118	U	4.12	1.7	pg/L	1.70	20.0
68194-12-7	PCB-120	U	1.04	1.04	pg/L	1.04	20.0
56558-18-0	PCB-121	U	1.18	1.18	pg/L	1.18	20.0
76842-07-4	PCB-122	U	1.78	1.78	pg/L	1.78	20.0
65510-44-3	PCB-123	U	1.76	1.76	pg/L	1.76	20.0
57465-28-8	PCB-126	U	1.98	1.98	pg/L	1.98	20.0

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 18:53	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
39635-33-1	PCB-127	U	1.68	1.68	pg/L	1.68	20.0
PCB-128/166	PCB-128/PCB-166	CU	1.3	1.3	pg/L	1.30	40.0
PCB-129-163	PCB-129/PCB-138/PCB-163	CJ	6.20	1.98	pg/L	1.46	60.0
52663-66-8	PCB-130	U	1.58	1.58	pg/L	1.58	20.0
61798-70-7	PCB-131	U	1.9	1.9	pg/L	1.90	20.0
38380-05-1	PCB-132	U	2.36	1.72	pg/L	1.72	20.0
35694-04-3	PCB-133	U	1.52	1.52	pg/L	1.52	20.0
52704-70-8	PCB-134	U	2.14	2.14	pg/L	2.14	20.0
PCB-135/151	PCB-135/PCB-151	CU	2.82	1.04	pg/L	1.04	40.0
38411-22-2	PCB-136	U	0.860	.76	pg/L	0.760	20.0
35694-06-5	PCB-137	U	1.64	1.64	pg/L	1.64	20.0
PCB-139/140	PCB-139/PCB-140	CU	1.46	1.46	pg/L	1.46	40.0
52712-04-6	PCB-141	U	1.4	1.4	pg/L	1.40	20.0
41411-61-4	PCB-142	U	1.62	1.62	pg/L	1.62	20.0
68194-15-0	PCB-143	U	1.44	1.44	pg/L	1.44	20.0
68194-14-9	PCB-144	U	.96	.96	pg/L	0.960	20.0
74472-40-5	PCB-145	U	.84	.84	pg/L	0.840	20.0
51908-16-8	PCB-146	U	1.2	1.2	pg/L	1.20	20.0
PCB-147/149	PCB-147/PCB-149	CU	4.98	1.44	pg/L	1.44	40.0
74472-41-6	PCB-148	U	.96	.96	pg/L	0.960	20.0
68194-08-1	PCB-150	U	.82	.82	pg/L	0.820	20.0
68194-09-2	PCB-152	U	.72	.72	pg/L	0.720	20.0
PCB-153/168	PCB-153/PCB-168	CU	4.28	1.22	pg/L	1.22	40.0
60145-22-4	PCB-154	U	.86	.86	pg/L	0.860	20.0
33979-03-2	PCB-155	U	.76	.76	pg/L	0.760	20.0
PCB-156/157	PCB-156/PCB-157	CU	2.14	1.48	pg/L	1.48	40.0
74472-42-7	PCB-158	U	1	1	pg/L	1.00	20.0
39635-35-3	PCB-159	U	1.1	1.1	pg/L	1.10	20.0
41411-62-5	PCB-160	U	1.26	1.26	pg/L	1.26	20.0
74472-43-8	PCB-161	U	1.06	1.06	pg/L	1.06	20.0
39635-34-2	PCB-162	U	1.16	1.16	pg/L	1.16	20.0
74472-45-0	PCB-164	U	1.08	1.08	pg/L	1.08	20.0

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	Instrument: HRP791
Run Date: 11/09/2016 18:53	Analyst: MJC	Dilution: 1
Data File: e09nov16a-4		Prep SOP Ref: CF-OA-E-001
Prep Batch: 33207	Prep Method: SW846 3520C	
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-46-1	PCB-165	U	1.32	1.32	pg/L	1.32	20.0
52663-72-6	PCB-167	U	1.14	1.1	pg/L	1.10	20.0
32774-16-6	PCB-169	U	1.2	1.2	pg/L	1.20	20.0
35065-30-6	PCB-170	U	2.24	1.08	pg/L	1.08	20.0
PCB-171/173	PCB-171/PCB-173	CU	1.20	1.1	pg/L	1.10	40.0
52663-74-8	PCB-172	U	1.1	1.1	pg/L	1.10	20.0
38411-25-5	PCB-174	U	3.08	1.04	pg/L	1.04	20.0
40186-70-7	PCB-175	U	.8	.8	pg/L	0.800	20.0
52663-65-7	PCB-176	U	.64	.64	pg/L	0.640	20.0
52663-70-4	PCB-177	U	1.22	1.12	pg/L	1.12	20.0
52663-67-9	PCB-178	U	.84	.84	pg/L	0.840	20.0
52663-64-6	PCB-179	U	0.660	.64	pg/L	0.640	20.0
PCB-180/193	PCB-180/PCB-193	CU	.92	.92	pg/L	0.920	40.0
74472-47-2	PCB-181	U	1.14	1.14	pg/L	1.14	20.0
60145-23-5	PCB-182	U	.78	.78	pg/L	0.780	20.0
PCB-183/185	PCB-183/PCB-185	CU	1.78	1.06	pg/L	1.06	40.0
74472-48-3	PCB-184	U	.64	.64	pg/L	0.640	20.0
74472-49-4	PCB-186	U	.72	.72	pg/L	0.720	20.0
52663-68-0	PCB-187	U	3.04	.84	pg/L	0.840	20.0
74487-85-7	PCB-188	U	.68	.68	pg/L	0.680	20.0
39635-31-9	PCB-189	U	1.30	1.08	pg/L	1.08	20.0
41411-64-7	PCB-190	U	.82	.82	pg/L	0.820	20.0
74472-50-7	PCB-191	U	.8	.8	pg/L	0.800	20.0
74472-51-8	PCB-192	U	.96	.96	pg/L	0.960	20.0
35694-08-7	PCB-194	U	1.52	.72	pg/L	0.720	20.0
52663-78-2	PCB-195	U	.78	.78	pg/L	0.780	20.0
42740-50-1	PCB-196	U	.8	.8	pg/L	0.800	20.0
PCB-197/200	PCB-197/PCB-200	CU	.66	.66	pg/L	0.660	40.0
PCB-198/199	PCB-198/PCB-199	CKU	1.18	.84	pg/L	0.840	40.0
40186-71-8	PCB-201	U	.64	.64	pg/L	0.640	20.0
2136-99-4	PCB-202	U	.7	.7	pg/L	0.700	20.0
52663-76-0	PCB-203	U	0.920	.82	pg/L	0.820	20.0

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 18:53	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
74472-52-9	PCB-204	U	.64	.64	pg/L	0.640	20.0
74472-53-0	PCB-205	U	0.640	.62	pg/L	0.620	20.0
40186-72-9	PCB-206	U	1.06	1.06	pg/L	1.06	20.0
52663-79-3	PCB-207	U	.78	.78	pg/L	0.780	20.0
52663-77-1	PCB-208	U	.84	.84	pg/L	0.840	20.0
2051-24-3	PCB-209	U	1.22	.68	pg/L	0.680	20.0
27323-18-8	Total monoCB	U	0	0	pg/L		
25512-42-9	Total diCB		335	319	pg/L		
25323-68-6	Total triCB		53.5	27.7	pg/L		
26914-33-0	Total tetraCB		37.9	18	pg/L		
25429-29-2	Total pentaCB		24.4	5.43	pg/L		
26601-64-9	Total hexaCB		24.8	1.98	pg/L		
28655-71-2	Total heptaCB	U	14.5	0	pg/L		
55722-26-4	Total octaCB	U	3.08	0	pg/L		
53742-07-7	Total nonaCB	U	0	0	pg/L		
DECACB(Tot)	Total decaCB	U	1.22	0	pg/L		
1336-36-3	Total PCB		495	372	pg/L		
TEQ 7	TOTAL (TEQ ND=1/2 DL)_2005		0.118		pg/L		
TEQ 8	TOTAL (TEQ ND=0)_2005		0.000429		pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		661	2000	pg/L	33.1	(15%-150%)
13C-3-MoCB		660	2000	pg/L	33.0	(15%-150%)
13C-4-DiCB		635	2000	pg/L	31.7	(25%-150%)
13C-15-DiCB		1670	2000	pg/L	83.7	(25%-150%)
13C-19-TrCB		1180	2000	pg/L	59.1	(25%-150%)
13C-37-TrCB		1290	2000	pg/L	64.3	(25%-150%)
13C-54-TeCB		721	2000	pg/L	36.1	(25%-150%)
13C-77-TeCB		1730	2000	pg/L	86.3	(25%-150%)
13C-81-TeCB		1710	2000	pg/L	85.3	(25%-150%)
13C-104-PeCB		908	2000	pg/L	45.4	(25%-150%)
13C-105-PeCB		1510	2000	pg/L	75.7	(25%-150%)
13C-114-PeCB		1450	2000	pg/L	72.4	(25%-150%)
13C-118-PeCB		1480	2000	pg/L	74.1	(25%-150%)
13C-123-PeCB		1480	2000	pg/L	74.2	(25%-150%)
13C-126-PeCB		1620	2000	pg/L	81.2	(25%-150%)
13C-155-HxCB		1070	2000	pg/L	53.4	(25%-150%)
13C-156-HxCB	C	2710	4000	pg/L	67.7	(25%-150%)
13C-167-HxCB		1390	2000	pg/L	69.6	(25%-150%)
13C-169-HxCB		1450	2000	pg/L	72.5	(25%-150%)
13C-188-HpCB		1330	2000	pg/L	66.4	(25%-150%)
13C-189-HpCB		1420	2000	pg/L	71.0	(25%-150%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017259		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: MB for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 18:53	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-4		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB			1520	2000	pg/L	75.9	(25%-150%)
13C-205-OcCB			1720	2000	pg/L	86.1	(25%-150%)
13C-206-NoCB			1780	2000	pg/L	89.2	(25%-150%)
13C-208-NoCB			1620	2000	pg/L	80.8	(25%-150%)
13C-209-DeCB			1930	2000	pg/L	96.6	(25%-150%)
13C-28-TrCB			1220	2000	pg/L	60.9	(30%-135%)
13C-111-PeCB			1620	2000	pg/L	81.0	(30%-135%)
13C-178-HpCB			1690	2000	pg/L	84.7	(30%-135%)

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**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98
 Lab Sample ID: 12017260
 Client Sample: QC for batch 33207
 Client ID: LCS for batch 33207
 Batch ID: 33209
 Run Date: 11/09/2016 16:41
 Data File: r09nov16a-2
 Prep Batch: 33207
 Prep Date: 08-NOV-16

Client: NMED001
 Method: EPA Method 1668A HS
 Analyst: MJC
 Prep Method: SW846 3520C
 Prep Aliquot: 1000 mL

Project: NMED00113
 Matrix: WATER
 Prep Basis: As Received
 Instrument: HRP791
 Dilution: 1
 Prep SOP Ref: CF-OA-E-001

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1		522	518	pg/L	5.74	40.0
2051-62-9	PCB-3		606	604	pg/L	4.96	40.0
13029-08-8	PCB-4		508	499	pg/L	4.28	40.0
2050-68-2	PCB-15		528	523	pg/L	4.74	40.0
38444-73-4	PCB-19		497	494	pg/L	2.40	20.0
38444-90-5	PCB-37		487	484	pg/L	6.88	20.0
15968-05-5	PCB-54		1000	1000	pg/L	1.16	20.0
32598-13-3	PCB-77		945	942	pg/L	4.18	20.0
70362-50-4	PCB-81		1120	1120	pg/L	3.92	20.0
56558-16-8	PCB-104		1060	1060	pg/L	1.18	20.0
32598-14-4	PCB-105		1180	1180	pg/L	5.10	20.0
74472-37-0	PCB-114		1020	1020	pg/L	5.02	20.0
31508-00-6	PCB-118		981	977	pg/L	4.70	20.0
65510-44-3	PCB-123		920	916	pg/L	4.86	20.0
57465-28-8	PCB-126		1020	1010	pg/L	5.84	20.0
33979-03-2	PCB-155		983	980	pg/L	0.720	20.0
PCB-156/157	PCB-156/PCB-157	C	2230	2230	pg/L	6.24	40.0
52663-72-6	PCB-167		1150	1150	pg/L	4.52	20.0
32774-16-6	PCB-169		1020	1010	pg/L	5.24	20.0
74487-85-7	PCB-188		975	972	pg/L	0.920	20.0
39635-31-9	PCB-189		977	971	pg/L	2.34	20.0
2136-99-4	PCB-202		1430	1430	pg/L	1.02	20.0
74472-53-0	PCB-205		1290	1290	pg/L	1.32	20.0
40186-72-9	PCB-206		1410	1410	pg/L	1.42	20.0
52663-77-1	PCB-208		1500	1490	pg/L	1.12	20.0
2051-24-3	PCB-209		1380	1380	pg/L	0.880	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1100	2000	pg/L	55.0	(15%-140%)
13C-3-MoCB		1040	2000	pg/L	51.8	(15%-140%)
13C-4-DiCB		1040	2000	pg/L	52.1	(30%-140%)
13C-15-DiCB		1790	2000	pg/L	89.3	(30%-140%)
13C-19-TrCB		1630	2000	pg/L	81.3	(30%-140%)
13C-37-TrCB		1460	2000	pg/L	72.9	(30%-140%)
13C-54-TeCB		1100	2000	pg/L	54.8	(30%-140%)
13C-77-TeCB		1890	2000	pg/L	94.6	(30%-140%)
13C-81-TeCB		1910	2000	pg/L	95.3	(30%-140%)
13C-104-PeCB		1170	2000	pg/L	58.4	(30%-140%)
13C-105-PeCB		1660	2000	pg/L	82.9	(30%-140%)
13C-114-PeCB		1610	2000	pg/L	80.7	(30%-140%)
13C-118-PeCB		1660	2000	pg/L	82.8	(30%-140%)
13C-123-PeCB		1680	2000	pg/L	84.1	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

Page 2 of 2

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017260		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: LCS for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	Instrument: HRP791
Run Date: 11/09/2016 16:41	Analyst: MJC	Dilution: 1
Data File: c09nov16a-2		Prep SOP Ref: CF-OA-E-001
Prep Batch: 33207	Prep Method: SW846 3520C	
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB			1710	2000	pg/L	85.5	(30%-140%)
13C-155-HxCB			1330	2000	pg/L	66.4	(30%-140%)
13C-156-HxCB		C	2970	4000	pg/L	74.3	(30%-140%)
13C-167-HxCB			1540	2000	pg/L	76.9	(30%-140%)
13C-169-HxCB			1540	2000	pg/L	77.2	(30%-140%)
13C-188-HpCB			1550	2000	pg/L	77.6	(30%-140%)
13C-189-HpCB			1570	2000	pg/L	78.5	(30%-140%)
13C-202-OcCB			1700	2000	pg/L	84.9	(30%-140%)
13C-205-OcCB			1940	2000	pg/L	97.1	(30%-140%)
13C-206-NoCB			2010	2000	pg/L	101	(30%-140%)
13C-208-NoCB			1810	2000	pg/L	90.5	(30%-140%)
13C-209-DeCB			2160	2000	pg/L	108	(30%-140%)
13C-28-TrCB			1280	2000	pg/L	63.8	(40%-125%)
13C-111-PeCB			1630	2000	pg/L	81.4	(40%-125%)
13C-178-HpCB			1710	2000	pg/L	85.5	(40%-125%)

Comments:

- B** The target analyte was detected in the associated blank.
C Congener has coeluters. When Cxxx, refer to congener number xxx for data

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017261		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: LCSD for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 17:47	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-3		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parname	Qual	Result	MBCR	Units	EDL	PQL
2051-60-7	PCB-1		458	454	pg/L	5.08	40.0
2051-62-9	PCB-3		546	544	pg/L	4.68	40.0
13029-08-8	PCB-4		433	424	pg/L	5.84	40.0
2050-68-2	PCB-15		478	473	pg/L	3.62	40.0
38444-73-4	PCB-19		451	447	pg/L	2.06	20.0
38444-90-5	PCB-37		423	420	pg/L	2.02	20.0
15968-05-5	PCB-54		879	876	pg/L	1.08	20.0
32598-13-3	PCB-77		829	826	pg/L	2.42	20.0
70362-50-4	PCB-81		970	968	pg/L	2.34	20.0
56558-16-8	PCB-104		923	920	pg/L	0.680	20.0
32598-14-4	PCB-105		1040	1030	pg/L	3.62	20.0
74472-37-0	PCB-114		892	888	pg/L	3.56	20.0
31508-00-6	PCB-118		845	842	pg/L	3.34	20.0
65510-44-3	PCB-123		797	793	pg/L	3.50	20.0
57465-28-8	PCB-126		910	906	pg/L	3.98	20.0
33979-03-2	PCB-155		876	873	pg/L	0.540	20.0
PCB-156/157	PCB-156/PCB-157	C	1920	1920	pg/L	3.62	40.0
52663-72-6	PCB-167		999	996	pg/L	2.72	20.0
32774-16-6	PCB-169		869	864	pg/L	3.00	20.0
74487-85-7	PCB-188		837	834	pg/L	0.560	20.0
39635-31-9	PCB-189		837	831	pg/L	1.20	20.0
2136-99-4	PCB-202		1220	1220	pg/L	0.680	20.0
74472-53-0	PCB-205		1120	1110	pg/L	0.800	20.0
40186-72-9	PCB-206		1200	1200	pg/L	0.900	20.0
52663-77-1	PCB-208		1290	1290	pg/L	0.740	20.0
2051-24-3	PCB-209		1200	1190	pg/L	0.500	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1050	2000	pg/L	52.3	(15%-140%)
13C-3-MoCB		971	2000	pg/L	48.6	(15%-140%)
13C-4-DiCB		984	2000	pg/L	49.2	(30%-140%)
13C-15-DiCB		3070	2000	pg/L	153 *	(30%-140%)
13C-19-TrCB		1950	2000	pg/L	97.5	(30%-140%)
13C-37-TrCB		2200	2000	pg/L	110	(30%-140%)
13C-54-TeCB		1120	2000	pg/L	55.8	(30%-140%)
13C-77-TeCB		2920	2000	pg/L	146 *	(30%-140%)
13C-81-TeCB		2920	2000	pg/L	146 *	(30%-140%)
13C-104-PeCB		1520	2000	pg/L	75.8	(30%-140%)
13C-105-PeCB		2520	2000	pg/L	126	(30%-140%)
13C-114-PeCB		2440	2000	pg/L	122	(30%-140%)
13C-118-PeCB		2480	2000	pg/L	124	(30%-140%)
13C-123-PeCB		2510	2000	pg/L	126	(30%-140%)

**PCB Congeners
Certificate of Analysis
Sample Summary**

SDG Number: 1609609_1609C98	Client: NMED001	Project: NMED00113
Lab Sample ID: 12017261		Matrix: WATER
Client Sample: QC for batch 33207		
Client ID: LCSD for batch 33207		Prep Basis: As Received
Batch ID: 33209	Method: EPA Method 1668A HS	
Run Date: 11/09/2016 17:47	Analyst: MJC	Instrument: HRP791
Data File: c09nov16a-3		Dilution: 1
Prep Batch: 33207	Prep Method: SW846 3520C	Prep SOP Ref: CF-OA-E-001
Prep Date: 08-NOV-16	Prep Aliquot: 1000 mL	

CAS No.	Parmname	Qual	Result	MBCR	Units	EDL	PQL
Surrogate/Tracer recovery							
		Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-126-PeCB			2680	2000	pg/L	134	(30%-140%)
13C-155-HxCB			1750	2000	pg/L	87.5	(30%-140%)
13C-156-HxCB		C	4400	4000	pg/L	110	(30%-140%)
13C-167-HxCB			2290	2000	pg/L	114	(30%-140%)
13C-169-HxCB			2340	2000	pg/L	117	(30%-140%)
13C-188-HpCB			2170	2000	pg/L	108	(30%-140%)
13C-189-HpCB			2320	2000	pg/L	116	(30%-140%)
13C-202-OcCB			2440	2000	pg/L	122	(30%-140%)
13C-205-OcCB			2800	2000	pg/L	140	(30%-140%)
13C-206-NoCB			2920	2000	pg/L	146 *	(30%-140%)
13C-208-NoCB			2620	2000	pg/L	131	(30%-140%)
13C-209-DeCB			3150	2000	pg/L	158 *	(30%-140%)
13C-28-TrCB			1460	2000	pg/L	72.9	(40%-125%)
13C-111-PeCB			2010	2000	pg/L	101	(40%-125%)
13C-178-HpCB			2080	2000	pg/L	104	(40%-125%)

Comments:

- B** The target analyte was detected in the associated blank.
- C** Congener has coeluters. When Cxxx, refer to congener number xxx for data

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C98

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-27691	SampType: MBLK	TestCode: EPA Method 1664A								
Client ID: PBW	Batch ID: 27691	RunNo: 37504								
Prep Date: 9/26/2016	Analysis Date: 9/26/2016	SeqNo: 1166137	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	ND	10								
Silica Gel Treated N-Hexane Extrac	ND	10								

Sample ID LCS-27691	SampType: LCS	TestCode: EPA Method 1664A								
Client ID: LCSW	Batch ID: 27691	RunNo: 37504								
Prep Date: 9/26/2016	Analysis Date: 9/26/2016	SeqNo: 1166138	Units: mg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	41	10	40.00	0	103	78	114			
Silica Gel Treated N-Hexane Extrac	20	10	20.00	0	100	64	132			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C98

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	MBLK-D	SampType:	MBLK	TestCode:	EPA Method 200.7: Dissolved Metals					
Client ID:	PBW	Batch ID:	D37643	RunNo:	37643					
Prep Date:		Analysis Date:	10/3/2016	SeqNo:	1171903	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C98

02-Dec-16

Client: AMAFCA
Project: CMC

Sample ID LCS	SampType: LCS		TestCode: EPA 200.8: Dissolved Metals							
Client ID: LCSW	Batch ID: B37945		RunNo: 37945							
Prep Date:	Analysis Date: 10/13/2016		SeqNo: 1182520		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.024	0.0010	0.02500	0	95.0	85	115			
Lead	0.012	0.00050	0.01250	0	97.3	85	115			

Sample ID LLCS	SampType: LCSLL		TestCode: EPA 200.8: Dissolved Metals							
Client ID: BatchQC	Batch ID: B37945		RunNo: 37945							
Prep Date:	Analysis Date: 10/13/2016		SeqNo: 1182521		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.0012	0.0010	0.001000	0	117	50	150			
Lead	0.00057	0.00050	0.0005000	0	113	50	150			

Sample ID MB	SampType: MBLK		TestCode: EPA 200.8: Dissolved Metals							
Client ID: PBW	Batch ID: B37945		RunNo: 37945							
Prep Date:	Analysis Date: 10/13/2016		SeqNo: 1182522		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	ND	0.0010								
Lead	ND	0.00050								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C98

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: A37430		RunNo: 37430							
Prep Date:	Analysis Date: 9/23/2016		SeqNo: 1163546		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: A37430		RunNo: 37430							
Prep Date:	Analysis Date: 9/23/2016		SeqNo: 1163547		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.95	0.10	1.000	0	94.9	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	103	90	110			

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: B37435		RunNo: 37435							
Prep Date:	Analysis Date: 9/23/2016		SeqNo: 1163875		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: B37435		RunNo: 37435							
Prep Date:	Analysis Date: 9/23/2016		SeqNo: 1163876		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	95.5	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C98

02-Dec-16

Client: AMAFCA
Project: CMC

Sample ID	MB-27653	SampType:	MBLK	TestCode:	SM5210B: BOD					
Client ID:	PBW	Batch ID:	27653	RunNo:	37534					
Prep Date:	9/22/2016	Analysis Date:	9/27/2016	SeqNo:	1167364	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID	MB--27653	SampType:	MBLK	TestCode:	SM5210B: BOD					
Client ID:	PBW	Batch ID:	27653	RunNo:	37534					
Prep Date:	9/22/2016	Analysis Date:	9/27/2016	SeqNo:	1167365	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID	LCS-27653	SampType:	LCS	TestCode:	SM5210B: BOD					
Client ID:	LCSW	Batch ID:	27653	RunNo:	37534					
Prep Date:	9/22/2016	Analysis Date:	9/27/2016	SeqNo:	1167366	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	170	2.0	198.0	0	83.4	56.9	131			

Sample ID	LCSD-27653	SampType:	LCSD	TestCode:	SM5210B: BOD					
Client ID:	LCSS02	Batch ID:	27653	RunNo:	37534					
Prep Date:	9/22/2016	Analysis Date:	9/27/2016	SeqNo:	1167367	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	190	2.0	198.0	0	97.2	56.9	131	15.4	20	

Sample ID	MB-27670	SampType:	MBLK	TestCode:	SM5210B: BOD					
Client ID:	PBW	Batch ID:	27670	RunNo:	37641					
Prep Date:	9/23/2016	Analysis Date:	9/28/2016	SeqNo:	1171545	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Sample ID	MB--27670	SampType:	MBLK	TestCode:	SM5210B: BOD					
Client ID:	PBW	Batch ID:	27670	RunNo:	37641					
Prep Date:	9/23/2016	Analysis Date:	9/28/2016	SeqNo:	1171546	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.0								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C98

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	LCS-27670	SampType:	LCS	TestCode:	SM5210B: BOD					
Client ID:	LCSW	Batch ID:	27670	RunNo:	37641					
Prep Date:	9/23/2016	Analysis Date:	9/28/2016	SeqNo:	1171547	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	180	2.0	198.0	0	91.4	56.9	131			

Sample ID	LCSD-27670	SampType:	LCSD	TestCode:	SM5210B: BOD					
Client ID:	LCSS02	Batch ID:	27670	RunNo:	37641					
Prep Date:	9/23/2016	Analysis Date:	9/28/2016	SeqNo:	1171548	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	170	2.0	198.0	0	86.8	56.9	131	5.10	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C98

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	MB-27666	SampType:	MBLK	TestCode:	SM 9223B Fecal Indicator: E. coli MPN					
Client ID:	PBW	Batch ID:	27666	RunNo:	37450					
Prep Date:	9/22/2016	Analysis Date:	9/23/2016	SeqNo:	1164161	Units:	CFU/100ml			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
E. Coli	<1	1.000								

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C98

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB	SampType: MBLK		TestCode: SM 4500 NH3: Ammonia							
Client ID: PBW	Batch ID: R37892		RunNo: 37892							
Prep Date:	Analysis Date: 10/12/2016		SeqNo: 1180229		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	ND	1.0								

Sample ID LCS	SampType: LCS		TestCode: SM 4500 NH3: Ammonia							
Client ID: LCSW	Batch ID: R37892		RunNo: 37892							
Prep Date:	Analysis Date: 10/12/2016		SeqNo: 1180230		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	10	1.0	10.00	0	101	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C98

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-28009	SampType: MBLK		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: PBW	Batch ID: 28009		RunNo: 37907							
Prep Date: 10/11/2016	Analysis Date: 10/12/2016		SeqNo: 1180912	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	ND	0.010								

Sample ID LCS-28009	SampType: LCS		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: LCSW	Batch ID: 28009		RunNo: 37907							
Prep Date: 10/11/2016	Analysis Date: 10/12/2016		SeqNo: 1180913	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.25	0.010	0.2500	0	101	90	110			

Sample ID 1609C98-001DMS	SampType: MS		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: Rio Grande-North-0	Batch ID: 28009		RunNo: 37907							
Prep Date: 10/11/2016	Analysis Date: 10/12/2016		SeqNo: 1180916	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.29	0.010	0.2500	0.04220	99.3	90	110			

Sample ID 1609C98-001DMSD	SampType: MSD		TestCode: EPA Method 365.1: Total Phosphorous							
Client ID: Rio Grande-North-0	Batch ID: 28009		RunNo: 37907							
Prep Date: 10/11/2016	Analysis Date: 10/12/2016		SeqNo: 1180917	Units: mg/L						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.28	0.010	0.2500	0.04220	96.6	90	110	2.37	20	

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C98

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-27761	SampType: MBLK		TestCode: SM2540C MOD: Total Dissolved Solids							
Client ID: PBW	Batch ID: 27761		RunNo: 37597							
Prep Date: 9/28/2016	Analysis Date: 9/30/2016		SeqNo: 1170153		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID LCS-27761	SampType: LCS		TestCode: SM2540C MOD: Total Dissolved Solids							
Client ID: LCSW	Batch ID: 27761		RunNo: 37597							
Prep Date: 9/28/2016	Analysis Date: 9/30/2016		SeqNo: 1170154		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1000	20.0	1000	0	100	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C98

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID	MB-28008	SampType:	MBLK	TestCode:	SM 4500 Norg C: TKN					
Client ID:	PBW	Batch ID:	28008	RunNo:	37920					
Prep Date:	10/11/2016	Analysis Date:	10/13/2016	SeqNo:	1181637	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	ND	1.0								

Sample ID	LCS-28008	SampType:	LCS	TestCode:	SM 4500 Norg C: TKN					
Client ID:	LCSW	Batch ID:	28008	RunNo:	37920					
Prep Date:	10/11/2016	Analysis Date:	10/13/2016	SeqNo:	1181638	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Kjeldahl, Total	9.9	1.0	10.00	0	99.4	80	120			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609C98

02-Dec-16

Client: AMAFCA

Project: CMC

Sample ID MB-27741	SampType: MBLK		TestCode: SM 2540D: TSS							
Client ID: PBW	Batch ID: 27741		RunNo: 37575							
Prep Date: 9/27/2016	Analysis Date: 9/29/2016		SeqNo: 1169096				Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	ND	4.0								

Sample ID LCS-27741	SampType: LCS		TestCode: SM 2540D: TSS							
Client ID: LCSW	Batch ID: 27741		RunNo: 37575							
Prep Date: 9/27/2016	Analysis Date: 9/29/2016		SeqNo: 1169097				Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	93	4.0	92.50	0	101	83.35	118.92			

Qualifiers:

- | | |
|---|---|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix | E Value above quantitation range |
| H Holding times for preparation or analysis exceeded | J Analyte detected below quantitation limits |
| ND Not Detected at the Reporting Limit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S % Recovery outside of range due to dilution or matrix | W Sample container temperature is out of limit as specified |

Sample Log-In Check List

Client Name: AMAFCA

Work Order Number: 1609C98

RcptNo: 1

Received by/date: AT 09/22/16

Logged By: **Lindsay Mangin** 9/22/2016 1:50:00 PM *Jessie Mangin*

Completed By: **Lindsay Mangin** 9/22/2016 2:27:47 PM *Jessie Mangin*

Reviewed By: *[Signature]* 09/22/16 @ 1600

Chain of Custody

- 1. Custody seals intact on sample bottles? Yes No Not Present
- 2. Is Chain of Custody complete? Yes No Not Present
- 3. How was the sample delivered? Client

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° C to 6.0°C Yes No NA
Samples were collected the same day and chilled.
- 6. Sample(s) in proper container(s)? Yes No
- 7. Sufficient sample volume for indicated test(s)? Yes No
- 8. Are samples (except VOA and ONG) properly preserved? Yes No
- 9. Was preservative added to bottles? Yes No NA
- 10. VOA vials have zero headspace? Yes No No VOA Vials
- 11. Were any sample containers received broken? Yes No
- 12. Does paperwork match bottle labels? Yes No
(Note discrepancies on chain of custody)
- 13. Are matrices correctly identified on Chain of Custody? Yes No
- 14. Is it clear what analyses were requested? Yes No
- 15. Were all holding times able to be met? Yes No
(If no, notify customer for authorization.)

of preserved bottles checked for pH: 12
(<2 or >12 unless noted)

Adjusted? NO

Checked by: *JC*

Special Handling (if applicable)

- 16. Was client notified of all discrepancies with this order? Yes No NA

Person Notified: _____ Date: _____

By Whom: _____ Via: eMail Phone Fax In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp. °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	6.3	Good	Not Present			

Chain-of-Custody Record

Client: AMAFLA

Mailing Address:

Phone #:

Email or Fax#: rchavez@AMAFLA.org

QA/QC Package:
 Standard Level 4 (Full Validation)

Accreditation:
 NELAP Other _____

EDD (Type):

Turn-Around Time:

Standard Rush

Project Name:
CMC

Project #:

Project Manager:
Patrick Chavez

Sampler: C. Johannesen

On Ice: Yes No

Sample Temperature: 6.3



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	See Attached Table	E. Coli. Num	Air Bubbles (Y or N)	
4/16	1215	A&Q	Rio Grande - North - 092216	NUMEROUS		1609C98 -001													X		
4/16	1100	A&Q	Rio Grande - South - 092216			-002													X	X	
-	-	A&Q	Trip Blank	2	HCL	-003													X		

Relinquished by: [Signature] Date: 09/22/10 Time: 1550

Received by: [Signature] Date: 09/22/10 Time: 1850

Remarks:

Relinquished by:

Received by:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

AMAFCA and CMC samples

- ✓ Hardness
- ✓ TSS
- ✓ TDS
- ✓ COD
- ✓ BOD
- ✓ DO
- ✓ Oil & grease
- ✓ E. coli
- ✓ pH
- ✓ Total kjeldahl nitrogen
- ✓ Nitrate plus nitrite
- ✓ Dissolved phosphorus
- ✓ Ammonia plus organic nitrogen
- ✓ Total Phosphorus
- ✓ Chromium IV
- ✓ Copper-dissolved
- ✓ Lead-dissolved
- ✓ PCBs
- ✓ Gross Alpha
- ✓ Tetrahydrofuran
- ✓ Benzo(a)pyrene
- ✓ Benzo(b)fluoranthene, alternate name 3, 4 Benzofluoranthene
- ✓ Benzo(k)fluoranthene
- ✓ Chrysene
- ✓ Indeno(1,2,3-cd)pyrene
- ✓ Dieldrin
- ✓ Pentachlorophenol
- ✓ Benzidine
- ✓ Benzo(a)anthracene
- ✓ Pentachlorophenol
- ✓ Dibenzofuran
- ✓ Dibenzo(a,h)anthracene
- ✓ Bis(2-ethylhexyl)phthalate

AMAFCA E.Coli only sites:

- Bear Arroyo
- Main Hanh Arroyo
- Embudo

7/8/2016

\\ss6abq\Data\Projects\WR14.0074_AMAFCA_Stormwater\Docs\WQ Monitoring\Field documents\AMAFCA and CMC sample list Wet 2016 .docx

ATTACHMENT 2
FY 2017 WET SEASON COMPLETED DATA VERIFICATION AND
VALIDATION FORMS

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (August 2016 – Wet Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande North – 8/2/16 – E. coli Only Sample – Was Not Qualifying Storm Event

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

*Note – Field Data for DO (mg/L) was recalculated by DBS&A and provided to BHI, e-mail 12-21-16. Corrected Field Notebook not provided to BHI. Database has the recalculated DO from the 12-21-16 e-mail.

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJG Date: 1/13/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJG Date: 1/13/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

Step 3 Completed *Initials: SJG Date: 1/13/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken

*Note – HEAL Lab report order number – 1608105_v1

Total number of occurrences: 0

Step 4 Completed *Initials: SJK Date: 1/13/17*

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed *Initials: SJK Date: 1/13/17*

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed *Initials: SJG Date: 1/13/17*

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed *Initials: SJG Date: 1/13/16*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature

Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (August 2016 – Wet Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande North – 8/3/16 – E. coli Only Sample – Was Not Qualifying Storm Event

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

*Note – Field Data for DO (mg/L) was recalculated by DBS&A and provided to BHI, e-mail 12-21-16. Corrected Field Notebook not provided to BHI. Database has the recalculated DO from the 12-21-16 e-mail.

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJK Date: 1/13/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJG Date: 1/13/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

Step 3 Completed *Initials: SJG Date: 1/13/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken

*Note – HEAL Lab report order number – 1608171_v1

Total number of occurrences: 0

Step 4 Completed *Initials: SJK Date: 1/13/17*

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed *Initials: SJK Date: 1/13/17*

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed *Initials: SJG Date: 1/13/17*

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed *Initials: SJG Date: 1/13/16*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature

Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (August 2016 – Wet Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande North – 8/10/16 and 8/11/16

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

*Note – Field Data for DO (mg/L) was recalculated by DBS&A and provided to BHI, e-mail 12-21-16. Corrected Field Notebook not provided to BHI. Database has the recalculated DO from the 12-21-16 e-mail.

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJJ Date: 1/13/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

*Note – Lab report identifies “Dissolved phosphorous” as “Total Phosphorous” on a filtered sample (identified under “Client Sample ID”).

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJG Date: 1/13/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable
 Step 3 Completed *Initials: SJG Date: 1/13/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
<u>Rio Grande North & South</u>	<u>8/11/16</u>	<u>Sample was tested for PCBs using Method 608, screening method.</u>	<u>Lab was contacted by CMC/DBS&A once aware of this testing method – there was not enough sample volume to re-test for PCBs using Method 1668.</u>
<u>Rio Grande North & South</u>	<u>8/11/16</u>	<u>Lab report provides Dissolved Phosphorous results as “Total Phosphorous” for “filtered sample”.</u>	<u>Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.</u>

*Note – HEAL Lab report order numbers – 1608623_v1 and 1608678_v2

Total number of occurrences: 2

Step 4 Completed *Initials: SJG Date: 1/13/17*

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed *Initials: SJG Date: 1/13/17*

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed *Initials: SJG Date: 1/13/17*

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed *Initials: SJG Date: 1/13/16*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature

Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that "V V in STORET" be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (August 2016 – Wet Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande South – 8/11/16

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

*Note – Field Data for DO (mg/L) was recalculated by DBS&A and provided to BHI, e-mail 12-21-16. Corrected Field Notebook not provided to BHI. Database has the recalculated DO from the 12-21-16 e-mail.

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJJ Date: 1/13/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

*Note – Lab report identifies “Dissolved phosphorous” as “Total Phosphorous” on a filtered sample (identified under “Client Sample ID”).

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJG Date: 1/13/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable
 Step 3 Completed *Initials: SJG Date: 1/13/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
<u>Rio Grande North & South</u>	<u>8/11/16</u>	<u>Sample was tested for PCBs using Method 608, screening method.</u>	<u>Lab was contacted by CMC/DBS&A once aware of this testing method – there was not enough sample volume to re-test for PCBs using Method 1668.</u>
<u>Rio Grande North & South</u>	<u>8/11/16</u>	<u>Lab report provides Dissolved Phosphorous results as “Total Phosphorous” for “filtered sample”.</u>	<u>Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.</u>

*Note – HEAL Lab report order number – 1608678_v2

Total number of occurrences: 2

Step 4 Completed *Initials: SJG Date: 1/13/17*

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed *Initials: SJG Date: 1/13/17*

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed *Initials: SJG Date: 1/13/17*

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed *Initials: SJG Date: 1/13/16*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature

Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that "V V in STORET" be added to the project title.

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When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (August 2016 – Wet Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande North – 8/31/16 – E. coli Only Sample – Was Not Qualifying Storm Event

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

*Note – Field Data for DO (mg/L) was recalculated by DBS&A and provided to BHI, e-mail 12-21-16. Corrected Field Notebook not provided to BHI. Database has the recalculated DO from the 12-21-16 e-mail.

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJG Date: 1/16/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJG Date: 1/16/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

Step 3 Completed *Initials: SJG Date: 1/16/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken

*Note – HEAL Lab report order number – 1608H83_v1

Total number of occurrences: 0

Step 4 Completed *Initials: SJK Date: 1/16/17*

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed *Initials: SJK Date: 1/16/17*

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed *Initials: SJG Date: 1/16/17*

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed *Initials: SJG Date: 1/16/16*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/16/17

Data Verifier/Validator Signature

Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that “V V in STORET” be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (September 2016 – Wet Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande North – 9/7/16 – E. coli Only Sample – Was Not Qualifying Storm Event

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJK Date: 1/13/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJG Date: 1/13/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

Step 3 Completed *Initials: SJG Date: 1/13/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken

*Note – HEAL Lab report order number – 1608289_v1

Total number of occurrences: 0

Step 4 Completed Initials: SJG Date: 1/13/17

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed Initials: SJG Date: 1/13/17

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed *Initials: SJG Date: 1/13/17*

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed *Initials: SJG Date: 1/13/16*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature

Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that "V V in STORET" be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (September 2016 – Wet Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande North – 9/12/16 and 9/13/16

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJG Date: 1/13/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

*Note – Lab report identifies “Dissolved phosphorous” as “Total Phosphorous” on a filtered sample (identified under “Client Sample ID”).

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJG Date: 1/13/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

Step 3 Completed *Initials: SJG Date: 1/13/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North & South	9/13/16	Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.

*Note – HEAL Lab report order number – 1609527_v1 and 1609609_v2

Total number of occurrences: 1

Step 4 Completed Initials: SJG Date: 1/13/17

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed Initials: SJG Date: 1/13/17

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed *Initials: SJJ Date: 1/13/17*

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed *Initials: SJJ Date: 1/13/16*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature

Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that "V V in STORET" be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (September 2016 – Wet Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande South – 9/13/16

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJK Date: 1/13/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

*Note – Lab report identifies “Dissolved phosphorous” as “Total Phosphorous” on a filtered sample (identified under “Client Sample ID”).

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJG Date: 1/13/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable
 Step 3 Completed *Initials: SJG Date: 1/13/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North & South	9/13/16	Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.

*Note – HEAL Lab report order number – 1609609_v2

Total number of occurrences: 1

Step 4 Completed Initials: SJG Date: 1/13/17

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed Initials: SJG Date: 1/13/17

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed Initials: SJG Date: 1/13/17

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed Initials: SJG Date: 1/13/16

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature

Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that "V V in STORET" be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (September 2016 – Wet Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande North – 9/21/16 and 9/22/16

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJJ Date: 1/13/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

*Note – Lab report identifies “Dissolved Phosphorous” as “Total Phosphorous” and does not distinguish this as a filtered sample, as prior lab reports have done. Lower value of “Total Phosphorous” reported as the “Dissolved Phosphorous” result.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJG Date: 1/13/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable

Step 3 Completed *Initials: SJG Date: 1/13/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North & South	9/22/16	Lab report provides two "Total Phosphorous" results, and no "Dissolved Phosphorous" results. Used lower value as "Dissolved Phosphorous".	Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.

*Note – HEAL Lab report order number – 1609B94_v1 and 1609609_v2

Total number of occurrences: 1

Step 4 Completed Initials: SJG Date: 1/13/17

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed Initials: SJG Date: 1/13/17

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed *Initials: SJJ Date: 1/13/17*

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed *Initials: SJJ Date: 1/13/16*

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

I acknowledge that the data verification and validation process has been completed for the data identified above in accordance with the procedures described in the CMC QAPP, SOP #2



1/13/17

Data Verifier/Validator Signature

Date

COMPLETION OF DATA VERIFICATION AND VALIDATION PROCESS

Once the data verification and validation process has been completed for the entire study (note: if the worksheet is for a subset of the data from a study, be sure ALL the data for the entire study is included before final completion of the data verification and validation process), notify the NMSQUID administrator that the process is complete and request that "V V in STORET" be added to the project title.

Once all data have been verified and validated for a study provide copies of ALL *Data Verification and Validation Worksheets* and attachments associated with the study to the Quality Assurance Officer and retain originals in the project binder.

Attachment 1.2 SWQB Validation Codes

When deficiencies are identified through the data verification and validation process, AMAFCA documents or “flags” the deficiencies by assigning validation codes. All data collected from the last compliant QC sample and up to the next compliant QC sample are assigned validation codes. The validation code alerts the data user that the results are outside QA control limits and may require re-sampling or a separate, qualitative analysis based on professional judgment.

Validation Code	Definition	WQX Equivalent
A1	Sample not collected according to SOP	
B1	Chemical was detected in the field blank at a concentration less than 5% of the sample concentration.	
BN	Blanks NOT collected during sampling run	
BU	Detection in blank. Analyte was not detected in this sample above the method's sample detection limit.	BU
RB1	Chemical was detected in the field blank at a concentration greater than or equal to 5% of the sample concentration. Results for this sample are rejected because they may be the result of contamination; the results may not be reported or used for regulatory compliance purposes.	B
R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)

Year: FY 2017 (September 2016 – Wet Season Sample)

Project Coordinator: For Data Review and Reporting – SJG, BHI

V&V Reviewer: SJG

Data covered by this worksheet: Rio Grande South – 9/22/16

Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015)

Step 1: Verify Field Data

A. Are all Field Data forms present and complete? Yes No

If yes, proceed; if no, attempt to locate missing forms, then indicate any remaining missing forms and action taken.

Missing Field Data Forms	Action Taken
_____	_____
_____	_____

Total number of occurrences: 0

B. Are station name and ID, and sampling date and time on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station and Parameter	Action Taken	Re-verified?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

C. Are field data on forms consistent with database? Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify.

Station	Sampling Date	Parameter(s) Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

D. Are RIDs correct and associated with the correct analytical suite, media subdivision (e.g. surface water, municipal waste, etc.) and activity type (e.g. Field observation, Routine sample, QA sample etc.)?

Yes No

If yes, proceed; if no, indicate errors identified, correct errors in database and re-verify

Station/RID	Sampling Date	RID Corrected	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Step 1 Completed *Initials: SJK Date: 1/13/17*

Step 2: Verify Data Deliverables

A. Have all data in question been delivered? Yes No

If yes, proceed; if no, indicate RIDs with missing data (samples or blanks) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken. Complete this step upon receipt of all missing data.

RID	Submittal Date	Missing Data/Parameters	Date of Initial Verification	Date Missing Data Were Received
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Total number of occurrences: 0

B. Do all of the analytical suites have the correct number and type of analytes. Yes No

If yes, proceed; if no, indicate RIDs with missing or incorrect analyte(s) or attach report with applicable RIDs highlighted. Contact data source and indicate action taken.

*Note – Lab report identifies “Dissolved Phosphorous” as “Total Phosphorous” and does not distinguish this as a filtered sample, as prior lab reports have done. Lower value of “Total Phosphorous” reported as the “Dissolved Phosphorous” result.

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Step 2 Completed *Initials: SJG Date: 1/13/17*

Step 3: Verify Flow Data

*Note – Not Applicable – no flow data provided with CMC sample collection

A. Identify incorrect or missing data on the flow calculation spreadsheet and correct errors.

Station	Sampling Date	Flow data missing or incorrect?
_____	_____	_____
_____	_____	_____

Total number of occurrences: 0

B. Identify incorrect or missing discharge measurements, correct errors in database and re-verify.

Station	Sampling Date	Flow data missing or incorrect?	Re-verified?
_____	_____	_____	_____
_____	_____	_____	_____

Total number of occurrences: 0

Not Applicable
 Step 3 Completed *Initials: SJG Date: 1/13/17*

Step 4: Verify Analytical Results for Missing Information or Questionable Results

Were any results with missing/questionable information identified? Yes No

If no, proceed; if yes, indicate results with missing information or questionable results or attach report. Contact data source and indicate action taken. Complete this step upon receipt of missing information or clarification of questionable results (clarify questionable results only, DO NOT change results without written approval (from lab or QA officer) and associated documentation).

RID	Sample Date	Missing or Questionable Information/Results	Action Taken
Rio Grande North & South	9/22/16	Lab report provides two "Total Phosphorous" results, and no "Dissolved Phosphorous" results. Used lower value as "Dissolved Phosphorous".	Notified AMAFCA and DBS&A of this and requested that lab more clearly report data.

*Note – HEAL Lab report order number – 1609609_v2

Total number of occurrences: 1

Step 4 Completed Initials: SJG Date: 1/13/17

Step 5: Validate Blanks Results

Were any analytes of concern detected in blank samples? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager, with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes have been added to database correctly.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database? *

*See validation procedures to determine which associated data need to be flagged and include on *Validation Codes Form*.

Total number of occurrences: 0

Step 5 Completed Initials: SJG Date: 1/13/17

Step 6: Validate Holding Times Violations

Were any samples submitted that did not meet specified holding times? Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID	Sample Date	Parameter	[Blank]	[Sample]	Validation Code/Flag Applied	Code/Flag verified in database to ALL associated data?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 6 Completed Initials: SJG Date: 1/13/17

Step 7: Validate Replicate/Duplicate Results (if applicable)

Were any replicate/duplicate pairs submitted outside of the established control limit of 20%?

Yes No

If no, proceed; if yes, list results that need to have validation codes applied in the database save these results as an excel file and forward to QA officer or Program Manager with a request to add appropriate validation codes to database. Complete this step after verifying that validation codes/flags have been added to database.

RID Pairs	Replicate or Duplicate?	Sample Date	Parameter	RPD	Validation Code/Flag Applied	Code/Flag verified in database applied?*

*See validation procedures to determine which associated data need to be flagged.

Total number of occurrences: 0

Step 7 Completed Initials: SJG Date: 1/13/16

After all of the above steps have been completed, save and print the worksheet, attach all applicable supplemental information and sign below.

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1/13/17

Data Verifier/Validator Signature

Date

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R1	Rejected due to incorrect sample preservation	R
R2	Rejected due to equipment failure in the field	R
R3	Rejected based on best professional judgment	R
D1	Spike recovery not within method acceptance limits	
F1	Sample filter time exceeded	
J1	Estimated: the analyte was positively identified and the associated value is an approximate concentration of the analyte in the sample	J
K1	Holding time violation	H
Ea	Estimated-Incubation temperature between 35.5 and 38.0° Celsius	
Er	Rejected-Incubation temperature < 34.5 or >38.0° Celsius	
PD1	Percent difference between duplicate samples excessive	
S1	Per SLD, uncertainties (sigmas) are expressed as one standard deviation, i.e. one standard error. Small negative or positive values that are less than two standard deviations should be interpreted as “less than the detection limit.”	
S2	Data are suspect but deemed usable based on best professional judgment; documentation of justification is required and should be included in the Data Verification and Validation Packet and reported with results	
Z1	Macroinvertebrate data did not meet QC criteria specified in Section 2.5 of QAPP	
H1	Habitat data did not meet QC criteria specified in Section 2.5 of QAPP	

ATTACHMENT 3
DOCUMENTATION RELATED TO E. COLI UNITS MPN/100ML AND
CFU/100 ML

From: Holcomb, Sarah, NMENV [<mailto:sarah.holcomb@state.nm.us>]
Sent: Monday, February 6, 2017 8:08 AM
To: Chavez, Patrick <pchavez@amafca.org>
Subject: RE: MPN vs CFU for E.coli

Hi Patrick,
According to our Monitoring folks, MPN and CFU are interchangeable. We did propose the change in the most recent triennial:

https://www.env.nm.gov/swqb/Standards/TR2013/01a_TRPetition04-2014.pdf

Once they are approved, you might want to check with EPA for how they would like you to report moving forward.

~ Sarah

From: Chavez, Patrick [<mailto:pchavez@amafca.org>]
Sent: Friday, February 3, 2017 8:54 AM
To: Holcomb, Sarah, NMENV <sarah.holcomb@state.nm.us>
Subject: MPN vs CFU for E.coli

Sarah:

[Here is the memo](#) I was referring to that discusses the difference between MPN and CFU. There isn't a lab that does the CFU method in Albuquerque and so all of our results to date are MPN. The permit refers to CFU as does the water quality standard. Be nice if we were able to compare apples-to-apples since the literature suggests that MPN may be higher than when compared to CFU. Should we be applying a correction factor to our lab results and is NMED going to consider EPA's guidance (in the memo) and list the water quality standards in both MPN and CFU?

Thanks,
Patrick

Patrick Chavez, MS, PE, LEED AP+
Storm Water Quality Engineer
Albuquerque Metropolitan Arroyo Flood Control Authority
2600 Prospect NE
Albuquerque, New Mexico 87107

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From: Andy Freeman [<mailto:andy@hallenvironmental.com>]
Sent: Tuesday, January 31, 2017 3:16 PM
To: Chavez, Patrick <pchavez@amafca.org>
Subject: RE: E.coli results

Hi Patrick,

We report e.Coli enumeration using EPA Method 9223B quantitray. Our reports list e.Coli MPN, but the units say cfu/100mls. This can be confusing. It would be better for us to report as MPN/100mls.

Let me know if you have further questions on this.

Andy

From: Chavez, Patrick [<mailto:pchavez@amafca.org>]
Sent: Tuesday, January 31, 2017 8:19 AM
To: Andy Freeman
Subject: E.coli results

Andy:

Have a question hoping you can shed some light on concerning the difference between MPN and CFU/100ml. Have attached a lab result as an example but the question pertains to all the E.coli results that have been obtained from HEAL.

The question is: why is E.coli MPN listed as the type of test and the Units are listed as CFU/100ml? It was brought to my attention yesterday from another engineer that the result should either be MPN or CFU/100ml and that they are really two different tests? Can you clarify please?

Thanks again,
Patrick

Patrick Chavez, MS, PE, LEED AP+
Storm Water Quality Engineer
Albuquerque Metropolitan Arroyo Flood Control Authority
2600 Prospect NE
Albuquerque, New Mexico 87107

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SUSANA MARTINEZ
Governor

JOHN A. SANCHEZ
Lieutenant Governor

NEW MEXICO
ENVIRONMENT DEPARTMENT

Surface Water Quality Bureau

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RYAN FLYNN
Cabinet Secretary

BUTCH TONGATE
Deputy Secretary

ERIKA SCHWENDER
Director
Resource Protection Division

MEMORANDUM

TO: Kris Pintado, Standards, Planning and Reporting Team Leader
FROM: Jodey Kougioulis, Quality Assurance Officer
DATE: February 26, 2014
SUBJECT: Triennial Review – Most probable number (MPN) and colony forming units (cfu) enumeration methods and proposed standards reporting revision

Introduction and Purpose

The purpose of this memo is to address EPA’s and SWQB staff comments and suggestions regarding the reporting of bacterial concentrations as MPN and to propose suggested revisions to the state’s current reporting language for bacteria criteria which are expressed as colony forming units (cfu) per 100 ml. Currently, the SWQB reports bacteria data as most probable number (MPN) per 100 ml based on the use of IDEXX *Quanti-Tray* (QT) method which is an extended version of the IDEXX Colilert test. MPN and cfu represent different enumeration methods and result in different method specific units, but for purposes of reporting, EPA has used these terms interchangeably. EPA has approved methods for enumeration and allows reporting in either cfu or MPN per 100/ml in federal rule for ambient water (40 CFR, 2003) and for wastewater and sludge (40 CFR, 2007).

Background and General Description of MPN and cfu.

The MPN is a statistical estimate of the number of bacteria that, more probable than any other number, would give the observed result; it is not an actual count of the bacteria present. Membrane filtration (MF) methods which produce results expressed as cfu are culture-based and results are quantified by counting the number of colonies that arise from bacteria captured on the membrane filter per volume of water filtered. Although expressed as an actual count of the bacterial colony forming units, the number is still considered an estimate because colonies can be produced by one or several cells that can clump together in the sample. MPN methods are also culture-based with a defined substrate which produces an estimate number (density) of organisms based on the combination of positive and negative test tube results that can be read from a statistical probability MPN table.

Proposal

The SWQB currently uses an approved EPA method for sampling and analyzing bacteria levels in its ambient water quality monitoring program and reports these results in MPN. The water quality standards for bacteria criteria are proposed to be revised to reflect SWQB's current reporting practices and EPA's approved use of either membrane filtration methods, reported as cfu, or MPN methods, reported as MPN for enumeration of bacteria in ambient water and effluent. This change, if adopted, would allow results to be reported in either cfu or MPN, depending on the analytical method. The most appropriate place to do this may be in 20.6.4.900.D and E of NMAC by adding language similar to the following: "Water quality standards for *E. coli* are expressed in colony forming units per 100 milliliters of water (cfu/100 ml) or as a Most Probable Number (MPN)/100 ml."

Related Research

There have been numerous published papers that address the similarities or differences between enumeration results obtained by cfu methods and those obtained by MPN methods. Much of the earlier research concluded that "*there was no significant difference for the enumeration of E. coli between the QT and MF methods*" (Rompré et al., 2002).

More recently published research by Wohlsen et al. (2006) does show a significant difference between the two enumeration methods when using a standard reference inoculum. The use and calibration of a standard reference inoculum of only viable cells still needs to be related to original criteria development which was based on a combination of frequency, magnitude, and duration of exposure to ambient recreational waters, bacterial densities as enumerated by MF, and selected illness rates in response. As stated earlier, this is primarily a reporting revision to acknowledge the programmatic reality that both MPN and cfu can be reported and used to assess against the water quality standard.

Staff and EPA Comments, Suggestions, and Initial Review of Bacteria Criteria Reporting

Responses to both the EPA, SWQB staff, and the proposal justification will need to be clearly communicated in a consistent and coordinated fashion. The need to remain consistent with existing water quality standard language, definitions, and format may limit the expanse of revised language but ultimately the simple proposed revision will communicate the available reporting options for bacteria criteria. Comments from SWQB staff largely focused on the fact that MPN and cfu are enumerated and expressed differently with method specific units and that clear definitions are needed to describe this difference. EPA's comments and suggestion are largely in concert with the proposed revision and the suggested language will provide the clarity needed for criteria interpretation.

SWQB Staff Questions and Responses

Question 1): I have come across several scholarly articles that attempt to correlate MPN to cfu. They are not the same; cfu represents an absolute number of units, whereas MPN represents a theoretical value (often considered the maximum value).

Response: EPA permits staff and SWQB staff raised issues about the enumeration of bacteria - most probable number (MPN) and colony forming units (cfu) - relative to implementation and assessment of the WQS. The traditional plate tests, including membrane filtration, estimate or count 'colonies' of bacteria reported as cfu. These provide a direct count of an indicator organism (*E. coli*) in ambient water or wastewater based on the development of colonies in/on media and a calculation is still performed. While microscopic counts may be more accurate, it's costly and time consuming, and there's still the problem of what's viable or not. Very few tests are conducted to determine live and dead colonies; in summary exact counts are generally not feasible to obtain. Newer tests such as Colilert (which is used by SWQWB for assessment and monitoring) report data as MPN which is a statistical representation of what level of *E. coli* is likely present in a sample. While MPN and cfu may not be entirely equivalent, for the purposes of reporting, these terms are currently used interchangeably by the EPA. EPA has approved these methods for enumeration in federal rule for ambient water (40 CFR, 2003) and for wastewater and sludge (40 CFR, 2007). The currently recommended EPA recreational or bacteria criteria for *E. coli* are expressed as cfu/100 ml measured using EPA Method 1603 or any other equivalent method that measures culturable *E. coli*. Therefore, the water quality standards are under deliberation to be revised to reflect the use of updated methods for monitoring, assessment and reporting. After much consideration, the most appropriate place to do this may be in 20.6.4.900.D and E of NMAC by adding language similar to the following:

*“Water quality standards for *E. coli* are expressed in colony forming units per 100 milliliters of water (cfu / 100 ml) or as a Most Probable Number (MPN)/100 ml”*

References for EPA Method 1603 and EPA's final rules establishing alternate test procedures could also be included in 20.6.4.901 NMAC as references.

Abbreviations for both cfu and MPN are suggested to be included in the WQS definitions.

Question 2) Similar to the cfu/100mL definition, do we need to make reference to cfu/100mL in the MPN definition?

Add the term “most probable number” (under terms beginning with the letter ‘M’).

Response: *Generally, the definitions seem to stand on their own, e.g., there doesn't seem to be any 'cross referencing' in these definitions. Instead of adding a definition for MPN, the abbreviation for MPN is retained in this section. Please also see the previous discussion in response to bacteria enumeration (under 20.6.4.7.A (3)(a) NMAC), and response below.*

“MPN” will be listed under the abbreviations section of the definitions, so it'll be 'defined' in that way. It's also appropriate to add 'MPN' (as an alternate enumeration to cfu) under the criteria section in 20.6.4.900.D and E NMAC (see the new language in that section). As there's not a “full” definition for cfu in the WQS, to be consistent with the rule format, a “full” definition for MPN won't be added. Also, there's really not a concise, easily understood definition for cfu to put into the standards. Both enumeration methods are also fully described in the EPA criteria recommendations and supporting documents, in the methods, and in the scientific literature.

EPA Comment and SWQB Response

The Region's concern with the state's current bacteria criteria are related to how the provision reads and its interpretation. The *E. coli* standard that the state uses is expressed as colony forming units (cfu) per 100 ml. In a plain reading, this provision requires a specific test method but does not allow an alternative test. Generally the Region recommends avoiding this type of approach to test methods.

When bacterial Total Maximum Daily Loads (TMDL) are issued, they may specify extremely large numbers of cfu/100 ml as a loading limit. This requires building an equation for calculating the loading limit as expressed in the TMDL into a footnote into NPDES permits. To simplify the process, the Region has consulted with waste water treatment plant operators to determine if the most probable number (MPN) can be used as an equivalent to cfu/100 ml. The general answer is yes, and the Region has been using this approach. NMED inspectors seem to agree with this approach, since they also see the problem in the field. The problem here is that this approach requires the use of a different test method. What the Region suggests is that both the standards and TMDL guidance documents refer to both cfu/100 ml and MPN as equivalent, allowing either generally approved test method to be used to account the level of indicator bacteria in permits.

Response: *EPA Region 6 has suggested that the water quality standards and the state's TMDL guidance refer to both colony forming units (cfu) and most probable number (MPN), as EPA has approved the use of test methods with results that are expressed in either cfu or MPN. The use of more cost-effective and time efficient methods in which counts are expressed as MPN was approved by EPA as equivalent for testing ambient waters in 2003^[1], and for wastewater and sewage sludge in 2007^[2]. The SWQB is currently using an approved EPA method for sampling and analyzing bacteria levels in ambient water and reporting results in MPN. The currently recommended EPA recreational or bacteria criteria for *E. coli* are expressed as cfu/100 ml measured using EPA Method 1603 or any other equivalent method that measures culturable *E. coli* ^{[3],[4]}. Therefore, the water quality standards are proposed to be revised to reflect the use of updated methods for monitoring, assessment and reporting. References for EPA Method 1603 and EPA's final rules establishing alternate test procedures may be considered for inclusion under 220.6.4.901 NMAC.*

Footnotes

1. U.S. Federal Register - 40 CFR Part 136 Vol. 68, No. 139; July 21, 2003.
2. U.S. Federal Register - 40 CFR Parts 136 and 503, Vol. 72, No. 157; March 26, 2007.
3. EPA, 2012:
<http://water.epa.gov/scitech/swguidance/standards/criteria/health/recreation/upload/factsheet2012.pdf>
4. USEPA. 2002. Method 1603: *Escherichia coli* (*E. coli*) In Water By Membrane Filtration Using Modified membrane-Thermotolerant *Escherichia coli* Agar (modified mTEC). U.S. Environmental Protection Agency, Office of Water, Washington D.C. EPA-821-R-02-023

References

Annie Rompre', Pierre Servais, Julia Baudart, Marie-Rene'e de-Roubin, Patrick Laurent (2002). *Detection and enumeration of coliforms in drinking water: current methods and emerging approaches*. Journal of Microbiological Methods 49 (2002) 31–54

U.S. Federal Register - 40 CFR Part 136 Vol. 68, No. 139; July 21, 2003.

U.S. Federal Register - 40 CFR Parts 136 and 503, Vol. 72, No. 157; March 26, 2007.

USEPA, 2012:

<http://water.epa.gov/scitech/swguidance/standards/criteria/health/recreation/upload/factsheet2012.pdf>

USEPA. 2002. Method 1603: *Escherichia coli* (*E. coli*) In Water By Membrane Filtration Using Modified membrane-Thermotolerant *Escherichia coli* Agar (modified mTEC). U.S. Environmental Protection Agency, Office of Water, Washington D.C. EPA-821-R-02-023

Wohlsen, T., Bates, J., Vesey, G., Robinson, W.A. and M. Katouli (2006) Evaluation of the methods for enumerating coliform bacteria from water samples using precise reference standards. *Letters in Applied Microbiology* **42**, 350-356.

ATTACHMENT 4

**DOCUMENTATION OF NMED COORDINATION REGARDING E. COLI
LOADING CALCULATIONS AND CMC MS4 WASTE LOAD ALLOCATION**

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MEMORANDUM

DATE: February 8, 2017

TO: Compliance Monitoring Cooperative (CMC) Members

FROM: Sarah Ganley, PE *sg*

SUBJECT: February 1, 2017, Meeting Minutes from Meeting with NMED Regarding E. coli TMDL and CMC MS4 Waste Load Allocation

Attendees

Sarah Holcomb, New Mexico Environment Department (NMED), Surface Water
Wano Urbanos, NMED, Assessment & TMDL Team
Kali Bronson, Bernalillo County
Patrick Chavez, AMAFCA
Kevin Daggett, City of Albuquerque
Dave Gatterman, SSCAFCA
Steven Morgenstern, NMDOT
Stephen Thies, NMDOT
Sarah Ganley, Bohannon Huston (BHI)

Purpose of Meeting

This meeting was initiated by the Compliance Monitoring Cooperative (CMC) group to discuss with NMED E. coli Total Maximum Daily Load (TMDL) in the Rio Grande, CMC MS4 Waste Load Allocation (WLA), and E. coli loading calculations in order to clarify and confirm calculation assumptions. Also, the group wanted to discuss what the E. coli loading results compared to the WLA mean for the CMC.

General Discussion of TMDL and Single Sample Results

The CMC began the discussion asking NMED for an overall explanation of the TMDL. This led to the CMC questioning the fact that the TMDL is based on daily, instream loading and that the MS4 discharge related to a storm event is not on a daily basis and also that MS4 non-point discharge is not accurately represented as an instream sample. The group also discussed that the TMDL is based on the Pueblos of Sandia and Isleta geometric mean water quality standard (WQS) of 47 CFU/100 ml.

Regarding the daily loading verses loading over a shorter storm duration, NMED's basis for the TMDL is daily loading in the river. If the CMC were to reduce the time duration for the E. coli loading, they would also need to reduce the WLA over that same time period. The E. coli loading

could not be calculated for only the storm duration and then compared to the WLA which was determined on a daily basis. The daily loading is just spreading out the E. coli concentration for a given flow rate over a day. Based on the discussions, the daily loading is appropriate for loading comparison to the TMDL and WLA.

NMED admitted that the WLA is really designed for a pipe/point source, and the instream sample for the MS4 non-point source is not completely accurate. At this time though, this is how the loading calculations and comparisons to the WLA were established and are being done. NMED seemed willing to consider other suggestions in the future, if the CMC could support a better approach. For now, this is how the TMDL and WLA for E. coli was determined.

To improve on the instream sample relevance for the MS4s, NMED suggested that another E. coli sample is needed at the stream segment divide (at Alameda). Discussion of the Santa Fe River TMDL development may have led to this suggestion. This led to a discussion on the CMC refining its sampling plan. This sampling plan refinement would need NMED and EPA approval. In addition, the CMC discussed perhaps adding pre-storm event E. coli samples to determine the condition of the river before a storm event and to help better determine what loading the MS4s are contributing during storm events.

The CMC asked how the TMDL could be based on the Pueblos' geometric mean WQS, but all of the water quality samples are single, grab samples. The comparison of the two numbers does not seem equitable. NMED stated that they must meet most stringent downstream WQSs when developing the TMDL. The geometric mean compared to the single sample was not discussed further.

The CMC members also asked NMED about reporting the monitoring values in the NetDMR system, which is set up for point source reporting. Sarah Holcomb stated that she has not had any conversations with EPA regarding this, so she is not sure about the NetDMR forms.

Stream Segment Designation Questions

The CMC group showed NMED the figure of the Rio Grande designating the two MS4 segments and the four NMED 303(d)/305(b) segments and questioned the NMED 303(d)/305(b) 2016-2018 Integrated Report tables, which do not list E. coli as a TMDL for several of the reaches. NMED explained the tables and the segments. TMDLs are separate from the NMED 303(d)/305(b) 2016-2018 Integrated Report. Based on their explanation, the segments are not contradictory.

The NMED 303(d)/305(b) 2016-2018 Integrated Report tables show the most recent assessment results, and currently, there is only one segment of the Rio Grande (Isleta to Tijeras) that was found to be impaired for E. coli. However, the TMDL for the other stream segments do not go away even if they are no longer impaired – the TMDL remains in place as a protective measure. The analogy NMDOT used to explain this was that if there was an intersection with a lot of accidents, and a stop sign or reduced speed measure was added in an effort to reduce the accidents, once the accidents were reduced, the control measure would not be removed. TMDLs remain after impairments are removed as protective measures. NMED stated that the only way a TMDL would be removed is if the water quality standard changed. NMED did state that new

assessment data or perhaps use of the CMC data could be used to revise the TMDL, but it would not be removed.

NMED stated that the fact that the E. coli impairment has been removed in several segments is a very good thing, and it's likely the MS4 work has helped with this improvement on the river. This point is a good point for CMC members to mention in their annual reporting.

The group briefly discussed why one segment (Isleta to Tijeras) was still impaired. The group asked if NMED looked for sources during the assessment. NMED explained that the NMED 303(d)/305(b) 2016-2018 Integrated Report tables list probable sources which come from staff observations, historical knowledge, and a checklist that is used during the assessments.

E. coli Loading Calculations – Questions on Assumptions

NMED clarified that the two assessment units (AUs) listed in the 2010 TMDL report are not additive – each was looked at individually during TMDL assessment. For calculations this translates to, when there is not a mid-point E. coli sample taken (as the CMC is currently operating), 77% of the instream E. coli loading is applied to the upstream reach (Alameda to Angostura), and 23% is applied to the downstream reach (Isleta to Alameda). As a reminder, currently the E. coli loading is the Rio Grande South E. coli loading minus the Rio Grande North E. coli loading. The draft of the E. coli loading spreadsheet incorrectly assumed the reaches were additive and had applied 100% to the lower reach (Isleta to Alameda)—this was corrected after this meeting. The refined sampling plan (discussed above) would add an intermediate E. coli sample, and the 77% and 23% discussed above would no longer be needed in the loading calculations.

We also briefly discussed that with the way the Rio Grande is operated, flow downstream (using the USGS gage at Central) is not necessarily higher than flow upstream (using the USGS gage at Alameda). This could result in a negative loading. The group's calculation spreadsheet will be updated to not allow negative loading.

WLA Exceedance When no Storm Event

The CMC pointed out that they had upstream and downstream E. coli results for non-storm events and analysis of these loading results show that the CMC WLA was exceeded even in “dry,” non-storm event conditions. NMED stated that you would never analyze non-storm event flows related to the CMC, and the CMC could not be in exceedance. The CMC's point that the “dry” exceedances show that the river E. coli issues are likely not correctly attributed to the MS4s was not fully understood/accepted by NMED during the meeting. NMED focused on the fact the MS4s would never look at “dry” conditions or be in exceedance of any WLAs in “dry,” non-storm event conditions.

This led to a brief discussion on if MS4s could be contributing to the E. coli loading during non-storm conditions (illicit discharges, septic systems, etc.). This led to a discussion by the CMC members of potentially conducting one day of watershed-wide dry weather inspections at the same time as sampling the E. coli upstream and downstream (maybe at the mid-point also) of the MS4. The dry weather screening would give assurance that no (or minimal) illicit discharges or non-stormwater flows were contributing to the river at the time of the samples. Then the river E.

coli samples could be assessed with assurance that the MS4 was not contributing runoff and the results would only be attributable to point sources and background sources.

What Does WLA Exceedance Mean for CMC

The CMC discussed that the WLA seems unattainable. The NMED 2010 TMDL reports state this is a “difficult objective.” Some of the reasons discussed regarding the WLA as a poor measurable goal include: the basis of the TMDL/WLA (the Pueblo geometric mean), the instream and single grab sample used in the calculation, and the fact that the “dry,” non-storm event conditions E. coli analyses show exceedances that are not attributable to the MS4s. NMED suggested including these concerns in the EPA annual reports along with the results.

AMAFCA asked if the WLA was always going to be exceeded should NMED consider issuing advisories. There were no real responses to the advisory discussion.

NMED explained that exceeding the WLA does not trigger enforcement. However, the MS4s need to document what they are doing once they realize the WLA is exceeded. First, this meeting and CMC discussion with NMED demonstrate that CMC members are working toward understanding and improvement. In addition, the suggested refinements to the sampling plan (discussed above) show that the CMC is investigating the exceedance. The proposed one day, watershed-wide dry weather inspections would be another step to show actions taken to further investigate the exceedance. In addition, NMED mentioned looking at Best Management Practices (BMPs) and how those could improve. Also, NMED suggested that the CMC members document all of these actions in their annual reports.

Potential Upcoming TMDLs Discussion

At the end of the meeting, the CMC group asked about the estimated 2017 TMDLs listed in the NMED 303(d)/305(b) 2016-2018 Integrated Report tables and what to expect regarding those. NMED stated that these are not current priorities and will not occur in 2017. The discussion is important because, as discussed earlier, once a TMDL is issued, it does not go away. In addition, MS4s cannot really remove themselves from a TMDL; since runoff occurs, it has to have a WLA. Bernalillo County was particularly interested in this regarding the Tijeras Arroyo and a future TMDL for nutrients. Even though the County has data showing runoff is not contributing to the nutrient issue, they would still be given a WLA in the future TMDL.

SG/le
Attachment

Attachment 1 – Meeting Agenda

ATTACHMENT 1
MEETING AGENDA

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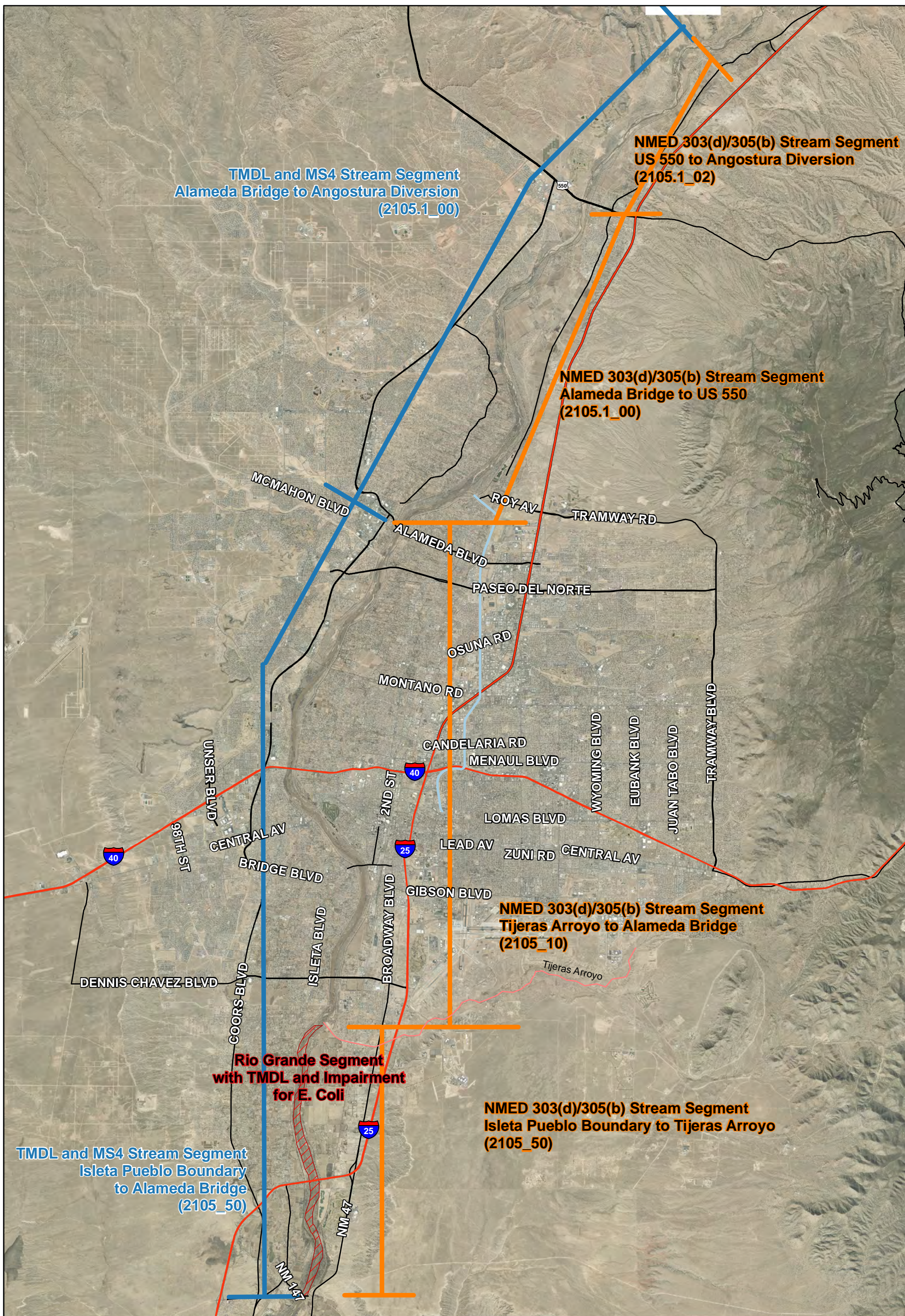
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**CMC Stormwater Quality Monitoring –
E. coli Loading and TMDL/WLA Discussion with NMED**

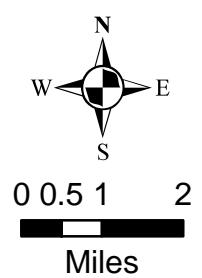
NMED
Wednesday, February 1, 2017
9:30 am

Meeting Objective: Discuss E. coli TMDL in Rio Grande, CMC MS4 WLA, and E. coli loading calculations with NMED in order to clarify and confirm calculation assumptions. Also, discuss what the E. coli loading results mean for the CMC.

General Discussion of TMDL and Single Sample Results	<p>Single sample and how one result translates/compares to the instream TMDL</p> <p>CMC has single sample for determining the E. coli loading – TMDL based on Pueblo geometric maximum mean value of 47 CFU/100 ml</p> <p>E. coli loading – daily loading compared to loading over the storm event duration</p> <p>NetDMR reporting – set up for point source reporting</p>
Stream Segment Designation Questions	<p>Compare MS4 and NMED §303(d)/§305(b) Integrated Report segment designations</p> <p>Question on NMED §303(d)/§305(b) Integrated Report listing of E. coli TMDLs</p>
E. coli Loading Calculations – Questions on Assumptions	<p>Flow regime designations – 2010 TMDL Report vs. NMED e-mail</p> <p>Confirm understanding and application of Jurisdictional Area Approach</p> <p>Delta in E. coli loading (north sample minus south sample) – this could be negative because of how Rio Grande is operated (flows can decrease downstream)</p> <p>Upstream exceedance – WLA only considers the delta in loading</p>
WLA Exceedance When no Storm Event	<p>Examples from Wet Season (July 2016) and Dry Season (Dec. 2016)</p> <p>E. coli data in 2010 TMDL Report – not related to storm events</p>
What Does WLA Exceedance Mean for CMC	<p>Need to calculate E. coli loading & compare to WLA – Required in MS4 Permit. Discuss what a calculated exceedance mean for the MS4s?</p>



- Legend**
- TMDL/MS4 Stream Segments
 - NMED Stream Segments
 - North Diversion Channel
 - Rio Grande Segment w/ TMDL and Impairment for E. Coli
 - Interstate Highway
 - U.S. Highway
 - State Highway



CMC Monitoring
Figure 7
Rio Grande
NMED and MS4 Permit
Stream Segments

Sarah Ganley

From: Sarah Ganley
Sent: Thursday, March 02, 2017 9:42 AM
To: 'smith.nelly@epa.gov'
Cc: Chavez, Patrick (pchavez@amafca.org); Sarah Holcomb (sarah.holcomb@state.nm.us)
Subject: FW: MS4 CMC E. coli Loading Calculation Follow-Up
Attachments: CMC E coli Loading Percentage Calculation 3_2_17.xlsx

Hello Nelly –

I am forwarding you this e-mail to keep you informed of on-going coordination between the Middle Rio Grande Stormwater MS4 Compliance Monitoring Cooperative (CMC) and NMED regarding E. coli loading calculations and comparison to the TMDL WLA values in the Rio Grande.

Thank you,

Sarah J. Ganley, PE
Engineer
Water Resources
Direct line: 505-923-3314

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From: Sarah Ganley
Sent: Thursday, March 02, 2017 9:30 AM
To: Sarah Holcomb (sarah.holcomb@state.nm.us) <sarah.holcomb@state.nm.us>; Henderson, Heidi, NMENV <heidi.henderson@state.nm.us>; wayne.urbonas@state.nm.us
Cc: Chavez, Patrick (pchavez@amafca.org) <pchavez@amafca.org>
Subject: MS4 CMC E. coli Loading Calculation Follow-Up

Hello Sarah, Heidi, and Wano,

Thank you for taking the time for a conference call on February 16, 2017 with myself and Patrick Chavez regarding the Middle Rio Grande Stormwater MS4 Compliance Monitoring Cooperative (CMC) E. coli loading calculations and comparison to the TMDL WLA values in the Rio Grande.

After our conversation, we went back and re-checked our approach, made one modification, and added notes/clarifications to our calculations spreadsheet. I have attached an updated spreadsheet to this e-mail for your reference.

As a summary of what we discussed on February 16th:

- Sources for the E. coli loading measured in the river are not solely attributable to the CMC MS4 members; the calculations we presented serve to provide a reasonable estimate of the CMC contribution to the measured E. coli loading.
- The measured E. coli loading is attributable to point sources (Town of Bernalillo WWTP, City of Rio Rancho WWTP No. 2, City of Rio Rancho WWTP No. 3, Albuquerque Bernalillo Water Utility Authority, and Sandia Peak Ski Co.), as well as non-point sources such as MS4 contributions and natural background contributions.
- An estimation of the E. coli loading attributable to the CMC is needed to allow comparison with the WLA values.
- We presented reasoning for why the 6% and 10% values from the US EPA Approved Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed, June 30, 2010, Appendix F are not applicable estimations for this approach because these percentages do not consider the point source contributions to the measured E. coli loading. They make sense regarding the WLA determination, but not when looking at this from an in-stream E. coli loading determination.
- We presented alternative percentages of contribution – and as mentioned earlier, modified these after our conversation with you – that calculate a percentage of the CMC WLA value divided by the TMDL minus the MOS. This percentage represents an estimate of the percent of the CMC E. coli loading to all of the E. coli contributors (point sources, MS4s, and natural background). This percentage allows a reasonable estimation of the percent of the E. coli loading that is attributable to the CMC MS4s. Since our discussion, we removed the MOS from our percentage calculation.
- Using the above approach, the CMC then has an E. coli loading value to compare to the applicable WLA values, for a given stream segment and flow regime.
- The percentages of contribution that are presented for the upper stream segment (Alameda to Angostura) are essentially 6%, the same value presented in Appendix F of the 2010 US EPA Approved TMDL. The point sources in this stream segment are small (0 to 3% of the total TMDL), so although the jurisdictional area percentage presented in Appendix F did not include point sources, the effect is negligible. The pie charts in the attached spreadsheet help to illustrate this.
- The percentages of contribution that are presented for the lower stream segment (Isleta to Alameda) range from 1.8% to 6.5%. In Appendix F of the 2010 US EPA Approved TMDL and the NMED Nov. 2016 e-mail, the CMC value would be 6.7%. The greater difference in percentages in this stream segment is due to the presence of significant point sources (specifically the ABCWUA), which are relatively large contributors (2.5% to 70.7%, depending on the flow regime) to the total TMDL; therefore, because the percentage presented in Appendix F did not account for point sources, the impact to the calculated percent contribution by the CMC members can be significant.
- This approach is only an estimate of the CMC contribution to the E. coli loading. We do not know from the in-stream data the concentration of E. coli contributed by the CMC MS4s, or any of the other potential sources. By using this percentage approach, if other contributors are in exceedance of the WLA then the CMC will likely also be in exceedance since this approach relies on a percentage of a total. Therefore, the data collected by the CMC could not be used to determine the source causing the exceedance.

You left me a voicemail regarding the application of these percentages if and when the CMC adds a mid-point E. coli sample to their sampling program. To clarify:

- The percentages presented above and discussed during our conference call will still need to be applied if and when the CMC adds a mid-point E. coli sample to their sampling program. These percentages are to estimate how much of the total measured E. coli loading applies to the CMC MS4s.
- The TMDL was determined for two river segments, so each segment has different WLAs for the CMC; therefore, we currently divide the measured E. coli loading between these two segments so that they can be compared to the applicable WLA. The jurisdictional area from Appendix F of the 2010 US EPA Approved TMDL was used to estimate the percent of E. coli loading attributable to the northern segment (Alameda to Angostura) and the southern segment (Isleta to Alameda) of the Middle Rio Grande – 77% and 23%, respectively. If and when the

CMC adds a mid-point E. coli sample to their sampling program, these percentages will no longer need to be applied to the CMC E. coli loading calculation.

Thank you again for taking the time to discuss and review the CMC E. coli loading approach and calculations. We are moving forward with this E. coli loading approach. Please let me know if you have any questions or I can provide additional information or rationale for this approach.

Sarah J. Ganley, PE

Engineer

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Sarah Ganley

From: Holcomb, Sarah, NMENV <sarah.holcomb@state.nm.us>
Sent: Thursday, March 02, 2017 1:20 PM
To: Sarah Ganley; Henderson, Heidi, NMENV; Urbonas, Wayne, NMENV
Cc: Chavez, Patrick (pchavez@amafca.org); Smith, Nelly (Smith.Nelly@epa.gov)
Subject: RE: MS4 CMC E. coli Loading Calculation Follow-Up

Hi Sarah & Patrick:

Thanks for the email. I think this is a good approach to estimating the CMC's contribution in stormwater. If there continue to be exceedances of the benchmark, then perhaps it may be a worthwhile discussion to refine the math at work here and look closer at conditions the day of monitoring. But we'll cross that bridge when we come to it.

I also wanted to ask when the CMC will add the additional monitoring location (for E. coli only) at the AU break.. I believe this should be documented in your next annual report, but this shouldn't require re-approval of the monitoring plan overall. Nelly, do you agree?

~ Sarah

From: Sarah Ganley [mailto:sganley@bhinc.com]
Sent: Thursday, March 2, 2017 9:30 AM
To: Holcomb, Sarah, NMENV <sarah.holcomb@state.nm.us>; Henderson, Heidi, NMENV <heidi.henderson@state.nm.us>; wayne.urbanos@state.nm.us
Cc: Chavez, Patrick (pchavez@amafca.org) <pchavez@amafca.org>
Subject: MS4 CMC E. coli Loading Calculation Follow-Up

Hello Sarah, Heidi, and Wano,

Thank you for taking the time for a conference call on February 16, 2017 with myself and Patrick Chavez regarding the Middle Rio Grande Stormwater MS4 Compliance Monitoring Cooperative (CMC) E. coli loading calculations and comparison to the TMDL WLA values in the Rio Grande.

After our conversation, we went back and re-checked our approach, made one modification, and added notes/clarifications to our calculations spreadsheet. I have attached an updated spreadsheet to this e-mail for your reference.

As a summary of what we discussed on February 16th:

- Sources for the E. coli loading measured in the river are not solely attributable to the CMC MS4 members; the calculations we presented serve to provide a reasonable estimate of the CMC contribution to the measured E. coli loading.
- The measured E. coli loading is attributable to point sources (Town of Bernalillo WWTP, City of Rio Rancho WWTP No. 2, City of Rio Rancho WWTP No. 3, Albuquerque Bernalillo Water Utility Authority, and Sandia Peak Ski Co.), as well as non-point sources such as MS4 contributions and natural background contributions.
- An estimation of the E. coli loading attributable to the CMC is needed to allow comparison with the WLA values.
- We presented reasoning for why the 6% and 10% values from the US EPA Approved Total Maximum Daily Load (TMDL) for the Middle Rio Grande Watershed, June 30, 2010, Appendix F are not applicable estimations for this approach because these percentages do not consider the point source contributions to the measured E. coli loading. They make sense regarding the WLA determination, but not when looking at this from an in-stream E. coli loading determination.

- We presented alternative percentages of contribution – and as mentioned earlier, modified these after our conversation with you – that calculate a percentage of the CMC WLA value divided by the TMDL minus the MOS. This percentage represents an estimate of the percent of the CMC E. coli loading to all of the E. coli contributors (point sources, MS4s, and natural background). This percentage allows a reasonable estimation of the percent of the E. coli loading that is attributable to the CMC MS4s. Since our discussion, we removed the MOS from our percentage calculation.
- Using the above approach, the CMC then has an E. coli loading value to compare to the applicable WLA values, for a given stream segment and flow regime.
- The percentages of contribution that are presented for the upper stream segment (Alameda to Angostura) are essentially 6%, the same value presented in Appendix F of the 2010 US EPA Approved TMDL. The point sources in this stream segment are small (0 to 3% of the total TMDL), so although the jurisdictional area percentage presented in Appendix F did not include point sources, the effect is negligible. The pie charts in the attached spreadsheet help to illustrate this.
- The percentages of contribution that are presented for the lower stream segment (Isleta to Alameda) range from 1.8% to 6.5%. In Appendix F of the 2010 US EPA Approved TMDL and the NMED Nov. 2016 e-mail, the CMC value would be 6.7%. The greater difference in percentages in this stream segment is due to the presence of significant point sources (specifically the ABCWUA), which are relatively large contributors (2.5% to 70.7%, depending on the flow regime) to the total TMDL; therefore, because the percentage presented in Appendix F did not account for point sources, the impact to the calculated percent contribution by the CMC members can be significant.
- This approach is only an estimate of the CMC contribution to the E. coli loading. We do not know from the in-stream data the concentration of E. coli contributed by the CMC MS4s, or any of the other potential sources. By using this percentage approach, if other contributors are in exceedance of the WLA then the CMC will likely also be in exceedance since this approach relies on a percentage of a total. Therefore, the data collected by the CMC could not be used to determine the source causing the exceedance.

You left me a voicemail regarding the application of these percentages if and when the CMC adds a mid-point E. coli sample to their sampling program. To clarify:

- The percentages presented above and discussed during our conference call will still need to be applied if and when the CMC adds a mid-point E. coli sample to their sampling program. These percentages are to estimate how much of the total measured E. coli loading applies to the CMC MS4s.
- The TMDL was determined for two river segments, so each segment has different WLAs for the CMC; therefore, we currently divide the measured E. coli loading between these two segments so that they can be compared to the applicable WLA. The jurisdictional area from Appendix F of the 2010 US EPA Approved TMDL was used to estimate the percent of E. coli loading attributable to the northern segment (Alameda to Angostura) and the southern segment (Isleta to Alameda) of the Middle Rio Grande – 77% and 23%, respectively. If and when the CMC adds a mid-point E. coli sample to their sampling program, these percentages will no longer need to be applied to the CMC E. coli loading calculation.

Thank you again for taking the time to discuss and review the CMC E. coli loading approach and calculations. We are moving forward with this E. coli loading approach. Please let me know if you have any questions or I can provide additional information or rationale for this approach.

Sarah J. Ganley, PE
 Engineer
 Water Resources

Direct line: 505-923-3314

Bohannon Huston

Courtyard I
7500 Jefferson St. NE
Albuquerque, NM 87109-4335
www.bhinc.com

voice: 505.823.1000 **facsimile:** 505.798.7988 **toll free:** 800.877.5332

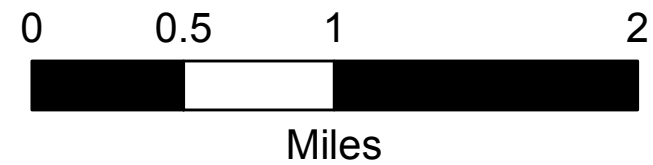
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Attachment 3

Map of Repaired Cross Connections



CROSS CONNECTION SITES



cross connections

Address

1812 Candelaria NW

Building type

city government office

SD size-inch

36

building name

Valle del Norte Family Development Center

confirmed date

1/21/2015

fixed date

5/6/2015

cost

\$12,098.00

ID

1

who paid for it

Department of Family and Community Services, COA

video pict



const pict



Address

4444 avenida manana ne

Building type

home

SD size-inch

24

building name

na

confirmed date

5/11/2015

fixed date

4/15/2016

cost

\$12,381.73

ID

2

who paid for it

Engineering/Storm/DMD

video pict

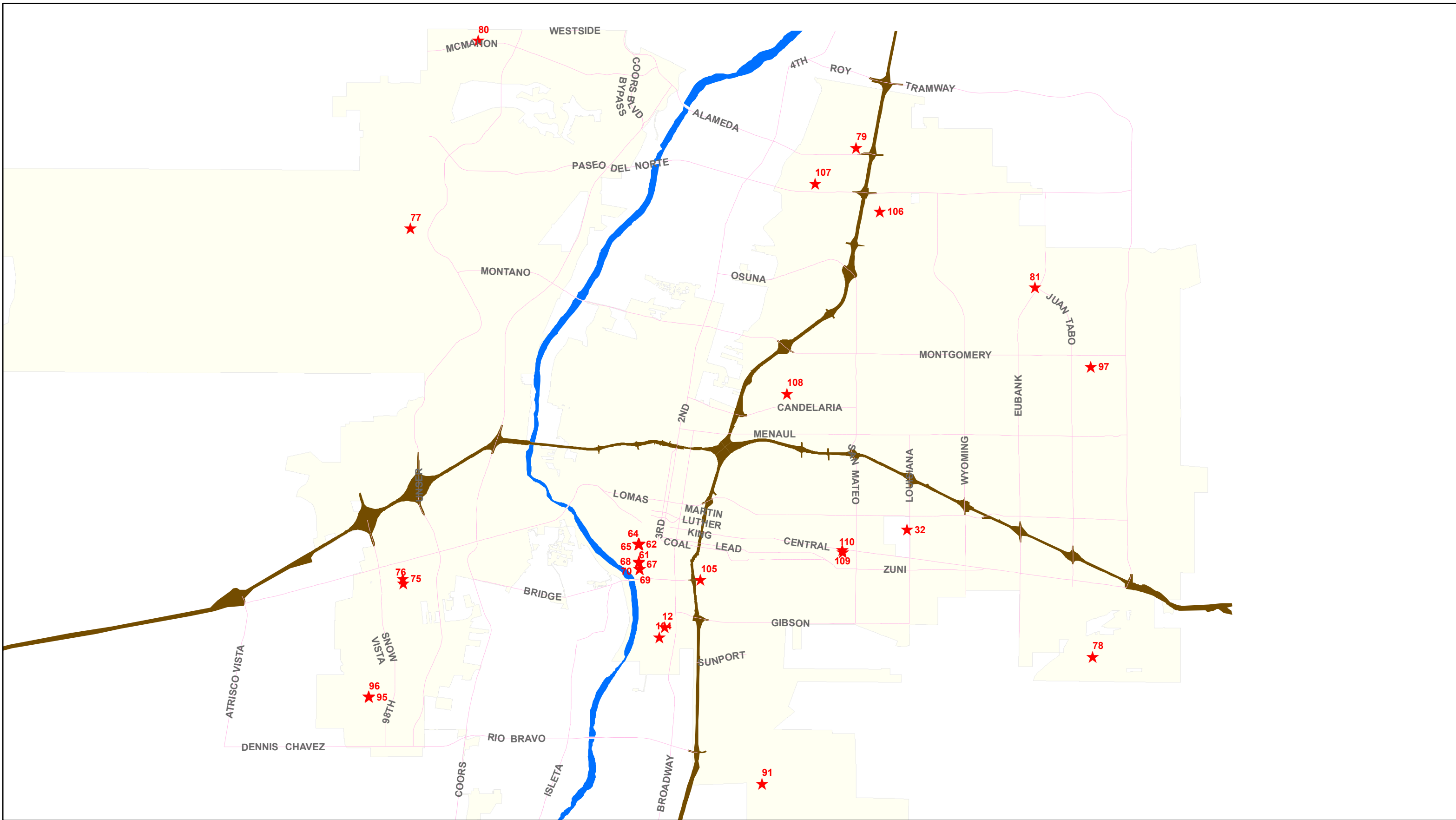


const pict

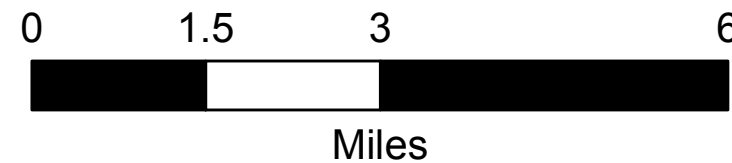


Attachment 4
Listing, Map, and Description of Storm Water
Quality Feature

date	year	project	cost	PN
6/21/2011	2011	Louisiana-hahn-security rack	\$2,400	
7/5/2011	2011	Amole pond out let rack at 98th and cent	\$2,600	
10/13/2011	2011	48 inch rack at 10128 Calle Chulita NW	\$2,900	
11/15/2011	2011	south broadway pond rack adjustmewnt	\$2,200	
1/4/2012	2012	ported riser design	\$52,000	
2/2/2012	2012	odelia tunnels racks	\$18,000	
3/13/2012	2012	Dumpester for PS-43 Urban	\$1,100	
9/24/2012	2012	ported riser at Piedra Lisa dam	\$22,000	440000
1/29/2013	2013	ported riser at Bluewater-Unser pond	\$21,000	440003
2/6/2013	2013	ported riser at Odelia pond	\$24,000	440004
2/26/2013	2013	trash screen at Ladera16 pond	\$15,000	440002
7/11/2013	2013	Dumpester for PS-30 Duranes	\$2,300	
11/19/2013	2013	trash screen for ps-36 Princton	\$200	
3/31/2014	2014	Pino Yards LID Retrofit	\$101,000	528000
9/15/2014	2014	8th St Streetscape Improvements	\$1,503,000	648391
10/1/2014	2014	South Broadway Drainage Project WQ	\$393,000	792602
12/1/2014	2014	pino yard permeable pavement	\$182,000	528002
12/21/2014	2014	Avenida Cesar Chavez Drainage Inlet	\$848,000	501507
3/4/2015	2015	Retanas nw-Lions-inlet-screen	\$700	
6/9/2015	2015	Louisiana & Lomas SD Improvements	\$1,900,000	730491
6/14/2015	2015	Four Hills Arroyo Debris&float Rack	\$116,000	756392
6/25/2015	2015	Santa Fe Village Flood Mitigation	\$68,000	785604
6/29/2015	2015	safety grate at la Charles NE culvert	\$700	
10/9/2015	2015	Siera sunset park- 2 trash racks	\$3,300	
10/28/2015	2015	Blake-Amole security gate	\$1,200	
11/11/2015	2015	Pollution prevention fish hanger-2000-ct	\$1,600	
12/7/2015	2015	adding gate to ladera-16 trsh rack	\$2,200	
1/20/2016	2016	Grate at Academy Hills park	\$1,900	
9/22/2016	2016	Unser and Paseo Grate	\$1,700	
10/6/2016	2016	90th st-sunset gardens-SW-grates	\$3,500	
11/22/2016	2016	Highland Senior Center Parking Lot	\$387,000	658802
4/19/2017	2017	Bryn Mawr Storm Drain Improvements	\$998,000	784903



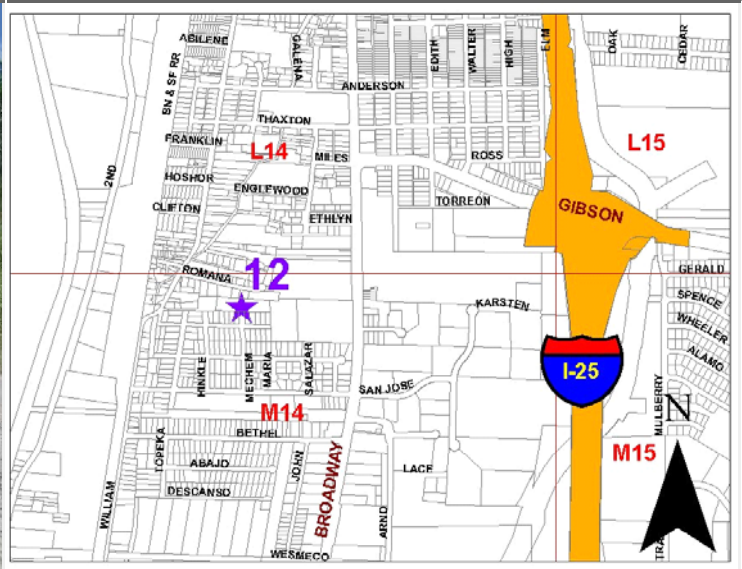
Stormwater Quality Features



SWQ Features

Ported Riser

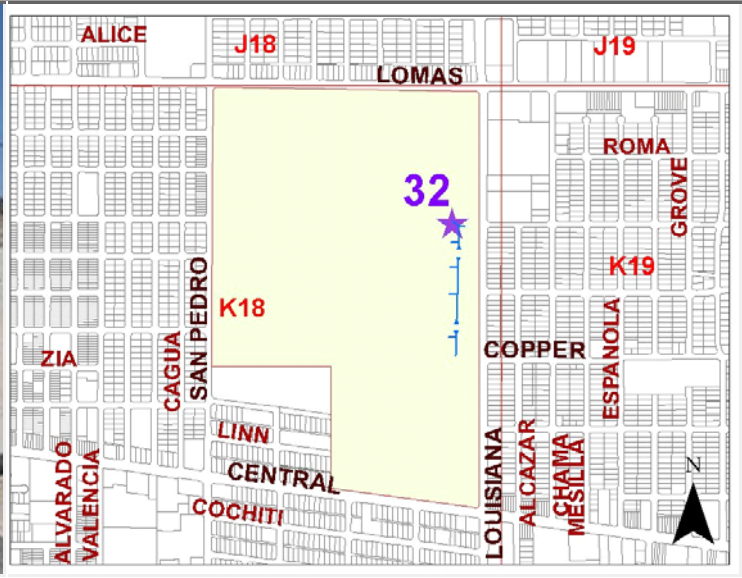
Ported Riser at Mechem Pond



MAP_KEY	<input type="text" value="M14"/>	City Quad	<input type="text" value="SE"/>
ARROYO	<input type="text" value="STORM DRAIN"/>		
Year_Built	<input type="text" value="2015"/>	NUMBER	<input type="text" value="12"/>
PROJECT NO	<input type="text" value="792602"/>	cost	<input type="text"/>
NOTES	<input type="text" value="INSIDE MECHEM'S POND"/>		
RACK SIZE	<input type="text"/>		
UPSTREAM SIZE	<input type="text" value="POND"/>		
DOWNSIDE SI	<input rcp"="" type="text" value="24\"/>		

Ported Riser

Expo NM Pond at LOMAS AND LOUISIANA



MAP_KEY City Quad

ARROYO

Year_Built NUMBER

PROJECT NO cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Inlets with Trash Screen

8th west of 717 stover sw



MAP_KEY

K13

City Quad

SW

ARROYO

STORM DRAIN

Year_Built

2015

NUMBER

59

PROJECT NO

648391

cost

1000

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Inlets with Trash Screen

8th st sw west of 717 stover sw



MAP_KEY

K13

City Quad

SW

ARROYO

STORM DRAIN

Year_Built

2015

NUMBER

60

PROJECT NO

648391

cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Inlets with Trash Screen

8th east of 801 stover sw



MAP_KEY

K13

City Quad

SW

ARROYO

STORM DRAIN

Year_Built

2015

NUMBER

61

PROJECT NO

648391

cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Inlets with Trash Screen

801 stover sw



MAP_KEY

K13

City Quad

SW

ARROYO

STORM DRAIN

Year_Built

2015

NUMBER

62

PROJECT NO

648391

cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Inlets with Trash Screen

800 stover sw



MAP_KEY

K13

City Quad

SW

ARROYO

STORM DRAIN

Year_Built

2015

NUMBER

63

PROJECT NO

648391

cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Inlets with Trash Screen

8th east of 800 stover sw



MAP_KEY

K13

City Quad

SW

ARROYO

STORM DRAIN

Year_Built

2015

NUMBER

64

PROJECT NO

648391

cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Inlets with Trash Screen

8th west of 724 stover sw



MAP_KEY

K13

City Quad

SW

ARROYO

STORM DRAIN

Year_Built

2015

NUMBER

65

PROJECT NO

648391

cost

NOTES

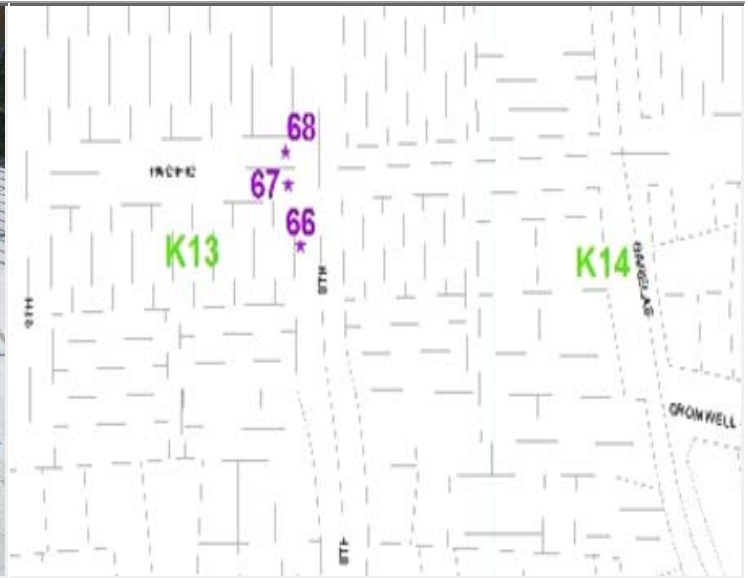
RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Inlets with Trash Screen

8th east of 800 pacific sw



MAP_KEY

K13

City Quad

SW

ARROYO

STORM DRAIN

Year_Built

2015

NUMBER

66

PROJECT NO

648391

cost

NOTES

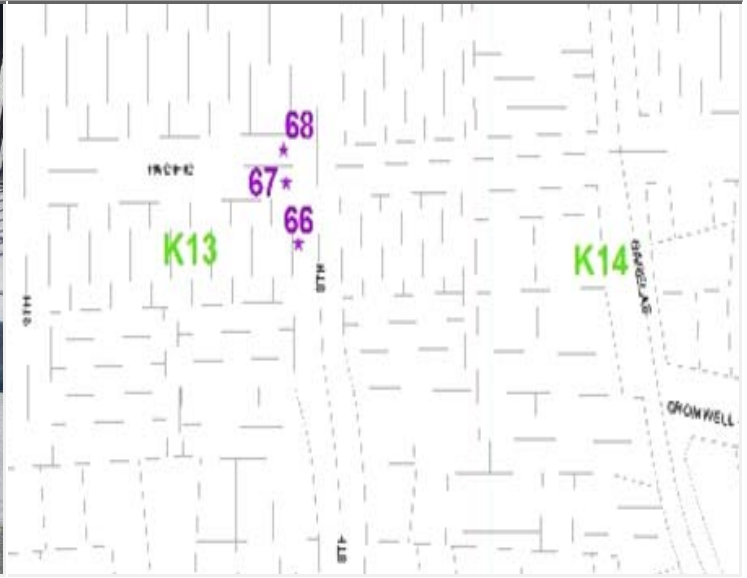
RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Inlets with Trash Screen

800 pacific sw



MAP_KEY

K13

City Quad

SW

ARROYO

STORM DRAIN

Year_Built

2015

NUMBER

67

PROJECT NO

648391

cost

NOTES

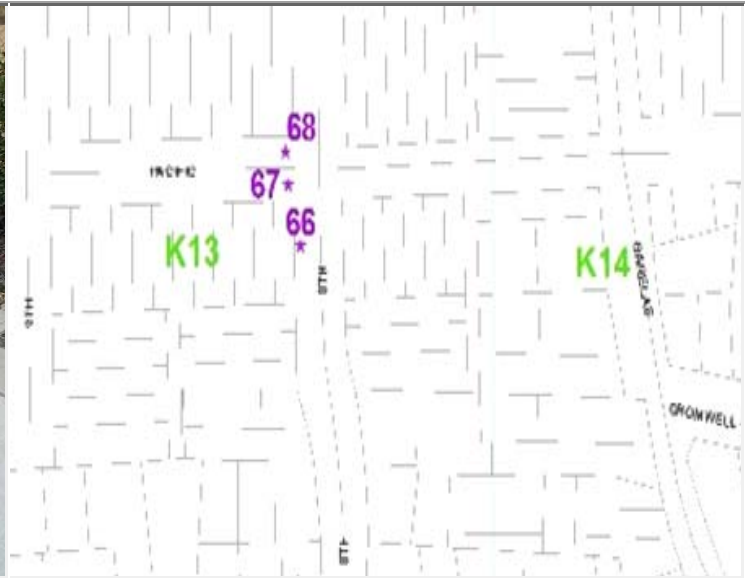
RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Inlets with Trash Screen

pacific s of 1017 8th sw



MAP_KEY

K13

City Quad

SW

ARROYO

STORM DRAIN

Year_Built

2015

NUMBER

68

PROJECT NO

648391

cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Inlets with Trash Screen

806 Marquez sw



MAP_KEY

K13

City Quad

SW

ARROYO

STORM DRAIN

Year_Built

2015

NUMBER

69

PROJECT NO

648391

cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Inlet with Trash Screen

Marquez south of 1223 8th sw



MAP_KEY

K13

City Quad

SW

ARROYO

STORM DRAIN

Year_Built

2015

NUMBER

70

PROJECT NO

648391

cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Trash Screen

90th st se, 150 ft south of sunset gardens se



MAP_KEY

L9

City Quad

SW

ARROYO

ODIN st sw

Year_Built

2016

NUMBER

75

PROJECT NO

cost

1743

NOTES

3"x3" clear openings-3/4" D bars-5/8"x6" plate-
installed by ed on 9-6-2016

RACK SIZE

3' x 16'

UPSTREAM SIZE

street

DOWNSTREAM SI

street

Trash Screen

90th st se, 550 ft south of sunset gardens se



MAP_KEY

L9

City Quad

SW

ARROYO

THOR st SW

Year_Built

2016

NUMBER

76

PROJECT NO

cost

1743

NOTES

3"x3" clear openings-3/4" D bars-5/8"x6" plate-
installed by ed on 9-6-2016

RACK SIZE

3' x 16'

UPSTREAM SIZE

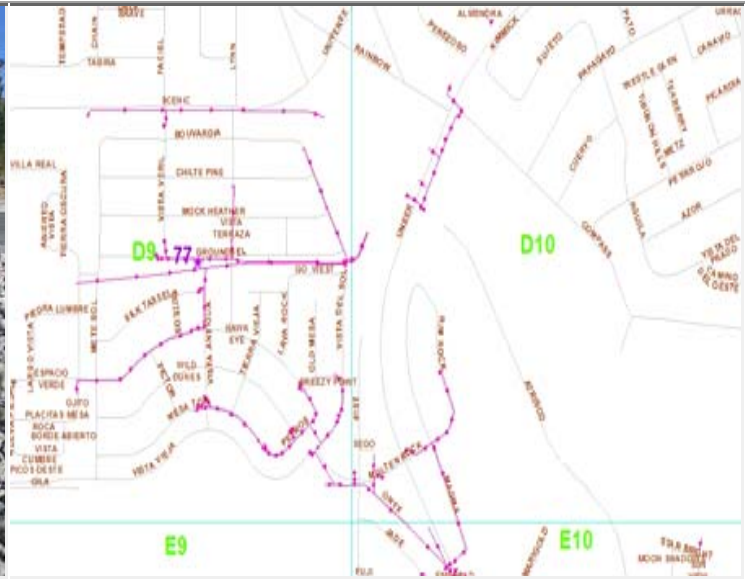
street

DOWNSTREAM SI

street

Trash Screen

8501 Groundsel nw



MAP_KEY

D9

City Quad

NW

ARROYO

24 in storm drain

Year_Built

2016

NUMBER

77

PROJECT NO

cost

1678

NOTES

3"x3" clear openings-3/4" D bars-installed by ed on 11-10-2016

RACK SIZE

19 w1x 48L x 53W2 and 13h x 53w2 in

UPSTREAM SIZE

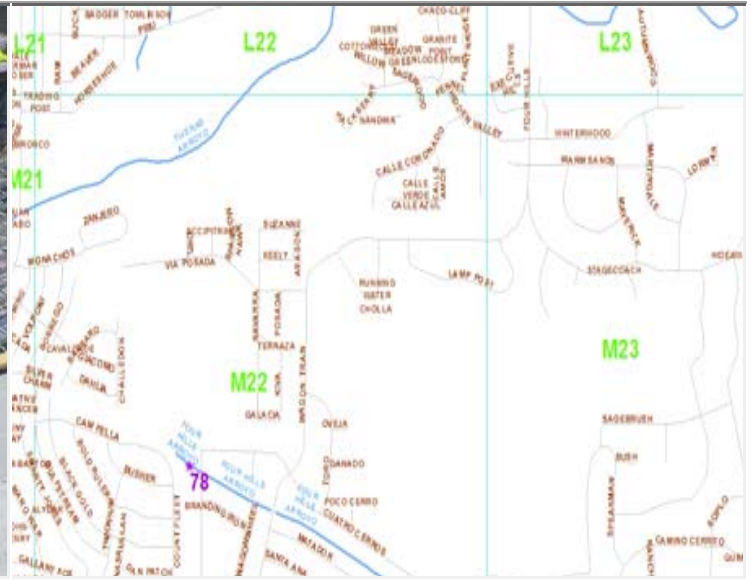
pond

DOWNSTREAM SI

24 in rcp

Trash Screen

four hills arroyo at sage brush



MAP_KEY

m22

City Quad

se

ARROYO

four hills

Year_Built

2015

NUMBER

78

PROJECT NO

756392

cost

NOTES

5 in x 5 in oc spacing and 15 deg from horiz

RACK SIZE

22'w1x16'w2x11'L+ 22' wx 2'h vertical

UPSTREAM SIZE

16'w1 x 22' w2 x 5'h

DOWNSTREAM SI

16'w1 x 22' w2 x 5'h

Security Rack

5117 blue sage ne (and san mateo)



MAP_KEY

c17

City Quad

ne

ARROYO

storm drains

Year_Built

2015

NUMBER

79

PROJECT NO

cost

1535

NOTES

3 cmp security racks

RACK SIZE

24 in dia

UPSTREAM SIZE

24 in

DOWNSTREAM SI

drainage easement channel

Trash Screen

6200 Nueva Espana nw



MAP_KEY

a10

City Quad

nw

ARROYO

storm drain inlet

Year_Built

2015

NUMBER

80

PROJECT NO

cost

695

NOTES

expanded metal 3/4 in 9 gage

RACK SIZE

8' x 25 in horiz+12'x6 in vertical

UPSTREAM SIZE

street

DOWNSTREAM SI

18 in rcp

Trash Screen

Academy hills park-Eubank and Juan Tabo



MAP_KEY

e21

City Quad

ne

ARROYO

bear trib

Year_Built

2016

NUMBER

81

PROJECT NO

cost

1923

NOTES

6" spacing, 3/4" bars

RACK SIZE

2' w x 2' h x 8'L

UPSTREAM SIZE

arroyo

DOWNSTREAM SI

underground

Security Screen

Airport-Tijeras outfall



MAP_KEY

P16

City Quad

se

ARROYO

Tijeras

Year_Built

2015

NUMBER

91

PROJECT NO

cost

NOTES

installed by street maintenance after a TV story that a man came out a MH inside the airport

RACK SIZE

9 ft Dia (108"), 6" x 6" c-c

UPSTREAM SIZE

108 in

DOWNSTREAM SI

arroyo

Trash screen

sierra sunset park-south 54 in pipe



MAP_KEY

n8

City Quad

sw

ARROYO

storm drain

Year_Built

2015

NUMBER

95

PROJECT NO

cost

NOTES

RACK SIZE

UPSTREAM SIZE

54

DOWNSTREAM SI

pond

Trash screen

SIERRA SUNSET PARK-NORTH 48 IN PIPE



MAP_KEY

n8

City Quad

sw

ARROYO

storm drain

Year_Built

2015

NUMBER

96

PROJECT NO

cost

NOTES

RACK SIZE

UPSTREAM SIZE

48

DOWNSTREAM SI

pond

Security screen

11805 la Charles NE



MAP_KEY

g22

City Quad

ne

ARROYO

storm drain

Year_Built

2015

NUMBER

97

PROJECT NO

cost

NOTES

RACK SIZE

48 in dia

UPSTREAM SIZE

48

DOWNSTREAM SI

arroyo

Stormceptor

Stormceptor at san jose and topeka se



MAP_KEY

M-14

City Quad

SE

ARROYO

Year_Built

2015

NUMBER

104

PROJECT NO

792602

cost

NOTES

stc 2400 precast

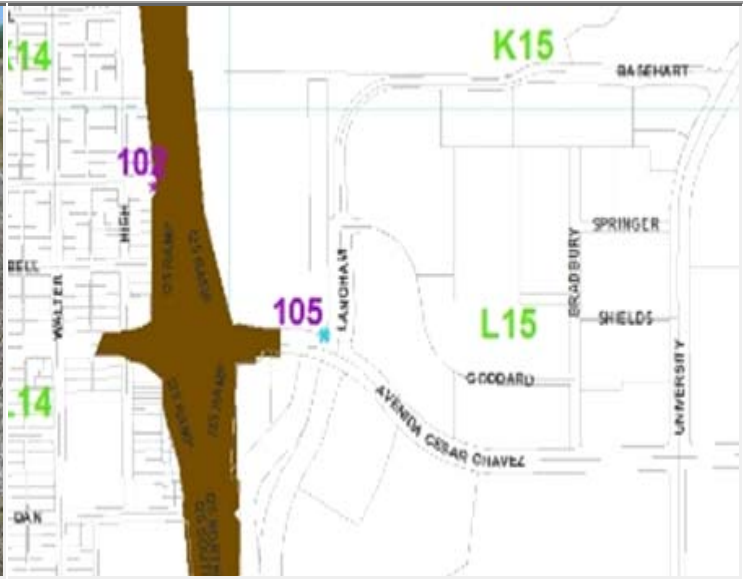
RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

SWQ MH

Avanida Cezar Chavez SE at I-25



MAP_KEY City Quad

ARROYO

Year_Built NUMBER

PROJECT NO cost

NOTES

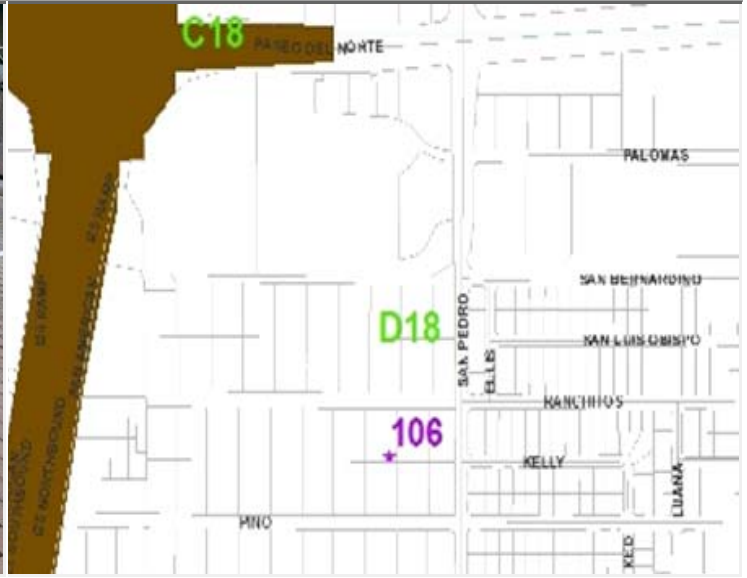
RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

permeable pavement

pino yard at pino and I-25



MAP_KEY

D-18

City Quad

NW

ARROYO

Year_Built

2015

NUMBER

106

PROJECT NO

528000

cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

SWQ structure

South Domingo Baca Arroyo west of Washington bridge



MAP_KEY

C-17

City Quad

NW

ARROYO

Year_Built

2015

NUMBER

107

PROJECT NO

800291

cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

2 SWQ Inlets

Aztec and Bryn Mawr ne



MAP_KEY

G-16

City Quad

NE

ARROYO

Year_Built

2017

NUMBER

108

PROJECT NO

784903

cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Permeable pavers

Highland Senior Center at 131 Monroe St NE



MAP_KEY

K-17

City Quad

NE

ARROYO

Year_Built

2016

NUMBER

109

PROJECT NO

658802

cost

NOTES

RACK SIZE

UPSTREAM SIZE

DOWNSTREAM SI

Bio-Swales

Highland Senior Center at 131 Monroe St NE



MAP_KEY

K-17

City Quad

NE

ARROYO

Year_Built

2016

NUMBER

110

PROJECT NO

658802

cost

NOTES

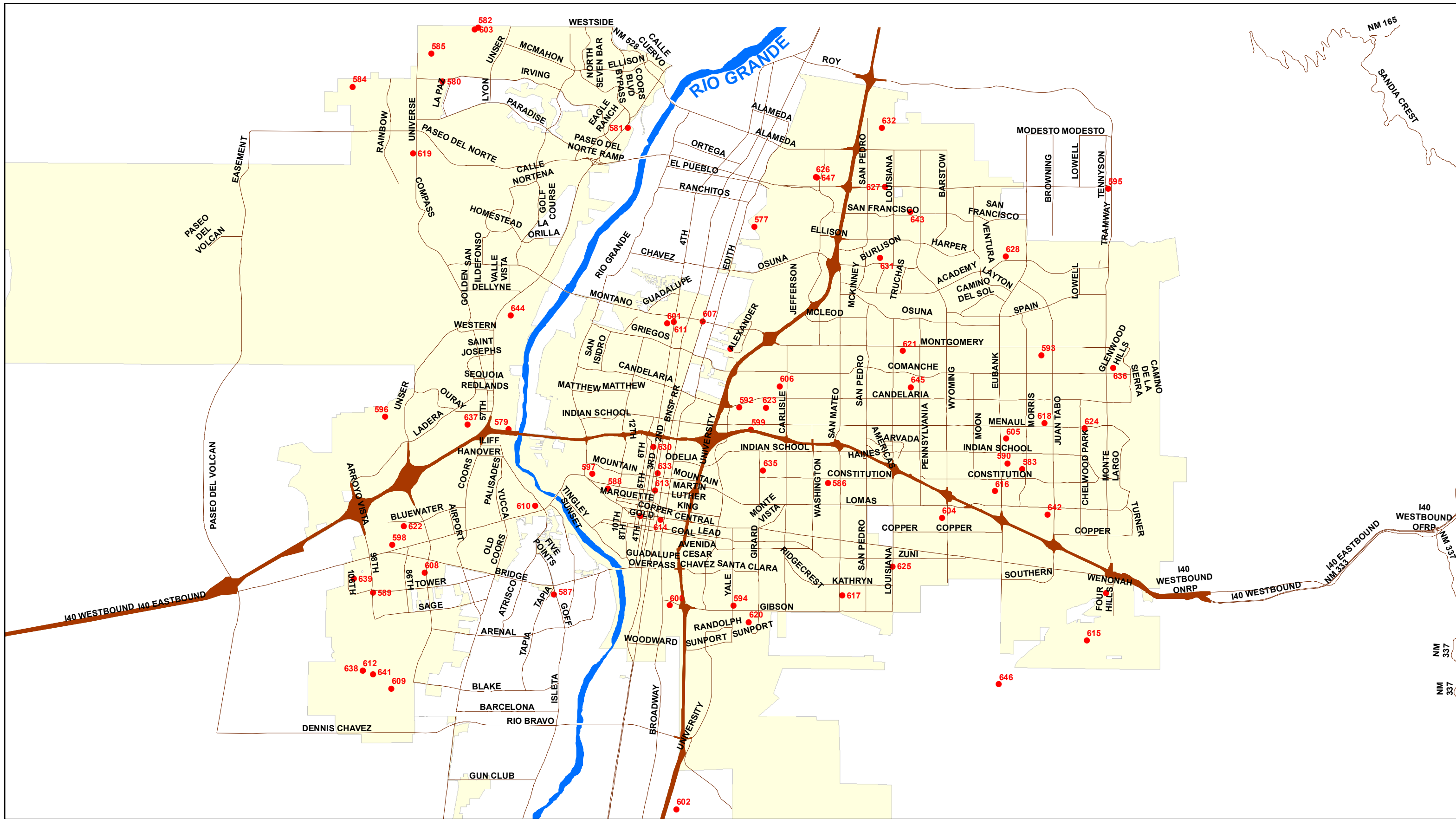
RACK SIZE

UPSTREAM SIZE

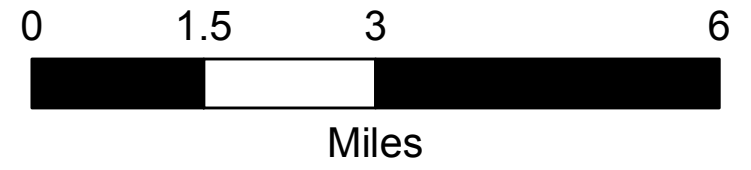
DOWNSTREAM SI

Attachment 5

Map and Description of 311 Complaints



311 CALLS 2016-2017



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address 4321 YALE NE- PREMIER DISTRIBUTING CO

Event ID 578 REPORTING SOURCE E-MAIL Complaint Date 7/19/2016

CUSTOMER KALI BRONSON 311CASE ID E-MAIL e-mail kbronson@bernco.gov

CUSTOMER Ph# 848-1544 SharePointLink: Z:\MUNICIPAL DEVELOPMENT\SHARE\MD-Storm\7_NPDES\311_SWQ

Complaint: odors of yeast and beer at the pond, and had a slight odor and excess algal growth. PDM told him that when the beer they keep expires they destroy containers and the liquids go to the storm drain outlet.

Suspected Facility PREMIER DISTRIBUTING CO Type of Complaint GREY WATER

Inspection Date 7/19/2016 Number of Field Visits 1 Inspector SK

Facility Contact MAINTENANCE MANAGER Facility Ph. #

FIELD OBSERVATION

there was a continous low flow in the BC pond at gregoes and RR track. Also I saw a continous water discharging into the storm drain.Lee, maintenance manager, told me that this is fron condensed water coming from the refrigrated warehouse.they have also a truck wash bay that is connected to the storm darin.

INITIAL ACTION

we sent a letter on 7-27-16 to this company asking to fix the problem.



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink: Z:\MUNICIPAL DEVELOPMENT\SHARE\MD-Storm\7_NPDES\311_SWQ

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

KAYENTA & IRVING NW

Event ID

580

REPORTING SOURCE

311

Complaint Date

7/25/2016

CUSTOMER

ANONYMOUS

311CASE ID

15139356

e-mail

na

CUSTOMER Ph#

na

SharePointLink:

..2016\2016-07-25-15139356-kayenta and irving nw

Oil leaking from car

Complaint:

Suspected Facility

HOME

Type of Complaint

OIL

Inspection Date

7/26/2016

Number of Field Visits

1

Inspector

SK

Facility Contact

NA

Facility Ph. #

na

FIELD
OBSERVATION

I saw some oil spots on the street at 6131 Bisbee NW

INITIAL
ACTION

I covered the oil spots with absorbent and distributed pollution prevention brochures at this neighborhood.



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address **6115 RED ROCK PARK NW**

Event ID **582** REPORTING SOURCE **311** Complaint Date **7/25/2016**

CUSTOMER **CITY OF ALBUQUERQUE MOBILE** 311CASE ID **15141734** e-mail <http://seeclickfix.com/issues/2729>

CUSTOMER Ph# SharePointLink: .20162016-07-26-15141734-6115 red rock park nw

Complaint: Chemical washed down storm drain. Blue chemical of some sort running down the gutter from this house into storm drain on Milky Way just before black arroyo
View the location on a map here: <http://seeclickfix.com/issues/2729810>

Suspected Facility **PREVENTATIVE PEST CONTROL** Type of Complaint **HAZARDOUS MATERIAL**

Inspection Date **7/26/2016** Number of Field Visits **1** Inspector **SK**

Facility Contact **CONTRACTOR** Facility Ph. # **792-8380**

FIELD OBSERVATION

I say dry blue color residue along the gutter stating from this address.the resident told me that their pest control contractor spilled the dye on the street.

INITIAL ACTION

The pest control contractor told me that the blue color chemical is a dye spilled by accident this dye is called spray indicator xl by Helen mixed with herbicide to show the sprayed area.It is a safe dye.I also distributed pollution prevention brochures at this neighborhood.



Address **10816 MAHLON NE**

Event ID **583** REPORTING SOURCE **311** Complaint Date **8/4/2016**

CUSTOMER **ANONYMOUS** 311CASE ID **15170299** e-mail **na**

CUSTOMER Ph# **na** SharePointLink: [https://2016\2016-08-04-15170299-10816 mahlon ne](https://2016\2016-08-04-15170299-10816%20mahlon%20ne)

Complaint: Diesel spill from truck parked in the street.

Suspected Facility **HOME** Type of Complaint **OIL**

Inspection Date **8/4/2016** Number of Field Visits **1** Inspector **SK**

Facility Contact **NA** Facility Ph. # **na**

FIELD OBSERVATION

there was a big spot of dissolved asphalt at this location.

INITIAL ACTION

it has been cleaned up and no further action was necessary. I distributed pollution prevention brochures at this neighborhood



Address

7904 UNIONVILLE CT NW

Event ID

584

REPORTING SOURCE

311

Complaint Date

8/9/2016

CUSTOMER

ANONYMOUS

311CASE ID

WEB

e-mail

nana

CUSTOMER Ph#

na

SharePointLink:

..\\2016\\2016-08-09-web-7904 unionville nw\\2016-08-12

motor and gear oil

Complaint:

Suspected Facility

HOME

Type of Complaint

OIL

Inspection Date

8/12/2016

Number of Field Visits

1

Inspector

SK

Facility Contact

NA

Facility Ph. #

na

FIELD
OBSERVATION

there were several oil spots

INITIAL
ACTION

covered the oil spots with absorbent and distributed pollution prevention brochures at this neighborhood



Address **6324 CORTE ALZIRA NW**

Event ID **585** REPORTING SOURCE **311** Complaint Date **8/10/2016**

CUSTOMER **CHRIS GUTHART** 311CASE ID **15187642** e-mail

CUSTOMER Ph# **321-9140** SharePointLink: [..2016\2016-08-11-15187642-6324 corte alzira nw](https://2016\2016-08-11-15187642-6324 corte alzira nw)

Oil leaking from somewhere on property

Complaint:

Suspected Facility **HOME** Type of Complaint **OIL**

Inspection Date **8/12/2016** Number of Field Visits **1** Inspector **SK**

Facility Contact **NA** Facility Ph. #

FIELD OBSERVATION

the dry oil residue was visible that was originated from this address.

INITIAL ACTION

It was dry and nothing can be done about it. I distributed pollution prevention brochures at this neighborhood



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION

Address **1711 SIRIUS SW**

Event ID **587** REPORTING SOURCE **311** Complaint Date **8/11/2016**

CUSTOMER **LILIA ANDRADE** 311CASE ID **15191714** e-mail

CUSTOMER Ph# **688-2447** SharePointLink: https://2016\2016-08-11-15191714-1711_sirius_sw

Oil is on Dryco SW located north of 1711 Sirius SW

Complaint:

Suspected Facility **HOME** Type of Complaint **OIL**

Inspection Date **8/29/2016** Number of Field Visits **1** Inspector **SK**

Facility Contact **NA** Facility Ph. #

FIELD OBSERVATION

I saw two minor dried oil spots at this location.

INITIAL ACTION

I distributed pollution prevention brochures at this neighborhood.



Address **1508 FRUIT AVE NW**

Event ID **588** REPORTING SOURCE **311** Complaint Date **8/26/2016**

CUSTOMER **ANONYMOUS** 311CASE ID **15234014** e-mail

CUSTOMER Ph# **na** SharePointLink: [..2016\2016-08-29-15234014-1508-fruit.nw](https://2016\2016-08-29-15234014-1508-fruit.nw)

Bottle of oil sitting out, spreading due to rain, staining the ground and wall around it.

Complaint:

Suspected Facility **HOME** Type of Complaint **OIL**

Inspection Date **8/30/2016** Number of Field Visits **1** Inspector **SK**

Facility Contact **RESIDENT** Facility Ph. #

FIELD OBSERVATION

the oil containers were gone but still there were oil around the dumpster

INITIAL ACTION

I covered the oil spots with oil absorbent. Also distributed pollution prevention brochures at this neighborhood.



Address **O'REILEY'S STORE AT 9750 TOWER SW**

Event ID **589** REPORTING SOURCE **311** Complaint Date **9/6/2016**

CUSTOMER **ISSAC SISNEROS** 311CASE ID **15262436** e-mail

CUSTOMER Ph# **505/450-8587** SharePointLink: [..2016\2016-09-06-15262436-oreiley at tower-97th st sw](https://2016\2016-09-06-15262436-oreiley%20at%20tower-97th%20st%20sw)

Oil running down the street from an O'Reiley's Store

Complaint:

Suspected Facility **O'REILEY'S STORE** Type of Complaint **OIL**

Inspection Date **9/7/2016** Number of Field Visits **1** Inspector **SK**

Facility Contact **MANAGER** Facility Ph. # **575-956-5550**

FIELD OBSERVATION

the manager told me that someone dumped used oil and trash at night into their dumpster area,

INITIAL ACTION

he said he will clean it up by the end of this week. I left some pollution prevention brochures with manager.



Address **10210 EDEN CT NE**

Event ID **590** REPORTING SOURCE **311** Complaint Date **9/6/2016**

CUSTOMER **RICHARD TYE** 311CASE ID **15260640** e-mail

CUSTOMER Ph# **974-7949** SharePointLink: <https://2016\2016-09-06-15260640-10210 eden ct ne>

Complaint: Occasionally at least 1 or 2 times a week there are chemicals (possibly paint) that are draining into the storm drain.

Suspected Facility **HOME** Type of Complaint **PAINT**

Inspection Date **9/7/2016** Number of Field Visits **1** Inspector **SK**

Facility Contact **RESIDENT** Facility Ph. # **na**

FIELD OBSERVATION

the home owner at 10210 was doing some stucco work and they washed away white colored paint.

INITIAL ACTION

I asked them to stop releasing dirty water into the street. also I distributed pollution prevention brochures at this neighborhood



Address WEEMS AV. SW & DEAN DR. SW

Event ID 591 REPORTING SOURCE 311 Complaint Date 9/12/2016

CUSTOMER FRANK ROMERO 311CASE ID 15280655 e-mail

CUSTOMER Ph# 505/463-5619 SharePointLink: ..\2016\2016-09-13-15280655-weems-dean-sw

Oil is underneath parked car.

Complaint:

Suspected Facility HOME Type of Complaint OIL

Inspection Date 9/14/2016 Number of Field Visits 1 Inspector SK

Facility Contact NA Facility Ph. #

FIELD OBSERVATION

the oil spots has been covered with absorbent.

INITIAL ACTION

I distributed pollution prevention brochures at this neighborhood



Address **FMH AT 2108 CANDELARIA NE**

Event ID **592** REPORTING SOURCE EMAIL Complaint Date **9/13/2016**

CUSTOMER **PATRICK CHAVEZ** 311CASE ID **NA** e-mail **pchavez@amafca.org**

CUSTOMER Ph# **884-2215** SharePointLink: [..2016\2016-09-13-email-fmh solution at 2108 candelaria ne](https://2016/2016-09-13-email-fmh-solution-at-2108-candelaria-ne)

Complaint: **we noticed some staining out the back of fmh material handling solutions**

Suspected Facility **FMH BUSINESS** Type of Complaint **HAZARDOUS MATERIAL**

Inspection Date **9/14/2016** Number of Field Visits **1** Inspector **SK**

Facility Contact **MANAGER** Facility Ph. #

FIELD OBSERVATION

I saw light brown color staining in the alley behind this business. The manager showed me the backyard of the business and I did not see any source of liquid dumping. I noticed several piles of batteries and machine parts on palets.it looks like the source of staining is the rust from the machine parts stored outside. The manager told me that the stain has been there as long as he remembers back since 15 years ago.

INITIAL ACTION

I gave them several copies of pollution prevention brochures for their employees.



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

YALE SE & CENTRE SE

Event ID

594

REPORTING SOURCE

311

Complaint Date

9/30/2016

CUSTOMER

EDDIE CHAVEZ

311CASE ID

15331392

e-mail

CUSTOMER Ph#

505/573-1123

SharePointLink:

.._2016\2016-09-30-15331392-yale-centre se

Complaint:

someone was dumping large bins of fluid into the gutter at this location

Suspected Facility

TRUCK

Type of Complaint

CONSTRUCTION

Inspection Date

10/4/2016

Number of Field Visits

1

Inspector

SK

Facility Contact

NA

Facility Ph. #

na

FIELD OBSERVATION

the white material on the top of grate is stucco. it looks like some construction company dumped their dirty water in to this inlet.

INITIAL ACTION

UNIT 415 CLEANED 5 INLETS/LATERALS 20'



Address

7849 TRAMWAY BLVD NE

Event ID

595

REPORTING SOURCE

311

Complaint Date

10/10/2016

CUSTOMER

ANN MARIE CAFFREY

311CASE ID

15357838

e-mail

CUSTOMER Ph#

505 259 2004

SharePointLink:

..2016\2016-10-10-15357838-7849 tramway ne

Complaint:

Antifreeze Coolant on the ground in a puddle on the north west corner of the building on the other side of the curb (about 3x3 puddle)

Suspected Facility

VALVOLINE INSTANT OIL CHANGE

Type of Complaint

OIL

Inspection Date

10/11/2016

Number of Field Visits

1

Inspector

SK

Facility Contact

MANAGER

Facility Ph. #

FIELD OBSERVATION

this is the only oil spot I saw, it was a minor and dried.

INITIAL ACTION

I distributed pollution prevention brochures at this complex



Address

2200 WEDGEWOOD CT NW

Event ID

596

REPORTING SOURCE

WEB

Complaint Date

10/17/2016

CUSTOMER

ANONYMOUS

311CASE ID

NA

e-mail

CUSTOMER Ph#

SharePointLink:

..\\2016\\2016-10-17-web-2200 wedgewood ct nw

Oil Containers and Liquid Material on North side of house spilling out and leaking out to other areas

Complaint:

Suspected Facility

HOME

Type of Complaint

OIL

Inspection Date

10/18/2016

Number of Field Visits

1

Inspector

SK

Facility Contact

RESIDENT

Facility Ph. #

na

FIELD
OBSERVATION

I saw two coverd 5 gallon buckets near the trash can, not leaking.

INITIAL
ACTION

no action was necessary. I distributed pollution prevention brochures at this neighborhood.



Address **LA PLACITA DINING ROOMS AT 206 SAN FELIPE NW**

Event ID **597** REPORTING SOURCE **311** Complaint Date **10/18/2016**

CUSTOMER **MIKE SMITH** 311CASE ID **15378172** e-mail

CUSTOMER Ph# **489-0050** SharePointLink: [..2016\2016-10-18-15378172-old town rd and san pasquale nw](https://2016\2016-10-18-15378172-old town rd and san pasquale nw)

The kitchen was power washed and sludge and grease were washed out.

Complaint:

Suspected Facility **PLACITAS DINING ROOM** Type of Complaint **GREY WATER**

Inspection Date **10/19/2016** Number of Field Visits **1** Inspector **SK**

Facility Contact **MANAGER** Facility Ph. # **247-2204**

FIELD OBSERVATION

the manager denied dumping any thing to storm inlet.

INITIAL ACTION

I left several pollution prevention brochures at this place.



Address

90TH ST AND VOLCANO NW

Event ID

598

REPORTING SOURCE

WEB

Complaint Date

10/24/2016

CUSTOMER

WAYNE SHRUBSALL AND BARBARA

311CASE ID

NA

e-mail

wayneshrubsall@q.com

CUSTOMER Ph#

505-944-5348

SharePointLink:

..\\2016\\2016-10-24-web-90th st and volcano nw

people have dumped varieties of trash, several couches, and other litter.

Complaint:

Suspected Facility

CITY VACANT LAND

Type of Complaint

TRASH

Inspection Date

10/27/2016

Number of Field Visits

1

Inspector

SK

Facility Contact

NA

Facility Ph. #

na

FIELD OBSERVATION

I observed several big pieces of furnitures and trash dumping on this lot. This is a city owned land.

INITIAL ACTION

I created two 311 cases (15387085 and 15387110) to clean up this area.



Address **2300 MENAUL NE (BEHIND THE BUILDING)**

Event ID **599** REPORTING SOURCE **WEB** Complaint Date **11/4/2016**

CUSTOMER **CINDY FELIZ** 311CASE ID **NA** e-mail **cfeliz@salud.unm.edu**

CUSTOMER Ph# **(505)225-4162** SharePointLink: [..20162016-11-7-2300_menaul_ne](https://20162016-11-7-2300_menaul_ne)

Trash between fence and I-40.

Complaint:

Suspected Facility **I-40** Type of Complaint **TRASH**

Inspection Date **11/9/2016** Number of Field Visits **1** Inspector **SK**

Facility Contact **TIMOTHY TRUJILLO** Facility Ph. #

FIELD
OBSERVATION

there were a lot of trash between the fence and freeway.

INITIAL
ACTION

forwarded to NMDOT



Address

Event ID REPORTING SOURCE E-MAIL Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

LOS PICAROS RD SE

Event ID

602

REPORTING SOURCE

WEB

Complaint Date

11/22/2016

CUSTOMER

JUDITH WYMAN

311CASE ID

NA

e-mail

jwyman@sandia.gov

CUSTOMER Ph#

505-944-5348

SharePointLink:

..20162016-11-22-los picaros rd se

trash on the road

Complaint:

Suspected Facility

Type of Complaint

TRASH

Inspection Date

11/28/2016

Number of Field Visits

1

Inspector

SK

Facility Contact

NA

Facility Ph. #

FIELD
OBSERVATION

no trash found

INITIAL
ACTION

I spoke to the caller and she said that the trash was removed next day after she reported.



Address

6140 MALPAIS PARK NW

Event ID

603

REPORTING SOURCE

311

Complaint Date

11/28/2016

CUSTOMER

SELBY LUCERO

311CASE ID

161126-000366

e-mail

nmrkatk@hotmail.com

CUSTOMER Ph#

(505) 506-0318

SharePointLink:

..2016\2016-11-26-161126-000366-6140 malpais park nw

Complaint:

Oil is running down the street from truck parked in the street. Citizen states it is running like water

Suspected Facility

UNKNOWN

Type of Complaint

OIL

Inspection Date

11/29/2016

Number of Field Visits

1

Inspector

SK

Facility Contact

RESIDENT

Facility Ph. #

FIELD OBSERVATION

there was a large amount of oil on the street at this location. Nobody was home at this address and the truck was gone.

INITIAL ACTION

I covered the oil spots with absorbent and distributed pollution prevention brochures at this neighborhood.



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

EMBUDITO ARROYO AND MENAUL

Event ID

605

REPORTING SOURCE

WEB

Complaint Date

1/10/2017

CUSTOMER

DOVEE RODRIGUES

311CASE ID

NA

e-mail

lemondrophc@live.com

CUSTOMER Ph#

322-3047

SharePointLink:

Excessive full garbage bags and misc trash illegally dumped on the west side of the arroyo.

Complaint:

Suspected Facility

ARROYO

Type of Complaint

TRASH

Inspection Date

1/10/2017

Number of Field Visits

1

Inspector:

sk

Facility Contact

Facility Ph. #

FIELD

OBSERVATION

INITIAL
ACTION

forwarded to arroyo maintenance for clean up.

Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

**FIELD
OBSERVATION**

**INITIAL
ACTION**



Address **MONTANIO AT RAIL ROAD CROSSING BETWEEN EDITH AND 2ND AT**

Event ID **607** REPORTING SOURCE **311** Complaint Date **1/10/2017**

CUSTOMER **RICHARD MONTOYA** 311CASE ID **170110-003112** e-mail **mr.fixitrich@yahoo.com**

CUSTOMER Ph# **340-4322** SharePointLink: <https://2017/2017-01-10-170110-003112-montanio-rr>

Complaint: **Citizen reports that at 830pm at the rail crossing he observed a fuel train car spilling liquid. It came out at the crossing and may have been spilling along the tracks for some time and continue to do so.**

Suspected Facility **NM RAIL RUNNER** Type of Complaint **HAZARDOUS MATERIAL**

Inspection Date **1/12/2017** Number of Field Visits **1** Inspector: **sk**

Facility Contact **NA** Facility Ph. #

FIELD OBSERVATION

I went there and did not see any spill.reported the issue to fire department.

INITIAL ACTION

this case has been reported to fire department.



Address **544 WHISPER MESA SW**

Event ID **608** REPORTING SOURCE **311** Complaint Date **1/30/2017**

CUSTOMER **ANONYMOUS** 311CASE ID **170130-002820** e-mail

CUSTOMER Ph# SharePointLink: [..20172017-01-30-170130-002820-544 whisper sw](https://sharepoint.com/..20172017-01-30-170130-002820-544%20whisper%20sw)

leaks oil into the street and every time they drive down the street.

Complaint:

Suspected Facility **HOME** Type of Complaint **OIL**

Inspection Date **2/1/2017** Number of Field Visits **1** Inspector: **sk**

Facility Contact Facility Ph. #

FIELD OBSERVATION

there was a big oil spot at this location

INITIAL ACTION

I covered all oil spots with absorbent and distributed pollution prevention brochures at this neighborhood.



Address

9515 VALLE VIDAL PL SW

Event ID

609

REPORTING SOURCE

311

Complaint Date

2/1/2017

CUSTOMER

LEROY CORDOVA

311CASE ID

170201-001057

e-mail

leeleeinabq@yahoo.com

CUSTOMER Ph#

873-1542

SharePointLink:

..20172017-02-01-170201-001057-9515 valle vidal pl sw

Car, BMW, on the street leaking a lot of oil. Been on the street for about a month.

Complaint:

Suspected Facility

HOME

Type of Complaint

OIL

Inspection Date

2/6/2017

Number of Field Visits

1

Inspector:

sk

Facility Contact

Facility Ph. #

FIELD
OBSERVATION

there was a cardboard under the car, no oil on the street.

INITIAL
ACTION

I distributed pollution prevention brochures at this neighborhood.



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

**FIELD
OBSERVATION**

**INITIAL
ACTION**



Address **EL PAYASO RESTAURANT AT 5333 4TH ST NW**

Event ID **611** REPORTING SOURCE **311** Complaint Date **2/8/2017**

CUSTOMER **ANONYMOUS** 311CASE ID **170208-001733** e-mail

CUSTOMER Ph# SharePointLink: [..2017\170208-001733-el payaso at 5333 4th st nw](https://2017\170208-001733-el_payaso_at_5333_4th_st_nw)

Complaint: **El Payaso restaurant has oil leaking from the dumpster they dug a trench and the oil runs into that and could travel to the storm drain citizen feels the department should go out to inspect.**

Suspected Facility **EL PAYASO RESTAURANT** Type of Complaint **COOKING GREASE**

Inspection Date **2/10/2017** Number of Field Visits **1** Inspector: **sk**

Facility Contact **MANAGER** Facility Ph. #

FIELD OBSERVATION

there was some cooking oil dumped near the dumpster by the previous restaurant owner.

INITIAL ACTION

the manager told me that she will clean it up immediately.



Address **10209 SANDY RIDGE SW**

Event ID **612** REPORTING SOURCE **311** Complaint Date **2/11/2017**

CUSTOMER **ANONYMOUS** 311CASE ID **170211-001629** e-mail

CUSTOMER Ph# SharePointLink: https://10209sandyridge.com/170211-001629-10209_sandy_ridge_sw

Complaint: **black chevy impala renters allowing a car to leak all the oil onto street.**

Suspected Facility **HOME** Type of Complaint **OIL**

Inspection Date **2/14/2017** Number of Field Visits **1** Inspector: **sk**

Facility Contact **RESIDENT** Facility Ph. #

FIELD OBSERVATION

there was a big oil spot at this location. No body was home at the time of my inspection.

INITIAL ACTION

I covered the oil spots with absorbent and distributed pollution prevention brochures at this neighborhood



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

**FIELD
OBSERVATION**

**INITIAL
ACTION**

Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

RV dumping sanitary waste into storm inlet

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD
OBSERVATION

INITIAL
ACTION



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink: <..2017\170301-11004 woodland ne-web>

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

vehicle parked in street is leaking oil

Complaint:

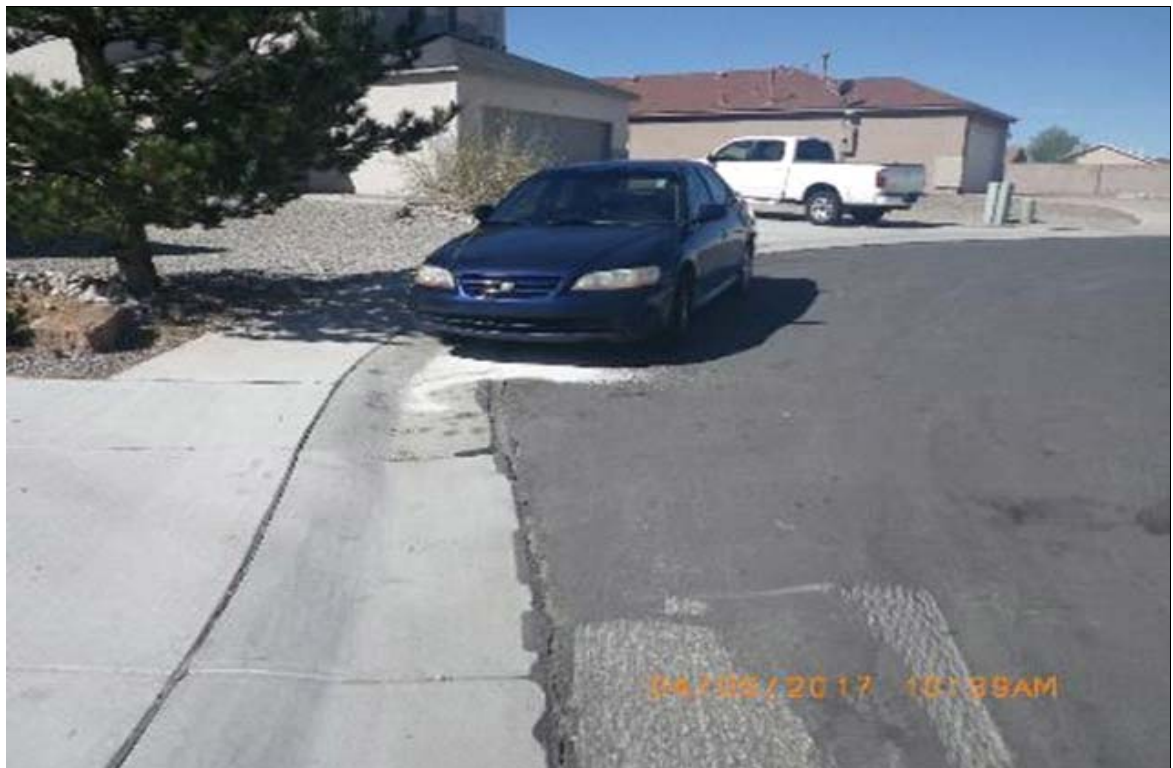
Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD
OBSERVATION

INITIAL
ACTION



Address

2819 RICHMOND NE

Event ID

623

REPORTING SOURCE

EMAIL

Complaint Date

4/11/2017

CUSTOMER

PATRICK CHAVEZ

311CASE ID

NA

e-mail

pchavez@amafca.org

CUSTOMER Ph#

884-2215

SharePointLink:

..2017\170411-email-amafca-2819 richmond ne

oil is flowing from all directions under the dumpster

Complaint:

Suspected Facility

BUSINESS

Type of Complaint

OIL

Inspection Date

4/12/2017

Number of Field Visits

1

Inspector:

sk

Facility Contact

MANAGER

Facility Ph. #

FIELD
OBSERVATION

some one left several plastic containers of used motor oil behind
d dumpster that was leaking on the floor

INITIAL
ACTION

I spoke to the manager, she said that people left used oil near the dumpster and they will clean it up. I left some
pollution prevention brochures at this business.



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink: https://2017/170410-002754-12070_menaul_ne

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address **501 LOUISIANA SE**

Event ID **625** REPORTING SOURCE **311** Complaint Date **4/15/2017**

CUSTOMER **JOHN** 311CASE ID **170415-001858** e-mail

CUSTOMER Ph# **304-5297** SharePointLink: [..2017\170415-001858-501 louisiana se](https://2017/170415-001858-501_louisiana_se)

Complaint: **Sweeping dirt with oil in it onto street.**

Suspected Facility **CASILLAS TIRE SHOP** Type of Complaint **OIL**

Inspection Date **4/18/2017** Number of Field Visits **1** Inspector: **sk**

Facility Contact **MANAGER** Facility Ph. # **304-2142**

FIELD OBSERVATION

there were several oil spots covered with dirt at this location.

INITIAL ACTION

I asked the manager to clean up this area and distributed pollution prevention brochures around this area



Address **DOMINGO BACA ARROYO AT WASHINGTON**

Event ID **626** REPORTING SOURCE **311** Complaint Date **5/5/2017**

CUSTOMER **PATRICK CHAVEZ** 311CASE ID **E-MAIL** e-mail **pchavez@amafca.org**

CUSTOMER Ph# **362-7342or884-2215** SharePointLink: [..2017\170505-domingo-baca-arroyo](https://2017/170505-domingo-baca-arroyo)

Complaint: **AMAFCA staff noticed an unusual discoloration along the bottom of the channel. Appears as though the gray is a result of fire(s) upstream of the Domingo Baca Water Quality Facility.**

Suspected Facility **ARROYO** Type of Complaint **HAZARDOUS MATERIAL**

Inspection Date **5/5/2017** Number of Field Visits **1** Inspector: **sk-bl-ac**

Facility Contact **NA** Facility Ph. #

FIELD OBSERVATION

there was no evidence of fire upstream of washington. There was illicit discharge from a storm pipe into the arroyo, but it was clean water.

INITIAL ACTION

no action was necessary



Address **PASEO DEL NORTE AND SAN PEDRO**

Event ID **627** REPORTING SOURCE **311** Complaint Date **5/10/2017**

CUSTOMER **RAUL VASQUEZ** 311CASE ID **170510-000788** e-mail

CUSTOMER Ph# **228-5224** SharePointLink: [https://2017/2017-05-10-170510-000788 Paseo Del Norte - Between Louisian](https://2017/2017-05-10-170510-000788/Paseo%20Del%20Norte%20-%20Between%20Louisian)

Sewer getting dumped down the storms drains East on Paseo Del Norte Between San Pedro and Lousiana.

Complaint:

Suspected Facility **ABCWUA** Type of Complaint **SEWAGE**

Inspection Date **5/10/2017** Number of Field Visits **1** Inspector: **BL-AC-**

Facility Contact **NA** Facility Ph. # **na**

FIELD
OBSERVATION

it was sanitary MH overflow case and ABCWUA was handling the case appropriately.

INITIAL
ACTION

no action was necessary



Address

9820 MURIFIELD CT NE

Event ID

628

REPORTING SOURCE

311

Complaint Date

5/10/2017

CUSTOMER

JOHN CATHEY

311CASE ID

170510-000892

e-mail

tanoan2@comcast.net

CUSTOMER Ph#

823-2307

SharePointLink:

Callback regarding signs that say "There is no poop fairy" for he can put in the neighborhood.

Complaint:

Suspected Facility

HOME

Type of Complaint

DOG POOPS

Inspection Date

5/17/2017

Number of Field Visits

1

Inspector:

BL

Facility Contact

Facility Ph. #

FIELD
OBSERVATION

na

INITIAL
ACTION

Inspector Byron Lueras took him sever of the requested sign.



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

**FIELD
OBSERVATION**

**INITIAL
ACTION**



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint: they witnessed an individual dumping tens of gallons of paint down the storm drain in front of the Albuquerque Tattoo Company. The business is located on the northwest side of the intersection.

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

6608 AVENIDA LA COSTA NE

Event ID

631

REPORTING SOURCE

311

Complaint Date

5/27/2017

CUSTOMER

ANONYMOUS

311CASE ID

170527-002370

e-mail

CUSTOMER Ph#

SharePointLink:

..2017\170527-002370 6608 Avenida la Costa ne

Complaint:

Neighbor pouring pool water down the storm drain, Citizen says it is going west from address to south to west .

Suspected Facility

HOME

Type of Complaint

NUSIANCE WATER

Inspection Date

5/30/2017

Number of Field Visits

1

Inspector:

AC

Facility Contact

RESIDENT

Facility Ph. #

FIELD
OBSERVATION

inspector Andrew Chavez inspected this claim on 5-30. no one was home.

INITIAL
ACTION

he distributed pollution prevention brochures at this neighborhood.



Address **GLENDALE AVENUE EAST OF SAN PEDRO NE**

Event ID **632** REPORTING SOURCE **WEB** Complaint Date **5/24/2017**

CUSTOMER **GWEN CUSTER** 311CASE ID **NA** e-mail **gcuster44@gmail.com**

CUSTOMER Ph# SharePointLink: [..2017170530 - Illegal dumping on Glendale NE](https://2017170530)

Mattress and box spring dumped on the street

Complaint:

Suspected Facility **STREET** Type of Complaint **TRASH**

Inspection Date **5/30/2017** Number of Field Visits **1** Inspector:

Facility Contact **NA** Facility Ph. #

FIELD OBSERVATION

there were several big items dumped along the street

INITIAL ACTION

asked street maintenance to pick up those items and they did.



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION

Address

509 EUGENE CT SE

Event ID

634

REPORTING SOURCE

311

Complaint Date

5/31/2017

CUSTOMER

ANONYMOUS

311CASE ID

170531-001630

e-mail

CUSTOMER Ph#

SharePointLink:

..2017\170601 - Eugene NE

leaves and brush are being blown into the storm drain by neighbor's landscapers.

Complaint:

Suspected Facility

HOME

Type of Complaint

LEAVES

Inspection Date

6/1/2017

Number of Field Visits

1

Inspector:

GS

Facility Contact

RESIDENT

Facility Ph. #

na

FIELD
OBSERVATION

The inlet was clean and clear of debris.the resident denied the claim.

INITIAL
ACTION

distributed pollution prevention brochures at this neighborhood

Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address **CALLE CEREZA AND CALLE OLIVO NE**

Event ID **636** REPORTING SOURCE **311** Complaint Date **6/7/2017**

CUSTOMER **ANONYMOUS** 311CASE ID **170607-003054** e-mail

CUSTOMER Ph# SharePointLink: [..201720170607 - Calle Cereza NE](https://sharepoint.com/..201720170607 - Calle Cereza NE)

Oil Dripping into the Street on a Trailer may go into the storm Drain

Complaint:

Suspected Facility **TRAILER** Type of Complaint **OIL**

Inspection Date **6/8/2017** Number of Field Visits **1** Inspector: **BL**

Facility Contact **NA** Facility Ph. # **na**

FIELD OBSERVATION

We found no potential illicit discharge per the 311. I took photos of the storm water inlet. There were no signs of a trailer on the road in question.

INITIAL ACTION

pollution prevention brochoure distributed at this neighborhood



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Citizen states the neighbor's black Malibu 2008 is parked in the street and continually leaks oil.

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

**FIELD
OBSERVATION**

**INITIAL
ACTION**



Address **10415 LOST ARROWHEAD AVE SW**

Event ID **639** REPORTING SOURCE **WEB** Complaint Date **6/12/2017**

CUSTOMER **ANONYMOUS** 311CASE ID **NA** e-mail **na**

CUSTOMER Ph# **na** SharePointLink: [..2017170612 - 10415 Lost Arrowhead SW](https://na.2017170612-10415_Lost_Arrowhead_SW)

Complaint: **a pile of rocks piled up on the sidewalk**

Suspected Facility **HOME** Type of Complaint **CONSTRUCTION**

Inspection Date **6/12/2017** Number of Field Visits **1** Inspector: **GS**

Facility Contact Facility Ph. #

FIELD OBSERVATION **there was a pile of gravel blocking the sidewalk**

INITIAL ACTION **no body was home at the time of inspection. Created a 311 case for blocking sidewalk. The inspector distributed pollution prevention brochures at this neighborhood.**



Address **ALLEY BEHIND EFFEX NIGHT CLUB AT 421 GOLD AVE SW**

Event ID **640** REPORTING SOURCE E-MAIL Complaint Date **6/19/2017**

CUSTOMER **BRYAN S REID** 311CASE ID **NA** e-mail **bryan.reid@gsa.gov**

CUSTOMER Ph# **248-7329** SharePointLink: [..2017\170619 - 421 Gold Alleyway](#)

Complaint: **Solid Waste Management collects garbage, strewn all over the alley, and decants poisonous liquids on the alley floor, where it streams to the storm drain, eventually ending up in the Rio Grande.**

Suspected Facility **EFFEX NIGHT CLUB** Type of Complaint **COOKING GREASE**

Inspection Date **6/27/2017** Number of Field Visits **1** Inspector: **BL-GS**

Facility Contact **MANAGER-BOBBY GANGSTER** Facility Ph. # **842-8870**

FIELD OBSERVATION

the inspectors observed the problem with the dumpster and unsanitary condition in the alley.

INITIAL ACTION

the inspectors talked to the manager about the problem and the manager promised to fix the problem.



Address

10024 GARDEN GATE LN SW

Event ID

641

REPORTING SOURCE

311

Complaint Date

6/26/2017

CUSTOMER

DIANA CAMPBELL

311CASE ID

170626-002050

e-mail

CUSTOMER Ph#

217-8717

SharePointLink:

Complaint:

Citizen received a industrial high risk storm pollution letter to verify multi sector compliance, an MS4 inspection. Citizen has a sewing/craft business and doesn't use water except for residential purpose from her home where she take crafts to shows to sell. Please callback and leave a full voicemail with callback number and extension if get voicemail to answer if this is really necessary for her home business.

Suspected Facility

SEWING/CRAFT BUSINESS

Type of Complaint

MSGP PERMIT

Inspection Date

6/27/2017

Number of Field Visits

1

Inspector:

BL

Facility Contact

OWNER

Facility Ph. #

217-8717

FIELD OBSERVATION

no visit

INITIAL ACTION

the inspector talked to her explaining the situation.

Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Call back requested regarding letter received on inspection

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD
OBSERVATION

INITIAL
ACTION

Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink:

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address

5132 SAN ADAN DR. NW

Event ID

644

REPORTING SOURCE

EMAIL

Complaint Date

6/27/2017

CUSTOMER

KATHLEEN VERHAGE

311CASE ID

NA

e-mail

kverhage@cabq.gov

CUSTOMER Ph#

768-3654

SharePointLink:

..2017\170628-Mi Cordelia & San Adan NW

Sand entering Storm Drain from Residential construction.

Complaint:

Suspected Facility

HOME UNDER CONSTRUCTION

Type of Complaint

CONSTRUCTION

Inspection Date

6/28/2017

Number of Field Visits

1

Inspector:

GS

Facility Contact

CONTRACTOR MICHAEL MONTOYA

Facility Ph. #

FIELD
OBSERVATION

The storm drain was visually clean and there was no sand/dirt near the storm drain or evidence that there was sand that had flowed towards the storm drain.

INITIAL
ACTION

the inspector asked the contractor to keep the area clean.



Address

Event ID REPORTING SOURCE Complaint Date

CUSTOMER 311CASE ID e-mail

CUSTOMER Ph# SharePointLink: .12017\170622-001467-7308 Aztec NE

Complaint:

Suspected Facility Type of Complaint

Inspection Date Number of Field Visits Inspector:

Facility Contact Facility Ph. #

FIELD OBSERVATION

INITIAL ACTION



Address **EUBANK OUTFALL**

Event ID **646** REPORTING SOURCE E-MAIL Complaint Date **6/28/2017**

CUSTOMER 311CASE ID **NA** e-mail

CUSTOMER Ph# SharePointLink: [..2017\170717-Eubank Outfall](#)

illicit discharge at this outfall at all the time with sewage odor.

Complaint:

Suspected Facility **UNKNOWN** Type of Complaint **SEWAGE**

Inspection Date **6/28/2017** Number of Field Visits **1** Inspector: **AS**

Facility Contact **NA** Facility Ph. # **na**

FIELD OBSERVATION

investigation is not complete yet

INITIAL ACTION

inspector started opening MHs on the lines that leads to this outfall. So far unable to locate the source.the investigation still going on.



Address **DOMINGO BACA AT WASHINGTON**

Event ID **647** REPORTING SOURCE E-MAIL Complaint Date **6/28/2017**

CUSTOMER **CURTIS CHERNE** 311CASE ID **NA** e-mail **ccherne@cabq.gov**

CUSTOMER Ph# **924-3420** SharePointLink:

Complaint: **illicit flow to the arroyo from a big pipe**

Suspected Facility **SANTA FE FEDERAL CREDIT UNION** Type of Complaint **GREY WATER**

Inspection Date **6/28/2017** Number of Field Visits **1** Inspector: **GS**

Facility Contact **HEADS UP** Facility Ph. #

FIELD OBSERVATION

the source of flow was leaks from irrigation system of the bank at 7101 Jefferson St NE

INITIAL ACTION

the ground keeper started fixing the leak



Attachment 6
Discharge Monitoring Reports

Attachment 7
Visual Monitoring Results



Weston Solutions, Inc.
3840 Commons Ave. NE
Albuquerque, NM 87109
505-837-6520 Fax 505-837-6550
www.westonsolutions.com

April 7, 2017

Ms. Kathy Verhage, P.E.
Department of Municipal Development - Storm Drainage Design
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Reference: PROJECT NO. 8010 CITYWIDE ON-CALL NPDES AND MS4 ENGINEERING SUPPORT SERVICES 4th QUARTER 2016 UPDATE FOR TASK 3 VISUAL STORM WATER INSPECTIONS

Dear Ms. Verhage:

This Memo describes the results of the 2017 Quarter 1 Visual Storm Water Inspections for 17 City of Albuquerque (City) facilities. This evaluation and memo has been prepared to address the requirements of the U.S. Environmental Protection Agency's (EPA) Municipal Separate Storm Sewer System (MS4) Permit issued to the City in 2014 and the Multi Sector General Permit for Storm Water Discharges Associated with Industrial Activity (MSGP) at City-owned facilities. Its purpose is to document the City's compliance with the requirements relative to quarterly storm water monitoring.

To comply with the MS4 and MSGP's requirements for storm water monitoring, Weston Solutions and CDM Smith were tasked with performing quarterly visual storm monitoring at 17 City-owned facilities which meet the definition of an industrial facility in the MSGP based on audits of city owned facilities performed between 2012 and 2017. The following facilities were monitored for visual inspection, locations of these facilities are also shown in Figure 1.

- Arroyo Del Oso Golf Course
- Arroyo Maintenance Facility
- Balloon Fiesta Park/ Golf Training Center
- Albuquerque BioPark Facilities
- Daytona Transit Center
- Fire Department Mechanical Shop
- Fleet- 4th Street Fuel Station
- Fleet- Lomas Fuel Station
- Ladera Golf Course
- Los Altos Golf Course
- Montessa Park Open Space
- Pino Yards
- Puerto del Sol Golf Course
- Street Satellite #1
- Street Satellite #2
- Street Satellite #3
- Yale Transit Center

Table 1 shows the Outfall identification names along with the inspection team responsible for monitoring the particular outfall.

Figure 1: Facility Site Locations

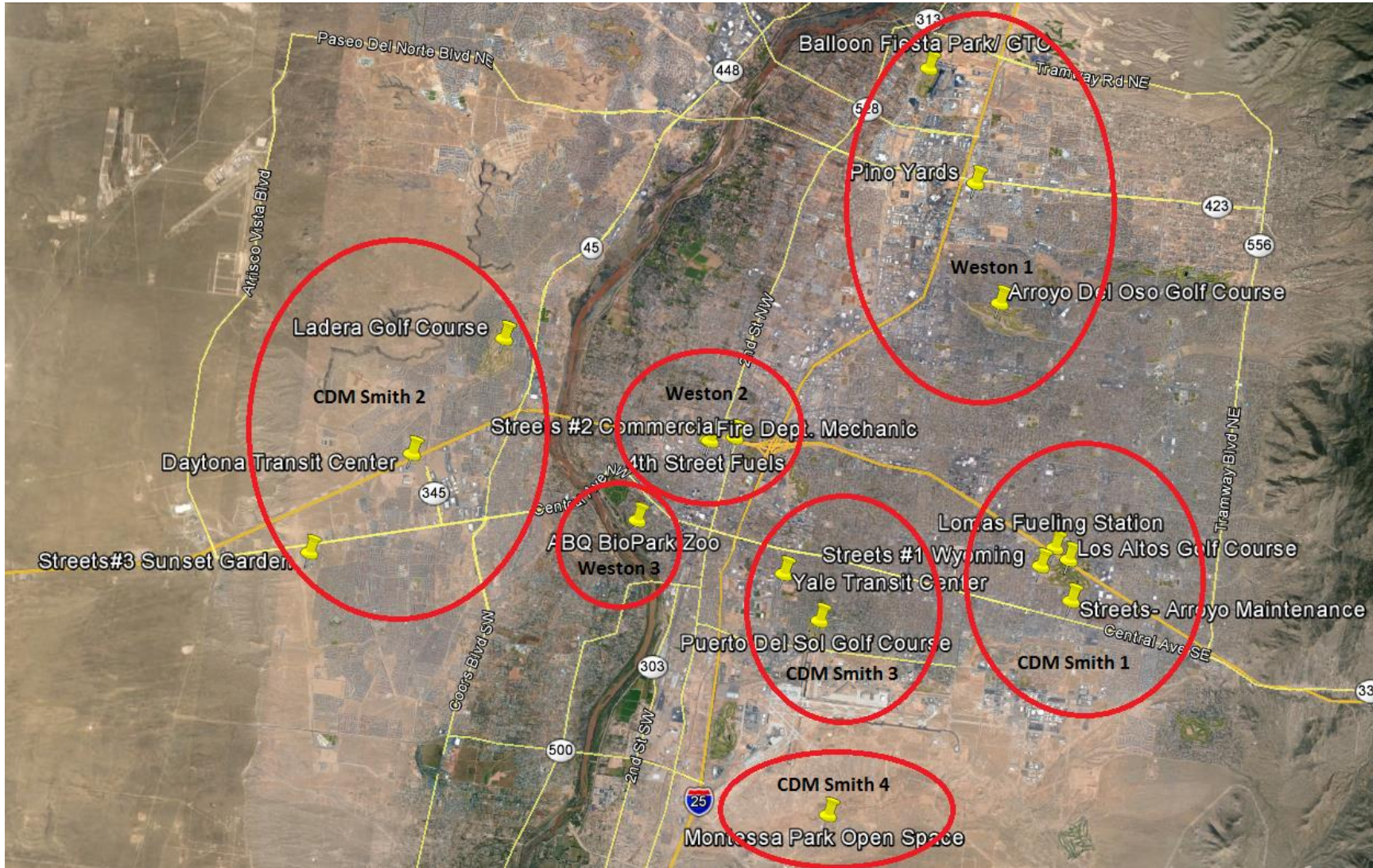


Table 1: Outfall ID and Designees

Site	Outfall ID
Weston 1	
Balloon Fiesta Park/ Golf Training Center	BFP1
	BFP2
	BFP3
	BFP4
	BFP5
Pino Yards	PY1
	PY2
	PY3
Arroyo Del Oso Golf Course	ADO1
	ADO2
Weston 2	
Fleet- 4 th Street Fuels	FS1
Fire Department Mechanic Shop	FM1
	FM2
Street Satellite #2	SS2
CDM Smith 1	
Los Altos Golf Course	LA1
	LA2
Fleet- Lomas Fuel Station	L1
Arroyo Maintenance Facility	AM1
Street Satellite #1	SS1A
	SS1B
CDM Smith 2	
Daytona Transit Center	D1
	D2
Ladera Golf Course	LGC1
	LGC2
Street Satellite #3	SS3
CDM Smith 3	
Puerto Del Sol Golf Course	PDS1
	PDS2
Yale Transit Facility	Y1
CDM Smith 4	
Montessa Park Open Space	MP1
	MP2
Weston 3	
ABQ BioPark Facilities	BP1

Background

The MSGP establishes requirements for monitoring the quality of storm water discharges depending on the activities at the different types of industrial facility. Although benchmark monitoring is not required, the MSGP does require quarterly visual assessment of storm water quality. Visual assessment consists of the collection of grab samples from each outfall (subject to demonstration of substantially identical outfalls) and examination for the presence of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, or other indicators of storm water pollution.

Certain criteria regarding the precipitation event must be met for an assessment event. Visual assessment of storm water must occur:

- During daylight hours
- Within 30 minutes of start of storm water discharge (or as soon as practicable thereafter)
- At least 72 hours after the previous storm water discharge event

Weston follows the City's existing storm water monitoring protocol outlining the locations and descriptions of all outfalls to be monitored. The protocol identifies contact persons at each facility for use in notifying City personnel when members of the storm water monitoring team are mobilizing to that location. A standard visual assessment form is used by all staff to document the monitoring activities.

Quarter 1 Monitoring Results

The 1st Quarter sampling period ran from January 1 to March 31, 2017.

- Weston Sites Group 1 mobilized 3 times during the quarter to collect samples from storm events. A visual sample was collected from all outfalls over the course of the 3 mobilizations. No repeat samples were collected.
- Weston Sites Group 2 mobilized 2 times and collected a sample from all outfalls over the course of the 2 mobilizations. Three repeat samples were also collected.
- Weston Sites Group 3 mobilized 2 times and collected no samples from the one outfall over the course of the 2 mobilizations. No repeat samples were collected.
- CDM Smith Sites Group 1 mobilized 1 time during the quarter to collect samples from storm events. 3 visual samples were collected from 6 outfalls during the 1 mobilization. No repeat samples were collected.
- CDM Smith Sites Group 2 mobilized 1 time during the quarter to collect samples from storm events. 3 visual samples were collected from 5 outfalls during the 1 mobilization. No repeat samples were collected.
- CDM Smith Sites Group 3 mobilized 1 time during the quarter to collect samples from storm events. 1 visual sample was collected from 3 outfalls during the 1 mobilization. No repeat samples were collected.

- CDM Smith Sites Group 4 mobilized 1 time during the quarter to collect samples from storm events. 1 visual sample was collected from 2 outfalls during the 1 mobilization. No repeat samples were collected.

The monitoring reports and photo logs from Weston Sites Groups 1 through 3 and CDM Sites Groups 1 through 4 can be found in the Appendix. Any outfalls not monitored in Quarter 1 will be made up during Quarter 2 of 2017 pending suitable weather conditions.

Observed Problems

In general very few pollution problems were observed at any of the outfalls with few exceptions. Many of the grab samples exhibited presence of sediment, but no pollutants required follow up inspections or actions to occur. There were limited to no issues with oils, floatables, salts, chemicals, or other pollutant sources.

Results from the Quarter 1 Visual Inspections can be found in the Appendix. All facilities were observed during the 1st Quarter. Both visual observations and grab samples were noted at most facilities during the 1st Quarter. Any facilities or outfalls that did not produce a sample in Quarter 1 2017 will be made up in the coming months.

We appreciate the opportunity to provide professional consulting services to you and we look forward to assisting you in the next quarter. Please contact Sarah Luckie at (505) 837-6540 (Sarah.Luckie@WestonSolutions.com) or Brad Sumrall at (505) 837-6566 (Brad.Sumrall@WestonSolutions.com) if you have any questions or need additional information.

Sincerely,

WESTON SOLUTIONS, INC.

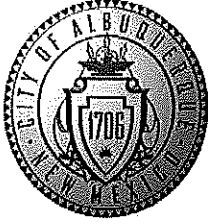


L. Brad Sumrall, PE
Albuquerque Operations Manager

APPENDIX: Q1 INSPECTION FORMS AND PHOTO LOGS

APPENDIX: Q1 INSPECTION FORMS & PHOTO LOGS- VISUAL INSPECTIONS

STREETS SATELLITE #1



City of Albuquerque
Street Maintenance Satellite #1

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 10:26 3/28/17
Time: 10:26 AM
Inspector: Reed, Amy

Weather: POST-RAIN / cloudy
Storm Precip: LO-LIC
Last 72 hour Precip: NONE
Photo: 4 OR 5

Outfall ID:	SS1A	SS1B
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>STRAW WATTLE AND WADDS AROUND STORM DRAIN</u>	<u>STRAW WATTLE AROUND STORM DRAIN</u>
Flow Estimate (include units and method of estimation):	\emptyset	\emptyset
Other Observations:	<u>Not high enough flow to pass through wattle. WATER accumulates on barrier lining drain</u>	<u>Not high enough flow to pass through wattle to drain. WATER IN STORM DRAIN FROM RAIN</u>
Color (describe):		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	<u>No grab sample collected</u>	<u>No grab sample collected</u>

Additional Comments: STORMWATER puddles on site show no issues or signs of contamination. And water near or around drains shows no contamination either.





DATE: 3/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Amy Reed (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

STREET MAINTENANCE SATELLITE 1



Photo 1: Water trail leading to outfall SS1B

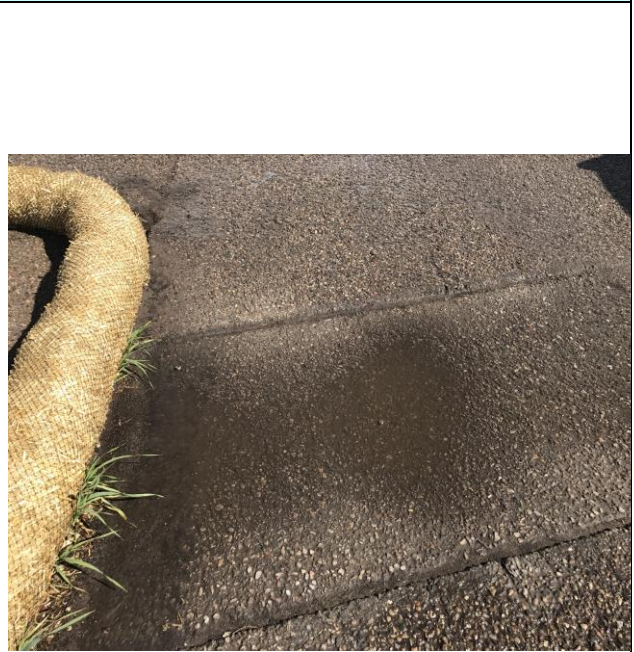


Photo 2: Water pooled around wattle of outfall SS1B.

STREETS SATELLITE #2



City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 1/6/17
Time: 1420
Inspector: Tommy Evans
Signature: [Signature]

Weather: Sunny 31°
Storm Precip: 0.07 inches of snow
Last 72 Hour Precip: -
Photo: Yes

Outfall ID:	SS2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Water is coming from driveway into the property
Flow Estimate (include units and method of estimation):	< 1 cfs
Other Observations:	
Color (Describe):	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	

Additional Comments: Not enough flow to collect a sample. The flow is only going to the drain and not where the jar could be placed to collect water.





City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 3/28/2017
Time: 8:45 AM
Inspector: Sarah Luchie (Weston)
Signature: Sarah Luchie

Weather: Rain
Storm Precip: 0.2 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	SS2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	running down curb.
Flow Estimate (include units and method of estimation):	< 1 cfs
Other Observations:	—
Color (Describe):	yellow / brown
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	generally clean

Additional Comments: _____





Date: March 28, 2017

Event: MS4 Visual storm Water Monitoring

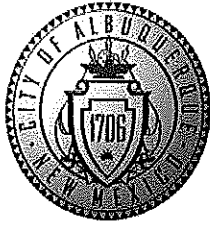
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Street Maintenance #2



STREETS SATELLITE #3



City of Albuquerque
Street Maintenance Satellite #3

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 3/28/17

Weather: lt rain

Time: 2:30

Storm Precip: ~0.5 inch

Inspector: G. Larson

Last 72 hour Precip: 0

Photo: yes

Outfall ID: SS3

Flow Observed: Yes No

Description of Monitoring Site: one spillway to stormwater detention pond

Flow Estimate (include units and method of estimation): low (visual)

Other Observations:

Color (describe): dark brown

Turbidity: Clear
 Slightly Cloudy
 Very Cloudy
 Opaque

Floating Solids: Yes No

Suspended Solids: Yes No

Settled Solids: Yes No

Sheen Present: Yes No

Odor: Yes No

Foam Present: Yes No

Describe:

Additional Comments:

Sheen observed in sample, likely from parked vehicles/equipment





DATE: 3/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

STREETS 3



Photo 1: SS3 Sample Location.



Photo 2: SS3 Grab Sample.

STREETS SATELLITE ARROYO MAINTENANCE

City of Albuquerque
Storm Drainage Maintenance Arroyo Maintenance Section

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: MAR. 28, 2017
Time: 10:12 AM
Inspector: Reed, Amy

Weather: post-rain
Storm Precip: < 0.1 in
Last 72 hour Precip: NONE
Photo: 4

Outfall ID: AM1

Flow Observed: Yes No

Description of Monitoring Site: Ponding upstream of outfall. No spills observed on site from C&E. GATE is locked.

Flow Estimate (include units and method of estimation): < 1 cfs

Other Observations: water observed in drainage channel running across site

Color (describe):

Turbidity: Clear
 Slightly Cloudy
 Very Cloudy
 Opaque

Floating Solids: Yes No
Suspended Solids: Yes No
Settled Solids: Yes No
Sheen Present: Yes No
Odor: Yes No
Foam Present: Yes No

Describe: Light brown musty smell.

Additional Comments: observe no apparent stormwater quality issues.



DATE: 3/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Amy Reed (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

STORM DRAINAGE MAINTENANCE ARROYO



Photo 1: Grab Sample of water flowing from AM1 to curb side.



Photo 2: Leaves and some litter observed in AM1 outfall.

PINO YARDS



City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 1/6/2017
 Time: 1:55 PM
 Inspector: Sarah Luckie (Weston)
 Signature: Sarah Luckie

Weather: AM snow
 Storm Precip: 0.07 in snow
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	PY1	PY2	PY3			
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No			
Description of Monitoring Site:	/					
Flow Estimate (include units and method of estimation):						
Other Observations:						
Color (Describe):						
Turbidity:				<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:				<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:				<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Describe:	/					

Additional Comments: Snow observed on grass surfaces. No discharge was observed flowing on site.





City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 2/13/2017
Time: 1:20 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: snow melt
Storm Precip: ≈ 1 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Wet in areas, grates mostly clean		runoff down both curbs.
Flow Estimate (include units and method of estimation):	< 1 cfs	< 1 cfs	< 1 cfs
Other Observations:	—	—	dark
Color (Describe):	clear/yellow	clear / yellow	Brown
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input checked="" type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	mostly clear, clean sample	generally clear, slightly opaque, clean sample	Dark, sediment had layers but overall clean

Additional Comments: _____

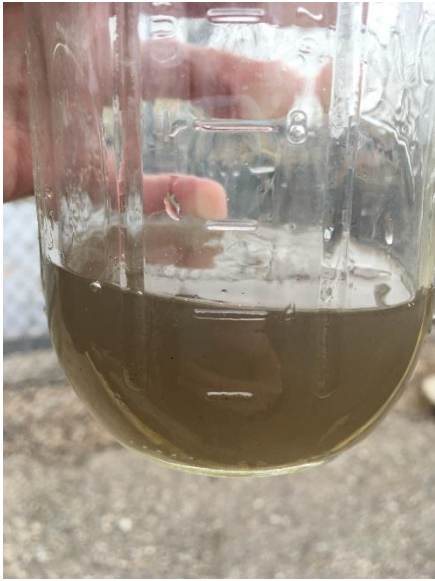




Date: February 13, 2017
Event: MS4 Visual Monitoring Assessment
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Pino Yards



PY3 Sample



PY2 Sample



PY1 Sample

TRANSIT- YALE



City of Albuquerque
Yale Maintenance Facility

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 3/28/17

Weather: light rain

Time: 9:15

Storm Precip: 20.5 inch

Inspector: G. Larson

Last 72 hour Precip: Ø

Photo: yes

Outfall ID: Y1

Flow Observed: Yes No

Description of Monitoring Site: inlets to stormceptor

Flow Estimate (include units and method of estimation): low

Other Observations: /

Color (describe): clear/pale

Turbidity: Clear
 Slightly Cloudy
 Very Cloudy
 Opaque

Floating Solids: Yes No

Suspended Solids: Yes No

Settled Solids: Yes No

Sheen Present: Yes No

Odor: Yes No

Foam Present: Yes No

Describe:

Additional Comments: observed flow into two inlets upstream of the stormceptor stormwater quality structure. No apparent pollutants entering the inlets





DATE: 3/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

YALE MAINTENANCE FACILITY



Photo 1: Inlet near bus fueling.

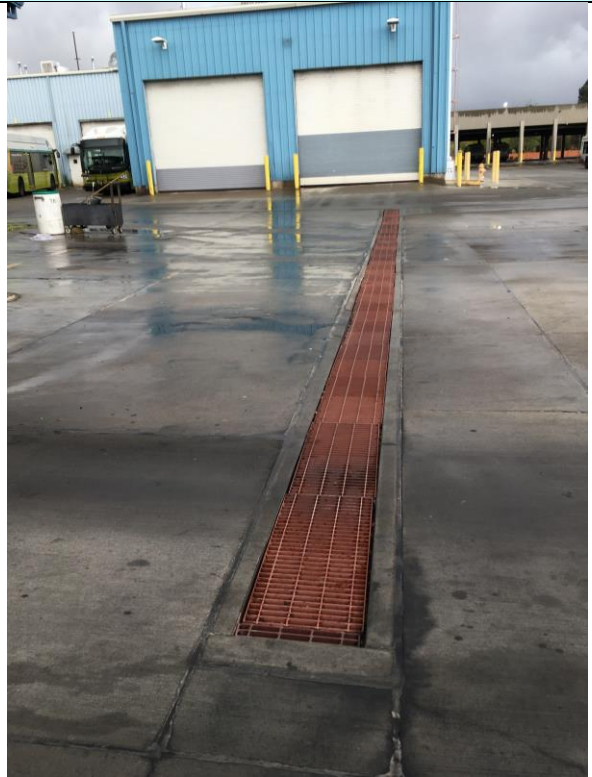


Photo 2: Inlet near bus fueling.

TRANSIT- DAYTONA



City of Albuquerque
West Side Maintenance Facility (Daytona)

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 3/28/17

Weather: heavy rain

Time: ~~2:15~~ 2:15

Storm Precip: ~ 0.5 inch

Inspector: G. Larson

Last 72 hour Precip: 0

Photo: yes

Outfall ID:	D1	D2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	manhole	manhole
Flow Estimate (include units and method of estimation):	high (visual)	high (visual)
Other Observations:	/	/
Color (describe):	pale yellow	pale brown
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input checked="" type="checkbox"/> Very Cloudy <input checked="" type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (minimal)
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (minimal)
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:		Slight sheen observed

Additional Comments:

Slight sheen observed in D2





DATE: 03/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Greg Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

DATONA



D1 Grab Sample



D2 Sample Location

BALLOON FIESTA PARK/ GOLF TRAINING CENTER



City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 1/6/2017
 Time: 1:15 PM
 Inspector: Sarah Luckie (Weston)
 Signature: Sarah Luckie

Weather: AM snow
 Storm Precip: 0.07 in snow
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:			
Flow Estimate (include units and method of estimation):			
Other Observations:			
Color (Describe):			
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:			

Additional Comments: Attempted to access North Gate with key card. Card did not give access. Attempted to access from South entrance. Entrance was barricaded. Stopped by Parks dept. at GTC, doors locked. Will reach out to Susan Rice.





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 1/6/2017
 Time: 1:15 PM
 Inspector: Sarah Luckie (Weston)
 Signature: Sarah Luckie

Weather: AM SNOW
 Storm Precip: 0.07 in SNOW
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:		
Flow Estimate (include units and method of estimation):		
Other Observations:		
Color (Describe):		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:		

Additional Comments: Same as previous page.





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 3/28/17
 Time: 9:15 AM
 Inspector: Sarah Luchie (Weston)
 Signature: Sarah Luchie

Weather: Rain
 Storm Precip: 0.2 in
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Running into grates	—	Some ponding and discharge
Flow Estimate (include units and method of estimation):	< 1 cfs	< 1 cfs	< 1 cfs
Other Observations:	discharge running down street into grates.	—	ponding
Color (Describe):	Clear	clear / gray	gray
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	clean sample	generally clean sample	generally clean

Additional Comments: _____





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 3/28/2017
 Time: 9:15 AM
 Inspector: Sarah Luckie (Weston)
 Signature: Sarah Luckie

Weather: Rain
 Storm Precip: 0.2
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<u>—————</u>	<u>Large amount of ponding</u>
Flow Estimate (include units and method of estimation):	<u>< 1 cfs</u>	<u>< 1 cfs</u>
Other Observations:	<u>—————</u>	<u>ponding near lamp post</u>
Color (Describe):	<u>white</u>	<u>gray</u>
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	<u>Clean, but Cloudy</u>	<u>Clean, but ponding occurring</u>

Additional Comments: _____

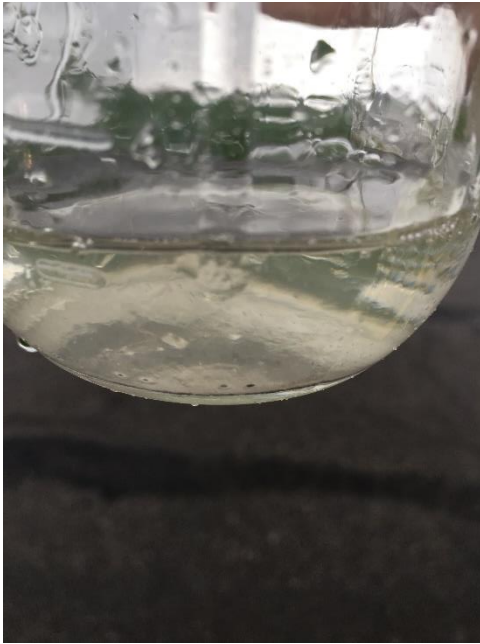




Date: March 28, 2017
Event: MS4 Stormwater Visual Monitoring
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

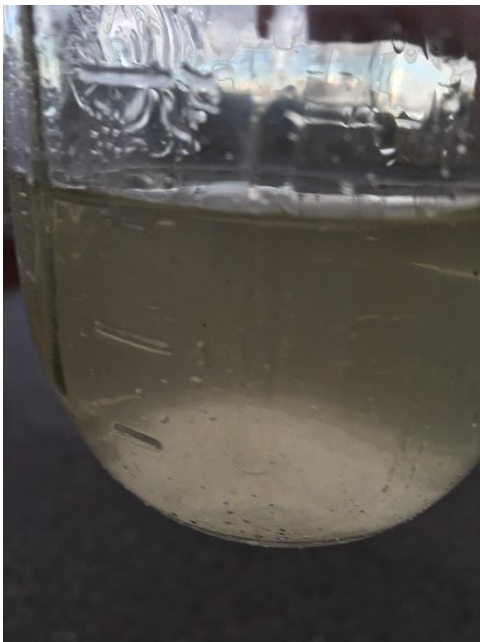
Balloon Fiesta Park



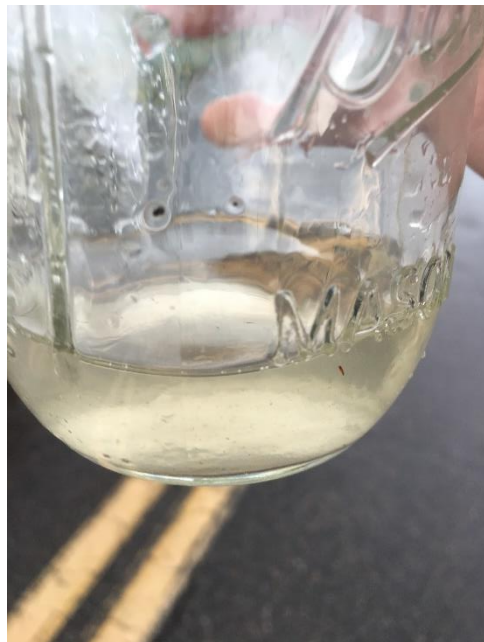
BFP1 Discharge



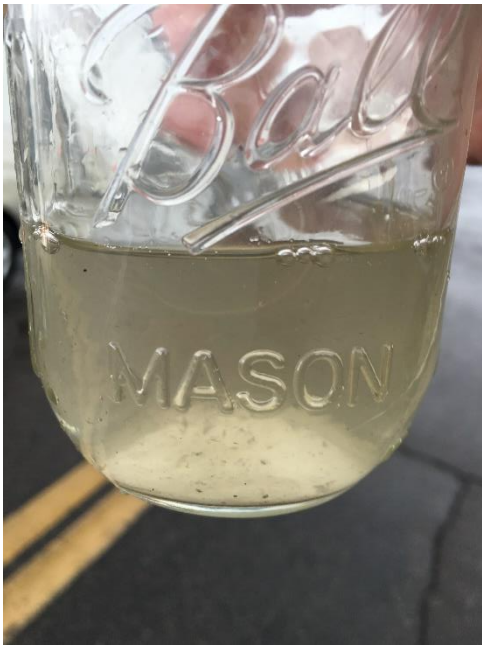
BFP4 Discharge



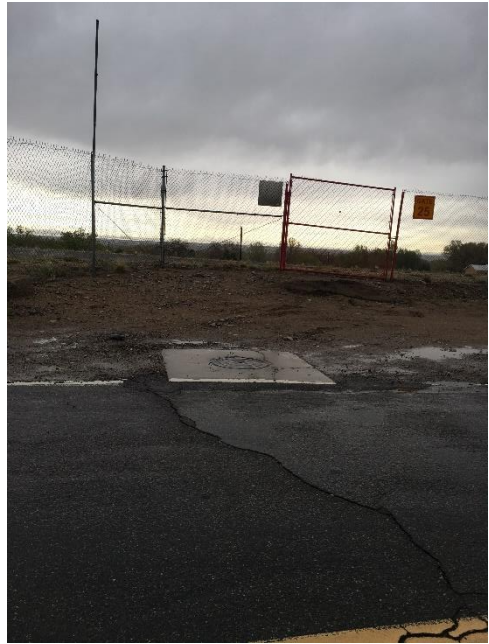
BFP5 Discharge



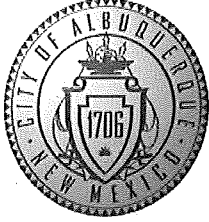
BFP2 Discharge



BFP3 Discharge



MONTESSA PARK



City of Albuquerque
 Montessa Park Open Space

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges
 Q1 Q2 Q3 Q4

Date: 3/28/17

Weather: SUNNY

Time: 10:50

Storm Precip: _____

Inspector: CONNOR KELLEY

Last 72 hour Precip: _____

Photo: YES

Outfall ID:	MP1	MP2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	OUTFLOW FROM PIPE IS COMING OUT OF GROUND	OUTFALL APPEARS DESTROYED (SEE PICTURES)
Flow Estimate (include units and method of estimation):	VERY LOW - ONLY DRIPPING	
Other Observations:		
Color (describe):	CLEAR - LIGHT TAN	
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:		

Additional Comments: MP1 - TOOK SAMPLE FROM POOL BELOW PIPE DUE TO SUCH LOW FLOW FROM PIPE.





DATE: 03/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Connor Kelley (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

MONTESSA PARK OPEN SPACE

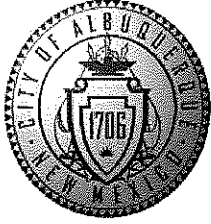


Destroyed Outfall MP2



Took sample from pooled water at outfall MP1

LOS ALTOS GOLF COURSE



City of Albuquerque
Los Altos Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 28 AR 3/30/17

Weather: RAIN

Time: 9:25 AM

Storm Precip: < 0.1 in

Inspector: Reed, A

Last 72 hour Precip: NONE AR

Photo: 2 LA2, 1 LA1 AR

Outfall ID:	LA1	LA2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	on golf course	Low runoff from maintenance building & lots of puddles → storage
Flow Estimate (include units and method of estimation):	∅	Low
Other Observations:	Not enough rain to produce run-off on vegetated area	
Color (describe):		Light brown/gray
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input checked="" type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	NO flow	Discolored from dirt & not oil

Additional Comments: OBSERVATION: NO STORMWATER RUNOFF
CONTAMINATION OBSERVED in water sample
from LA2 or in puddles created from runoff
leaving Los Altos site.





DATE: 3/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Amy Reed (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LOS ALTOS GOLF COURSE

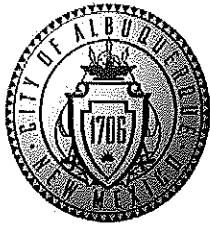


Photo 1: Water pooling on site coming from golf course storage shop.



Photo 2: Grab sample from runoff at LA2

PUERTO DEL SOL GOLF COURSE



City of Albuquerque
Puerto del Sol Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 3/28/17

Weather: lt rain

Time: 9:25

Storm Precip: 20.5 inch

Inspector: C. Larson

Last 72 hour Precip: 0

Photo: yes

Outfall ID:	PDS1	PDS2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>inlet</u>	<u>inlet</u>
Flow Estimate (include units and method of estimation):	<u>0</u>	<u>0</u>
Other Observations:	<u>small amount of litter and lots of leaves</u>	<u>leaves/gross clippings/sediment</u>
Color (describe):	<u> </u>	<u> </u>
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	<u>see below</u>	<u>see below</u>

Additional Comments:

Leaves, grass clippings and sediment observed in PDS2, near golf maintenance.
Significant amount of leaves and some trash in PDS1 inlet





DATE: 3/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

PUERTO DEL SOL GOLF COURSE

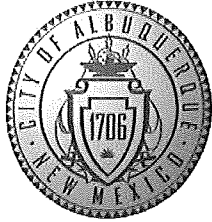


Photo 1: Leaf and other litter observed in PDS1 inlet.



Photo 2: Leaves, sediment, and grass clippings in outfall PDS2.

LADERA GOLF COURSE



City of Albuquerque
Ladera Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 3/28/17

Weather: RAIN

Time: 1420

Storm Precip: _____

Inspector: CONNOR KELLEY

Last 72 hour Precip: _____

Photo: YES

Outfall ID:	LGC1		LGC2			
Flow Observed:	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
Description of Monitoring Site:						
Flow Estimate (include units and method of estimation):						
Other Observations:						
Color (describe):						
Turbidity:					<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:					<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:					<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No				
Describe:						
Additional Comments:						

Additional Comments: THOUGH ~~AT~~ THE INSPECTION OCCURRED
DURING A STEADY TO HEAVY RAINFALL, NO FLOW
WAS OBSERVED AT EITHER OUTFALL.





DATE: 03/28/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Connor Kelley (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LADERA GOLF COURSE



Runoff not observed at Outfall LGC1.



Debris observed in Outfall LGC1

ARROYO DEL OSO GOLF COURSE



City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 1/6/2017
 Time: 2:30 PM
 Inspector: Sarah Luchie (Weston)
 Signature: Sarah Luchie

Weather: AM SNOW
 Storm Precip: 0.07 in SNOW
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	AD01	AD02
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	snow melt, water in Arroyo	" "
Flow Estimate (include units and method of estimation) :	< 1cfs	< 1cfs
Other Observations:	Water in Arroyo	" "
Color (Describe):	Clear	slight yellow
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	Clean sample	Clean sample

Additional Comments: _____





Date: January 6, 2017

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Arroyo Del Oso Golf Course



ADO1 Sample



ADO2 Sample



FIRE DEPARTMENT MECHANIC



**City of Albuquerque
Fire Department Mechanic Shop**

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 1/6/17
 Time: 1335, 1345
 Inspector: Tommy Evans
 Signature: *Tommy Evans*

Weather: Sunny 31°
 Storm Precip: 0.07 inches of snow
 Last 72 Hour Precip: —
 Photo: Yes

Outfall ID:	FM1	FM2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	Standing water in canal and against the boom.	Standing water around the rail tracks, mud and plant debris built up at the boom.
Flow Estimate (include units and method of estimation):	none	none
Other Observations:	Water continued to trickle outside the fence to the street	Accumulated snow on the south side of the tracks
Color (Describe):		clear
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:		

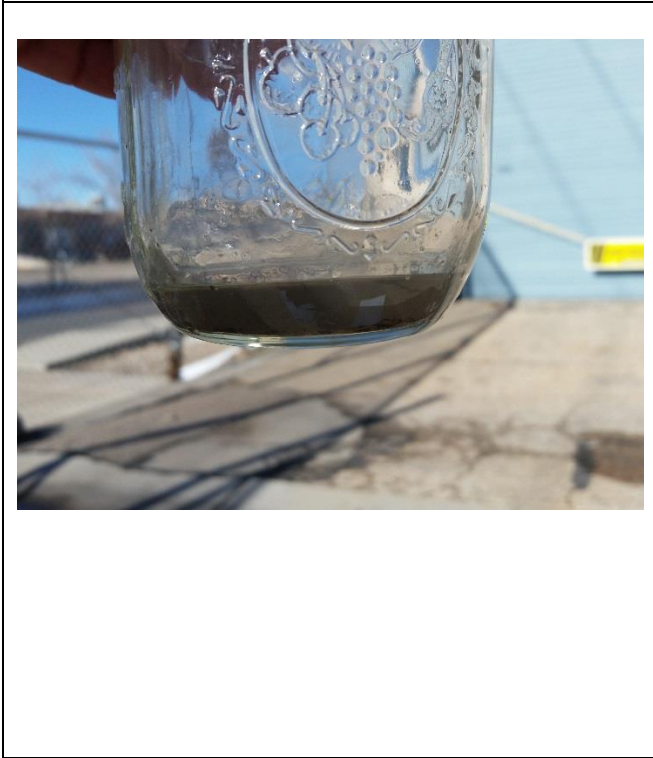
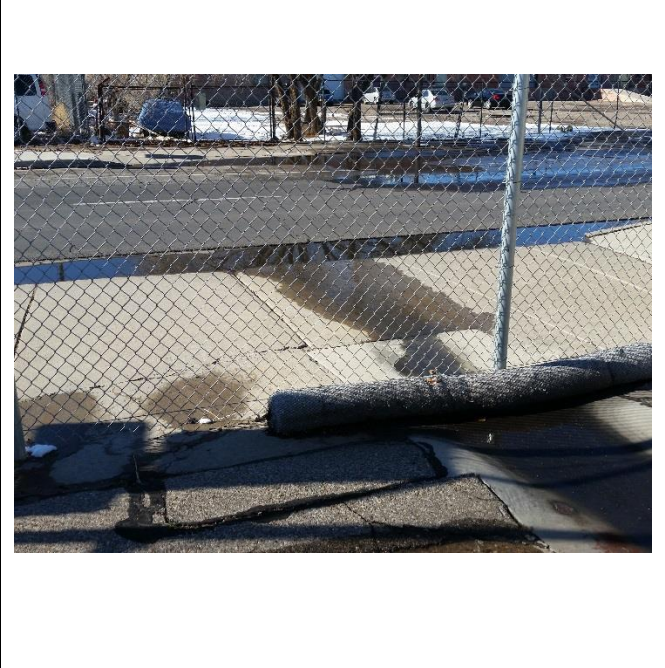
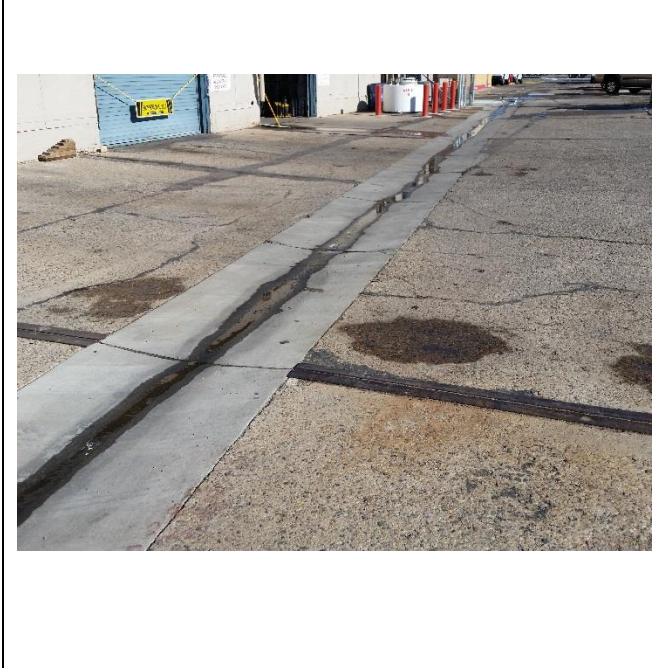
Additional Comments: Could not collect a large volume of water.
Water is from snow/ice melt from precipitation event last night.





Date: January 6, 2017
Event: MS4 Visual Storm Water Monitoring
Inspector: Tommy Evans (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG
Fire Mechanic Shop - FM1**





Date: January 6, 2017
Event: MS4 Visual Storm Water Monitoring
Inspector: Tommy Evans (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Fire Mechanic Shop - FM2





City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 3/28/2017 Weather: Rain
 Time: 8:40 AM Storm Precip: 0.2 in
 Inspector: Sarah Luchie (Weston) Last 72 Hour Precip: —
 Signature: Sarah Luchie Photo: yes

Outfall ID:	FM1	FM2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	some construction was occurring, sediment present	ponding behind wattle
Flow Estimate (include units and method of estimation):	< 1 cfs	< 1 cfs
Other Observations:	sediment	ponding
Color (Describe):	brown	yellow
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input checked="" type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	sediment due to construction	some sheen

Additional Comments: Some issues with sediment in FM1, some sheen noticed behind FM2 wattle, but was not leaving site due to gutter buddie.





Date: March 28, 2017
Event: MS4 Visual Storm Water Monitoring
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Fire Mechanic Shop



FM1



FM1



FM2



FM2

4TH STREET FUELS



City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 1/6/17
Time: 1315
Inspector: Tommy Evans
Signature: Tommy Evans

Weather: Sunny 31°
Storm Precip: 0.07 inches of snow
Last 72 Hour Precip: -
Photo: YRS

Outfall ID:	FS1
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Evidence of snow Gutters are wet
Flow Estimate (include units and method of estimation):	< 1 cfs
Other Observations:	Plant debris near collection point.
Color (Describe):	light gray/brown
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input checked="" type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	

Additional Comments: Water is from snow/ice melt from precipitation event last night.





Date: January 6, 2017

Event: MS4 Visual Storm Monitoring

Inspector: Tommy Evans (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

4th Street Fuels





City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 3/28/2017
Time: 8:35 AM
Inspector: Sarah Luckie (Weston)
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.2 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	FS1
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	flow down gutter
Flow Estimate (include units and method of estimation) :	< .1 cfs
Other Observations:	—
Color (Describe):	clear/gray
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input checked="" type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	generally clean

Additional Comments: _____





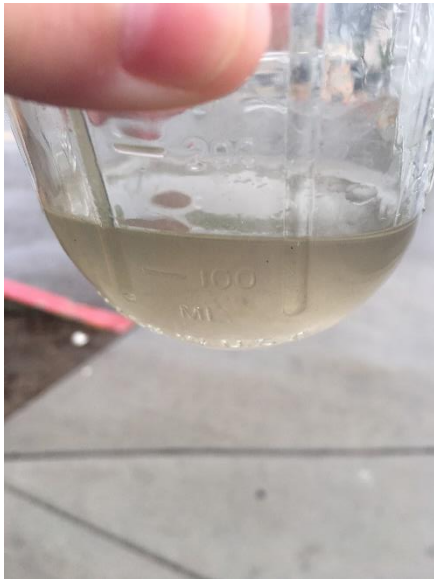
Date: March 28, 2017

Event: MS4 Visual Storm Monitoring

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

4th Street Fuels



LOMAS FUELS



City of Albuquerque
Lomas Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 2/28/17

Weather: RAIN

Time: 9:18 AM

Storm Precip: < 0.1 in

Inspector: Reed, Amy

Last 72 hour Precip: NONE AR

Photo: 1 of site, 1 of sample AK

Outfall ID: L1

Flow Observed: Yes No

Description of Monitoring Site:

NO SOLIDS
Lots of puddles
on site. 1 car
fueling.

Flow Estimate (include units and method of estimation):

2 cfs

Other Observations:

SHEET
FLOW
OVER SITE

Color (describe): Light brown

Turbidity:

Clear
 Slightly Cloudy
 Very Cloudy
 Opaque

Floating Solids: Yes No

Suspended Solids: Yes No

Settled Solids: Yes No

Sheen Present: Yes No

Odor: Yes No

Foam Present: Yes No

Describe:

Color affected
by dirt +
sediment - not
oil/fuel.

Additional Comments: OBSERVATION: NO APPARENT SIGNS OF

CONTAMINATION IN STORM WATER FROM

FUELING ACTIVITIES AT FUELING STATION.



ABQ BIOPARK ZOO



City of Albuquerque
ABQ BioPark Zoo

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 1/6/17
Time: 14:53
Inspector: Tommy Evans
Signature: Tommy Evans

Weather: Rain
Storm Precip: < 1.0 inch
Last 72 Hour Precip: —
Photo: Yes

Outfall ID:	BP1
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>Sediment inside the pipe.</u>
Flow Estimate (include units and method of estimation):	
Other Observations:	
Color (Describe):	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	

Additional Comments: No discharge. sediment inside the outfall pipe.





City of Albuquerque
ABQ BioPark Zoo

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 3/28/17
Time: 09:30
Inspector: Tommy Evans
Signature: Tommy Evans

Weather: Light rain
Storm Precip: 0.04
Last 72 Hour Precip: —
Photo: Yes

Outfall ID:	BP1
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>Sediment inside the pipe.</u>
Flow Estimate (include units and method of estimation):	<u>—</u>
Other Observations:	
Color (Describe):	<u>—</u>
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	

Additional Comments: There continues to be a layer of sediment (~1.0 inch) inside the outfall pipe. The sediment is much dryer towards the center of the pipe.





Weston Solutions, Inc.
3840 Commons Ave. NE
Albuquerque, NM 87109
505-837-6520 Fax 505-837-6550
www.westonsolutions.com

July 10, 2017

Ms. Kathy Verhage, P.E.
Department of Municipal Development - Storm Drainage Design
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Reference: PROJECT NO. 8010 CITYWIDE ON-CALL NPDES AND MS4 ENGINEERING SUPPORT SERVICES 2nd QUARTER 2017 UPDATE FOR TASK 3 VISUAL STORM WATER INSPECTIONS

Dear Ms. Verhage:

This Memo describes the results of the 2017 Quarter 2 Visual Storm Water Inspections for 17 City of Albuquerque (City) facilities. This evaluation and memo has been prepared to address the requirements of the U.S. Environmental Protection Agency's (EPA) Municipal Separate Storm Sewer System (MS4) Permit issued to the City in 2014 and the Multi Sector General Permit for Storm Water Discharges Associated with Industrial Activity (MSGP) at City-owned facilities. Its purpose is to document the City's compliance with the requirements relative to quarterly storm water monitoring.

To comply with the MS4 and MSGP's requirements for storm water monitoring, Weston Solutions and CDM Smith were tasked with performing quarterly visual storm monitoring at 17 City-owned facilities which meet the definition of an industrial facility in the MSGP based on audits of city owned facilities performed between 2012 and 2017. The following facilities were monitored using visual inspection methods to identify potential impacted water discharges. Locations of these facilities are also shown in Figure 1 which include:

- Arroyo Del Oso Golf Course
- Arroyo Maintenance Facility
- Balloon Fiesta Park/Golf Training Center
- Albuquerque BioPark Facilities
- Daytona Transit Center
- Fire Department Mechanical Shop
- Fleet- 4th Street Fuel Station
- Fleet- Lomas Fuel Station
- Ladera Golf Course
- Los Altos Golf Course
- Montessa Park Open Space
- Pino Yards
- Puerto del Sol Golf Course
- Street Satellite #1
- Street Satellite #2
- Street Satellite #3
- Yale Transit Center

Table 1 shows the Outfall identification names along with the inspection team responsible for monitoring the particular outfall.

Figure 1: Facility Site Locations

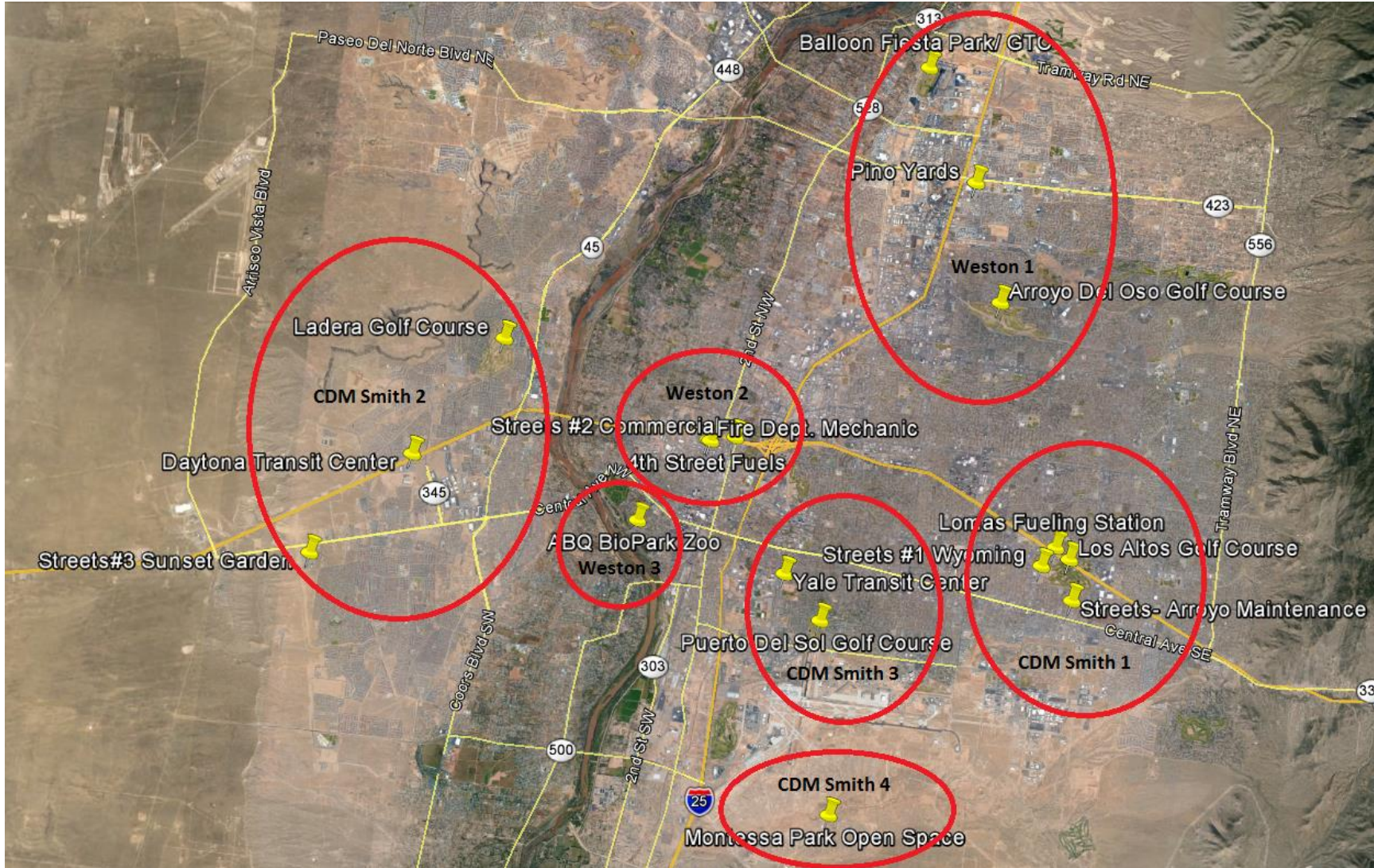


Table 1: Outfall ID and Designees

Site	Outfall ID
Weston 1	
Balloon Fiesta Park/ Golf Training Center	BFP1
	BFP2
	BFP3
	BFP4
	BFP5
Pino Yards	PY1
	PY2
	PY3
Arroyo Del Oso Golf Course	ADO1
	ADO2
Weston 2	
Fleet- 4 th Street Fuels	FS1
Fire Department Mechanic Shop	FM1
	FM2
Street Satellite #2	SS2
CDM Smith 1	
Los Altos Golf Course	LA1
	LA2
Fleet- Lomas Fuel Station	L1
Arroyo Maintenance Facility	AM1
Street Satellite #1	SS1A
	SS1B
CDM Smith 2	
Daytona Transit Center	D1
	D2
Ladera Golf Course	LGC1
	LGC2
Street Satellite #3	SS3
CDM Smith 3	
Puerto Del Sol Golf Course	PDS1
	PDS2
Yale Transit Facility	Y1
CDM Smith 4	
Montessa Park Open Space	MP1
	MP2
Weston 3	
ABQ BioPark Facilities	BP1

Background

The MSGP establishes requirements for monitoring the quality of storm water discharges depending on the nature of activities performed at the various industrial facilities. Although benchmark monitoring is not required, the MSGP does require quarterly visual assessment of storm water quality. Visual assessment consists of the collection of grab samples from each outfall (subject to demonstration of substantially identical outfalls) and examination for the presence of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, or other indicators of storm water pollution.

Certain criteria regarding the precipitation event must be met for an assessment event. Visual assessment of storm water must occur:

- During daylight hours
- Within 30 minutes of start of storm water discharge (or as soon as practicable thereafter)
- At least 72 hours after the previous storm water discharge event

Weston follows the City's existing storm water monitoring protocol outlining the locations and descriptions of all outfalls to be monitored. The protocol identifies contact persons at each facility for use in notifying City personnel when members of the storm water monitoring team are mobilizing to that location. A standard visual assessment form is used by all staff to document the monitoring activities.

Quarter 2 Monitoring Results

The 2nd Quarter sampling period ran from April 1 to June 30, 2017.

- Weston Sites Group 1 mobilized one time during the quarter to collect samples from storm events. A visual sample was collected from all outfalls over the course of the single mobilization. No repeat samples were collected.
- Weston Sites Group 2 mobilized twice and collected a sample from all outfalls over the course of the two mobilizations. 4 repeat samples were also collected, one for each outfall.
- Weston Sites Group 3 mobilized twice and collected no samples from the one outfall over the course of the two mobilizations. No repeat samples were collected.
- CDM Smith Sites Group 1 mobilized once during the quarter to collect samples from storm events. A visual sample was collected from all outfalls during the mobilization. No repeat samples were collected.
- CDM Smith Sites Group 2 mobilized zero times during the quarter to collect samples from storm events. No visual samples were collected from five outfalls. No repeat samples were collected.
- CDM Smith Sites Group 3 mobilized once during the quarter to collect samples from storm events. Two visual sample was collected from three outfalls during the single mobilization. No repeat samples were collected.

- CDM Smith Sites Group 4 mobilized zero times during the quarter to collect samples from storm events. No visual samples was collected from the single outfall. No repeat samples were collected.

The monitoring reports and photo logs from Weston Sites Groups 1 through 3 and CDM Sites Groups 1 through 4 can be found in the Appendix. Any outfalls not monitored in Quarter 2 will be made up during Quarter 3 of 2017 pending suitable weather conditions.

Observed Problems

In general very few pollution problems were observed at any of the outfalls with few exceptions. Many of the grab samples exhibited presence of sediment, but no pollutants required follow up inspections or actions to occur. There were limited to no issues with oils, floatables, salts, chemicals, or other pollutant sources.

Results from the Quarter 2 Visual Inspections can be found in the Appendix. Thirteen out of seventeen facilities were observed during the 2nd Quarter. Both visual observations and grab samples were noted at thirteen facilities during the 2nd Quarter. Any facilities or outfalls that did not produce a sample in Quarter 2, 2017 will be made up in the coming months.

We appreciate the opportunity to provide professional consulting services to you and we look forward to assisting you in the next quarter. Please contact Sarah Luckie at (505) 837-6540 (Sarah.Luckie@WestonSolutions.com) or Brad Sumrall at (505) 837-6566 (Brad.Sumrall@WestonSolutions.com) if you have any questions or need additional information.

Sincerely,

WESTON SOLUTIONS, INC.



L. Brad Sumrall, PE
Albuquerque Operations Manager

APPENDIX:

ATTACHMENT A: Q2 INSPECTION FORMS AND PHOTO LOGS

ATTACHMENT B: CDM SMITH NON-QUALIFYING EVENT MEMO

ATTACHMENT A: Q2 INSPECTION FORMS AND PHOTO LOGS

STREETS SATELLITE #1



City of Albuquerque
Street Maintenance Satellite #1

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4/25/17

Weather: rain

Time: 9:00

Storm Precip: no. inch

Inspector: G. Larson

Last 72 hour Precip: 0

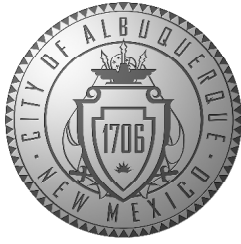
Photo: yes

Outfall ID: **SS1A** **SS1B**

	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	grated inlet	grated inlet
Flow Estimate (include units and method of estimation):	low (visual)	low (visual)
Other Observations:	/	/
Color (describe):	pale brown	pale brown
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	/	/

Additional Comments: _____





DATE: 04/25/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Greg Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

STREETS MAINTENANCE SATELLITE #1



Photo 1: Outfall SS1A. No storm water quality issues observed.



Photo 2: Outfall SS1B. No storm water quality issues observed.

STREETS SATELLITE #2



City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4/25/17
Time: 09:55
Inspector: Tommy Evans (Weston)
Signature: [Signature]

Weather: Rain
Storm Precip: < 1 inch
Last 72 Hour Precip: —
Photo: Yes

Outfall ID:	SS2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Flow coming from the driveways into the storm drain
Flow Estimate (include units and method of estimation):	< 1 cfs
Other Observations:	
Color (Describe):	light brown/yellow
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	

Additional Comments: _____





Date: April 25, 2017

Event: MS4 Visual storm Water Monitoring

Inspector: Tommy Evans (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Street Maintenance #2



STREETS SATELLITE #3

STREETS SATELLITE ARROYO MAINTENANCE

City of Albuquerque
Storm Drainage Maintenance Arroyo Maintenance Section

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4/25/17
 Time: 8:55
 Inspector: G. Larson

Weather: Rain
 Storm Precip: 20.1 inch
 Last 72 hour Precip: Ø
 Photo: yes

Outfall ID: AM1

Flow Observed: Yes No

Description of Monitoring Site: Curb inlet

Flow Estimate (include units and method of estimation): low (visual)

Other Observations: /

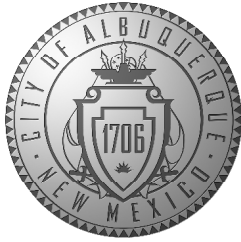
Color (describe): slightly reddish/brown

Turbidity: Clear
 Slightly Cloudy
 Very Cloudy
 Opaque

Floating Solids: Yes No
 Suspended Solids: Yes No
 Settled Solids: Yes No
 Sheen Present: Yes No
 Odor: Yes No
 Foam Present: Yes No

Describe:

Additional Comments: color observed from storm
roadway debris material
- no issues



DATE: 4/25/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Greg Larson (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

STORM DRAINAGE MAINTENANCE ARROYO SECTION



Photo 1: Grab sample from outfall. Slight reddish color from scoria.



Photo 2: Wattle at upstream of outfall. Some roadway deicing material (scoria) observed in the area.

PINO YARDS



City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4/25/2017
 Time: _____
 Inspector: Sarah Luckie (Weston)
 Signature: Sarah Luckie

Weather: Rain
 Storm Precip: 0.25 in
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	wattles need replaced		_____
Flow Estimate (include units and method of estimation):	< 1 cfs	< 1 cfs	< 1 cfs
Other Observations:	_____	_____	_____
Color (Describe):	clear	clear	dark brown
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input checked="" type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	clean	clean	dark sediment

Additional Comments: Wattle needs replaced.





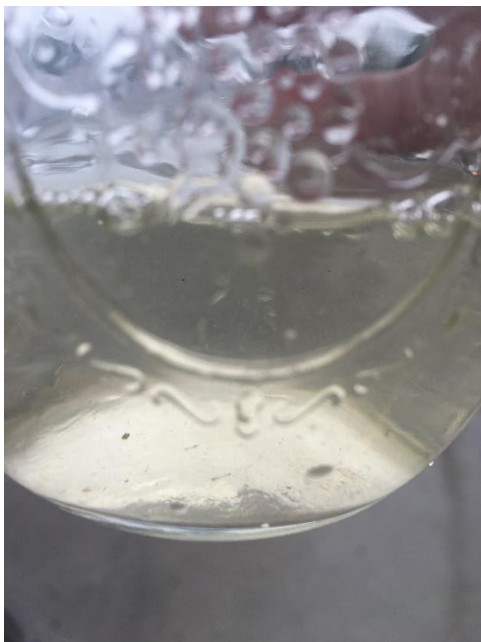
Date: April 25, 2017
Event: MS4 Visual Monitoring Assessment
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Pino Yards



PY3 Sample



PY2 Sample



PY1 Sample

Pino Yards



Wattles need replacing.

TRANSIT- YALE



City of Albuquerque
Yale Maintenance Facility

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4/25/17

Weather: rain

Time: 9:20

Storm Precip: ~ 0.1 inch

Inspector: G. Larson

Last 72 hour Precip: 0

Photo: yes

Outfall ID: Y1

Flow Observed: Yes No

Description of Monitoring Site: stormwater inlets to stormceptor

Flow Estimate (include units and method of estimation): low (visual)

Other Observations: see below

Color (describe): dark gray

Turbidity: Clear Slightly Cloudy Very Cloudy Opaque

Floating Solids: Yes No

Suspended Solids: Yes No

Settled Solids: Yes No

Sheen Present: Yes No

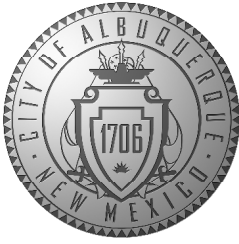
Odor: Yes No

Foam Present: Yes No

Describe: 0

Additional Comments: Some foam observed in runoff from roof drain





DATE: 04/25/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Greg Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

YALE BUS MAINTENANCE FACILITY



Photo 1: Grab sample collected at inlet to storm water quality treatment device. No apparent storm water quality issues.



Photo 2: Some foam observed in runoff from roof drain.

TRANSIT- DAYTONA

BALLOON FIESTA PARK/ GOLF TRAINING CENTER



City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4/25/17
 Time: _____
 Inspector: Sarah Luckie (Weston)
 Signature: Sarah Luckie

Weather: Rain
 Storm Precip: 0.25 in
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	_____	_____	_____
Flow Estimate (include units and method of estimation):	< 1 cfs	< 1 cfs	< 1 cfs
Other Observations:	_____	_____	_____
Color (Describe):	clear	clear/brown	clear
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	clean	sediment	dirt

Additional Comments: _____





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4/25/2017
 Time: _____
 Inspector: Sarah Luckie (Weston)
 Signature: Sarah Luckie

Weather: Rain
 Storm Precip: 0.25 in
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<u>—</u>	<u>slight ponding</u>
Flow Estimate (include units and method of estimation):	<u>< 1cfs</u>	<u>< 1cfs</u>
Other Observations:	<u>—</u>	<u>—</u>
Color (Describe):	<u>clear</u>	<u>yellow/clear</u>
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	<u>Clean</u>	

Additional Comments: _____

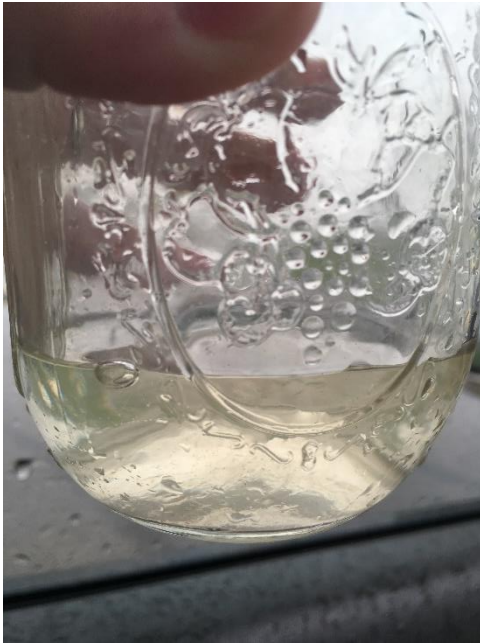




Date: April 25, 2017
Event: MS4 Stormwater Visual Monitoring
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Balloon Fiesta Park



BFP1 Discharge



BFP4 Discharge



BFP5 Discharge



BFP2 Discharge

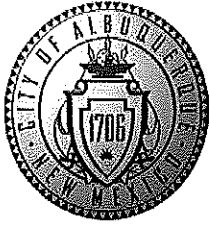


BFP3 Discharge



MONTESSA PARK

LOS ALTOS GOLF COURSE



City of Albuquerque
Los Altos Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8-25 4/25/17

Weather: rain

Time: 8:45

Storm Precip: 0.1 inch

Inspector: G. Larson

Last 72 hour Precip: 0

Photo: yes

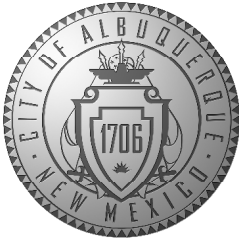
Outfall ID: LA1 LA2

	LA1	LA2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	pipe culvert / concrete v-curb	sheet flow over pavement
Flow Estimate (include units and method of estimation):	low (visual)	low (visual)
Other Observations:	/	/
Color (describe):	brown	pale gray
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input checked="" type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:		

— sand

Additional Comments: Grass clippings and sediment
near outfall from routine
landscape/course maintenance
operations. Not excessive.





DATE: 4/25/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Greg Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LOS ALTOS GOLF COURSE



Photo 1: Surface runoff at outfall LA2.



Photo 2: Grass clippings and sediment at outfall LA1 as a result of routine golf course maintenance operations.

PUERTO DEL SOL GOLF COURSE



City of Albuquerque
Puerto del Sol Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

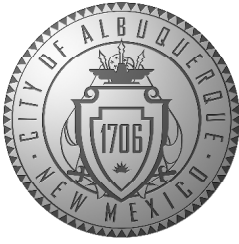
Date: 4/25/17
Time: 9:10
Inspector: O. Laison

Weather: rain
Storm Precip: 0.1 inch
Last 72 hour Precip: 0
Photo: yes

Outfall ID:	PDS1	PDS2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	grated inlet	grated inlet
Flow Estimate (include units and method of estimation):	0	low (visual)
Other Observations:	/	/
Color (describe):	/	dark grey/green
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:		

Additional Comments: Leaves/debris in PDS1
Debris/leaves removed from PDS2
grate last inspection.





DATE: 04/25/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Greg Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

PUERTO DEL SOL GOLF COURSE



Photo 1: Outfall PDS1. Leaves and debris observed in outfall.



Photo 2: Outfall PDS1. Debris has been removed from outlet since last monitoring event. No apparent storm water quality issues.

LADERA GOLF COURSE

ARROYO DEL OSO GOLF COURSE



City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4/25/2017
 Time: _____
 Inspector: Sarah Luckie (Weston)
 Signature: Sarah Luckie

Weather: Rain
 Storm Precip: 0.25 in
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	AD01	AD02
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<u>Rain & light ponding</u>	<u>rain.</u>
Flow Estimate (include units and method of estimation):	<u>< 1 cfs</u>	<u>< 1 cfs</u>
Other Observations:	<u>—</u>	<u>—</u>
Color (Describe):	<u>yellow/brown</u>	<u>yellow</u>
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	<u>Slight sediment</u>	<u>sediment</u>

Additional Comments: _____





Date: April 25, 2017

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG
Arroyo Del Oso Golf Course**



ADO1 Sample



ADO2 Sample

FIRE DEPARTMENT MECHANIC



City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4/25/17
 Time: FM2 - 09:25 FM1 - 09:35
 Inspector: Tommy Evans (Weston)
 Signature: Tommy Evans

Weather: Rain
 Storm Precip: < 1 inch
 Last 72 Hour Precip: —
 Photo: Yes

Outfall ID:	FM1	FM2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<i>Collected outside the fence. Water pooled against the wall. Light flow to the street</i>	<i>Large amount of water collected at the wall</i>
Flow Estimate (include units and method of estimation):	<i>< 1 cfs</i>	<i>< 1 cfs</i>
Other Observations:		<i>light flow to the wall</i>
Color (Describe):	<i>light brown</i>	<i>clear / light brown</i>
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:		

Additional Comments: _____





Date: April 25, 2017
Event: MS4 Visual Storm Water Monitoring
Inspector: Tommy Evans (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

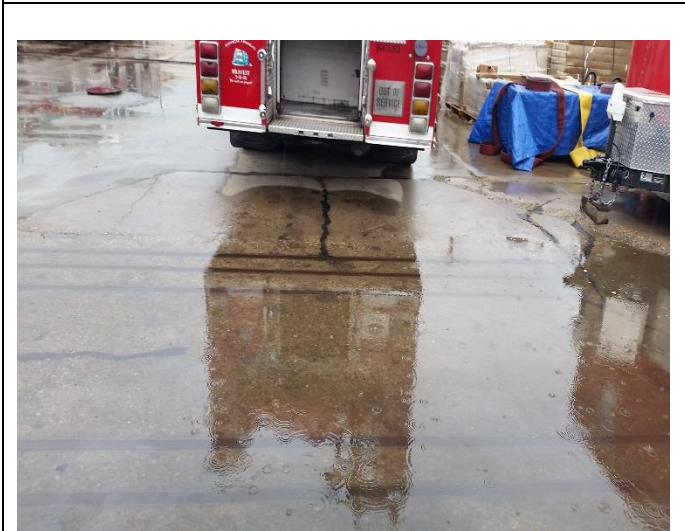
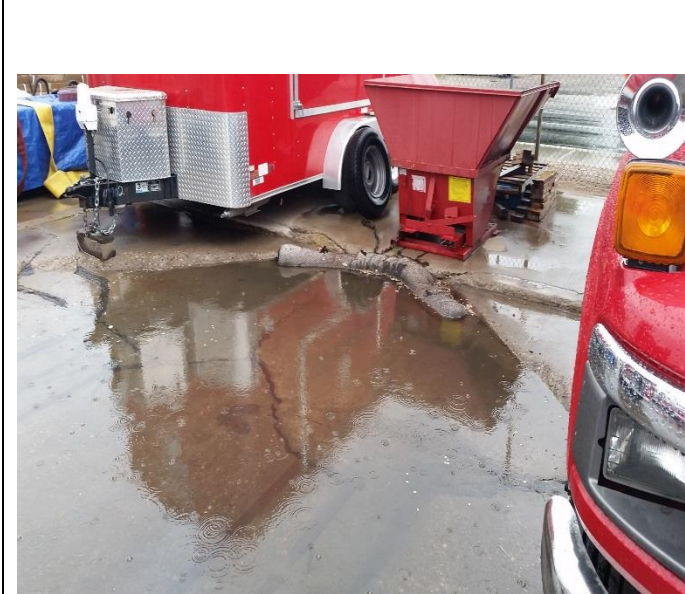
Fire Mechanic Shop - FM1





Date: April 25, 2017
Event: MS4 Visual Storm Water Monitoring
Inspector: Tommy Evans (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG
Fire Mechanic Shop - FM2**



4TH STREET FUELS



City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4/25/17
Time: 09:15
Inspector: T. Evans (Weston)
Signature: Terry Evans

Weather: Rain
Storm Precip: < 1 inch
Last 72 Hour Precip: _____
Photo: Yes

Outfall ID:	FS1
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<u>Collected at curb before entering the drain</u>
Flow Estimate (include units and method of estimation):	<u>1/10 cfs</u>
Other Observations:	
Color (Describe):	<u>light brown / clear grey</u>
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	

Additional Comments: _____





Date: April 25, 2017

Event: MS4 Visual Storm Monitoring

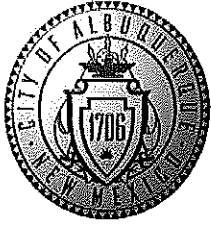
Inspector: Tommy Evans (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

4th Street Fuels



LOMAS FUELS



City of Albuquerque
Lomas Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4/25/17

Weather: Rain

Time: 8:40

Storm Precip: ~0.1 inch

Inspector: G. Larson

Last 72 hour Precip: 0

Photo: yes

Outfall ID: I.1

Flow Observed: Yes No

Description of Monitoring Site: Fuel station

Flow Estimate (include units and method of estimation): Sheet flow (visual)

Other Observations: /

Color (describe): pk grey

Turbidity: Clear
 Slightly Cloudy
 Very Cloudy
 Opaque

Floating Solids: Yes No

Suspended Solids: Yes No

Settled Solids: Yes No

Sheen Present: Yes No

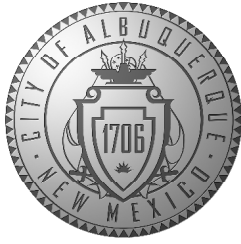
Odor: Yes No

Foam Present: Yes No

Describe:

Additional Comments: no issues observed





DATE: 04/25/2017

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Greg Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LOMAS FUEL STATION



Photo 1: Sheetflow at fueling station looking east.



Photo 2: Sheetflow at fueling station looking south. No apparent storm water quality issues.

ABQ BIOPARK ZOO



City of Albuquerque
ABQ BioPark Zoo

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4/25/17
Time: 10:20
Inspector: Tommy Evans (Weston)
Signature: Tommy Evans

Weather: light rain
Storm Precip: < 1 inch
Last 72 Hour Precip: —
Photo: Yes

Outfall ID:	BP1
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<i>Outfall site has become overgrown with vegetation</i>
Flow Estimate (include units and method of estimation):	<i>NA</i>
Other Observations:	<i>Soil is dry inside the outfall pipe.</i>
Color (Describe):	<i>NA</i>
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	

Additional Comments: _____





Date: April 25, 2017

Event: MS4 Visual Storm Monitoring

Inspector: Tommy Evans (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

BioPark Zoo



ATTACHMENT B: CDM SMITH NON-QUALIFYING EVENT MEMO



6001 Indian School Rd. NE, Suite 310
Albuquerque, NM 87110
tel: 505 243-3200
fax: 505 243-2700

July 7, 2017

Mr. Brad Sumrall, P.E.
Weston Solutions
3840 Commons Ave NE
Albuquerque, New Mexico 87109

Subject: Visual Stormwater Monitoring at the City of Albuquerque —Fourth Quarter 2016 (Task 03 Visual Stormwater Monitoring)
CDM Smith Project No: 76998-114606

Dear Mr. Sumrall:

CDM Smith Inc. (CDM Smith) herein notifies Weston Solutions (Weston) that a visual stormwater monitoring event was not conducted for the following City of Albuquerque facilities during the second quarter of 2017: Montessa Park, Daytona Transit Facility, Street Satellite #3, and Ladera Golf Course. National Weather Service (NWS) data, from a weather station located approximately between two and eight miles from the facilities, provided precipitation events for April through June 2017 is included in **Attachment A**. Daily weather reports, with data obtained from the weather station, for days when precipitation was observed, according to NWS data, are included in **Attachment B**. The events with measurable precipitation occurring during this time are summarized in **Table 1**.

Section 3.2 of 2015 Multi Sector General Permit (MSGP) describes the criteria regarding the precipitation event that must be met to qualify as an assessment event. Visual assessment of stormwater must occur:

- On samples collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and you must document why it was not possible to take the sample within the first 30 minutes.
- For storm events, on discharges that occur at least 72 hours (three days) from the previous discharge.

An additional limitation on the timing of sampling activities within the City of Albuquerque is contained in the City's Storm Water Management Plan (SWMP, December, 2016). Section 13.3.1.2 of the SWMP limits sampling to normal business hours – Monday through Friday, 7:30 am to 5:00 pm and not required on the following observed holidays: Memorial Day; Independence Day; Labor





Mr. Brad Sumrall, P.E.

July 7, 2017

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Day; Thanksgiving Day; and Christmas Day through New Year’s Day. Therefore, storm events that occur outside of normal business hours or on a holiday are not considered qualifying events.

CDM Smith’s past visual monitoring experience for City of Albuquerque facilities has shown that stormwater discharges from facilities typically does not occur for precipitation events of less than 0.1 inches of measurable rainfall. Therefore, events with less than 0.1 inch of measurable rainfall do not create a discharge and are not considered for visual assessment.

Table 1 Second Quarter 2017 Precipitation Events

Date	Total Precipitation (Inches)	Event Start Time	Notes
Saturday, 4/1/2017	0.21	5:52 am	Light rain started at 5:52 am. Non qualifying due to event occurring outside of normal business hours.
Tuesday, 4/25/2017	0.21	7:52 am	Light rain started at 7:52 am developing which developed into isolated showers throughout various areas of Albuquerque.
Friday, 4/28/2017	0.13	11:40 am	Light rain started at 11:40 am. Non qualifying due to event due to rain in the past 72 hours.
Saturday, 4/29/2017	0.23	1:52 am	Light rain started at 1:52 am. Non qualifying event due to event occurring outside of normal business hours.
Monday, 5/1/2017	0.10	1:52 am	Light rain started at 1:52 am. Non qualifying event due to start of event occurring outside normal business hours.
Tuesday, 5/16/2017	0.05	12:30 pm	Isolated thunderstorms started at 12:30 pm. Recordable precipitation (0.05 inches) occurred between 5:30 and 6:52 pm. Non qualifying event due to measurable precipitation associated with event occurred outside of business hours.
Thursday, 5/18/2017	0.01	5:52 am	Light rain started at 5:52 pm. Non qualifying event due to rain in past 72 hours and outside normal business hours.
Wednesday, 5/31/2017	0.08	1:52 pm	Rain started at 1:52 pm with isolated thunderstorms occurring throughout the afternoon. Insufficient precipitation (less than 0.01 inches) occurred between 1:51 PM and 6:00 PM. 0.07 inches of rain was recorded between 6:00 pm and 7:00 pm. Non qualifying event due to measurable precipitation occurring outside of business hours.
Monday, 6/26/2017	0.48	6:45 pm	Thunderstorms and rain started at 6:45 pm. Non qualifying event due event occurring outside normal business hours.

Notes: Events shaded in gray are non-qualifying events. Bold indicates qualifying events.



Mr. Brad Sumrall, P.E.

July 7, 2017

Page 3

As seen in **Table 1**, of the 9 storm events with measurable precipitation that occurred in the second quarter, only one of the events is considered a qualifying assessment event per the criteria listed above. During the April 25th qualifying event, CDM Smith mobilized to the following sites to perform visual stormwater monitoring: Lomas Fuel Station, Los Altos and Puerto del Sol Golf Courses, Stormwater Drainage Maintenance Arroyo, Streets Satellite #1, and the Yale Transit Facility. During this event, CDM Smith made the determination not to perform visual monitoring at the other facilities due to the observed lack of rainfall at the sites based on visual storm tracking and radar data provided by weather tracking websites. Due to these circumstances a visual monitoring event was not performed during the second quarter of 2017 at the aforementioned facilities.

Please contact CDM Smith at (505) 243-3200 if you have any questions or comments regarding this report.

Sincerely,

A handwritten signature in blue ink, appearing to read "Gregory S. Larson".

Gregory S. Larson, P.E.
Project Engineer
CDM Smith Inc.

A handwritten signature in blue ink, appearing to read "Kelly A. Collins".

Kelly A. Collins, PG, BCES
Principal, Task Order Manager
CDM Smith Inc.

Attachments

cc: File

ATTACHMENT A

NWS WEATHER SUMMARY APRIL 1, 2017 TO JUNE 30, 2017

Weather History for KABQ - April, 2017

From:

April

1

2017

To:

June

30

2017

Get History

Daily

Weekly

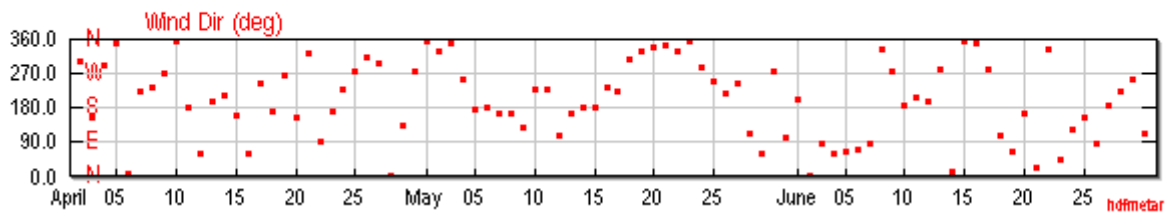
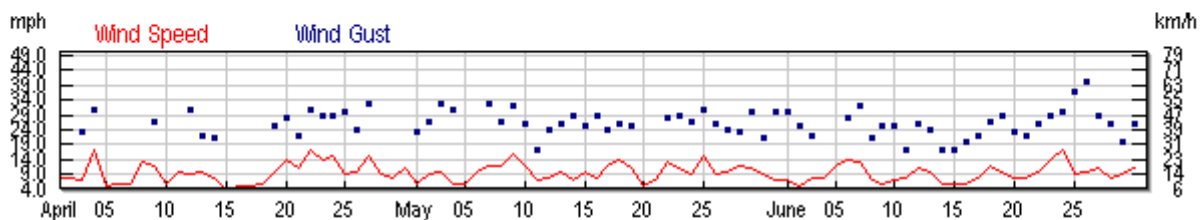
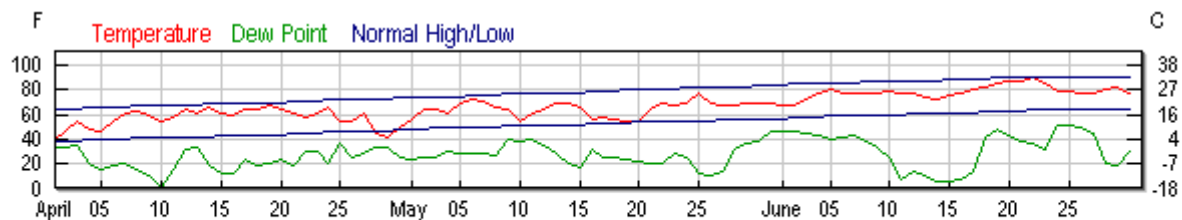
Monthly

Custom

	Max	Avg	Min	Sum
Temperature				
Max Temperature	103 °F	81 °F	45 °F	
Mean Temperature	90 °F	67 °F	40 °F	
Min Temperature	76 °F	53 °F	31 °F	
Degree Days				

	Max	Avg	Min	Sum
Heating Degree Days (base 65)	25	3	0	310
Cooling Degree Days (base 65)	25	5	0	490
Growing Degree Days (base 50)	38	17	0	1559
Dew Point				
Dew Point	55 °F	28 °F	-6 °F	
Precipitation				
Precipitation	0.48 in	0.02 in	0.00 in	1.50 in
Snowdepth	0.0 in	0.0 in	0.0 in	-
Wind				
Wind	52 mph	10 mph	0 mph	
Gust Wind	65 mph	26 mph	16 mph	
Sea Level Pressure				
Sea Level Pressure	30.26 in	29.83 in	29.37 in	

Custom Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

April

1

Submit

Weather History & Observations

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
Apr	45	40	34	38	34	29	92	78	64	30.11	29.95	29.78	10	9	2	22	8	30	0.21	Rain , Snow
	61	46	31	36	33	30	100	66	32	30.08	29.92	29.78	10	10	8	26	8	35	0.00	Fog
	66	54	41	43	35	27	76	50	24	29.80	29.70	29.59	10	10	10	28	7	38	T	Rain
	56	48	40	35	20	1	65	38	11	30.08	29.80	29.65	10	10	10	31	17	40	T	
	60	47	34	21	16	10	51	33	14	30.26	30.17	30.10	10	10	10	12	5	15	0.00	
	71	55	39	22	18	11	45	28	11	30.18	30.08	29.98	10	10	10	12	6	14	0.00	
	79	62	44	28	20	7	41	24	7	30.05	29.95	29.84	10	10	10	21	6	26	0.00	
	78	63	48	22	16	7	34	21	7	29.90	29.78	29.64	10	10	10	28	13	34	0.00	
	69	59	49	21	11	-4	28	17	6	29.94	29.78	29.67	10	10	10	29	12	36	0.00	
	67	55	42	8	1	-4	18	12	6	30.11	30.02	29.95	10	10	10	14	6	17	0.00	
	73	58	42	29	16	7	31	20	9	30.11	30.00	29.91	10	10	10	20	10	25	0.00	
	78	64	50	43	32	10	59	33	7	30.00	29.92	29.83	10	10	10	35	9	42	0.00	
	77	62	47	41	33	23	82	48	14	30.02	29.91	29.79	10	10	10	23	10	32	0.00	
	80	66	51	31	19	8	38	23	7	29.87	29.77	29.65	10	10	10	22	8	28	0.00	
	78	62	45	18	13	9	28	18	7	29.94	29.85	29.79	10	10	10	15	4	19	0.00	

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
	78	60	41	22	13	7	31	19	6	29.98	29.90	29.85	10	10	10	15	5	19	0.00	
	79	65	50	39	23	12	59	34	9	29.98	29.89	29.81	10	10	10	14	5	18	0.00	
	81	65	49	23	19	13	27	19	11	29.97	29.89	29.79	10	10	10	18	6	22	0.00	
	81	67	53	28	21	13	32	20	8	29.96	29.88	29.79	10	10	10	24	10	30	0.00	
	78	64	50	37	24	2	47	27	6	29.96	29.86	29.71	10	10	10	31	14	39	0.00	
	76	61	46	26	19	12	30	21	11	30.02	29.83	29.74	10	10	10	20	11	26	0.00	
	71	58	45	38	31	17	65	42	18	30.10	30.00	29.90	10	10	10	35	17	46	0.00	
	77	61	44	33	30	28	53	36	19	30.12	29.93	29.72	10	10	10	32	14	37	0.00	
	82	66	49	31	21	12	46	27	8	29.73	29.60	29.48	10	10	10	35	15	44	0.00	
	65	55	45	46	37	20	93	56	18	29.75	29.58	29.44	10	9	4	28	9	39	0.21	Rain , Thunderstorm
	68	55	41	33	25	14	62	38	13	29.85	29.73	29.63	10	10	10	24	10	34	0.00	
	74	62	50	34	29	23	48	32	16	29.63	29.51	29.37	10	10	10	39	15	65	0.00	
	52	45	38	39	34	26	92	66	39	29.83	29.70	29.58	10	10	5	21	9	26	0.13	Rain
	49	41	32	38	33	28	100	73	46	30.09	29.91	29.77	10	8	0	22	8	24	0.23	Fog , Rain , Snow
	65	50	35	35	25	10	100	56	12	30.08	29.99	29.86	10	10	8	29	11	38	0.00	
2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
May	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
	74	57	40	33	24	17	53	34	15	29.99	29.90	29.81	10	10	10	24	6	29	0.00	
	81	65	48	33	26	19	56	33	10	29.89	29.80	29.67	10	10	10	26	9	35	0.00	
	76	65	53	38	26	15	51	31	10	30.18	29.93	29.78	10	10	10	29	10	35	0.00	
	77	62	46	38	31	22	66	40	13	30.17	30.08	29.98	10	10	10	33	6	38	0.00	
	85	69	53	34	29	24	41	26	11	30.00	29.89	29.76	10	10	10	14	6	20	0.00	
	87	72	56	37	29	17	33	21	8	29.94	29.74	29.60	10	10	10	35	10	46	T	Rain

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	82	71	59	39	28	17	46	28	9	29.74	29.65	29.57	10	10	10	33	12	59	0.00	
	81	66	51	36	27	13	44	26	8	29.81	29.69	29.59	10	10	10	30	12	39	0.00	
	75	64	52	50	40	29	65	43	20	29.93	29.73	29.60	10	10	3	52	16	63	T	Thunderstorm
	60	54	47	46	38	24	86	57	28	30.01	29.86	29.75	10	9	4	26	12	33	0.10	Rain , Thunderstorm
	74	61	48	47	40	34	93	59	25	30.08	30.02	29.96	10	10	10	20	7	23	0.00	
	78	65	51	43	35	24	71	43	15	30.07	29.95	29.81	10	10	10	25	8	30	0.00	
	85	70	55	34	29	21	43	27	11	29.83	29.73	29.60	10	10	10	25	10	35	0.00	
	82	69	55	27	20	10	30	19	7	29.91	29.75	29.68	10	10	10	28	7	35	0.00	
	81	66	51	30	17	10	30	19	8	29.80	29.69	29.57	10	10	10	32	10	41	0.00	
	67	57	46	43	32	16	80	49	17	29.88	29.72	29.63	10	10	6	33	8	41	0.05	Rain , Thunderstorm
	73	58	43	33	25	18	56	35	13	29.90	29.68	29.51	10	10	10	24	12	31	0.00	
	68	56	44	38	26	11	76	44	12	29.83	29.73	29.62	10	10	10	28	14	35	0.01	Rain
	66	54	42	33	23	13	62	38	14	29.99	29.88	29.77	10	10	10	23	11	29	T	
	71	55	39	25	22	19	51	33	15	30.11	29.96	29.89	10	10	10	16	5	23	0.00	
	81	65	49	26	20	14	35	22	8	30.03	29.93	29.83	10	10	10	20	7	28	0.00	
	80	69	57	31	21	13	30	19	8	30.12	29.89	29.81	10	10	10	29	13	38	0.00	
	79	67	55	45	29	11	66	37	7	30.02	29.90	29.82	10	10	10	28	11	36	0.00	
	89	70	50	33	26	16	52	30	7	29.89	29.72	29.54	10	10	10	28	9	33	0.00	
	86	77	67	25	13	-1	18	11	4	29.69	29.56	29.49	10	10	10	33	15	45	0.00	
	86	69	52	15	11	5	19	12	5	29.91	29.75	29.66	10	10	10	28	9	35	0.00	
	84	68	51	22	14	7	19	13	6	30.08	29.86	29.77	10	10	10	25	10	32	0.00	
	80	68	56	42	32	22	61	36	11	30.07	29.98	29.91	10	10	10	31	12	36	0.00	

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	81	70	58	43	36	29	51	34	17	30.12	29.98	29.88	10	10	10	32	11	40	T	
	84	69	54	44	38	19	71	41	10	30.08	29.99	29.90	10	10	10	23	9	28	0.00	
	78	69	59	54	46	39	78	53	27	30.17	29.96	29.87	10	10	5	31	7	38	0.08	Rain , Thunderstorm

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
Jun	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
	82	67	51	54	46	33	89	54	18	29.97	29.89	29.78	10	10	10	24	7	40	0.00	
	78	68	58	51	47	42	72	52	31	30.04	29.87	29.81	10	10	10	22	5	29	T	Rain , Thunderstorm
	87	73	59	50	45	39	64	42	20	30.12	29.90	29.81	10	10	10	22	8	31	T	Thunderstorm
	91	77	63	50	43	33	56	35	14	30.14	29.83	29.69	10	10	10	23	8	28	0.00	Rain
	93	80	67	47	40	23	48	28	8	29.85	29.77	29.68	10	10	10	36	12	45	0.00	
	88	77	66	46	42	34	42	29	15	30.12	29.89	29.80	10	10	10	38	14	44	0.00	
	90	78	65	50	44	30	52	33	13	30.16	29.93	29.78	10	10	10	36	13	47	T	Rain , Thunderstorm
	93	78	62	52	38	14	67	37	6	30.04	29.84	29.69	10	10	10	26	7	33	0.00	
	95	78	61	48	33	20	52	30	7	29.82	29.72	29.62	10	10	10	22	6	31	0.00	
	95	79	63	31	25	3	28	17	5	29.73	29.64	29.52	10	10	10	22	7	27	0.00	
	91	77	63	15	7	1	12	8	3	29.75	29.68	29.61	10	10	9	23	8	29	0.00	
	93	77	61	24	14	9	16	11	5	29.79	29.70	29.60	10	10	10	30	11	35	0.00	
	86	75	63	24	10	-4	17	10	3	29.81	29.76	29.70	10	10	10	25	10	33	0.00	
	90	72	54	15	5	-4	15	9	3	29.91	29.84	29.77	10	10	10	14	6	17	0.00	
	96	76	56	20	6	-6	19	11	2	29.91	29.82	29.74	10	10	9	14	6	18	0.00	
	98	78	57	22	7	0	14	9	3	29.86	29.77	29.66	10	10	10	17	6	20	0.00	
	100	80	59	22	14	7	13	9	4	29.76	29.68	29.60	10	10	10	25	8	33	0.00	

2017	Temp. (°F)			Dew Point (°F)			Humidity (%)			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	97	82	67	51	41	23	49	30	11	29.98	29.73	29.63	10	10	10	32	12	41	0.00	
	99	85	70	55	48	31	53	32	10	30.08	29.84	29.77	10	10	10	28	10	33	0.00	Rain , Thunderstorm
	101	88	74	55	44	15	46	26	5	29.96	29.85	29.72	10	10	9	25	8	30	0.00	
	102	88	73	49	39	27	41	25	8	29.97	29.75	29.60	10	10	10	22	8	30	0.00	
	103	90	76	48	36	23	33	20	7	29.73	29.64	29.54	10	10	10	28	10	35	T	
	100	85	70	54	32	12	49	27	4	30.01	29.76	29.63	10	10	10	31	14	43	0.00	
	90	79	68	55	51	46	55	40	24	30.01	29.94	29.81	10	10	9	40	17	50	0.00	
	91	79	66	55	51	46	68	46	23	30.23	30.04	29.91	10	10	2	39	9	50	T	Thunderstorm
	90	77	64	54	50	40	67	42	17	30.21	30.03	29.86	10	9	2	47	10	58	0.48	Rain , Thunderstorm
	92	78	63	53	45	38	67	42	16	30.18	29.89	29.68	10	10	8	32	11	40	T	Rain , Thunderstorm
	95	80	64	42	21	5	33	18	3	29.98	29.73	29.63	10	10	7	24	8	30	0.00	
	96	83	69	29	19	11	19	12	5	29.82	29.73	29.65	10	10	10	20	9	27	0.00	
	95	78	61	51	30	14	46	27	8	29.84	29.79	29.73	10	10	9	36	11	44	T	

ATTACHMENT B

DAILY WEATHER REPORTS FOR PRECIPITATION EVENTS OCCURRING IN SECOND QUARTER 2017

Weather History for KABQ - April, 2017

April

1

2017

View

Saturday, April 1, 2017

Daily	Weekly	Monthly	Custom
--------------	--------	---------	--------

	Actual	Average	Record
Temperature			
Mean Temperature	40 °F	52 °F	
Max Temperature	45 °F	65 °F	81 °F (2011)
Min Temperature	34 °F	39 °F	13 °F (1896)
Degree Days			
Heating Degree Days	25	13	
Month to date heating degree days	25	13	
Since 1 July heating degree days	3015	3840	
Cooling Degree Days	0	0	

	Actual	Average	Record
Month to date cooling degree days	0	0	
Year to date cooling degree days	1	0	
Moisture			
Dew Point	34 °F		
Average Humidity	78		
Maximum Humidity	92		
Minimum Humidity	64		
Precipitation			
Precipitation	0.21 in	0.02 in	1.90 in (1905)
Month to date precipitation	0.21	0.02	
Year to date precipitation	1.80	1.45	
Snow			
Snow	T in	-	- ()
Month to date snowfall	T		
Since 1 July snowfall	2.9		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	29.95 in		
Wind			
Wind Speed	8 mph (NE)		
Max Wind Speed	22 mph		
Max Gust Speed	30 mph		
Visibility	9 miles		

Actual

Average

Record

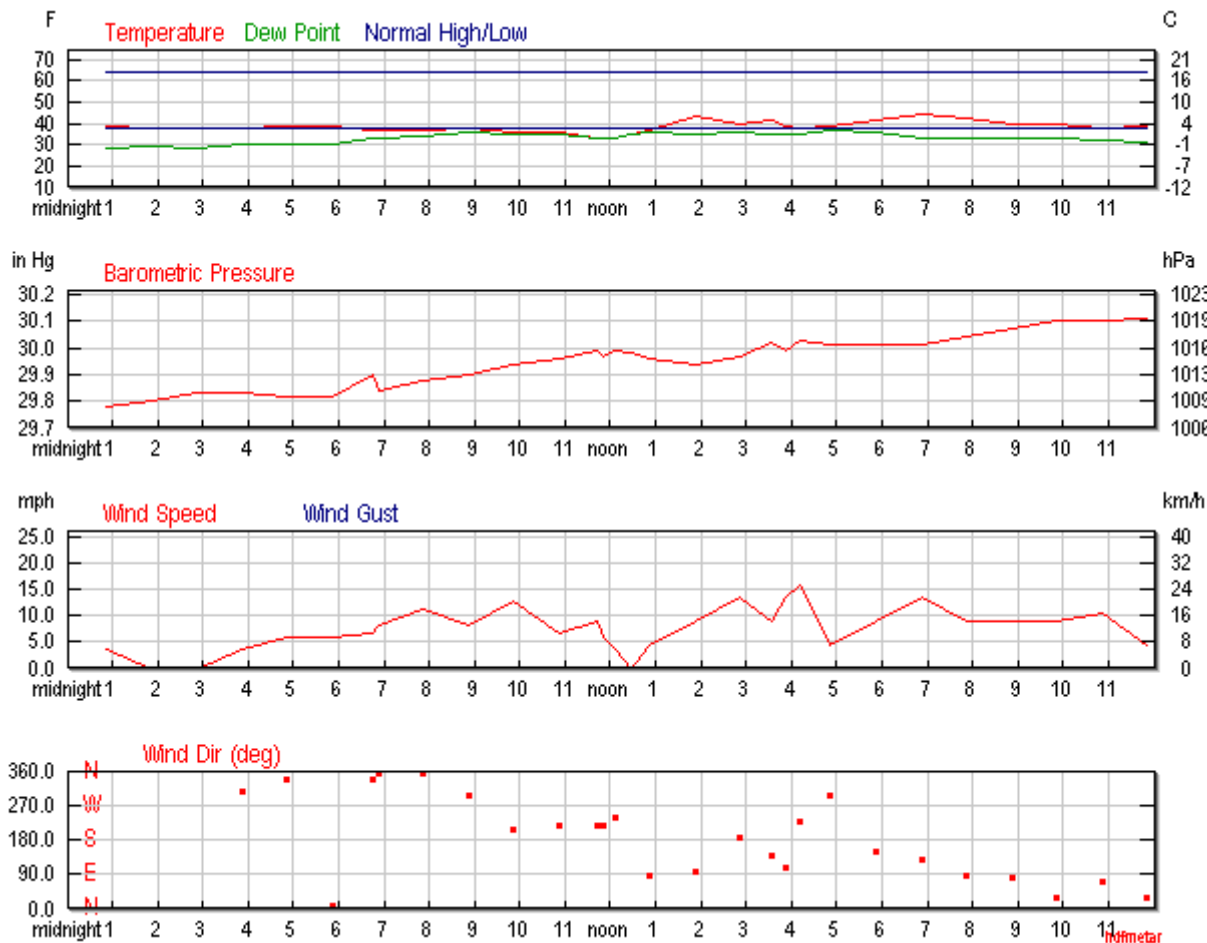
Events

Rain , Snow

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

Submit

Astronomy

Apr. 01, 2017	Rise	Set
Actual Time	6:52 AM MDT	7:28 PM MDT
<u>Civil Twilight</u>	6:27 AM MDT	7:53 PM MDT
<u>Nautical Twilight</u>	5:57 AM MDT	8:23 PM MDT
<u>Astronomical Twilight</u>	5:26 AM MDT	8:54 PM MDT
Moon	10:30 AM MDT (4/1)	No Moon Set
Length of Visible Light	13h 26m	
Length of Day	12h 35m	

Waxing Crescent, 27% of the Moon is Illuminated

Apr 1	Apr 3	Apr 11	Apr 19	Apr 26
Waxing Crescent	First Quarter	Full	Last Quarter	New

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	39.9 °F	37.8 °F	28.9 °F	65%	29.78 in	10.0 mi	NNW	3.5 mph	-	N/A		Scattered Clouds
1:52 AM	39.0 °F	-	30.0 °F	70%	29.80 in	10.0 mi	Calm	Calm	-	N/A		Mostly Cloudy
2:52 AM	39.0 °F	-	28.9 °F	67%	29.83 in	10.0 mi	Calm	Calm	-	N/A		Mostly Cloudy
3:52 AM	39.0 °F	36.8 °F	30.9 °F	73%	29.83 in	10.0 mi	NW	3.5 mph	-	N/A		Overcast
4:52 AM	39.9 °F	35.8 °F	30.9 °F	70%	29.82 in	10.0 mi	NNW	5.8 mph	-	0.00 in		Overcast
5:52 AM	39.9 °F	35.8 °F	30.9 °F	70%	29.82 in	9.0 mi	North	5.8 mph	-	0.00 in	Rain	Light Rain
6:45 AM	37.9 °F	32.7 °F	34.0 °F	86%	29.90 in	10.0 mi	NNW	6.9 mph	-	0.01 in		Overcast
6:52 AM	37.9 °F	32.1 °F	34.0 °F	86%	29.84 in	10.0 mi	North	8.1 mph	-	0.01 in		Overcast
7:52 AM	37.9 °F	30.5 °F	35.1 °F	89%	29.88 in	10.0 mi	North	11.5 mph	-	0.00 in		Overcast
8:52 AM	39.0 °F	33.4 °F	37.0 °F	93%	29.90 in	10.0 mi	WNW	8.1 mph	-	0.01 in		Overcast
9:52 AM	37.0 °F	28.9 °F	36.0 °F	96%	29.94 in	7.0 mi	SSW	12.7 mph	-	0.01 in	Rain	Light Rain
10:52 AM	37.0 °F	31.6 °F	36.0 °F	96%	29.96 in	5.0 mi	SW	6.9 mph	-	0.02 in	Rain	Rain
11:42 AM	34.0 °F	26.6 °F	34.0 °F	100%	29.99 in	1.8 mi	SW	9.2 mph	-	0.10 in	Rain , Snow	Light Rain
11:52 AM	34.0 °F	28.8 °F	34.0 °F	100%	29.97 in	2.5 mi	SW	5.8 mph	-	0.12 in	Rain , Snow	Light Rain
12:06 PM	34.0 °F	31.0 °F	34.0 °F	100%	29.99 in	5.0 mi	WSW	3.5 mph	-	0.01 in	Rain	Light Rain
12:27 PM	36.0 °F	-	36.0 °F	100%	29.98 in	10.0 mi	Calm	Calm	-	0.01 in		Overcast
12:52 PM	37.9 °F	34.4 °F	37.0 °F	97%	29.96 in	10.0 mi	East	4.6 mph	-	0.01 in		Overcast
1:52 PM	44.1 °F	39.0 °F	36.0 °F	73%	29.94 in	10.0 mi	East	9.2 mph	-	N/A		Overcast
2:52 PM	41.0 °F	33.5 °F	37.0 °F	86%	29.97 in	10.0 mi	South	13.8 mph	-	0.01 in	Rain	Light Rain
3:34 PM	42.1 °F	36.6 °F	36.0 °F	79%	30.02 in	9.0 mi	SE	9.2 mph	-	0.01 in	Rain	Light Rain
3:52 PM	39.9 °F	32.1 °F	36.0 °F	86%	29.99 in	10.0 mi	ESE	13.8 mph	-	0.02 in	Rain	Light Rain
4:12 PM	39.0 °F	30.3 °F	36.0 °F	89%	30.03 in	10.0 mi	SW	16.1 mph	-	0.00 in	Rain	Light Rain
4:52 PM	39.9 °F	36.7 °F	37.9 °F	93%	30.01 in	10.0 mi	WNW	4.6 mph	-	0.00 in		Mostly Cloudy

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
5:52 PM	42.1 °F	36.6 °F	37.0 °F	82%	30.01 in	10.0 mi	SSE	9.2 mph	-	N/A		Mostly Cloudy
6:52 PM	45.0 °F	38.5 °F	34.0 °F	65%	30.01 in	10.0 mi	SE	13.8 mph	-	N/A		Mostly Cloudy
7:52 PM	43.0 °F	37.7 °F	34.0 °F	71%	30.04 in	10.0 mi	East	9.2 mph	-	N/A		Mostly Cloudy
8:52 PM	41.0 °F	35.2 °F	34.0 °F	76%	30.07 in	10.0 mi	East	9.2 mph	-	N/A		Scattered Clouds
9:52 PM	41.0 °F	35.2 °F	34.0 °F	76%	30.10 in	10.0 mi	NNE	9.2 mph	-	N/A		Scattered Clouds
10:52 PM	39.0 °F	32.3 °F	33.1 °F	79%	30.10 in	10.0 mi	ENE	10.4 mph	-	N/A		Partly Cloudy
11:52 PM	39.9 °F	36.7 °F	32.0 °F	73%	30.11 in	10.0 mi	NNE	4.6 mph	-	N/A		Scattered Clouds

|

Weather History for KABQ - April, 2017

April

25

2017

View

Tuesday, April 25, 2017

Daily

Weekly

Monthly

Custom

	Actual	Average	Record
Temperature			
Mean Temperature	55 °F	59 °F	
Max Temperature	65 °F	72 °F	86 °F (1981)
Min Temperature	45 °F	46 °F	25 °F (1921)
Degree Days			
Heating Degree Days	10	7	
Month to date heating degree days	166	249	
Since 1 July heating degree days	3156	4076	
Cooling Degree Days	0	1	

	Actual	Average	Record
Month to date cooling degree days	4	1	
Year to date cooling degree days	5	1	
Growing Degree Days	6 (Base 50)		
Moisture			
Dew Point	37 °F		
Average Humidity	56		
Maximum Humidity	93		
Minimum Humidity	18		
Precipitation			
Precipitation	0.21 in	0.02 in	0.86 in (1990)
Month to date precipitation	0.42	0.52	
Year to date precipitation	2.01	1.95	
Snow			
Snow	0.00 in	-	- ()
Month to date snowfall	T		
Since 1 July snowfall	2.9		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	29.58 in		
Wind			
Wind Speed	9 mph (West)		
Max Wind Speed	28 mph		
Max Gust Speed	39 mph		

Actual

Average

Record

Visibility

9 miles

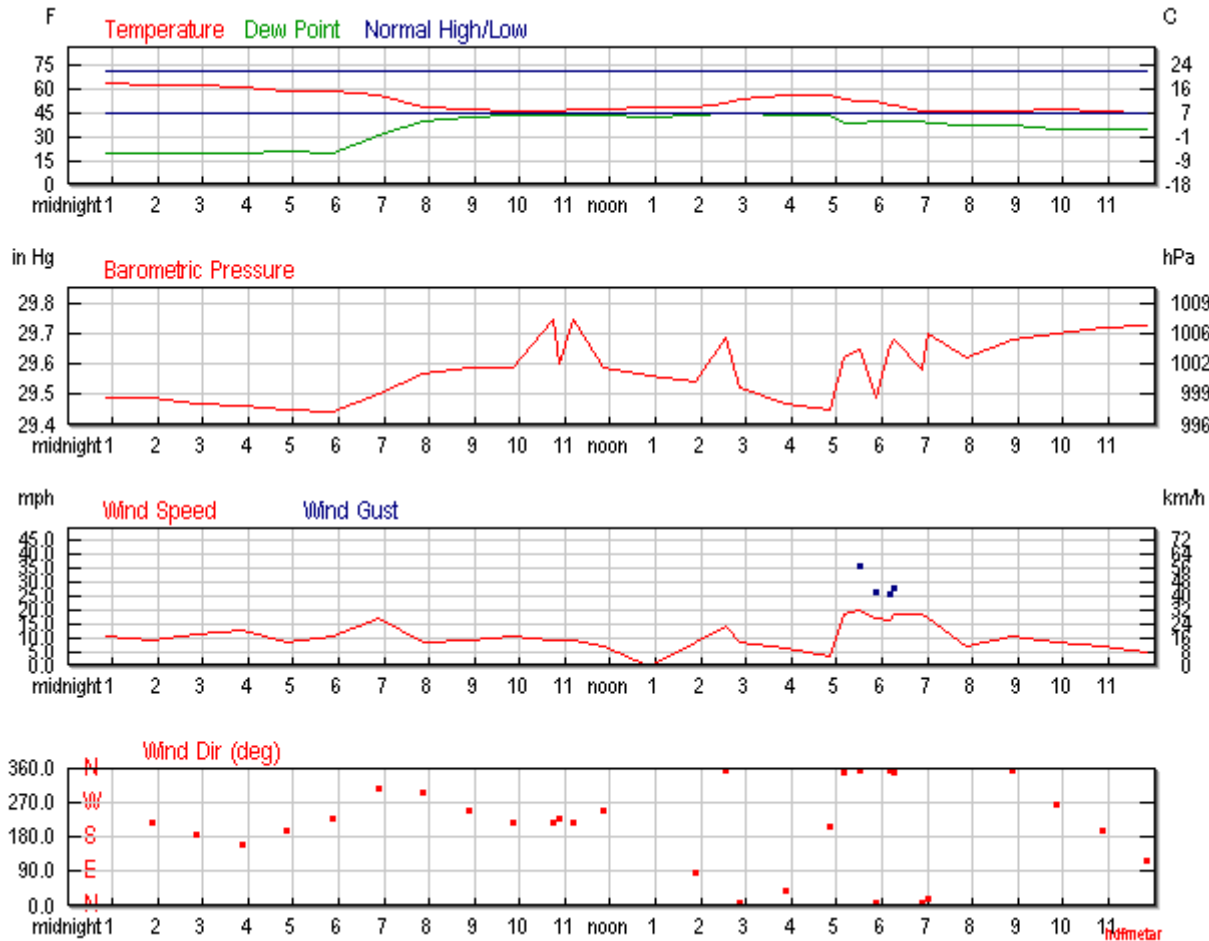
Events

Rain , Thunderstorm

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

April

25

Submit

Astronomy

Apr. 25, 2017	Rise	Set
Actual Time	6:21 AM MDT	7:47 PM MDT
<u>Civil Twilight</u>	5:55 AM MDT	8:14 PM MDT
<u>Nautical Twilight</u>	5:23 AM MDT	8:46 PM MDT
<u>Astronomical Twilight</u>	4:49 AM MDT	9:19 PM MDT
Moon	6:04 AM MDT (4/25)	7:05 PM MDT (4/25)
Length of Visible Light	14h 19m	
Length of Day	13h 25m	

Waning Crescent, 1% of the Moon is Illuminated

Apr 25	Apr 26	May 2	May 10	May 18
Waning Crescent	New	First Quarter	Full	Last Quarter

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	64.9 °F	-	19.9 °F	18%	29.49 in	10.0 mi	WSW	10.4 mph	-	N/A		Mostly Cloudy
1:52 AM	64.0 °F	-	21.0 °F	19%	29.49 in	10.0 mi	SW	9.2 mph	-	N/A		Mostly Cloudy
2:52 AM	63.0 °F	-	21.0 °F	20%	29.47 in	10.0 mi	South	11.5 mph	-	N/A		Overcast
3:52 AM	62.1 °F	-	21.0 °F	21%	29.46 in	10.0 mi	SSE	12.7 mph	-	N/A		Overcast
4:52 AM	60.1 °F	-	21.9 °F	23%	29.45 in	10.0 mi	SSW	8.1 mph	-	N/A		Overcast
5:52 AM	60.1 °F	-	19.9 °F	21%	29.44 in	10.0 mi	SW	10.4 mph	-	N/A		Mostly Cloudy
6:52 AM	57.0 °F	-	32.0 °F	39%	29.50 in	10.0 mi	NW	17.3 mph	23.0 mph	N/A		Overcast
7:52 AM	50.0 °F	-	41.0 °F	71%	29.57 in	9.0 mi	WNW	8.1 mph	-	0.00 in	Rain	Light Rain
8:52 AM	48.0 °F	-	43.0 °F	83%	29.59 in	4.0 mi	WSW	9.2 mph	-	0.09 in	Rain	Light Rain
9:52 AM	46.9 °F	-	44.1 °F	90%	29.59 in	5.0 mi	SW	10.4 mph	-	0.05 in	Rain	Light Rain
10:43 AM	46.9 °F	-	45.0 °F	93%	29.75 in	9.0 mi	SW	9.2 mph	-	0.03 in	Rain	Light Rain
10:52 AM	46.9 °F	-	45.0 °F	93%	29.60 in	7.0 mi	SW	9.2 mph	-	0.04 in	Rain	Light Rain
11:11 AM	48.0 °F	-	45.0 °F	89%	29.75 in	10.0 mi	SW	9.2 mph	-	N/A		Overcast
11:52 AM	48.0 °F	-	44.1 °F	86%	29.59 in	10.0 mi	WSW	6.9 mph	-	0.00 in	Rain	Light Rain
12:52 PM	50.0 °F	-	43.0 °F	77%	29.56 in	10.0 mi	Calm	Calm	-	0.00 in		Mostly Cloudy
1:52 PM	50.0 °F	-	45.0 °F	83%	29.54 in	10.0 mi	East	8.1 mph	-	N/A		Overcast
2:32 PM	52.0 °F	-	46.0 °F	80%	29.69 in	10.0 mi	North	13.8 mph	39.1 mph	0.00 in	Rain , Thunderstorm	Light Rain
2:52 PM	55.0 °F	-	46.0 °F	72%	29.52 in	10.0 mi	North	8.1 mph	-	0.00 in		Mostly Cloudy
3:52 PM	57.0 °F	-	44.1 °F	62%	29.47 in	10.0 mi	NE	5.8 mph	-	0.00 in		Scattered Clouds
4:52 PM	57.0 °F	-	44.1 °F	62%	29.45 in	10.0 mi	SSW	3.5 mph	-	N/A		Mostly Cloudy

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
5:10 PM	55.0 °F	-	39.9 °F	57%	29.62 in	10.0 mi	North	18.4 mph	33.4 mph	0.00 in	Rain , Thunderstorm	Light Rain
5:31 PM	54.0 °F	-	39.0 °F	57%	29.65 in	10.0 mi	North	19.6 mph	35.7 mph	0.00 in		Scattered Clouds
5:52 PM	53.1 °F	-	41.0 °F	64%	29.49 in	10.0 mi	North	17.3 mph	26.5 mph	0.00 in		Mostly Cloudy
6:10 PM	51.1 °F	-	41.0 °F	68%	29.66 in	10.0 mi	North	16.1 mph	25.3 mph	0.00 in	Rain , Thunderstorm	Light Rain
6:17 PM	51.1 °F	-	41.0 °F	68%	29.68 in	10.0 mi	North	18.4 mph	27.6 mph	0.00 in	Rain , Thunderstorm	Light Thunderstorms and Rain
6:52 PM	46.9 °F	-	41.0 °F	80%	29.58 in	8.0 mi	North	18.4 mph	-	0.03 in	Rain , Thunderstorm	Light Rain
7:00 PM	46.9 °F	-	39.9 °F	77%	29.70 in	10.0 mi	NNE	17.3 mph	-	0.00 in		Mostly Cloudy
7:52 PM	46.9 °F	-	37.9 °F	71%	29.62 in	10.0 mi	Variable	6.9 mph	-	0.00 in		Mostly Cloudy
8:52 PM	46.9 °F	-	37.9 °F	71%	29.68 in	10.0 mi	North	10.4 mph	-	N/A		Mostly Cloudy
9:52 PM	48.0 °F	-	36.0 °F	63%	29.70 in	10.0 mi	West	8.1 mph	-	N/A		Mostly Cloudy
10:52 PM	46.9 °F	-	36.0 °F	66%	29.72 in	10.0 mi	SSW	6.9 mph	-	N/A		Scattered Clouds
11:52 PM	46.0 °F	43.9 °F	35.1 °F	66%	29.73 in	10.0 mi	ESE	4.6 mph	-	N/A		Partly Cloudy

Weather History for KABQ - April, 2017

April

28

2017

View

Friday, April 28, 2017

Daily

Weekly

Monthly

Custom

	Actual	Average	Record
Temperature			
Mean Temperature	45 °F	60 °F	
Max Temperature	52 °F	73 °F	87 °F (1981)
Min Temperature	38 °F	47 °F	27 °F (1918)
Degree Days			
Heating Degree Days	20	6	
Month to date heating degree days	199	267	
Since 1 July heating degree days	3189	4094	
Cooling Degree Days	0	1	

	Actual	Average	Record
Month to date cooling degree days	4	4	
Year to date cooling degree days	5	4	
Moisture			
Dew Point	34 °F		
Average Humidity	66		
Maximum Humidity	92		
Minimum Humidity	39		
Precipitation			
Precipitation	0.13 in	0.02 in	1.17 in (1985)
Month to date precipitation	0.55	0.58	
Year to date precipitation	2.14	2.01	
Snow			
Snow	T in	-	- ()
Month to date snowfall	T		
Since 1 July snowfall	2.9		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	29.70 in		
Wind			
Wind Speed	9 mph (North)		
Max Wind Speed	21 mph		
Max Gust Speed	26 mph		
Visibility	10 miles		

Actual

Average

Record

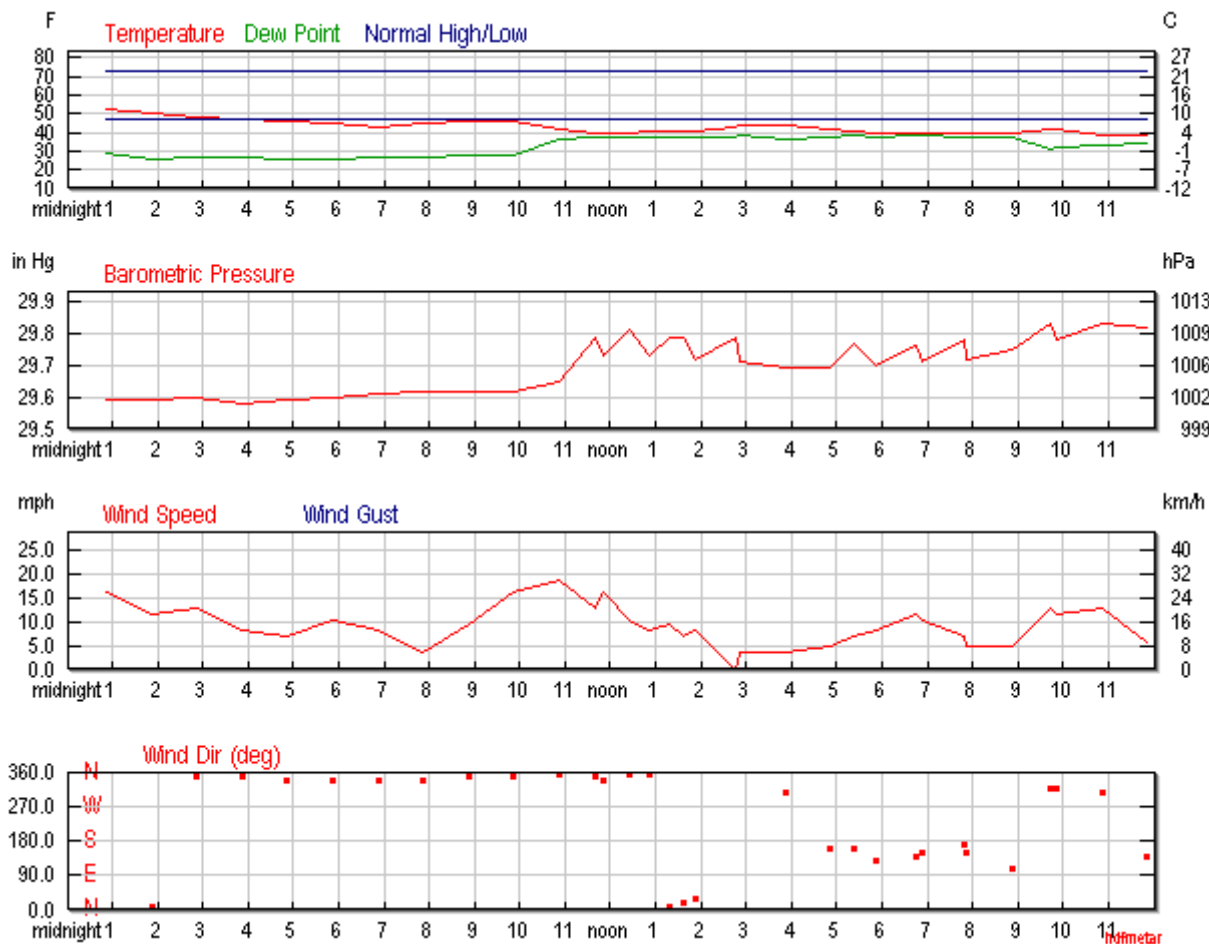
Events

Rain

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

Submit

Astronomy

Apr. 28, 2017	Rise	Set
Actual Time	6:18 AM MDT	7:49 PM MDT
Civil Twilight	5:51 AM MDT	8:16 PM MDT
Nautical Twilight	5:19 AM MDT	8:49 PM MDT
Astronomical Twilight	4:45 AM MDT	9:23 PM MDT
Moon	8:19 AM MDT (4/28)	10:33 PM MDT (4/28)
Length of Visible Light	14h 25m	
Length of Day	13h 31m	

Waxing Crescent, 7% of the Moon is Illuminated

Apr 28	May 2	May 10	May 18	May 25
Waxing Crescent	First Quarter	Full	Last Quarter	New

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	52.0 °F	-	28.9 °F	41%	29.59 in	10.0 mi	North	16.1 mph	-	N/A		Partly Cloudy
1:52 AM	50.0 °F	-	26.1 °F	39%	29.59 in	10.0 mi	North	11.5 mph	-	N/A		Partly Cloudy
2:52 AM	48.0 °F	-	27.0 °F	44%	29.60 in	10.0 mi	North	12.7 mph	-	N/A		Clear
3:52 AM	46.9 °F	-	27.0 °F	46%	29.58 in	10.0 mi	North	8.1 mph	-	N/A		Clear
4:52 AM	46.0 °F	42.5 °F	26.1 °F	46%	29.59 in	10.0 mi	NNW	6.9 mph	-	N/A		Clear
5:52 AM	45.0 °F	39.7 °F	26.1 °F	48%	29.60 in	10.0 mi	NNW	10.4 mph	-	N/A		Mostly Cloudy
6:52 AM	43.0 °F	38.2 °F	27.0 °F	53%	29.61 in	10.0 mi	NNW	8.1 mph	-	N/A		Scattered Clouds
7:52 AM	45.0 °F	43.5 °F	27.0 °F	49%	29.62 in	10.0 mi	NNW	3.5 mph	-	N/A		Mostly Cloudy
8:52 AM	46.0 °F	41.4 °F	28.0 °F	50%	29.62 in	10.0 mi	North	9.2 mph	-	N/A		Overcast
9:52 AM	46.0 °F	39.3 °F	28.0 °F	50%	29.62 in	10.0 mi	North	16.1 mph	-	N/A		Overcast
10:52 AM	42.1 °F	33.6 °F	36.0 °F	79%	29.65 in	10.0 mi	North	18.4 mph	-	0.00 in		Overcast
11:40 AM	39.9 °F	32.5 °F	37.9 °F	93%	29.79 in	10.0 mi	North	12.7 mph	-	0.00 in	Rain	Light Rain
11:52 AM	39.9 °F	31.4 °F	37.0 °F	89%	29.73 in	10.0 mi	NNW	16.1 mph	-	0.00 in	Rain	Light Rain
12:24 PM	39.9 °F	33.4 °F	37.0 °F	89%	29.81 in	10.0 mi	North	10.4 mph	-	0.01 in	Rain	Light Rain
12:52 PM	41.0 °F	35.8 °F	37.9 °F	89%	29.73 in	10.0 mi	North	8.1 mph	-	0.01 in	Rain	Light Rain
1:19 PM	41.0 °F	35.2 °F	37.9 °F	89%	29.79 in	6.0 mi	North	9.2 mph	-	N/A	Rain	Light Rain
1:38 PM	41.0 °F	36.4 °F	37.9 °F	89%	29.79 in	6.0 mi	NNE	6.9 mph	-	0.01 in	Rain	Light Rain
1:52 PM	41.0 °F	35.8 °F	37.0 °F	86%	29.72 in	6.0 mi	NNE	8.1 mph	-	0.02 in	Rain	Light Rain
2:46 PM	42.8 °F	-	37.4 °F	81%	29.79 in	10.0 mi	Calm	Calm	-	0.00 in	Rain	Light Rain
2:52 PM	44.1 °F	42.5 °F	39.0 °F	82%	29.71 in	10.0 mi	Variable	3.5 mph	-	0.00 in	Rain	Light Rain
3:52 PM	44.1 °F	42.5 °F	36.0 °F	73%	29.69 in	10.0 mi	NW	3.5 mph	-	0.00 in		Overcast
4:52 PM	42.1 °F	39.2 °F	37.0 °F	82%	29.69 in	10.0 mi	SSE	4.6 mph	-	0.04 in	Rain	Light Rain
5:23 PM	41.0 °F	36.4 °F	39.0 °F	93%	29.77 in	5.0 mi	SSE	6.9 mph	-	0.03 in	Rain	Light Rain

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
5:52 PM	39.9 °F	34.5 °F	37.0 °F	89%	29.70 in	10.0 mi	SE	8.1 mph	-	0.03 in	Rain	Light Rain
6:44 PM	39.9 °F	32.9 °F	39.0 °F	97%	29.76 in	10.0 mi	SE	11.5 mph	-	0.02 in		Mostly Cloudy
6:52 PM	39.9 °F	33.4 °F	39.0 °F	97%	29.71 in	10.0 mi	SSE	10.4 mph	-	0.02 in		Mostly Cloudy
7:48 PM	39.2 °F	34.2 °F	37.4 °F	93%	29.78 in	10.0 mi	South	6.9 mph	-	0.00 in		Overcast
7:52 PM	39.9 °F	36.7 °F	37.9 °F	93%	29.72 in	10.0 mi	SSE	4.6 mph	-	0.00 in		Overcast
8:52 PM	39.9 °F	36.7 °F	37.9 °F	93%	29.75 in	10.0 mi	ESE	4.6 mph	-	0.01 in	Rain	Light Rain
9:44 PM	42.1 °F	35.2 °F	30.9 °F	65%	29.83 in	10.0 mi	NW	12.7 mph	-	0.00 in		Overcast
9:52 PM	42.1 °F	35.7 °F	32.0 °F	67%	29.78 in	10.0 mi	NW	11.5 mph	-	0.00 in		Overcast
10:52 PM	39.0 °F	31.4 °F	33.1 °F	79%	29.83 in	10.0 mi	NW	12.7 mph	-	N/A		Overcast
11:52 PM	39.0 °F	34.8 °F	34.0 °F	82%	29.82 in	10.0 mi	SE	5.8 mph	-	N/A		Overcast

|

Weather History for KABQ - April, 2017

April

29

2017

View

Saturday, April 29, 2017

Daily

Weekly

Monthly

Custom

	Actual	Average	Record
Temperature			
Mean Temperature	41 °F	60 °F	
Max Temperature	49 °F	73 °F	88 °F (1943)
Min Temperature	32 °F	47 °F	31 °F (1991)
Degree Days			
Heating Degree Days	24	5	
Month to date heating degree days	223	272	
Since 1 July heating degree days	3213	4099	
Cooling Degree Days	0	1	

	Actual	Average	Record
Month to date cooling degree days	4	5	
Year to date cooling degree days	5	5	
Moisture			
Dew Point	33 °F		
Average Humidity	73		
Maximum Humidity	100		
Minimum Humidity	46		
Precipitation			
Precipitation	0.23 in	0.01 in	1.28 in (1907)
Month to date precipitation	0.78	0.59	
Year to date precipitation	2.37	2.02	
Snow			
Snow	0.70 in	-	- ()
Month to date snowfall	0.7		
Since 1 July snowfall	3.6		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	29.91 in		
Wind			
Wind Speed	8 mph (SE)		
Max Wind Speed	22 mph		
Max Gust Speed	24 mph		
Visibility	8 miles		

Actual

Average

Record

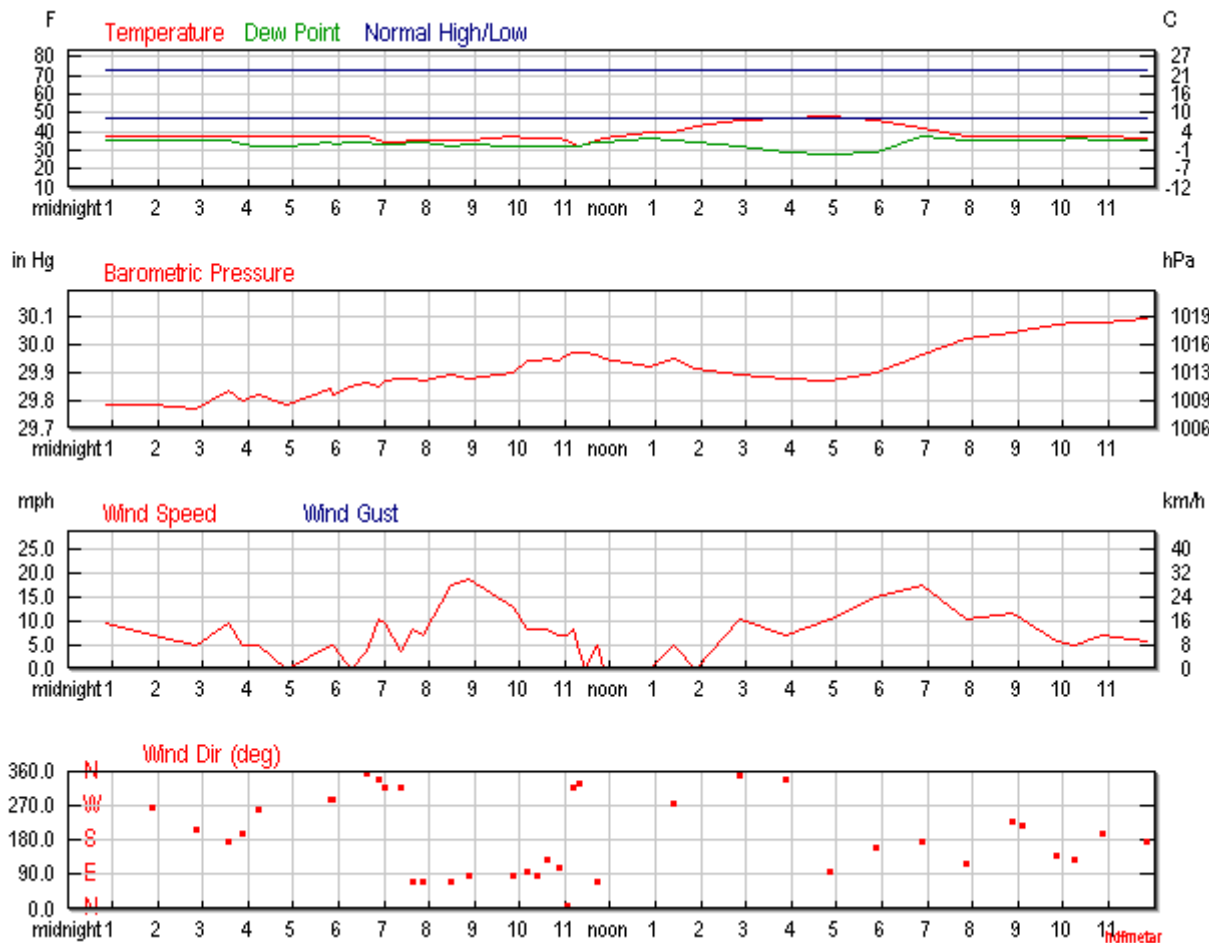
Events

Fog , Rain , Snow

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

April

29

Submit

Astronomy

Apr. 29, 2017	Rise	Set
Actual Time	6:17 AM MDT	7:50 PM MDT
Civil Twilight	5:50 AM MDT	8:17 PM MDT
Nautical Twilight	5:18 AM MDT	8:50 PM MDT
Astronomical Twilight	4:44 AM MDT	9:24 PM MDT
Moon	9:14 AM MDT (4/29)	11:38 PM MDT (4/29)
Length of Visible Light	14h 27m	
Length of Day	13h 33m	

Waxing Crescent, 15% of the Moon is Illuminated

Apr 29	May 2	May 10	May 18	May 25
Waxing Crescent	First Quarter	Full	Last Quarter	New

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	37.9 °F	31.5 °F	35.1 °F	89%	29.78 in	10.0 mi	WSW	9.2 mph	-	N/A		Overcast
1:52 AM	37.0 °F	31.6 °F	35.1 °F	93%	29.78 in	9.0 mi	West	6.9 mph	-	0.00 in	Rain	Light Rain
2:52 AM	37.0 °F	33.3 °F	35.1 °F	93%	29.77 in	10.0 mi	SSW	4.6 mph	-	0.00 in		Overcast
3:33 AM	37.0 °F	30.4 °F	35.1 °F	93%	29.83 in	10.0 mi	South	9.2 mph	-	N/A		Overcast
3:52 AM	37.0 °F	33.3 °F	33.1 °F	86%	29.80 in	10.0 mi	SSW	4.6 mph	-	N/A		Overcast
4:14 AM	37.0 °F	33.3 °F	32.0 °F	82%	29.82 in	10.0 mi	West	4.6 mph	-	N/A		Overcast
4:52 AM	37.0 °F	-	32.0 °F	82%	29.78 in	10.0 mi	Calm	Calm	-	N/A		Overcast
5:50 AM	37.4 °F	33.8 °F	33.8 °F	87%	29.84 in	10.0 mi	WNW	4.6 mph	-	0.00 in	Rain	Light Rain
5:52 AM	37.0 °F	33.3 °F	33.1 °F	86%	29.82 in	8.0 mi	WNW	4.6 mph	-	0.00 in	Rain	Light Rain
6:17 AM	37.0 °F	-	34.0 °F	89%	29.85 in	8.0 mi	Calm	Calm	-	0.01 in	Rain	Light Rain
6:36 AM	37.0 °F	34.5 °F	34.0 °F	89%	29.86 in	6.0 mi	North	3.5 mph	-	0.01 in	Rain , Snow	Light Snow
6:52 AM	35.1 °F	27.4 °F	33.1 °F	92%	29.85 in	2.0 mi	NNW	10.4 mph	-	0.03 in	Rain , Snow	Light Snow
7:00 AM	34.0 °F	26.6 °F	33.1 °F	96%	29.87 in	2.0 mi	NW	9.2 mph	-	0.01 in	Rain , Snow	Light Snow
7:22 AM	34.0 °F	31.0 °F	33.1 °F	96%	29.88 in	2.0 mi	NW	3.5 mph	-	0.02 in	Snow	Light Snow
7:39 AM	35.1 °F	28.6 °F	34.0 °F	96%	29.88 in	4.0 mi	ENE	8.1 mph	-	0.03 in	Snow	Light Snow
7:52 AM	35.1 °F	29.3 °F	34.0 °F	96%	29.87 in	4.0 mi	ENE	6.9 mph	-	0.03 in	Rain	Light Rain
8:29 AM	35.1 °F	24.8 °F	32.0 °F	89%	29.89 in	10.0 mi	ENE	17.3 mph	-	0.00 in		Overcast
8:52 AM	35.1 °F	24.5 °F	33.1 °F	92%	29.88 in	10.0 mi	East	18.4 mph	-	0.00 in		Overcast
9:52 AM	37.0 °F	28.9 °F	32.0 °F	82%	29.90 in	10.0 mi	East	12.7 mph	-	N/A		Overcast
10:09 AM	36.0 °F	29.6 °F	32.0 °F	86%	29.94 in	3.0 mi	East	8.1 mph	-	0.00 in	Snow	Light Snow
10:22 AM	36.0 °F	29.6 °F	32.0 °F	86%	29.94 in	2.5 mi	East	8.1 mph	-	0.00 in	Snow	Light Snow
10:36 AM	36.0 °F	29.6 °F	32.0 °F	86%	29.95 in	4.0 mi	SE	8.1 mph	-	0.00 in	Snow	Light Snow
10:52 AM	36.0 °F	30.3 °F	32.0 °F	86%	29.94 in	6.0 mi	ESE	6.9 mph	-	0.00 in	Snow	Light Snow

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
11:03 AM	35.1 °F	29.3 °F	32.0 °F	89%	29.96 in	1.0 mi	North	6.9 mph	-	0.01 in	Snow	Light Snow
11:10 AM	33.1 °F	26.1 °F	32.0 °F	96%	29.97 in	0.5 mi	NW	8.1 mph	-	0.02 in	Fog , Snow	Snow
11:18 AM	32.0 °F	28.7 °F	32.0 °F	100%	29.97 in	0.2 mi	NNW	3.5 mph	-	0.05 in	Fog , Snow	Heavy Snow
11:27 AM	33.1 °F	-	33.1 °F	100%	29.97 in	1.0 mi	Calm	Calm	-	0.06 in	Snow	Light Snow
11:44 AM	35.1 °F	31.0 °F	34.0 °F	96%	29.96 in	5.0 mi	ENE	4.6 mph	-	0.07 in		Overcast
11:52 AM	36.0 °F	-	34.0 °F	93%	29.95 in	5.0 mi	Calm	Calm	-	0.07 in		Overcast
12:52 PM	39.9 °F	-	36.0 °F	86%	29.92 in	10.0 mi	Calm	Calm	-	N/A		Overcast
1:23 PM	39.9 °F	36.7 °F	35.1 °F	83%	29.95 in	10.0 mi	West	4.6 mph	-	N/A		Overcast
1:52 PM	43.0 °F	-	34.0 °F	71%	29.91 in	10.0 mi	Calm	Calm	-	N/A		Overcast
2:52 PM	46.0 °F	41.0 °F	32.0 °F	58%	29.89 in	10.0 mi	North	10.4 mph	-	0.00 in		Mostly Cloudy
3:52 PM	46.9 °F	-	28.9 °F	50%	29.88 in	10.0 mi	NNW	6.9 mph	-	N/A		Mostly Cloudy
4:52 PM	48.0 °F	-	28.0 °F	46%	29.87 in	10.0 mi	East	10.4 mph	-	N/A		Mostly Cloudy
5:52 PM	46.0 °F	39.6 °F	28.9 °F	51%	29.90 in	10.0 mi	SSE	15.0 mph	-	N/A		Mostly Cloudy
6:52 PM	42.1 °F	33.9 °F	37.9 °F	85%	29.96 in	10.0 mi	South	17.3 mph	-	0.01 in		Mostly Cloudy
7:52 PM	37.9 °F	30.9 °F	35.1 °F	89%	30.02 in	10.0 mi	ESE	10.4 mph	-	0.00 in	Rain	Light Rain
8:52 PM	37.9 °F	30.5 °F	35.1 °F	89%	30.04 in	8.0 mi	SW	11.5 mph	-	0.06 in	Rain	Light Rain
9:05 PM	37.9 °F	30.9 °F	35.1 °F	89%	30.05 in	10.0 mi	SW	10.4 mph	-	0.00 in	Rain	Light Rain
9:52 PM	37.9 °F	33.5 °F	35.1 °F	89%	30.07 in	10.0 mi	SE	5.8 mph	-	0.00 in		Overcast
10:16 PM	37.9 °F	34.4 °F	36.0 °F	93%	30.08 in	10.0 mi	SE	4.6 mph	-	0.00 in	Rain	Light Rain
10:52 PM	37.0 °F	31.6 °F	35.1 °F	93%	30.08 in	10.0 mi	SSW	6.9 mph	-	0.02 in	Rain	Light Rain
11:52 PM	36.0 °F	31.1 °F	35.1 °F	97%	30.09 in	10.0 mi	South	5.8 mph	-	0.01 in	Rain	Light Rain

|

Weather History for KABQ - April, 2017

May

1

2017

View

Saturday, April 29, 2017

Daily

Weekly

Monthly

Custom

	Actual	Average	Record
Temperature			
Mean Temperature	41 °F	60 °F	
Max Temperature	49 °F	73 °F	88 °F (1943)
Min Temperature	32 °F	47 °F	31 °F (1991)
Degree Days			
Heating Degree Days	24	5	
Month to date heating degree days	223	272	
Since 1 July heating degree days	3213	4099	
Cooling Degree Days	0	1	

	Actual	Average	Record
Month to date cooling degree days	4	5	
Year to date cooling degree days	5	5	
Moisture			
Dew Point	33 °F		
Average Humidity	73		
Maximum Humidity	100		
Minimum Humidity	46		
Precipitation			
Precipitation	0.23 in	0.01 in	1.28 in (1907)
Month to date precipitation	0.78	0.59	
Year to date precipitation	2.37	2.02	
Snow			
Snow	0.70 in	-	- ()
Month to date snowfall	0.7		
Since 1 July snowfall	3.6		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	29.91 in		
Wind			
Wind Speed	8 mph (SE)		
Max Wind Speed	22 mph		
Max Gust Speed	24 mph		
Visibility	8 miles		

Actual

Average

Record

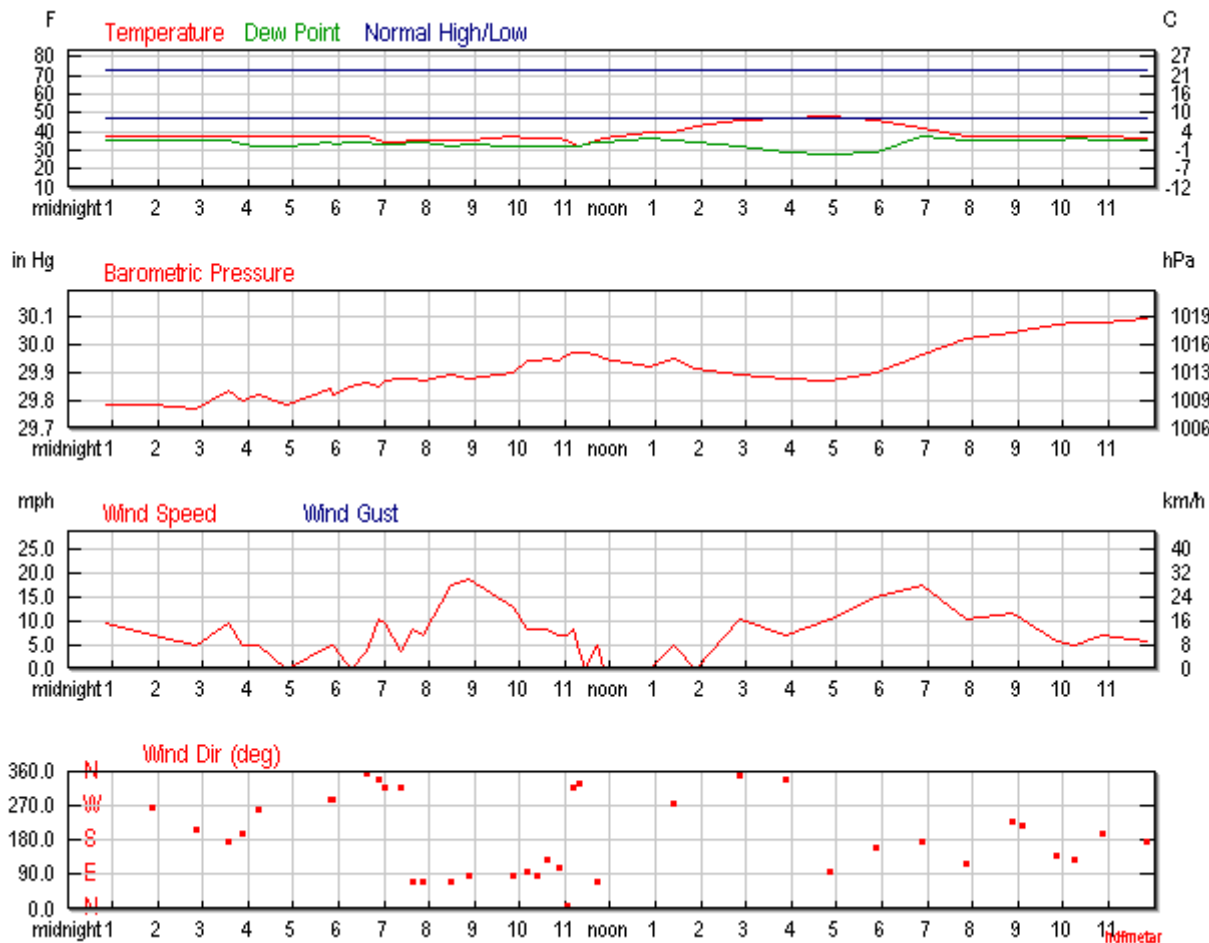
Events

Fog , Rain , Snow

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

April

29

Submit

Astronomy

Apr. 29, 2017	Rise	Set
Actual Time	6:17 AM MDT	7:50 PM MDT
Civil Twilight	5:50 AM MDT	8:17 PM MDT
Nautical Twilight	5:18 AM MDT	8:50 PM MDT
Astronomical Twilight	4:44 AM MDT	9:24 PM MDT
Moon	9:14 AM MDT (4/29)	11:38 PM MDT (4/29)
Length of Visible Light	14h 27m	
Length of Day	13h 33m	

Waxing Crescent, 15% of the Moon is Illuminated

Apr 29	May 2	May 10	May 18	May 25
Waxing Crescent	First Quarter	Full	Last Quarter	New

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	37.9 °F	31.5 °F	35.1 °F	89%	29.78 in	10.0 mi	WSW	9.2 mph	-	N/A		Overcast
1:52 AM	37.0 °F	31.6 °F	35.1 °F	93%	29.78 in	9.0 mi	West	6.9 mph	-	0.00 in	Rain	Light Rain
2:52 AM	37.0 °F	33.3 °F	35.1 °F	93%	29.77 in	10.0 mi	SSW	4.6 mph	-	0.00 in		Overcast
3:33 AM	37.0 °F	30.4 °F	35.1 °F	93%	29.83 in	10.0 mi	South	9.2 mph	-	N/A		Overcast
3:52 AM	37.0 °F	33.3 °F	33.1 °F	86%	29.80 in	10.0 mi	SSW	4.6 mph	-	N/A		Overcast
4:14 AM	37.0 °F	33.3 °F	32.0 °F	82%	29.82 in	10.0 mi	West	4.6 mph	-	N/A		Overcast
4:52 AM	37.0 °F	-	32.0 °F	82%	29.78 in	10.0 mi	Calm	Calm	-	N/A		Overcast
5:50 AM	37.4 °F	33.8 °F	33.8 °F	87%	29.84 in	10.0 mi	WNW	4.6 mph	-	0.00 in	Rain	Light Rain
5:52 AM	37.0 °F	33.3 °F	33.1 °F	86%	29.82 in	8.0 mi	WNW	4.6 mph	-	0.00 in	Rain	Light Rain
6:17 AM	37.0 °F	-	34.0 °F	89%	29.85 in	8.0 mi	Calm	Calm	-	0.01 in	Rain	Light Rain
6:36 AM	37.0 °F	34.5 °F	34.0 °F	89%	29.86 in	6.0 mi	North	3.5 mph	-	0.01 in	Rain , Snow	Light Snow
6:52 AM	35.1 °F	27.4 °F	33.1 °F	92%	29.85 in	2.0 mi	NNW	10.4 mph	-	0.03 in	Rain , Snow	Light Snow
7:00 AM	34.0 °F	26.6 °F	33.1 °F	96%	29.87 in	2.0 mi	NW	9.2 mph	-	0.01 in	Rain , Snow	Light Snow
7:22 AM	34.0 °F	31.0 °F	33.1 °F	96%	29.88 in	2.0 mi	NW	3.5 mph	-	0.02 in	Snow	Light Snow
7:39 AM	35.1 °F	28.6 °F	34.0 °F	96%	29.88 in	4.0 mi	ENE	8.1 mph	-	0.03 in	Snow	Light Snow
7:52 AM	35.1 °F	29.3 °F	34.0 °F	96%	29.87 in	4.0 mi	ENE	6.9 mph	-	0.03 in	Rain	Light Rain
8:29 AM	35.1 °F	24.8 °F	32.0 °F	89%	29.89 in	10.0 mi	ENE	17.3 mph	-	0.00 in		Overcast
8:52 AM	35.1 °F	24.5 °F	33.1 °F	92%	29.88 in	10.0 mi	East	18.4 mph	-	0.00 in		Overcast
9:52 AM	37.0 °F	28.9 °F	32.0 °F	82%	29.90 in	10.0 mi	East	12.7 mph	-	N/A		Overcast
10:09 AM	36.0 °F	29.6 °F	32.0 °F	86%	29.94 in	3.0 mi	East	8.1 mph	-	0.00 in	Snow	Light Snow
10:22 AM	36.0 °F	29.6 °F	32.0 °F	86%	29.94 in	2.5 mi	East	8.1 mph	-	0.00 in	Snow	Light Snow
10:36 AM	36.0 °F	29.6 °F	32.0 °F	86%	29.95 in	4.0 mi	SE	8.1 mph	-	0.00 in	Snow	Light Snow
10:52 AM	36.0 °F	30.3 °F	32.0 °F	86%	29.94 in	6.0 mi	ESE	6.9 mph	-	0.00 in	Snow	Light Snow

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
11:03 AM	35.1 °F	29.3 °F	32.0 °F	89%	29.96 in	1.0 mi	North	6.9 mph	-	0.01 in	Snow	Light Snow
11:10 AM	33.1 °F	26.1 °F	32.0 °F	96%	29.97 in	0.5 mi	NW	8.1 mph	-	0.02 in	Fog , Snow	Snow
11:18 AM	32.0 °F	28.7 °F	32.0 °F	100%	29.97 in	0.2 mi	NNW	3.5 mph	-	0.05 in	Fog , Snow	Heavy Snow
11:27 AM	33.1 °F	-	33.1 °F	100%	29.97 in	1.0 mi	Calm	Calm	-	0.06 in	Snow	Light Snow
11:44 AM	35.1 °F	31.0 °F	34.0 °F	96%	29.96 in	5.0 mi	ENE	4.6 mph	-	0.07 in		Overcast
11:52 AM	36.0 °F	-	34.0 °F	93%	29.95 in	5.0 mi	Calm	Calm	-	0.07 in		Overcast
12:52 PM	39.9 °F	-	36.0 °F	86%	29.92 in	10.0 mi	Calm	Calm	-	N/A		Overcast
1:23 PM	39.9 °F	36.7 °F	35.1 °F	83%	29.95 in	10.0 mi	West	4.6 mph	-	N/A		Overcast
1:52 PM	43.0 °F	-	34.0 °F	71%	29.91 in	10.0 mi	Calm	Calm	-	N/A		Overcast
2:52 PM	46.0 °F	41.0 °F	32.0 °F	58%	29.89 in	10.0 mi	North	10.4 mph	-	0.00 in		Mostly Cloudy
3:52 PM	46.9 °F	-	28.9 °F	50%	29.88 in	10.0 mi	NNW	6.9 mph	-	N/A		Mostly Cloudy
4:52 PM	48.0 °F	-	28.0 °F	46%	29.87 in	10.0 mi	East	10.4 mph	-	N/A		Mostly Cloudy
5:52 PM	46.0 °F	39.6 °F	28.9 °F	51%	29.90 in	10.0 mi	SSE	15.0 mph	-	N/A		Mostly Cloudy
6:52 PM	42.1 °F	33.9 °F	37.9 °F	85%	29.96 in	10.0 mi	South	17.3 mph	-	0.01 in		Mostly Cloudy
7:52 PM	37.9 °F	30.9 °F	35.1 °F	89%	30.02 in	10.0 mi	ESE	10.4 mph	-	0.00 in	Rain	Light Rain
8:52 PM	37.9 °F	30.5 °F	35.1 °F	89%	30.04 in	8.0 mi	SW	11.5 mph	-	0.06 in	Rain	Light Rain
9:05 PM	37.9 °F	30.9 °F	35.1 °F	89%	30.05 in	10.0 mi	SW	10.4 mph	-	0.00 in	Rain	Light Rain
9:52 PM	37.9 °F	33.5 °F	35.1 °F	89%	30.07 in	10.0 mi	SE	5.8 mph	-	0.00 in		Overcast
10:16 PM	37.9 °F	34.4 °F	36.0 °F	93%	30.08 in	10.0 mi	SE	4.6 mph	-	0.00 in	Rain	Light Rain
10:52 PM	37.0 °F	31.6 °F	35.1 °F	93%	30.08 in	10.0 mi	SSW	6.9 mph	-	0.02 in	Rain	Light Rain
11:52 PM	36.0 °F	31.1 °F	35.1 °F	97%	30.09 in	10.0 mi	South	5.8 mph	-	0.01 in	Rain	Light Rain

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Weather History for KABQ - May, 2017

May

16

2017

View

Tuesday, May 16, 2017

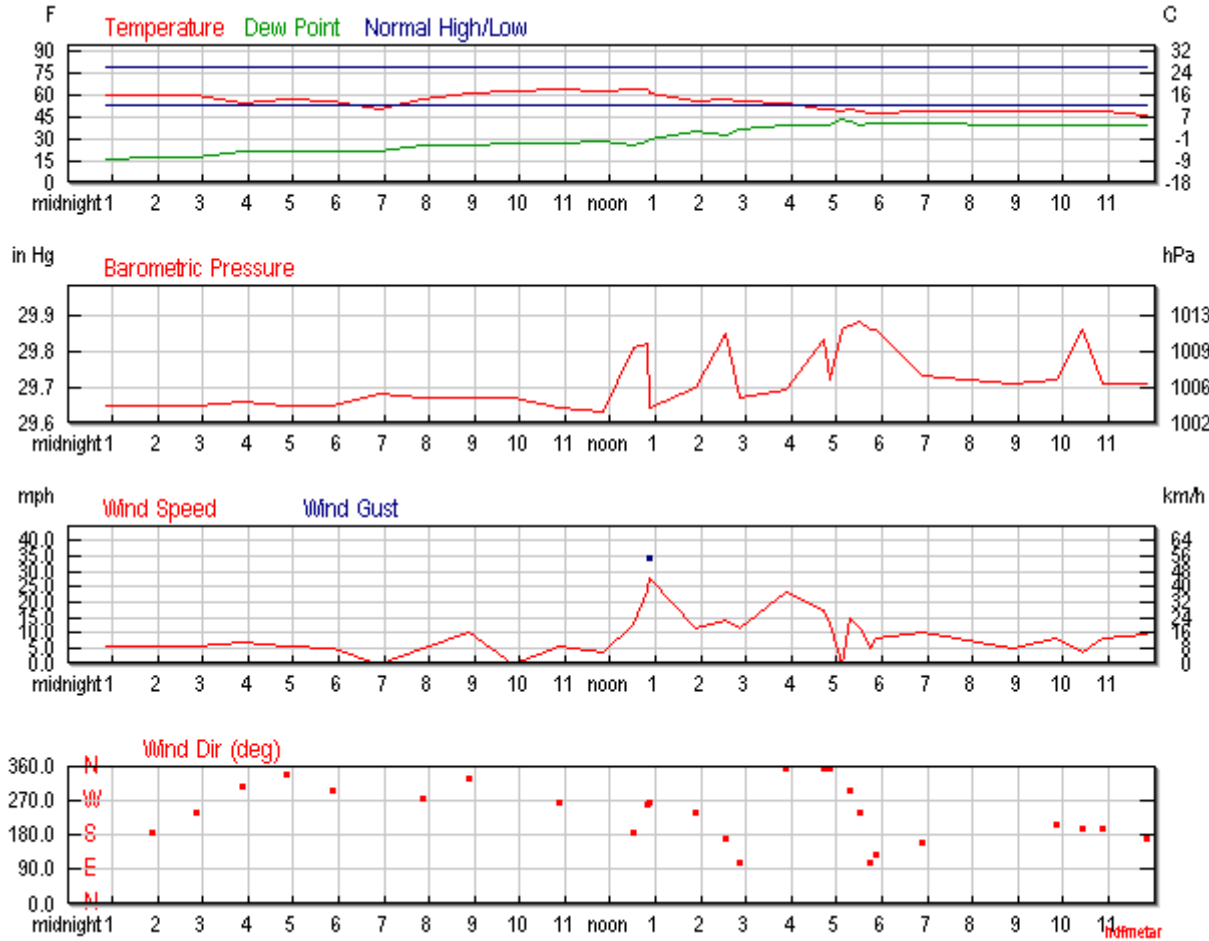
Daily	Weekly	Monthly	Custom
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	Actual	Average	Record
Temperature			
Mean Temperature	57 °F	66 °F	
Max Temperature	67 °F	79 °F	93 °F (1996)
Min Temperature	46 °F	53 °F	30 °F (1916)
Degree Days			
Heating Degree Days	8	2	
Month to date heating degree days	35	53	
Since 1 July heating degree days	3263	4157	
Cooling Degree Days	0	3	

	Actual	Average	Record
Month to date cooling degree days	28	27	
Year to date cooling degree days	33	34	
Growing Degree Days	5 (Base 50)		
Moisture			
Dew Point	32 °F		
Average Humidity	49		
Maximum Humidity	80		
Minimum Humidity	17		
Precipitation			
Precipitation	0.05 in	0.01 in	0.71 in (2007)
Month to date precipitation	0.15	0.26	
Year to date precipitation	2.52	2.30	
Snow			
Snow	0.00 in	-	- ()
Month to date snowfall	0.0		
Since 1 July snowfall	3.6		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	29.72 in		
Wind			
Wind Speed	8 mph (WSW)		
Max Wind Speed	33 mph		
Max Gust Speed	41 mph		

	Actual	Average	Record
Visibility	10 miles		
Events	Rain , Thunderstorm		
T = Trace of Precipitation, MM = Missing Value		Source: NWS Daily Summary	

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

May

16

Submit

Astronomy

May. 16, 2017	Rise	Set
Actual Time	6:01 AM MDT	8:04 PM MDT
<u>Civil Twilight</u>	5:33 AM MDT	8:32 PM MDT
<u>Nautical Twilight</u>	4:59 AM MDT	9:06 PM MDT
<u>Astronomical Twilight</u>	4:22 AM MDT	9:43 PM MDT
Moon	12:06 AM MDT (5/16)	10:39 AM MDT (5/16)
Length of Visible Light	14h 58m	
Length of Day	14h 02m	

Waning Gibbous, 72% of the Moon is Illuminated

May 16	May 18	May 25	Jun 1	Jun 9
Waning Gibbous	Last Quarter	New	First Quarter	Full

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	60.1 °F	-	16.0 °F	18%	29.65 in	10.0 mi	SSE	5.8 mph	-	N/A		Clear
1:52 AM	60.1 °F	-	17.1 °F	19%	29.65 in	10.0 mi	South	5.8 mph	-	N/A		Clear
2:52 AM	60.1 °F	-	17.1 °F	19%	29.65 in	10.0 mi	WSW	5.8 mph	-	N/A		Clear
3:52 AM	55.0 °F	-	21.0 °F	27%	29.66 in	10.0 mi	NW	6.9 mph	-	N/A		Clear
4:52 AM	57.0 °F	-	21.0 °F	25%	29.65 in	10.0 mi	NNW	5.8 mph	-	N/A		Clear
5:52 AM	55.9 °F	-	21.9 °F	27%	29.65 in	10.0 mi	WNW	4.6 mph	-	N/A		Clear
6:52 AM	51.1 °F	-	21.9 °F	32%	29.68 in	10.0 mi	Calm	Calm	-	N/A		Clear
7:52 AM	57.0 °F	-	26.1 °F	30%	29.67 in	10.0 mi	West	4.6 mph	-	N/A		Clear
8:52 AM	61.0 °F	-	26.1 °F	26%	29.67 in	10.0 mi	NNW	10.4 mph	-	N/A		Partly Cloudy
9:52 AM	63.0 °F	-	27.0 °F	26%	29.67 in	10.0 mi	Calm	Calm	-	N/A		Partly Cloudy
10:52 AM	64.9 °F	-	27.0 °F	24%	29.64 in	10.0 mi	West	5.8 mph	-	N/A		Partly Cloudy
11:52 AM	63.0 °F	-	28.0 °F	27%	29.63 in	10.0 mi	Variable	3.5 mph	-	0.00 in		Mostly Cloudy
12:30 PM	64.9 °F	-	26.1 °F	23%	29.81 in	10.0 mi	South	12.7 mph	-	N/A	Thunderstorm	Mostly Cloudy
12:49 PM	64.4 °F	-	28.4 °F	26%	29.82 in	10.0 mi	West	24.2 mph	34.5 mph	N/A		Overcast
12:52 PM	62.1 °F	-	30.0 °F	30%	29.64 in	10.0 mi	West	27.6 mph	34.5 mph	N/A		Overcast
1:52 PM	55.9 °F	-	35.1 °F	45%	29.70 in	10.0 mi	WSW	11.5 mph	-	0.00 in		Overcast
2:34 PM	57.0 °F	-	33.1 °F	40%	29.85 in	10.0 mi	South	13.8 mph	18.4 mph	0.00 in		Overcast
2:52 PM	55.9 °F	-	37.0 °F	49%	29.67 in	10.0 mi	ESE	11.5 mph	-	0.00 in		Mostly Cloudy
3:52 PM	55.0 °F	-	39.9 °F	57%	29.69 in	10.0 mi	North	23.0 mph	31.1 mph	0.00 in		Mostly Cloudy
4:43 PM	51.1 °F	-	39.9 °F	66%	29.83 in	10.0 mi	North	17.3 mph	-	N/A	Thunderstorm	Thunderstorm
4:52 PM	51.1 °F	-	39.9 °F	66%	29.72 in	10.0 mi	North	12.7 mph	-	N/A	Thunderstorm	Overcast

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
5:08 PM	48.9 °F	-	43.0 °F	80%	29.86 in	6.0 mi	Calm	Calm	-	N/A	Rain	Light Rain
5:18 PM	50.0 °F	-	42.1 °F	74%	29.87 in	7.0 mi	WNW	15.0 mph	24.2 mph	N/A	Rain , Thunderstorm	Light Thunderstorms and Rain
5:30 PM	48.9 °F	-	39.9 °F	71%	29.88 in	9.0 mi	WSW	11.5 mph	-	0.01 in	Rain , Thunderstorm	Light Rain
5:43 PM	48.0 °F	-	41.0 °F	77%	29.86 in	6.0 mi	ESE	4.6 mph	-	0.02 in	Rain	Light Rain
5:52 PM	48.0 °F	-	41.0 °F	77%	29.86 in	6.0 mi	SE	8.1 mph	-	0.02 in	Rain	Light Rain
6:52 PM	48.9 °F	-	41.0 °F	74%	29.73 in	10.0 mi	SSE	10.4 mph	-	0.03 in		Mostly Cloudy
8:52 PM	48.9 °F	-	39.9 °F	71%	29.71 in	10.0 mi	Variable	4.6 mph	-	N/A		Mostly Cloudy
9:52 PM	48.9 °F	-	39.9 °F	71%	29.72 in	10.0 mi	SSW	8.1 mph	-	N/A		Overcast
10:27 PM	48.9 °F	-	39.9 °F	71%	29.86 in	10.0 mi	SSW	3.5 mph	-	0.00 in		Mostly Cloudy
10:52 PM	48.9 °F	-	39.9 °F	71%	29.71 in	10.0 mi	SSW	8.1 mph	-	0.00 in		Scattered Clouds
11:52 PM	46.0 °F	41.4 °F	39.9 °F	79%	29.71 in	10.0 mi	South	9.2 mph	-	N/A		Partly Cloudy

Weather History for KABQ - May, 2017

May

18

2017

View

Thursday, May 18, 2017

Daily	Weekly	Monthly	Custom
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	Actual	Average	Record
Temperature			
Mean Temperature	56 °F	66 °F	
Max Temperature	68 °F	79 °F	94 °F (1996)
Min Temperature	44 °F	53 °F	32 °F (1930)
Degree Days			
Heating Degree Days	9	2	
Month to date heating degree days	51	57	
Since 1 July heating degree days	3279	4161	
Cooling Degree Days	0	3	

	Actual	Average	Record
Month to date cooling degree days	28	33	
Year to date cooling degree days	33	40	
Growing Degree Days	6 (Base 50)		
Moisture			
Dew Point	26 °F		
Average Humidity	44		
Maximum Humidity	76		
Minimum Humidity	12		
Precipitation			
Precipitation	0.01 in	0.01 in	0.63 in (1910)
Month to date precipitation	0.16	0.29	
Year to date precipitation	2.53	2.33	
Snow			
Snow	0.00 in	-	- ()
Month to date snowfall	0.0		
Since 1 July snowfall	3.6		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	29.73 in		
Wind			
Wind Speed	14 mph (NW)		
Max Wind Speed	28 mph		
Max Gust Speed	35 mph		

Actual

Average

Record

Visibility

10 miles

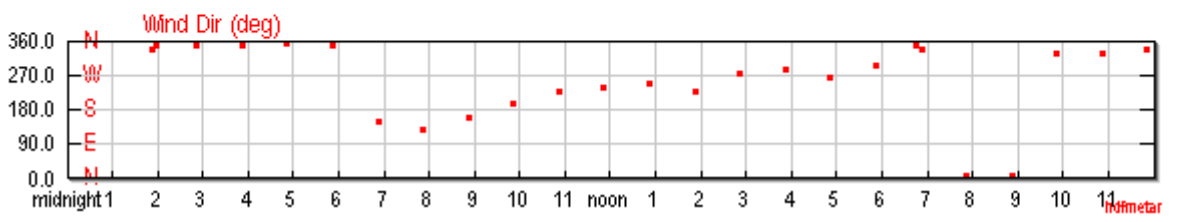
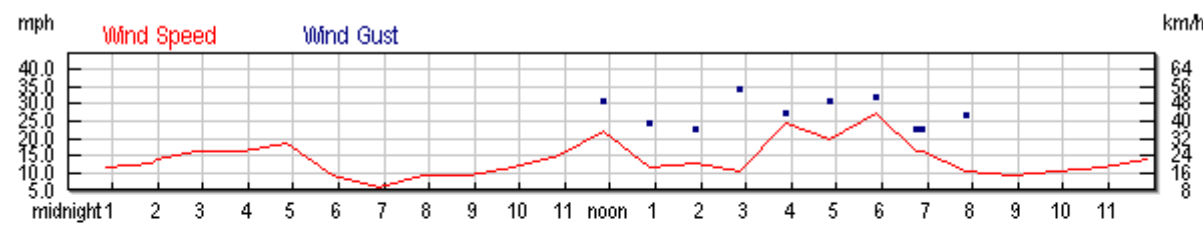
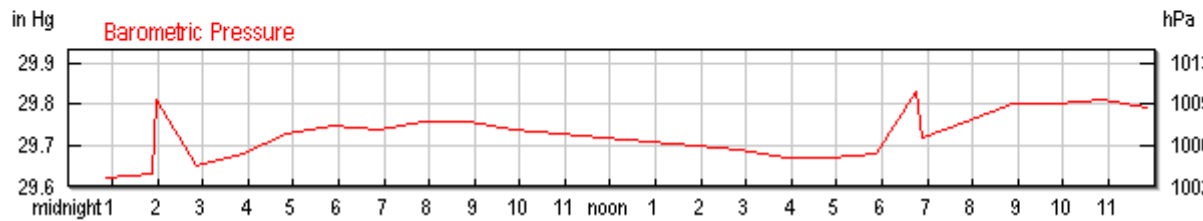
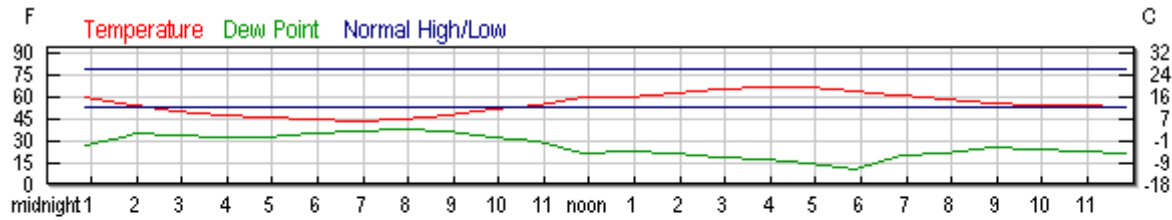
Events

Rain

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

May

18

Submit

Astronomy

May. 18, 2017	Rise	Set
Actual Time	6:00 AM MDT	8:05 PM MDT
<u>Civil Twilight</u>	5:32 AM MDT	8:34 PM MDT
<u>Nautical Twilight</u>	4:57 AM MDT	9:08 PM MDT
<u>Astronomical Twilight</u>	4:20 AM MDT	9:46 PM MDT
Moon	1:28 AM MDT (5/18)	12:30 PM MDT (5/18)
Length of Visible Light	15h 02m	
Length of Day	14h 05m	

Waning Gibbous, 53% of the Moon is Illuminated

May 18	May 18	May 25	Jun 1	Jun 9
Waning Gibbous	Last Quarter	New	First Quarter	Full

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	60.1 °F	-	27.0 °F	28%	29.62 in	10.0 mi	West	11.5 mph	19.6 mph	N/A		Mostly Cloudy
1:52 AM	55.0 °F	-	34.0 °F	45%	29.63 in	10.0 mi	NNW	12.7 mph	-	N/A		Overcast
1:59 AM	54.0 °F	-	35.1 °F	49%	29.81 in	10.0 mi	North	13.8 mph	-	N/A		Overcast
2:52 AM	50.0 °F	-	34.0 °F	54%	29.65 in	10.0 mi	North	16.1 mph	-	N/A		Overcast
3:52 AM	48.0 °F	-	33.1 °F	56%	29.68 in	10.0 mi	North	16.1 mph	26.5 mph	N/A		Overcast
4:52 AM	46.9 °F	-	32.0 °F	56%	29.73 in	10.0 mi	North	18.4 mph	-	N/A		Mostly Cloudy
5:52 AM	45.0 °F	40.1 °F	35.1 °F	68%	29.75 in	10.0 mi	North	9.2 mph	-	0.01 in	Rain	Light Rain
6:52 AM	44.1 °F	40.8 °F	37.0 °F	76%	29.74 in	10.0 mi	SSE	5.8 mph	-	0.00 in		Mostly Cloudy
7:52 AM	45.0 °F	40.1 °F	37.9 °F	76%	29.76 in	10.0 mi	SE	9.2 mph	-	N/A		Mostly Cloudy
8:52 AM	48.0 °F	-	36.0 °F	63%	29.76 in	10.0 mi	SSE	9.2 mph	-	N/A		Scattered Clouds
9:52 AM	52.0 °F	-	32.0 °F	47%	29.74 in	10.0 mi	SSW	11.5 mph	-	N/A		Partly Cloudy
10:52 AM	54.0 °F	-	30.0 °F	40%	29.73 in	10.0 mi	SW	15.0 mph	20.7 mph	N/A		Scattered Clouds
11:52 AM	60.1 °F	-	21.9 °F	23%	29.72 in	10.0 mi	WSW	21.9 mph	31.1 mph	N/A		Partly Cloudy
12:52 PM	60.1 °F	-	23.0 °F	24%	29.71 in	10.0 mi	WSW	11.5 mph	24.2 mph	N/A		Scattered Clouds
1:52 PM	63.0 °F	-	21.9 °F	21%	29.70 in	10.0 mi	SW	12.7 mph	23.0 mph	N/A		Mostly Cloudy
2:52 PM	66.0 °F	-	19.0 °F	17%	29.69 in	10.0 mi	West	10.4 mph	34.5 mph	N/A		Mostly Cloudy
3:52 PM	66.9 °F	-	17.1 °F	15%	29.67 in	10.0 mi	WNW	24.2 mph	27.6 mph	N/A		Scattered Clouds
4:52 PM	66.9 °F	-	15.1 °F	14%	29.67 in	10.0 mi	West	19.6 mph	31.1 mph	N/A		Scattered Clouds
5:52 PM	64.9 °F	-	10.9 °F	12%	29.68 in	10.0 mi	WNW	27.6 mph	32.2 mph	N/A		Mostly Cloudy
6:44 PM	62.1 °F	-	19.0 °F	19%	29.83 in	10.0 mi	North	16.1 mph	23.0 mph	N/A		Mostly Cloudy
6:52 PM	62.1 °F	-	19.9 °F	20%	29.72 in	10.0 mi	NNW	16.1 mph	23.0 mph	N/A		Mostly Cloudy
7:52 PM	59.0 °F	-	21.9 °F	24%	29.76 in	10.0 mi	North	10.4 mph	26.5 mph	0.00 in		Mostly Cloudy

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
8:52 PM	55.9 °F	-	26.1 °F	32%	29.80 in	10.0 mi	North	9.2 mph	-	N/A		Overcast
9:52 PM	55.0 °F	-	24.1 °F	30%	29.80 in	10.0 mi	NNW	10.4 mph	-	0.00 in		Scattered Clouds
10:52 PM	54.0 °F	-	23.0 °F	30%	29.81 in	10.0 mi	NNW	11.5 mph	-	N/A		Mostly Cloudy
11:52 PM	53.1 °F	-	21.9 °F	30%	29.79 in	10.0 mi	NNW	13.8 mph	-	N/A		Mostly Cloudy

|

Weather History for KABQ - May, 2017

May

31

2017

View

Wednesday, May 31, 2017

Daily	Weekly	Monthly	Custom
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	Actual	Average	Record
Temperature			
Mean Temperature	69 °F	70 °F	
Max Temperature	78 °F	84 °F	97 °F (1956)
Min Temperature	59 °F	57 °F	33 °F (1909)
Degree Days			
Heating Degree Days	0	1	
Month to date heating degree days	72	72	
Since 1 July heating degree days	3300	4175	
Cooling Degree Days	4	6	

	Actual	Average	Record
Month to date cooling degree days	74	91	
Year to date cooling degree days	79	98	
Growing Degree Days	19 (Base 50)		
Moisture			
Dew Point	46 °F		
Average Humidity	53		
Maximum Humidity	78		
Minimum Humidity	27		
Precipitation			
Precipitation	0.08 in	0.02 in	0.50 in (1914)
Month to date precipitation	0.24	0.50	
Year to date precipitation	2.61	2.54	
Snow			
Snow	0.00 in	-	- ()
Month to date snowfall	0.0		
Since 1 July snowfall	3.6		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	29.96 in		
Wind			
Wind Speed	7 mph (ESE)		
Max Wind Speed	31 mph		
Max Gust Speed	38 mph		

Actual

Average

Record

Visibility

10 miles

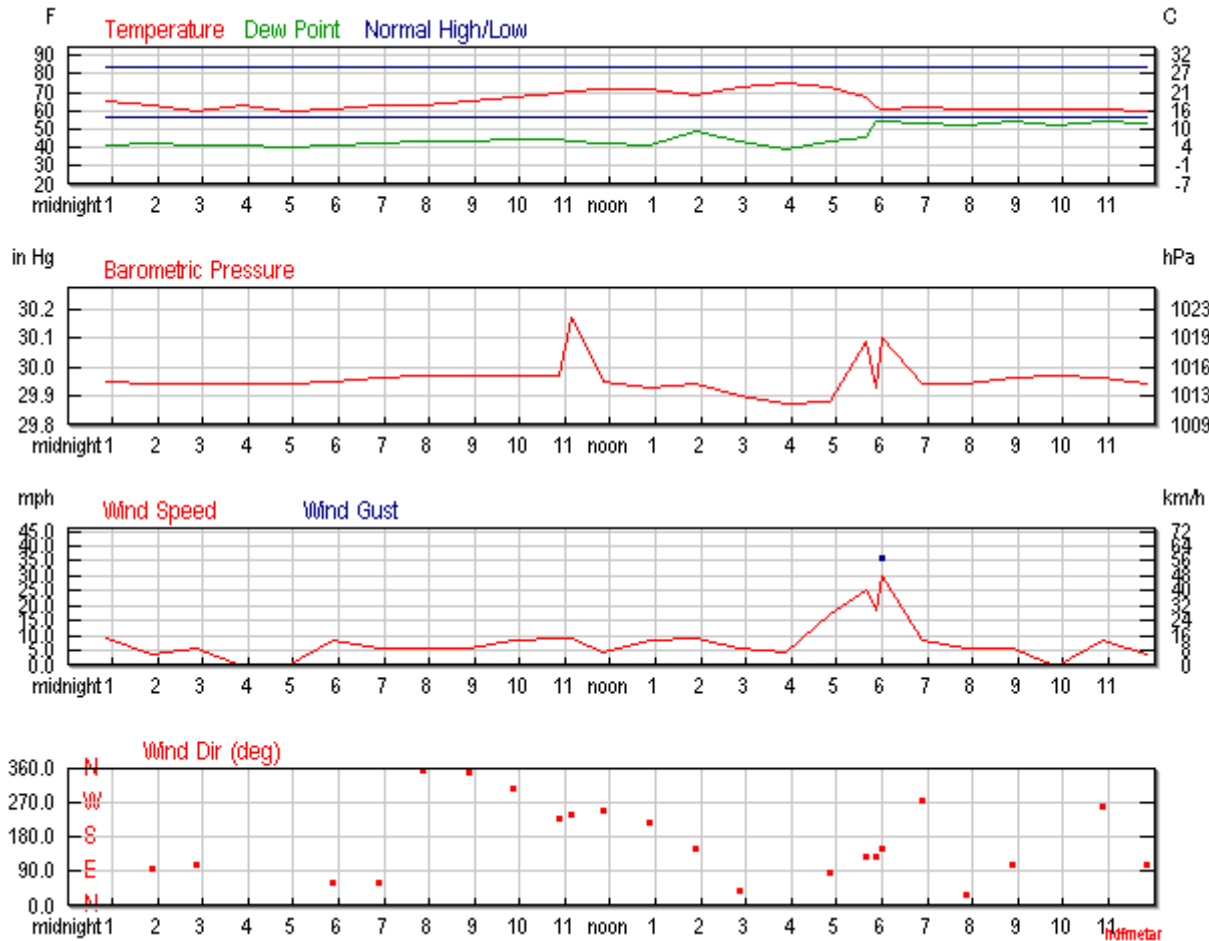
Events

Rain , Thunderstorm

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

May

31

Submit

Astronomy

May. 31, 2017	Rise	Set
Actual Time	5:53 AM MDT	8:14 PM MDT
<u>Civil Twilight</u>	5:24 AM MDT	8:44 PM MDT
<u>Nautical Twilight</u>	4:48 AM MDT	9:20 PM MDT
<u>Astronomical Twilight</u>	4:09 AM MDT	9:59 PM MDT
Moon	12:09 PM MDT (5/31)	12:54 AM MDT (5/31)
Length of Visible Light	15h 19m	
Length of Day	14h 21m	

Waxing Crescent, 42% of the Moon is Illuminated

May 31	Jun 1	Jun 9	Jun 17	Jun 23
Waxing Crescent	First Quarter	Full	Last Quarter	New

Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	64.9 °F	41.0 °F	42%	29.95 in	10.0 mi	East	9.2 mph	-	N/A		Scattered Clouds
1:52 AM	63.0 °F	42.1 °F	46%	29.94 in	10.0 mi	East	3.5 mph	-	N/A		Partly Cloudy
2:52 AM	60.1 °F	41.0 °F	49%	29.94 in	10.0 mi	ESE	5.8 mph	-	N/A		Partly Cloudy
3:52 AM	63.0 °F	41.0 °F	45%	29.94 in	10.0 mi	Calm	Calm	-	N/A		Mostly Cloudy
4:52 AM	60.1 °F	39.9 °F	47%	29.94 in	10.0 mi	Calm	Calm	-	N/A		Mostly Cloudy
5:52 AM	61.0 °F	41.0 °F	48%	29.95 in	10.0 mi	ENE	8.1 mph	-	N/A		Mostly Cloudy
6:52 AM	63.0 °F	42.1 °F	46%	29.96 in	10.0 mi	ENE	5.8 mph	-	N/A		Mostly Cloudy
7:52 AM	63.0 °F	43.0 °F	48%	29.97 in	10.0 mi	North	5.8 mph	-	N/A		Mostly Cloudy
8:52 AM	64.9 °F	43.0 °F	45%	29.97 in	10.0 mi	North	5.8 mph	-	N/A		Overcast
9:52 AM	66.9 °F	44.1 °F	44%	29.97 in	10.0 mi	NW	8.1 mph	-	N/A		Overcast
10:52 AM	70.0 °F	44.1 °F	39%	29.97 in	10.0 mi	SW	9.2 mph	-	N/A	Thunderstorm	Overcast
11:08 AM	71.1 °F	43.0 °F	36%	30.17 in	10.0 mi	WSW	9.2 mph	-	N/A		Overcast
11:52 AM	72.0 °F	42.1 °F	34%	29.95 in	10.0 mi	WSW	4.6 mph	-	N/A		Overcast
12:52 PM	72.0 °F	41.0 °F	33%	29.93 in	10.0 mi	SW	8.1 mph	-	N/A		Overcast
1:52 PM	68.0 °F	48.9 °F	50%	29.94 in	8.0 mi	SSE	9.2 mph	-	0.01 in	Rain	Light Rain
2:52 PM	73.0 °F	43.0 °F	34%	29.90 in	10.0 mi	NE	5.8 mph	-	0.00 in		Overcast
3:52 PM	75.0 °F	39.0 °F	27%	29.87 in	10.0 mi	Variable	4.6 mph	-	N/A		Mostly Cloudy
4:52 PM	73.0 °F	43.0 °F	34%	29.88 in	10.0 mi	East	17.3 mph	26.5 mph	N/A		Mostly Cloudy
5:38 PM	66.9 °F	46.0 °F	47%	30.09 in	10.0 mi	SE	25.3 mph	-	N/A	Thunderstorm	Overcast
5:52 PM	62.1 °F	54.0 °F	75%	29.93 in	9.0 mi	SE	18.4 mph	27.6 mph	0.00 in	Rain , Thunderstorm	Light Rain
6:00 PM	61.0 °F	54.0 °F	78%	30.10 in	10.0 mi	SSE	29.9 mph	35.7 mph	0.00 in	Rain	Light Rain
6:52 PM	62.1 °F	53.1 °F	72%	29.94 in	5.0 mi	West	8.1 mph	-	0.07 in	Rain	Rain

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
7:52 PM	61.0 °F	52.0 °F	72%	29.94 in	10.0 mi	NNE	5.8 mph	-	0.00 in		Mostly Cloudy
8:52 PM	61.0 °F	54.0 °F	78%	29.96 in	10.0 mi	ESE	5.8 mph	-	N/A		Mostly Cloudy
9:52 PM	61.0 °F	52.0 °F	72%	29.97 in	10.0 mi	Calm	Calm	-	N/A		Mostly Cloudy
10:52 PM	61.0 °F	54.0 °F	78%	29.96 in	10.0 mi	West	8.1 mph	-	N/A		Mostly Cloudy
11:52 PM	60.1 °F	53.1 °F	78%	29.94 in	10.0 mi	ESE	3.5 mph	-	N/A		Mostly Cloudy

|

Weather History for KABQ - June, 2017

June

26

2017

View

Monday, June 26, 2017

Daily	Weekly	Monthly	Custom
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	Actual	Average	Record
Temperature			
Mean Temperature	77 °F	78 °F	
Max Temperature	90 °F	91 °F	107 °F (1994)
Min Temperature	64 °F	65 °F	45 °F (1916)
Degree Days			
Heating Degree Days	0	0	
Month to date heating degree days	0	0	
Since 1 June heating degree days	0	0	
Since 1 July heating degree days	3300	4175	

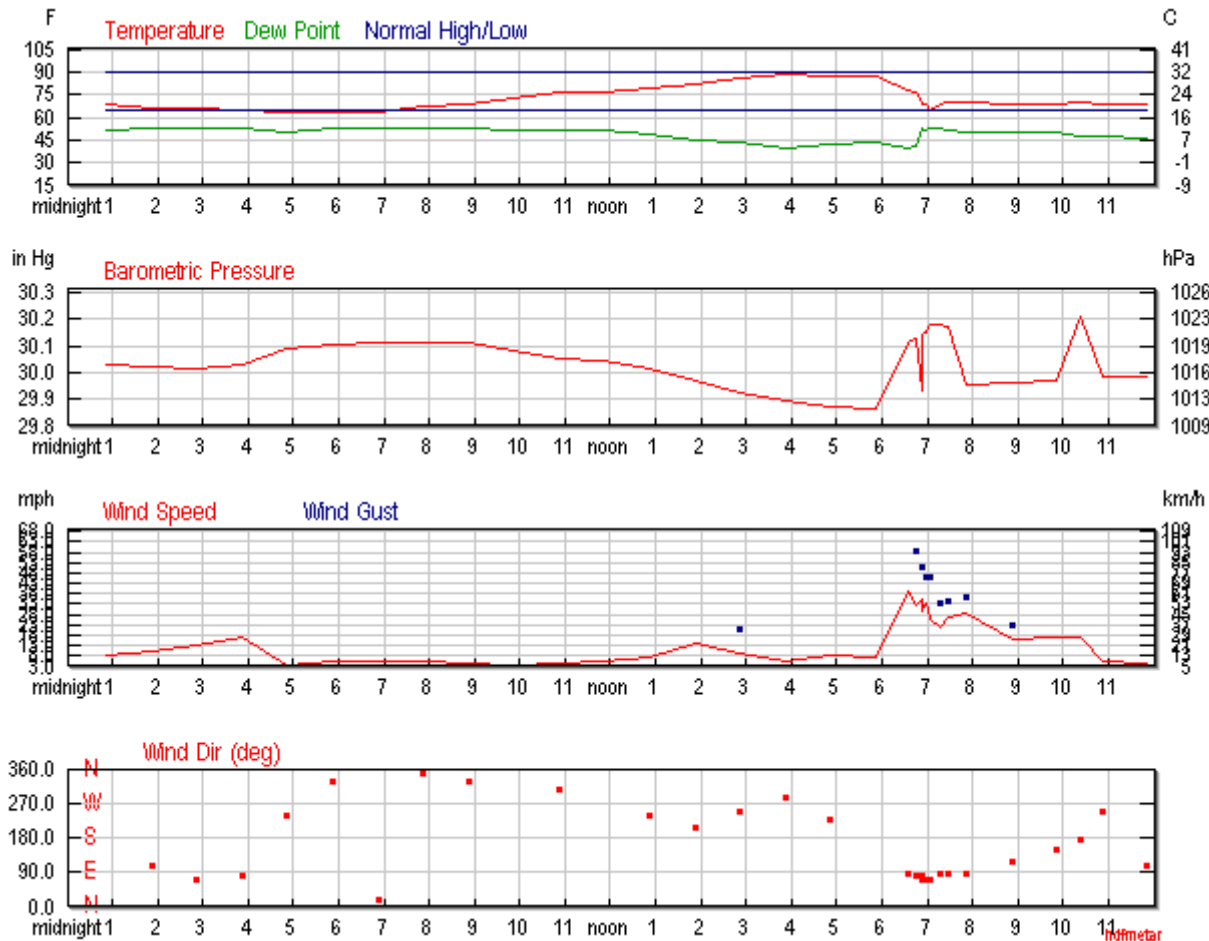
	Actual	Average	Record
Cooling Degree Days	12	13	
Month to date cooling degree days	353	249	
Year to date cooling degree days	432	347	
Since 1 June cooling degree days	353	249	
Growing Degree Days	27 (Base 50)		
Moisture			
Dew Point	50 °F		
Average Humidity	42		
Maximum Humidity	67		
Minimum Humidity	17		
Precipitation			
Precipitation	0.48 in	0.04 in	0.96 in (1937)
Month to date precipitation	0.48	0.53	
Year to date precipitation	3.09	3.07	
Snow			
Snow	T in	-	- ()
Month to date snowfall	T		
Since 1 June snowfall	T		
Since 1 July snowfall	3.6		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	30.03 in		
Wind			

	Actual	Average	Record
Wind Speed	10 mph (East)		
Max Wind Speed	47 mph		
Max Gust Speed	58 mph		
Visibility	9 miles		
Events	Rain , Thunderstorm		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

June

26

Submit

Astronomy

Jun. 26, 2017

Rise

Set

Actual Time

5:54 AM MDT

8:24 PM MDT

Civil Twilight

5:24 AM MDT

8:54 PM MDT

Nautical Twilight

4:47 AM MDT

9:30 PM MDT

Astronomical Twilight

4:07 AM MDT

10:11 PM MDT

Moon

8:48 AM MDT (6/26)

10:48 PM MDT (6/26)

Length of Visible Light

15h 29m

Length of Day

14h 30m

Waxing Crescent, 10% of the Moon is Illuminated

Jun 26	Jun 30	Jul 8	Jul 16	Jul 23
Waxing Crescent	First Quarter	Full	Last Quarter	New

Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:52 AM	69.1 °F	52.0 °F	54%	30.03 in	10.0 mi	ESE	8.1 mph	-	N/A		Scattered Clouds
1:52 AM	66.9 °F	53.1 °F	61%	30.02 in	10.0 mi	ESE	10.4 mph	-	N/A		Partly Cloudy
2:52 AM	66.9 °F	53.1 °F	61%	30.01 in	10.0 mi	ENE	12.7 mph	-	N/A		Mostly Cloudy
3:52 AM	66.0 °F	54.0 °F	65%	30.03 in	10.0 mi	East	17.3 mph	-	N/A		Mostly Cloudy
4:52 AM	64.9 °F	51.1 °F	61%	30.09 in	10.0 mi	WSW	3.5 mph	-	N/A		Mostly Cloudy
5:52 AM	64.0 °F	53.1 °F	67%	30.10 in	10.0 mi	NNW	5.8 mph	-	N/A		Scattered Clouds
6:52 AM	64.9 °F	54.0 °F	68%	30.11 in	10.0 mi	NNE	5.8 mph	-	N/A		Scattered Clouds
7:52 AM	68.0 °F	53.1 °F	59%	30.11 in	10.0 mi	North	5.8 mph	-	N/A		Scattered Clouds
8:52 AM	70.0 °F	54.0 °F	57%	30.11 in	10.0 mi	NNW	4.6 mph	-	N/A		Scattered Clouds
9:52 AM	73.9 °F	52.0 °F	46%	30.08 in	10.0 mi	Variable	3.5 mph	-	N/A		Scattered Clouds
10:52 AM	77.0 °F	52.0 °F	42%	30.05 in	10.0 mi	NW	4.6 mph	-	N/A		Partly Cloudy
11:52 AM	78.1 °F	52.0 °F	40%	30.04 in	10.0 mi	Variable	5.8 mph	-	N/A		Mostly Cloudy
12:52 PM	80.1 °F	50.0 °F	35%	30.01 in	10.0 mi	WSW	6.9 mph	-	N/A		Mostly Cloudy
1:52 PM	82.9 °F	46.0 °F	27%	29.97 in	10.0 mi	SSW	13.8 mph	20.7 mph	N/A		Scattered Clouds
2:52 PM	87.1 °F	44.1 °F	22%	29.92 in	10.0 mi	WSW	9.2 mph	20.7 mph	N/A		Partly Cloudy
3:52 PM	89.1 °F	39.9 °F	18%	29.89 in	10.0 mi	WNW	5.8 mph	-	N/A		Scattered Clouds
4:52 PM	88.0 °F	43.0 °F	21%	29.87 in	10.0 mi	SW	8.1 mph	-	N/A		Mostly Cloudy

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
5:52 PM	88.0 °F	44.1 °F	22%	29.86 in	10.0 mi	Variable	6.9 mph	-	N/A		Mostly Cloudy
6:35 PM	79.0 °F	41.0 °F	26%	30.11 in	2.5 mi	East	39.1 mph	57.5 mph	N/A		Widespread Dust
6:45 PM	77.0 °F	42.1 °F	29%	30.13 in	5.0 mi	East	32.2 mph	58.7 mph	0.00 in	Rain , Thunderstorm	Light Thunderstorms and Rain
6:52 PM	69.1 °F	53.1 °F	57%	29.93 in	5.0 mi	East	35.7 mph	50.6 mph	0.03 in	Rain , Thunderstorm	Heavy Thunderstorms and Rain
6:54 PM	69.1 °F	53.1 °F	57%	30.14 in	5.0 mi	ENE	29.9 mph	50.6 mph	0.03 in	Rain , Thunderstorm	Heavy Thunderstorms with Small Hail
6:59 PM	69.1 °F	52.0 °F	54%	30.15 in	5.0 mi	ENE	33.4 mph	46.0 mph	0.05 in	Rain , Thunderstorm	Light Thunderstorms and Rain
7:05 PM	66.0 °F	54.0 °F	65%	30.18 in	1.8 mi	ENE	25.3 mph	46.0 mph	0.07 in	Rain , Thunderstorm	Heavy Thunderstorms and Rain
7:17 PM	70.0 °F	53.1 °F	55%	30.18 in	4.0 mi	East	21.9 mph	33.4 mph	0.45 in	Rain , Thunderstorm	Light Thunderstorms and Rain
7:27 PM	71.1 °F	52.0 °F	51%	30.17 in	10.0 mi	East	26.5 mph	34.5 mph	0.45 in	Thunderstorm	Mostly Cloudy
7:52 PM	71.1 °F	51.1 °F	49%	29.95 in	10.0 mi	East	28.8 mph	36.8 mph	0.45 in		Mostly Cloudy
8:52 PM	70.0 °F	51.1 °F	51%	29.96 in	10.0 mi	ESE	16.1 mph	23.0 mph	N/A		Mostly Cloudy
9:52 PM	70.0 °F	51.1 °F	51%	29.97 in	10.0 mi	SSE	17.3 mph	-	N/A		Scattered Clouds
10:23 PM	71.1 °F	48.9 °F	45%	30.21 in	10.0 mi	South	17.3 mph	-	N/A		Scattered Clouds
10:52 PM	70.0 °F	48.9 °F	47%	29.98 in	10.0 mi	WSW	5.8 mph	-	N/A		Scattered Clouds
11:52 PM	69.1 °F	46.9 °F	45%	29.98 in	10.0 mi	ESE	4.6 mph	-	N/A		Scattered Clouds



Weston Solutions, Inc.
3840 Commons Ave. NE
Albuquerque, NM 87109
505-837-6520 Fax 505-837-6550
www.westonsolutions.com

October 7, 2016

Ms. Kathy Verhage, P.E.
Department of Municipal Development - Storm Drainage Design
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Reference: PROJECT NO. 8010 CITYWIDE ON-CALL NPDES AND MS4 ENGINEERING SUPPORT SERVICES 3rd QUARTER 2016 UPDATE TASK 3 VISUAL STORM WATER INSPECTIONS

Dear Ms. Verhage:

This Memo describes the results of the 2016 Quarter 3 Visual Storm Water Inspections for 16 City of Albuquerque (City) facilities. This evaluation and memo has been prepared to address the requirements of the U.S. Environmental Protection Agency's (EPA) Municipal Separate Storm Sewer System (MS4) Permit issued to the City in 2014 and the Multi Sector General Permit for Storm Water Discharges Associated with Industrial Activity (MSGP) at City-owned facilities. Its purpose is to document the City's compliance with the requirements relative to quarterly storm water monitoring.

To comply with the MS4 and MSGP's requirements for storm water monitoring, Weston Solutions and CDM Smith were tasked with performing quarterly visual storm monitoring at 17 City-owned facilities which meet the definition of an industrial facility in the MSGP based on audits of city owned facilities performed between 2012 and 2016. The following facilities were monitored for visual inspection, locations of these facilities are also shown in Figure 1.

- Arroyo Del Oso Golf Course
- Arroyo Maintenance Facility
- Balloon Fiesta Park/ Golf Training Center
- Albuquerque BioPark Facilities*
- Daytona Transit Center
- Fire Department Mechanical Shop
- Fleet- 4th Street Fuel Station
- Fleet- Lomas Fuel Station
- Ladera Golf Course
- Los Altos Golf Course
- Montessa Park Open Space
- Pino Yards
- Puerto del Sol Golf Course
- Street Satellite #1
- Street Satellite #2
- Street Satellite #3
- Yale Transit Center

**visual monitoring for the ABQ BioPark Facilities will begin after the implementation of their SWPPP, SPCC Plan, training, and Implementation Inspection estimated for 4th Quarter 2016*

Table 1 shows the Outfall identification names along with the inspection team responsible for monitoring the particular outfall.

Figure 1: Facility Site Locations

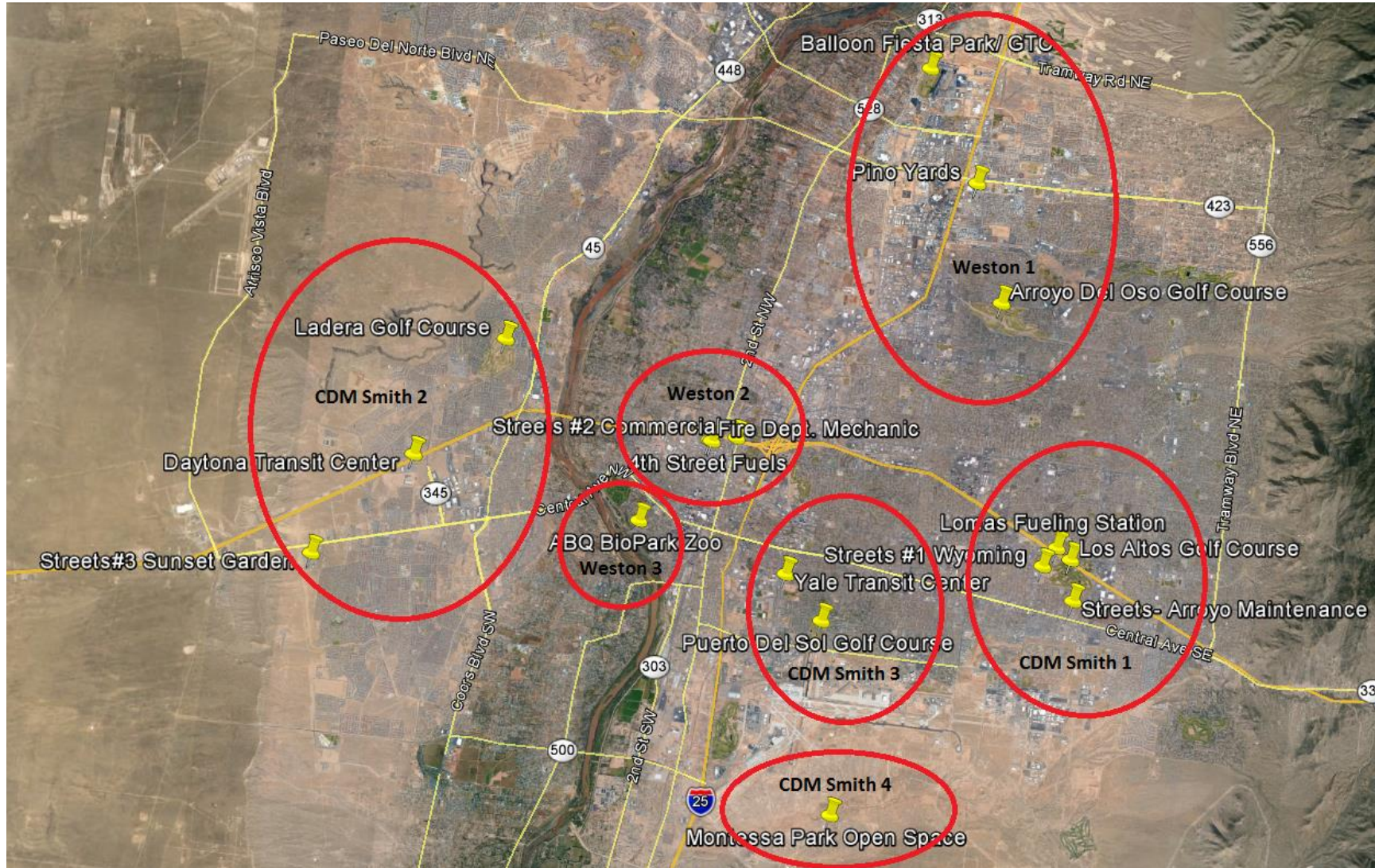


Table 1: Outfall ID and Designees

Site	Outfall ID
Weston 1	
Balloon Fiesta Park/ Golf Training Center	BFP1
	BFP2
	BFP3
	BFP4
	BFP5
Pino Yards	PY1
	PY2
	PY3
Arroyo Del Oso Golf Course	ADO1
	ADO2
Weston 2	
Fleet- 4 th Street Fuels	FS1
Fire Department Mechanic Shop	FM1
	FM2
Street Satellite #2	SS2
CDM Smith 1	
Los Altos Golf Course	LA1
	LA2
Fleet- Lomas Fuel Station	L1
Arroyo Maintenance Facility	AM1
Street Satellite #1	SS1A
	SS1B
CDM Smith 2	
Daytona Transit Center	D1
	D2
Ladera Golf Course	LGC1
	LGC2
Street Satellite #3	SS3
CDM Smith 3	
Puerto Del Sol Golf Course	PDS1
	PDS2
Yale Transit Facility	Y1
CDM Smith 4	
Montessa Park Open Space	MP1
	MP2
*Weston 3	
*ABQ BioPark Facilities	*BP1

**visual monitoring for the ABQ BioPark Facilities will begin after the implementation of their SWPPP, SPCC Plan, training and implementation inspection estimated for 4th Quarter 2016 (SWPPP and SPCC in place Aug 2016)*

Background

The MSGP establishes requirements for monitoring the quality of storm water discharges depending on the activities at the different types of industrial facility. Although benchmark monitoring is not required, the MSGP does require quarterly visual assessment of storm water quality. Visual assessment consists of the collection of grab samples from each outfall (subject to demonstration of substantially identical outfalls) and examination for the presence of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, or other indicators of storm water pollution.

Certain criteria regarding the precipitation event must be met for an assessment event. Visual assessment of storm water must occur:

- During daylight hours
- Within 30 minutes of the start of storm water discharge (or as soon as practicable thereafter)
- At least 72 hours after the previous storm water discharge event

Weston will follow the City's existing storm water monitoring protocol outlining the locations and descriptions of all outfalls to be monitored. The protocol identifies contact persons at each facility for use in notifying City personnel when members of the storm water monitoring team are mobilizing to that location. A standard visual assessment form will be used by all staff to document the monitoring activities.

Quarter 3 Monitoring Results

Kick-off for this work was on June 8th 2016. The sampling period ran from July 1 to September 30. Weston Team 1 mobilized 10 times during the three months to collect samples from storm events. A visual sample was collected from all outfalls over the course of the 10 mobilizations. 4 repeat samples (2 for ADO and 2 for BFP) were also collected. Weston Team 2 mobilized 5 times and collected a sample from all outfalls over the course of the 5 mobilizations. 3 repeat samples were also collected (1 for Fire Mechanic, 1 for 4th Street Fuels and 1 for Streets #2). CDM Smith Team 1 mobilized 1 time during the three months to collect samples from storm events. A visual sample was collected from 1 outfall over the course of the 1 mobilization. No repeat samples were collected. CDM Smith Team 2 mobilized 2 times during the three months to collect samples from storm events. A visual sample was collected from 2 outfalls over the course of the 2 mobilizations. No repeat samples were collected. CDM Smith Team 3 mobilized 1 time during the three months to collect samples from storm events. A visual sample was collected from 2 outfalls over the course of the 1 mobilization. No repeat samples were collected. CDM Smith Team 4 mobilized 1 time during the three months to collect samples from storm events. No visual sample was collected from any outfalls over the course of the 1 mobilization. No repeat samples were collected. The monitoring reports and photo logs from Weston Team 1 and Weston Team 2 and CDM Team 1-4 can be found in the Appendix. Any outfalls that were not monitored in Quarter 3 will be attempted to be made up during Quarter 4 pending weather conditions.

Observed Problems

In general very few pollution problems were observed at any of the outfalls with few exceptions. Many of the grab samples exhibited presence of sediment, but no pollutants caused for follow up inspections or actions to occur.

Results from the Quarter 3 Visual Inspections can be found in the Appendix. Both visual observations and grab samples were noted at most facilities during the third quarter. The only facilities that were not observed during the third quarter were Streets Maintenance #1, Streets Maintenance #3 and Montessa Park. All facilities that did not produce a sample in Quarter 3 will be attempted to be made up in the coming months.

We appreciate the opportunity to provide professional consulting services to you and we look forward to assisting you in the next quarter. Please contact me at (505) 837-6548 (Dana.Peterson@WestonSolutions.com) or Brad Sumrall at (505) 837-6566 (Brad.Sumrall@WestonSolutions.com) if you have any questions or need additional information.

Sincerely,

WESTON SOLUTIONS, INC.



Dana Peterson, PE
Project Engineer

APPENDIX: Q2 INSPECTION FORMS AND PHOTO LOGS

APPENDIX: Q3 INSPECTION FORMS & PHOTO LOGS- VISUAL INSPECTIONS

STREETS SATELLITE #1



City of Albuquerque
Street Maintenance Satellite #1

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 6 SEPT. 2016

Weather: RAINY

Time: 5:25p

Storm Precip: < 0.1 inches

Inspector: ROCHELLE LARSON

Last 72 hour Precip: none

Photo: none

Outfall ID:	SS1A	SS1B
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:		
Flow Estimate (include units and method of estimation):		
Other Observations:		
Color (describe):		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:		

Additional Comments: SITE IS LOCKED AND COULD NOT GET A HOLD OF MANAGER. TO OPEN GATE.



STREETS SATELLITE #2



City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 7/1/16
Time: 8:15 AM
Inspector: Dana Peterson
Signature: [Signature]

Weather: wet/light rain
Storm Precip: _____
Last 72 Hour Precip: _____
Photo: 162

Outfall ID:	<u>SS2</u>
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	
Flow Estimate (include units and method of estimation):	<u>Discharge</u>
Other Observations:	
Color (Describe):	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	

Additional Comments: wet/cloudy light rain no discharge





Date: July 1, 2016

Event: MS4 Visual storm Water Monitoring

Inspector: Dana Peterson (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Street Maintenance #2



No Discharge observed



City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 7/18/16
Time: 6:45 pm
Inspector: Savannah Martinez
Signature: [Signature]

Weather: Cloudy/Rainy
Storm Precip: 0.16 inches
Last 72 Hour Precip: N/A
Photo: yes

Outfall ID:	SS2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Still Raining w/ Little Runoff
Flow Estimate (include units and method of estimation):	< 1 cfs
Other Observations:	Runoff was very slow
Color (Describe):	Dark Brown cloudy
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input checked="" type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	Looked very similar to chocolate milk

Additional Comments: arrived near end of storm so runoff was slowing down. Storm precip was taken from NWS @ ABQ international airport





Date: July 18, 2016

Event: MS4 Visual storm Water Monitoring

Inspector: Savannah Martinez (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Street Maintenance #2



Discharge observed



Brown Color discharge



City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 7/24/16
Time: 6:30 pm
Inspector: Savannah Martinez
Signature: [Signature]

Weather: Raining
Storm Precip: NA
Last 72 Hour Precip: NA
Photo: yes

Outfall ID:	SS2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>Ground was dry but raining</u>
Flow Estimate (include units and method of estimation):	<u>[Handwritten curve]</u>
Other Observations:	
Color (Describe):	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	

Additional Comments: Ground was dry but it was raining





Date: July 24, 2016

Event: MS4 Visual storm Water Monitoring

Inspector: Savannah Martinez (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Street Maintenance #2



No discharge observed



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City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/6/16
Time: 5:20 pm
Inspector: Savannah Martinez
Signature: [Signature]

Weather: Rainy
Storm Precip: _____
Last 72 Hour Precip: _____
Photo: yes

Outfall ID:	SS2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>Puddle near site</u>
Flow Estimate (include units and method of estimation):	<u>[Diagonal line]</u>
Other Observations:	
Color (Describe):	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	

Additional Comments: No runoff





Date: August 6, 2016

Event: MS4 Visual storm Water Monitoring

Inspector: Savannah Martinez (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

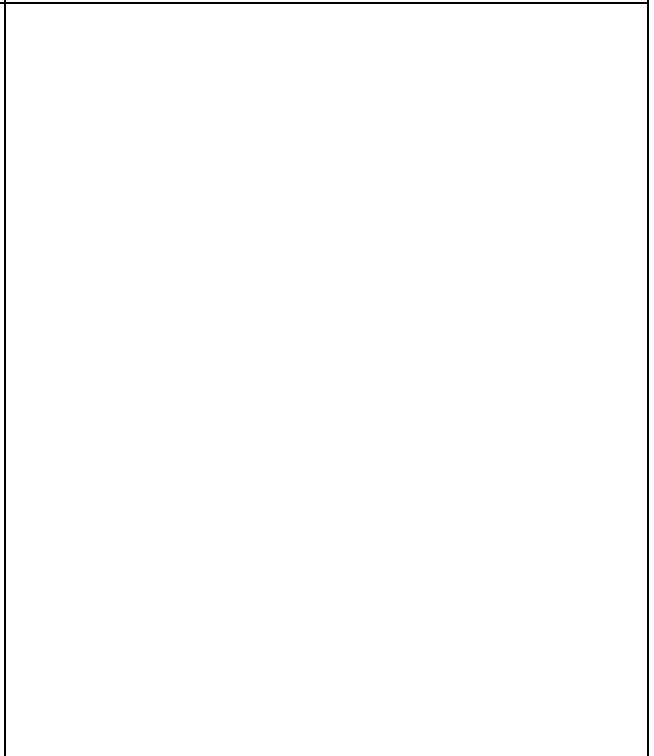
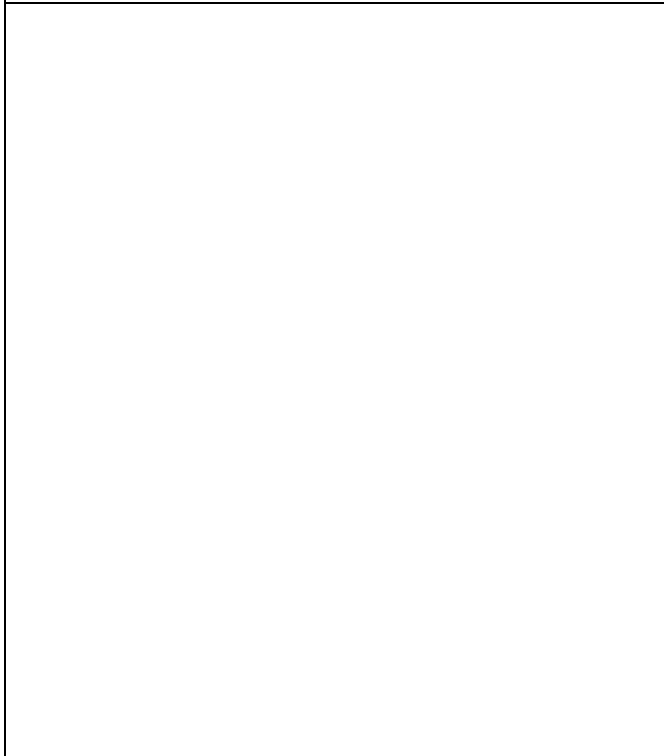
Street Maintenance #2



No discharge observed



No discharge observed





City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/8/16
Time: 4:30 pm
Inspector: Savannah Martinez
Signature: [Signature]

Weather: Raining and Windy
Storm Precip: ≈ 0.35"
Last 72 Hour Precip: N/A
Photo: yes

Outfall ID:	SS2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	A lot of runoff!
Flow Estimate (include units and method of estimation):	> 1 cfs H2O was flowing very quickly lot of volume
Other Observations:	A lot of H2O coming off site
Color (Describe):	Slightly grey
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	No sign of any sticks OR red color

Additional Comments: _____





Date: August 8, 2016

Event: MS4 Visual storm Water Monitoring

Inspector: Savannah Martinez (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Street Maintenance #2



Discharge observed



Discharge observed



Sample Collected

STREETS SATELLITE #3

STREETS SATELLITE ARROYO MAINTENANCE

City of Albuquerque
Storm Drainage Maintenance Arroyo Maintenance Section

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 6 SEPT. 2016
Time: 5:33p
Inspector: Rochelle Larson

Weather: RAINY
Storm Precip: < 0.1 inches
Last 72 hour Precip: none
Photo: 4 photos

Outfall ID: AM1

Flow Observed: Yes No

Description of Monitoring Site: ponding upstream of outfall;
salt storage nearby

Flow Estimate (include units and method of estimation): < 1 cfs

Other Observations: sheet flow occurring over
entire site

Color (describe): yellow; light brown

Turbidity: Clear
Slightly Cloudy
Very Cloudy
Opaque

Floating Solids: Yes No

Suspended Solids: Yes No

Settled Solids: Yes No

Sheen Present: Yes No

Odor: Yes No

Foam Present: Yes No

Describe: site is closed for the day

Additional Comments: no apparent stormwater quality issues



DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Rochelle Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

STORM DRAINAGE MAINTENANCE ARROYO MAINTENANCE SECTION



Visual sample collected at AM1



Runoff observed in curb.



Ponded water observed near outfall.

PINO YARDS



City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: July 1, 2016
 Time: 3:15 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light Rain
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: No

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Light rain in area but no discharge observed.		
Flow Estimate (include units and method of estimation):	/		
Other Observations:	/		
Color (Describe):	/		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/		

Additional Comments: No discharge.





City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 7/18/16
 Time: 7:00 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light Rain
 Storm Precip: -
 Last 72 Hour Precip: -
 Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	Light rain in the area but no discharge observed.		
Flow Estimate (include units and method of estimation):	/		
Other Observations:	/		
Color (Describe):	/		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/		

Additional Comments: _____





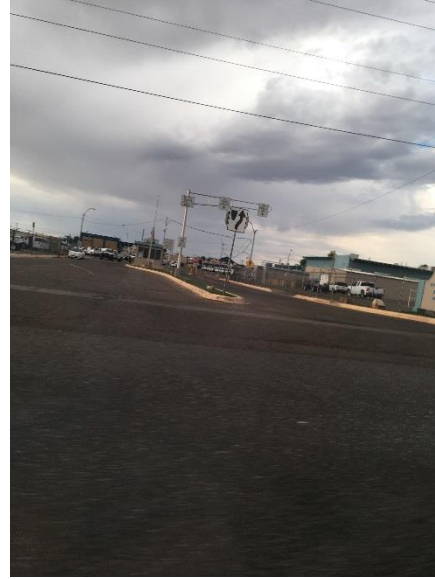
Date: July 18, 2016

Event: MS4 Visual Monitoring Assessment

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Pino Yards



No discharge in area



City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: July 24, 2016
 Time: 7:25PM
 Inspector: Sarah Lyckie
 Signature: Sarah Lyckie

Weather: Light Rain
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	Light rain in the area, no discharge was observed.		
Flow Estimate (include units and method of estimation):	/		
Other Observations:	/		
Color (Describe):	/		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/		

Additional Comments: _____





Date: July 24, 2016

Event: MS4 Visual Monitoring Assessment

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Pino Yards



No discharge in area



City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/4/2016
 Time: 5:10 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: clouds
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	Radar indicated precipitation in area, none observed.		
Flow Estimate (include units and method of estimation):	/		
Other Observations:	/		
Color (Describe):	/		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/		

Additional Comments: _____





Date: August 4, 2016

Event: MS4 Visual Monitoring Assessment

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Pino Yards



No discharge in area



City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/4/2016
 Time: 8:45 PM
 Inspector: Sarah Luchie
 Signature: Sarah Luchie

Weather: Rain
 Storm Precip: 0.5 inches
 Last 72 Hour Precip: 0.5
 Photo: no

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Was actively raining but the sun had already set.		
Flow Estimate (include units and method of estimation):	[Diagonal line drawn across all three columns]		
Other Observations:	[Diagonal line drawn across all three columns]		
Color (Describe):	[Diagonal line drawn across all three columns]		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	[Diagonal line drawn across all three columns]		

Additional Comments: Was after sunset by the time I got to Pino Yards.





City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/8/2016
 Time: 4:15 PM
 Inspector: Sarah Luchie
 Signature: Sarah Luchie

Weather: Rain
 Storm Precip: -
 Last 72 Hour Precip: -
 Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	Rain in area but not enough to discharge		
Flow Estimate (include units and method of estimation):	/		
Other Observations:	/		
Color (Describe):	/		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/		

Additional Comments: Waited from 4:15 to 4:45 PM, rain but no discharge.





Date: August 8, 2016
Event: MS4 Visual Monitoring Assessment
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Pino Yards



No discharge in area



City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/16/2016
 Time: 6:10
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light rain
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	light rain	w/ wind but no discharge	
Flow Estimate (include units and method of estimation):			
Other Observations:			
Color (Describe):			
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:			

Additional Comments: _____





Date: August 16, 2016
Event: MS4 Visual Monitoring Assessment
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Pino Yards



No discharge in area



City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/18/2016
 Time: 4:40 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light Rain
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<u>Radar indicated storm, not enough to cause discharge</u>		
Flow Estimate (include units and method of estimation):	<u>/</u>		
Other Observations:	<u>/</u>		
Color (Describe):	<u>/</u>		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	<u>/</u>		

Additional Comments: _____





Date: August 18, 2016
Event: MS4 Visual Monitoring Assessment
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Pino Yards



No discharge in area



City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/22/2016
Time: 6:20 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Hard Rain
Storm Precip: 0.75 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Sheet flow	Sheet flow	Sheet flow down street
Flow Estimate (include units and method of estimation):	7.1 cfs	> 1 cfs	> 1 cfs
Other Observations:	Wattles are effective		pond quite full
Color (Describe):	yellow	yellow/clear	yellow/clear
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	some sediment	some sediment	Some sediment in sample

Additional Comments: _____





Date: August 22, 2016
Event: MS4 Visual Monitoring Assessment
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Pino Yards



PY3 Discharge



PY2 Discharge



PY1 Discharge



City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 9/12/2016
 Time: 6:30PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Cloudy
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	No discharge observed		
Flow Estimate (include units and method of estimation):	/		
Other Observations:	/		
Color (Describe):	/		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/		

Additional Comments: Storm moved too far east and missed site.





Date: Septemebr 12, 2016

Event: MS4 Visual Monitoring Assessment

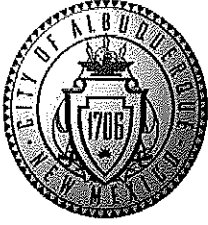
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Pino Yards



TRANSIT- YALE



City of Albuquerque
Yale Maintenance Facility

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 09/06/2016

Weather: light rain

Time: 5:00

Storm Precip: ~0.1 inches

Inspector: Greg Larson

Last 72 hour Precip: none

Photo: yes

Outfall ID: Y1

Flow Observed: Yes No

Description of Monitoring Site: inlet to stormceptor water quality device

Flow Estimate (include units and method of estimation): low 0-10 gpm (visual)

Other Observations: none newly constructed area

Color (describe): clear

Turbidity: Clear
Slightly Cloudy
Very Cloudy
Opaque

Floating Solids: Yes No

Suspended Solids: Yes No

Settled Solids: Yes No

Sheen Present: Yes No

Odor: Yes No

Foam Present: Yes No

Describe:

Additional Comments: NO stormwater quality issues observed





DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

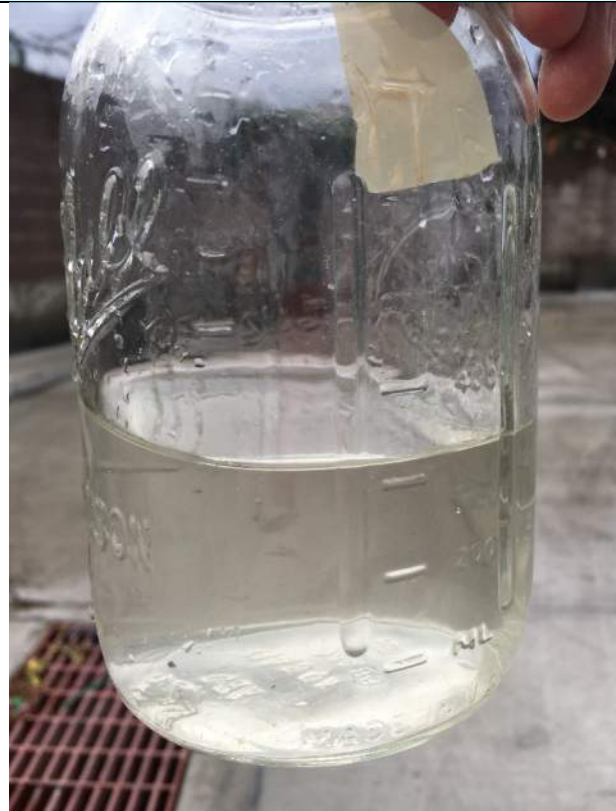
INSPECTOR(S): Gregory Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

YALE MAINTENANCE FACILITY



Flow observed entering water quality structure inlet structure.



Visual sample collected at inlet to storm water quality structure.

TRANSIT- DAYTONA



City of Albuquerque
West Side Maintenance Facility (Daytona)

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 09/06/2016 Weather: rain
 Time: 4:15 Storm Precip: ~0.1 inches
 Inspector: Greg Larson Last 72 hour Precip: none
 Photo: yes

Outfall ID:	D1	D2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<u>manhole</u>	<u>manhole</u>
Flow Estimate (include units and method of estimation):	<u>unable to estimate visually ~3-6 inches of flow depth</u>	<u>unable to estimate visually ~3-6 inches of flow depth</u>
Other Observations:		
Color (describe):	<u>pale gray</u>	<u>pale gray</u>
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:		

Additional Comments: NO major impacts to stormwater quality observed. Some sediment washout observed from unlandscaped areas.





DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Gregory Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

WEST SIDE MAINTENANCE FACILITY (DAYTONA)



Visual sample collected from Outfall D1



Some evidence of erosion near employee parking lot.



DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

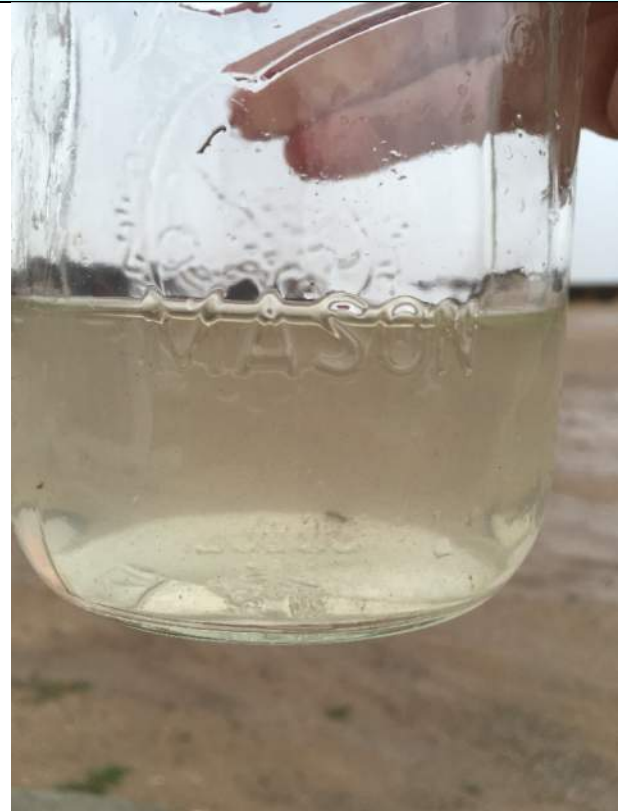
INSPECTOR(S): Gregory Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

WEST SIDE MAINTENANCE FACILITY (DAYTONA)



Flow observed in Outfall D1.



Visual sample collected from Outfall D1



City of Albuquerque
West Side Maintenance Facility (Daytona)

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/16/2016

Weather: cloudy / no rain

Time: 4:00

Storm Precip: _____

Inspector: Greg Larson

Last 72 hour Precip: _____

Photo: _____

Outfall ID:	D1	D2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:		
Flow Estimate (include units and method of estimation):		
Other Observations:		
Color (describe):		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:		

Additional Comments: false start - little to
no rain - no runoff observed



BALLOON FIESTA PARK/ GOLF TRAINING CENTER



City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: July 1, 2016
 Time: 3:00 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light Rain
 Storm Precip: -
 Last 72 Hour Precip: -
 Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	Wet in area Slight run off		
Flow Estimate (include units and method of estimation):	< 1 cfs		
Other Observations:	Recently mowed for July 4th festivities		
Color (Describe):	yellow / brown		
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	floating grass and sediment in sample		

Additional Comments: Discharge only occurring at North part of BFP





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: July 1, 2016
 Time: 3:00 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light Rain
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP4 BFP5	BFP5 BFP4
Flow Observed:	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	Wet in area slight run off	
Flow Estimate (include units and method of estimation):	< 1 cfs	
Other Observations:	Recently mowed for July 4th festivities	
Color (Describe):	yellow / brown	
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	Some grass from mowing opps was in sample + sediment	

Additional Comments: Discharge observed at BFP5, pending
observed.





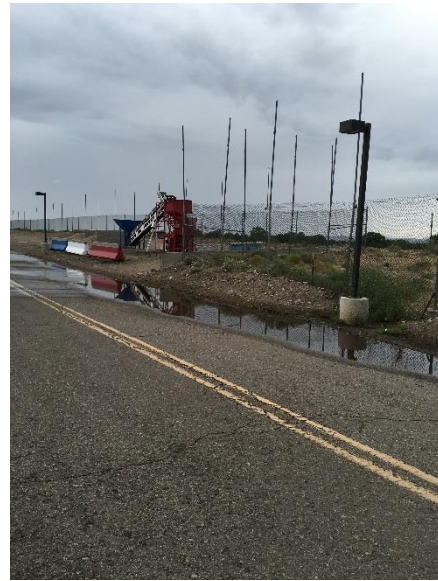
Date: July 1, 2016
Event: MS4 Stormwater Visual Monitoring
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Balloon Fiesta Park



Grab Sample from BFP1, floating grass in sample



Ponding observed at BFP5



Grab Sample from BFP5, floating grass in sample



No Discharge Observed

Balloon Fiesta Park



No discharge observed



No discharge observed



City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 7/18/2016
 Time: 6:15 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light Rain
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	Isolated storms in the area, including light rain - no discharge observed.		
Flow Estimate (include units and method of estimation):	/		
Other Observations:	/		
Color (Describe):	/		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/		

Additional Comments: _____





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 7/18/16
 Time: 6:15 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light Rain
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>No discharge observed.</u>	
Flow Estimate (include units and method of estimation):	<u>[Diagonal line]</u>	
Other Observations:	<u>[Diagonal line]</u>	
Color (Describe):	<u>[Diagonal line]</u>	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	<u>[Diagonal line]</u>	

Additional Comments: _____





Date: July 18, 2016
Event: MS4 Stormwater Visual Monitoring
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Balloon Fiesta Park



No discharge observed



City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: July 24, 2016
 Time: 6:20 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Dark Rain clouds
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	No	Discharge	observed.
Flow Estimate (include units and method of estimation):	/		
Other Observations:	/		
Color (Describe):	/		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/		

Additional Comments: Was very dark west of BFP - light rain but no discharge observed.
Got there @ 6:20 PM
checked back @ 7:45 PM





**City of Albuquerque
Balloon Fiesta Park and Golf Training Center**

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1
 Q2
 Q3
 Q4

Date: July 24, 2016
 Time: 6:20 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Dark Clouds
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>No Discharge</u>	
Flow Estimate (include units and method of estimation):	/	
Other Observations:	/	
Color (Describe):	/	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/	

Additional Comments: _____





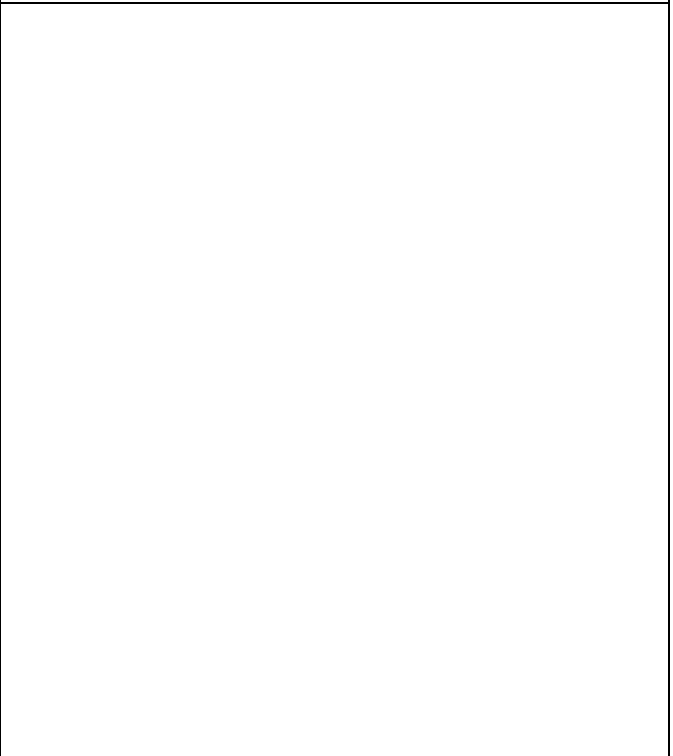
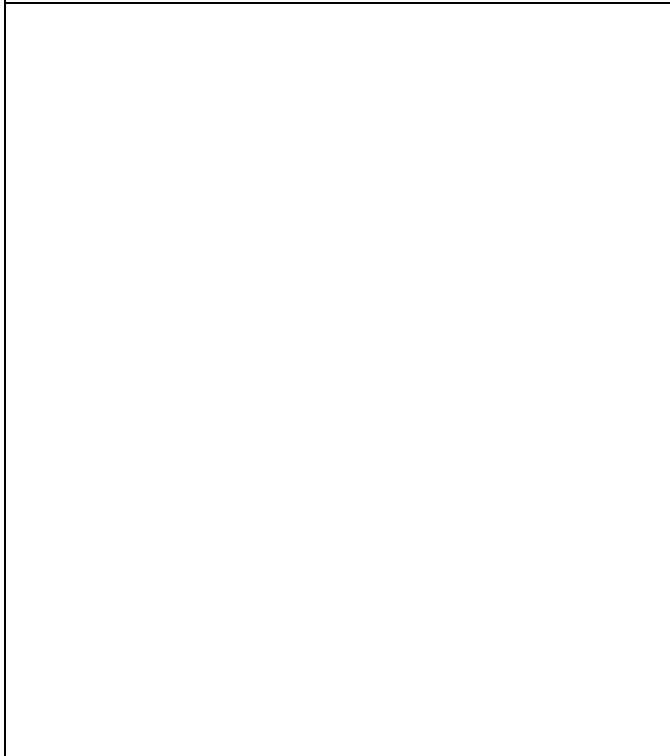
Date: July 24, 2016
Event: MS4 Stormwater Visual Monitoring
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Balloon Fiesta Park



No discharge observed





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1
 Q2
 Q3
 Q4

Date: 8/4/2016
 Time: 4:30 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: clouds
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Radar indicated storm, no precip.		
Flow Estimate (include units and method of estimation):	/		
Other Observations:	/		
Color (Describe):	/		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/		

Additional Comments: _____





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/4/2016
 Time: 4:30 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: clouds
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>Radar indicated rain no precip.</u>	
Flow Estimate (include units and method of estimation):	/	
Other Observations:	/	
Color (Describe):	/	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/	

Additional Comments: _____





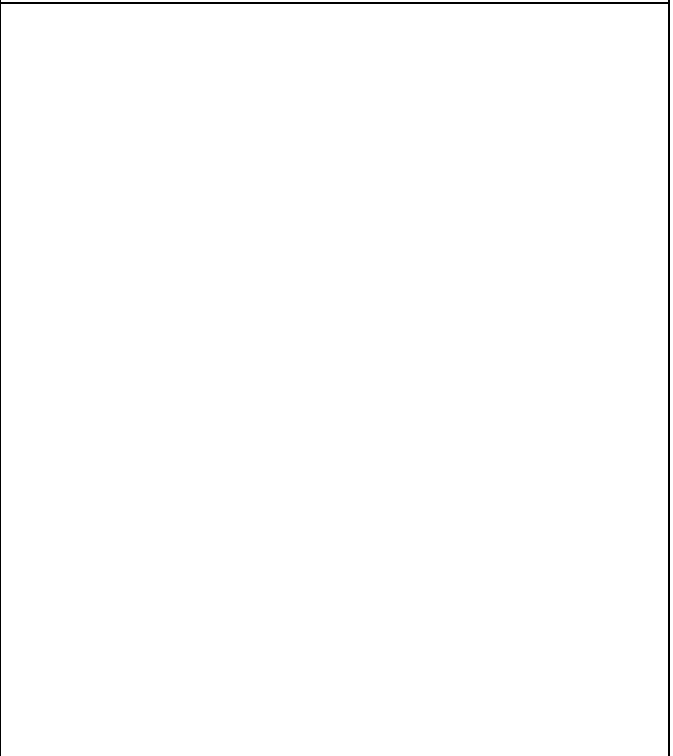
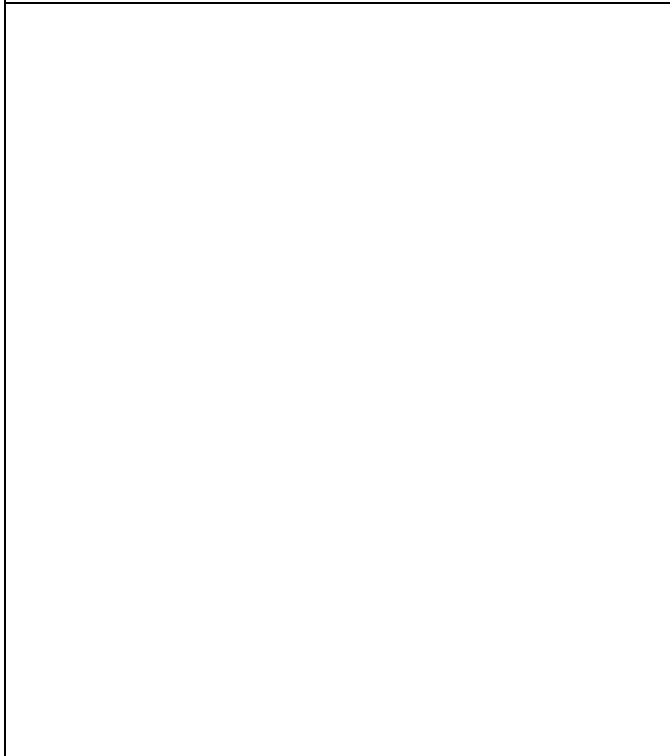
Date: August 4, 2016
Event: MS4 Stormwater Visual Monitoring
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Balloon Fiesta Park



No discharge observed





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1
 Q2
 Q3
 Q4

Date: 8/4/2016
 Time: 8:10 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Rain
 Storm Precip: 0.5 inches
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Raining with discharge		
Flow Estimate (include units and method of estimation):	< 1 cfs	< 1 cfs	< 1 cfs
Other Observations:			
Color (Describe):	yellow	brown/clear	yellow
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	Grass in sample	Sample was murky but clear	yellow color but mostly clear

Additional Comments: _____





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/4/2016
 Time: 8:10 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: _____
 Storm Precip: _____
 Last 72 Hour Precip: _____
 Photo: _____

Outfall ID:	BFP4	BFP5
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Slight discharge.	Discharge ponding
Flow Estimate (include units and method of estimation):	< 1 cfs	< 1 cfs
Other Observations:		
Color (Describe):	yellow	Yellow
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	Smaller sample, some sediment	Some sediment present in sample

Additional Comments: _____





Date: August 4, 2016
Event: MS4 Stormwater Visual Monitoring
Inspector: Sarah Luckie (Weston)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

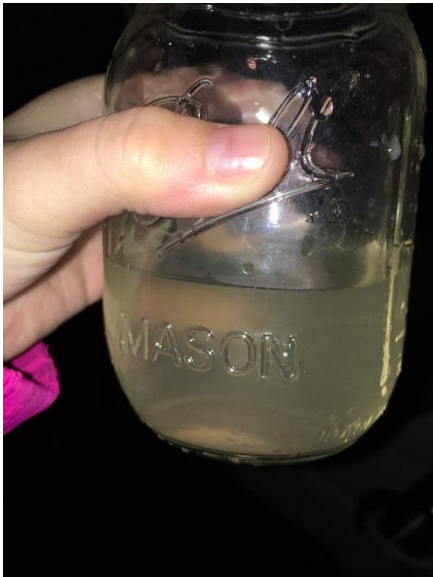
Balloon Fiesta Park



BFP 1



BFP 5



BFP 2



BFP 4



BFP 3



City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/8/2016
 Time: _____
 Inspector: _____
 Signature: _____

Weather: _____
 Storm Precip: _____
 Last 72 Hour Precip: _____
 Photo: _____

Outfall ID:	BFP1	BFP2	BFP3			
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Description of Monitoring Site:	Not Observed out to Balloon Fiesta					
Flow Estimate (include units and method of estimation):	/					
Other Observations:						
Color (Describe):						
Turbidity:				<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:				<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No			
Describe:						

Additional Comments: _____





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/8/2016
 Time: _____
 Inspector: _____
 Signature: _____

Weather: _____
 Storm Precip: _____
 Last 72 Hour Precip: _____
 Photo: _____

Outfall ID:	BFP4	BFP5		
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Description of Monitoring Site:	Did not go to BFP			
Flow Estimate (include units and method of estimation):	/			
Other Observations:				
Color (Describe):				
Turbidity:			<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Describe:				

Additional Comments: _____





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/16/2016
 Time: 5:20
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light rain
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<u>Light rain in area, no discharge</u>		
Flow Estimate (include units and method of estimation):			
Other Observations:			
Color (Describe):			
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:			

Additional Comments: _____





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/16/2016
 Time: 5:20
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light rain
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<u>Light rain in area, no discharge</u>	
Flow Estimate (include units and method of estimation):	/	
Other Observations:	/	
Color (Describe):	/	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/	

Additional Comments: _____





Date: August 16, 2016
Event: MS4 Stormwater Visual Monitoring
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Balloon Fiesta Park





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/18/2016
 Time: 5:15 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: —
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: NO

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<u>No</u>	<u>Discharge</u>	<u>observed</u>
Flow Estimate (include units and method of estimation):	<u>/</u>	<u>/</u>	<u>/</u>
Other Observations:	<u>/</u>	<u>/</u>	<u>/</u>
Color (Describe):	<u>/</u>	<u>/</u>	<u>/</u>
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	<u>/</u>	<u>/</u>	<u>/</u>

Additional Comments: _____





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/18/2016
 Time: 5:15 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: —
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: No

Outfall ID:	BFP4	BFP5
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<u>No discharge observed</u>	
Flow Estimate (include units and method of estimation):		
Other Observations:		
Color (Describe):		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:		

Additional Comments: _____





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/22/2016
 Time: 7:20 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Rain
 Storm Precip: 0.5 in
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	discharge	discharge	discharge
Flow Estimate (include units and method of estimation):	≈ 1 cfs	< 1 cfs	< 1 cfs
Other Observations:			
Color (Describe):	clear	brown	clear
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	grass in sample	sediment	no pollutants

Additional Comments: _____





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/22/2016
 Time: 7:30 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Rain
 Storm Precip: 0.5 in
 Last 72 Hour Precip: _____
 Photo: _____

Outfall ID:	BFP4	BFP5
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<u>≈ 1 cfs</u>	<u>≈ 1 cfs</u>
Flow Estimate (include units and method of estimation):	<u>discharge</u>	<u>discharge</u>
Other Observations:		
Color (Describe):	<u>whitish</u>	<u>clear</u>
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	<u>murkey / milk color</u>	<u>no pollutants</u>

Additional Comments: _____





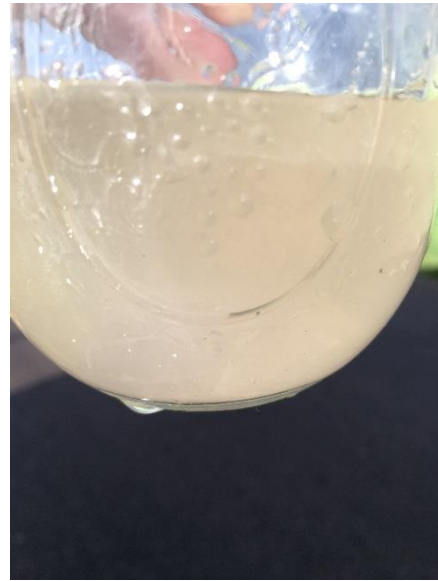
Date: August 22, 2016
Event: MS4 Stormwater Visual Monitoring
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

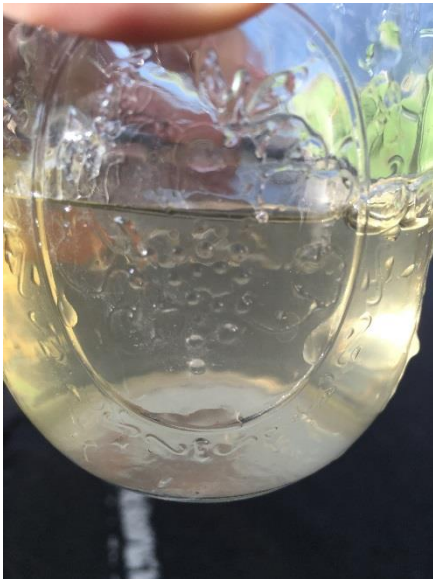
Balloon Fiesta Park



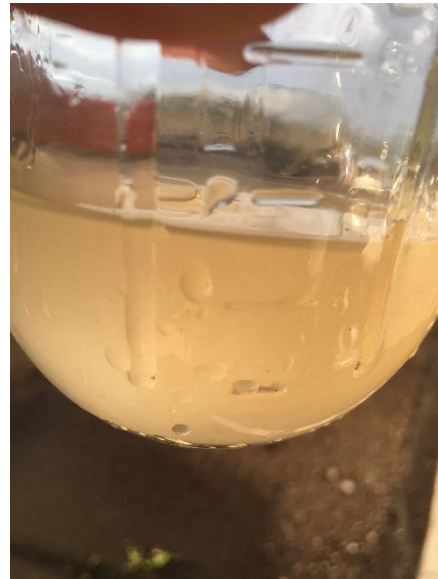
BFP1 Discharge



BFP4 Discharge



BFP5 Discharge



BFP2 Discharge



BFP3 Discharge



City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 9/12/2016
 Time: 6:00 PM
 Inspector: Sarah Luchie
 Signature: Sarah Luchie

Weather: Cloudy
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: NO

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>No discharge observed</u>		
Flow Estimate (include units and method of estimation):			
Other Observations:			
Color (Describe):			
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:			

Additional Comments: Badar indicated large storm cell, storm moved too far east and missed site.





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 9/12/2016
 Time: 6:00 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

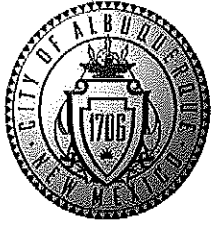
Weather: Cloudy
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: No

Outfall ID:	BFP4	BFP5
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>No Discharge</u>	
Flow Estimate (include units and method of estimation):	/	
Other Observations:	/	
Color (Describe):	/	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/	

Additional Comments: Badar indicated large storm cell, storm moved too far east & missed site.



MONTESSE PARK



City of Albuquerque
Montessa Park Open Space

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/16/2016

Weather: cloudy / no rain

Time: 4:00

Storm Precip: _____

Inspector: Rockelle Larson

Last 72 hour Precip: _____

Photo: _____

Outfall ID: **MP1** **MP2**

Flow Observed: Yes No Yes No

Description of Monitoring Site:

Flow Estimate (include units and method of estimation):

Other Observations:

Color (describe):

Turbidity: Clear Slightly Cloudy Very Cloudy Opaque

Floating Solids: Yes No Yes No

Suspended Solids: Yes No Yes No

Settled Solids: Yes No Yes No

Sheen Present: Yes No Yes No

Odor: Yes No Yes No

Foam Present: Yes No Yes No

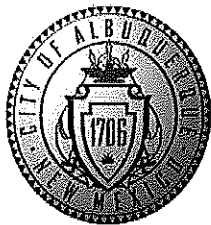
Describe:

Additional Comments:

false start - never rained at facility



LOS ALTOS GOLF COURSE



City of Albuquerque
Los Altos Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 6 SEPT. 2016

Weather: RAINY

Time: 5:11p

Storm Precip: < 0.1 inches

Inspector: ROCHELLE LARSON

Last 72 hour Precip: NONE

Photo: 2 (overall site)

Outfall ID:	LA1	LA2
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:		no runoff from maintenance bldg, fuel area, was observed
Flow Estimate (include units and method of estimation):		Ø
Other Observations:		
Color (describe):		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:		

Additional Comments: visual observation of the site completed;
no apparent stormwater quality issues





DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Rochelle Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LOS ALTOS GOLF COURSE



No runoff observed by golf maintenance wash pad.



No runoff observed from outfall LA2.

PUERTO DEL SOL GOLF COURSE



City of Albuquerque
Puerto del Sol Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 09/06/2016

Weather: Overcast/rainy (light)

Time: 5:20

Storm Precip: ~0.1 inches

Inspector: Gary Larson

Last 72 hour Precip: none

Photo: yes

Outfall ID:	PDS1	PDS2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	grated inlet	grated inlet
Flow Estimate (include units and method of estimation):	low flow $< 5 \text{ gpm}$ (visual)	\emptyset
Other Observations:		
Color (describe):	clear/pale yellow	
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	\emptyset	

Additional Comments: no apparent stormwater

quality issues





DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Gregory Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

PUERTO DEL SOL GOLF COURSE



Concrete curb from maintenance area to outfall.



Evidence of grass clippings and sediment entering outfall.



DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Gregory Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

PUERTO DEL SOL GOLF COURSE



Visual sample collected at Outfall PDS1.



New containment provided for used oil tank.

LADERA GOLF COURSE



City of Albuquerque
Ladera Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 09/06/2016

Weather: rain

Time: 4:30

Storm Precip: ~0.1 inches

Inspector: Greg Larson

Last 72 hour Precip: none

Photo: yes

Outfall ID:	LGC1	LGC2
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	course closed due	maintenance area
Flow Estimate (include units and method of estimation):	to rain could not	
Other Observations:	access LGC1	some sediment washout observed / but remained on-site
Color (describe):		pale gray
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:		

Additional Comments: observed runoff from maintenance area, no apparent stormwater issues.





DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Gregory Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LADERA GOLF COURSE



Runoff from maintenance area.



Runoff to Outfall LGC2

ARROYO DEL OSO GOLF COURSE



City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: July 1, 2016
 Time: 2:30PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light rain
 Storm Precip: -
 Last 72 Hour Precip: -
 Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	Light Rain in the area but no discharge observed.	
Flow Estimate (include units and method of estimation) :		
Other Observations:		
Color (Describe):		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:		

Additional Comments: Small amount of water observed in ADO1, not enough to get grab sample - see photo log.





Date: July 1, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG
Arroyo Del Oso Golf Course**



Not enough Discharge to take sample



City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 7/18/2016
 Time: 5:40 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light Rain
 Storm Precip: -
 Last 72 Hour Precip: -
 Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>Isolated storms in area but no discharge observed.</u>	
Flow Estimate (include units and method of estimation) :	/	
Other Observations:	/	
Color (Describe):	/	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/	

Additional Comments: _____





Date: July 18, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG
Arroyo Del Oso Golf Course**



Shopping cart and debris in Arroyo



Not enough Discharge to take sample



City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: July 24, 2016
 Time: 6:40 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Rain in Area, wind
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	AD01	AD02
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	<u>Rain in area with a lot of wind, no discharge</u>	
Flow Estimate (include units and method of estimation) :	/	
Other Observations:	/	
Color (Describe):	/	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/	

Additional Comments: _____





Date: July 24, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Arroyo Del Oso Golf Course





City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4:00 PM
 Time: 8/4/2016
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Clouds
 Storm Precip: -
 Last 72 Hour Precip: -
 Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>Radar indicated storm, no precipitation</u>	
Flow Estimate (include units and method of estimation) :	/	
Other Observations:	/	
Color (Describe):	/	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/	

Additional Comments: _____





Date: August 4, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Arroyo Del Oso Golf Course





City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/4/2016
 Time: 7:30 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Rain
 Storm Precip: 0.5 inches
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	AD01	AD02
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Rain but no discharge	discharge in Arroyo
Flow Estimate (include units and method of estimation):		< 1 cfs
Other Observations:		clean Arroyo
Color (Describe):		clear / yellow
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:		overall, mostly clean

Additional Comments: _____





Date: August 4, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Arroyo Del Oso Golf Course





City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/8/2016
Time: 5:00 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.5 in
Last 72 Hour Precip: -
Photo: yes

Outfall ID:	AD01	AD02
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Rain in area discharge	Rain + discharge
Flow Estimate (include units and method of estimation):	< 1 cfs	< 1 cfs
Other Observations:	ponding in parking lot	—
Color (Describe):	brown	brown
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	Sediment in sample	Sediment

Additional Comments: _____





Date: August 8, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Arroyo Del Oso Golf Course



ADO1



ADO2



City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/16/2016
 Time: 4:45 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light rain
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	AD01	AD02
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Light rain but no discharge observed in area	
Flow Estimate (include units and method of estimation) :	/	
Other Observations:	/	
Color (Describe):	/	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/	

Additional Comments: _____





Date: August 16, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Arroyo Del Oso Golf Course





City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/18/2016
 Time: 4:00PM
 Inspector: Sarah Luchie
 Signature: Sarah Luchie

Weather: Light rain
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

	AD01	AD02
Outfall ID:		
Flow Observed:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Radar indicated storm, light rain, no discharge	
Flow Estimate (include units and method of estimation):	/	
Other Observations:	/	
Color (Describe):	/	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/	

Additional Comments: _____





Date: August 18, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Arroyo Del Oso Golf Course





City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 6:45 PM
 Time: 8/22/2016
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light Rain
 Storm Precip: 0.5 in
 Last 72 Hour Precip:
 Photo: yes

Outfall ID:	AD01	AD02
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	rain + discharge	Light rain + discharge
Flow Estimate (include units and method of estimation) :	< 1 cfs	< 1 cfs
Other Observations:		barren
Color (Describe):	yellow/brown	brown
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	slight foam & sediment	sediment in sample

Additional Comments: _____





Date: August 22, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Arroyo Del Oso Golf Course



ADO1 Discharge



ADO2 Discharge

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City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 9/12/2016
 Time: 5:15 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light rain
 Storm Precip: —
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	ADO1	ADO2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	Radar indicated large cell, no precipitation accumulation	
Flow Estimate (include units and method of estimation) :	/	
Other Observations:	/	
Color (Describe):	/	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	/	

Additional Comments: Storm moved too far east and mostly missed site





Date: September 12, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Arroyo Del Oso Golf Course



FIRE DEPARTMENT MECHANIC



City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 7/1/16
 Time: 8:01 AM
 Inspector: Dana Peterson
 Signature: [Signature]

Weather: light Rain
 Storm Precip: _____
 Last 72 Hour Precip: _____
 Photo: 160/161 151-159

Outfall ID:	FM1	FM2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:		
Flow Estimate (include units and method of estimation):	<u>No Discharge</u>	
Other Observations:		
Color (Describe):		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:		

Additional Comments: West w/ light rain puddling on road but no flow





Date: July 1, 2016
Event: MS4 Visual Storm Water Monitoring
Inspector: Dana Peterson (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Fire Mechanic Shop



No discharge observed



No discharge observed





**City of Albuquerque
Fire Department Mechanic Shop**

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1
 Q2
 Q3
 Q4

Date: 7/18/16
 Time: 6:25pm
 Inspector: Savannah Martinez
 Signature: [Signature]

Weather: Cloudy/Rainy
 Storm Precip: 0.16
 Last 72 Hour Precip: NA
 Photo: yes

Outfall ID:	FM1	FM2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Water was puddled behind waddle and running offsite	Water was puddled behind waddle runoff offsite.
Flow Estimate (include units and method of estimation):	< 1 cfs	0 cfs
Other Observations:	Water was following path of previous oil spill (see picture)	Waddle was doing a great job of preventing runoff
Color (Describe):	Light gray/Brown color cloudy	Dark Brown puddle
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	Not too much flow Still a bit cloudy	

Additional Comments: Since time of storm was after hours, was unable to sample FM2. But took photo of puddle.
Storm precip came from NWS @ ABQ Int. Airport





Date: July 18, 2016
Event: MS4 Visual Storm Water Monitoring
Inspector: Savannah Martinez (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Fire Mechanic Shop



FM1

Discharge observed



FM1

Discharge observed



FM1

Brown and cloudy discharge



FM2

Discharge observed and puddled; sample was unable to be taken



City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 7/24/16
 Time: 6:20 pm
 Inspector: Savannah Martinez
 Signature: S.M.

Weather: Raining
 Storm Precip: NA
 Last 72 Hour Precip: NA
 Photo: yes

Outfall ID:	FM1	FM2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>Raining but dry</u>	<u>Raining but dry</u>
Flow Estimate (include units and method of estimation):	<u>[Handwritten flow curve]</u>	<u>[Handwritten flow curve]</u>
Other Observations:		
Color (Describe):		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:		

Additional Comments: Ground was dry but it was raining
dirt seemed to be piled up behind
waddles from previous storm





Date: July 24, 2016
Event: MS4 Visual Storm Water Monitoring
Inspector: Savannah Martinez (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Fire Mechanic Shop



FM1

No discharge observed



FM1

Discharge observed



City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/6/16
 Time: 5:10pm
 Inspector: Savannah Martinez
 Signature: [Signature]

Weather: Rainy
 Storm Precip: _____
 Last 72 Hour Precip: _____
 Photo: Yes

Outfall ID:	FM1	FM2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>Ground was wet</u>	<u>But no runoff Puddle behind wattle</u>
Flow Estimate (include units and method of estimation):	<u>[Diagonal line]</u>	<u>[Diagonal line]</u>
Other Observations:		
Color (Describe):		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:		

Additional Comments: Water was pooling behind FM2 wattle and FM1 wattle looked new.





Date: August 6, 2016
Event: MS4 Visual Storm Water Monitoring
Inspector: Savannah Martinez (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Fire Mechanic Shop



FM1

No discharge observed



FM1

Discharge observed



FM2

Ponding behind wattle



**City of Albuquerque
Fire Department Mechanic Shop**

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1
 Q2
 Q3
 Q4

Date: 8/8/16
 Time: 4:45 pm
 Inspector: Suzannah Martinez
 Signature: Suh me

Weather: Rainy and Windy
 Storm Precip: ≈ 0.35
 Last 72 Hour Precip: N/A
 Photo: yes

	FM1	FM2
Outfall ID:		
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	H ₂ O was running off from site	H ₂ O ponded behind waddle
Flow Estimate (include units and method of estimation):	1 CFS - H ₂ O took a few seconds to fill jar	0 CFS H ₂ O was ponded
Other Observations:	2 samples were taken inside site and on street. Street was dirtier than site.	No runoff into street
Color (Describe):	Brown Black	Slightly cloudy [grey]
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input checked="" type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	Street sample had more evidence of oil/gas than site sample	A few little sticks and a bit of dirt suspended in sample

Additional Comments: At FM1, street sample was very large puddle that was being mixed by cars driving by [see photos]





Date: August 8, 2016
Event: MS4 Visual Storm Water Monitoring
Inspector: Savannah Martinez (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Fire Mechanic Shop



FM1

Discharge observed



FM1

Sample Collected inside site



FM1

Lots of runoff ponding on street



FM1

Runoff Collect



FM2
Ponding behind wattle



FM2
Ponding inside site



FM2
Sample collected inside site

4TH STREET FUELS



City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 7/1/16
Time: 2:07 PM
Inspector: Dana Peterson
Signature: [Signature]

Weather: Wet/light rain
Storm Precip: _____
Last 72 Hour Precip: _____
Photo: ~~#162~~ 160/161

Outfall ID:	FS1
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	
Flow Estimate (include units and method of estimation):	
Other Observations:	<i>discharge</i>
Color (Describe):	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	

Additional Comments:

Wet w/ light rain, but no discharge





Date: July 1, 2016

Event: MS4 Visual Storm Monitoring

Inspector: Dana Peterson (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

4th Street Fuels



No runoff observed



No runoff observed



City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 7/18/16
Time: 6:15 pm
Inspector: Savannah Martinez
Signature: [Signature]

Weather: Cloudy/Rainy
Storm Precip: 0.16 inches
Last 72 Hour Precip: None
Photo: yes

Outfall ID:	FS1
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Raining and runoff coming off site
Flow Estimate (include units and method of estimation):	0.1 CFS, ^{how quickly} mason jar potted up
Other Observations:	Area was still raining
Color (Describe):	Black or very dark brown
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input checked="" type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	Very dark, black in color Very cloudy with some solids (settling and moving around)

Additional Comments: Area was raining slightly
Storm precip was taken at From National Weather
Service at ABA International Airport





Date: July 18, 2016

Event: MS4 Visual Storm Monitoring

Inspector: Savannah Martinez (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

4th Street Fuels



Runoff observed



Runoff very dark and cloudy



City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 7/24/16
Time: 6:15 pm
Inspector: Savannah Martinez
Signature: [Signature]

Weather: Raining
Storm Precip: N/A
Last 72 Hour Precip: N/A
Photo: yes

Outfall ID:	FS1
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>Raining but no discharge</u>
Flow Estimate (include units and method of estimation) :	<u>[Diagonal line]</u>
Other Observations:	
Color (Describe):	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	

Additional Comments: Ground was wet and it was raining but no discharge





Date: July 24, 2016

Event: MS4 Visual Storm Monitoring

Inspector: Savannah Martinez (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

4th Street Fuels



No discharge observed



City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/6/16
Time: 5:00pm
Inspector: Jasminah Martinez
Signature: [Signature]

Weather: Rainy
Storm Precip: _____
Last 72 Hour Precip: _____
Photo: yes

Outfall ID:	FS1
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	<u>wet with puddles</u> <u>No runoff</u>
Flow Estimate (include units and method of estimation):	
Other Observations:	
Color (Describe):	
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	

Additional Comments: puddles near site but no runoff





Date: August 6, 2016

Event: MS4 Visual Storm Monitoring

Inspector: Savannah Martinez (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

4th Street Fuels



No discharge observed



No discharge observed



City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 8/8/16
Time: 4:40pm
Inspector: Savannah Martinez
Signature: [Signature]

Weather: Raining + Windy
Storm Precip: 0.35"
Last 72 Hour Precip: N/A
Photo: yes

Outfall ID:	FS1
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Flowing
Flow Estimate (include units and method of estimation) :	1 CFS mason jar took 2 seconds to fill
Other Observations:	A few little sticks inside sample
Color (Describe):	Clear - little cloudy
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	Very clear and there was a lot of H2O

Additional Comments:

Very large storm, several inches of H2O pending and running offsite. Sample was relatively clean, but perhaps it was b/c I had gotten there at the tail end of the storm.





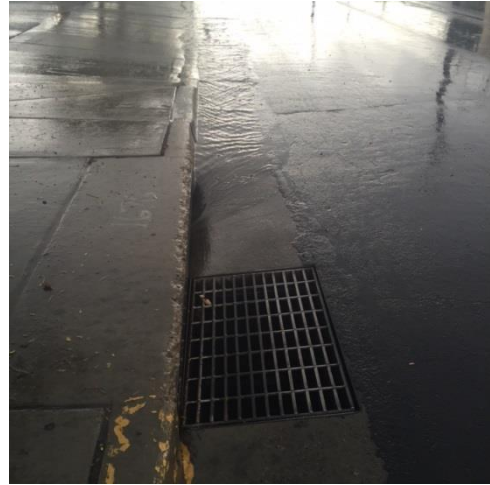
Date: August 8, 2016
Event: MS4 Visual Storm Monitoring
Inspector: Savannah Martinez (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

4th Street Fuels



Discharge observed



Discharge observed



LOMAS FUELS



City of Albuquerque
Lomas Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 6 SEPT. 2016

Weather: RAINY

Time: 5:17p

Storm Precip: 0.1 inches

Inspector: Rochelle Larson

Last 72 hour Precip: none

Photo: 1 (overall site)

Outfall ID: L1

Flow Observed: Yes No

Description of Monitoring Site: No spills present and no fueling (Fuel station)

Flow Estimate (include units and method of estimation): < 2 cfs

Other Observations: Sheet flow occurring over entire site

Color (describe):

Turbidity: Clear
 Slightly Cloudy
 Very Cloudy
 Opaque

Floating Solids: Yes No

Suspended Solids: Yes No

Settled Solids: Yes No

Sheen Present: Yes No

Odor: Yes No

Foam Present: Yes No

Describe: no grab sample collected

Additional Comments: visual observation of the site;

no apparent stormwater quality issues





DATE: 09/06/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Rochelle Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LOMAS FUEL STATION



Runoff observed at Lomas Fuel Station



Weston Solutions, Inc.
3840 Commons Ave. NE
Albuquerque, NM 87109
505-837-6520 Fax 505-837-6550
www.westonsolutions.com

January 9, 2016

Ms. Kathy Verhage, P.E.
Department of Municipal Development - Storm Drainage Design
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Reference: PROJECT NO. 8010 CITYWIDE ON-CALL NPDES AND MS4 ENGINEERING SUPPORT SERVICES 4th QUARTER 2016 UPDATE FOR TASK 3 VISUAL STORM WATER INSPECTIONS

Dear Ms. Verhage:

This Memo describes the results of the 2016 Quarter 4 Visual Storm Water Inspections for 16 City of Albuquerque (City) facilities. This evaluation and memo has been prepared to address the requirements of the U.S. Environmental Protection Agency's (EPA) Municipal Separate Storm Sewer System (MS4) Permit issued to the City in 2014 and the Multi Sector General Permit for Storm Water Discharges Associated with Industrial Activity (MSGP) at City-owned facilities. Its purpose is to document the City's compliance with the requirements relative to quarterly storm water monitoring.

To comply with the MS4 and MSGP's requirements for storm water monitoring, Weston Solutions and CDM Smith were tasked with performing quarterly visual storm monitoring at 17 City-owned facilities which meet the definition of an industrial facility in the MSGP based on audits of city owned facilities performed between 2012 and 2016. The following facilities were monitored for visual inspection, locations of these facilities are also shown in Figure 1.

- Arroyo Del Oso Golf Course
- Arroyo Maintenance Facility
- Balloon Fiesta Park/ Golf Training Center
- Albuquerque BioPark Facilities*
- Daytona Transit Center
- Fire Department Mechanical Shop
- Fleet- 4th Street Fuel Station
- Fleet- Lomas Fuel Station
- Ladera Golf Course
- Los Altos Golf Course
- Montessa Park Open Space
- Pino Yards
- Puerto del Sol Golf Course
- Street Satellite #1
- Street Satellite #2
- Street Satellite #3
- Yale Transit Center

**visual monitoring for the ABQ BioPark Facilities will begin after the implementation of their SWPPP, SPCC Plan, training, and implementation inspection estimated for 1st Quarter 2017*

Table 1 shows the Outfall identification names along with the inspection team responsible for monitoring the particular outfall.

Figure 1: Facility Site Locations

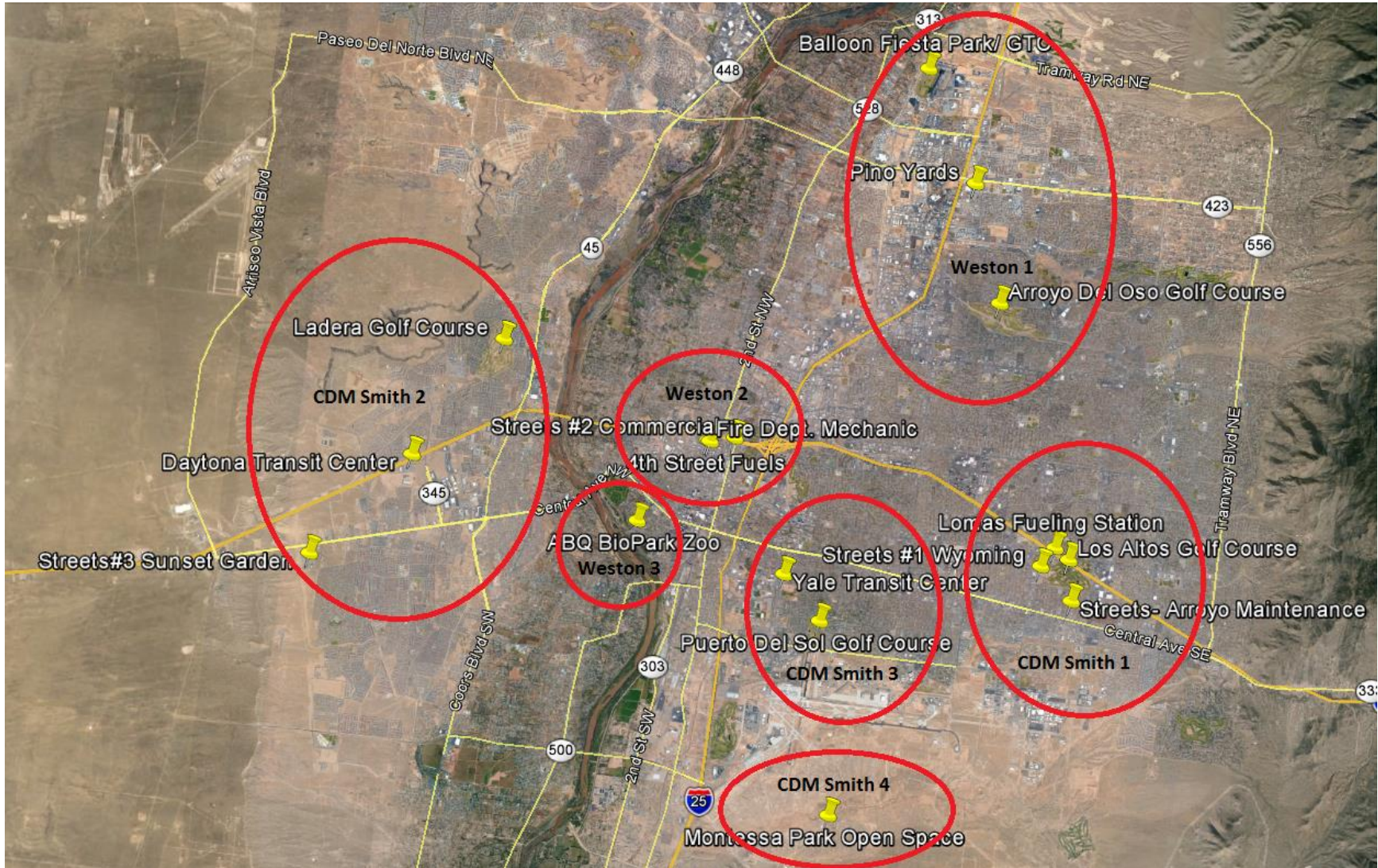


Table 1: Outfall ID and Designees

Site	Outfall ID
Weston 1	
Balloon Fiesta Park/ Golf Training Center	BFP1
	BFP2
	BFP3
	BFP4
	BFP5
Pino Yards	PY1
	PY2
	PY3
Arroyo Del Oso Golf Course	ADO1
	ADO2
Weston 2	
Fleet- 4 th Street Fuels	FS1
Fire Department Mechanic Shop	FM1
	FM2
Street Satellite #2	SS2
CDM Smith 1	
Los Altos Golf Course	LA1
	LA2
Fleet- Lomas Fuel Station	L1
Arroyo Maintenance Facility	AM1
Street Satellite #1	SS1A
	SS1B
CDM Smith 2	
Daytona Transit Center	D1
	D2
Ladera Golf Course	LGC1
	LGC2
Street Satellite #3	SS3
CDM Smith 3	
Puerto Del Sol Golf Course	PDS1
	PDS2
Yale Transit Facility	Y1
CDM Smith 4	
Montessa Park Open Space	MP1
	MP2
*Weston 3	
*ABQ BioPark Facilities	*BP1

**visual monitoring for the ABQ BioPark Facilities will begin after the implementation of their SWPPP, SPCC Plan, training and implementation inspection estimated for 1st Quarter 2017 (SWPPP and SPCC in place Aug 2016)*

Background

The MSGP establishes requirements for monitoring the quality of storm water discharges depending on the activities at the different types of industrial facility. Although benchmark monitoring is not required, the MSGP does require quarterly visual assessment of storm water quality. Visual assessment consists of the collection of grab samples from each outfall (subject to demonstration of substantially identical outfalls) and examination for the presence of color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, or other indicators of storm water pollution.

Certain criteria regarding the precipitation event must be met for an assessment event. Visual assessment of storm water must occur:

- During daylight hours
- Within 30 minutes of the start of storm water discharge (or as soon as practicable thereafter)
- At least 72 hours after the previous storm water discharge event

Weston will follow the City's existing storm water monitoring protocol outlining the locations and descriptions of all outfalls to be monitored. The protocol identifies contact persons at each facility for use in notifying City personnel when members of the storm water monitoring team are mobilizing to that location. A standard visual assessment form will be used by all staff to document the monitoring activities.

Quarter 4 Monitoring Results

The 4th Quarter sampling period ran from October 1 to December 31, 2016.

- Weston Team 1 mobilized 2 times during the three months to collect samples from storm events. A visual sample was collected from all outfalls over the course of the 2 mobilizations. No repeat samples were collected.
- Weston Team 2 mobilized 1 time and collected a sample from all outfalls over the course of the 1 mobilization. No repeat samples were also collected.
- CDM Smith Team 1 mobilized 1 time during the three months to collect samples from storm events. No visual samples were collected from any outfalls during the 1 mobilization. No repeat samples were collected.
- CDM Smith Team 2 mobilized 1 time during the three months to collect samples from storm events. A visual sample was collected from 3 outfalls over the course of the 1 mobilization. No repeat samples were collected.
- CDM Smith Team 3 did not mobilize during the three months to collect samples from storm events. No visual samples were collected. No repeat samples were collected.
- CDM Smith Team 4 did not mobilize during the three months to collect samples from storm events. No visual sample was collected from any outfalls. No repeat samples were collected.

The monitoring reports and photo logs from Weston Teams 1-2 and CDM Teams 1-4 can be found in the Appendix. Any outfalls that were not monitored in Quarter 4 will be attempted to be made up during Quarter 1 of 2017 pending weather conditions.

Observed Problems

In general very few pollution problems were observed at any of the outfalls with few exceptions. Many of the grab samples exhibited presence of sediment, but no pollutants required follow up inspections or actions to occur.

Results from the Quarter 4 Visual Inspections can be found in the Appendix. Both visual observations and grab samples were noted at most facilities during the 4th Quarter. The only facilities that were not observed during the 4th Quarter were Los Altos Golf Course, Lomas Fuel Station, Arroyo Maintenance, Streets Maintenance #1, Ladera Golf Course, Puerto Del Sol Golf Course, Yale Transit, and Montessa Park. All facilities that did not produce a sample in Quarter 4 2016 will be attempted to be made up in the coming months.

We appreciate the opportunity to provide professional consulting services to you and we look forward to assisting you in the next quarter. Please contact Sarah Luckie at (505) 837-6540 (Sarah.Luckie@WestonSolutions.com) or Brad Sumrall at (505) 837-6566 (Brad.Sumrall@WestonSolutions.com) if you have any questions or need additional information.

Sincerely,
WESTON SOLUTIONS, INC.



Dana Peterson, PE
Project Engineer

APPENDIX: Q4 INSPECTION FORMS AND PHOTO LOGS

APPENDIX: Q3 INSPECTION FORMS & PHOTO LOGS- VISUAL INSPECTIONS

STREETS SATELLITE #1

STREETS SATELLITE #2



City of Albuquerque
Street Maintenance Satellite #2

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 11/4/2016
Time: 3:15 PM
Inspector: Sarah Luchie
Signature: Sarah Luchie

Weather: Rain
Storm Precip: 0.5 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	SS2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	running down gutter
Flow Estimate (include units and method of estimation):	< 1 cfs
Other Observations:	Bubbles seen exiting site
Color (Describe):	orange/brown
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	

Additional Comments: Some foam present exiting site - small amount, no noticeable sheen in sample and no smell. (see site photos)





Date: November 4, 2016

Event: MS4 Visual storm Water Monitoring

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Street Maintenance #2



Sample Collected



Some foam/bubbles present

--	--

STREETS SATELLITE #3



City of Albuquerque
Street Maintenance Satellite #3

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 11/24/16

Weather: LIGHT RAIN

Time: 9:17

Storm Precip: 0.09 inches @ Support

Inspector: GREG LARSON
CON

Last 72 hour Precip: NO thru 4:15 am

Photo: YES

Outfall ID: SS3

Flow Observed: Yes No

Description of Monitoring Site:

Flow Estimate (include units and method of estimation): LOW

Other Observations: WADDLE INSTALLED

Color (describe): PALE BROWN

Turbidity: Clear
Slightly Cloudy
Very Cloudy
Opaque

Floating Solids: Yes No MINOR

Suspended Solids: Yes No

Settled Solids: Yes No

Sheen Present: Yes No

Odor: Yes No

Foam Present: Yes No

Describe:

Additional Comments: SHEEN PRESENTS UPSTREAM FROM WADDLE

SEEMED TO ORIGINATE FROM WHERE

STREET SWEEPERS/VEHICLES WERE PARKED.





DATE: 11/04/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Connor Kelley, Greg Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LOMAS FUEL STATION



Sheen observed in runoff upstream of outfall.



Wattles installed upstream of outfall.



DATE: 11/04/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Connor Kelley, Greg Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LOMAS FUEL STATION



Small sheen present in sample collected upstream of outfall.



Outfall discharges to detention pond.



DATE: 11/04/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Connor Kelley, Greg Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LOMAS FUEL STATION



Sheen appeared to originate from pavement stains neared parked vehicles.



Street sweeper was cleaning the site's paved area during inspection event.

STREETS SATELLITE ARROYO MAINTENANCE

PINO YARDS



City of Albuquerque
Pino Yards Complex

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 10/8/2016
Time: 11:15 AM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.4 in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	PY1	PY2	PY3
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	some litter in grate	clean grate	discharge down street
Flow Estimate (include units and method of estimation):	< 1 cfs	< 1 cfs	≈ 1 cfs
Other Observations:			
Color (Describe):	yellow	clear	yellow
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	fairly clean	clean	some sediment overall clean

Additional Comments: _____

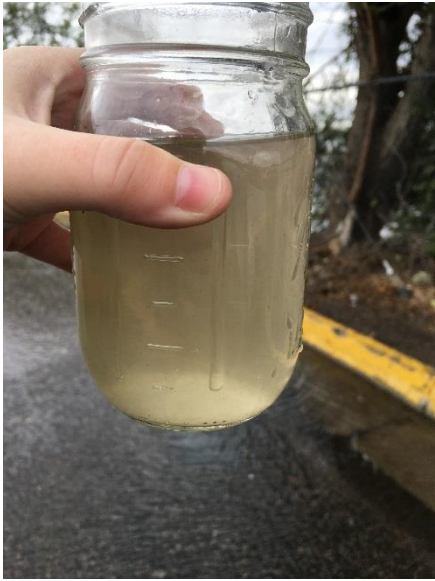




Date: October 08, 2016
Event: MS4 Visual Monitoring Assessment
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

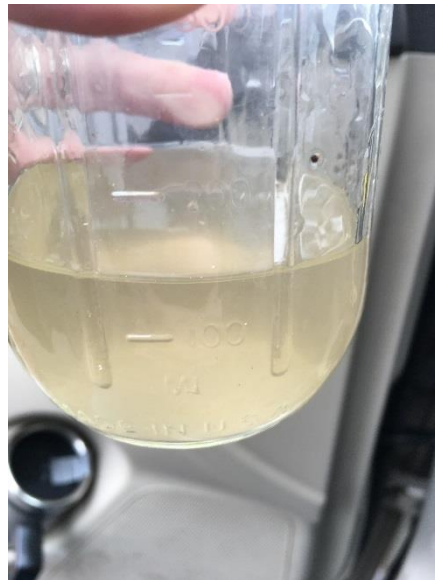
Pino Yards



PY3 Sample



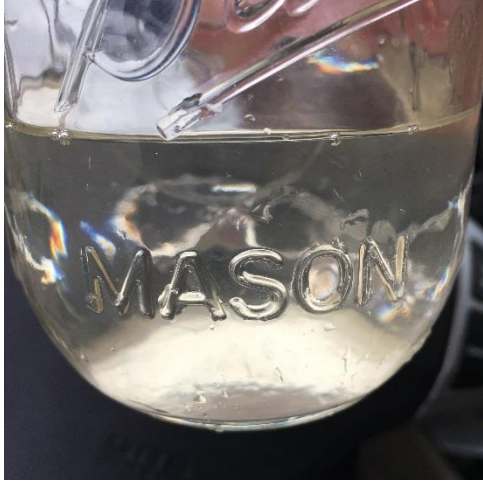
PY3 Discharge



PY1 Sample

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Pino Yards



PY2 Sample

TRANSIT- YALE

TRANSIT- DAYTONA



City of Albuquerque
West Side Maintenance Facility (Daytona)

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 11/4/16

Weather: rain

Time: 8:56 AM

Storm Precip: 0.09 inches @Sunport

Inspector: Greg Larson

Last 72 hour Precip: no thru 4:15pm

Connor Kelley

Photo: yes

Outfall ID: **D1** **D2**

	D1	D2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	MANHOLE	manhole
Flow Estimate (include units and method of estimation):	MEDIUM / MODERATE FLOW (VISUAL)	medium / moderate flow (visual)
Other Observations:	/	/
Color (describe):	PALE / GRAY	pale / yellow
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:		

Additional Comments: no apparent issues





DATE: 11/4/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Greg Larson, Connor Kelley (CDM Smith)

CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG

DAYTONA TRANSIT CENTER



Outfall D2 – Bailer used to retrieve stormwater sample for visual observation.



Outfall D2 – Stormwater sample was pale yellow. No major impacts to stormwater quality observed.



Outfall D1 – Stormwater sample collected from manhole



Outfall D1 – No apparent stormwater quality issues.

BALLOON FIESTA PARK/ GOLF TRAINING CENTER



City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 11/4/2016
 Time: 10:30 AM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light Rain
 Storm Precip: 0.18 in
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP1	BFP2	BFP3
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Light rain in the area with small amount of discharge		
Flow Estimate (include units and method of estimation):	< 1 cfs	< 1 cfs	< 1 cfs
Other Observations:			
Color (Describe):	clear / yellow	white	brown
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	Some sediment and grass	sample milky but clean	Sediment in sample

Additional Comments: _____





City of Albuquerque
Balloon Fiesta Park and Golf Training Center

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 11/4/16
 Time: 10:30 AM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Light rain
 Storm Precip: 0.10 in
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	BFP4	BFP5
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	light rain with small discharge	
Flow Estimate (include units and method of estimation):	< 1 cfs	< 1 cfs
Other Observations:		
Color (Describe):	brown	brown
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	Some sediment in sample	grass & sediment in sample

Additional Comments: _____

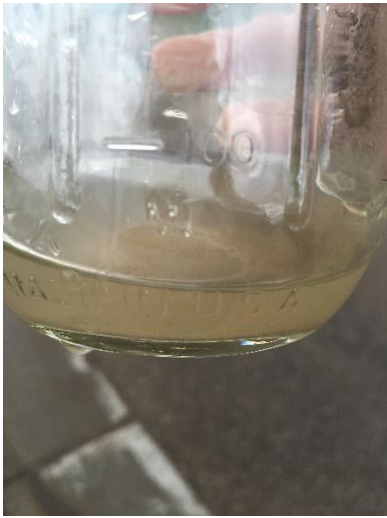




Date: November 4, 2016
Event: MS4 Stormwater Visual Monitoring
Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

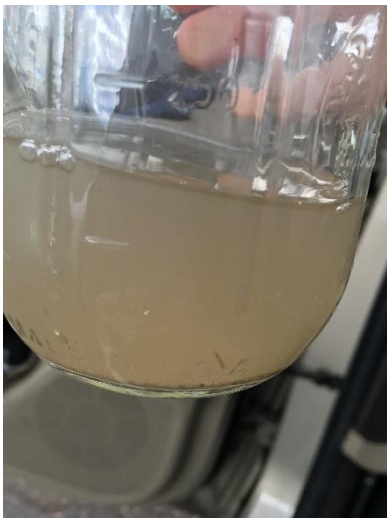
Balloon Fiesta Park



BFP1 Discharge



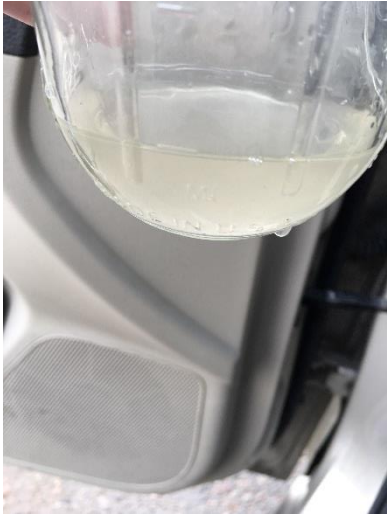
BFP4 Discharge



BFP5 Discharge



BFP2 Discharge



BFP3 Discharge

MONTESSE PARK

LOS ALTOS GOLF COURSE



City of Albuquerque
Los Altos Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4 Nov 2016

Weather: RAIN

Time: 2:19 PM

Storm Precip: LO. 1 in.

Inspector: AMY REED

Last 72 hour Precip: NONE

Photo: 321

	LA1	LA2
Outfall ID:	LA1	LA2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:	on golf course	No runoff currently present from maintenance block
Flow Estimate (include units and method of estimation):	∅	∅
Other Observations:		
Color (describe):		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:	no flow	

Additional Comments: OBSERVATION: NO STORMWATER RUNOFF
CONTAMINATION OBSERVED in pooling
water by LA2 or by wet surrounding
SURFACES





DATE: 11/04/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Amy Reed (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LOS ALTOS GOLF COURSE



Outfall LA2: No apparent impact to stormwater quality observed in pooled runoff.

PUERTO DEL SOL GOLF COURSE

LADERA GOLF COURSE



City of Albuquerque
Ladera Golf Course

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 11/4/16

Weather: CLOUDY

Time: 9:50

Storm Precip: 0.09 inches @ Summit

Inspector: GREG LARSON

Last 72 hour Precip: NO

CONNOR KELLEY

Photo: YES

thru
4:15pm

Outfall ID:	LGC1	LGC2
Flow Observed:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Description of Monitoring Site:		
Flow Estimate (include units and method of estimation):	<u>NONE</u>	
Other Observations:		
Color (describe):		
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Describe:		

Additional Comments: TRASH/DEBRIS OBSERVED IN GGC1

JUST FINISHED RAINING





DATE: 11/04/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Connor Kelley, Gregory Larson (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LADERA GOLF COURSE



Runoff not observed at Outfall LGC@.



Debris observed in Outfall LGC1

ARROYO DEL OSO GOLF COURSE



City of Albuquerque
Arroyo Del Oso Golf Course

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 10/8/2016
 Time: 10:45 AM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Rain
 Storm Precip: 0.4 inch
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	AD01	AD02
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Light rain, discharge	discharge
Flow Estimate (include units and method of estimation):	< 1 cfs	< 1 cfs
Other Observations:		
Color (Describe):	gray	brown
Turbidity:	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input checked="" type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input checked="" type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	small grass bits & sediment	debris and sediment in sample

Additional Comments: _____





Date: October 08, 2016

Event: MS4 Stormwater Visual Inspection

Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Arroyo Del Oso Golf Course



ADO1 Sample



ADO2 Sample

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FIRE DEPARTMENT MECHANIC



City of Albuquerque
Fire Department Mechanic Shop

Quarterly Visual Monitoring of
 Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 11/4/2016
 Time: 2:45 PM
 Inspector: Sarah Luckie
 Signature: Sarah Luckie

Weather: Rain
 Storm Precip: 0.7 in
 Last 72 Hour Precip: —
 Photo: yes

Outfall ID:	FM1	FM2
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Rain, discharge down gutter	discharge, ponding gutter buddie.
Flow Estimate (include units and method of estimation):	≈ 1 cfs	< 1 cfs
Other Observations:		
Color (Describe):	gray/brown	yellow
Turbidity:	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque	<input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	Some sediment and leafs	Some sediment mostly clear gutter buddie works.

Additional Comments: _____





Date: November 4, 2016
Event: MS4 Visual Storm Water Monitoring
Inspector: Sarah Luckie(Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

Fire Mechanic Shop



FM2



FM1

4TH STREET FUELS



City of Albuquerque
4th Street Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 11/4/2016
Time: 2:30 PM
Inspector: Sarah Luckie
Signature: Sarah Luckie

Weather: Rain
Storm Precip: 0.7in
Last 72 Hour Precip: —
Photo: yes

Outfall ID:	FS1
Flow Observed:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Description of Monitoring Site:	Rain, discharge down gutter
Flow Estimate (include units and method of estimation):	~ 1 cfs
Other Observations:	
Color (Describe):	clear
Turbidity:	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly Cloudy <input type="checkbox"/> Very Cloudy <input type="checkbox"/> Opaque
Floating Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Suspended Solids:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Settled Solids:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Sheen Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Odor:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Foam Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Describe:	Some sediment in sample

Additional Comments: _____





Date: November 4, 2016

Event: MS4 Visual Storm Monitoring


Inspector: Sarah Luckie (Weston)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

4th Street Fuels



Sample

4 th Street Fuels	
 <p>Sample</p>	

LOMAS FUELS



City of Albuquerque
Lomas Fuel Station

Quarterly Visual Monitoring of
Storm Water Outfall Discharges

Q1 Q2 Q3 Q4

Date: 4 NOV 2014

Weather: RAIN

Time: 2:14pm

Storm Precip: 20.1 inches

Inspector: Amy REED

Last 72 hour Precip: NONE

Photo: 1

Outfall ID: L1

Flow Observed: Yes No

Description of Monitoring Site: NO SPILLS
NO CARS CURRENTLY
FUELED @

Flow Estimate (include units and method of estimation): 1-2 cfs

Other Observations: SHEET
FLOW OVER
SITE.

Color (describe):

Turbidity: Clear
 Slightly Cloudy
 Very Cloudy
 Opaque

Floating Solids: Yes No

Suspended Solids: Yes No

Settled Solids: Yes No

Sheen Present: Yes No

Odor: Yes No

Foam Present: Yes No

Describe: NO
GRAB
SAMPLE
COLLECTED

Additional Comments: OBSERVATION: STORMWATER RUNOFF

QUALITY SHOWS NO SIGNS OF
ISSUES OR APPARENT CONTAMINATION





DATE: 11/04/2016

EVENT: MS4 Visual Storm Water Monitoring Assessment

INSPECTOR(S): Amy Reed (CDM Smith)

**CITY OF ALBUQUERQUE
STORM WATER MONITORING PHOTOGRAPH LOG**

LOMAS FUEL STATION



Outfall L1: No apparent impacts to stormwater quality apparent in pooled runoff.



Outfall L1: No apparent impacts to stormwater quality apparent in pooled runoff.



6000 Uptown Blvd. NE, Suite 200
Albuquerque, NM 87110
tel: 505 243-3200
fax: 505 243-2700

January 6, 2016

Mr. Brad Sumrall, P.E.
Weston Solutions
3840 Commons Ave NE
Albuquerque, New Mexico 87109

Subject: Visual Stormwater Monitoring at the City of Albuquerque —Fourth Quarter 2016 (Task 03 Visual Stormwater Monitoring)
CDM Smith Project No: 76998-114606

Dear Mr. Sumrall:

CDM Smith Inc. (CDM Smith) herein notifies Weston Solutions (Weston) that a visual stormwater monitoring event was not conducted for the following City of Albuquerque facilities during the fourth quarter: Arroyo Maintenance, Montessa Park, Puerto Del Sol Golf Course, Street Satellite #1, and the Yale Transit Yard. National Weather Service (NWS) data, from a weather station located approximately between two and eight miles from the facilities, provided precipitation events for October through December 2016 is included in **Attachment A**. Daily weather reports, with data obtained from the weather station, for days when precipitation was observed, according to NWS data, are included in **Attachment B**. The events with measurable precipitation occurring during this time are summarized in **Table 1**.

Section 3.2 of 2015 Multi Sector General Permit (MSGP) describes the criteria regarding the precipitation event that must be met to qualify as an assessment event. Visual assessment of stormwater must occur:

- On samples collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample must be collected as soon as practicable after the first 30 minutes and you must document why it was not possible to take the sample within the first 30 minutes.
- For storm events, on discharges that occur at least 72 hours (three days) from the previous discharge.

An additional limitation on the timing of sampling activities within the City of Albuquerque is contained in the City's Storm Water Management Plan (SWMP, December, 2016). Section 13.3.1.2 of the SWMP limits sampling to normal business hours – Monday through Friday, 7:30 am to 5:00 pm and not required on the following observed holidays: Memorial Day; Independence Day; Labor



Day; Thanksgiving Day; and Christmas Day through New Year’s Day. Therefore, storm events that occur outside of normal business hours or on a holiday are not considered qualifying events.

CDM Smith’s past visual monitoring experience for City of Albuquerque facilities has shown that stormwater discharges from facilities typically does not occur for precipitation events of less than 0.1 inches of measurable rainfall. Therefore, events with less than 0.1 inch of measurable rainfall do not create a discharge and are not considered for visual assessment.

Table 1 Fourth Quarter 2016 Precipitation Events

Date	Total Precipitation (Inches)	Event Start Time	Notes
Monday, 10/3/2016	0.05	2:52 am	Light rain started at 2:52 am. Non qualifying event due to insufficient precipitation to create discharge and outside normal business hours.
Saturday, 10/8/2016	0.01	4:52 pm	Light rain started at 4:52 pm. Non qualifying event due to insufficient precipitation to create discharge and outside normal business hours.
Sunday, 10/9/2016	0.33	5:52 pm	Rain and thunderstorm started at 5:52 pm. Non qualifying event due to event starting outside normal business hours.
Wednesday, 11/2/2016	0.02	10:52 pm	Rain started at 10:52 pm. Non qualifying event due to insufficient precipitation to create discharge and outside normal business hours.
Thursday, 11/3/2016	0.04	12:52 am	Light thunderstorms and rain started at 12:52 am. Non qualifying event due to insufficient precipitation to create discharge and outside normal business hours.
Friday, 11/4/2016	0.22	7:52 am	Isolated showers throughout various areas of Albuquerque.
Saturday, 11/5/2016	0.55	12:52 am	Rain started at 12:52 am. Non qualifying event due to rain in past 72 hours and outside normal business hours.
Thursday, 12/22/2016	0.44	2:18 am	Rain started at 2:18 am. Non qualifying event due to event occurring and outside normal business hours.
Friday, 12/23/2016	0.04	12:05 am	Thunderstorms and rain started at 12:05 am. Non qualifying event due to rain in past 72 hours and outside normal business hours.
Saturday, 12/31/2016	0.05	8:40 am	Light thunderstorms and rain started at 8:40 am. Non qualifying event due to insufficient precipitation to create discharge and outside normal business hours.

Table Notes: Events shaded in gray are non-qualifying events. Bold indicates qualifying events.



Mr. Brad Sumrall, P.E.
January 6, 2016
Page 3

As seen in **Table 1**, of the 10 storm events with measurable precipitation that occurred in the fourth quarter, only one of the events are considered a qualifying assessment event per the criteria listed above. During this event which occurred November 4th 2016, CDM Smith mobilized to the following sites to perform visual stormwater monitoring: Ladera Golf Course, Lomas Fuel Station, Los Altos Golf Course, Streets Satellite #3 and the West Transit Facility (Daytona). During this event, CDM Smith made the determination not to perform visual monitoring at the other facilities due to the observed lack of rainfall at the sites based on visual storm tracking and radar data provided by weather tracking websites. Due to these circumstances a visual monitoring event was not performed during the fourth quarter of 2016 at the aforementioned facilities.

CDM Smith will attempt to perform multiple stormwater monitoring events in the first and second quarters of 2017 in order to capture 4 total monitoring events at each facility between July 2016 and June 2017.

Please contact CDM Smith at (505) 243-3200 if you have any questions or comments regarding this report.

Sincerely,

A handwritten signature in blue ink, appearing to read "Gregory S. Larson".

Gregory S. Larson, P.E.
Project Engineer
CDM Smith Inc.

A handwritten signature in black ink, appearing to read "Kelly A. Collins".

Kelly A. Collins, PG, BCES
Principal, Task Order Manager
CDM Smith Inc.

Attachments

cc: File

ATTACHMENT A

NWS WEATHER SUMMARY OCTOBER 1, 2016 TO DECEMBER 31, 2016

Weather History for KABQ - October, 2016

From:

October

1

2016

To:

December

31

2016

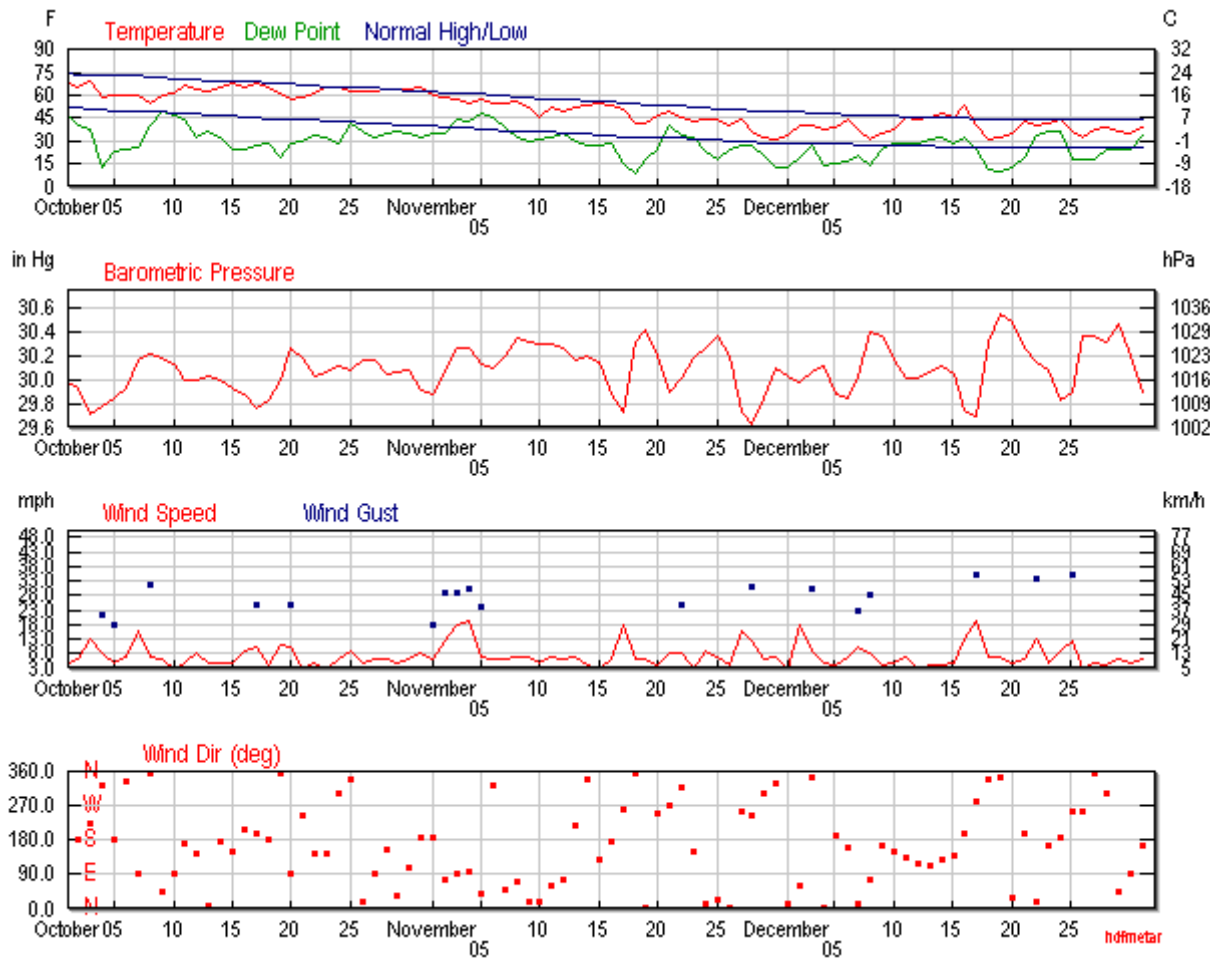
Get History

Daily	Weekly	Monthly	Custom
-------	--------	---------	---------------

	Max	Avg	Min	Sum
Temperature				
Max Temperature	85 °F	61 °F	39 °F	
Mean Temperature	69 °F	50 °F	31 °F	
Min Temperature	58 °F	39 °F	20 °F	
Degree Days				
Heating Degree Days (base 65)	34	15	0	1354
Cooling Degree Days (base 65)	4	0	0	18
Growing Degree Days (base 50)	18	5	0	466
Dew Point				
Dew Point	56 °F	29 °F	-5 °F	
Precipitation				
Precipitation	0.40 in	0.03 in	0.00 in	2.28 in
Snowdepth	0.0 in	0.0 in	0.0 in	-
Wind				

	Max	Avg	Min	Sum
Wind	44 mph	7 mph	0 mph	
Gust Wind	56 mph	27 mph	16 mph	
Sea Level Pressure				
Sea Level Pressure	30.65 in	30.08 in	29.36 in	

Custom Weather History Graph



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KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

October

1

Submit

Weather History & Observations

2016	Temp. [°F]			Dew Point [°F]			Humidity [%]			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
Oct	80	68	56	56	47	38	93	58	23	30.06	29.98	29.89	10	10	10	14	5	19	0.00	
	79	66	53	45	41	37	64	44	23	30.00	29.92	29.82	10	10	10	15	6	19	0.00	
	80	69	58	54	38	20	86	49	11	29.81	29.71	29.58	10	10	10	29	13	38	0.05	Rain
	70	59	47	19	13	9	26	18	10	29.86	29.77	29.68	10	10	10	17	8	23	0.00	
	75	60	44	28	23	18	40	28	16	29.94	29.85	29.77	10	10	10	21	5	26	0.00	
	73	60	47	32	24	15	46	31	15	30.03	29.93	29.84	10	10	10	18	7	22	0.00	
	70	60	49	34	26	13	52	35	18	30.25	30.16	30.05	10	10	10	28	16	35	0.00	
	62	55	47	52	41	27	100	69	38	30.38	30.22	30.14	10	10	4	25	7	32	0.34	Rain , Thunderstorm
	71	60	49	53	50	47	100	72	44	30.33	30.18	30.06	10	10	4	15	6	18	0.35	Rain , Thunderstorm
	74	61	48	51	47	39	100	66	31	30.31	30.13	30.02	10	10	10	12	3	15	0.00	Fog
	79	67	54	51	44	31	89	57	25	30.11	30.00	29.89	10	10	10	10	5	15	0.00	
	78	64	50	42	33	24	59	37	15	30.08	30.00	29.95	10	10	10	29	8	35	0.00	
	77	63	49	43	37	26	80	48	16	30.19	30.03	29.96	10	10	10	16	5	20	0.00	
	79	65	51	40	32	23	59	36	12	30.09	29.99	29.88	10	10	10	14	5	16	0.00	
	85	68	51	30	25	18	44	27	9	30.00	29.92	29.83	10	10	10	13	5	15	0.00	
	83	66	49	30	24	15	41	25	8	29.99	29.87	29.76	10	10	10	22	9	31	0.00	
	85	68	51	31	27	21	38	24	10	29.84	29.76	29.66	10	10	10	25	10	31	0.00	
	80	65	50	32	29	25	50	32	13	29.93	29.83	29.75	10	10	10	14	4	19	0.00	
	72	62	51	33	19	0	43	25	7	30.18	30.00	29.85	10	10	10	28	11	34	0.00	
	66	57	47	34	28	12	50	35	19	30.37	30.27	30.17	10	10	10	24	10	32	0.00	
	73	59	44	33	30	27	58	40	22	30.39	30.18	30.05	10	10	10	9	3	13	0.00	
	77	62	47	37	34	30	66	42	18	30.14	30.03	29.92	10	10	10	9	5	11	0.00	
	80	66	51	37	33	30	54	36	17	30.15	30.06	30.01	10	10	10	9	3	10	0.00	
	77	65	52	33	29	26	35	26	16	30.21	30.11	30.04	10	10	10	13	6	16	0.00	
	73	63	53	50	42	33	60	47	34	30.20	30.07	30.00	10	10	10	25	9	27	T	Rain
	75	63	50	43	36	27	68	42	16	30.25	30.17	30.11	10	10	10	16	5	23	0.00	
	76	63	50	37	33	30	50	36	21	30.27	30.16	30.08	10	10	10	12	6	15	0.00	
	75	64	53	37	35	31	50	36	21	30.13	30.04	29.96	10	10	10	12	6	16	0.00	

2016	Temp. [°F]			Dew Point [°F]			Humidity [%]			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	78	64	50	39	37	36	59	41	22	30.11	30.06	30.01	10	10	10	16	5	22	0.00	
	77	64	51	37	35	33	54	38	22	30.19	30.08	29.99	10	10	10	16	6	19	0.00	
	75	65	54	37	32	25	50	33	16	30.00	29.91	29.81	10	10	10	21	8	26	0.00	

2016	Temp. [°F]			Dew Point [°F]			Humidity [%]			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
Nov	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
	70	60	50	39	35	30	54	39	23	30.07	29.87	29.80	10	10	10	16	6	21	0.00	
	72	59	45	47	35	28	71	46	20	30.25	30.06	29.93	10	10	10	30	12	39	0.02	Rain
	64	57	50	47	44	39	83	66	48	30.34	30.27	30.19	10	10	10	30	18	39	0.04	Rain
	60	55	49	47	43	40	93	72	51	30.42	30.26	30.20	10	9	2	37	19	42	0.20	Rain
	65	57	48	51	48	45	100	78	56	30.28	30.12	29.98	10	10	5	24	7	29	0.40	Rain , Thunderstorm
	62	55	47	51	46	40	100	72	43	30.19	30.09	30.00	10	8	1	16	6	21	0.00	
	68	55	42	43	39	27	96	63	29	30.30	30.20	30.11	10	10	10	20	6	25	0.00	
	64	56	47	36	32	28	60	45	30	30.44	30.35	30.26	10	10	10	26	7	34	0.00	
	64	52	40	34	30	19	79	50	20	30.42	30.32	30.21	10	10	10	17	7	22	0.00	
	56	46	36	35	31	26	70	54	38	30.37	30.29	30.23	10	10	10	12	5	16	0.00	
	64	52	40	36	33	28	79	53	27	30.38	30.30	30.21	10	10	10	21	7	24	0.00	
	59	50	40	36	35	33	85	63	40	30.38	30.26	30.16	10	10	10	17	6	22	0.00	
	66	52	38	37	30	23	79	50	21	30.25	30.17	30.08	10	10	10	17	7	21	0.00	
	65	53	40	30	27	23	62	42	22	30.27	30.20	30.13	10	10	10	10	4	12	0.00	
	70	55	39	29	27	24	55	37	18	30.33	30.14	30.04	10	10	10	8	3	10	0.00	
	66	53	39	32	28	24	65	44	22	30.02	29.88	29.69	10	10	10	17	6	22	0.00	
	63	51	38	30	15	-5	41	25	9	30.05	29.73	29.56	10	10	7	44	18	56	0.00	
	52	42	31	12	8	1	43	28	13	30.46	30.32	30.09	10	10	10	15	6	18	0.00	
	54	42	30	22	18	13	53	40	26	30.53	30.42	30.32	10	10	10	14	6	18	0.00	
	60	47	33	28	24	21	61	44	26	30.33	30.20	30.04	10	10	10	13	4	17	0.00	
	60	50	40	47	41	29	100	75	49	30.05	29.90	29.71	10	10	2	37	8	51	0.36	Rain , Thunderstorm
	52	46	39	35	34	32	79	65	50	30.20	30.01	29.86	10	10	10	20	8	26	0.00	
	53	43	32	36	32	30	96	69	41	30.26	30.18	30.12	10	10	9	12	3	13	0.00	
	53	44	34	31	23	15	82	53	24	30.36	30.26	30.14	10	10	10	20	9	25	0.00	
	53	44	35	24	18	13	54	38	22	30.49	30.37	30.30	10	10	10	22	7	28	0.00	
	49	40	30	34	25	21	69	54	38	30.35	30.20	29.90	10	10	10	13	4	16	0.00	
	51	44	36	38	27	14	86	55	24	29.86	29.73	29.63	10	10	8	36	16	44	T	Rain

2016	Temp. [°F]			Dew Point [°F]			Humidity [%]			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	41	36	30	33	27	21	100	73	45	29.70	29.63	29.55	10	10	4	32	12	41	0.01	Snow
	40	32	24	30	20	17	92	66	40	30.11	29.85	29.62	10	10	5	16	6	20	T	Snow
	42	31	20	19	13	7	84	54	23	30.18	30.10	30.03	10	10	10	18	7	27	0.00	
2016	Temp. [°F]			Dew Point [°F]			Humidity [%]			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
Dec	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	low	high	avg	high	sum	
	45	34	22	15	13	11	65	46	27	30.10	30.02	29.95	10	10	10	9	3	11	0.00	
	49	40	31	25	19	14	64	45	26	30.05	29.98	29.91	10	10	9	33	18	40	T	Snow
	48	40	32	31	27	17	92	67	41	30.12	30.06	29.94	10	9	6	31	9	35	T	Snow
	48	38	28	19	14	12	69	47	25	30.21	30.11	30.03	10	10	10	13	5	16	0.00	
	54	39	23	19	15	12	55	40	24	29.99	29.87	29.74	10	10	10	10	4	13	0.00	
	53	44	35	21	17	14	47	36	24	29.93	29.84	29.74	10	10	10	17	7	24	0.00	
	45	38	30	27	20	14	59	48	37	30.22	30.02	29.81	10	10	10	26	10	29	0.00	
	39	31	23	19	14	12	65	53	40	30.47	30.39	30.25	10	10	10	28	8	33	0.00	
	45	35	25	27	24	18	81	65	49	30.47	30.37	30.29	10	10	10	12	4	16	0.00	
	51	38	25	30	28	23	92	67	42	30.30	30.16	30.01	10	10	10	13	5	16	0.00	
	59	46	32	36	29	25	82	56	30	30.09	30.01	29.94	10	10	10	16	7	21	0.00	
	56	44	31	33	29	25	78	61	43	30.07	30.01	29.92	10	10	10	12	3	14	0.00	
	58	46	33	34	31	27	75	61	46	30.14	30.06	29.99	10	10	10	10	4	12	0.00	
	60	48	35	36	32	28	85	60	35	30.17	30.11	30.06	10	10	10	14	4	19	0.00	
	57	46	35	33	29	27	76	55	33	30.14	30.04	29.89	10	10	10	12	5	14	0.00	
	60	53	45	40	32	21	61	48	34	29.87	29.74	29.47	10	10	10	37	13	46	0.00	
	53	41	28	39	24	12	61	47	33	30.15	29.70	29.36	10	10	4	38	19	47	0.15	Rain
	40	31	21	15	11	5	68	46	23	30.47	30.32	30.17	10	10	10	12	7	15	0.00	
	43	32	21	14	10	8	65	45	24	30.65	30.54	30.48	10	10	10	17	7	21	0.00	
	47	35	23	15	13	8	68	45	22	30.61	30.48	30.36	10	10	10	12	5	15	0.00	
	56	43	30	25	19	13	63	43	22	30.33	30.26	30.17	10	10	10	30	6	37	0.00	
	45	40	35	37	34	25	100	73	45	30.28	30.14	30.07	10	7	0	30	13	39	0.31	Fog , Rain
	50	42	33	40	37	33	100	83	66	30.13	30.08	30.02	10	6	0	13	5	14	0.02	Fog , Rain
	55	44	32	40	36	31	100	75	50	30.03	29.83	29.53	10	10	10	28	9	35	T	Rain
	45	37	28	30	18	11	100	66	32	30.18	29.90	29.63	10	10	9	33	12	42	T	Snow
	41	32	22	20	18	15	84	59	34	30.46	30.36	30.19	10	10	10	9	3	11	0.00	
	50	38	26	23	18	13	69	48	27	30.46	30.37	30.27	10	10	10	13	5	15	0.00	

2016	Temp. [°F]			Dew Point [°F]			Humidity [%]			Sea Level Press. (in)			Visibility (mi)			Wind (mph)			Precip. (in)	Events
	50	39	27	26	24	21	78	57	36	30.39	30.31	30.22	10	10	10	13	4	17	0.00	
	43	36	29	25	24	22	72	59	46	30.53	30.47	30.39	10	10	10	14	6	17	0.00	
	46	35	24	28	24	20	88	67	45	30.43	30.20	29.98	10	10	10	10	5	13	0.00	Fog
	49	39	29	40	34	29	100	83	66	29.99	29.90	29.82	10	9	5	17	6	19	0.03	Rain , Thunderstorm

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ATTACHMENT B

DAILY WEATHER REPORTS FOR PRECIPITATION EVENTS OCCURRING IN FOURTH QUARTER 2016

Kirtland AFB, NM

Albuquerque International Sunport

© 5:19 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - October, 2016

October

3

2016

View

Monday, October 3, 2016

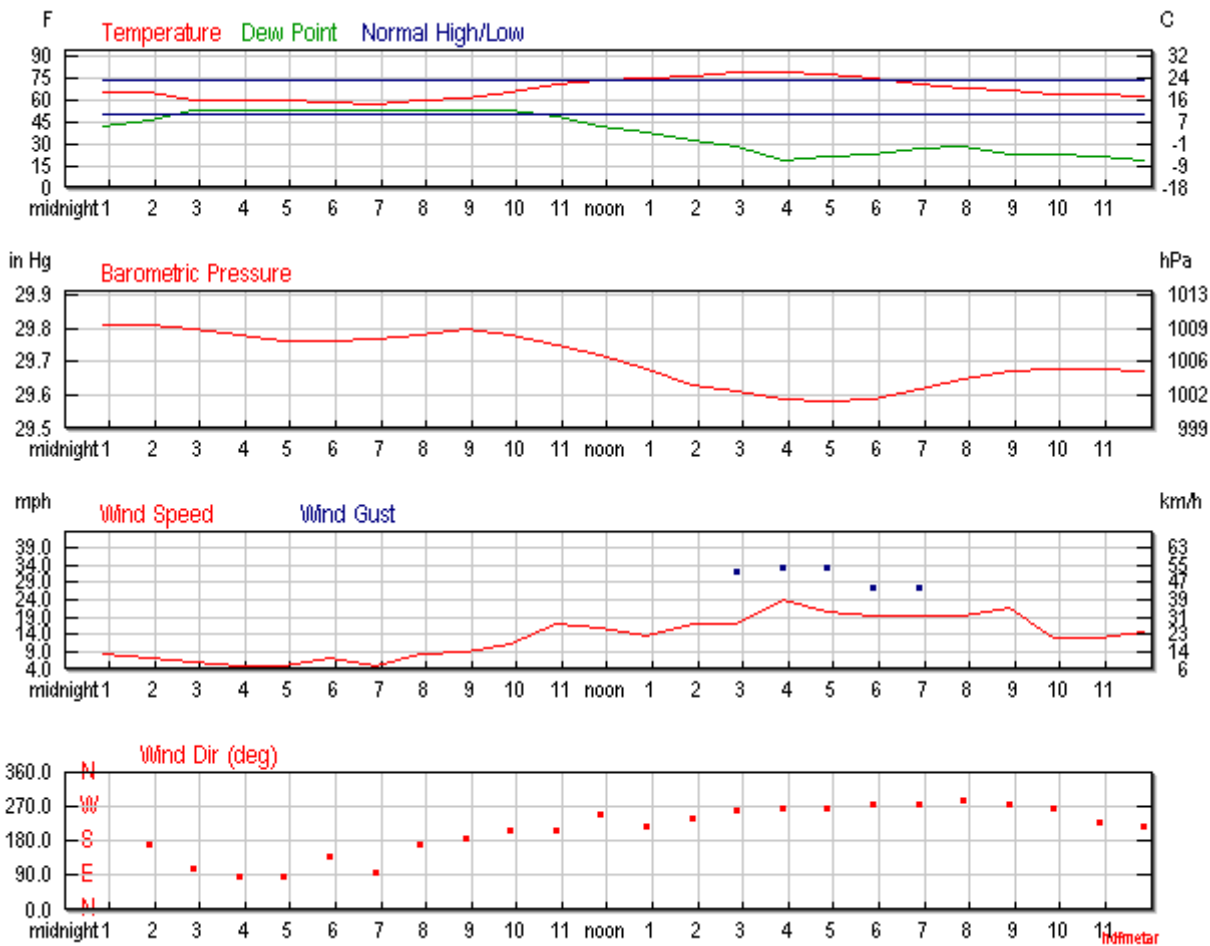
Daily	Weekly	Monthly	Custom			
				Actual	Average	Record
Temperature						
Mean Temperature				69 °F	-	
Max Temperature				80 °F	-	- ()
Min Temperature				58 °F	-	- ()
Cooling Degree Days				4		
Month to date cooling degree days				8		
Year to date cooling degree days				1515		
Growing Degree Days				18 [Base 50]		
Moisture						
Dew Point				38 °F		
Average Humidity				49		
Maximum Humidity				86		
Minimum Humidity				11		
Precipitation						
Precipitation				-	-	- ()
Month to date precipitation				0.05		

	Actual	Average	Record
Year to date precipitation	4.45		
Snow			
Snow	0.00 in	-	- ()
Month to date snowfall	0.0		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	29.71 in		
Wind			
Wind Speed	13 mph [SW]		
Max Wind Speed	29 mph		
Max Gust Speed	38 mph		
Visibility	10 miles		
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



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Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

October

3

Submit

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Astronomy

Oct. 03, 2016

Rise

Set

Actual Time

7:03 AM MDT

6:46 PM MDT

Civil Twilight

6:37 AM MDT

7:12 PM MDT

Nautical Twilight

6:08 AM MDT

7:41 PM MDT

Astronomical Twilight

5:39 AM MDT

8:10 PM MDT

Moon

9:20 AM MDT [10/3]

8:36 PM MDT [10/3]

Length of Visible Light

12h 34m

Length of Day

11h 43m

Waxing Crescent, 7% of the Moon is Illuminated

Oct 3

Oct 8

Oct 15

Oct 22

Oct 30

Waxing Crescent

First Quarter

Full

Last Quarter

New

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Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
12:52 AM	66.0 °F	43.0 °F	43%	29.81 in	10.0 mi	SSW	8.1 mph	-	N/A		Overcast
1:52 AM	66.0 °F	46.9 °F	50%	29.81 in	10.0 mi	South	6.9 mph	-	N/A		Overcast
2:52 AM	61.0 °F	53.1 °F	75%	29.80 in	10.0 mi	ESE	5.8 mph	-	0.01 in	Rain	Light Rai
3:52 AM	60.1 °F	54.0 °F	80%	29.78 in	10.0 mi	East	4.6 mph	-	0.03 in		Overcast
4:52 AM	61.0 °F	54.0 °F	78%	29.76 in	10.0 mi	East	4.6 mph	-	0.01 in		Mostly Cloudy
5:52 AM	59.0 °F	54.0 °F	83%	29.76 in	10.0 mi	SE	6.9 mph	-	N/A		Scattered Clouds
6:52 AM	57.9 °F	53.1 °F	84%	29.77 in	10.0 mi	East	4.6 mph	-	N/A		Mostly Cloudy
7:52 AM	60.1 °F	53.1 °F	78%	29.78 in	10.0 mi	South	8.1 mph	-	N/A		Scattered Clouds
8:52 AM	62.1 °F	53.1 °F	72%	29.80 in	10.0 mi	South	9.2 mph	-	N/A		Partly Cloudy

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
9:52 AM	66.0 °F	53.1 °F	63%	29.78 in	10.0 mi	SSW	11.5 mph	-	N/A		Partly Cloudy
10:52 AM	71.1 °F	48.9 °F	45%	29.75 in	10.0 mi	SSW	17.3 mph	25.3 mph	N/A		Mostly Cloudy
11:52 AM	73.9 °F	43.0 °F	33%	29.72 in	10.0 mi	WSW	16.1 mph	-	N/A		Scattered Clouds
12:52 PM	75.9 °F	39.0 °F	26%	29.68 in	10.0 mi	SW	13.8 mph	-	N/A		Scattered Clouds
1:52 PM	77.0 °F	33.1 °F	20%	29.63 in	10.0 mi	WSW	17.3 mph	24.2 mph	N/A		Scattered Clouds
2:52 PM	79.0 °F	28.9 °F	16%	29.61 in	10.0 mi	West	17.3 mph	32.2 mph	N/A		Scattered Clouds
3:52 PM	79.0 °F	19.9 °F	11%	29.59 in	10.0 mi	West	24.2 mph	33.4 mph	N/A		Scattered Clouds
4:52 PM	78.1 °F	21.9 °F	12%	29.58 in	10.0 mi	West	20.7 mph	33.4 mph	N/A		Mostly Cloudy
5:52 PM	75.0 °F	23.0 °F	14%	29.59 in	10.0 mi	West	19.6 mph	27.6 mph	N/A		Mostly Cloudy
6:52 PM	72.0 °F	27.0 °F	19%	29.62 in	10.0 mi	West	19.6 mph	27.6 mph	N/A		Overcast
7:52 PM	69.1 °F	28.9 °F	22%	29.65 in	10.0 mi	WNW	19.6 mph	-	N/A		Mostly Cloudy
8:52 PM	66.9 °F	24.1 °F	20%	29.67 in	10.0 mi	West	21.9 mph	29.9 mph	N/A		Scattered Clouds
9:52 PM	64.0 °F	24.1 °F	22%	29.68 in	10.0 mi	West	12.7 mph	-	N/A		Mostly Cloudy
10:52 PM	64.0 °F	21.9 °F	20%	29.68 in	10.0 mi	SW	12.7 mph	-	N/A		Overcast
11:52 PM	63.0 °F	19.9 °F	19%	29.67 in	10.0 mi	SW	15.0 mph	-	N/A		Mostly Cloudy

report this ad

Kirtland AFB, NM

Albuquerque International Sunport

© 5:23 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - October, 2016

October

8

2016

View

Saturday, October 8, 2016

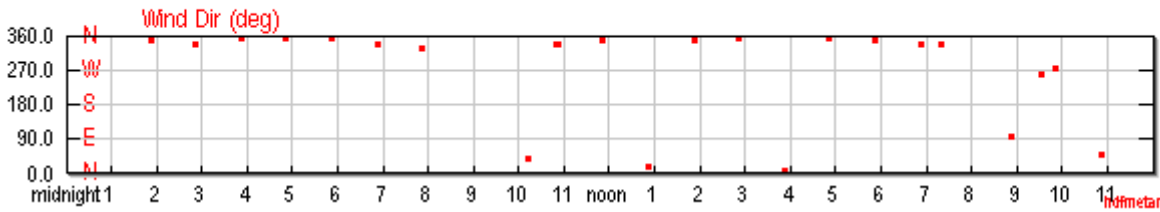
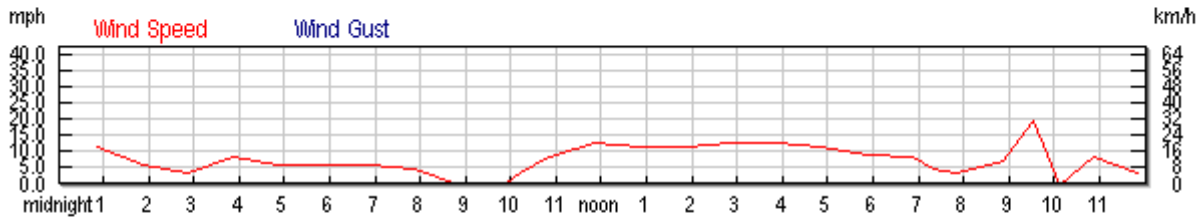
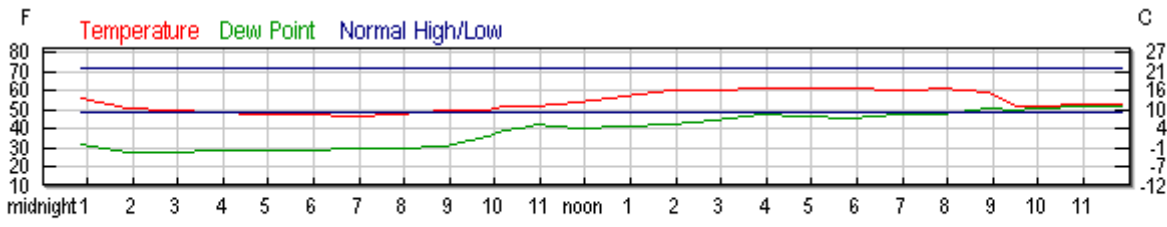
Daily	Weekly	Monthly	Custom		Actual	Average	Record
Temperature							
Mean Temperature					55 °F	-	
Max Temperature					62 °F	-	- ()
Min Temperature					47 °F	-	- ()
Degree Days							
Heating Degree Days					10		
Month to date heating degree days					31		
Growing Degree Days					4 [Base 50]		
Moisture							
Dew Point					41 °F		
Average Humidity					69		
Maximum Humidity					100		
Minimum Humidity					38		
Precipitation							
Precipitation					-	-	- ()
Month to date precipitation					0.39		

	Actual	Average	Record
Year to date precipitation	4.79		
Snow			
Snow	0.00 in	-	- ()
Month to date snowfall	0.0		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	30.22 in		
Wind			
Wind Speed	7 mph (North)		
Max Wind Speed	25 mph		
Max Gust Speed	32 mph		
Visibility	10 miles		
Events	Rain , Thunderstorm		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



report this ad | why ads?

Search for Another Location

Airport or City:

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

October

8

Submit

report this ad | why ads?

Astronomy

Oct. 08, 2016

Rise

Set

Actual Time	7:07 AM MDT	6:39 PM MDT
<u>Civil Twilight</u>	6:41 AM MDT	7:05 PM MDT
Nautical Twilight	6:12 AM MDT	7:34 PM MDT
<u>Astronomical Twilight</u>	5:43 AM MDT	8:03 PM MDT
Moon	1:39 PM MDT [10/8]	No Moon Set
<u>Length of Visible Light</u>	12h 23m	
<u>Length of Day</u>	11h 32m	

Waxing Crescent, 46% of the Moon is Illuminated

Oct 8	Oct 8	Oct 15	Oct 22	Oct 30
Waxing Crescent	First Quarter	Full	Last Quarter	New

[report this ad](#) | [why ads?](#)

Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
12:52 AM	55.9 °F	32.0 °F	40%	30.17 in	10.0 mi	NE	11.5 mph	-	N/A	
1:52 AM	51.1 °F	27.0 °F	39%	30.18 in	10.0 mi	North	5.8 mph	-	N/A	
2:52 AM	50.0 °F	28.0 °F	43%	30.19 in	10.0 mi	NNW	3.5 mph	-	N/A	
3:52 AM	48.9 °F	28.9 °F	46%	30.18 in	10.0 mi	North	8.1 mph	-	N/A	
4:52 AM	48.0 °F	28.9 °F	48%	30.19 in	10.0 mi	North	5.8 mph	-	N/A	
5:52 AM	48.0 °F	28.9 °F	48%	30.20 in	10.0 mi	North	5.8 mph	-	N/A	
6:52 AM	46.9 °F	30.0 °F	52%	30.22 in	10.0 mi	NNW	5.8 mph	-	N/A	
7:52 AM	48.0 °F	30.0 °F	50%	30.24 in	10.0 mi	NNW	4.6 mph	-	N/A	
8:52 AM	50.0 °F	30.9 °F	48%	30.26 in	10.0 mi	Calm	Calm	-	N/A	

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
9:52 AM	50.0 °F	36.0 °F	59%	30.26 in	10.0 mi	Calm	Calm	-	0.00 in	Rain
10:13 AM	52.0 °F	39.0 °F	61%	30.37 in	10.0 mi	NE	3.5 mph	-	0.00 in	Rain , Thunderstorm
10:50 AM	51.8 °F	41.0 °F	67%	30.37 in	10.0 mi	NNW	8.1 mph	-	0.00 in	
10:52 AM	52.0 °F	42.1 °F	69%	30.25 in	10.0 mi	NNW	8.1 mph	-	0.00 in	
11:52 AM	54.0 °F	39.9 °F	59%	30.24 in	10.0 mi	North	12.7 mph	-	N/A	
12:52 PM	57.0 °F	41.0 °F	55%	30.21 in	10.0 mi	NNE	11.5 mph	-	N/A	
1:52 PM	60.1 °F	42.1 °F	51%	30.18 in	10.0 mi	North	11.5 mph	-	N/A	
2:52 PM	60.1 °F	44.1 °F	55%	30.17 in	10.0 mi	North	12.7 mph	-	N/A	
3:52 PM	61.0 °F	48.0 °F	62%	30.16 in	10.0 mi	North	12.7 mph	-	0.00 in	Rain
4:52 PM	61.0 °F	46.9 °F	60%	30.14 in	10.0 mi	North	11.5 mph	-	0.01 in	
5:52 PM	61.0 °F	46.0 °F	58%	30.14 in	10.0 mi	North	9.2 mph	-	N/A	
6:52 PM	60.1 °F	48.0 °F	64%	30.14 in	10.0 mi	NNW	8.1 mph	-	N/A	
7:20 PM	60.1 °F	48.0 °F	64%	30.26 in	10.0 mi	NNW	4.6 mph	-	N/A	Thunderstorm
7:52 PM	61.0 °F	48.0 °F	62%	30.15 in	10.0 mi	Variable	3.5 mph	-	N/A	Thunderstorm
8:52 PM	59.0 °F	51.1 °F	75%	30.19 in	10.0 mi	East	6.9 mph	-	0.06 in	Rain , Thunderstorm
9:33 PM	52.0 °F	50.0 °F	93%	30.37 in	6.0 mi	West	19.6 mph	32.2 mph	0.06 in	Rain , Thunderstorm
9:52 PM	52.0 °F	51.1 °F	97%	30.30 in	4.0 mi	West	9.2 mph	-	0.21 in	Rain , Thunderstorm
10:08 PM	52.0 °F	51.1 °F	97%	30.38 in	5.0 mi	Calm	Calm	-	0.03 in	Rain
10:52 PM	53.1 °F	52.0 °F	96%	30.25 in	10.0 mi	NE	8.1 mph	-	0.06 in	

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
11:52 PM	53.1 °F	52.0 °F	96%	30.21 in	10.0 mi	Variable	3.5 mph	-	0.00 in	

||

[report this ad](#)

Kirtland AFB, NM

Albuquerque International Sunport

⌚ 5:24 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - October, 2016

October

9

2016

View

Sunday, October 9, 2016

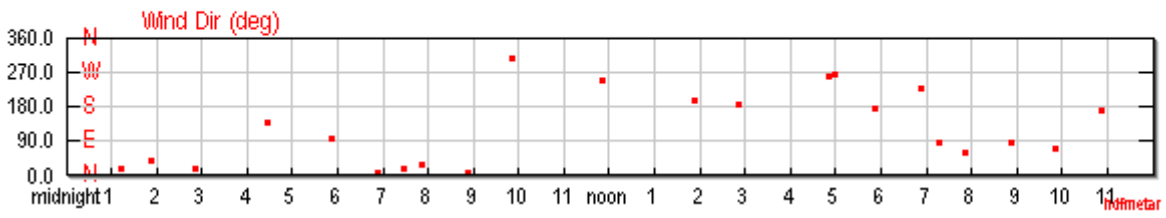
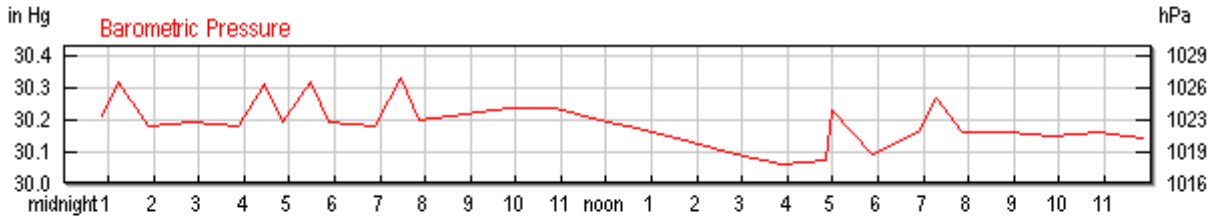
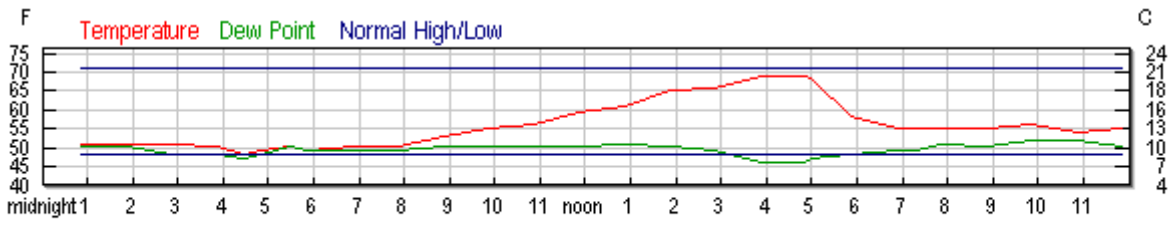
Daily	Weekly	Monthly	Custom			
				Actual	Average	Record
Temperature						
Mean Temperature				60 °F	-	
Max Temperature				71 °F	-	- ()
Min Temperature				49 °F	-	- ()
Degree Days						
Heating Degree Days				5		
Month to date heating degree days				36		
Growing Degree Days				10 [Base 50]		
Moisture						
Dew Point				50 °F		
Average Humidity				72		
Maximum Humidity				100		
Minimum Humidity				44		
Precipitation						
Precipitation				-	-	- ()
Month to date precipitation				0.74		

	Actual	Average	Record
Year to date precipitation	5.14		
Snow			
Snow	0.00 in	-	- ()
Month to date snowfall	0.0		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	30.18 in		
Wind			
Wind Speed	6 mph [NE]		
Max Wind Speed	15 mph		
Max Gust Speed	18 mph		
Visibility	10 miles		
Events	Rain , Thunderstorm		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



report this ad | why ads?

Search for Another Location

Airport or City:

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

October

9

Submit

report this ad | why ads?

Astronomy

Oct. 09, 2016

Rise

Set

Actual Time

7:07 AM MDT

6:38 PM MDT

Civil Twilight

6:42 AM MDT

7:03 PM MDT

Nautical Twilight

6:13 AM MDT

7:33 PM MDT

Astronomical Twilight

5:43 AM MDT

8:02 PM MDT

Moon

2:26 PM MDT [10/9]

12:12 AM MDT [10/9]

Length of Visible Light

12h 21m

Length of Day

11h 30m

First Quarter, 56% of the Moon is Illuminated

Oct 9

Oct 15

Oct 22

Oct 30

Nov 7

First Quarter

Full

Last Quarter

New

First Quarter

[report this ad](#) | [why ads?](#)

Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Co
12:52 AM	52.0 °F	51.1 °F	97%	30.21 in	10.0 mi	North	6.9 mph	-	N/A		Mc
1:14 AM	52.0 °F	51.1 °F	97%	30.32 in	10.0 mi	NNE	6.9 mph	-	N/A		Mc
1:52 AM	52.0 °F	51.1 °F	97%	30.18 in	10.0 mi	NE	10.4 mph	-	N/A		Ov
2:52 AM	52.0 °F	48.9 °F	89%	30.19 in	10.0 mi	NNE	4.6 mph	-	N/A		Mc
3:52 AM	51.1 °F	48.9 °F	92%	30.18 in	10.0 mi	Calm	Calm	-	N/A		Ov
4:27 AM	48.9 °F	48.0 °F	97%	30.31 in	10.0 mi	SE	4.6 mph	-	N/A		Ov
4:52 AM	50.0 °F	48.9 °F	96%	30.19 in	10.0 mi	Calm	Calm	-	N/A		Ov
5:29 AM	51.1 °F	51.1 °F	100%	30.32 in	8.0 mi	Calm	Calm	-	N/A		Ov
5:52 AM	50.0 °F	50.0 °F	100%	30.19 in	10.0 mi	East	4.6 mph	-	N/A		Ov

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
6:52 AM	51.1 °F	50.0 °F	96%	30.18 in	10.0 mi	North	6.9 mph	-	N/A		Mostly Cloudy
7:29 AM	51.1 °F	50.0 °F	96%	30.33 in	10.0 mi	NNE	4.6 mph	-	N/A		Mostly Cloudy
7:52 AM	51.1 °F	50.0 °F	96%	30.20 in	10.0 mi	NNE	6.9 mph	-	N/A		Mostly Cloudy
8:52 AM	54.0 °F	51.1 °F	90%	30.22 in	10.0 mi	North	4.6 mph	-	N/A		Mostly Cloudy
9:52 AM	55.9 °F	51.1 °F	84%	30.24 in	10.0 mi	NW	5.8 mph	-	0.00 in		Mostly Cloudy
10:52 AM	57.0 °F	51.1 °F	81%	30.24 in	10.0 mi	Calm	Calm	-	N/A		Mostly Cloudy
11:52 AM	60.1 °F	51.1 °F	72%	30.20 in	10.0 mi	WSW	3.5 mph	-	N/A		Mostly Cloudy
12:52 PM	62.1 °F	52.0 °F	70%	30.17 in	10.0 mi	Variable	5.8 mph	-	N/A		Partly Cloudy
1:52 PM	66.0 °F	51.1 °F	59%	30.13 in	10.0 mi	SSW	11.5 mph	-	N/A		Scattered Clouds
2:52 PM	66.9 °F	50.0 °F	54%	30.09 in	10.0 mi	South	8.1 mph	-	N/A		Scattered Clouds
3:52 PM	70.0 °F	46.9 °F	44%	30.06 in	10.0 mi	Variable	3.5 mph	-	N/A		Scattered Clouds
4:52 PM	70.0 °F	46.9 °F	44%	30.07 in	10.0 mi	West	8.1 mph	-	N/A	Thunderstorm	Mostly Cloudy
4:58 PM	69.1 °F	48.0 °F	47%	30.23 in	10.0 mi	West	8.1 mph	-	N/A	Thunderstorm	Thunderstorm
5:52 PM	59.0 °F	48.9 °F	69%	30.09 in	4.0 mi	South	11.5 mph	-	0.19 in	Rain , Thunderstorm	Thunderstorm
6:52 PM	55.9 °F	50.0 °F	80%	30.16 in	7.0 mi	SW	12.7 mph	-	0.14 in	Rain , Thunderstorm	Light Thunderstorm
7:18 PM	55.9 °F	50.0 °F	80%	30.27 in	10.0 mi	East	5.8 mph	-	0.00 in		Scattered Clouds
7:52 PM	55.9 °F	52.0 °F	87%	30.16 in	10.0 mi	ENE	12.7 mph	-	0.00 in		Mostly Cloudy
8:52 PM	55.9 °F	51.1 °F	84%	30.16 in	10.0 mi	East	3.5 mph	-	0.00 in		Scattered Clouds
9:52 PM	57.0 °F	53.1 °F	87%	30.15 in	10.0 mi	ENE	3.5 mph	-	0.02 in		Scattered Clouds

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Co
10:52 PM	55.0 °F	53.1 °F	93%	30.16 in	10.0 mi	South	4.6 mph	-	N/A		Cle
11:52 PM	55.9 °F	51.1 °F	84%	30.14 in	10.0 mi	Calm	Calm	-	N/A		Cle

||

report this ad

Kirtland AFB, NM

Albuquerque International Sunport

© 5:25 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - October, 2016

October

25

2016

View

Tuesday, October 25, 2016

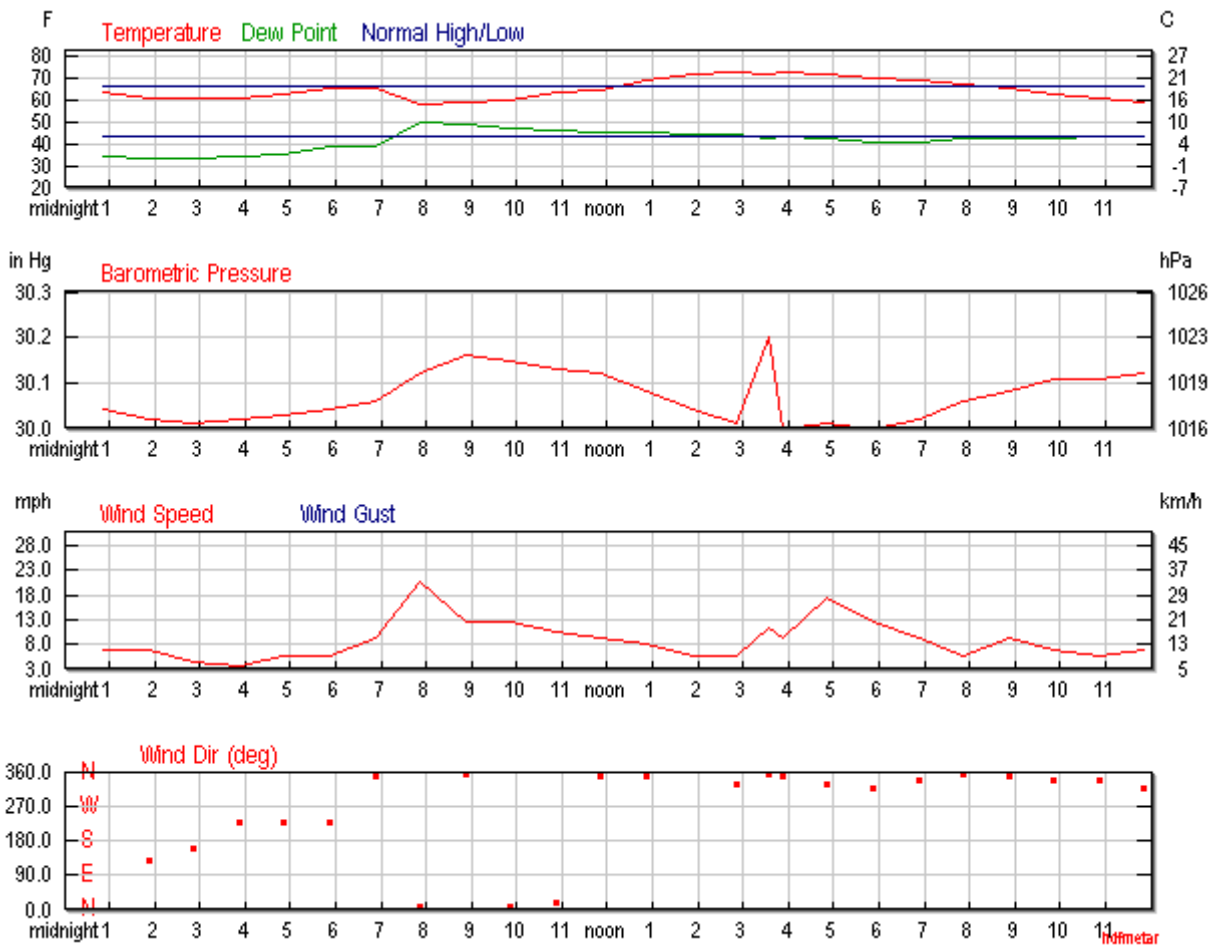
Daily	Weekly	Monthly	Custom		Actual	Average	Record
Temperature							
Mean Temperature					63 °F	-	
Max Temperature					73 °F	-	- ()
Min Temperature					53 °F	-	- ()
Degree Days							
Heating Degree Days					2		
Month to date heating degree days					65		
Growing Degree Days					15 [Base 50]		
Moisture							
Dew Point					42 °F		
Average Humidity					47		
Maximum Humidity					60		
Minimum Humidity					34		
Precipitation							
Precipitation					-	-	- ()
Month to date precipitation					0.74		

	Actual	Average	Record
Year to date precipitation	5.14		
Snow			
Snow	0.00 in	-	- ()
Month to date snowfall	0.0		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	30.07 in		
Wind			
Wind Speed	9 mph (NNW)		
Max Wind Speed	25 mph		
Max Gust Speed	27 mph		
Visibility	10 miles		
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



report this ad | why ads?

Search for Another Location

Airport or City:

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

October

25

Submit

report this ad | why ads?

Astronomy

Oct. 25, 2016

Rise

Set

Actual Time

7:21 AM MDT

6:18 PM MDT

Civil Twilight

6:55 AM MDT

6:44 PM MDT

Nautical Twilight

6:25 AM MDT

7:14 PM MDT

Astronomical Twilight

5:56 AM MDT

7:43 PM MDT

Moon

2:40 AM MDT [10/25]

3:54 PM MDT [10/25]

Length of Visible Light

11h 48m

Length of Day

10h 57m

Waning Crescent, 22% of the Moon is Illuminated

Oct 25

Oct 30

Nov 7

Nov 14

Nov 21

Waning Crescent

New

First Quarter

Full

Last Quarter

[report this ad](#) | [why ads?](#)

Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
12:52 AM	63.0 °F	34.0 °F	34%	30.04 in	10.0 mi	SSE	6.9 mph	-	N/A		Overcast
1:52 AM	61.0 °F	33.1 °F	35%	30.02 in	10.0 mi	SE	6.9 mph	-	N/A		Mostly Cloudy
2:52 AM	61.0 °F	33.1 °F	35%	30.01 in	10.0 mi	SSE	4.6 mph	-	N/A		Scattered Clouds
3:52 AM	61.0 °F	34.0 °F	36%	30.02 in	10.0 mi	SW	3.5 mph	-	N/A		Mostly Cloudy
4:52 AM	62.1 °F	35.1 °F	37%	30.03 in	10.0 mi	SW	5.8 mph	-	N/A		Mostly Cloudy
5:52 AM	64.9 °F	39.0 °F	39%	30.04 in	10.0 mi	SW	5.8 mph	-	N/A		Overcast
6:52 AM	64.9 °F	39.0 °F	39%	30.06 in	10.0 mi	North	9.2 mph	-	N/A		Overcast
7:52 AM	57.9 °F	50.0 °F	75%	30.12 in	10.0 mi	North	20.7 mph	-	0.00 in	Rain	Light Rain
8:52 AM	59.0 °F	48.9 °F	69%	30.16 in	10.0 mi	North	12.7 mph	-	0.00 in		Mostly Cloudy

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
9:52 AM	60.1 °F	46.9 °F	62%	30.15 in	10.0 mi	North	12.7 mph	-	N/A		Mostly Cloudy
10:52 AM	63.0 °F	46.0 °F	54%	30.13 in	10.0 mi	NNE	10.4 mph	-	N/A		Scattered Clouds
11:52 AM	64.0 °F	45.0 °F	50%	30.12 in	10.0 mi	North	9.2 mph	-	N/A		Scattered Clouds
12:52 PM	69.1 °F	45.0 °F	42%	30.08 in	10.0 mi	North	8.1 mph	-	N/A		Scattered Clouds
1:52 PM	71.1 °F	44.1 °F	38%	30.04 in	10.0 mi	Variable	5.8 mph	-	N/A		Scattered Clouds
2:52 PM	72.0 °F	44.1 °F	37%	30.01 in	10.0 mi	NNW	5.8 mph	-	N/A		Mostly Cloudy
3:34 PM	71.1 °F	42.1 °F	35%	30.20 in	10.0 mi	North	11.5 mph	-	N/A		Mostly Cloudy
3:52 PM	72.0 °F	43.0 °F	35%	30.00 in	10.0 mi	North	9.2 mph	-	N/A		Mostly Cloudy
4:52 PM	71.1 °F	42.1 °F	35%	30.01 in	10.0 mi	NNW	17.3 mph	-	N/A		Mostly Cloudy
5:52 PM	70.0 °F	41.0 °F	35%	30.00 in	10.0 mi	NW	12.7 mph	-	N/A		Scattered Clouds
6:52 PM	69.1 °F	41.0 °F	36%	30.02 in	10.0 mi	NNW	9.2 mph	-	N/A		Partly Cloudy
7:52 PM	66.9 °F	42.1 °F	40%	30.06 in	10.0 mi	North	5.8 mph	-	N/A		Partly Cloudy
8:52 PM	64.9 °F	42.1 °F	43%	30.08 in	10.0 mi	North	9.2 mph	-	N/A		Clear
9:52 PM	62.1 °F	42.1 °F	48%	30.11 in	10.0 mi	NNW	6.9 mph	-	N/A		Clear
10:52 PM	61.0 °F	43.0 °F	52%	30.11 in	10.0 mi	NNW	5.8 mph	-	N/A		Clear
11:52 PM	59.0 °F	43.0 °F	55%	30.12 in	10.0 mi	NW	6.9 mph	-	N/A		Clear

report this ad

Kirtland AFB, NM

Albuquerque International Sunport

© 5:25 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - November, 2016

November

2

2016

View

Wednesday, November 2, 2016

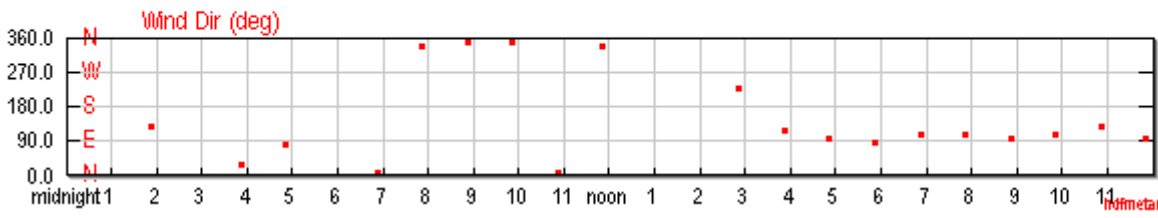
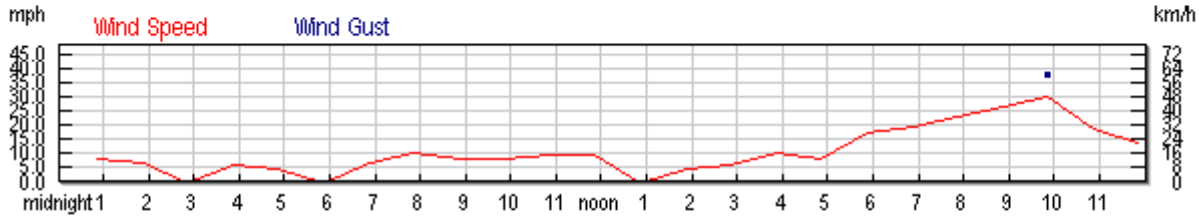
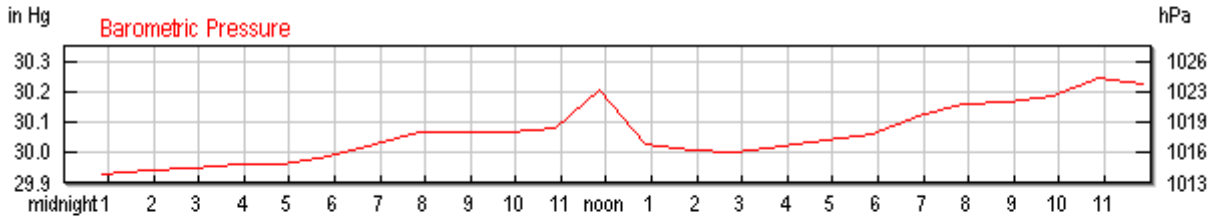
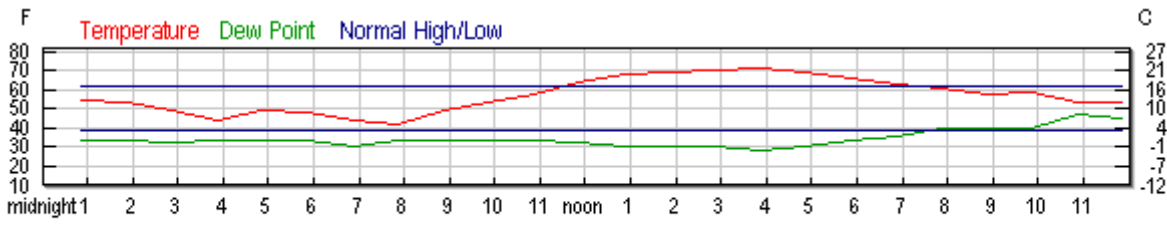
Daily	Weekly	Monthly	Custom		Actual	Average	Record
Temperature							
Mean Temperature					59 °F	-	
Max Temperature					72 °F	-	- ()
Min Temperature					45 °F	-	- ()
Degree Days							
Heating Degree Days					6		
Month to date heating degree days					11		
Growing Degree Days					7 [Base 50]		
Moisture							
Dew Point					35 °F		
Average Humidity					46		
Maximum Humidity					71		
Minimum Humidity					20		
Precipitation							
Precipitation					-	-	- ()
Month to date precipitation					0.02		

	Actual	Average	Record
Year to date precipitation	5.16		
Snow			
Snow	0.00 in	-	- ()
Month to date snowfall	0.0		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	30.06 in		
Wind			
Wind Speed	12 mph [ENE]		
Max Wind Speed	30 mph		
Max Gust Speed	39 mph		
Visibility	10 miles		
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



report this ad | why ads?

Search for Another Location

Airport or City:

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

November

2

Submit

report this ad | why ads?

Astronomy

Nov. 02, 2016

Rise

Set

Actual Time

7:28 AM MDT

6:10 PM MDT

Civil Twilight

7:02 AM MDT

6:36 PM MDT

Nautical Twilight

6:32 AM MDT

7:06 PM MDT

Astronomical Twilight

6:03 AM MDT

7:36 PM MDT

Moon

9:54 AM MDT [11/2]

8:31 PM MDT [11/2]

Length of Visible Light

11h 34m

Length of Day

10h 41m

Waxing Crescent, 8% of the Moon is Illuminated

Nov 2

Nov 7

Nov 14

Nov 21

Nov 29

Waxing Crescent

First Quarter

Full

Last Quarter

New

[report this ad](#) | [why ads?](#)

Hourly Weather History & Observations

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Even
12:52 AM	54.0 °F	-	34.0 °F	47%	29.93 in	10.0 mi	SSE	8.1 mph	-	N/A	
1:52 AM	53.1 °F	-	34.0 °F	48%	29.94 in	10.0 mi	SE	6.9 mph	-	N/A	
2:52 AM	48.9 °F	-	32.0 °F	52%	29.95 in	10.0 mi	Calm	Calm	-	N/A	
3:52 AM	44.1 °F	40.8 °F	34.0 °F	68%	29.96 in	10.0 mi	NNE	5.8 mph	-	N/A	
4:52 AM	48.9 °F	-	34.0 °F	56%	29.96 in	10.0 mi	East	4.6 mph	-	N/A	
5:52 AM	48.0 °F	-	34.0 °F	58%	29.99 in	10.0 mi	Calm	Calm	-	N/A	
6:52 AM	44.1 °F	40.1 °F	30.0 °F	58%	30.03 in	10.0 mi	North	6.9 mph	-	N/A	
7:52 AM	42.1 °F	36.1 °F	34.0 °F	73%	30.07 in	10.0 mi	NNW	10.4 mph	-	N/A	
8:52 AM	48.9 °F	-	33.1 °F	54%	30.07 in	10.0 mi	North	8.1 mph	-	N/A	

Time (MDT)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Even
9:52 AM	53.1 °F	-	33.1 °F	47%	30.07 in	10.0 mi	North	8.1 mph	-	N/A	
10:52 AM	57.9 °F	-	33.1 °F	39%	30.08 in	10.0 mi	North	9.2 mph	-	N/A	
11:52 AM	64.0 °F	-	32.0 °F	30%	30.21 in	10.0 mi	NNW	9.2 mph	-	N/A	
12:52 PM	68.0 °F	-	30.9 °F	25%	30.03 in	10.0 mi	Calm	Calm	-	N/A	
1:52 PM	69.1 °F	-	30.0 °F	23%	30.01 in	10.0 mi	Variable	4.6 mph	-	N/A	
2:52 PM	70.0 °F	-	30.0 °F	23%	30.00 in	10.0 mi	SW	5.8 mph	-	N/A	
3:52 PM	71.1 °F	-	28.0 °F	20%	30.02 in	10.0 mi	ESE	10.4 mph	19.6 mph	N/A	
4:52 PM	69.1 °F	-	30.9 °F	24%	30.04 in	10.0 mi	East	8.1 mph	-	N/A	
5:52 PM	66.0 °F	-	33.1 °F	29%	30.06 in	10.0 mi	East	17.3 mph	-	N/A	
6:52 PM	63.0 °F	-	36.0 °F	37%	30.12 in	10.0 mi	ESE	19.6 mph	25.3 mph	N/A	
7:52 PM	61.0 °F	-	39.9 °F	46%	30.16 in	10.0 mi	ESE	23.0 mph	-	N/A	
8:52 PM	57.9 °F	-	39.9 °F	51%	30.17 in	10.0 mi	East	26.5 mph	34.5 mph	N/A	
9:52 PM	59.0 °F	-	39.9 °F	49%	30.19 in	10.0 mi	ESE	29.9 mph	38.0 mph	N/A	
10:52 PM	53.1 °F	-	46.9 °F	80%	30.25 in	10.0 mi	SE	18.4 mph	-	0.01 in	Rain
11:52 PM	53.1 °F	-	45.0 °F	74%	30.23 in	10.0 mi	East	13.8 mph	-	0.01 in	Rain

report this ad

Kirtland AFB, NM

Albuquerque International Sunport

⌚ 5:26 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - November, 2016

November

3

2016

View

Thursday, November 3, 2016

Daily	Weekly	Monthly	Custom
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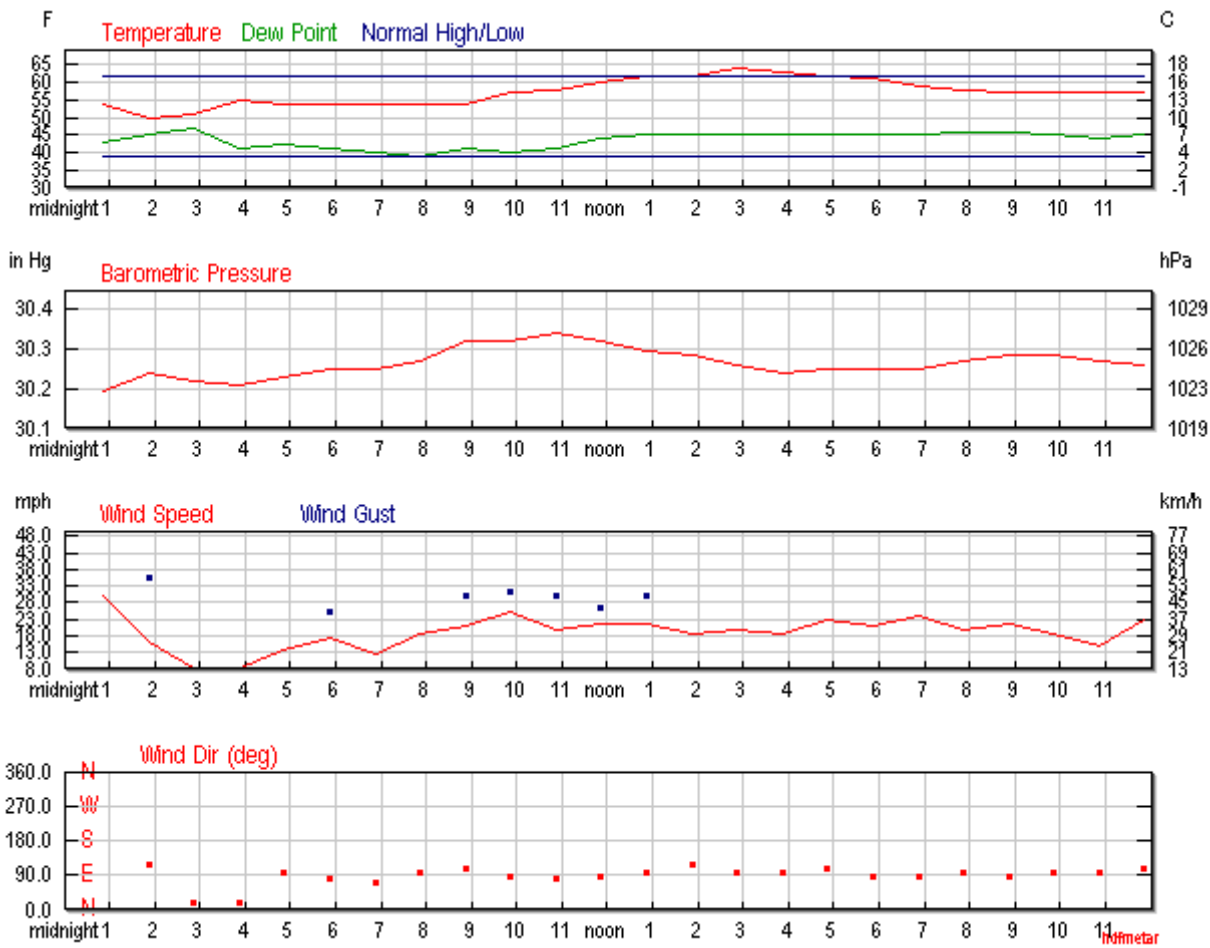
	Actual	Average	Record
Temperature			
Mean Temperature	57 °F	-	
Max Temperature	64 °F	-	- ()
Min Temperature	50 °F	-	- ()
Degree Days			
Heating Degree Days	8		
Month to date heating degree days	19		
Growing Degree Days	8 [Base 50]		
Moisture			
Dew Point	44 °F		
Average Humidity	66		
Maximum Humidity	83		
Minimum Humidity	48		
Precipitation			
Precipitation	-	-	- ()
Month to date precipitation	0.06		

	Actual	Average	Record
Year to date precipitation	5.20		
Snow			
Snow	0.00 in	-	- ()
Month to date snowfall	0.0		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	30.27 in		
Wind			
Wind Speed	18 mph (East)		
Max Wind Speed	30 mph		
Max Gust Speed	39 mph		
Visibility	10 miles		
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



report this ad | why ads?

Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

November

3

Submit

report this ad | why ads?

Astronomy

Nov. 03, 2016

Rise

Set

Actual Time

7:29 AM MDT

6:09 PM MDT

Civil Twilight

7:03 AM MDT

6:35 PM MDT

Nautical Twilight

6:33 AM MDT

7:05 PM MDT

Astronomical Twilight

6:03 AM MDT

7:35 PM MDT

Moon

10:45 AM MDT [11/3]

9:16 PM MDT [11/3]

Length of Visible Light

11h 32m

Length of Day

10h 39m

Waxing Crescent, 14% of the Moon is Illuminated

Nov 3

Nov 7

Nov 14

Nov 21

Nov 29

Waxing Crescent

First Quarter

Full

Last Quarter

New

[report this ad](#) | [why ads?](#)

Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
12:52 AM	54.0 °F	43.0 °F	66%	30.19 in	10.0 mi	East	29.9 mph	39.1 mph	0.00 in	Rain	Light Rair
1:52 AM	50.0 °F	45.0 °F	83%	30.24 in	10.0 mi	ESE	16.1 mph	35.7 mph	0.01 in	Rain	Light Rair
2:52 AM	51.1 °F	46.9 °F	86%	30.22 in	10.0 mi	NNE	8.1 mph	-	0.03 in	Rain	Light Rair
3:52 AM	55.0 °F	41.0 °F	59%	30.21 in	10.0 mi	NNE	8.1 mph	-	0.00 in		Overcast
4:52 AM	54.0 °F	42.1 °F	64%	30.23 in	10.0 mi	East	13.8 mph	21.9 mph	N/A		Overcast
5:52 AM	54.0 °F	41.0 °F	62%	30.25 in	10.0 mi	East	17.3 mph	25.3 mph	N/A		Mostly Cloudy
6:52 AM	54.0 °F	39.9 °F	59%	30.25 in	10.0 mi	ENE	12.7 mph	-	N/A		Scattered Clouds
7:52 AM	54.0 °F	39.0 °F	57%	30.27 in	10.0 mi	East	18.4 mph	27.6 mph	N/A		Overcast
8:52 AM	54.0 °F	41.0 °F	62%	30.32 in	10.0 mi	ESE	20.7 mph	29.9 mph	N/A		Mostly Cloudy

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
9:52 AM	57.0 °F	39.9 °F	53%	30.32 in	10.0 mi	East	25.3 mph	31.1 mph	0.00 in		Mostly Cloudy
10:52 AM	57.9 °F	41.0 °F	53%	30.34 in	10.0 mi	East	19.6 mph	29.9 mph	N/A		Mostly Cloudy
11:52 AM	60.1 °F	44.1 °F	55%	30.32 in	10.0 mi	East	21.9 mph	26.5 mph	N/A		Mostly Cloudy
12:52 PM	62.1 °F	45.0 °F	53%	30.29 in	10.0 mi	East	21.9 mph	29.9 mph	N/A		Mostly Cloudy
1:52 PM	62.1 °F	45.0 °F	53%	30.28 in	10.0 mi	ESE	18.4 mph	-	N/A		Mostly Cloudy
2:52 PM	64.0 °F	45.0 °F	50%	30.26 in	10.0 mi	East	19.6 mph	-	N/A		Scattered Clouds
3:52 PM	63.0 °F	45.0 °F	52%	30.24 in	10.0 mi	East	18.4 mph	28.8 mph	N/A		Scattered Clouds
4:52 PM	62.1 °F	45.0 °F	53%	30.25 in	10.0 mi	ESE	23.0 mph	-	N/A		Scattered Clouds
5:52 PM	61.0 °F	45.0 °F	56%	30.25 in	10.0 mi	East	20.7 mph	-	N/A		Scattered Clouds
6:52 PM	59.0 °F	45.0 °F	60%	30.25 in	10.0 mi	East	24.2 mph	-	N/A		Scattered Clouds
7:52 PM	57.9 °F	46.0 °F	65%	30.27 in	10.0 mi	East	19.6 mph	-	N/A		Scattered Clouds
8:52 PM	57.0 °F	46.0 °F	67%	30.28 in	10.0 mi	East	21.9 mph	25.3 mph	N/A		Partly Cloudy
9:52 PM	57.0 °F	45.0 °F	64%	30.28 in	10.0 mi	East	18.4 mph	-	N/A		Scattered Clouds
10:52 PM	57.0 °F	44.1 °F	62%	30.27 in	10.0 mi	East	15.0 mph	-	N/A		Mostly Cloudy
11:52 PM	57.0 °F	45.0 °F	64%	30.26 in	10.0 mi	ESE	23.0 mph	-	N/A		Mostly Cloudy

||

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Kirtland AFB, NM

Albuquerque International Sunport

© 5:27 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - November, 2016

November

4

2016

View

Friday, November 4, 2016

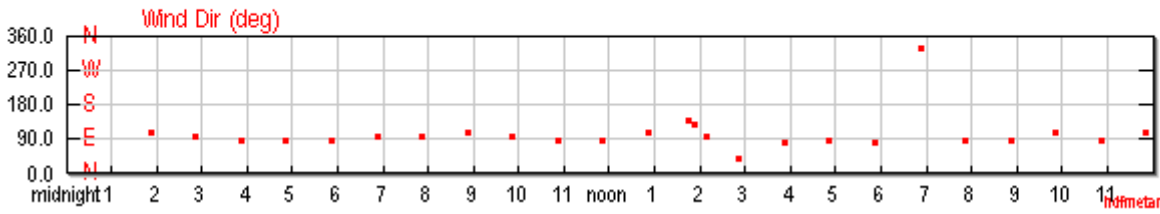
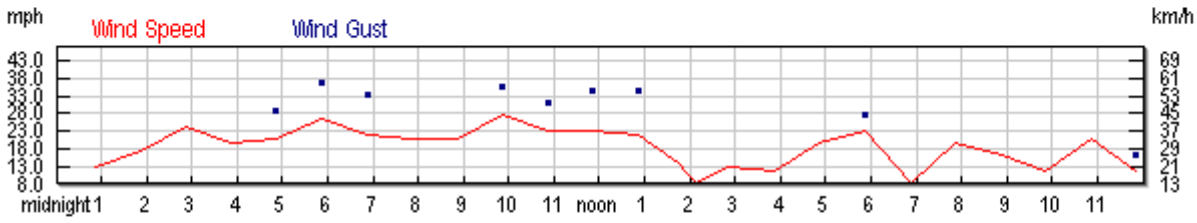
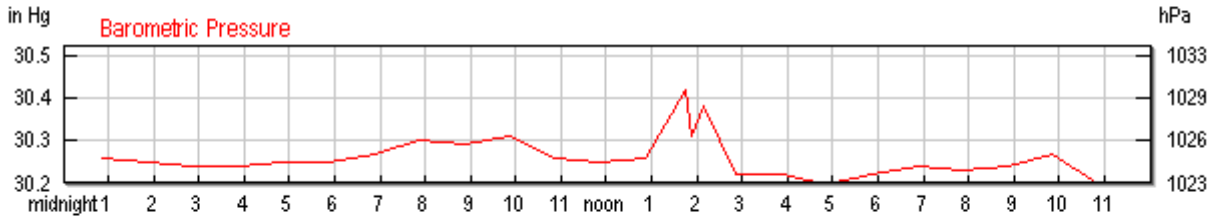
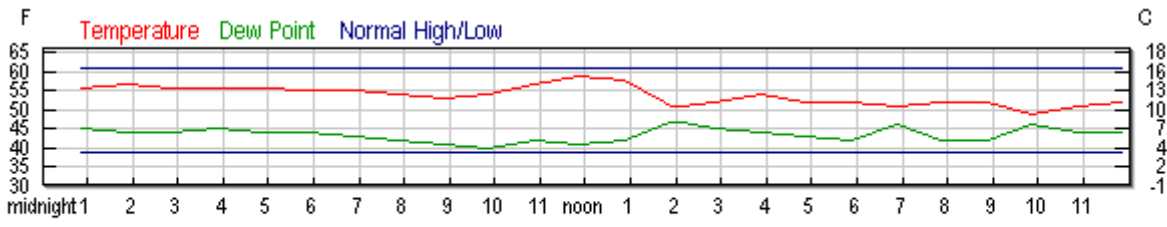
Daily	Weekly	Monthly	Custom		Actual	Average	Record
Temperature							
Mean Temperature					55 °F	-	
Max Temperature					60 °F	-	- ()
Min Temperature					49 °F	-	- ()
Degree Days							
Heating Degree Days					10		
Month to date heating degree days					29		
Growing Degree Days					4 [Base 50]		
Moisture							
Dew Point					43 °F		
Average Humidity					72		
Maximum Humidity					93		
Minimum Humidity					51		
Precipitation							
Precipitation					-	-	- ()
Month to date precipitation					0.26		

	Actual	Average	Record
Year to date precipitation	5.40		
Snow			
Snow	0.00 in	-	- ()
Month to date snowfall	0.0		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	30.26 in		
Wind			
Wind Speed	19 mph (East)		
Max Wind Speed	37 mph		
Max Gust Speed	42 mph		
Visibility	9 miles		
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



report this ad | why ads?

Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

November

4

Submit

report this ad | why ads?

Astronomy

Nov. 04, 2016

Rise

Set

Actual Time	7:30 AM MDT	6:08 PM MDT
<u>Civil Twilight</u>	7:04 AM MDT	6:35 PM MDT
Nautical Twilight	6:34 AM MDT	7:05 PM MDT
<u>Astronomical Twilight</u>	6:04 AM MDT	7:34 PM MDT
Moon	11:35 AM MDT	10:05 PM MDT
<u>Length of Visible Light</u>	11h 30m	
<u>Length of Day</u>	10h 37m	

Waxing Crescent, 21% of the Moon is Illuminated

Nov 4	Nov 7	Nov 14	Nov 21	Nov 29
Waxing Crescent	First Quarter	Full	Last Quarter	New

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Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
12:52 AM	55.9 °F	45.0 °F	67%	30.26 in	10.0 mi	ESE	12.7 mph	-	N/A		Scattered Clouds
1:52 AM	57.0 °F	44.1 °F	62%	30.25 in	10.0 mi	ESE	17.3 mph	25.3 mph	N/A		Scattered Clouds
2:52 AM	55.9 °F	44.1 °F	64%	30.24 in	10.0 mi	East	24.2 mph	-	N/A		Mostly Cloudy
3:52 AM	55.9 °F	45.0 °F	67%	30.24 in	10.0 mi	East	19.6 mph	27.6 mph	N/A		Mostly Cloudy
4:52 AM	55.9 °F	44.1 °F	64%	30.25 in	10.0 mi	East	20.7 mph	28.8 mph	N/A		Scattered Clouds
5:52 AM	55.0 °F	44.1 °F	67%	30.25 in	10.0 mi	East	26.5 mph	36.8 mph	N/A		Scattered Clouds
6:52 AM	55.0 °F	43.0 °F	64%	30.27 in	10.0 mi	East	21.9 mph	33.4 mph	N/A		Overcast
7:52 AM	54.0 °F	42.1 °F	64%	30.30 in	10.0 mi	East	20.7 mph	-	0.00 in	Rain	Light Rair
8:52 AM	53.1 °F	41.0 °F	64%	30.29 in	10.0 mi	ESE	20.7 mph	32.2 mph	0.01 in	Rain	Light Rair

Time [MDT]	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Condition
9:52 AM	54.0 °F	39.9 °F	59%	30.31 in	10.0 mi	East	27.6 mph	35.7 mph	0.00 in	Rain	Light Rain
10:52 AM	57.0 °F	42.1 °F	57%	30.26 in	10.0 mi	East	23.0 mph	31.1 mph	0.00 in		Scattered Clouds
11:52 AM	59.0 °F	41.0 °F	51%	30.25 in	10.0 mi	East	23.0 mph	34.5 mph	N/A		Mostly Cloudy
12:52 PM	57.9 °F	42.1 °F	56%	30.26 in	10.0 mi	ESE	21.9 mph	34.5 mph	0.00 in		Overcast
1:44 PM	52.0 °F	46.0 °F	80%	30.42 in	2.5 mi	SE	13.8 mph	-	0.06 in	Rain	Rain
1:52 PM	51.1 °F	46.9 °F	86%	30.31 in	2.5 mi	SE	11.5 mph	-	0.06 in	Rain	Light Rain
2:10 PM	51.1 °F	46.9 °F	86%	30.38 in	8.0 mi	East	8.1 mph	-	0.03 in	Rain	Light Rain
2:52 PM	52.0 °F	45.0 °F	77%	30.22 in	10.0 mi	NE	12.7 mph	21.9 mph	0.03 in		Overcast
3:52 PM	54.0 °F	44.1 °F	69%	30.22 in	10.0 mi	East	11.5 mph	-	0.00 in		Overcast
4:52 PM	52.0 °F	43.0 °F	71%	30.20 in	10.0 mi	East	19.6 mph	29.9 mph	0.00 in		Mostly Cloudy
5:52 PM	52.0 °F	42.1 °F	69%	30.22 in	10.0 mi	East	23.0 mph	27.6 mph	N/A		Overcast
6:52 PM	51.1 °F	46.0 °F	83%	30.24 in	10.0 mi	NNW	8.1 mph	-	0.00 in		Overcast
7:52 PM	52.0 °F	42.1 °F	69%	30.23 in	10.0 mi	East	19.6 mph	27.6 mph	N/A		Mostly Cloudy
8:52 PM	52.0 °F	42.1 °F	69%	30.24 in	10.0 mi	East	16.1 mph	-	0.00 in	Rain	Light Rain
9:52 PM	48.9 °F	46.0 °F	90%	30.27 in	7.0 mi	ESE	11.5 mph	-	0.07 in	Rain	Rain
10:52 PM	51.1 °F	44.1 °F	77%	30.20 in	10.0 mi	East	20.7 mph	29.9 mph	0.03 in		Overcast
11:52 PM	52.0 °F	44.1 °F	74%	30.20 in	10.0 mi	ESE	11.5 mph	16.1 mph	0.00 in		Overcast

report this ad

Kirtland AFB, NM

Albuquerque International Sunport

© 5:27 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - November, 2016

November

5

2016

View

Saturday, November 5, 2016

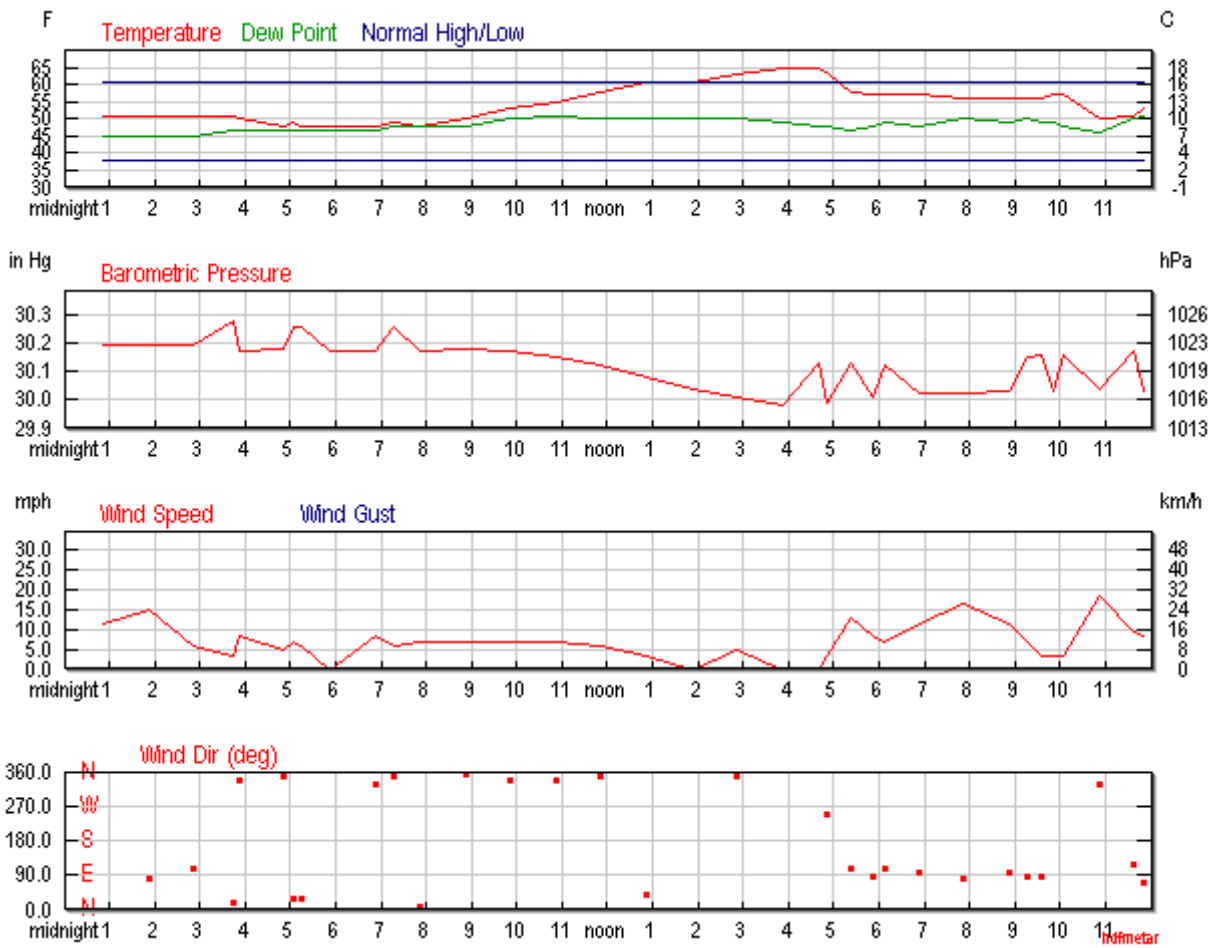
Daily	Weekly	Monthly	Custom			
				Actual	Average	Record
Temperature						
Mean Temperature				57 °F	-	
Max Temperature				65 °F	-	- ()
Min Temperature				48 °F	-	- ()
Degree Days						
Heating Degree Days				8		
Month to date heating degree days				37		
Growing Degree Days				6 [Base 50]		
Moisture						
Dew Point				48 °F		
Average Humidity				78		
Maximum Humidity				100		
Minimum Humidity				56		
Precipitation						
Precipitation				-	-	- ()
Month to date precipitation				0.66		

	Actual	Average	Record
Year to date precipitation	5.80		
Snow			
Snow	0.00 in	-	- ()
Month to date snowfall	0.0		
Snow Depth	0.00 in		
Sea Level Pressure			
Sea Level Pressure	30.12 in		
Wind			
Wind Speed	7 mph (NE)		
Max Wind Speed	24 mph		
Max Gust Speed	29 mph		
Visibility	10 miles		
Events	Rain , Thunderstorm		

T = Trace of Precipitation, MM = Missing Value

Source: NWS Daily Summary

Daily Weather History Graph



report this ad | why ads?

Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

November

5

Submit

report this ad | why ads?

Astronomy

Nov. 05, 2016

Rise

Set

Actual Time

7:31 AM MDT

6:07 PM MDT

Civil Twilight

7:05 AM MDT

6:34 PM MDT

Nautical Twilight

6:35 AM MDT

7:04 PM MDT

Astronomical Twilight

6:05 AM MDT

7:34 PM MDT

Moon

12:22 PM MDT [11/5]

10:57 PM MDT [11/5]

Length of Visible Light

11h 28m

Length of Day

10h 36m

Waxing Crescent, 30% of the Moon is Illuminated

Nov 5

Nov 7

Nov 14

Nov 21

Nov 29

Waxing Crescent

First Quarter

Full

Last Quarter

New

[report this ad](#) | [why ads?](#)

Hourly Weather History & Observations

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
12:52 AM	51.1 °F	45.0 °F	80%	30.19 in	10.0 mi	East	11.5 mph	-	0.00 in	Rain
1:52 AM	51.1 °F	45.0 °F	80%	30.19 in	10.0 mi	East	15.0 mph	-	0.00 in	
2:52 AM	51.1 °F	45.0 °F	80%	30.19 in	10.0 mi	ESE	5.8 mph	-	0.00 in	Rain
3:44 AM	51.1 °F	46.9 °F	86%	30.28 in	10.0 mi	NNE	3.5 mph	-	0.00 in	Rain
3:52 AM	50.0 °F	46.9 °F	89%	30.17 in	10.0 mi	NNW	8.1 mph	-	0.00 in	Rain
4:52 AM	48.0 °F	46.9 °F	96%	30.18 in	5.0 mi	North	4.6 mph	-	0.02 in	Rain
5:04 AM	48.9 °F	46.9 °F	93%	30.26 in	6.0 mi	NNE	6.9 mph	-	0.04 in	Rain
5:15 AM	48.0 °F	46.9 °F	96%	30.26 in	10.0 mi	NNE	5.8 mph	-	0.04 in	
5:52 AM	48.0 °F	46.9 °F	96%	30.17 in	10.0 mi	Calm	Calm	-	0.04 in	

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
6:52 AM	48.0 °F	46.9 °F	96%	30.17 in	10.0 mi	NNW	8.1 mph	-	N/A	
7:17 AM	48.9 °F	48.0 °F	97%	30.26 in	10.0 mi	North	5.8 mph	-	N/A	
7:52 AM	48.0 °F	48.0 °F	100%	30.17 in	10.0 mi	North	6.9 mph	-	N/A	
8:52 AM	50.0 °F	48.0 °F	93%	30.18 in	10.0 mi	North	6.9 mph	-	N/A	
9:52 AM	53.1 °F	50.0 °F	89%	30.17 in	10.0 mi	NNW	6.9 mph	-	N/A	
10:52 AM	55.0 °F	51.1 °F	86%	30.15 in	10.0 mi	NNW	6.9 mph	-	N/A	
11:52 AM	57.9 °F	50.0 °F	75%	30.12 in	10.0 mi	North	5.8 mph	-	N/A	
12:52 PM	61.0 °F	50.0 °F	67%	30.08 in	10.0 mi	NE	3.5 mph	-	N/A	
1:52 PM	61.0 °F	50.0 °F	67%	30.04 in	10.0 mi	Calm	Calm	-	N/A	
2:52 PM	63.0 °F	50.0 °F	63%	30.01 in	10.0 mi	North	4.6 mph	-	N/A	
3:52 PM	64.9 °F	48.9 °F	56%	29.98 in	10.0 mi	Calm	Calm	-	N/A	
4:41 PM	64.9 °F	48.0 °F	54%	30.13 in	10.0 mi	Calm	Calm	-	N/A	Thunderstorm
4:52 PM	64.0 °F	48.0 °F	56%	29.99 in	10.0 mi	WSW	3.5 mph	-	N/A	Thunderstorm
5:23 PM	57.9 °F	46.9 °F	67%	30.13 in	10.0 mi	ESE	12.7 mph	-	N/A	Thunderstorm
5:52 PM	57.0 °F	48.0 °F	72%	30.01 in	10.0 mi	East	8.1 mph	-	N/A	Thunderstorm
6:07 PM	57.0 °F	48.9 °F	74%	30.12 in	10.0 mi	ESE	6.9 mph	-	N/A	
6:52 PM	57.0 °F	48.0 °F	72%	30.02 in	10.0 mi	East	11.5 mph	-	N/A	
7:52 PM	55.9 °F	50.0 °F	80%	30.02 in	10.0 mi	East	16.1 mph	-	0.00 in	Rain
8:52 PM	55.9 °F	48.9 °F	77%	30.03 in	10.0 mi	East	11.5 mph	-	0.00 in	
9:16 PM	55.9 °F	50.0 °F	80%	30.15 in	10.0 mi	East	6.9 mph	-	N/A	Thunderstorm

Time (MDT)	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
9:35 PM	55.9 °F	48.9 °F	77%	30.16 in	10.0 mi	East	3.5 mph	-	N/A	Thunderstorm
9:52 PM	57.0 °F	48.9 °F	74%	30.03 in	10.0 mi	Variable	3.5 mph	-	N/A	
10:05 PM	57.0 °F	48.0 °F	72%	30.16 in	10.0 mi	Variable	3.5 mph	-	N/A	Thunderstorm
10:52 PM	50.0 °F	46.0 °F	86%	30.04 in	5.0 mi	NNW	18.4 mph	24.2 mph	0.26 in	Rain , Thunderstorm
11:38 PM	51.1 °F	50.0 °F	96%	30.17 in	10.0 mi	ESE	9.2 mph	-	0.07 in	Rain
11:52 PM	53.1 °F	51.1 °F	93%	30.03 in	10.0 mi	ENE	8.1 mph	-	0.08 in	Rain

||

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Kirtland AFB, NM

Albuquerque International Sunport

© 5:27 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - December, 2016

December

22

2016

View

Thursday, December 22, 2016

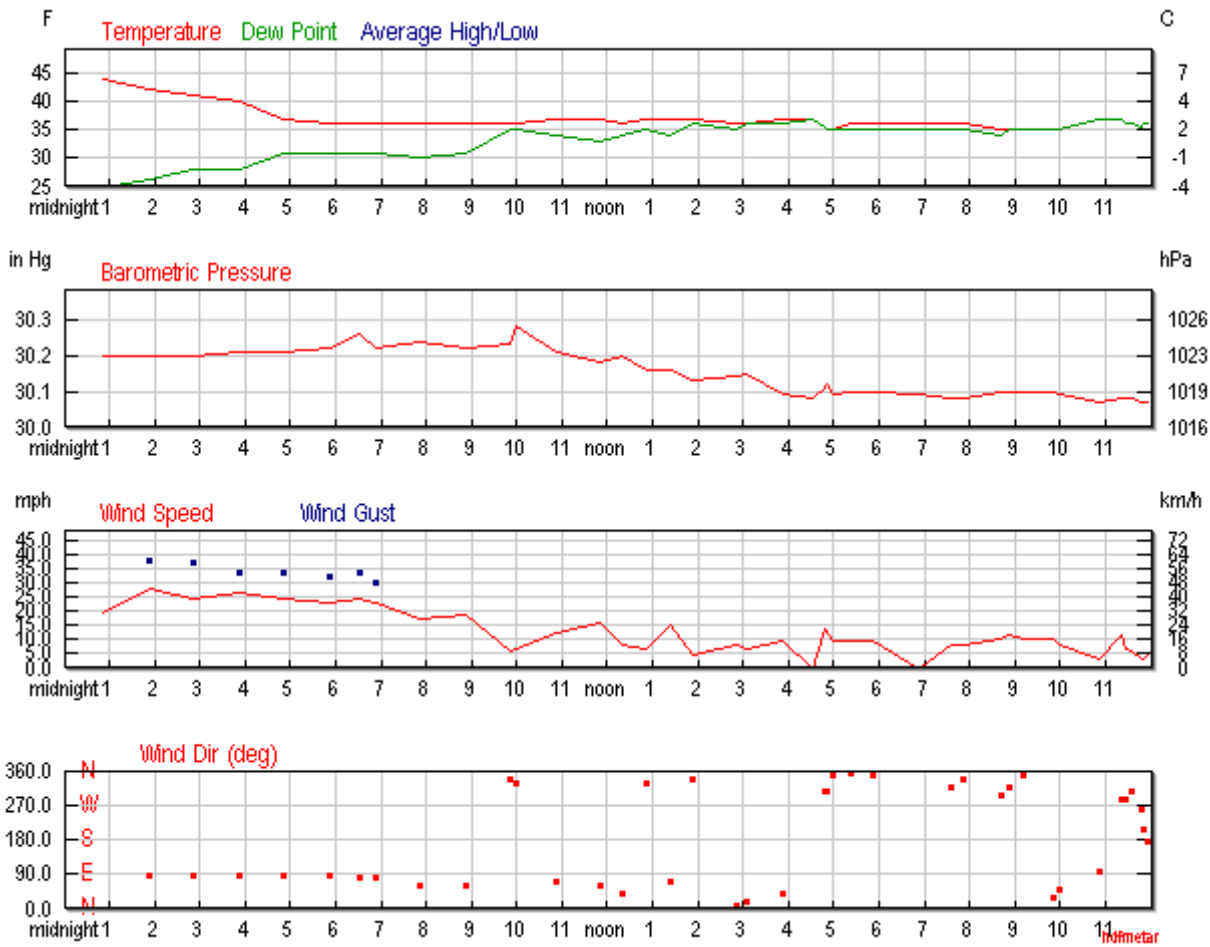
Daily	Weekly	Monthly	Custom		Actual	Average	Record	
Temperature								
Mean Temperature						40 °F	-	
Max Temperature						44 °F	-	- ()
Min Temperature						35 °F	-	- ()
Degree Days								
Heating Degree Days						26		
Moisture								
Dew Point						34 °F		
Average Humidity						91		
Maximum Humidity						100		
Minimum Humidity						47		
Precipitation								
Precipitation						0.30 in	-	- ()
Sea Level Pressure								
Sea Level Pressure						30.14 in		
Wind								

	Actual	Average	Record
Wind Speed	14 mph ()		
Max Wind Speed	28 mph		
Max Gust Speed	38 mph		
Visibility	6.5 miles		
Events	Fog , Rain		

T = Trace of Precipitation, MM = Missing Value

Source: Averaged Metar Reports

Daily Weather History Graph



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Airport or City:

KABQ

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Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

December

22

Submit

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Astronomy

Dec. 22, 2016	Rise	Set
Actual Time	7:11 AM MST	4:59 PM MST
<u>Civil Twilight</u>	6:43 AM MST	5:27 PM MST
Nautical Twilight	6:11 AM MST	5:59 PM MST
<u>Astronomical Twilight</u>	5:40 AM MST	6:30 PM MST
Moon	1:09 AM MST [12/22]	1:07 PM MST [12/22]
Length of Visible Light	10h 44m	
<u>Length of Day</u>	9h 47m	

Waning Crescent, 34% of the Moon is Illuminated

Dec 22	Dec 28	Jan 5	Jan 12	Jan 19
Waning Crescent	New	First Quarter	Full	Last Quarter

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Hourly Weather History & Observations

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
12:52 AM	44.1 °F	35.9 °F	25.0 °F	47%	30.20 in	10.0 mi	East	19.6 mph	36.8 mph	N/A	
1:52 AM	42.1 °F	31.7 °F	26.1 °F	53%	30.20 in	10.0 mi	East	27.6 mph	38.0 mph	N/A	
2:52 AM	41.0 °F	30.9 °F	28.0 °F	60%	30.20 in	10.0 mi	East	24.2 mph	36.8 mph	0.00 in	Rain

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
3:52 AM	39.9 °F	29.0 °F	28.0 °F	63%	30.21 in	10.0 mi	East	26.5 mph	33.4 mph	0.00 in	Rain
4:52 AM	37.0 °F	25.6 °F	30.9 °F	79%	30.21 in	10.0 mi	East	24.2 mph	33.4 mph	0.03 in	Rain
5:52 AM	36.0 °F	24.4 °F	30.9 °F	82%	30.22 in	10.0 mi	East	23.0 mph	32.2 mph	0.03 in	Rain
6:31 AM	36.0 °F	24.2 °F	30.9 °F	82%	30.26 in	9.0 mi	East	24.2 mph	33.4 mph	0.02 in	Rain
6:52 AM	36.0 °F	24.4 °F	30.9 °F	82%	30.22 in	9.0 mi	East	23.0 mph	29.9 mph	0.03 in	Rain
7:52 AM	36.0 °F	26.0 °F	30.0 °F	79%	30.24 in	10.0 mi	ENE	17.3 mph	-	0.01 in	Rain
8:52 AM	36.0 °F	25.6 °F	30.9 °F	82%	30.22 in	10.0 mi	ENE	18.4 mph	-	0.00 in	Rain
9:52 AM	36.0 °F	31.1 °F	35.1 °F	97%	30.23 in	10.0 mi	NNW	5.8 mph	-	0.00 in	
10:00 AM	36.0 °F	30.3 °F	35.1 °F	97%	30.28 in	8.0 mi	NNW	6.9 mph	-	N/A	
10:52 AM	37.0 °F	28.9 °F	34.0 °F	89%	30.21 in	8.0 mi	ENE	12.7 mph	-	0.00 in	Rain
11:52 AM	37.0 °F	27.7 °F	33.1 °F	86%	30.18 in	10.0 mi	ENE	16.1 mph	-	0.00 in	Rain
12:20 PM	36.0 °F	29.6 °F	34.0 °F	93%	30.20 in	5.0 mi	NE	8.1 mph	-	0.01 in	Rain
12:52 PM	37.0 °F	31.6 °F	35.1 °F	93%	30.16 in	6.0 mi	NNW	6.9 mph	-	0.01 in	Rain
1:23 PM	37.0 °F	28.1 °F	34.0 °F	89%	30.16 in	4.0 mi	ENE	15.0 mph	-	0.03 in	Rain
1:52 PM	37.0 °F	33.3 °F	36.0 °F	96%	30.13 in	7.0 mi	NNW	4.6 mph	-	0.03 in	
2:52 PM	36.0 °F	29.6 °F	35.1 °F	97%	30.14 in	4.0 mi	North	8.1 mph	-	0.02 in	Rain
3:05 PM	36.0 °F	30.3 °F	36.0 °F	100%	30.15 in	4.0 mi	NNE	6.9 mph	-	0.01 in	Rain
3:52 PM	37.0 °F	30.4 °F	36.0 °F	96%	30.09 in	4.0 mi	NE	9.2 mph	-	0.04 in	Rain
4:32 PM	37.0 °F	-	37.0 °F	100%	30.08 in	8.0 mi	Calm	Calm	-	0.00 in	
4:47 PM	35.6 °F	26.6 °F	35.6 °F	100%	30.11 in	9.0 mi	NW	13.8 mph	-	0.00 in	

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
4:52 PM	35.1 °F	26.4 °F	35.1 °F	100%	30.12 in	0.5 mi	NW	12.7 mph	-	0.00 in	
4:58 PM	35.1 °F	27.9 °F	35.1 °F	100%	30.09 in	0.5 mi	North	9.2 mph	-	N/A	
5:23 PM	36.0 °F	29.0 °F	35.1 °F	97%	30.10 in	10.0 mi	North	9.2 mph	-	N/A	
5:52 PM	36.0 °F	29.0 °F	35.1 °F	97%	30.10 in	10.0 mi	North	9.2 mph	-	N/A	
6:52 PM	36.0 °F	-	35.1 °F	97%	30.09 in	10.0 mi	Calm	Calm	-	N/A	
7:36 PM	36.0 °F	29.6 °F	35.1 °F	97%	30.08 in	10.0 mi	NW	8.1 mph	-	N/A	
7:52 PM	36.0 °F	29.6 °F	35.1 °F	97%	30.08 in	10.0 mi	NNW	8.1 mph	-	N/A	
8:41 PM	35.1 °F	27.4 °F	34.0 °F	96%	30.10 in	3.0 mi	WNW	10.4 mph	-	0.02 in	Rain
8:52 PM	35.1 °F	26.9 °F	35.1 °F	100%	30.10 in	4.0 mi	NW	11.5 mph	-	0.05 in	Rain
9:10 PM	35.1 °F	27.4 °F	35.1 °F	100%	30.10 in	7.0 mi	North	10.4 mph	-	0.00 in	Rain
9:52 PM	35.1 °F	27.4 °F	35.1 °F	100%	30.10 in	5.0 mi	NNE	10.4 mph	-	0.01 in	Rain
9:59 PM	35.1 °F	28.6 °F	35.1 °F	100%	30.09 in	6.0 mi	NE	8.1 mph	-	0.00 in	Rain
10:52 PM	37.0 °F	34.5 °F	37.0 °F	100%	30.07 in	7.0 mi	East	3.5 mph	-	0.02 in	Rain
11:21 PM	37.0 °F	29.3 °F	37.0 °F	100%	30.08 in	1.2 mi	WNW	11.5 mph	-	0.01 in	Rain
11:28 PM	36.0 °F	30.3 °F	36.0 °F	100%	30.08 in	0.2 mi	WNW	6.9 mph	-	0.01 in	Fog , Rain
11:35 PM	36.0 °F	31.1 °F	36.0 °F	100%	30.08 in	0.5 mi	NW	5.8 mph	-	0.01 in	Fog , Rain
11:47 PM	35.6 °F	32.8 °F	35.6 °F	100%	30.07 in	1.2 mi	West	3.5 mph	-	0.02 in	Rain
11:52 PM	36.0 °F	33.3 °F	36.0 °F	100%	30.07 in	1.5 mi	SSW	3.5 mph	-	0.02 in	Rain
11:55 PM	36.0 °F	32.1 °F	36.0 °F	100%	30.07 in	2.0 mi	South	4.6 mph	-	0.01 in	Rain

Kirtland AFB, NM

Albuquerque International Sunport

⌚ 5:28 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - December, 2016

December

23

2016

View

Friday, December 23, 2016

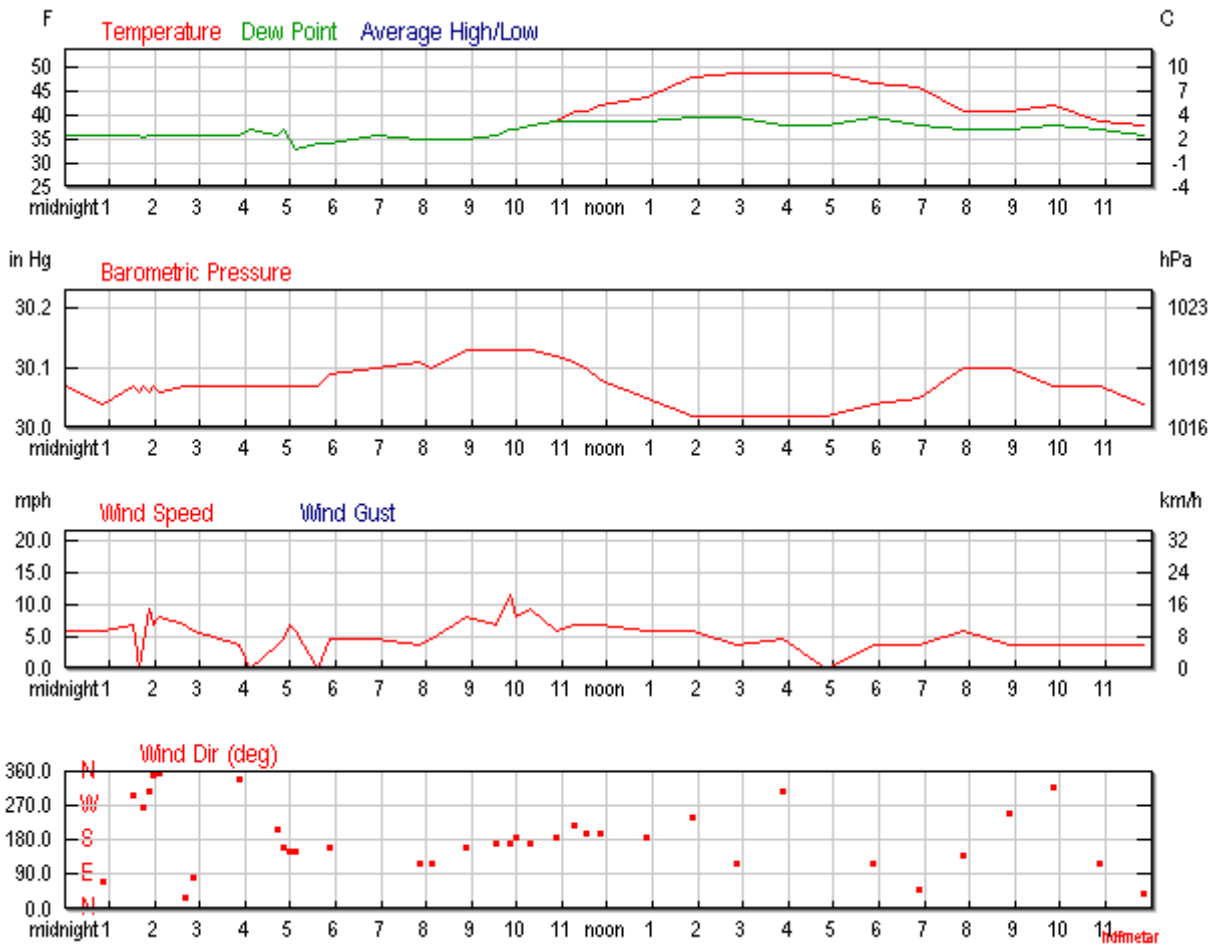
Daily	Weekly	Monthly	Custom			
				Actual	Average	Record
Temperature						
Mean Temperature				40 °F	-	
Max Temperature				48 °F	-	- ()
Min Temperature				33 °F	-	- ()
Degree Days						
Heating Degree Days				24		
Moisture						
Dew Point				37 °F		
Average Humidity				93		
Maximum Humidity				100		
Minimum Humidity				66		
Precipitation						
Precipitation				0.03 in	-	- ()
Sea Level Pressure						
Sea Level Pressure				30.08 in		
Wind						

	Actual	Average	Record
Wind Speed	5 mph ()		
Max Wind Speed	12 mph		
Max Gust Speed	-		
Visibility	6.0 miles		
Events	Fog , Rain		

T = Trace of Precipitation, MM = Missing Value

Source: Averaged Metar Reports

Daily Weather History Graph



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KABQ

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Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

December

23

Submit

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Astronomy

Dec. 23, 2016	Rise	Set
Actual Time	7:11 AM MST	4:59 PM MST
<u>Civil Twilight</u>	6:43 AM MST	5:28 PM MST
Nautical Twilight	6:11 AM MST	5:59 PM MST
<u>Astronomical Twilight</u>	5:41 AM MST	6:30 PM MST
Moon	2:03 AM MST [12/23]	1:39 PM MST [12/23]
Length of Visible Light	10h 44m	
<u>Length of Day</u>	9h 48m	

Waning Crescent, 25% of the Moon is Illuminated

Dec 23	Dec 28	Jan 5	Jan 12	Jan 19
Waning Crescent	New	First Quarter	Full	Last Quarter

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Hourly Weather History & Observations

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
12:05 AM	36.0 °F	31.1 °F	36.0 °F	100%	30.07 in	4.0 mi	Variable	5.8 mph	-	0.01 in	Rain
12:52 AM	36.0 °F	31.1 °F	36.0 °F	100%	30.04 in	3.0 mi	ENE	5.8 mph	-	0.03 in	Rain
1:32 AM	36.0 °F	30.3 °F	36.0 °F	100%	30.07 in	2.0 mi	WNW	6.9 mph	-	0.00 in	

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
1:39 AM	36.0 °F	-	36.0 °F	100%	30.06 in	1.2 mi	Calm	Calm	-	0.00 in	
1:46 AM	35.6 °F	32.8 °F	35.6 °F	100%	30.07 in	0.8 mi	West	3.5 mph	-	0.00 in	
1:52 AM	36.0 °F	29.0 °F	36.0 °F	100%	30.06 in	0.5 mi	NW	9.2 mph	-	0.00 in	Fog
1:59 AM	36.0 °F	30.3 °F	36.0 °F	100%	30.07 in	2.5 mi	North	6.9 mph	-	N/A	
2:06 AM	36.0 °F	29.6 °F	36.0 °F	100%	30.06 in	10.0 mi	North	8.1 mph	-	N/A	
2:42 AM	36.0 °F	30.3 °F	36.0 °F	100%	30.07 in	10.0 mi	NNE	6.9 mph	-	N/A	
2:52 AM	36.0 °F	31.1 °F	36.0 °F	100%	30.07 in	10.0 mi	East	5.8 mph	-	N/A	
3:52 AM	36.0 °F	33.3 °F	36.0 °F	100%	30.07 in	10.0 mi	NNW	3.5 mph	-	N/A	
4:06 AM	37.0 °F	-	37.0 °F	100%	30.07 in	10.0 mi	Calm	Calm	-	N/A	
4:42 AM	36.0 °F	33.3 °F	36.0 °F	100%	30.07 in	10.0 mi	SSW	3.5 mph	-	N/A	
4:52 AM	37.0 °F	33.3 °F	37.0 °F	100%	30.07 in	10.0 mi	SSE	4.6 mph	-	N/A	
5:00 AM	35.1 °F	29.3 °F	35.1 °F	100%	30.07 in	1.5 mi	SSE	6.9 mph	-	N/A	
5:06 AM	33.1 °F	27.7 °F	33.1 °F	100%	30.07 in	0.2 mi	SSE	5.8 mph	-	N/A	Fog
5:36 AM	34.0 °F	-	34.0 °F	100%	30.07 in	0.2 mi	Calm	Calm	-	N/A	Fog
5:52 AM	34.0 °F	29.8 °F	34.0 °F	100%	30.09 in	0.2 mi	SSE	4.6 mph	-	N/A	Fog
6:52 AM	36.0 °F	32.1 °F	36.0 °F	100%	30.10 in	0.2 mi	Variable	4.6 mph	-	N/A	Fog
7:52 AM	35.1 °F	32.2 °F	35.1 °F	100%	30.11 in	0.2 mi	ESE	3.5 mph	-	N/A	Fog
8:08 AM	35.1 °F	31.0 °F	35.1 °F	100%	30.10 in	0.2 mi	ESE	4.6 mph	-	N/A	Fog
8:52 AM	35.1 °F	28.6 °F	35.1 °F	100%	30.13 in	0.2 mi	SSE	8.1 mph	-	N/A	Fog
9:32 AM	36.0 °F	30.3 °F	36.0 °F	100%	30.13 in	0.5 mi	South	6.9 mph	-	N/A	Fog

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
9:52 AM	37.0 °F	29.3 °F	37.0 °F	100%	30.13 in	0.5 mi	South	11.5 mph	-	N/A	Fog
9:58 AM	37.0 °F	31.0 °F	37.0 °F	100%	30.13 in	1.5 mi	South	8.1 mph	-	N/A	
10:17 AM	37.9 °F	31.5 °F	37.9 °F	100%	30.13 in	5.0 mi	South	9.2 mph	-	N/A	
10:52 AM	39.0 °F	34.8 °F	39.0 °F	100%	30.12 in	6.0 mi	South	5.8 mph	-	N/A	
11:16 AM	41.0 °F	36.4 °F	39.0 °F	93%	30.11 in	10.0 mi	SW	6.9 mph	-	N/A	
11:33 AM	41.0 °F	36.4 °F	39.0 °F	93%	30.10 in	10.0 mi	SSW	6.9 mph	-	N/A	
11:52 AM	42.1 °F	37.7 °F	39.0 °F	89%	30.08 in	10.0 mi	SSW	6.9 mph	-	N/A	
12:52 PM	44.1 °F	40.8 °F	39.0 °F	82%	30.05 in	10.0 mi	South	5.8 mph	-	N/A	
1:52 PM	48.0 °F	-	39.9 °F	74%	30.02 in	10.0 mi	WSW	5.8 mph	-	N/A	
2:52 PM	48.9 °F	-	39.9 °F	71%	30.02 in	10.0 mi	ESE	3.5 mph	-	N/A	
3:52 PM	48.9 °F	-	37.9 °F	66%	30.02 in	10.0 mi	NW	4.6 mph	-	N/A	
4:52 PM	48.9 °F	-	37.9 °F	66%	30.02 in	10.0 mi	Calm	Calm	-	N/A	
5:52 PM	46.9 °F	-	39.9 °F	77%	30.04 in	10.0 mi	ESE	3.5 mph	-	N/A	
6:52 PM	46.0 °F	44.8 °F	37.9 °F	73%	30.05 in	10.0 mi	NE	3.5 mph	-	N/A	
7:52 PM	41.0 °F	37.1 °F	37.0 °F	86%	30.10 in	10.0 mi	SE	5.8 mph	-	N/A	
8:52 PM	41.0 °F	39.0 °F	37.0 °F	86%	30.10 in	10.0 mi	WSW	3.5 mph	-	N/A	
9:52 PM	42.1 °F	40.2 °F	37.9 °F	85%	30.07 in	10.0 mi	NW	3.5 mph	-	N/A	
10:52 PM	39.0 °F	36.8 °F	37.0 °F	93%	30.07 in	10.0 mi	ESE	3.5 mph	-	N/A	
11:52 PM	37.9 °F	35.5 °F	36.0 °F	93%	30.04 in	10.0 mi	NE	3.5 mph	-	N/A	

Kirtland AFB, NM

Albuquerque International Sunport

© 5:29 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - December, 2016

December

24

2016

View

Saturday, December 24, 2016

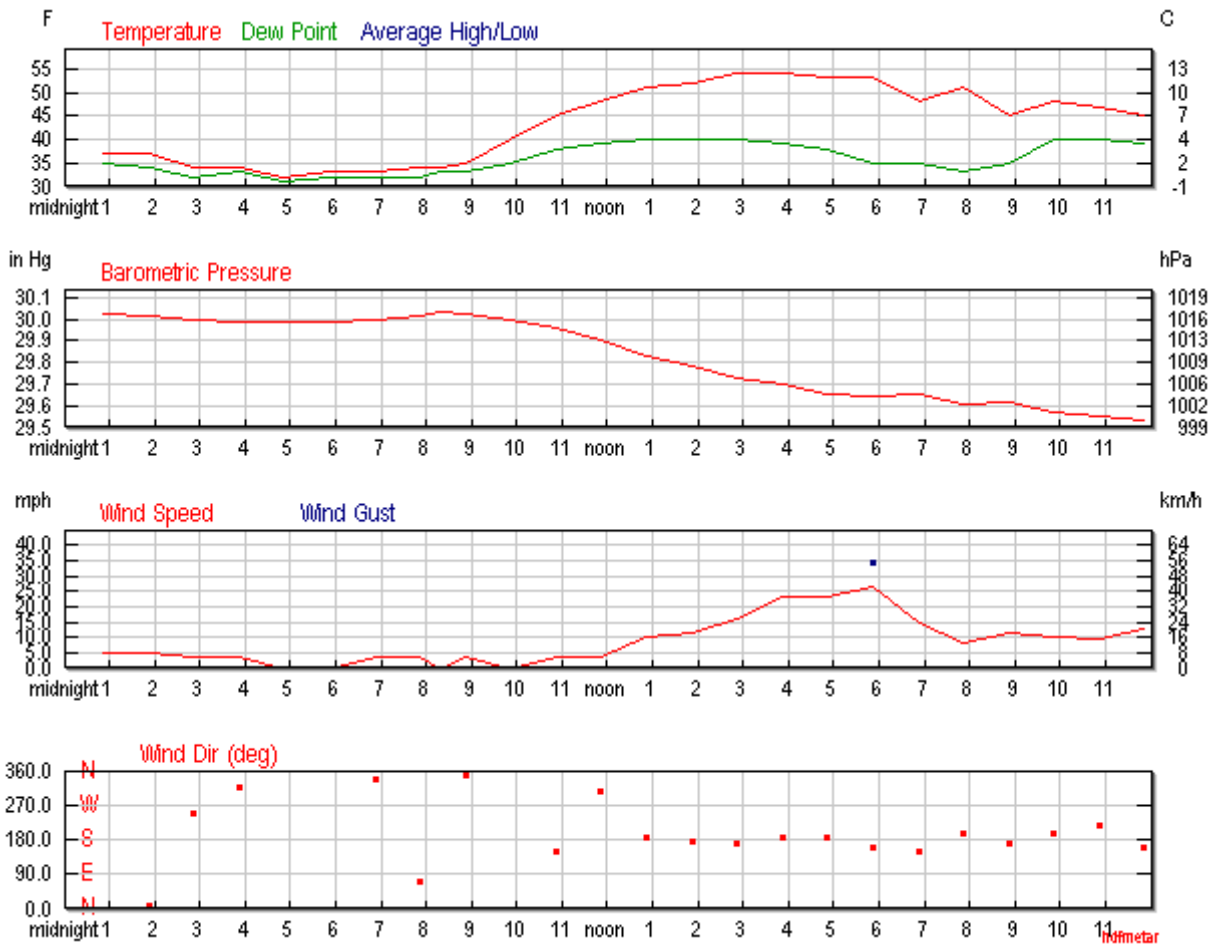
Daily	Weekly	Monthly	Custom			
				Actual	Average	Record
Temperature						
Mean Temperature				43 °F	-	
Max Temperature				54 °F	-	- ()
Min Temperature				32 °F	-	- ()
Degree Days						
Heating Degree Days				22		
Moisture						
Dew Point				36 °F		
Average Humidity				77		
Maximum Humidity				96		
Minimum Humidity				50		
Precipitation						
Precipitation				0.00 in	-	- ()
Sea Level Pressure						
Sea Level Pressure				29.83 in		
Wind						

	Actual	Average	Record
Wind Speed	6 mph ()		
Max Wind Speed	26 mph		
Max Gust Speed	34 mph		
Visibility	10.0 miles		
Events	Rain		

T = Trace of Precipitation, MM = Missing Value

Source: Averaged Metar Reports

Daily Weather History Graph



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KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

December

24

Submit

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Astronomy

Dec. 24, 2016	Rise	Set
Actual Time	7:12 AM MST	5:00 PM MST
<u>Civil Twilight</u>	6:44 AM MST	5:28 PM MST
Nautical Twilight	6:12 AM MST	6:00 PM MST
<u>Astronomical Twilight</u>	5:41 AM MST	6:31 PM MST
Moon	2:57 AM MST [12/24]	2:13 PM MST [12/24]
Length of Visible Light	10h 44m	
<u>Length of Day</u>	9h 48m	

Waning Crescent, 18% of the Moon is Illuminated

Dec 24	Dec 28	Jan 5	Jan 12	Jan 19
Waning Crescent	New	First Quarter	Full	Last Quarter

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Hourly Weather History & Observations

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
12:52 AM	37.0 °F	33.3 °F	35.1 °F	93%	30.02 in	10.0 mi	NNE	4.6 mph	-	N/A	
1:52 AM	37.0 °F	33.3 °F	34.0 °F	89%	30.01 in	10.0 mi	North	4.6 mph	-	N/A	
2:52 AM	34.0 °F	31.0 °F	32.0 °F	92%	30.00 in	10.0 mi	WSW	3.5 mph	-	N/A	

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
3:52 AM	34.0 °F	31.0 °F	33.1 °F	96%	29.99 in	10.0 mi	NW	3.5 mph	-	N/A	
4:52 AM	32.0 °F	-	30.9 °F	96%	29.99 in	10.0 mi	Calm	Calm	-	N/A	
5:52 AM	33.1 °F	-	32.0 °F	96%	29.99 in	10.0 mi	Calm	Calm	-	N/A	
6:52 AM	33.1 °F	30.0 °F	32.0 °F	96%	30.00 in	10.0 mi	NNW	3.5 mph	-	N/A	
7:52 AM	34.0 °F	31.0 °F	32.0 °F	92%	30.01 in	10.0 mi	ENE	3.5 mph	-	N/A	
8:18 AM	34.0 °F	-	33.1 °F	96%	30.03 in	10.0 mi	Calm	Calm	-	N/A	
8:52 AM	35.1 °F	32.2 °F	33.1 °F	92%	30.02 in	10.0 mi	North	3.5 mph	-	N/A	
9:52 AM	39.9 °F	-	35.1 °F	83%	30.00 in	10.0 mi	Calm	Calm	-	N/A	
10:52 AM	45.0 °F	43.5 °F	37.9 °F	76%	29.96 in	10.0 mi	SSE	3.5 mph	-	N/A	
11:52 AM	48.0 °F	-	39.0 °F	71%	29.90 in	10.0 mi	NW	3.5 mph	-	N/A	
12:52 PM	51.1 °F	-	39.9 °F	66%	29.83 in	10.0 mi	South	10.4 mph	-	N/A	
1:52 PM	52.0 °F	-	39.9 °F	63%	29.78 in	10.0 mi	South	11.5 mph	-	N/A	
2:52 PM	54.0 °F	-	39.9 °F	59%	29.73 in	10.0 mi	South	16.1 mph	-	N/A	
3:52 PM	54.0 °F	-	39.0 °F	57%	29.70 in	10.0 mi	South	23.0 mph	-	N/A	
4:52 PM	53.1 °F	-	37.9 °F	57%	29.65 in	10.0 mi	South	23.0 mph	29.9 mph	N/A	
5:52 PM	53.1 °F	-	35.1 °F	50%	29.64 in	10.0 mi	SSE	26.5 mph	34.5 mph	N/A	
6:52 PM	48.0 °F	-	35.1 °F	61%	29.65 in	10.0 mi	SSE	15.0 mph	-	N/A	
7:52 PM	51.1 °F	-	33.1 °F	50%	29.61 in	10.0 mi	SSW	8.1 mph	-	N/A	
8:52 PM	45.0 °F	39.3 °F	35.1 °F	68%	29.62 in	10.0 mi	South	11.5 mph	-	N/A	
9:52 PM	48.0 °F	-	39.9 °F	74%	29.57 in	10.0 mi	SSW	10.4 mph	24.2 mph	0.00 in	Rain

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
10:52 PM	46.9 °F	-	39.9 °F	77%	29.55 in	10.0 mi	SW	9.2 mph	-	0.00 in	
11:52 PM	45.0 °F	38.9 °F	39.0 °F	80%	29.53 in	10.0 mi	SSE	12.7 mph	-	N/A	

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Kirtland AFB, NM

Albuquerque International Sunport

⌚ 5:29 PM MST on January 03, 2017 [GMT -0700]

Weather History for KABQ - December, 2016

December

31

2016

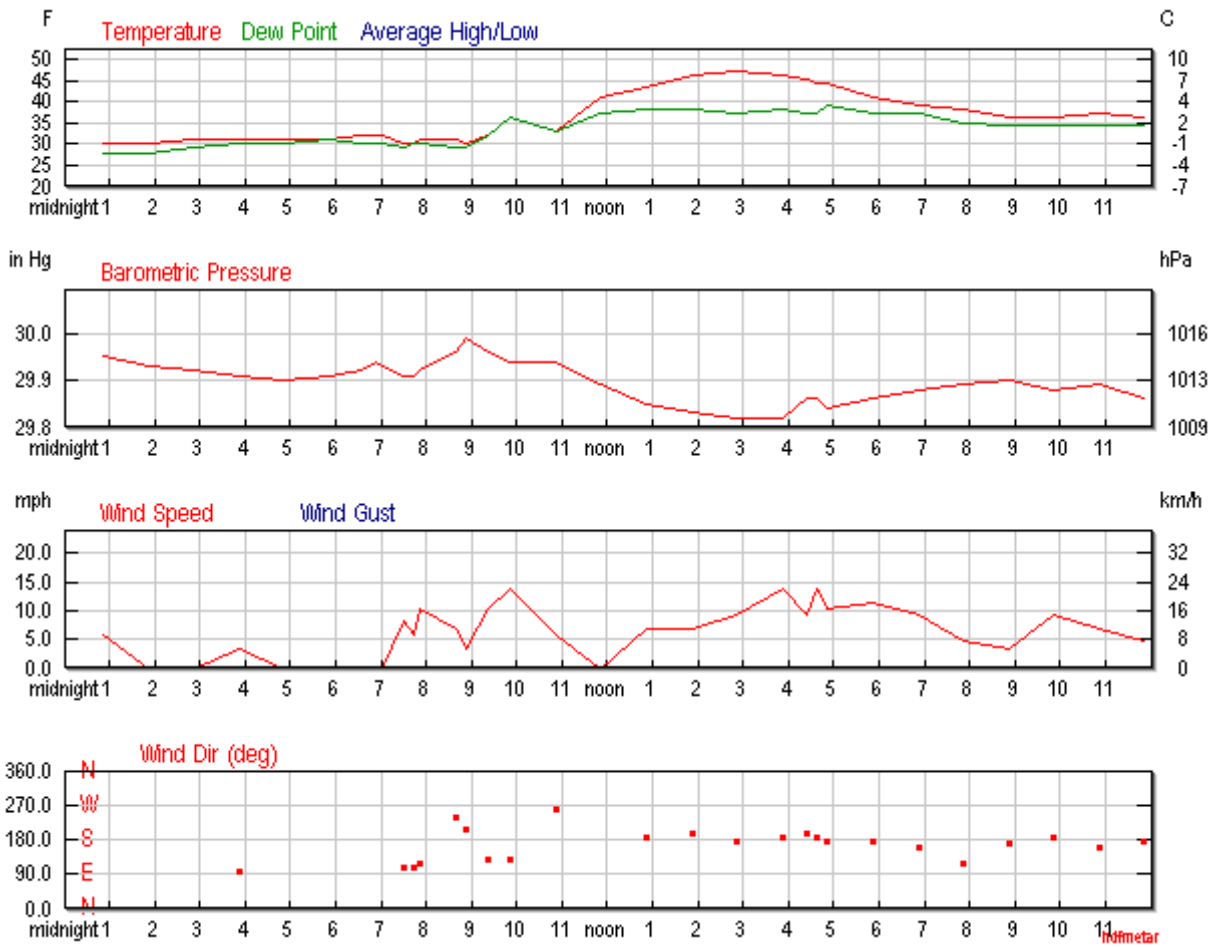
View

Saturday, December 31, 2016

Daily	Weekly	Monthly	Custom			
				Actual	Average	Record
Temperature						
Mean Temperature				39 °F	-	
Max Temperature				48 °F	-	- ()
Min Temperature				30 °F	-	- ()
Degree Days						
Heating Degree Days				26		
Moisture						
Dew Point				34 °F		
Average Humidity				90		
Maximum Humidity				100		
Minimum Humidity				68		
Precipitation						
Precipitation				0.03 in	-	- ()
Sea Level Pressure						
Sea Level Pressure				29.90 in		
Wind						

	Actual	Average	Record
Wind Speed	4 mph ()		
Max Wind Speed	14 mph		
Max Gust Speed	-		
Visibility	9.4 miles		
Events	Rain , Thunderstorm		
T = Trace of Precipitation, MM = Missing Value		Source: Averaged Metar Reports	

Daily Weather History Graph



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Search for Another Location

Airport or City:

KABQ

Submit

Trip Planner

Search our weather history database for the weather conditions in past years. The results will help you decide how hot, cold, wet, or windy it might be!

Date:

December

31

Submit

[report this ad](#) | [why ads?](#)

Astronomy

Dec. 31, 2016	Rise	Set
Actual Time	7:14 AM MST	5:05 PM MST
Civil Twilight	6:46 AM MST	5:33 PM MST
Nautical Twilight	6:14 AM MST	6:04 PM MST
Astronomical Twilight	5:43 AM MST	6:35 PM MST
Moon	8:48 AM MST [12/31]	7:39 PM MST [12/31]
Length of Visible Light	10h 46m	
Length of Day	9h 50m	

Waxing Crescent, 6% of the Moon is Illuminated

Dec 31	Jan 5	Jan 12	Jan 19	Jan 27
Waxing Crescent	First Quarter	Full	Last Quarter	New

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Hourly Weather History & Observations

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
12:52 AM	30.9 °F	25.2 °F	28.9 °F	92%	29.95 in	10.0 mi	ESE	5.8 mph	-	N/A	
1:52 AM	30.9 °F	-	28.9 °F	92%	29.93 in	10.0 mi	Calm	Calm	-	N/A	
2:52 AM	32.0 °F	-	30.0 °F	92%	29.92 in	10.0 mi	Calm	Calm	-	N/A	

Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
3:52 AM	32.0 °F	28.7 °F	30.9 °F	96%	29.91 in	10.0 mi	East	3.5 mph	-	N/A	
4:52 AM	32.0 °F	-	30.9 °F	96%	29.90 in	10.0 mi	Calm	Calm	-	N/A	
5:52 AM	32.0 °F	-	32.0 °F	100%	29.91 in	10.0 mi	Calm	Calm	-	0.00 in	
6:35 AM	33.1 °F	-	30.9 °F	92%	29.92 in	10.0 mi	Calm	Calm	-	N/A	
6:52 AM	33.1 °F	-	30.9 °F	92%	29.94 in	10.0 mi	Calm	Calm	-	N/A	
7:01 AM	33.1 °F	-	30.9 °F	92%	29.93 in	10.0 mi	Calm	Calm	-	N/A	
7:30 AM	30.9 °F	23.5 °F	30.0 °F	96%	29.91 in	10.0 mi	ESE	8.1 mph	-	N/A	
7:43 AM	30.9 °F	25.2 °F	30.9 °F	100%	29.91 in	10.0 mi	ESE	5.8 mph	-	N/A	
7:52 AM	32.0 °F	23.6 °F	30.9 °F	96%	29.92 in	10.0 mi	ESE	10.4 mph	-	N/A	
8:40 AM	32.0 °F	25.6 °F	30.0 °F	92%	29.96 in	6.0 mi	WSW	6.9 mph	-	0.00 in	Rain
8:52 AM	30.9 °F	27.5 °F	30.0 °F	96%	29.99 in	5.0 mi	SSW	3.5 mph	-	0.01 in	Rain
9:23 AM	33.1 °F	24.9 °F	33.1 °F	100%	29.96 in	6.0 mi	SE	10.4 mph	-	0.02 in	Rain
9:52 AM	37.0 °F	28.5 °F	37.0 °F	100%	29.94 in	9.0 mi	SE	13.8 mph	-	0.02 in	
10:52 AM	34.0 °F	28.8 °F	34.0 °F	100%	29.94 in	6.0 mi	West	5.8 mph	-	N/A	
11:52 AM	42.1 °F	-	37.9 °F	85%	29.89 in	10.0 mi	Calm	Calm	-	N/A	
12:52 PM	44.1 °F	40.1 °F	39.0 °F	82%	29.85 in	10.0 mi	South	6.9 mph	-	N/A	
1:52 PM	46.9 °F	-	39.0 °F	74%	29.83 in	10.0 mi	SSW	6.9 mph	-	N/A	
2:52 PM	48.0 °F	-	37.9 °F	68%	29.82 in	10.0 mi	South	9.2 mph	-	N/A	
3:52 PM	46.9 °F	-	39.0 °F	74%	29.82 in	10.0 mi	South	13.8 mph	-	N/A	
4:24 PM	46.0 °F	41.4 °F	37.9 °F	73%	29.86 in	10.0 mi	SSW	9.2 mph	-	N/A	Thunderst

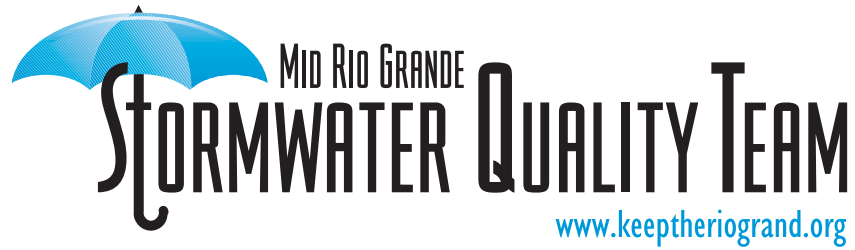
Time (MST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events
4:37 PM	45.0 °F	38.5 °F	37.9 °F	76%	29.86 in	10.0 mi	South	13.8 mph	-	N/A	
4:52 PM	45.0 °F	39.7 °F	39.9 °F	82%	29.84 in	10.0 mi	South	10.4 mph	-	N/A	
5:52 PM	42.1 °F	35.7 °F	37.9 °F	85%	29.86 in	10.0 mi	South	11.5 mph	-	N/A	
6:52 PM	39.9 °F	33.9 °F	37.9 °F	93%	29.88 in	10.0 mi	SSE	9.2 mph	-	N/A	
7:52 PM	39.0 °F	35.7 °F	36.0 °F	89%	29.89 in	10.0 mi	ESE	4.6 mph	-	N/A	
8:52 PM	37.0 °F	34.5 °F	35.1 °F	93%	29.90 in	10.0 mi	South	3.5 mph	-	N/A	
9:52 PM	37.0 °F	30.4 °F	35.1 °F	93%	29.88 in	10.0 mi	South	9.2 mph	-	N/A	
10:52 PM	37.9 °F	32.7 °F	35.1 °F	89%	29.89 in	10.0 mi	SSE	6.9 mph	-	N/A	
11:52 PM	37.0 °F	33.3 °F	35.1 °F	93%	29.86 in	10.0 mi	South	4.6 mph	-	N/A	

||

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Attachment 8

Education and Outreach Outcomes Report



Outcomes Report

for

Fiscal Year 2016-2017

(July 1, 2016 - June 30, 2017)

presented by

Phyllis Baker





During the period from July 1, 2016 through June 30, 2017, the Mid Rio Grande Stormwater Quality Team (MRGSQT) continued its educational partnerships with the Bosque Ecosystem Monitoring Program (B.E.M.P.) and RiverXchange. The team continued to post relevant information to its website and Facebook page, and also participated in a number of high-profile community events, including the KOB TV Health & Wellness Fair in January 2017. The team moved its interactive kiosk to Rio Rancho's Loma Colorado Public Library at the beginning of 2017 and held a news conference there in June in conjunction with the onset of the beginning of the monsoon season in July. Several team members were booked on morning radio and TV talk shows to discuss stormwater quality and ways to keep pollutants out of the Rio Grande. The team decided to concentrate on educating contractors and people in the construction field about the new 2017 Construction General Permit changes and additions by creating a presentation and holding an educational breakfast seminar at the end of June.

Team partners and supporters disseminated information on stormwater through municipal water quality reports to stakeholders. Specialty advertising giveaways relating to stormwater quality awareness were ordered/reordered for use at public events. The overall budget spent on these activities, excluding donated hours by team members and RiverXchange and B.E.M.P., was \$44,555.98. The contractor, CWA Strategic Communications, donated \$3,399.04 in services during the 12-month period. We have summarized the activities below and on the following pages:

WEBSITE (www.keeptheriogrand.org)

New visitors accounted for 77% of the total 1,675 website visitors. A majority of visitors continue to access the website using their desktop computers but mobile access continues to increase: out of 254 sessions, 199 sessions were conducted via mobile devices.

A detailed Google Analytics Report is included as an attachment to this report, labeled Exhibit 1.

Estimated number of individuals reached by this activity: 1,675

Permit Reference(s): General SWP, Construction, Pet Waste, Household Hazardous Waste

Audience(s): Children, Adults

FACEBOOK PAGE

In conjunction with the SQT website, a Facebook page contains posts and updated information at: (<https://www.facebook.com/Keeptheriogrand>). Total "likes" for the page increased from 134 in the last year to 141 during this year, a 1 percent increase.

A detailed report is included as an attachment to this report, labeled Exhibit 2.

Estimated number of individuals reached by this activity: 141

Permit Reference(s): General SWP, Construction, Pet Waste

Audience(s): Children, Adults

EVENTS

Between July 1, 2016 and June 30, 2017, MRGSQT members and their partner agencies reported participating in a total of 68 community outreach/educational events and reaching 14,084 adults and children. **Details can be found in Exhibit 3 at the end of this report.**

Estimated number of individuals reached by these community outreach/education events (with duplications): 14,084

Permit Reference(s): General SWP, Construction, Pet Waste, Construction, Household Hazardous Waste, Illicit Discharge and Animal Sources

Audience(s): Children, Adults

GENERAL MATERIALS DISTRIBUTION

As appropriate, team members distribute materials at events. While the MRGSQT is focusing less on printed collateral pieces and more on community outreach through partnerships and participation in community events, we have included inventories of materials on hand as of July 1, 2016 through June 30, 2017.

Total estimated number of people reached by these activities: 6,738

Cost per person reached (may be some duplication): \$1.38

Permit Reference(s): General SWP, Pet Waste, Household Hazardous Waste

Audience(s): Children, Adults

EDUCATIONAL ACTIVITIES

Educational Kiosk at the Children’s Library at the Main Albuquerque Public Library Albuquerque and Rio Rancho’s Main Loma Colorado Library.

STORMWATER QUALITY TEAM Inventory				
Item	Starting Qty as of 7/1/2016	Distributed	Ending Quantity as of 6/30/2017	Cost of Materials Distributed
“Keep the Rio Grand” Bumper Stickers	1228	430	798	\$167.58
“Reduce Stormwater Pollution at Home” brochure	811	641	170	\$224.35
SQT Brochure - “New Dog or Cat”	2740	680	2620	\$204.00
Dog-shaped Poop Bag Dispensers	1496	1070	426	\$426.00
“Don’t Contaminate the River” stickers	3000	1960	1040	\$1,040.00
Poo Emoji Squeezies (added 2/14/17)	5000	430	4570	\$4,570.00
“Scoop the Poop” Rack Card	244	244	0	\$-
“Yard Mess” Brochure	513	513	0	\$-
Morphing Fish Bags	957	770	187	\$2,664.20
		6,738		\$9,296.13

On January 2, 2017, the Mid Rio Grande Stormwater Quality Team moved its educational kiosk from the Albuquerque main library to the Loma Colorado Library in Rio Rancho. A news conference was held on June 14, just before the beginning of the area’s monsoon season, to introduce the kiosk to the community and educate citizens about stormwater issues. The kiosk features:

- An interactive stormwater system map where children can press various points to learn the roles arroyos and channels play in the stormwater system and how to keep from polluting that system. The system stretches from Bernalillo on the north through Rio Rancho and into Albuquerque.
- A “Scoop the Poop” game that lets children choose one of three dogs and learn how to properly pick up after that dog. This is important, according to the MRGSQT, because pet waste is a major source of E coli contamination in the Rio Grande.
- An educational panel on common types of trash, debris and chemicals that pollute the Rio Grande including appliances and electronics, automotive products such as oil, batteries and gasoline, glass and cement, household cleaners, yard waste, prescription and over-the-counter medicines.
- A touch screen that includes facts about each arroyo and the Rio Grande.

Total number of children and adults viewing the kiosk from January 2 through June 31, 2017 is broken down on the right:

JAN	15,999
FEB	18,181
MAR	17,955
APR	16,509
MAY	16,546
JUN	19,777
TOTAL	104,967

STUDENTS AND TEACHERS REACHED THROUGH PARTNER EDUCATIONAL PROGRAMS – RIVERXCHANGE AND BOSQUE ECOSYSTEM MONITORING PROGRAM (B.E.M.P.)

RiverXchange

RiverXchange is an innovative, long-term outreach program that integrates water resource topics with computer technology, student writing, and a hands-on curriculum to meet specific, measurable outcomes.

Since 2007, the program has enabled upper elementary classes from New Mexico to become “high tech pen pals” with a class outside the state to share what they learn about the geography, culture, and ecology of their local river and watershed. Including these partner classes, the program has served over 14,000 students. Each student spends about 25 hours engaged with the program over the course of the school year. The curriculum incorporates hands-on activities, multiple classroom presentations by local water resources. During the 2016-2017 season, there were 42 classes in New Mexico, 23 of which were Title I schools. RiverXchange conducted:

- 19 classes in the Albuquerque Public School System
- 18 classes in the Rio Rancho Public School System
- 5 classes in the Bernalillo Public School System
- 32 “Watershed on Wheels” (WOW) offerings (National Fish and Wildlife Foundation)

For more information, see Exhibit 4, RiverXchange’s 2016-2017 report to the Mid Rio Grande Stormwater Quality Team.

B.E.M.P.

The main objective of the *Stormwater Science* outreach education program of the Bosque Ecosystem Monitoring Program (B.E.M.P.) is to teach students that the health of the Rio Grande is directly related to the health of the surrounding watershed. The Stormwater Science program includes a one and one-half hour classroom activity, and a 4-5 hour study trip to the Rio Grande. During the 2016-2017 school year 1,775 students AND teachers participated in *Stormwater Science* activities in their classrooms, in the field or both. The one and one-half hour classroom program was delivered to 1,269 students in 32 classrooms in 19 different schools in Bernalillo, Rio Rancho, Albuquerque, Los Lunas and Belen.

See **Exhibit 5** for the BEMP Report on the 2016-2017 school year and its *Stormwater Science* report.

Total estimated number of people reached by these educational activities: 108,011

Permit Reference(s): General SWP, Pet Waste, Animal Sources, Household Hazardous Waste, Illicit Discharges
Audience(s): Children, Adults

Construction General Permit (CGP) Seminar

The Stormwater Team realized the importance of outreach to contractors and construction professionals about the changes and adjustments to the 2017 CGP. They planned a seminar and invited members of those groups to attend. The breakfast seminar was held at the NM Department of Transportation District 3 Auditorium. Fifty-three attendees (16 contractors and 37 government employees) learned about the updates to the 2017 CGP. Response to the seminar was very positive.

Total estimated number of people reached by these educational activities: 53

Permit Reference(s): General SWP, Illicit Discharges
Audience(s): Adults

Mid Rio Grande **STORMWATER QUALITY TEAM** PRESENTS

New 2017 Construction General Permit (CGP) Explained

FREE SEMINAR CEUs Available

Thursday, June 29 • 7-9 am
NMDOT District 3 Auditorium
7500 Pan American Fwy (Frontage Rd.)
Breakfast Served

Learn About New Permit Changes to CGP Requirements

If you work in construction or engineering you need to take this class!

Representatives from the following MS4s will be on hand to clarify their specific requirements for the new CGP:

- RMAFCR
- Bernalillo County
- City of Albuquerque
- City of Rio Rancho
- ESCAFCA
- NMDOT
- SSCAFCA
- Sandoval County
- Town of Bernalillo
- Village of Corrales
- Village of Los Ranchos de Albuquerque

NMDOT District 3 is located at 7500 Pan American Fwy (Frontage Rd Northbound) between San Antonio and Paseo Del Norte

MAP NOT TO SCALE

RSVP to Phyllis at 505-245-3135 or phyllisb@cwastrategic.com no later than Friday, June 23

Kids learn about stormwater

BY GARY HERRON
Assistant Editor

Sure, you can understand that the Southern Sandoval County Arroyo Control Authority (SSCAFCA) has a valid interest in the Rio Grande — what's flowing into it, what's flowing out of it — and the Mid Rio Grande Stormwater Quality Team members showing up at Loma Colorado Main Library on June 14 to talk about facets of stormwater and more.

It turns out we're all in this together.

The MRGSQT, a multi-agency team formed in 2004 to educate individuals and businesses on reducing stormwater pollution by keeping trash, chemicals and other debris out of our stormwater system to protect the Rio Grande, took the lead here. SSCAFCA and the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) are on that team, as are Rio Rancho, Corrales and Bernalillo.

A couple dozen youngsters being entertained at The MAC, a short walk away, sat on the floor and listened as Catherine Conran, the education outreach director, talked about the team's goals.

A few steps away, youngsters could play an interactive — and quite popular, wouldn't you know — game called "Scoop the Poop." Using their fingers on a screen, they could "scoop" doggy do-do into bags, keeping it from ending up in a drain and, ultimately, the Rio Grande.

Hence, "Keep the Rio Grand" is great slogan.

To get thing started, MRGSQT partnered with the Bosque Ecosystem Monitoring Program (BEMP) to monitor four sites on the Rio Grande and to provide educational activities on water quality relating to watershed management in Bernalillo and Sandoval counties. Those monitoring sites are



GARY HERRON/Observer

A group of youngsters from The MAC, a short walk from Loma Colorado Main Library, listen to Catherine Conran.

located along the Rio Grande in Bernalillo and Sandoval counties adjacent to existing BEMP site.

Sites included were at the US 550 bridge in Bernalillo, the Alameda and Montano bridges within Albuquerque, and south of Tijeras Arroyo and north of Isleta Pueblo in Albuquerque. Weekly monitoring measured levels of the bacteria known as *Escherichia coli* (*E. coli*) in the river.

Although the bacteria occurs naturally in the Rio Grande, levels can also be temporarily elevated after a storm if animal wastes are washed into the river. For example, storm sewers in the Albuquerque and Rio Rancho areas can potentially carry *E. coli* from rain contact with wastes from domestic animals, wildlife, birds, pets — and even humans — into the Rio Grande.

The area's stormwater system contains approximately 16,100 storm inlets leading to 722 miles of storm pipes leading to the Rio Grande. As the area grows, more waste is created. For example, there are at least 43,000 licensed dogs in Albuquerque alone, creating more than 20 tons of dog waste a day. That waste can end up in the river if it's left in a yard or not disposed of properly in household trash containers.

Conran said analysis of the *E. coli*'s "DNA" revealed 22 percent of it came from dog waste.

Youngsters listening to Conran didn't need to know all that, of course. She said the team takes this approach — having children "teach," or remind — the adults when the time comes. They were more interested in the interactive three-sided kiosk that included games, videos and touch-screen maps to engage and teach them about our area's stormwater drainage system and what they can do to prevent stormwater pollution.

Stormwater, the leading source of pollution in the Rio Grande and that pollution is largely human-caused. There are no filters to keep trash, debris and chemicals dumped into our area's nearly 1,000 miles of stormwater pipelines, lined channels and unlined arroyos from flowing into and polluting the Rio Grande.

There was a lot to be learned in a little time, with the main message being for pet owners to pick up after their dogs.

The kiosk will remain at Loma Colorado Main Library for about six months, then moved — probably to Bernalillo — where its important messages can be repeated.

EARNED MEDIA

- Rio Rancho's local newspaper, *The Observer*, did a story on the kiosk that appeared in the state's largest newspaper the next day.

Total number of estimated readers for article on the kiosk in the *The Observer*: 23,500

Permit Reference(s): General SWP, Pet Waste, Household Hazardous Waste Audience(s): Adults

- The local CBS-affiliate KRQE also attended the news conference and subsequently ran a story which was also posted on the station's website.

- Stormwater Team members Steve Glass (Ciudad SWCD), Dave Gatterman (SSCAFCA), Fred Marquez (Sandoval County) and Tim McDonough (Village of Los Ranchos) were booked on several morning talk shows (TV and radio) to talk about the SQT and best practices to follow during the upcoming monsoon season:

- **Cumulus Media: Pat Allen's public affairs show:** 4,200 listeners were reached through traditional radio broadcast throughout the local Cumulus media system: (KBZU-FM 96.3 NASH ICON - Country, KKOB-AM 770 News Talk Radio (The Talk Monster), KMGa-FM 99.5 Magic FM (Magic's Best Mix of Yesterday and Today), KBZU-FM 96.3 (Country), KNML-AM 610 (The Sports Animal), KKOB-FM 93.3 KOB-FM (Albuquerque's #1 Hit Music Station), KRST-FM NASH FM 92.3 KRST (Country), and KTBL-AM 1050 (News andTalk).

There are no specific streaming numbers for Pat Allen's show, but we know that 59,413 people listen to KKOB 770-AM via streaming each month.

- **iheart media: Donnie Chase Show** 10,100 listeners throughout the local

iheart media stations: 100.3 The Peak (Mix and variety), Big I 107.9 (Country), 94 Rock, The Edge 104.1 (Alternative), 104.7 KABQ (Mix and Variety), 98.1 The Bull (Country), Hot 95.1 (Old School Hip Hop and R&B), AM1350 (News and Talk), and 100.9 The Beat (Hip Hop and R&B).

• **KOB-4: Good Day New Mexico**

Show has a 1.1-1.3 HH rating and audience averaged about 38,737

• **KRQE-13: This Morning**

7am --- rtg: 0.6 shr: 8,568
 8am --- rtg: 0.8 shr: 11,424
 9am --- rtg: 0.8 shr: 11,424

A total of 163,166 listeners were reached through these articles and interviews.



PUBLIC EDUCATION CAMPAIGNS ON PROPER DISPOSAL OF FATS, OILS & GREASE

In November and December 2016, the City of Rio Rancho and the Albuquerque Bernalillo County Water Utility Authority (ABCWUA) planned and implemented public education campaigns on how to dispose of cooking grease properly. The



campaigns were timed to coincide with the holiday cooking season (Thanksgiving through Christmas). The City of Rio Rancho campaign included:

Print Ads – Quarter Page (4 col. x 8”) full-color ad in The Observer, running 2 Sundays in November (11/20 & 11/27) and 2 Sundays in December (12/18 & 12/25), reaching 94,000 readers (with duplication).

Digital Outdoor Boards – 7 digital outdoor boards running in November (11/21-11/27) and 7 boards running in December (12/19-12/25) reaching an estimated audience of 501,897 adults (18 years of age and older) with duplication

Movie Theaters – One 15-second spot running in Rio Rancho’s 14-plex Premiere Theater for one week in November and one week in December, reaching approximately 40,000 people with duplications.

Total number of estimated people reached (with duplications): 635,897

In addition, in November and December 2016, the ABCWUA (a Stormwater Team supporter) planned and implemented public education campaigns on how to dispose of cooking grease properly. The campaigns were timed to coincide with the holiday cooking season (Thanksgiving through Christmas). The Water Authority’s campaign included:

Digital Outdoor Boards – 7 digital outdoor boards running in November and December (4 in November; 3 in December) reaching an estimated audience of 491,451 adults (18 years of age and older) with duplication

Television – A total of 646 30-second television spots reaching an estimated audience of 2,259,978 with duplications.

Bill inserts – Three bill inserts for Water Authority utility bills reaching an estimated audience of 210,000 with duplication

Movie Theaters – One 30-second spot running in five of the Albuquerque metropolitan area’s most popular theaters reaching an estimated 329,036 people with duplications.

Point of Purchase – 53 Johnny Boards (billboards in public restrooms) reaching an estimated 51,638 people with duplications

Total number of estimated people reached (with duplications): 3,342,103



DONATIONS

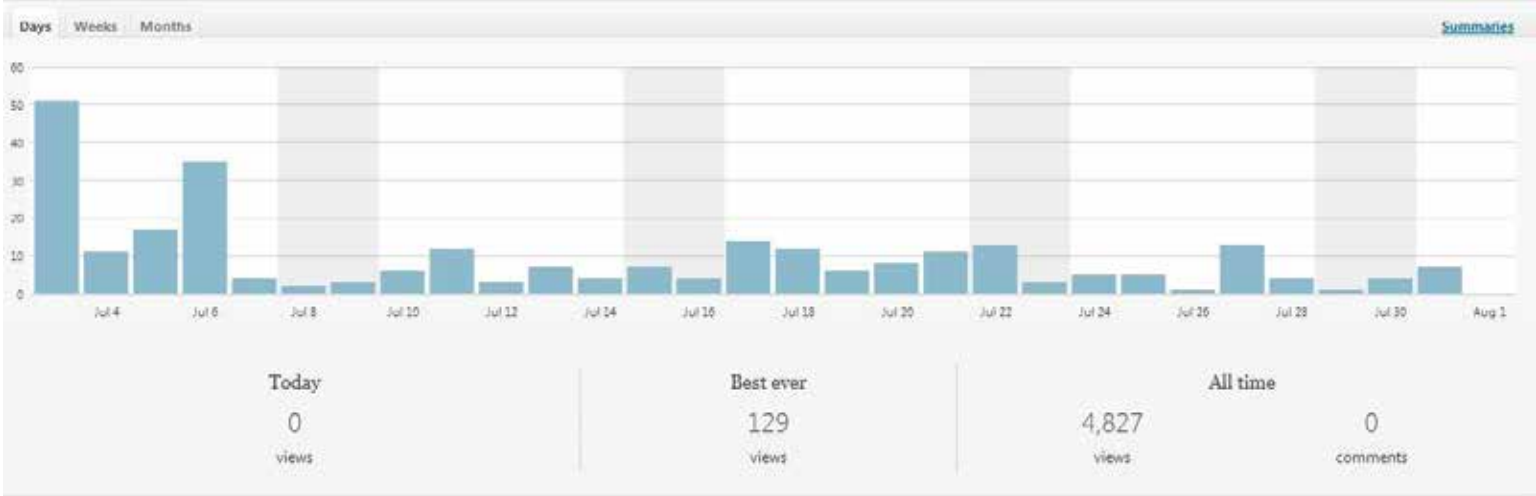
The City Of Albuquerque donated \$85,000 to The Nature Conservancy, RiverXchange and EarthForce for additional educational programs that reached 649 people (571 children and 78 adults). ***See Exhibits 5 and 6 for reports from The Nature Conservancy and Earth Force.***

TOTAL NUMBER OF PEOPLE REACHED THROUGH ALL ADVERTISING, EDUCATIONAL AND PUBLIC OUTREACH ACTIVITIES DURING 2016-2017:

Obviously, some people were reached by more than one activity, but in gross numbers an estimated **4,244,484** people were reached with a stormwater quality/stormwater pollution prevention message during the 2016-2017 fiscal year.

Exhibit 1 - Website Analytics

DAILY Direct Website Traffic



MONTHLY Direct Website Traffic



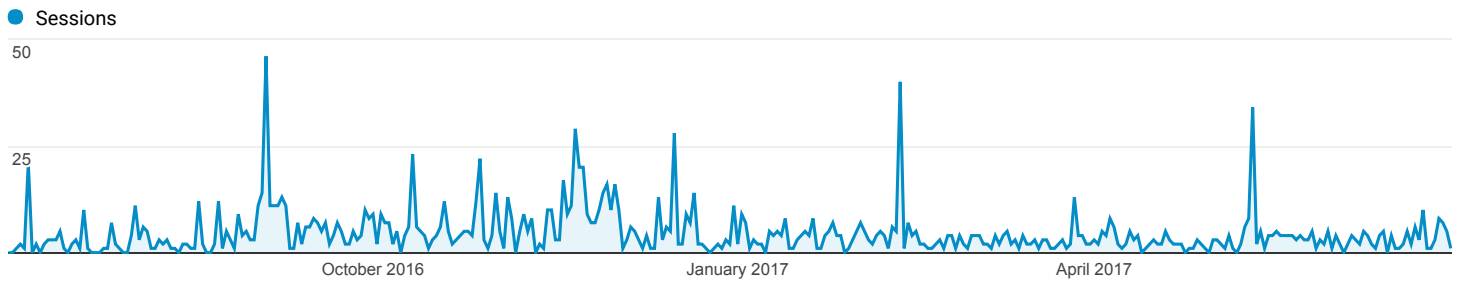
Browser & OS

Jul 1, 2016 - Jun 30, 2017

All Users
100.00% Sessions

Explorer

Summary



Browser	Acquisition			Behavior			Conversions		
	Sessions	% New Sessions	New Users	Bounce Rate	Pages / Session	Avg. Session Duration	Goal Conversion Rate	Goal Completions	Goal Value
	1,675 % of Total: 100.00% (1,675)	76.96% Avg for View: 76.96% (0.00%)	1,289 % of Total: 100.00% (1,289)	49.13% Avg for View: 49.13% (0.00%)	2.12 Avg for View: 2.12 (0.00%)	00:01:44 Avg for View: 00:01:44 (0.00%)	0.00% Avg for View: 0.00% (0.00%)	0 % of Total: 0.00% (0)	\$0.00 % of Total: 0.00% (\$0.00)
1. Chrome	883 (52.72%)	91.17%	805 (62.45%)	45.75%	2.10	00:00:48	0.00%	0 (0.00%)	\$0.00 (0.00%)
2. Safari	239 (14.27%)	62.76%	150 (11.64%)	56.07%	1.70	00:02:16	0.00%	0 (0.00%)	\$0.00 (0.00%)
3. Internet Explorer	220 (13.13%)	60.91%	134 (10.40%)	50.91%	2.45	00:02:26	0.00%	0 (0.00%)	\$0.00 (0.00%)
4. Firefox	215 (12.84%)	67.91%	146 (11.33%)	59.07%	2.53	00:03:10	0.00%	0 (0.00%)	\$0.00 (0.00%)
5. google.com	57 (3.40%)	3.51%	2 (0.16%)	3.51%	1.96	00:06:18	0.00%	0 (0.00%)	\$0.00 (0.00%)
6. Edge	27 (1.61%)	74.07%	20 (1.55%)	55.56%	2.26	00:03:06	0.00%	0 (0.00%)	\$0.00 (0.00%)
7. Mozilla Compatible Agent	12 (0.72%)	100.00%	12 (0.93%)	100.00%	1.00	00:00:00	0.00%	0 (0.00%)	\$0.00 (0.00%)
8. Mozilla	6 (0.36%)	100.00%	6 (0.47%)	100.00%	1.00	00:00:00	0.00%	0 (0.00%)	\$0.00 (0.00%)
9. Opera	4 (0.24%)	75.00%	3 (0.23%)	50.00%	1.50	00:00:30	0.00%	0 (0.00%)	\$0.00 (0.00%)
10. Safari (in-app)	4 (0.24%)	100.00%	4 (0.31%)	75.00%	1.25	00:01:04	0.00%	0 (0.00%)	\$0.00 (0.00%)

Rows 1 - 10 of 17

Devices

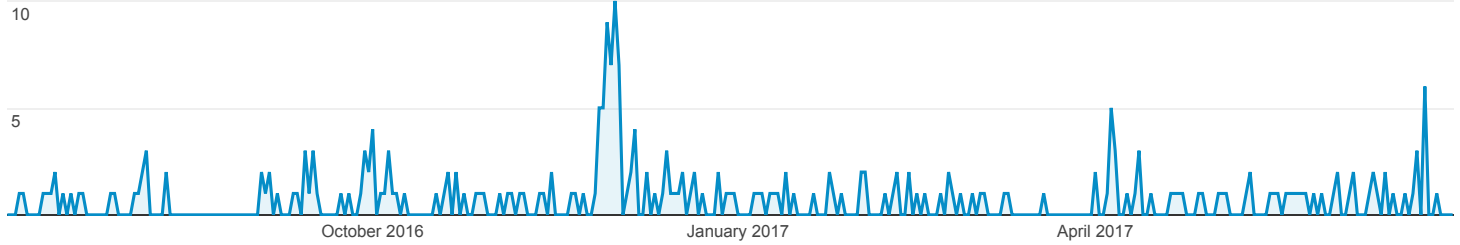
Jul 1, 2016 - Jun 30, 2017

All Users
15.16% Sessions

Explorer

Summary

Sessions



Mobile Device Info	Acquisition			Behavior			Conversions		
	Sessions	% New Sessions	New Users	Bounce Rate	Pages / Session	Avg. Session Duration	Goal Conversion Rate	Goal Completions	Goal Value
	254 % of Total: 15.16% (1,675)	72.44% Avg for View: 76.96% (-5.87%)	184 % of Total: 14.27% (1,289)	55.91% Avg for View: 49.13% (13.78%)	1.59 Avg for View: 2.12 (-25.29%)	00:01:38 Avg for View: 00:01:44 (-6.21%)	0.00% Avg for View: 0.00% (0.00%)	0 % of Total: 0.00% (0)	\$0.00 % of Total: 0.00% (\$0.00)
1. Apple iPhone	148 (58.27%)	57.43%	85 (46.20%)	52.03%	1.53	00:02:17	0.00%	0 (0.00%)	\$0.00 (0.00%)
2. Apple iPad	21 (8.27%)	95.24%	20 (10.87%)	61.90%	1.62	00:00:26	0.00%	0 (0.00%)	\$0.00 (0.00%)
3. Microsoft Xbox One	5 (1.97%)	80.00%	4 (2.17%)	60.00%	2.00	00:00:48	0.00%	0 (0.00%)	\$0.00 (0.00%)
4. LG K330 Tribute 5	4 (1.57%)	75.00%	3 (1.63%)	0.00%	3.25	00:03:49	0.00%	0 (0.00%)	\$0.00 (0.00%)
5. Samsung SCH i545 Galaxy S4	4 (1.57%)	100.00%	4 (2.17%)	50.00%	1.75	00:01:36	0.00%	0 (0.00%)	\$0.00 (0.00%)
6. Samsung SM-N920V Galaxy Note 5	4 (1.57%)	100.00%	4 (2.17%)	50.00%	1.50	00:00:09	0.00%	0 (0.00%)	\$0.00 (0.00%)
7. (not set)	3 (1.18%)	100.00%	3 (1.63%)	33.33%	2.33	00:01:54	0.00%	0 (0.00%)	\$0.00 (0.00%)
8. Motorola XT1254 Droid Turbo	3 (1.18%)	66.67%	2 (1.09%)	100.00%	1.00	00:00:00	0.00%	0 (0.00%)	\$0.00 (0.00%)
9. Samsung SM-G930T Galaxy S7	3 (1.18%)	100.00%	3 (1.63%)	100.00%	1.00	00:00:00	0.00%	0 (0.00%)	\$0.00 (0.00%)
10. Samsung SM-G930V Galaxy S7	3 (1.18%)	100.00%	3 (1.63%)	66.67%	2.67	00:02:08	0.00%	0 (0.00%)	\$0.00 (0.00%)

Rows 1 - 10 of 55

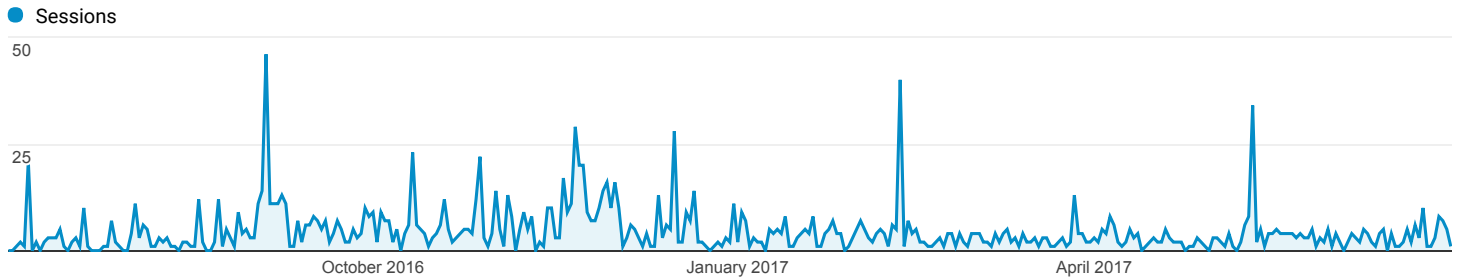
New vs Returning

Jul 1, 2016 - Jun 30, 2017

All Users
100.00% Sessions

Explorer

Summary

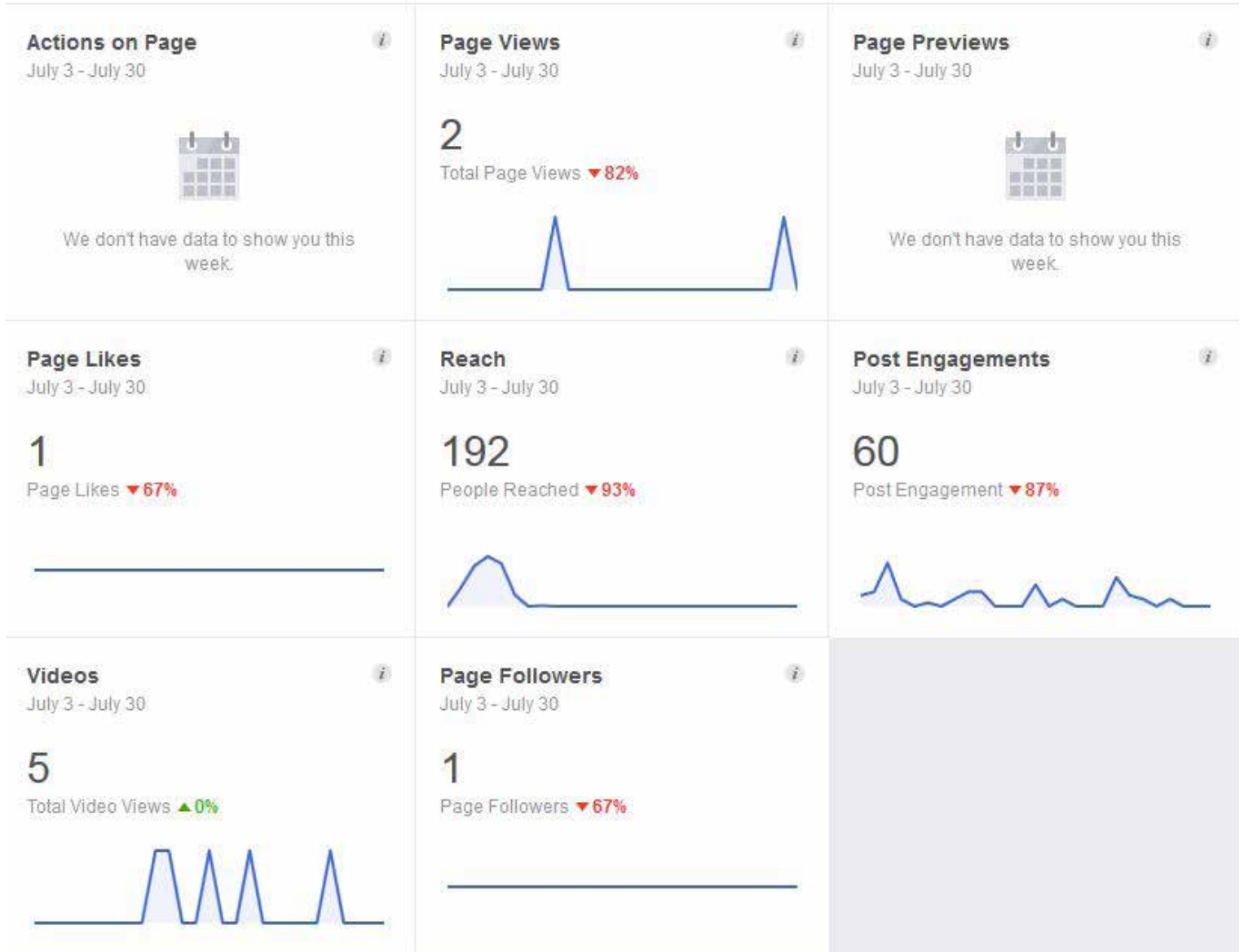


User Type	Acquisition			Behavior			Conversions		
	Sessions	% New Sessions	New Users	Bounce Rate	Pages / Session	Avg. Session Duration	Goal Conversion Rate	Goal Completions	Goal Value
	1,675 % of Total: 100.00% (1,675)	76.96% Avg for View: 76.96% (0.00%)	1,289 % of Total: 100.00% (1,289)	49.13% Avg for View: 49.13% (0.00%)	2.12 Avg for View: 2.12 (0.00%)	00:01:44 Avg for View: 00:01:44 (0.00%)	0.00% Avg for View: 0.00% (0.00%)	0 % of Total: 0.00% (0)	\$0.00 % of Total: 0.00% (\$0.00)
1. New Visitor	1,289 (76.96%)	100.00%	1,289 (100.00%)	53.92%	1.94	00:00:56	0.00%	0 (0.00%)	\$0.00 (0.00%)
2. Returning Visitor	386 (23.04%)	0.00%	0 (0.00%)	33.16%	2.72	00:04:27	0.00%	0 (0.00%)	\$0.00 (0.00%)

Rows 1 - 2 of 2

Exhibit 2 - Facebook Analytics

Facebook Engagement



Facebook Engagement by Posts

07/06/2017 3:00 pm		Last week we came together to discuss how local construction p			174		2 4		Boost Post
07/05/2017 1:26 pm		Our talk show tour continued this week when we sat down with KR			35		1 4		Boost Post
06/30/2017 1:18 pm		A HUGE thank you to Good Day New Mexico for having us on to d			126		7 12		Boost Post
06/15/2017 1:51 pm		Yesterday, we unveiled our interactive kiosk that teaches children			171		10 12		Boost Post
06/09/2017 1:43 pm		Join us Wednesday, June 14th at Rio Rancho's Loma Colorado L			2.5K		36 25		View Results Boosted: \$35.00
05/17/2017 3:12 pm		This free breakfast/seminar is for construction professionals so t			0		0 0		
05/17/2017 3:08 pm		Calling all construction professionals! If you're wondering how th			100		5 4		Boost Post
11/10/2016 4:41 pm		New post (MRGSQT Doggie Dash & Dawdle Signs) has been pu			16		0 0		Boost Post
11/08/2016 5:13 pm		We had a terrific time at the Doggie Dash 'N Dawdle! We'd like to			26		14 3		Boost Post
11/04/2016 1:01 pm		Looking for something fun to do this Sunday? Stop by our booth in			95		0 0		Boost Post
08/10/2016 5:30 pm		Members of the Stormwater Quality Team met with EPA Region 6			354		57 15		Boost Post

The success of different post types based on average reach and engagement.

Show All Posts ▾

■ Reach
■ Post Clicks
■ Reactions, Comments & Shares ⓘ

Type	Average Reach	Average Engagement
Photo	913	14 11
Link	111	6 9
Status	0	0 0

Exhibit 3 - Event Participation

PROGRAM/EVENT	EVENT DATE	PRESENTER/ REPORTED BY	TYPE OF AUDIENCE	ATTENDEES	TOTAL PARTICIPANTS	PERMIT REFERENCE	NOTES
2016							
Isleta Pueblo Environmental Fair	7/16/16	Steve Glass, Tom Allen			N/A	PW, SWP	
Tijeras Watershed Education Project (Vista Grande CC)	7/20/16	Jennifer Moss			80	AS, PW, SWP	
Santa Ana Environmental Fair	8/13/16	Steve Glass			N/A	AS, SWP	
Toss No Mas	9/12/16	Catherine Conran	Mixed		280	PW,SWP	
Open Space Visitor's Center	9/17/16	Steve Glass			N/A	AS, SWP	
Valle de Oro NWR 4th Birthday Bash	9/24/16	Steve Glass			N/A	AS, SWP	
East Mountain Celebration (BCOS)	9/25/16	Jennifer Moss			100	PW, SWP	
RR Children's Water Festival	10/24/16	Steve Glass, Jennifer Moss			150	PW, SWP	
RR Children's Water Festival	10/25/16	Steve Glass, Jennifer Moss			150	PW, SWP	
Animal Humane NM Doggie Dash 'n Dawdle	11/2/16	Patti Watson (CWA Strategic)	Adults and Children		290	PW, SWP	Annual event featuring a race and booths for pet lovers and friends. SQT hosted a booth to educate attendees on proper disposal of pet waste. 290 surveys administered; talked w/people about pet waste as a major polluter of the Rio Grande.
20-Year SOILebration	11/12/16	Tom Allen			N/A	PW, SWP	
Rio Rancho and Bernalillo teacher 4th grade packets	11/24/16	Catherine Conran	4th-grade Students		82	PW, SWP	
Children's Water Festival	11/24-11/25 2016	Catherine Conran	4th-grade Students	Classes from Town of Bernalillo and City of Rio Rancho	1,487	PW, SWP	
Bernalillo County Holiday Mercado	12/2/16	Jennifer Moss			100	SWP	
2017							
NMDOT Paving Conference	1/4-1/5 2017	Catherine Conran	Adults	Professionals	100	CO, ID, SWP	
KOB 4 Health & Wellness Fair	1/23-1/24 2017	SQT members	Adults and children	Community Members	8,000	HHW, PW, SWP	Annual event focusing on wellness; handed out giveaways, 290 surveys were filled out
Classroom Presentations (Sandia Vista Elementary)	2/16/17	RMYC	Elementary School Children		60	PW, SWP	
ARID LID preconference event field trip	2/22/17	Catherine Conran	Adults	Community Members	29	ID, SWP	
Classroom Presentations (Osuna Elementary)	3/2/17	RMYC	Elementary School Children		80	PW, SWP	
Classroom Presentations (Cochiti Elementary)	3/3/17	RMYC	Elementary School Children		65	PW, SWP	

AS: Animal Sources
 CON: Construction
 HHW: Household Hazardous Waste

ID: Illicit Discharges
 PW: Pet Waste
 SSS: Septic & Sanitary Sewer Systems

SWP: General Stormwater Pollution Prevention

PROGRAM/EVENT	EVENT DATE	PRESENTER/ REPORTED BY	TYPE OF AUDIENCE	ATTENDEES	TOTAL PARTICIPANTS	PERMIT REFER- ENCE	NOTES
Classroom Presentations (Rio Rancho Elementary)	3/6/17	RMYC	Elementary School		100	PW, SWP	
Classroom Presentations (Georgia O'Keefe)	3/7/17	RMYC	Elementary School Children		85	PW, SWP	
Classroom Presentations (Zia Elementary)	3/15/17	RMYC	Elementary School Children		50	PW, SWP	
Route 66 Cleanup	3/25/17	City of Albuquerque	Adults and Children	Community Members	20	HHW, SWP	Picked up: 85 bags of trash and 2 tires; 5 bags mixed recycling; 5 5-gal. buckets and 2 bags of broken glass; 4 bags aluminum cans, 1 box spring, 1 shopping cart, variety of large metal objects, variety of lumber, cleaned up at least 6 illegal campsites including tents, sleeping bags and clothing.
Classroom Presentations (Lew Wallace Elementary)	3/28/17	RMYC	Elementary School Children		25	PW, SWP	
Classroom Presentations (Colinas del Norte)	3/30/17	RMYC	Elementary School Children		100	PW, SWP	
Classroom Presentations (Mountain View Elementary)	4/5/17	RMYC	Elementary School Children		60	SWP	
Indian School Cleanup	4/9/17	City of Albuquerque	Adults and Children	Community Members	74	PW, SWP	Picked up: 40 lbs. of dog poop; 7 bags of trash; 3 bags mixed recycling; 7 buckets of broken glass; 1 bucket of aluminum cans.
4 Trail crews performed trail maintenance on approx. 1.7 miles of trail.					20	HHW, PW, SWP	
100s pf cactus cuttings were planted on shortcut trails as a deterrent.					N/A	SWP	
Menaul Cleanup	4/15/17	City of Albuquerque	Adults and Children	Community Members	40	PW, SWP	Picked up: 30 lbs. of dog poop; 3 bags of trash; 3 bags mixed recycling; 1 5-gal. bucket of broken glass; 1/2 bag of aluminum cans.
6 Trail crews performed trail maintenance on several different trails.					30	PW, SWP	
Classroom Presentations (Bandelier Elementary)	4/18/17	RMYC	Elementary School Children		50	PW, SWP	
Science in the Community Day (Wilson Mid School)	4/19/17	Steve Glass, Tom Allen	Elementary School Children		200	AS, SWP	
Earth Day Puesta Del Sol Elementary	4/20/17	Catherine Conran	Children	Elementary School Children	600	PW, SWP	
Rotary Club in Albuquerque	4/20/17	Catherine Conran	Adults		40	SWP	
Earth Day (Manzano Day School)	4/20/17	Steve Glass	Elementary School Children		100	PW, SWP	
CORR tree give away	4/22/17	Catherine Conran	Adults	Community Members	N/A	SWP	

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SWP: General Stormwater Pollution Prevention

PROGRAM/EVENT	EVENT DATE	PRESENTER/ REPORTED BY	TYPE OF AUDIENCE	ATTENDEES	TOTAL PARTICIPANTS	PERMIT REFERENCE	NOTES
Earth Day- CORR	4/22/17	Catherine Conran	Adults and Children	Mixed Audience, Mostly Adults	300	SWP	
Great American Cleanup	4/22/17	Catherine Conran	Mixed	Community Members	1200	HHW, SWP	
Great American Cleanup Campus Contests	4/22/17	Catherine Conran	Adults	School-based Clean Up Events for GAC	3384	SWP	
Earth Day Piedra Lisa Cleanup	4/22/17	City of Albuquerque	Adults and Children	Community Members	55	CON, PW, SWP	Picked up: 18 lbs. of dog poop; 3 bags of trash; 2 bags mixed recycling; 2.5 5-gal. bucket of broken glass; 1 5-gal. bucket of rusty metal; 1 bag aluminum cans.
6 Trail crews performed trail maintenance on several different trails.					30	PW, SWP	
Environmental Justice Fair (Valle de Oro NWR)	4/22/17	Jessica Allen			40	HHW, SWP	
NMWC Rio Grande Water Festival (Sawmill Lofts)	4/22/17	Steve Glass			100	AS, SWP	
American Public Works Association New Mexico Spring Conference	4/27/17	Catherine Conran	Adults		30	CON, ID, SWP	
BEMP Student Congress at Bosque School	4/28/17	Steve Glass	Elementary School Children		100	AS, PW, SWP	
Recycled Art Fair at Open Space Visitors Center	4/30/17	Steve Glass			75	AS, SWP	
Rio Grande Report (Tierra Antigua Elementary)	5/5/17	Logan Moss (Jennifer Moss)	Elementary School Children		45	PW, SWP	
Classroom Presentations (Bernalillo Elementary)	5/8/17	Rocky Mountain Youth Corp	Elementary School Children		45	PW, SWP	
River Cleanup	5/13/17	City of Albuquerque	Adults and Children	Community Members	57	PW, SWP	Picked up: 18 lbs. of dog poop; 250 cubic yds. (54 bags of trash and 9 tires); 11 bags mixed recycling; 4 bags of broken glass; 2 bags aluminum cans. Crews hit all 4 corners of Central Bridge, west side or Bridge, west side of Rio Bravo, a remote location on westside, north of Central and Pat Baca Open Space. Also had 2 rafts, 2 canoes and 2 kayaks on River cleaning from Montano to Central.
Ravena Grass Removal	5/13/17	City of Albuquerque	Adults and Children	Community Members	50	SWP	Crew in Tingley area working on Ravena grass removal.
Tree Stewards Trainings	5/14,21,28 2016	Catherine Conran	Adults	Over 2262 Hours Volunteered for Trees	N/A	SWP	
Cielo Azul Elementary School field day presentation	5/18/17	Steve Glass	Elementary School Children		60	AS, PW, SWP	

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HHW: Household Hazardous Waste

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SWP: General Stormwater Pollution Prevention

PROGRAM/EVENT	EVENT DATE	PRESENTER/ REPORTED BY	TYPE OF AUDIENCE	ATTENDEES	TOTAL PARTICIPANTS	PERMIT REFERENCE	NOTES
Monte Vista Elementary School	5/23/17	Steve Glass			60	AS, PW, SWP	
Albuquerque Country Club Summer Program	6/20/17	Astrid Hueglin			24	HHW, SWP	
Moms Group at Tijeras Creek Restoration Project	7/11/17	Steve Glass, Connie Crandall, Jennifer Moss, Melissa McLamb			20	AS, SWP	
Isleta Pueblo Environmental Fair	7/15/17	Steve Glass, Amelia Symonds			50	AS, SWP	
Water Day at Railyards Market	7/16/17	Tom Allen, TTYL				SWP	
Copper Cleanup		City of Albuquerque	Adults and Children	Community Members	35	PW, SWP	Picked up: 60 lbs. of dog poop; 2 bags of trash; 1 bags mixed recycling; 1/2 bucket of broken glass; 1/2 bag of aluminum cans.
3 Trail crews performed trail maintenance on approx. 1.7 miles of trail.					15	PW, SWP	
Arid LID Conference	2/23-2/24/2017	Catherine Conran	Adults	Community Members, Students, University Students and Industry	189	ID, SWP	
Elementary School Students Achieve For Excellence (S.A.F.E.) program	2016-2017	Catherine Conran	1st-5th-grade Students	Mixed Grades and Size of Program Ranged from 50 to 100 Students	250	PW, SWP	
Bosque Ecosystem Monitoring Project (BEMP)-MRGSWQT	2016-2017	Catherine Conran	Elementary School Children	472 Students in 18 Classes w/18 Teachers and 1-day Event for "Dia Del Rio" 17 Classes	492	AS, PW, SWP	
Bosque Ecosystem Monitoring Project (BEMP)-MRGSWQT	2016-2017	Catherine Conran	Mid-high School	610 with 25 Teachers	635	PW, SWP	
RiverXchange	2016-2017	Catherine Conran	5th-grade Students	1,200 Students and 53 Teachers	1253	PW, SWP	
SSCAFCA's Arroyo Classroom Program	2016-2017	Catherine Conran	3rd-grade Students	700 Students 28 Teachers	728	PW, SWP	
CORR animal control educational materials Scoop the poop	As needed	Catherine Conran	Adults and Children	Mixed Audience, Mostly Adults	100	PW	
NMDOT Paving Conference	1/7/16	Catherine Conran	Adults		100	CON, ID	
Rio Rancho Recycles Day		Catherine Conran	Mixed		200	SWP	
Tree Stewards Program	2016-2017	Catherine Conran	Adults	42 Trees Planted, 64 Plantings, 2 Edible Gardens	N/A	SWP	
Watermelon Ranch Educational Materials Scoop the Poop	As needed	Catherine Conran	Adults and Children	Mixed Audience, Mostly Adults	100	PW, SWP	

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SSS: Septic & Sanitary Sewer Systems

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Donations

MEMBER	AMOUNT DONATED	RECIPIENT	PURPOSE
City of Albuquerque	\$20,000	The Nature Conservancy	For Education and Outreach
"	\$45,000	RiverXchange	For Education and Outreach
"	\$20,000	Earth Force	For Education and Outreach

Exhibit 4 - RiverXchange 2016-17

RIVERXchange™

2016-2017

Presented by: Melissa McLamb



What is RiverXchange?

- A year-long program connecting students around the world to learn about water resources
- Hands-on, multidisciplinary curriculum
 - Lessons incorporate science, social studies, and math to teach about major water issues
 - Informational texts and writing/communication projects help teachers teach Common Core Language Arts Standards
- Each New Mexico 5th grade class receives:
 - Teacher workshop
 - 4 guest speakers – local water management professionals
 - Service-learning field trip to the Rio Grande
 - Partnership matching and private web sharing platform
 - Support throughout the school year



Why RiverXchange?

- Students gain a broad understanding of how our community's water issues fit together
- Long-term engagement with the topic reinforces learning
- Writing to a real audience reinforces learning, and helps teachers meet their goals (Common Core Standards)
- There are many resources available, but often teachers don't take advantage of them – RiverXchange provides a framework and a purpose.
- **Each student spends ~25 hours engaged with the program throughout the school year!**



Multidisciplinary Curriculum

Through classroom activities, guest speakers and field trips, students study and explore the following themes throughout the year:

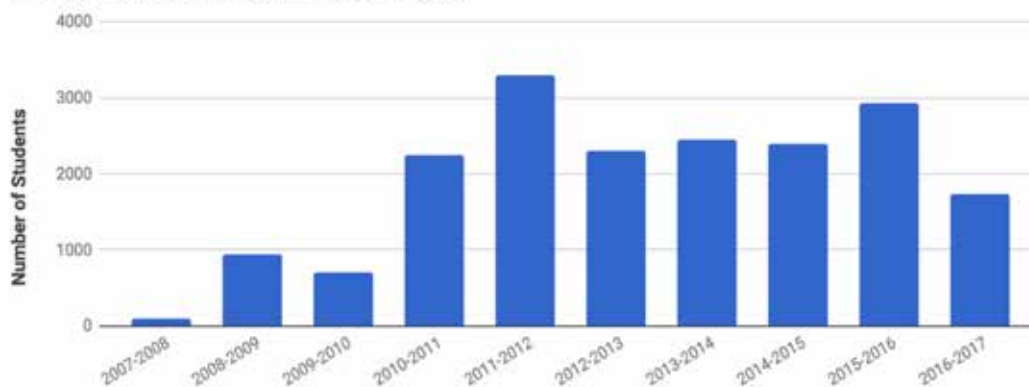
1. Understanding a Watershed
2. Water in Our Society
3. The River Ecosystem



2016-2017 Totals

- 42 New Mexico classes
- 19 classes Albuquerque Public Schools
- 18 classes Rio Rancho Public Schools
- 5 classes Bernalillo Public Schools
- 1,058 total New Mexico students
- 32 WOW offerings (NFWF)
- 23 classes (55%) are Title I schools
- 25 out-of-state partner classes, 675 students

RiverXchange Has Served Over 16,000 Students!



Online Learning

The screenshot shows a Facebook page for 'RX2017-Stream'. The page header includes the name 'RX2017-Stream', a 'New Post +' button, and a user profile for 'RiverXchange'. The main profile section features a yellow circular profile picture with a musical note icon, the name 'RX2017-STREAM', and the description 'Exploring watersheds through global collabo...'. Below this are 'Settings', 'Follow', and icons for a lock and a crossed-out speech bubble. The main content area has tabs for 'Posts' and 'Comments' (with a notification badge). A search bar is located at the top right of the content area. The page is divided into four columns: 1. 'Welcome to RiverXchange' with a blue background and 55 comments. 2. 'Introduction of West Branch Creek' with a photo of a river and 4 comments. 3. 'our fildtrip to tingle beach' with a photo of three girls and 2 comments. 4. 'Members' section with a search bar and a grid of 20 member profile pictures, two of which are highlighted in blue.

Why Blogging Partnerships?

- Writing solidifies concepts in students' minds
- Learning about other rivers gives students perspective on their local situation and enhances understanding of larger water related issues
- Reflection groups and multi-class partner matching provides an authentic audience that motivates students to write and promotes collaboration both within and between classes
- Creative sharing develops 21st Century Skills!
- Private website provides a safe environment to teach internet safety skills

Students Talk!



Hello, we are The Rodriguez tutus, again and we have tested the water quality of our stream to show you. Water quality is the condition of the water, like the amount of pollution in it. It is important because without clean water, all life would perish and no animals, plants, or people can live. Earth would be lifeless. We tested for water pH and researched that a common pH for streams is between 6.5 to 8.5 in order for aquatic life to take place, and our stream has a pH of 8. Since our pH is of 8 it can support aquatic life and can be used for plant irrigation, to bath, sports and enjoyment. --Rodriguez (El Rio de Bayamón ,Puerto Rico)



As part of a local conservation effort, our class is raising native Rio Grande fish from January through May. It is our responsibility to keep the fish happy and healthy. In May, we will return the fish to the Rio Grande river. There are a large number of factors that we have to consider when raising our fish.
-OlsonErosion, NM

I think that it is very neat that you guys raised fish and planned to return them to the Rio Grande River. We also raised mosquito fish and snails in our Eco-columns...part terrarium and part aquarium. They were a closed system where we could observe not only energy transfer within a food chain but also the water cycle...-OverbyErosion, NC



A creek with a very similar ecosystem as Beaver Creek in Alaska.

Hi! Thank you for responding to our post! We live in Homer Alaska and go to McNeil Canyon elementary. It sounds like your river is HUGE compared to our tiny creek. We have many types of animals, birds and fish. Is it sunny in Connecticut or is it rainy, snowy and cold? Does your river have a beach or rocks that slope into your water. Do you have wild boars in Connecticut around your river? Our creek has small rocks, pebbles and some small boulders that make a small slope into our river. Do you have a gigantic mountain that has a water flow that goes into your river? Where does your river originate from? How long is your river? Our creek flows from Bald Mountain and flows into the anchor river and then eventually into the Pacific ocean. Thank you for being amazing buddies! Sincerely: GreenWaterOtters. AK

Guest Speakers

Students learn from local resource professionals



RIVER Xchange™

Agriculture

Irrigation can be wasteful and helpful. There are different kinds of irrigation, the one you probably know most about is sprinkling and, as you guessed, it uses sprinklers, its not the most efficient way of irrigation but, it also isn't most inefficient way of irrigation.

The most inefficient way of irrigation is probably surface irrigation. Surface irrigation is basically near flooding plants in water, there are many disadvantages that come with surface irrigation such as: seeds washing away, plants getting over-watered and dying, and losing soil. Yet, surface irrigation is the most popular way of irrigation. Last but not least, the most efficient way of irrigation is drip irrigation...Drip irrigation...is a form of irrigation that lets water drip slowly into the roots of plants, it conserves water and soil. ... ~Elizabeth, MirabalOnline,NM

Drinking Water

Hello we are the Torres Owls and we are going to tell you about what happens when you have a leaky faucet. A leaky faucet is a faucet that drips even when the water is fully turned off. Over 3,000 gallons of water are wasted from one leaky faucet a year. That is a lot of water that is being wasted! A leaky faucet should be fixed by a plumber as soon as possible or a lot of water is wasted. Thank you for reading, I hope you enjoyed.

-TorresOwls, NM

Stormwater

How can we protect our local water? Don't throw plastic bags or let them fly away into the river. Pick up your dog's ecoli.

Get your car fixed so it won't leak oil everywhere. When you're camping don't throw your trash in the river. -

AckermanStormwater,NM



"Storm water is water from rain,snow,hail,and sleet. After storm water falls and melts, it runs into the gutters, then it goes into the river. The water doesn't get cleaned. The water can have fertilizer,pesticides,trash,and animal waste. It then can harm animals. People can reduce pollution by not littering,being careful when using fertilizer and pesticides,and picking up after your animals. What is your storm water like?" -TorresRivulet, NM



Wastewater

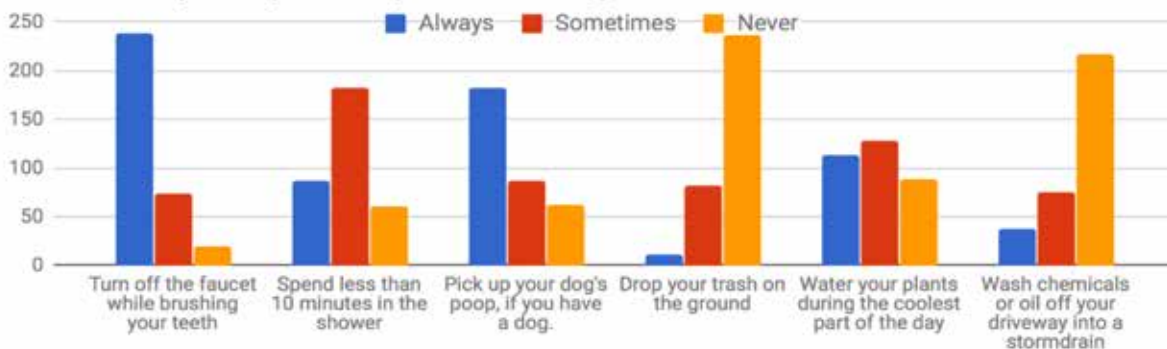
"I learned that wastewater can be recycled into drinking water. I also learned that all the sludge goes into public parks. I learned that the things that should go in the toilet are: poop, pee, vomit and toilet paper. I was surprised that waster water turned into drinking water. Whenever wipes say "flushable" they are really not flushable." -ShaferRainforest, NM



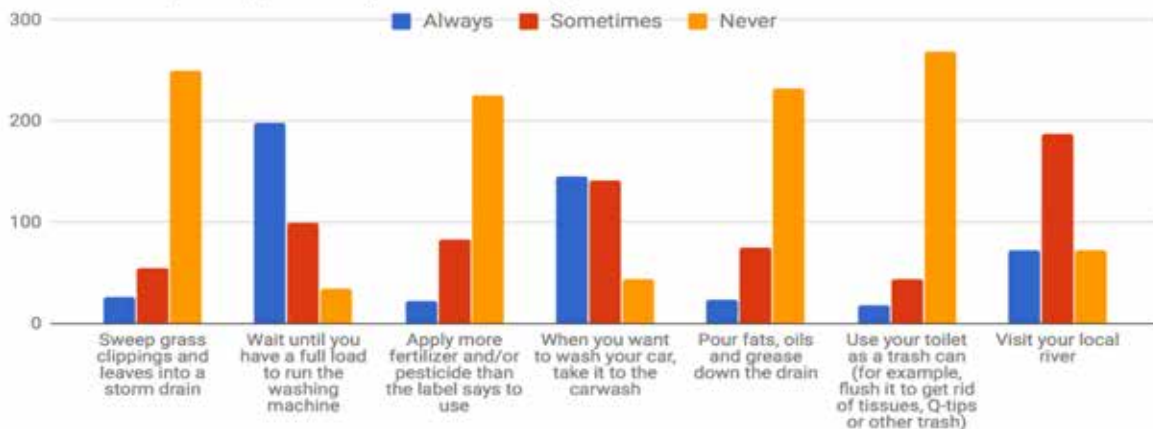
"...We learned what happens when you flush something down the toilet that is not meant to be flushed like, plastic soldiers, phones, glass, and garbage. These are some ways that water can be wasted, taking more than 5 minute showers, running the water while brushing your teeth, and flushing the toilet more than is necessary. ...we learned how much water we waste in a year or a day..." - MallettBrook, NM

Our class visited one of the three water treatment plants in our city, Winston-Salem, NC and learned how water taken from the Yadkin River is made safe for us to drink. -OverbyRiparian

How often do you or your family do the following..? POSTSURVEY



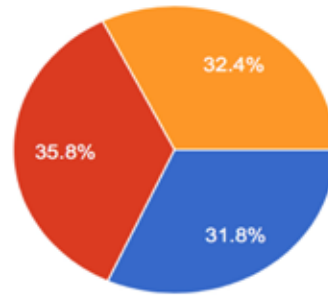
How often do you or your family do the following..? POSTSURVEY



When it rains, where does your community's stormwater go?

692 responses

PRE-Survey

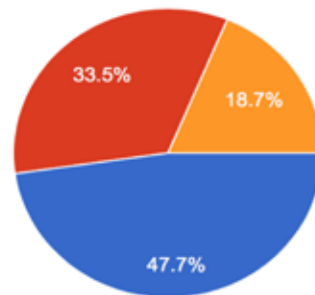


- It goes through storm drains or arroyos into a river, lake, bay or ocean without being cleaned.
- It goes through a sewer to a wastewater treatment plant to be cleaned.
- I don't know.

When it rains, where does your community's stormwater go?

331 responses

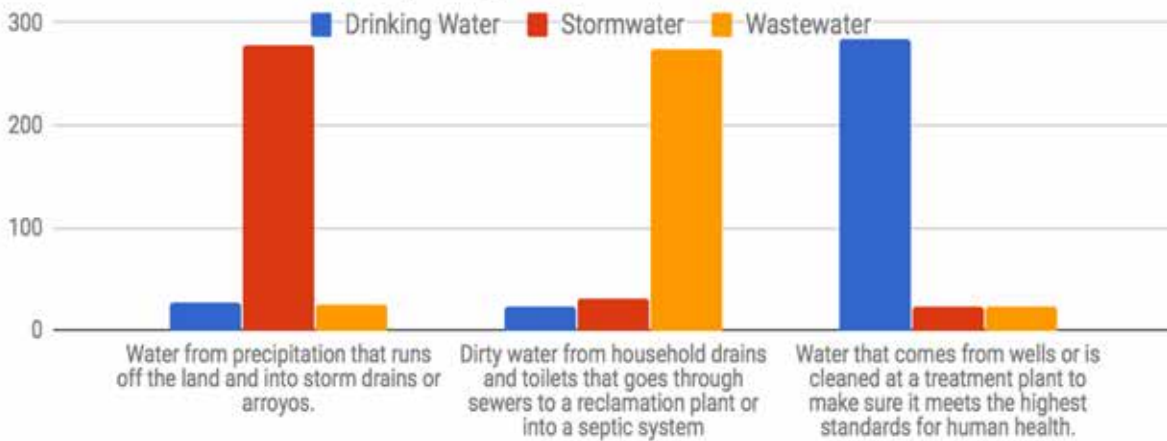
POST-Survey



- It goes through storm drains or arroyos into a river, lake, bay or ocean without being cleaned.
- It goes through a sewer to a wastewater treatment plant to be cleaned.
- I don't know.

POST-Survey

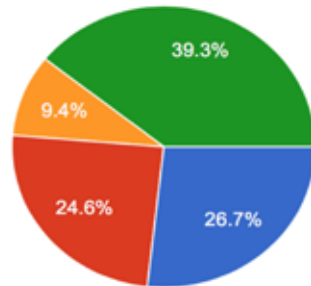
Match the definitions for drinking water, stormwater and wastewater.



What is a Watershed (also known as a catchment or drainage basin)?

692 responses

PRE-Survey

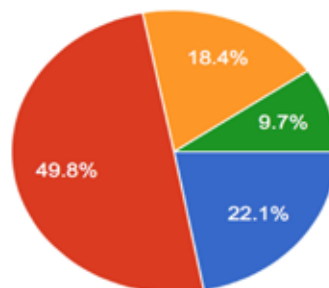


- It is a building where we store water.
- It is an area of land that drains to a river, lake, bay or ocean.
- It is a water-body such as a river, lake, bay or ocean.
- I don't know.

What is a Watershed (also known as a catchment or drainage basin)?

331 responses

POST-Survey



- It is a building where we store water.
- It is an area of land that drains to a river, lake, bay or ocean.
- It is a water-body such as a river, lake, bay or ocean.
- I don't know.

Tree Planting Field Trips

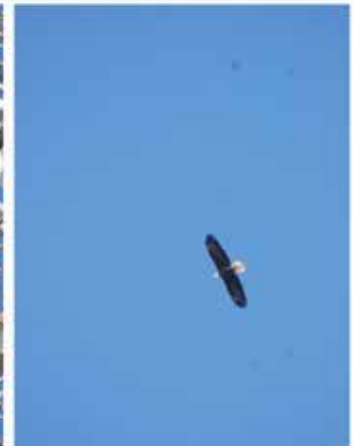


This year, RiverXchange students helped restore 4 acres of riparian habitat!

With the help of participating parents and teachers, we planted 245 cottonwood trees, 16 black willows, 191 willow whips and 26 baccharis shrubs!



What we learned about the Rio Grande is that we have not taken care of the river. It is impacting the Cottonwood trees in the area by giving them a worse chance to survive. Some common invasive species can be humans, tumbleweed, and Russian Olives. The invasive species impact the Bosque by littering and taking away water for the plants . Now let's talk about the process of planting trees. First you dig a hole with an auger , then you put the tree in the hole and push it down until it can't go any further. After you do that, you need to start putting dirt in the hole and pack it down until dirt fills the top. Then you do the happy dance because you are done. We plant trees in the winter because they are dormant, which means the tree is asleep. **After this field trip we do understand and see the Bosque differently by helping it maintain itself. We can apply what we learned on this field trip to use less water at home and at school.** SandiaStreamers5 -Arroyo



Water Testing Field Trips

Students conduct water testing of the Rio Grande and Tingley Wetlands. Outcomes help teach about:

- The importance of water quality
- Consequences of human actions and development
- Identifying causes of pollutants and imbalances in water quality
- Finding solutions to prevent pollution and improve existing conditions



What are the greatest learning outcomes for your class as participants in RiverXchange?

What Teachers Have to Say

RiverXchange is a great program that gives students from our Title 1 school the opportunity to learn about the river and environments that are near the Rio Grande. The guest speakers and field trip expand their minds and understanding of the world that is around them and not just simply in their back yard or neighborhood. They simply cannot afford or simply don't know what is out there. ...Educating them about their relationship with it (the river) will help open their minds to how they are connected with many people, places, and things that they might not even imagine. - Cindy Shafer, RRPS (returning teacher)

I have been working with RiverXchange since it was in the pilot program stage. I love the way it gives students an authentic audience to connect with about their learning. -Lara Overby, NC (10th year participating)

This is a wonderful program and it teaches students so many different aspects about water and the many ways we here in New Mexico can learn to be better with how we use and treat water. - Andrew Vigil, APS (3rd year participating)

This program has been a pleasure and learning experience for all and I am truly amazed by how much students learn about their own environment. - Debbie Beer, APS (7th year participating)

How RiverXchange serves MRGSQT

- **Total cost of program this year: \$42,065.89**
-with 1,058 participating students, that's **\$39.76/student**
- **In Kind Match to date - \$179,953.92, meaning \$170.09 was invested in each student.**
-**In Kind Match promised for FY2017 - \$26,571.89**
- 55% of our participating schools are Title I
- Strong learning outcomes for participants
- Collaborative work in our community benefits our watershed
- This year we met together with BEMP and NM Water Collaborative to develop coordination between programs to create a long term educational experience around watershed health and stormwater pollution prevention..

MRGSQT Programs:

Pet Waste, Household Hazardous Waste, General SWP, Septic, Illicit Discharges, Construction

Our educational presentations and curriculum excel at meeting most of these funding goals!

Our RiverXchange Vision for 2017-2018

With your continued support, we strive to help create a new generation of citizen scientists and stewards who are invested in the health of their local watershed here in the Middle Rio Grande Valley.

- Provide regular blog announcements and notices of excellent work with all teachers to encourage blog entries and responsiveness to partners
- Encourage classes to implement creative projects and/or create an end-of-year Storm Water Quality project to be presented to a broader audience, including MRGSQT
- Offer an additional Storm Water Quality field trip as a class incentive (Sanchez Farm, Valle de Oro)
- Provide technology incentives to returning classes who excel in their RiverXchange related writing and work

Thanks So Much to Our Sponsors!



Funding Request for 2017-2018

The cost, per class, to continue improving our program, and to better-serve your permit requirements is \$1,500.

We hope you can continue to support our efforts for 2017-2018!

Thank you!



Exhibit 4 - B.E.M.P. 2016-17



BOSQUE SCHOOL



scholarship • community • integrity

BEMP Education Office
4000 Bosque School Road NW
Albuquerque, NM 87120
505.898.6388

Bosque Ecosystem Monitoring Program (BEMP) 2016-2017 Stormwater Science Education Overview

The main objective of the *Stormwater Science* outreach education program is to teach students that the health of the Rio Grande is directly related to the health of the surrounding watershed. The *Stormwater Science* program includes a one and one-half hour classroom activity, a four to five hour study trip to the Rio Grande and a water chemistry lab. **During the 2016-2017 school-year 1775 students participated in *Stormwater Science* activities in their classrooms, in the field or both. The one and one-half hour classroom program was delivered to 1269 students in 32 classrooms at 19 different schools in Bernalillo, Rio Rancho, Albuquerque, Los Lunas, and Belen.**

During the 2016-2017 school-year Stormwater Science programming was focused on middle school and high school students emphasizing reaching students in multiple formats. BEMP has observed that it is often difficult for middle and high school teachers to take students into the field because they are only able to take a subset of their students out at a time. In an effort to simplify BEMP's practice of reaching students in multiple ways, we piloted a water chemistry lab class with middle school students this year. Teachers were given the choice to follow up their classroom lesson with either a study trip to the river or a water chemistry lab. Four hundred twenty six (426) students took part in a lab or study trip, which more than doubles the number of students who took part in study trips this year, as compared to last year. Both the study trip and water chemistry lab build upon the themes of the classroom presentation and provide a hands-on experience in water quality testing.

The classroom portion of the program demonstrates that runoff carries contamination to the Rio Grande. Students construct a model of the Rio Grande Watershed (see Page 6). The model watershed has five different communities along the river: a cattle ranch, up-and-downstream eco-friendly towns, an urban city, and agricultural fields. Students add different 'runoff cards' to the river downstream of the community where the runoff constituents originate. Some of the runoff is naturally occurring (turbidity), and others are human caused (pesticides, oil, etc.). The model runs through two different scenarios: (1) a *before-the-storm* and (2) an *after-the-storm* river. These two versions of a watershed demonstrate the harmful effects storm water contamination can have on aquatic organisms and downstream communities.

The classroom program then encourages students to observe their daily behavior and think about ways they can help to keep their watershed clean in alignment with the MRGSQT educational messaging. BEMP used the matrix provided by MRGSQT as a guideline to crafting the Stormwater Science messaging. Educators provide opportunities for students to come up with

their own suggestions for improving watershed health and provide a few suggestions students can do individually. The handout to accompany this activity is available to students in both English and Spanish; the classroom handout is included on Page 3 of this document.

The field portion of the program is a four to five hour trip to the Rio Grande during which students investigate how stormwater moves through the city. Students also collect and interpret water quality data. The program starts with a trail/arroyo survey which examines and categorizes the amount of visible pollutants (plastics, paper, dog poop, animal scat, etc.) in the San Antonio arroyo in Albuquerque which empties into the bosque. In the arroyo students survey for several types of litter and test water quality using a LaMotte water quality monitoring kit (see Page 6). When the students arrive at the bank of the Rio Grande, they do additional water quality testing and search for macro-invertebrates. Students then collectively share their results, compare them to results gathered by students in the past and to the data they gathered in the arroyo, and discuss what the data could mean in terms of river health.

During the water chemistry lab, students are in their own classroom and they perform water quality tests on river water, tap water, and water from school fish tanks or ponds (if available). Students learn what factors affect water quality, discuss the differences between the water in the river and the water they drink, and understand what makes a good freshwater habitat vs. what makes good drinking water. If time permits, students go outside their school to look for the paths stormwater takes when it falls on their school's campus.




In the 2016-2017 proposal, we proposed to develop a new Stormwater Science program to be delivered at BEMP monitoring sites along the bosque during BEMP's monthly monitoring/data collection for students in grades 2-12. Some activities were piloted during monthly monitoring this year with 2nd graders from Rio Grande Elementary at the Belen site and 4th graders from The International School at Mesa del Sol near Valle de Oro National Wildlife Refuge. Work on the monthly monitoring curriculum continues and BEMP educators plan to refine stormwater science activities during monthly monitoring field trips for elementary, middle and high school students to be delivered in the Spring of 2018.

Hundreds of students also took part in *Stormwater Science* related field activities at two BEMP events this year. The BEMP Student Congresses (~300 students, ~55 teachers/chaperones), was where BEMP students had the chance to share their research and experiences in the bosque, including watershed health observations, and BEMP's Otter Day (~125 students, ~25 teachers/chaperones), an event for first graders, hosted by high school students to teach about endangered animals in New Mexico (see Page 7).

During BEMP's monthly water chemistry testing for the MRGSQRT, which commenced in January 2017, BEMP scientists provide in-depth explanations of E. coli testing and abiotic parameter testing to a select group of high school and college students who assist with this dataset.

Classroom Handout – Mid/High School

Hydrologist: _____ Date: _____

stormwater Science

What 2 sources can New Mexicans get their drinking water from?

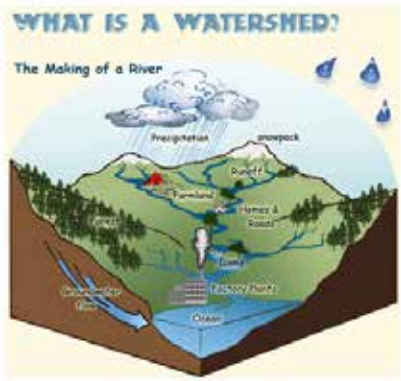
- _____
- _____

Where does water go after we use it?

A watershed is an area of land where all of the water that falls on it, or that is under it, drains to the lowest point.

WHAT IS A WATERSHED?


The Making of a River




Draw a line from the word to its definition

Turbidity	◆ A stream or arroyo that brings water to the main channel of the river
Nonpoint source pollution	◆ Types of nutrients found in fertilizers that can lead to excess algae growth
<i>E. coli</i>	◆ A single location where pollution is being leaked into the environment
Point source pollution	◆ A type of bacteria found in warm blooded animal's intestines that can make people sick
Nitrates and phosphates	◆ Tiny 'water bugs' whose species are an indication of water quality
Tributary	◆ Any type of pollution that comes from many different sources
Macro-invertebrates	◆ A measure of water clarity based on the amount of suspended solids


Cattle Ranch



Upstream eco-friendly town



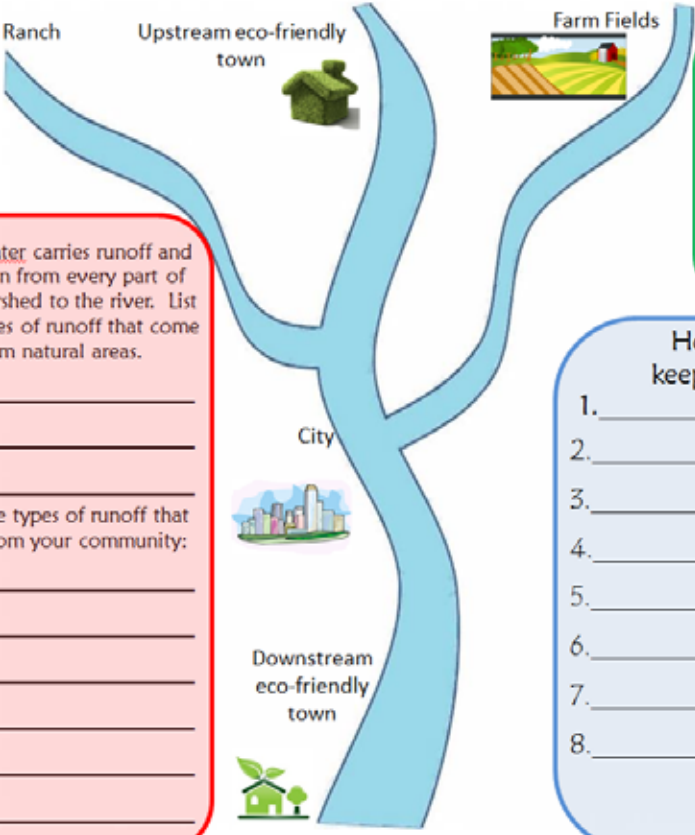
Farm Fields




How do the living things in the river ecosystem react to the stormwater?

Stormwater carries runoff and pollution from every part of the watershed to the river. List some types of runoff that come from natural areas.


List some types of runoff that come from your community:



City




Downstream eco-friendly town

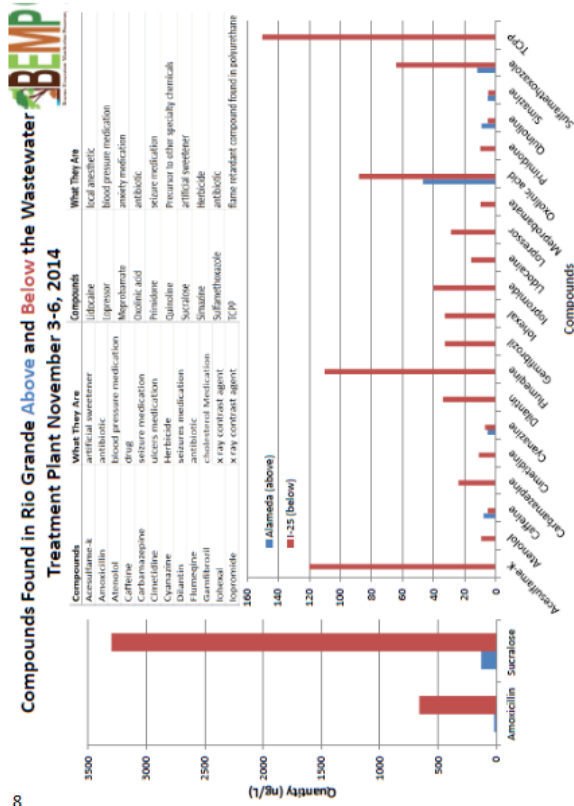


How can *YOU* help to keep our watershed clean?

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____



Do you use any of these compounds?



Name: _____

Date: _____

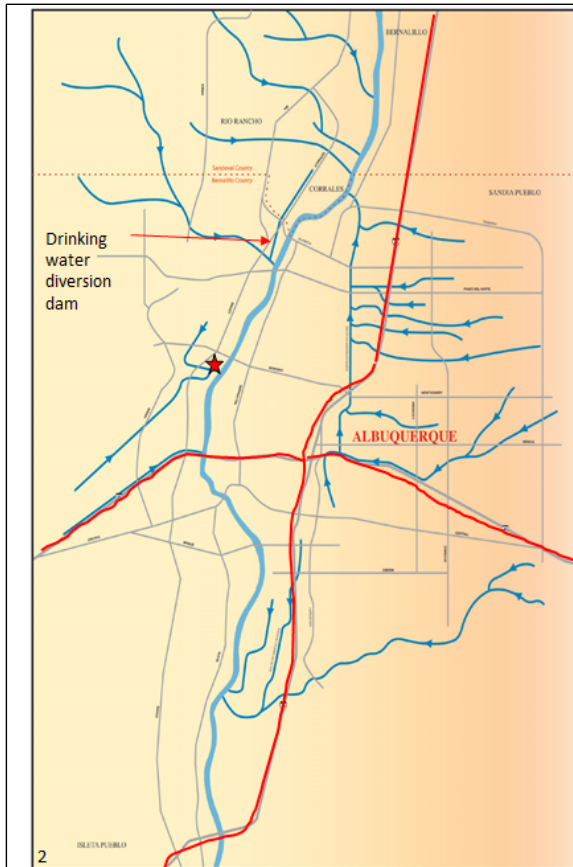
Stormwater Science

Field Journal

Bosque Ecosystem Monitoring Program

Flying insect	Animal Burrow	Bird poop	Harvester Ants
Rain Gauge	Porcupine or "sign"	SCAT	Animal Tracks
Lizard	Litter	Beaver "sign"	Evidence of erosion
Macro-Invertebrates	Rio Grande	Small Bird	Cumulus clouds/ Rain clouds

www.bemp.org



Water Chemistry

	Arroyo	River
Temperature	°F / °C	°F / °C
Turbidity	JTU	JTU
Nitrate	ppm	ppm
Phosphate	ppm	ppm
pH		
Dissolved oxygen	ppm %	ppm %
E. coli	Present / Absent	Present / Absent

Temperature 8-12 °C- good 13-15 °C- fair >15 °C- poor	Turbidity Sources: erosion, fire 1-39 JTU- good 4-100 JTU- fair >100 JTU- poor	Nitrates Sources: plants, soil, fertilizer 1-4 ppm- good 5- 20 ppm- fair >20 ppm- poor	Phosphates Sources: plants, fertilizer, plastic 1 ppm- good 2 ppm- fair 4ppm- poor
pH 1-strong acid- poor 6-week acid- fair 7-neutral- good 8-week base- fair 14-strong base- poor	Dissolved Oxygen 1 ppm or 60-100% -good 4 ppm or 40-60%- fair 8 ppm or 0-40%- poor	E. coli Sources: animal waste E. coli will always be present in small amounts. Large amounts are harmful to humans and animals	

Overall river health: (circle one)

Good Fair Poor

Macro-invertebrates: Ecosystem Indicators

Pollution Sensitive

- 1 Stonefly larva
- 2 Caddisfly larva
- 3 Water penny beetle larva
- 4 Riffle beetle
- 5 Mayfly larva
- 6 Gilled snail
- 7 Hellgrammite (dobsonfly larva)

Somewhat Pollution Tolerant

- 8 Crayfish
- 9 Sowbug
- 10 Scud
- 11 Alderfly larva
- 12 Fishfly larva
- 13 Damselfly larva
- 14 Watersnipe fly larva
- 15 Cane Fly larva
- 16 Beetle larva
- 17 Dragonfly larva
- 18 Clam

Pollution Tolerant

- 19 Aquatic worms
- 20 Midge fly larva
- 21 Black fly larva
- 22 Leech
- 23 Pouch snail
- 24 Other snails

Litter Survey

The San Antonio Arroyo collects runoff from all over the west side of Albuquerque, anything on the streets can end up in the arroyo. Record the litter you find throughout the day here.

Litter type	Arroyo	Bosque
Plastic		
Paper		
Glass		
Metal		
Cigarette butts		
Dog poop		
Animal scat		
Evidence of chemicals		
Other trash		

Who is responsible?

Point source pollution- comes from a specific place

Non-point source pollution- comes from many places and people

3

Page 3

How long will it take?

Every piece of trash has a face... where and WHO did it come from? It takes just a moment for an item to be carelessly discarded where it can be washed into a river or blown in by wind, but it can take many, many years for it to completely decompose. Test your knowledge about decomposition times below by drawing a line from the item to its decomposition time.

Banana peel	1 million years
Cigarette butt	600 years
Fishing line	450 years
Styrofoam cup	200 years
Milk carton	50 years
Plastic bottle	20 years
Aluminum can	5 years
Glass bottle	3 months
Plastic bag	4 weeks

Which of these things can be reused or recycled?

4

Weather Report

1. Time: _____ am or pm

2. Today's

Weather:



3. Cloud Cover: _____ %

4. Wind: Speed: _____ Direction: _____
km/hr OR mph



5. Humidity: _____ %

6. Temp: It feels like: _____ °F It actually is: _____ °F

Journal Space

5

Page 4

Middle school students at Harrison Middle School (right) and Albuquerque Institute of Math and Science (below) discuss runoff while they build a watershed model.



Jimmy Carter Middle School students test for dissolved oxygen in water in the San Antonio Arroyo





1st grade students build a puzzle to discover the “secret message” telling them how to keep the river clean and protect wildlife habitat during Otter Day 2017.

BEMP staff and students collecting water quality data in Jan. 2017



Exhibit 5 - Nature Conservancy 2016-17



New Mexico
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Santa Fe, New Mexico 87501

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Fax (505) 988-4095

The Nature Conservancy in New Mexico
Rio Grande Watershed Educational Programs
Final Report to the City of Albuquerque: June 2017

Education Programs:

Between April and May 2017, The Nature Conservancy and project partners conducted a three-part series for 8 classes of 4th and 5th graders from Duranes and Whittier Elementary Schools. Approximately 160 students participated in hands-on activities exploring watershed health, forest health, and surface to groundwater interactions. There were also 67 adults that participated in the field trips to the top of the Sandias, providing a unique experience for underserved children and some of their family members. Topics included storm water management, water quality, watershed connections, the importance of forests and mountains as water towers, drinking water sources, impacts of drought, and ecological consequences of river management.

Part I: The In-Class Watershed Model Activity

Students received background information about the Rio Grande rift, the uplift of the Sandia Mountains, and how rocks from a 300 million-year-old ocean are up on top of Sandia Peak. Working with a model of the watershed made of wood, foil, nails for tree trunks and cotton balls for trees, the students watched where the water flows when it rains or snow melts from the mountain top. They then saw what happens if people add dog poop (chocolate sprinkles), trash (cut up straws), oil spots from cars (olive oil), fertilizer (green food coloring), and pesticides (red food coloring). Students then took off the cotton ball trees to represent a too-hot fire in an unhealthy forest habitat, and replaced the trees with chocolate powder to represent ashes. They learned about the Jemez fire and how it impacted the Rio Grande ecosystem and our ability to use river water for three months following the fire.



This river has been polluted with trash, dog poop, oil, fertilizer and pesticides.



This river has been choked with ashes from a fire that burned too because the forest was unhealthy.

Part II: Ride to See the Rio Grande Watershed

The Tram Field Trip was connected to Next Gen Science Standards stating that four earth systems work together: Hydrosphere, Geosphere, Atmosphere, and Biosphere (we considered only plants). Students predicted what they would observe at the initial in-class meeting. Students were divided into small groups of 3 – 4 students and used the following materials to make observations. A notebook was provided with maps and information, as well as their lab sheet to collect observations.



A notebook was provided with maps and information, as well as their lab sheet to collect observations.

1. a soil sifter that separated soil into rocks, gravel, sand, clay, and silt and magnets to collect iron
2. a tree density gauge to measure how many big trees on top and bottom of mountain
3. a soil-water gauge
4. a water bottle to measure effects of air density

Students compared the amounts of soil types at school, the tram dock, and the crest. They found more rocks at the top, more gravel at the tram dock, and more sand at their school. Magnets at the tram dock collected

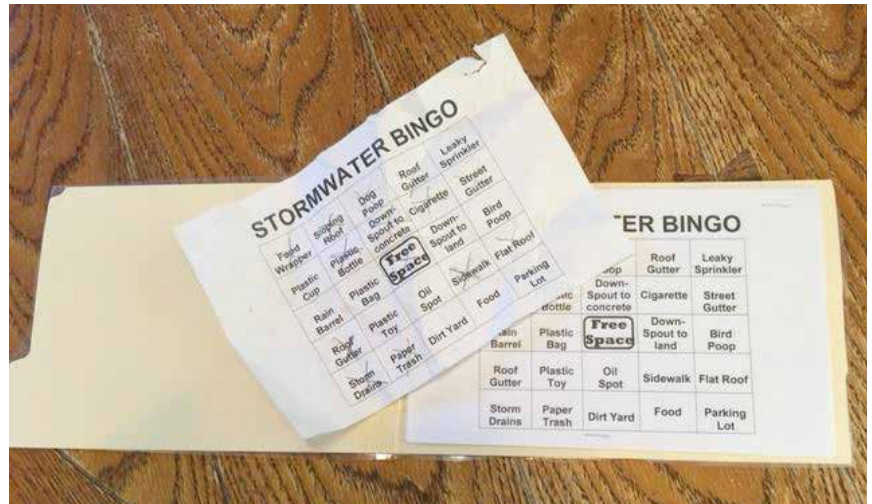
TONS of iron whereas the dirt at the top had very little. They learned that this is because water weathers and erodes rock, shaping the watershed and the soil in it.

Students compared the number of big trees at the tram dock and mountaintop. They learned that there are more big trees on top of the mountain and more cactus at the bottom tram dock. Students compared water in the soil and learned that there is more water in the soil at the top of the mountain. They also learned that the crest gets about 100 inches of snow each year compared to 7.8 inches of snow in town.

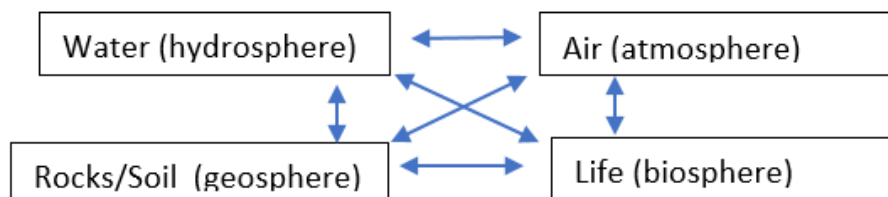
Students heard the air escape from the water bottle when air from the tram dock was brought to the top. They saw how the bottle became squashed by denser surrounding it when air from the top was brought down to the tram dock. They learned that rock, the mountain, effects the air density and the weather.

Part III - The Storm Water Bingo Walk and Art Project Wrap Up

Students went on a walk in the neighborhood or around their school campus to look for evidence of the storm water system and some of the bad things that get washed into the river. Bingo seems to be a VERY popular activity. They learned how hard surfaces shed the water into the storm drains that run into the river taking with it all the trash and dog poop that we leave behind.



Students discussed the connections between the four earth systems.



Afterwards, students returned to the classroom to write haikus and make pictures that completed the sentence: "I am from the Rio Grande Watershed where . . ."



Students and teachers enjoyed this program. They learned about the watershed, storm water and had the opportunity to see the enormity of the Rio Grande watershed. From Mt. Taylor and Santa Fe, it looks immense from the crest, and it is only a small part of the Rio Grande Watershed. Students could feel connected to the watershed and see how water connects us all.

Partnering organizations for the program included: Sandia Mountain Natural History Center and the Cibola National Forest.

Marketing Services:

During the time of the Conservancy's contract with the city, we disseminated a media advisory about water fund educational outreach activities, which was pitched to regional media outlets. Two local news stations, KQRE and KOAT filmed the student's visit to the Sandias including the tram ride, but only KQRE aired the film. As well, all media coverage and releases are highlighted on the Conservancy's website and Facebook page. These educational programs will also be featured in the Rio Grande Water Fund Annual Report, which will be published in the fall 2017.

Exhibit 6 - Earth Force 2016-17

1. What are the goals you hoped to achieve and how did you meet the stated goals?
 - a. The goal of this project was to leverage an urgent community need - stormwater management - to give young people a hands-on STEM experience. Participating classes collected water quality data, conducted a stormwater assessment and learned how Albuquerque manages stormwater. Students then developed a project that improves stormwater management at both the point of origin (their school) and at the point where it re-enters the natural environment (the refuge). Earth Force supported 11 educators in the Community Action & Problem-Solving Process, helping the educators gain the skills needed to implement the project-based learning approach. These educators guided students to create 7 projects.
2. What activities have occurred to date as a result of the City of Albuquerque contribution? Are there activities yet to get underway?
 - a. 411 students participated in the six-step Community Action & Problem-Solving Process and developed 7 total projects that addressed stormwater in the Middle Rio Grande.
 - b. Eighty students shared their environmental projects with peers and stakeholders from the community at the Youth Summit on May 12, 2017. All of the students created and shared presentations about their projects, including a remarkable presentation from students at the Native American Community Academy who made their presentations in at three different native languages. Their projects focussed around pollinator gardens and pollinator water ecosystems. Emerson Elementary School investigated their school's drinking water, as it was coming out of the faucets and drinking fountains brown. They tested their water and brought their results to the principle to fix the issue. Truman Middle School created a rain garden and mural at the Valle de Oro National Wildlife Refuge. The space will be utilized as an outdoor education space.
3. How many youth were impacted by Lockheed Martin/Sandia National Laboratories funding this request?
 - a. # youth: 411
 - b. # adults: 11
4. If your program is educational, how is it addressing the community's need for a future workforce and what is it doing to encourage students to achieve their highest potential?
 - a. Young people in Earth Force programs design and implement projects that reflect issues they care about and their desire to address a local environmental issue, gaining hands-on experience by applying what they have learned in the classroom to real-world situations. Our program focuses on civic engagement, which helps students to become active participants in their communities by conducting balanced research, building strong community partnerships, and making decisions as a democratic group. These skills are vital for lifelong environmental citizenry and workforce development. Earth Force uses its Community Action & Problem-Solving Process, which helps students to gain workplace STEM skills such as using scientific tools to generate data, using data to problem-solve, and developing policies through the application of data.