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

UNIVERSITY OF NEW MEXICO
Name of MS4

Casey | Hall | Director, EHS
Name of Contact Person (First) (Last) (Title)

505-277-0305 | cbhall4@unm.edu
Telephone (including area code) E-mail

1801 Tucker Rd NE
Mailing Address

Albuquerque | NM | 87131
City State ZIP code

What size population does your MS4(s) serve? 33,000 NPDES number

What is the reporting period for this report? (mm/dd/yyyy) From Jul 1, 2020 to Jun 30, 2021

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	
AMAFCA (NDC) to Rio Grande	NM 2105_50	☒ Yes	☐ No	☒ Yes	☐ No
AMAFCA (SDC) to Rio Grande	NM 2105_50	☒ Yes	☐ No	☒ Yes	☐ No
		☐ Yes	☐ No	☐ Yes	☐ No
		☐ Yes	☐ No	☐ Yes	☐ No

2. B. Continued

Impaired Water	Impairment	Approved TMDL		TMDL assigns WLA to MS4	
		☐ Yes	☐ No	☐ Yes	☐ No
		☐ Yes	☐ No	☐ Yes	☐ No
		☐ Yes	☐ No	☐ Yes	☐ No
		☐ Yes	☐ No	☐ Yes	☐ No

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

Trash, debris, sediment, pet waste (E. coli), hazardous chemicals, waste from birds (E. coli), fats, oils, nutrients

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?

Trash, debris, animal waste.

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.

Our program activities, such as 12/4/16 article on stormwater in "Inside UNM" 5/9/16 ad in "Daily Lobo", 300 storm drain inlet markers with the phrase "No Dumping, only Rain in The Drain" reach a wide audience campus wide.

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 ≥ 1 acre in operation in your jurisdiction at any time during the reporting period. 1

D. How many of the sites identified in 4.C did you inspect during this reporting period? 1

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

On average, once a month during construction, and within 24 hours after a storm event.

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

If Yes, based on what criteria? Sites under active construction during monsoon season

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	0	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?

None found during reporting period

J. How often do municipal employees receive training on the construction program? No training this period

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. None

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?

None

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? None

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

UNM does not have what would be considered outfalls as defined in Part VII of the permit. UNM has identified discharge points into major drainage channels within the MS4, and monitors those according to the schedule in our IDDE plan

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

J. During this reporting period, how many illicit discharges/illegal connections have you discovered? 0

K. Of those illicit discharges/illegal connections that have been discovered or reported, how many have been eliminated? 0

L. How often do municipal employees receive training on the illicit discharge program? Annual, delayed-COVID

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	☒ Yes	☐ No
All municipal construction activities, including those disturbing less than 1 acre	☒ Yes	☐ No
All municipal turf grass/landscape management activities	☒ Yes	☐ No
All municipal vehicle fueling, operation and maintenance activities	☒ Yes	☐ No
All municipal maintenance yards	☒ Yes	☐ No
All municipal waste handling and disposal areas	☒ Yes	☐ No

Other

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

C. If Yes, at what frequency are inspections conducted? At least annually

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

Management practices are in place for street sweeping, trash pickup, and stormwater maintenance

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?

UNM staff overseeing stormwater-related activities have experience and college degrees with coursework that covers stormwater management. Maintenance employees are trained annually on UNM's SW program and ID reporting.

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?	☒ Yes	☐ No
Long-term operation and maintenance of stormwater management controls?	☒ Yes	☐ No
Retrofitting to incorporate long-term stormwater management controls?	☐ Yes	☒ 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.)?

New and redevelopment projects that disturb >= 1 ac; projects disturbing < 1ac that are part of a > 1ac common plan for development.

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.

https://pdc.unm.edu/assets/documents/SRS-ContractorRequirements_rev4.2012.pdf to be updated this year

G. How many development and redevelopment project plans were reviewed during the reporting period to assess impacts to water quality and receiving stream protection? 29

H. How many of the plans identified in 7.G were approved? 29

I. How many privately owned permanent stormwater management practices/facilities were inspected during the reporting period? 13

J. How many of the practices/facilities identified in I were found to have inadequate maintenance? None

K. How long do you give operators to remedy any operation and maintenance deficiencies identified during inspections? until next scheduled maint

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? 0

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? annual, from 2017

8. Program Resources

A. What was the annual expenditure to implement MS4 permit requirements this reporting period? 150,000

B. What is next year's budget for implementing the requirements of your MS4 NPDES permit? 150,000

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:	Institutional and Government funds	Amount $		OR %	100
Source:		Amount $		OR %	
Source:		Amount $		OR %	

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)? 1 FTE

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

Entity	Activity/Task/Responsibility	Your Oversight/Accountability Mechanism
Cooperative	stormwater compliance monitoring	Intergovernmental Agreement

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**
Example: E. coli	2003	Weekly April–September	20
Recycling Waste Diversion Program	2012	Annual	
Outreach to UNM community	2012	Semi annual	
IDDE Inspections	2018	Annual	13

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.

See report Middle Rio Grande E. Coli Analysis and Research: http://www.amafca.org/documents/2015_Annual_Report/AMAFCA%202015%20%28Jan%20to%20June%29%20Annual%20Report%20II.A%20-%20VI.pdf

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 | Teresa Costantinidis, Senior Vice President | Name of Certifying Official, Title | Date (mm/dd/yyyy)

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Executive Summary

The University of New Mexico's (UNM) Environmental Health and Safety (EHS) department prepared this MS4 Annual Report (Report). This Report supports the requirements of the United States Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) Middle Rio Grande (MRG) Watershed Based Municipal Separate Stormwater Sewer System (MS4) Permit, No. NMR04A000 (MS4 Permit). The Permit requires UNM to implement a program to reduce pollutants in stormwater runoff to the maximum extent practicable.

UNM is a public research university located in central Albuquerque, New Mexico, serving a faculty, staff, and student population of 33,000. The main campus is approximately 600 acres, split into three parts – North, Central, and South. Central Campus sits between Central Avenue on the south, Girard Boulevard on the east, Lomas Boulevard on the north, and University Boulevard on the west. It is home to the primary academic operations of the university. North Campus, which includes the medical and law schools, is located on the north side of Lomas Boulevard across from Central Campus. South Campus is a mile south of Central Campus, centered around University Boulevard and Avenida César Chavez. It primarily houses athletic facilities and UNM's Science and Technology Park.

UNM campuses contain numerous buildings and facilities with large areas of impervious surfaces, which have stormwater implications. UNM's MS4 serves all three campuses, draining to the west toward the Rio Grande. However, the system drains stormwater to the City of Albuquerque (COA) and the Albuquerque Municipal Arroyo Flood Control Authority (AMAFCA) MS4, diversion channels, or arroyos.

EHS implements the MS4 Program on behalf of UNM, complying with the provisions of the MS4 Permit. The MS4 Program:

(1) Educates and engages with the public, faculty, staff, and students on stormwater pollution prevention;
(2) Detects and eliminates illicit discharges to the MS4;
(3) Monitors and minimizes the release of pollutants, sediment, trash, and debris to the MS4;
(4) Encourages post-construction best management practices such as Green Infrastructure and Low Impact Development; and
(5) Performs training for staff on good housekeeping and pollution prevention.

This Report summarizes the changes, updates, progress, and limitations of the MS4 Program from the previous reporting year (July 1, 2020 – June 30, 2021). In addition, the Report also addresses UNM's water quality priorities, long-term stormwater management measures, program resources, and program evaluation efforts.

EHS continues to welcome comments, questions, and feedback on this Report and the MS4 Program.

CONSTRUCTION SITE STORMWATER RUNOFF CONTROLS			
Permit Activity	**Proposed Plan**	**Measurable Goal**	**Status**
1.1 Development of an ordinance or other regulatory mechanism as required in Part I.D.5.a.(ii)(a), The program must include the development, implementation, and enforcement of, at a minimum: (a) An ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State, Tribal or local law;	Environmental Health and Safety (EHS), Facilities Management (FM) and the Office of Planning, Design & Construction (PDC) will continue to review, revise and enforce existing design and construction standards and guidelines, and develop new guidelines where appropriate. EHS Contractor requirements for new and remodeled UNM facilities requires: 1. For projects disturbing > 1 acre of soil or pavement: prior to breaking ground, contractor must make required EPA notifications (e.g., NOI and NOT) obtain an NPDES permit or waiver, and develop and comply with any required site-specific Stormwater Pollution Prevention Plan (SWPPP). EHS may request revision of contractor's SWPPP. UNM may with-hold payment for contractor non-compliance. 2. Any required stormwater controls must be regularly inspected & maintained over project duration. 3. Washing out construction equipment on-site a. Permitted in FM-approved pit locations for biodegradable and non-hazardous water-based material (e.g., latex paints) wash rinsate. Rinsate of water-based paints may also be washed down the sanitary sewers if FM allows. b. Concrete Rinsate must be contained and disposed of offsite.	Revisions to existing policy, design, or construction standards and guidelines; or the creation of new policy, design, or construction standards and guidelines that pertain to erosion and sediment control will be tracked and reported in the annual report.	EHS continues to review and propose revisions to its Design Guidelines. During this reporting period, EHS began the implementation of the UNM Construction Safety Manual. The manual includes requirements for contractors to follow EPA notification procedures. Additionally, the contractor is required to regularly inspect construction sites with regular audits by UNM EHS.

CONSTRUCTION SITE STORMWATER RUNOFF CONTROLS			
Permit Activity	**Proposed Plan**	**Measurable Goal**	**Status**
	c. Oil- & solvent-based materials washing rinsate must be properly disposed off-site. d. No on-site disposal of unused materials other than clean soil with FM approval. 4. Trash Control – all exterior trash that may become wind-blown or wash off-site with stormwater must be picked up at least daily. 5. As the site operator, the constructor (GC or CM, etc.) will be responsible for all EPA Construction General Permit (CGP) requirements, e.g., but not limited to meeting & maintaining construction site stormwater quality discharge requirements, SWPPPs, NOIs, BMPs, inspections, record-keeping, reporting, monitoring, NOTs, etc. until UNM formal acceptance of the completed project.		
1.2. Develop requirements and procedures as required in Part I.D.5.a.(ii)(b) through in Part I.D.5.a.(ii)(h) (b) Requirements for construction site operators to implement appropriate erosion and sediment control best management practices (both structural and non-structural); (c) Requirements for construction site operators to control waste such as, but not limited to, discarded building	• (See proposed activities listed for permit activity 1.1 above). • EHS and its sister departments will continue to inform UNM contractors of requirements and review necessary documents (i.e., erosion control plan, SWPPP/eNOI application and fugitive dust permit) during the Construction Review Process. • EHS and its sister departments will continue to oversee UNM contractors	• Revisions to existing policy, design, or construction standards and guidelines; or the creation of new policy, design, or construction standards and guidelines that pertain to erosion and sediment control will be tracked and	During the reporting period, only one construction project greater than 1 acre was completed. The project turned an abandoned building into a permeable surface parking lot. During the review period, EHS identified and reviewed site plans for the above-mentioned project.

CONSTRUCTION SITE STORMWATER RUNOFF CONTROLS			
Permit Activity	**Proposed Plan**	**Measurable Goal**	**Status**
materials, concrete truck washout, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality (see EPA guidance at http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp =117); (d) Procedures for site plan review which incorporate consideration of potential water quality impacts. The site plan review must be conducted prior to commencement of construction activities, and include a review of the site design, the planned operations at the construction site, the planned control measures during the construction phase (including the technical criteria for selection of the control measures), and the planned controls to be used to manage runoff created after the development; (e) Procedures for receipt and consideration of information submitted by the public; (f) Procedures for site inspection (during construction) and enforcement of control measures, including provisions to ensure proper construction, operation, maintenance, and repair. The procedures must clearly define who is responsible for site inspections; who has the authority to implement enforcement	to ensure that they comply with federal law, municipal ordinance and contractual provisions and implementing a Stormwater Pollution Prevention Plan (SWPPP). • FM's Environmental Services Design & Development Standard Requirements prohibits washing of concrete trucks into an uncontrolled area, and requires removal of construction debris, including concrete tailings from site. • EHS and its sister departments will continue to review site plans and attend pre-construction review meetings to try to ensure consistency with applicable stormwater quality requirements. The plan review must occur prior to construction and focus on construction and post-construction stormwater quality measures that address likely impacts and public concerns. Site plan review must include evaluation of opportunities for incorporating green infrastructure (GI). • UNM will continue to comply with the CGP, including SWPPP preparation and eNOI application for all public projects greater than one acre. • e) UNM continues to welcome public participation in its SWMP. The draft SWMP was published for public comment before submittal to the EPA.	reported in the annual report. • EHS and its sister departments will maintain records of documents required from contractors pertaining to Stormwater (i.e., erosion control plan, SWPP/eNOI application, and fugitive dust permit). The number of documents will be reported in the annual report. • Site plan reviews and evaluation of opportunities for incorporating green infrastructure (GI) will be documented and reported in the annual report. • Finalized inspection procedures for exterior construction sites less than 1-acre will be included in the annual report as an appendix.	EHS reviewed plans for future construction to incorporate GI/LID. Inspection checklists have been developed for inspecting construction sites. The inspections are conducted by EHS personnel at least once a month and within 24 hours after a storm event of 0.25" or greater. The UNM SWMP was finalized and sent to PDC and FM and is being implemented. Training material on stormwater management and pollution prevention was finalized, and training was not provided to the UNM Grounds and Landscaping Staff during the reporting period due to COVID-19. During this reporting period, the Elks Lodge Parking lot was inspected for stormwater management compliance. Inspection procedures for exterior construction sites less than 1-acre have been completed and are incorporated into this SWMP

CONSTRUCTION SITE STORMWATER RUNOFF CONTROLS			
Permit Activity	**Proposed Plan**	**Measurable Goal**	**Status**
procedures; and the steps utilized to identify priority sites for inspection and enforcement based on the nature of the construction activity, topography, and the characteristics of soils and the quality of the receiving water. If a construction site operator fails to comply with procedures or policies established by the permittee, the permittee may request EPA enforcement assistance. The site inspection and enforcement procedures must describe sanctions and enforcement mechanism(s) for violations of permit requirements and penalties with detail regarding corrective action follow-up procedures, including enforcement escalation procedures for recalcitrant or repeat offenders. Possible sanctions include non-monetary penalties (such as stop work orders and/or permit denials for non-compliance), as well as monetary penalties such as fines and bonding requirements; (g) Procedures to educate and train permittee personnel involved in the planning, review, permitting, and/or approval of construction site plans, inspections and enforcement. Education and training shall also be provided for developers, construction site operators, contractors and supporting personnel, including requiring a stormwater pollution prevention plan for construction sites within the permitee's jurisdiction;	Public comments were reviewed and addressed accordingly. The EHS Department continues involving other UNM departments, e.g., FM, PDC, etc., as stakeholders in the development and revision of UNM's SWMP. • f) UNM will continue to develop inspection procedures for exterior construction sites less than 1-acre. The new procedures will include: (1) determining who is responsible for conducting UNM construction site stormwater quality inspections; determining who has authority to implement enforcement procedures regarding construction stormwater quality at UNM; developing a process for prioritizing sites for inspection and enforcement based on type of construction activity; inspecting all sites greater than 1-acre at least once per month and follow up on any deficiencies to ensure corrective action; inspecting sites once project team believes final site stabilization is complete; and describing enforcement procedures and any penalties for repeated non-compliance at a UNM construction site. • The leadership of PDC & FM will be engaged by EHS in the development and implementation of UNM's SWMP. Once the SWMP is finalized, training on the SWMP and general stormwater	• EHS will maintain records of the number of trainings offered on the SWMP and general stormwater pollution prevention (P2) basics and will report these in the annual report.	and included in the annual report as an appendix. Training for the UNM Facilities management is on hold due to COVID-19.

CONSTRUCTION SITE STORMWATER RUNOFF CONTROLS			
Permit Activity	**Proposed Plan**	**Measurable Goal**	**Status**
(h) Procedures for keeping records of and tracking all regulated construction activities within the MS4, i.e. site reviews, inspections, inspection reports, warning letters and other enforcement documents. A summary of the number and frequency of site reviews, inspections (including inspector's checklist for oversight of sediment and erosion controls and proper disposal of construction wastes) and enforcement activities that are conducted annually and cumulatively during the permit term shall be included in each annual report;	pollution prevention (P2) basics will be offered. • UNM will continue its procedures for construction project record-keeping, including, site reviews, inspections, inspection reports, any enforcement letters & documents.		
1.3. Annually conduct site inspections of 100 percent of all construction projects cumulatively disturbing one (1) or more acres as required in Part I.D.5.a.(iii): (iii) Annually conduct site inspections of 100 percent of all construction projects cumulatively disturbing one (1) or more acres within the MS4 jurisdiction. Site inspections are to be followed by any necessary compliance or enforcement action. Follow-up inspections are to be conducted to ensure corrective maintenance has occurred; and, all projects must be inspected at completion for confirmation of final stabilization.	• UNM will continue to develop inspection procedures for 100% of all exterior construction projects cumulatively disturbing one (1) or more acres. The new procedures will include: (1) determining who is responsible for conducting UNM construction site stormwater quality inspections; determining who has authority to implement enforcement procedures regarding construction stormwater quality at UNM; developing a process for prioritizing sites for inspection and enforcement based on type of construction activity; inspecting all sites greater than 1-acre at least once per year and follow up on any deficiencies to ensure corrective action; inspecting sites once project team believes final site stabilization is complete; and describing enforcement procedures and any penalties for repeated non-compliance at a UNM	• Finalized inspection procedures and the number of site inspections done will be included in the annual report as an appendix.	Inspection checklists have been developed for inspecting construction sites. The inspections are conducted by EHS personnel at least once a month and within 24 hours after a storm event. Written procedures on how the inspections should be conducted have been completed and are incorporated into this SWMP. The only site that met this criterion last year has been closed, and there are currently no projects disturbing 1 acre or more of land.

CONSTRUCTION SITE STORMWATER RUNOFF CONTROLS			
Permit Activity	**Proposed Plan**	**Measurable Goal**	**Status**
	construction site. The procedures will be developed and inspections began no later than December 20, 2016.		
1.4. Coordinate with all departments and boards with jurisdiction over the planning, review, permitting, or approval of public and private construction projects/activities within the permit area as required in Part I.D.5.a.(iv); (iv) The permittee must coordinate with all departments and boards with jurisdiction over the planning, review, permitting, or approval of public and private construction projects/activities within the permit area to ensure that the construction stormwater runoff controls eliminate erosion and maintain sediment on site. Planning documents include, but are not limited to: comprehensive or master plans, subdivision ordinances, general land use plan, zoning code, transportation master plan, specific area plans, such as sector plan, site area plans, corridor plans, or unified development ordinances.	EHS will continue to coordinate all UNM departments who have a role in construction activities to ensure proper controls are in place to eliminate erosion and reduce the transport of sediment from construction projects. EHS acts in an advisory role for projects under 1 acre and ensures compliance in projects 1 acre or greater. • Inform UNM contractors of requirements and review necessary documents (i.e., erosion control plan, SWPP/eNOI application and fugitive dust permit) during the Construction Review Process. • EHS and its sister departments will continue to oversee UNM contractors to ensure that they comply with federal law, municipal ordinance and contractual provisions and implementing a Stormwater Pollution Prevention Plan (SWPPP). • EHS and its sister departments will continue to review site plans and attend pre-construction review meetings to try to ensure consistency with applicable stormwater quality requirements. The plan review must occur prior to construction and focus on construction and post-construction stormwater quality measures that address likely impacts and public concerns. Site plan review must	UNM will include a summary of regulated construction activities in the Annual Report.	During the reporting period, EHS reviewed project planning and design documents and participated in regular construction project meetings that included construction companies, Facilities Management (FM), Planning, Design and Construction (PDC), Parking and Transportation Services (PATS), and other UNM departments. EHS provided input to ensure proper controls are in place to eliminate erosion and reduce the transport of sediment from construction project sites. Examples of projects include the Elks Lodge Parking Lot.

CONSTRUCTION SITE STORMWATER RUNOFF CONTROLS			
Permit Activity	**Proposed Plan**	**Measurable Goal**	**Status**
	include evaluation of opportunities for incorporating green infrastructure (GI).		
1.5. Evaluation of GI/LID/Sustainable practices in site plan reviews as required in Part I.D.5.a.(v): (v) The site plan review required in Part I.D.5.a.(ii)(d) must include an evaluation of opportunities for use of GI/LID/Sustainable practices and when the opportunity exists, encourage project proponents to incorporate such practices into the site design to mimic the pre-development hydrology of the previously undeveloped site. For purposes of this permit, pre-development hydrology shall be met according to Part I.D.5.b of this permit. (consistent with any limitations on that capture). Include a reporting requirement of the number of plans that had opportunities to implement these practices and how many incorporated these practices.	• EHS and its sister departments will continue to review site plans and attend pre-construction review meetings to try to ensure consistency with applicable stormwater quality requirements. The plan review must occur prior to construction and focus on construction and post-construction stormwater quality measures that address likely impacts and public concerns. Site plan review must include evaluation of opportunities for incorporating green infrastructure (GI).	EHS will include in the Annual Report the number of opportunities to incorporate GI and the number of times GI has actually been incorporated.	During the reporting period, EHS reviewed 1 Construction project at Domenici Hall for incorporation of GI/LID.
1.6. Enhance the program to include program elements in Part I.D.5.a.(viii) through Part I.D.5.a.(x): (viii) The permittee may use stormwater educational materials locally developed or provided by the EPA (refer to http://water.epa.gov/polwaste/npdes/swbmp/index.cfm, http://www.epa.gov/smartgrowth/parking.htm, http://www.epa.gov/smartgrowth/stormwater.htm), the NMED,	• UNM will utilize its own, or when appropriate, publicly available stormwater educational material to enhance its stormwater program. • Where applicable, UNM will refer to existing local, state and federal construction handbooks and stormwater management guidelines to ensure consistency and compliance with promulgated construction and development effluent limitation guidelines.	EHS participated in the revision/update of the local "NPDES Stormwater Management Guideline for Construction and Industrial Activities Handbook." It is now completed. UNM will include an update on educational materials in its annual report.	UNM has used stormwater educational materials provided by the EPA and CABQ to enhance its stormwater education training and outreach material. UNM has also created its own stormwater education training and outreach material. Copies of UNM's education training and outreach material are available upon request.

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environmental, public interest or trade organizations, and/or other MS4s. (ix) The permittee may develop or update existing construction handbooks (e.g., the COA NPDES Stormwater Management Guidelines for Construction and Industrial Activities Handbook) to be consistent with promulgated construction and development effluent limitation guidelines. (x) The construction site inspections required in Part I.D.5.a.(iii) may be carried out in conjunction with the permittee's building code inspections using a screening prioritization process.			No changes were made to the NPDES Stormwater Management Guideline for Construction and Industrial Activities Handbook.
1.7. Describe other proposed activities to address the Construction Site Stormwater Runoff Control Measure:	• No additional activities are being proposed at this time. UNM will continue to explore additional activities to address the Construction Site Stormwater Runoff Control Measure.	• Additional proposed activities will be reported in the annual report.	
POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND RE-DEVELOPMENT			
Permit Activity	**Proposed Plan**	**Measurable Goal**	
2.1. Development of strategies as required in Part I.D.5.b.(ii).(a): (ii) The program must include the development, implementation, and enforcement of, at a minimum: (a) Strategies which include a combination of structural and/or non-	• EHS will work with its sister departments (e.g. FM, PDC and Parking and Transportation Services) to propose implementation of design review and construction, as well as operation and maintenance procedures to assure structural and/or non-structural best management practices	• Submit draft policies, procedures, guidelines, protocols regarding Stormwater	The EHS Design guidelines state that for projects disturbing greater than 1 acre of soil or pavement the project must be reviewed for GI/LID.

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structural best management practices (BMPs) to control pollutants in stormwater runoff.	(BMPs) to control pollutants in stormwater runoff. • EHS will propose the development of contractual procedures to ensure implementation of UNM's SWMP in UNM development and redevelopment projects. • By February 20 2016, EHS will work to develop and adopt design standards, including methodology, to estimate water quality impacts and selection of controls.	Quality upon completion. • Submit cumulative changes in UNM's Stormwater Management Program in the Annual Report.	For final site design, retain on-site all stormwater discharge in excess of natural pre-development discharges for up to a 2-inch rain event or whatever the current CABQ Development Process Manual (DPM) requires. UNM's Stormwater Operations and Maintenance Manual addresses non-structural BMPs to control pollutants in stormwater runoff. EHS is in the process of creating a guidance document for designers and project managers to meet stormwater requirements. Where applicable, UNM will utilize guidance from the April 2002 EPA Manual, *Urban Stormwater BMP Performance Monitoring*, on how to estimate water quality impacts of BMPs, when feasible.

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2.2. Development of an ordinance or other regulatory mechanism as required in Part I.D.5.b.(ii).(b): (b) An ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State, Tribal or local law. The ordinance or policy must: Incorporate a stormwater quality design standard that manages on-site the 90th percentile storm event discharge volume associated with new development sites and 80th percentile storm event discharge volume associated with redevelopment sites, through stormwater controls that infiltrate, evapotranspire the discharge volume, except in instances where full compliance cannot be achieved, as provided in Part I.D.5.b.(v). The stormwater from rooftop discharge may be harvested and used on-site for non- commercial use. Any controls utilizing impoundments that are also used for flood control that are located in areas where the New Mexico Office of the State Engineer requirements at NMAC 19.26.2.15 (see also Section 72-5-32 NMSA) apply must drain within 96 hours unless the state engineer has issued a waiver to the owner of the impoundment.	• EHS will work with its sister departments (FM, PDC and Parking and Transportation Services etc.) to develop and adopt design standards, policy and enforcement mechanisms for requiring on-site management of 90th percentile storm events discharge volume associated with new development sites and 80th percentile storm event discharge volume associated with redevelopment sites.	• Submit finalized policies, procedures, guidelines, protocols regarding Stormwater Quality upon completion of finalized draft.	EHS continues to work with FM, PDC, and PATS to comply with stormwater rules and implement GI/LID on projects. EHS continues to reevaluate its estimation of the 90th and 80th percentile storm event with the most recently available data in accordance with the methods in "Estimating Predevelopment Hydrology in the Middle Rio Grande Watershed, New Mexico, EPA Publication Number 832-R-14-007". EHS is in the process of publishing revised values in a guidance document for designers and project managers.

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Options to implement the site design standard include, but not limited to: management of the discharge volume achieved by canopy interception, soil amendments, rainfall harvesting, rain tanks and cisterns, engineered infiltration, extended filtration, dry swales, bioretention, roof top disconnections, permeable pavement, porous concrete, permeable pavers, reforestation, grass channels, green roofs and other appropriate techniques, and any combination of these practices, including implementation of other stormwater controls used to reduce pollutants in stormwater (e.g., a water quality facility). Estimation of the 90th or 80th percentile storm event discharge volume is included in EPA Technical Report entitled "Estimating Predevelopment Hydrology in the Middle Rio Grande Watershed, New Mexico, EPA Publication Number 832-R-14-007". Permittees can also estimate: Option A: a site specific 90th or 80th percentile storm event discharge volume using methodology specified in the referenced EPA Technical Report. Option B: a site specific pre-development hydrology and associated storm event discharge volume using			

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methodology specified in the referenced EPA technical Report.			
2.3. Implementation and enforcement, via the ordinance or other regulatory mechanism, of site design standards as required in Part I.D.5.b.(ii).(b).	• UNM, unlike municipalities, does not have formal enforcement authority through ordinances. UNM may use contractual mechanisms if necessary, and does regular consultation with contractors, to ensure compliance with UNM design guidelines. Therefore, UNM will not pursue a separate monitoring and enforcement mechanisms of UNM design standards and guidelines.		EHS continues to consult with contractors on a regular basis to ensure compliance with UNM design guidelines.
2.4. Ensure appropriate implementation of structural controls as required in Part I.D.5.b.(ii).(c) and Part I.D.5.b.(ii).(d): (d) The permittee must ensure that the post-construction program requirements are constantly reviewed and revised as appropriate to incorporate improvements in control techniques;	• Once developed, the post construction program requirements will be monitored, reviewed and revised as appropriate by EHS, with input from other departments, on an annual basis. A process will be put in place by June 20, 2017.	• In each annual report to EPA, EHS will report any changes/revisions to UNM's Post-Construction Program.	EHS is in the process of creating updated guidance for designers and project managers, which outlines stormwater infrastructure requirements and best practices for FM and PDC.
2.5. Develop procedures as required in Part I.D.5.b.(ii).(e), Part I.D.5.b.(ii).(f), Part I.D.5.b.(ii).(g), and Part I.D.5.b.(ii).(h): (e) Procedure to develop and implement an educational program for project developers regarding designs to control water quality effects from stormwater, and a training program for plan review staff regarding stormwater standards, site design techniques and controls, including training regarding	• EHS will participate and cooperate in local experts' combined efforts to refine and present stormwater quality educational training for project developers. UNM staff (e.g., PDC, FM, etc.), including plan reviewers, on construction project teams will receive such training. • EHS in conjunction with FM will inspect campus stormwater management and control systems to assure long-term operation,	• Provide a discussion of education and outreach activities geared toward LID implementation in the Annual Report. • Provide a discussion of maintenance and	EHS is developing guidance documents on stormwater improvements for project managers. As part of the preventive maintenance program, the UNM Facilities Management department inspects stormwater management and control systems to assure long-

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GI/LID/Sustainability practices. Training may be developed independently or obtained from outside resources, i.e. federal, state, or local experts; (f) Procedures for site inspection and enforcement to ensure proper long-term operation, maintenance, and repair of stormwater management practices that are put into place as part of construction projects/activities. Procedure(s) shall include the requirement that as-built plans be submitted within ninety (90) days of completion of construction projects/activities that include controls designed to manage the stormwater associated with the completed site (post-construction stormwater management). Procedure(s) may include the use of dedicated funds or escrow accounts for development projects or the adoption by the permittee of all privately owned control measures. This may also include the development of maintenance contracts between the owner of the control measure and the permittee. The maintenance contract shall include verification of maintenance practices by the owner, allows the MS4 owner/operator to inspect the maintenance practices, and perform maintenance if inspections indicate neglect by the owner; (g) Procedures to control the discharge of pollutants related to commercial	maintenance and repair of stormwater management and control systems. UNM contractors are already required to submit project as built plans to PDC upon completion. These plans are stored in PDC's database. The number of such inspections will be mentioned in UNM's Annual Reports to EPA. • UNM's Integrated Pest Management (IPM) manual applies to UNM campus wide. FM will review and revise the IPM, provide more IPM related training to employees, seek less toxic and equally less expensive new approaches. EHS will work with FM to review their protocols for applying herbicides and fertilizers and will work to monitor the use of pesticides, herbicides, and fertilizers.	inspections of stormwater control features in the Annual Report.	term operation, maintenance, and repair. EHS has developed inspection checklists used to inspect campus stormwater management and control systems to assure long-term operation, maintenance, and repair of stormwater management and control systems. UNM Golf Course contractors and FM Grounds and landscaping staff engaged in IPM activities are required to maintain licenses. As part of the licensing process, they receive annual training on IPM. They are also required by the New Mexico Department of Agriculture to maintain detailed logs of herbicide and fertilizer application.

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application and distribution of pesticides, herbicides, and fertilizers where permittee(s) hold jurisdiction over lands not directly owned by that entity (e.g., incorporated city). The procedures must ensure that herbicides and pesticides applicators doing business within the permittee's jurisdiction have been properly trained and certified, are encouraged to use the least toxic products, and control use and application rates according to the applicable requirements; and (h) Procedure or system to review and update, as necessary, the existing program to ensure that stormwater controls or management practices for new development and redevelopment projects/activities continue to meet the requirements and objectives of the permit.			
2.6. Coordinate internally with all departments and boards with jurisdiction over the planning, review, permitting, or approval of public and private construction projects/activities within the permit area as required in Part I.D.5.b.(iii) (iii) The permittee must coordinate with all departments and boards with jurisdiction over the planning, review, permitting, or approval of public and private new development and redevelopment projects/activities within	• EHS will work with its sister departments (FM, PDC and Parking and Transportation Services etc.) to develop and adopt design standards, policy and enforcement mechanisms for requiring on-site management of 90th percentile (0.44-inch) storm events discharge volume associated with new development sites and 80th percentile storm event discharge volume associated with redevelopment sites. This will be done by December 2015.	• A discussion on UNM's progress in developing and adopting such design standards, policy, and enforcement mechanisms will be included in the annual report.	The EHS Design guidelines refer to the City of Albuquerque Development Process Manual specifications for stormwater discharge from construction sites. EHS continues to coordinate with PDC and FM (the departments with jurisdiction at UNM) to ensure development

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the permit area to ensure the hydrology associated with new development and redevelopment sites mimic to the extent practicable the pre-development hydrology of the previously undeveloped site, except in instances where the pre-development hydrology requirement conflicts with applicable water rights appropriation requirements. For purposes of this permit, pre-development hydrology shall be met by capturing the 90th percentile storm event runoff (consistent with any limitations on that capture) which under undeveloped natural conditions would be expected to infiltrate or evapotranspirate on-site and result in little, if any, off-site runoff. (Note: This permit does not prevent permittees from requiring additional controls for flood control purposes.) Planning documents include, but are not limited to: comprehensive or master plans, subdivision ordinances, general land use plan, zoning code, transportation master plan, specific area plans, such as sector plan, site area plans, corridor plans, or unified development ordinances.			complies with the MS4 permit.
2.7. As required in Part I.D.5.b.(iv), the permittee must assess all existing codes, ordinances, planning documents and other applicable regulations, for impediments to the use of GI/LID/Sustainable practices: (iv) The permittee must assess all existing codes, ordinances, planning documents and other applicable	• EHS will work with PDC, FM and other departments to assess facility planning and design procedures to identify impediments for the incorporation of GI/LID approaches including infiltration, recharge, water harvesting, habitat improvement and/or hydrological management to	• An update will be provided in the annual report.	EHS continued to work with FM and PDC to discuss potential GI/LID features for current and upcoming projects. EHS has reviewed multiple projects during the reporting period, incorporating infiltration

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regulations, for impediments to the use of GI/LID/Sustainable practices. The assessment shall include a list of the identified impediments, necessary regulation changes, and recommendations and proposed schedules to incorporate policies and standards to relevant documents and procedures to maximize infiltration, recharge, water harvesting, habitat improvement, and hydrological management of stormwater runoff as allowed under the applicable water rights appropriation requirements. The permittee must develop a report of the assessment findings, which is to be used to provide information to the permittee, of the regulation changes necessary to remove impediments and allow implementation of these practices.	improve post-construction stormwater quality.		and water harvesting into remodels and new construction.
2.8. As required in Part I.D.5.b.(iv), describe the plan to report the assessment findings on GI/LID/Sustainable practices	• Assessment findings will be tracked, recorded and reported in an annual report by March 20, 2017.		Assessment findings will continue to be reported in the annual reports.
2.9. Estimation of the number of acres of IA and DCIA as required in Part I.D.5.b.(vi): (vi) The permittee must estimate the number of acres of impervious area (IA) and directly connected impervious area (DCIA). For the purpose of his part, IA includes conventional pavements, sidewalks, driveways, roadways, parking lots, and rooftops. DCIA is the portion of IA with a direct hydraulic connection to the permittee's MS4 or a waterbody	• By June 20, 2017, EHS will calculate and update an estimate of acreage of impervious areas (IA) and directly connected impervious areas (DCIA). UNM may report the acreages of IA and DCIA in a tabular format to EPA and describe the methodology used to calculate the acreages.	• Estimation of campus IAs and DCIA removed or added in the Annual Report.	This process has been completed. There are 576.3 acres of impervious area and 681.7 acres of permeable area at UNM. The majority of UNM's impervious area has a direct hydraulic connection to the MS4 and can therefore be considered DCIA.

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via continuous paved surfaces, gutters, pipes, and other impervious features. DCIA typically does not include isolated impervious areas with an indirect hydraulic connection to the MS4 (e.g., swale or detention basin) or that otherwise drain to a pervious area.			During the reporting period, the Elk Lodge was converted to a gravel parking area, constituting 4.75 acres of permeable surface. The assessment report is available upon request. EHS will continue to provide IA and DCIA estimates for upcoming projects.
2.10. Inventory and priority ranking as required in section in Part I.D.5.b.(vii): (vii) The permittee must develop an inventory and priority ranking of MS4-owned property and infrastructure (including public right-of-way) that may have the potential to be retrofitted with control measures designed to control the frequency, volume, and peak intensity of stormwater discharges to and from its MS4. In determining the potential for retrofitting, the permittee shall consider factors such as the complexity and cost of implementation, public safety, access for maintenance purposes, subsurface geology, depth to water table, proximity to aquifers and subsurface infrastructure including sanitary sewers and septic systems, and opportunities for public use and education under the applicable water right requirements and restrictions. In determining its priority ranking, the	• By June 20, 2018, EHS will complete an inventory and rank campus property and MS4 infrastructure that may have the potential to be retrofitted with control measures to improve stormwater quality. Factors such as implementation cost, public safety, maintenance access, geology, depth to groundwater/aquifer, proximity to other infrastructure (e.g., sanitary sewer & septic systems), opportunities for public use and education should be considered in the priority ranking of potential retrofit projects.	• An annual report on what retrofitting work has been done will be made beginning in the 2017 Annual Report to the EPA, and such reporting will continue in each subsequent Annual Report to the EPA.	This process is ongoing. An inventory of UNM's storm drain system is shown in UNM's Campus Utility Maps prepared by FM. In 2015 FM Engineering hired an engineering firm to do studies. The final reports titled: *University of New Mexico Drainage Study: Popejoy Hall and Woodward Lecture Hall Drainage issues* and *University of New Mexico Drainage Study: Science and math Learning Center Area Drainage issues* identify and recommend several LID/BMP options to reduce flow and improve

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permittee shall consider factors such as schedules for planned capital improvements to storm and sanitary sewer infrastructure and paving projects; current storm sewer level of service and control of discharges to impaired waters, streams, and critical receiving water (drinking water supply sources);			water quality. FM Grounds and Landscaping has also identified and retrofitted UNM storm drain inlets with smaller size grates to reduce the amount of debris flowing into the storm drains. UNM is also in the process of seeking further funding for studies on stormwater GI/LID issues.
2.11. Incorporate watershed protection elements as required in Part I.D.5.b.(viii): (viii) The permittee must incorporate watershed protection elements into relevant policy and/or planning documents as they come up for regular review. If a relevant planning document is not scheduled for review during the term of this permit, the permittee must identify the elements that cannot be implemented until that document is revised, and provide to EPA and NMED a schedule for incorporation and implementation not to exceed five years from the effective date of this permit. As applicable to each permittee's MS4 jurisdiction, policy and/or planning documents must include the following: (a) A description of master planning and project planning procedures to control	By June 20, 2017 EHS will work to research and develop watershed protection measures and propose their incorporation into UNM policy and planning documents as they come up for review for renewal. Such policy and planning documents will include: • A description of UNM's master planning and project planning procedures to control the discharge of pollutants into the MS4. • Minimize the amount of impervious surfaces (roads, parking lots, roofs, etc.) within the campus by controlling the creation and expansion of such during development and re-development. • Identify any environmentally or ecologically sensitive areas that	• All new proposed watershed protection measures will be discussed in the annual report.	UNM's written Stormwater Operations and Maintenance Plan describes UNM's stormwater management practices that minimize water quality impacts to streams. Using resources such as the engineering reports cited earlier in this report and EPA's *Handbook for Developing Watershed Plans to Restore and Protect Our Waters* and *Community Solutions for Stormwater Management: A Guide for Voluntary Long-Term Planning,* EHS has identified watershed protection measures that could be incorporated into UNM's master planning documents. Upcoming revisions include

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the discharge of pollutants to and from the MS4. (b) Minimize the amount of impervious surfaces (roads, parking lots, roofs, etc.) within each watershed, by controlling the unnecessary creation, extension and widening of impervious parking lots, roads and associated development. The permittee may evaluate the need to add impervious surface on a case-by- case basis and seek to identify alternatives that will meet the need without creating the impervious surface. (c) Identify environmentally and ecologically sensitive areas that provide water quality benefits and serve critical watershed functions within the MS4 and ensure requirements to preserve, protect, create and/or restore these areas are developed and implemented during the plan and design phases of projects in these identified areas. These areas may include, but are not limited to critical watersheds, floodplains, and areas with endangered species concerns and historic properties. Stakeholders shall be consulted as appropriate. (d) Implement stormwater management practices that minimize water quality impacts to streams, including disconnecting direct discharges to surface waters from impervious surfaces such as parking lots.	provides water quality benefits or serve critical watershed functions. Requirements may be needed to protect such if there is a technical basis to justify the actual existence of any such areas on campus. Inviting stakeholder input may be required for identifying sensitive areas. • No streams exist on campus. Should UNM acquire and develop stream-side property, then measures will be taken to disconnect direct discharge to the stream from impervious areas. • UNM will seek to avoid hydro-modification of arroyos caused by campus development, including roads, etc. • UNM will develop and implement development policies to protect soils, prevent topsoil stripping and soil compaction. • UNM will continue to incorporate watershed protection elements into relevant policy and/or planning documents as they come up for regular review.		FM engineering design guidelines in addition to the UNM 2040 master plan.

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(e) Implement stormwater management practices that protect and enhance groundwater recharge as allowed under the applicable water rights laws. (f) Seek to avoid or prevent hydromodification of streams and other water bodies caused by development, including roads, highways, and bridges. (g) Develop and implement policies to protect native soils, prevent topsoil stripping, and prevent compaction of soils. (h) The program must be specifically tailored to address local community needs (e.g. protection to drinking water sources, reduction of water quality impacts) and must be designed to attempt to maintain pre-development runoff conditions.			
2.12. Enhance the program to include program elements in Part I.D.5.b.(xi) and Part I.D.5.b.(xii): (xii) When choosing appropriate BMPs, the permittee may participate in locally-based watershed planning efforts, which attempt to involve a diverse group of stakeholders including interested citizens. When developing a program that is consistent with this measure's intent, the permittee may adopt a planning process that identifies the municipality's program goals (e.g., minimize water quality impacts resulting from post-construction runoff from new	• UNM will continue to participate in locally-based watershed planning efforts, such as the stormwater Technical Advisory Group (TAG) and the Middle Rio Grande Urban Waters Partnership and work to incorporate ideas from these efforts into its Stormwater management program.		During the reporting period, EHS participated in TAG meetings and discussions with the Compliance Monitoring Cooperative committee.

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development and redevelopment), implementation strategies (e.g., adopt a combination of structural and/or non-structural BMPs), operation and maintenance policies and procedures, and enforcement procedures.			
2.13. Describe other proposed activities to address the Post-Construction Stormwater Management in New Development and Redevelopment Measure:	• No additional activities are being proposed at this time. UNM will continue to explore additional activities to address the Post Construction Stormwater Management in New Development and Redevelopment Measure.	Additional proposed activities will be reported in the annual report.	No proposed activities were included in the annual report.

POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

Permit Activity	Proposed Plan	Measurable Goal	Status
3.1. Develop or update the Pollution Prevention/Good House Keeping program to include the elements in Part I.D.5.c.(i): (i) The permittee must develop, revise and implement an operation and maintenance program that includes a training component and the ultimate goal of preventing or reducing pollutant runoff from municipal operations. Permittees previously covered under NMS000101 or NMR040000 must continue existing programs while updating those programs, as necessary, to comply with the requirements of this permit. The program must include: (a) Development and implementation of an employee training program to incorporate pollution prevention and good housekeeping techniques into everyday operations and maintenance activities. The employee training program must be designed to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and stormwater system maintenance. The permittee must also develop a tracking procedure and ensure that employee turnover is considered when determining frequency of training; (b) Maintenance activities, maintenance schedules, and long term inspections	• UNM will continue to implement, review and enhance pollution prevention practices. When possible, UNM will implement new source control procedures to limit the discharge of pollutants from the campus MS4. • As required, FM will implement a) Stormwater Operations & Maintenance (O&M) Program b) grounds and landscaping maintenance; c) road and parking lot operation and maintenance; d) fleet and building maintenance; e) new construction and land disturbance training; f) utility systems maintenance; g) MS4 system maintenance. • The UNM O&M program will include training for appropriate UNM staff on improving stormwater quality. • FM's O&M Program maintains: a) an updated list of stormwater quality facilities by drainage basin, including location and description; b) a target number of 20 stormwater quality facilities will be inspected once every 3 months by FM and cleaned if necessary (See Table 1); and c) continue FM's leading source control program of street and hard-	• Submission of annual progress included in Annual Report.	Stormwater Management training was not provided to UNM Grounds and Landscaping and UNM FM Areas 1-4 personnel during the reporting period due to COVID-19. UNM continued implementation of its SPCC plan during the reporting period. UNM has prepared a written Stormwater Operation and Maintenance manual that includes the required elements listed.

procedures for structural and non-structural stormwater controls to reduce floatable, trash, and other pollutants discharged from the MS4. (c) Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, fleet or maintenance shops with outdoor storage areas, salt/sand storage locations, snow disposal areas operated by the permittee, and waste transfer stations; (d) Procedures for properly disposing of waste removed from the separate storm sewers and areas listed in Part I.D.5.c.(i).(c) (such as dredge spoil, accumulated sediments, floatables, and other debris); and (e) Procedures to ensure that new flood management projects assess the impacts on water quality and examine existing projects for incorporating additional water quality protection devices or practices. Note: The permittee may use training materials that are available from EPA, NMED, Tribe, or other organizations.	scaping sweep and daily (M-F) litter pickup on campus. • UNM maintains a Spill Prevention, Countermeasure and Control Plan (SPCCP) to address the risks from oil tanks larger than 55 gallons. UNM takes measures to insure that parties responsible for a spill on campus take reasonable steps to control and minimize threats to human health and the environment. • Potential discharges will be controlled through implementation of spill prevention practices, self-inspections, and employee training. FM's O&M Program will also include measures to control the following stormwater pollutants: a) de-icing salts; b) roadway debris and roadside vegetation management practices; leaked automotive fluids in equipment maintenance yards; c) debris on hard-scaping (roads, etc.) that can be reduced by modifying street sweeping strategies; and d) targeting problem areas on campus that may have greater pollution potential.		
3.2. Enhance the program to include the elements in Part I.D.5.c.(ii): (ii) The Pollution Prevention/Good Housekeeping program must include the following elements:	(See Proposed Plan for Permit Activities listed in 3.1 above). In addition, UNM will do the following: • UNM's O&M program will identify waste disposal standard operating procedures (SOPs), including SOPs	• Submit annual progress updates in the Annual Report.	FM continued routine O&M operations for street sweeping, trash collections, recycling. Disposal of hazardous chemicals and used oils from maintenance shops were done

(a) Develop or update the existing list of all stormwater quality facilities by drainage basin, including location and description; (b) Develop or modify existing operational manual for de-icing activities addressing alternate materials and methods to control impacts to stormwater quality; (c) Develop or modify existing program to control pollution in stormwater runoff from equipment and vehicle maintenance yards and maintenance center operations located within the MS4; (d) Develop or modify existing street sweeping program. Assess possible benefits from changing frequency or timing of sweeping activities or utilizing different equipment for sweeping activities; (e) A description of procedures used by permittees to target roadway areas most likely to contribute pollutants to and from the MS4 (i.e., runoff discharges directly to sensitive receiving water, roadway receives majority of de-icing material, roadway receives excess litter, roadway receives greater loads of oil and grease); (f) Develop or revise existing standard operating procedures for collection of used motor vehicle fluids (at a minimum oil and antifreeze) and toxics (including paint, solvents, fertilizers, pesticides, herbicides, and other hazardous materials) used in permittee operations or discarded in the MS4, for recycle, reuse, or proper disposal;	for motor vehicle fluids, toxic paints, solvents, fertilizers, pesticides, herbicides and any other hazmat, by June 2017. This will include a list of opportunities for recycling substances. Also, standard operating procedures will address the removal of sediments, debris, floatables and litter including pet wastes. • By June 20, 2017, UNM will re-assess existing flood control infrastructure for the potential to retro-fit it with additional water quality enhancement features. • UNM's O&M Program maintains: a) an updated list of stormwater quality facilities by drainage basin, including location and description; b) a target number of 20 stormwater quality facilities shall be inspected once every 3 months by FM and cleaned if necessary.		through EHS or other third-party vendors. With the exception of a few small detention basins, UNM does not have flood control infrastructure. The flood control infrastructure is owned and operated by the AMAFCA. No retrofit evaluations were conducted during this reporting period.

(g) Develop or revised existing standard operating procedures for the disposal of accumulated sediments, floatables, and other debris collected from the MS4 and during permittee operations to ensure proper disposal; (h) Develop or revised existing litter source control programs to include public awareness campaigns targeting the permittee audience; and (i) Develop or review and revise, as necessary, the criteria, procedures and schedule to evaluate existing flood control devices, structures and drainage ways to assess the potential of retrofitting to provide additional pollutant removal from stormwater. Implement routine review to ensure new and/or innovative practices are implemented where applicable. (j) Enhance inspection and maintenance programs by coordinating with maintenance personnel to ensure that a target number of structures per basin are inspected and maintained per quarter; (k) Enhance the existing program to control the discharge of floatables and trash from the MS4 by implementing source control of floatables in industrial and commercial areas; (l) Include in each annual report, a cumulative summary of retrofit evaluations conducted during the permit term on existing flood control devices, structures and drainage ways to benefit water quality.			

Update the SWMP to include a schedule (with priorities) for identified retrofit projects; (m) Flood management projects: review and revise, as necessary, technical criteria guidance documents and program for the assessment of water quality impacts and incorporation of water quality controls into future flood control projects. The criteria guidance document must include the following elements: A. Describe how new flood control projects are assessed for water quality impacts. B. Provide citations and descriptions of design standards that ensure water quality controls are incorporated in future flood control projects. C. Include method for permittees to update standards with new and/or innovative practices. D. Describe master planning and project planning procedures and design review procedures. (n) Develop procedures to control the discharge of pollutants related to the storage and application of pesticides, herbicides, and fertilizers applied, by the permittee's employees or contractors, to public right-of-ways, parks, and other municipal property. The permittee must provide an updated description of the data monitoring system for all permittee departments utilizing pesticides, herbicides and fertilizers.			

3.3. Develop or update a list and a map of industrial facilities owned or operated by the permittee as required in Part I.D.5.c.(iii): (iii) Comply with the requirements included in the EPA Multi Sector General Permit (MSGP) to control runoff from industrial facilities (as defined in 40 CFR 122.26(b)(14)(i)-(ix) and (xi)) owned or operated by the permittees and ultimately discharge to the MS4. The permittees must develop or update: (a) A list of municipal/permittee operations impacted by this program, (b) A map showing the industrial facilities owned and operated by the MS4, (c) A list of the industrial facilities (other than large construction activities defined as industrial activity) that will be included in the industrial runoff control program by category and by basin. The list must include the permit authorization number or a MSGP NOI ID for each facility as applicable.	• UNM does not have operations within our campus jurisdiction that would normally be categorized as industrial or that have the potential for high-risk runoff.		
3.4. Describe other proposed activities to address the Pollution Prevention/Good Housekeeping for Municipal/permittee Operations Measure:	• No additional activities are being proposed at this time. UNM will continue to explore additional activities to address the Pollution Prevention/Good Housekeeping for Municipal/permittee Operations Measure.	• Additional proposed activities will be reported in the annual report.	EHS is in the process of inventorying and updating signage on campus.

INDUSTRIAL AND HIGH RISK RUNOFF

Permit Activity	Proposed Plan	Measurable Goal
4.1. Ordinance (or other control method) as required in Part I.D.5.d.(i): (i) The permittee must control through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by stormwater discharges associated with industrial activity and the quality of stormwater discharged from sites of industrial activity as defined in 40 CFR 122.26(b)(14)(i)-(ix) and (xi). If no such industrial activities are in a permittees jurisdiction, that permittee may certify that this program element does not apply.	• UNM does not have operations within our campus jurisdiction that would normally be categorized as industrial or that have the potential for high risk runoff.	
4.2. Continue implementation and enforcement of the Industrial and High Risk Runoff program, assess the overall success of the program, and document both direct and indirect measurements of program effectiveness in the annual report as required in Part I.D.5.d.(ii): (ii) The permittee must continue implementation and enforcement of the Industrial and High Risk Runoff program, assess the overall success of the program, and document both direct and indirect measurements of program effectiveness in the annual report. The program shall include: (a) A description of a program to identify, monitor, and control pollutants in stormwater discharges to the MS4 from municipal landfills; other treatment, storage, or disposal facilities for municipal waste (e.g. transfer stations, incinerators, etc.); hazardous waste treatment, storage, disposal and recovery facilities; facilities that are subject to EPCRA Title III, Section 313; and any other industrial or commercial discharge the permittee(s) determines are contributing a substantial pollutant loading to the	• UNM does not have operations within our campus jurisdiction that would normally be categorized as industrial or that have the potential for high-risk runoff.	

MS4. (Note: If no such facilities are in a permittees jurisdiction, that permittee may certify that this program element does not apply.); and (b) Priorities and procedures for inspections and establishing and implementing control measures for such discharges.		
4.3. Meet the monitoring requirements in Part I.D.5.d.(iii): (iii) Permittees must comply with the monitoring requirements specified in Part III.A.4;		
4.4. Include requirements in Part I.D.5.d.(iv): (iv) The permittee must modify the following as necessary: (a) The list of the facilities included in the program, by category and basin; (b) Schedules and frequency of inspection for listed facilities. Facility inspections may be carried out in conjunction with other municipal programs (e.g. pretreatment inspections of industrial users, health inspections, fire inspections, etc.), but must include random inspections for facilities not normally visited by the municipality; (c) The priorities for inspections and procedures used during inspections (e.g. inspection checklist, review for NPDES permit coverage; review of stormwater pollution prevention plan; etc.); and (d) Monitoring frequency, parameters and entity performing monitoring and analyses (MS4 permittees or subject facility). The monitoring program may include a waiver of monitoring for parameters at individual facilities based on a "no-exposure" certification;		

4.5. Enhance the program to include requirements in Part I.D.5.d.(vii): (vii) The permittee may: (a) Use analytical monitoring data, on a parameter-by-parameter basis, that a facility has collected to comply with or apply for a State or NPDES discharge permit (other than this permit), so as to avoid unnecessary cost and duplication of effort; (b) Allow the facility to test only one (1) outfall and to report that the quantitative data also apply to the substantially identical outfalls if: A. A Type 1 or Type 2 industrial facility has two (2) or more outfalls with substantially identical effluents, and B. Demonstration by the facility that the stormwater outfalls are substantially identical, using one (1) or all of the following methods for such demonstration. The NPDES Stormwater Sampling Guidance Document (EPA 833-B-92-001), available on EPA's website at provides detailed guidance on each of the three options: (1) submission of a narrative description and a site map; (2) submission of matrices; or (3) submission of model matrices. (c) Accept a copy of a "no exposure" certification from a facility made to EPA under 40 CFR §122.26(g), in lieu of analytic monitoring.		
4.6. Describe other proposed activities to address the Industrial and High Risk Runoff Measure:		

ILLICIT DISCHARGES AND IMPROPER DISPOSAL

Permit Activity	Proposed Plan	Measurable Goal	Status
5.1. Mapping as required in Part I.D.5.e.(i)(a); (i) The permittee shall develop, revise, implement, and enforce a program to detect and eliminate illicit discharges (as defined at 40 CFR 122.26(b)(2)) entering the MS4. Permittees previously covered under NMS000101 or NMR040000 must continue existing programs while updating those programs, as necessary, to comply with the requirements of this permit. The permittee must: (a) Develop, if not already completed, a storm sewer system map, showing the names and locations of all outfalls as well as the names and locations of all waters of the United States that receive discharges from those outfalls. Identify all discharges points into major drainage channels draining more than twenty (20) percent of the MS4 area;	(see Proposed Plan listed for permit Activity 5.2 below) • UNM completed a campus utility map in 2013, which includes its storm sever map. UNM will continue to revise and update its storm sewer system map as necessary.	• Updates to the map will be reported in the annual report.	UNM continued to implement its activities to detect and eliminate illicit discharges and training for staff, informing them how to detect and report illicit discharges. UNM does not have what would be considered outfalls as defined in Part VII of the permit. UNM has identified discharge points into major drainage channels. In 2021 EHS began an update to campus utility maps with photos of all storm sewers. New data includes GIS location of storm sewers supplied by the Earth Data Analysis Center
5.2. Ordinance (or other control method) as required in Part I.D.5.e.(i)(b): (b) To the extent allowable under State, Tribal or local law, effectively prohibit, through ordinance or other regulatory mechanism, non-stormwater discharges into the MS4, and implement appropriate enforcement procedures and actions;	• To the extent possible, EHS will work with other departments to develop mechanisms to control non-stormwater discharges into the MS4, and implement appropriate enforcement procedures and actions.		UNM's Construction Safety Manual and the EHS design guidelines and contractor requirements prohibit non-stormwater discharges into the MS4. UNM has implemented an IDDE program that regulates non-stormwater discharges into the MS4. UNM does not have formal regulatory or enforcement power but can utilize contractual and employee disciplinary

			mechanisms to discourage non-stormwater discharges from contractors and employees, respectively.
5.3. Develop and implement a IDDE plan as required in Part I.D.5.e.(i)(c): (c) Develop and implement a plan to detect and address non-stormwater discharges, including illegal dumpling, to the MS4. The permittee must include the following elements in the plan: A. Procedures for locating priority areas likely to have illicit discharges including field test for selected pollutant indicators (ammonia, boron, chlorine, color, conductivity, detergents, E. coli, enterococci, total coliform, fluoride, hardness, pH, potassium, conductivity, surfactants), and visually screening outfalls during dry weather; B. Procedures for enforcement, including enforcement escalation procedures for recalcitrant or repeat offenders; C. Procedures for removing the source of the discharge; D. Procedures for program evaluation and assessment; and E. Procedures for coordination with adjacent municipalities and/or state, tribal, or federal regulatory agencies to address situations where investigations indicate the illicit discharge originates outside the MS4 jurisdiction.	• UNM continues to implement efforts to detect and eliminate illicit discharges and improper disposal that may impact the quality of stormwater discharged from the campus. IDDE efforts at UNM have historically identified and eliminated at least one non-stormwater discharge to our MS4. EHS Department investigates IDDE problems within 48-hours of being reported. UNM then eliminates illicit discharges or improper disposal on campus within 30 days. If more time is needed then EHS Department develops an elimination schedule within six months. • In addition, any newly discovered non-stormwater discharges will be assessed for their potential impact to the Rio Grande. EHS will review compliance records to check for similar incidents and will prioritize preventing repeat issues by increased awareness. EHS will manage UNM's IDDE Program and maintain maps applicable to the campus. • EHS will check both wet and dry stormwater discharges. Initial assessments of stormwater quality	• EHS will develop and implement an IDDE program. • If the systematic IDDE process identifies a significant illicit discharge or improper disposal on campus, then that finding and a brief explanation of any potential hazard will be posted on an EHS website page to inform any interested members of the campus or local communities. • EHS will incorporate that finding into stormwater quality training for the associated UNM staff that can best control the problem. • IDDE screening and inspections will be conducted at the frequency outlined in UNM's written IDDE program and incorporated	A third-party contractor developed an IDDE plan on September 13, 2017. IDDE inspections were conducted at facilities identified as a potential source for illicit discharges. During the reporting period, EHS began work on a survey of all storm drains within our jurisdiction. Additionally, all reports of illicit discharges are investigated, and a written report is issued to the appropriate department for correction. If the source of an illicit discharge is outside the jurisdiction of UNM, it is referred to the appropriate authority, i.e., The City of Albuquerque.

	will occur by visual and olfactory methods. If suspicious water quality conditions are encountered visually, then water quality samples may be tested with field instrumentation, e.g., conductivity, pH, temperature and perhaps dissolved oxygen or turbidity. • If visual and field instrumentation assessment is unsatisfactory and other contamination is suspected (e.g., heavier than normal oil sheen), then grab samples may be collected for potentially applicable lab analysis by EPA methods, e.g., TPH, BTEX, E. Coli, nitrates/nitrite, etc. • If unusual levels of water quality contaminants are observed, UNM will analyze the above information to try to track back to the source on campus or where up-gradient contamination enters campus. UNM will notify up-gradient MS4 entities if we encounter contamination from their jurisdiction entering campus.	by reference into this SWMP.	
5.4. Develop an education program as required in Part I.D.5.e.(i)(d): (d) Develop an education program to promote, publicize, and facilitate public reporting of illicit connections or discharges, and distribution of outreach materials. The permittee shall inform	• By June 20, 2016, EHS will include in its education program, information to promote and facilitate anonymous reporting of illicit connections or discharges by the campus community.		A written education program has been completed and is incorporated by reference into this SWMP. Copies are available upon request.

public employees, businesses and the general public of hazards associated with illegal discharges and improper disposal of waste.			Appropriate contact information is available on the EHS website, including a 24/7 pager number and an online system to submit work order requests. These resources are outlined in the 2017 IDDE plan.
5.5. Establish a hotline as required in Part I.D.5.e.(i)(e): (e) Establish a hotline to address complaints from the public.	• Complaints from the public can be directed to EHS, which will conduct an investigation or notify the appropriate parties.	• Complaints from the public will be tracked, recorded, and reported.	EHS has a 24/7 Duty Officer program where complaints can be reported.
5.6. Investigate suspected significant/severe illicit discharges as required in Part I.D.5.e.(i)(f); (f) Investigate suspected significant/severe illicit discharges within forty-eight (48) hours of detection and all other discharges as soon as practicable; elimination of such discharges as expeditiously as possible; and, requirement of immediate cessation of illicit discharges upon confirmation of responsible parties.	• EHS will investigate all suspected significant/severe illicit discharges within forty-eight (48) hours of detection and all other discharges as soon as practicable; eliminate such discharges as expeditiously as possible; and, require immediate cessation of illicit discharges upon confirmation of responsible parties.	• An update will be provided in the annual report.	A review of the investigation process was completed as part of the updates to the IDDE plan and is included in the IDDE plan. No incidents were noted and investigated during the reporting period.
5.7. Review complaint records and develop a targeted source reduction program as required in Part I.D.5.e.(i)(g): (g) Review complaint records for the last permit term and develop a targeted source reduction program for those illicit discharge/improper disposal incidents that have occurred more than twice in two (2) or more years from different locations. (Applicable only to class A and B permittees)	• EHS will maintain a log of complaint records from the last permit term and target source reduction efforts to repeat discharge incidents.	• An update will be provided in the annual report.	No incidents were reported to EHS during the time period, and none were repeat incidents.
5.8. Screening of system as required in Part I.D.5.e.(iii) as follows:			During the reporting period, EHS began work on a survey

(iii) The permittee must screen the entire jurisdiction at least once every five (5) years and high priority areas at least once every year. High priority areas include any area where there is ongoing evidence of illicit discharges or dumping, or where there are citizen complaints on more than five (5) separate events within twelve (12) months. The permittee must: (a) Include in its SWMP document a description of the means, methods, quality assurance and controls protocols, and schedule for successfully implementing the required screening, field monitoring, laboratory analysis, investigations, and analysis evaluation of data collected. (b) Comply with the dry weather screening program established in Table 6 and the monitoring requirements specified in Part III.A.2. (c) If applicable, implement the priority ranking system develop in previous permit term.	• The screening will occur as part of the IDDE program by EHS. Screening will be done according to the schedule in the permit.	• An update will be provided in the annual report.	of all storm drains within our jurisdiction.
5.9. Develop, update, and implement a Waste Collection Program as required in Part I.D.5.e.(iv): (iv) Waste Collection Programs: The permittee must develop, update, and implement programs to collect used motor vehicle fluids (at a minimum, oil and antifreeze) for recycle, reuse, or proper disposal, and to collect household hazardous waste materials (including paint, solvents, fertilizers, pesticides, herbicides, and other hazardous materials)	• FM's O&M program will identify waste disposal standard operating procedures (SOPs), including SOPs for motor vehicle fluids, toxic paints, solvents, fertilizers, pesticides, herbicides and any other hazmat. This will include a list of opportunities for recycling substances. Also standard operating procedures will address the removal of sediments, debris,	• The annual report will include a discussion on any updates to an existing FM O&M program and SOPs or the development of new programs and SOPs.	UNM's Stormwater O&M Program contains a description of waste management operations. FM continued to operate a waste collection program that includes recycling. EHS continued to operate its hazardous waste collection and disposal program across campus.

for recycle, reuse, or proper disposal. Where available, collection programs operated by third parties may be a component of the programs. Permittees shall enhance these programs by establishing the following elements as a goal in the SWMP: A. Increasing the frequency of the collection days hosted; B. Expanding the program to include commercial fats, oils and greases; and C. Coordinating program efforts between applicable permittee departments.	floatables and litter including pet wastes. This will be completed by June 20, 2017.		
5.10. Develop, update and implement a Spill Prevention and Response program to prevent, contain, and respond to spills that may discharge into the MS4 as required in Part I.D.5.e.(v): (v) Spill Prevention and Response. The permittee must develop, update and implement a program to prevent, contain, and respond to spills that may discharge into the MS4. The permittees must continue existing programs while updating those programs, as necessary, to comply with the requirements of this permit. The Spill Prevention and Response program shall include: (a) Where discharge of material resulting from a spill is necessary to prevent loss of life, personal injury, or severe property damage, the permittee(s) shall take, or insure the party responsible for the spill takes, all reasonable steps to control or	• UNM's EHS department has developed and regularly updates spill prevention and response programs, and has staff trained to respond to chemical spills. EHS also has a 27/4 Duty Officer pager number where all spills are reported. A complete review of these programs will be completed by June 20, 2017.	• Responses to spills that have the potential to impact water quality will be reported in the annual report.	EHS maintained a 24/7 spill response team and an on-call spill response contractor. EHS also maintained the 24/7 Duty Officer program through which spills and other emergencies can be reported to EHS personnel. UNM followed its SPCC Plan during the reporting period. The plan is available upon request. There were no updates to the spill prevention and response program during the reporting period. During the reporting period, there was no response to spills that have the potential to impact water quality.

prevent any adverse effects to human health or the environment: and (b) The spill response program may include a combination of spill response actions by the permittee (and/or another public or private entity), and legal requirements for private entities within the permittee's municipal jurisdiction.			
5.11. Enhance the program to include requirements in Part I.D.5.e.(ix): (ix) The permittee may: (a) Divide the jurisdiction into assessment areas where monitoring at fewer locations would still provide sufficient information to determine the presence or absence of illicit discharges within the larger area; (b) Downgrade high priority areas after the area has been screened at least once and there are citizen complaints on no more than five (5) separate events within a twelve (12) month period; (c) Rely on a cooperative program with other MS4s for detection and elimination of illicit discharges and illegal dumping; (d) If participating in a cooperative program with other MS4s, required detection program frequencies may be based on the combined jurisdictional area rather than individual jurisdictional areas and may use assessment areas crossing jurisdictional boundaries to reduce total number of screening locations (e.g., a shared single screening location that	• EHS will look at the different subbasins and where feasible, divide them into different assessment areas. These assessment areas may be ranked in order of priority for screening purposes.	• An update on progress will be included in the annual report.	UNM's IDDE plan has identified locations throughout campus where screening for illicit discharges will take place. EHS began reconnaissance of all storm drains on the UNM campus along with GPS mapping locations.

would provide information on more than one jurisdiction); and (e) After screening a non-high priority area once, adopt an "in response to complaints only" IDDE for that area provided there are citizen complaints on no more than two (2) separate events within a twelve (12) month period. (f) Enhance the program to utilize procedures and methodologies consistent with those described in "Illicit Discharge Detection and Elimination, A Guidance Manual for Program Development and Technical Assessments."			
5.12. Describe other proposed activities to address the Illicit Discharges and Improper Disposal Measure:	• No additional activities are being proposed at this time. UNM will continue to explore additional activities to address the Illicit Discharges and Improper Disposal Measure.	• Additional proposed activities will be reported in the annual report.	

CONTROL OF FLOATABLES DISCHARGES

Permit Activity	Proposed Plan	Measurable Goal	Status
6.1. Develop a schedule to implement the program as required in Part I.D.5.f.(i)(a): (i) The permittee must develop, update, and implement a program to address and control floatables in discharges into the MS4. The floatables control program shall include source controls and, where necessary, structural controls. Permittees previously covered under NMS000101 or NMR040000 must continue existing programs while updating those programs, as necessary, to comply with the requirements of this permit. The following elements must be included in the program: (a) Develop a schedule for implementation of the program to control floatables in discharges into the MS4 (Note: AMAFCA and the City of Albuquerque should update the schedule according to the findings of the 2005 AMAFCA/COA Floatable and Gross Pollutant Study and other studies); and	• UNM's approach is to control floatables at the source. UNM has a robust trash collection system, with a dense network of trash collection stations across campus. UNM may have the most intensive litter removal and street and sidewalk sweeping program in the Albuquerque metro area that removes floatables from the campus grounds before they can come into contact with stormwater. These activities are continuous. • Furthermore, UNM has installed grates in stormwater inlets across campus to control floatables discharge. • PDD will continue to track and report the estimated volume of floatables and trash removed from our control facilities. Beginning in June 2017, FM will start characterizing the types of floatables removed from control facilities.	To implement a schedule for implementation of controls of floatables in discharges into the MS4 Include a discussion of volume and type of trash removed in Annual Reports.	UNM grounds and landscaping personnel continued implementing cleaning and maintenance on stormwater inlets that trap floatables and other debris. FM has identified a list of storm drain inlets that are cleaned at least quarterly. FM does street sweeping every day, and each UNM street is swept on average twice a week. The frequency of sweeping reduces in the winter months. The amount of debris collected from street sweeping is still to be determined.

WASTE COLLECTION PROGRAMS

Permit Activity	Proposed Plan	Measurable Goal	
	• UNM carefully collects and disposes of all wastes that could be hazardous to stormwater quality. For instance, the EHS Department picks up and properly disposes of UNM's hazardous wastes in compliance with RCRA requirements. EHS, FM and other UNM departments properly manage and dispose of regulated universal wastes and other special wastes. UNM policy UBPP 7780 forbids automotive maintenance activities on campus outside of the fleet and equipment maintenance operations at the FM Automotive Center. UNM is expanding its waste collection program to include fats, oils and greases. UNM continues to coordinate waste collection efforts amongst departments.		
6.2. Describe the plan to estimate the annual volume of floatables and trash removed from each control facility and characterize the floatable type as required in Part I.D.5.f.(i)(b): (b) Estimate the annual volume of floatables and trash removed from each control facility and characterize the floatable type.	• UNM does not own or operate any major stormwater quality control facilities. FM recycling will continue to track and report the estimated volume of trash and recyclable materials collected from campus.	The progress and estimated volume of trash and recyclable materials will be reported in the annual report.	The volume of trash and recyclable materials for the reporting period is still being determined.
6.3. Describe other proposed activities to address the Control of Floatables Discharges Measure:	• No additional activities are being proposed at this time. UNM will continue to explore additional activities to address the Control of Floatables Discharges Measure.	Additional proposed activities will be reported in the annual report.	No additional activities were reported.

PUBLIC EDUCATION AND OUTREACH ON STORMWATER IMPACTS

Permit Activity	Proposed Plan	Measurable Goal	
7.1. Develop, revise, implement, and maintain an education and outreach program as required in Part I.D.5.g.(i) and Part I.D.5.g.(ii): (i) The permittee shall, individually or cooperatively, develop, revise, implement, and maintain a comprehensive stormwater program to educate the community, employees, businesses, and the general public of hazards associated with the illegal discharges and improper disposal of waste and about the impact that stormwater discharges on local waterways, as well as the steps that the public can take to reduce pollutants in stormwater. Permittees previously covered under NMS000101 and NMR040000 must continue existing programs while updating those programs, as necessary, to comply with the requirements of this permit. (ii) The permittee must implement a public education program to distribute educational knowledge to the community or conduct equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff. The permittee must:	• UNM is actively involved in providing public education and outreach regarding stormwater impacts in the Albuquerque area watershed. UNM's efforts are aimed to educate the public about stormwater pollution and how citizens can control the impact of stormwater pollution. Some activities that UNM is involved in include: (1) posting stormwater information on the EHS Department website; (2) publishing stormwater information in the UNM Newsroom or The Daily Lobo publications; and (3) providing stormwater training to UNM staff. The information that UNM provides includes the proper handling, disposal and recycling of used motor vehicle fluids, household hazardous wastes, grass clippings, car wash water, use of fertilizers, pesticides and herbicides, oil and toxics on roadways and the steps to report illicit discharges and improper disposal. Further, UNM educates pet owners about proper disposal of pet wastes. • UNM's EHS Department works with FM to maintain pet waste collection stations on its Main Campus. EHS also educates owners and operators of UNM-related facilities regarding their responsibility to control pollutants in stormwater discharges from their property to the MS4 by including stormwater pollution prevention training to UNM Building Coordinators and staff. EHS is also including stormwater education in its Basic Annual Safety Training required to be taken annually by all UNM employees.	• Discussion of additional education and outreach activities performed by UNM staff will be provided in the Annual Reports. • Outreach efforts will continue to be summarized in the Annual Reports.	EHS has developed a written education and outreach program, which is incorporated into this SWMP by reference. During the reporting period, EHS continued to maintain storm drain caps on storm drain inlets across campus with the message "No Dumping, only Rain in the Drain." Additionally, the IDDE recon above will find locations without these and replace them. EHS participated in "Welcome back days" at the beginning of the UNM academic semester and handed out fliers with stormwater education literature. EHS has created an advertisement that runs on the KUNM public radio station asking the public to protect water quality

(a) Define the goals and objectives of the program based on high priority community-wide issues; (b) Develop or utilize appropriate educational materials, such as printed materials, billboard and mass transit advertisements, signage at select locations, radio advertisements, television advertisements, and websites; (c) Inform individuals and households about ensuring proper septic system maintenance, ensuring the proper use and disposal of landscape and garden chemicals including fertilizers and pesticides, protecting and restoring riparian vegetation, and properly disposing of used motor oil or household hazardous wastes; (d) Inform individuals and groups how to become involved in local stream and beach restoration activities as well as activities that are coordinated by youth service and conservation corps or other citizen groups; (e) Use tailored public education program, using a mix of locally appropriate strategies, to target specific audiences and communities. Examples of strategies include distributing brochures or fact sheets, sponsoring speaking engagements before community groups, providing public service announcements, implementing educational programs targeted at school age children, and conducting community-based projects such as storm drain stenciling, and watershed cleanups; and (f) Use materials or outreach programs directed toward targeted groups of			by scooping pet waste.

commercial, industrial, and institutional entities likely to have significant stormwater impacts. For example, providing information to restaurants on the impact of grease clogging storm drains and to garages on the impact of oil discharges. The permittee may tailor the outreach program to address the viewpoints and concerns of all communities, particularly minority and disadvantaged communities, as well as any special concerns relating to children. The permittee must make information available for non-English speaking residents, where appropriate.			
7.2. Enhance the program to include requirements in Part I.D.5.g.(v) through Part I.D.5.g.(viii): (v) Where necessary to comply with the Minimum Control Measures established in Part I.D.5.g.(i) and Part I.D.5.g.(ii), the permittee should develop a program or modify/revise an existing education and outreach program to: (a) Promote, publicize, and facilitate the use of Green Infrastructure (GI)/Low Impact Development (LID)/Sustainability practices; and (b) Include an integrated public education program (including all permittee departments and programs within the MS4) regarding litter reduction, reduction in pesticide/herbicide use, recycling and proper disposal (including yard waste, hazardous waste materials, and used motor vehicle fluids), and GI/LID/Sustainable practices (including xeriscaping, reduced water consumption,			

water harvesting practices allowed by the New Mexico State Engineer Office). (vi) The permittee may collaborate or partner with other MS4 operators to maximize the program and cost effectiveness of the required outreach. (vii) The education and outreach program may use citizen hotlines as a low-cost strategy to engage the public in illicit discharge surveillance. (viii) The permittee may use stormwater educational materials provided by the State, Tribe, EPA, environmental, public interest or trade organizations, or other MS4s. The permittee may also integrate the education and outreach program with existing education and outreach programs in the Middle Rio Grande area. Example of existing programs include: (a) Classroom education on stormwater; A. Develop watershed map to help students visualize area impacted. B. Develop pet-specific education (b) Establish a water committee/advisor group; (c) Contribute and participate in Stormwater Quality Team; (d) Education/outreach for commercial activities; (e) Hold regular employee trainings with industry groups (f) Education of lawn and garden activities; (g) Education on sustainable practices;			

(h) Education/outreach of pet waste management; (i) Education on the proper disposal of household hazardous waste; (j) Education/outreach programs aimed at minority and disadvantaged communities and children; (k) Education/outreach of trash management; (l) Education/outreach in public events; A. Participate in local events—brochures, posters, etc. B. Participate in regional events (i.e., State Fair, Balloon Fiesta). (m) Education/outreach using the media (e.g. publish local newsletters); (n) Education/outreach on water conservation practices designed to reduce pollutants in stormwater for home residences.			
7.3. Describe other proposed activities to address the Public Education and Outreach on Stormwater Impacts Measure:			

PUBLIC INVOLVEMENT AND PARTICIPATION

Permit Activity	Proposed Plan	Measurable Goal	Status
8.1. Develop (or update), implement, and maintain a public involvement and participation plan as required in Part I.D.5.h.(ii) and Part I.D.5.h.(iii): (ii) The permittee shall develop, revise, implement and maintain a plan to encourage public involvement and provide opportunities for participation in the review, modification and implementation of the SWMP; develop and implement a process by which public comments to the plan are received and reviewed by the person(s) responsible for the SWMP; and, make the SWMP available to the public and to the operator of any MS4 or Tribal authority receiving discharges from the MS4. Permittee previously covered under NMS000101 or NMR040000 must continue existing public involvement and participation programs while updating those programs, as necessary, to comply with the requirements of this permit. (iii) The plan required in Part I.D.5.h.(ii) shall include a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate. The permittee must include the following elements in the plan:	• UNM continues to welcome public participation in its SWMP. The EHS Department continues involving other UNM departments, e.g., FM, OCP, etc., as stakeholders in the development and revision of UNM's SWMP. UNM also participates in local Albuquerque area public forums where active public involvement occurs, e.g., the Technical Advisory Group on stormwater issues. • EHS Department regularly trains and updates other UNM Departments about stormwater issues and solicits input and participation.	Discussion of public input and their comments will be provided in the Annual Report.	UNM requested public participation in its SWMP. The SWMP is posted on our website and a link advertised in the Daily Lobo newspaper. The EHS Department continues involving other UNM departments, e.g., FM, PDC, etc., as stakeholders in the development and revision of UNM's SWMP. EHS also participated in local Albuquerque area public forums where active public involvement occurs, e.g., the Technical Advisory Group on stormwater issues.

(a) A detailed description of the general plan for informing the public of involvement and participation opportunities, including types of activities; target audiences; how interested parties may access the SWMP; and how the public was involved in development of the SWMP; (b) The development and implementation of at least one (1) assessment of public behavioral change following a public education and/or participation event; (c) A process to solicit involvement by environmental groups, environmental justice communities, civic organizations or other neighborhoods/organizations interested in water quality-related issues, including but not limited to the Middle Rio Grande Water Quality Work Group, the Middle Rio Grande Bosque Initiative, the Middle Rio Grande Endangered Species Act Collaborative Program, the Middle Rio Grande-Albuquerque Reach Watershed Group, the Pueblos of Santa Ana, Sandia and Isleta, Albuquerque Bernalillo County Water Utility Authority, UNM Colleges and Schools, and Chartered Student Organizations; and (d) An evaluation of opportunities to utilize volunteers for stormwater pollution prevention activities and awareness throughout the area.			
8.2. Describe the plan to comply with State, Tribal, and local notice requirements when implementing a Public Involvement and Participation Program as required in Part I.D.5.h.(iv):	• UNM provided public notice of its plan to submit a NOI and SWMP to the EPA. The notice was published in the Albuquerque Journal. The draft NOI and SWMP were published on the EHS website, with copies		

(iv) The permittee shall comply with State, Tribal and local public notice requirements when implementing a public involvement/ participation program.	available at the Zimmerman Library, and the public was allowed 30 days to submit written comments.		
8.3. Describe a plan to include elements as required in Part I.D.5.h.(v): (v) The public participation process must reach out to all economic and ethnic groups. Opportunities for members of the public to participate in program development and implementation include serving as citizen representatives on a local stormwater management panel, attending public hearings, working as citizen volunteers to educate other individuals about the program, assisting in program coordination with other pre- existing programs, or participating in volunteer monitoring efforts.			
8.4. As required in Part I.D.5.h.(viii) provide the internet site (or website) where the SWMP document, Annual Reports, and other documents will be available to the public: (viii) The permittee must provide public accessibility of the Stormwater Management Program (SWMP) document and Annual Reports online via the Internet and during normal business hours at the MS4 operator's main office, a local library, posting on the internet and/or other readily accessible location for public inspection and copying consistent with any applicable federal, state, tribal, or local open records requirements. Upon a showing of significant public interest, the MS4 operator is encouraged to hold a public meeting (or include in the agenda of in a regularly scheduled city council meeting,	EHS will publish UNM's SWMP and Annual Reports on its website and provide a forum to seek and address input from the public.		

etc.) on the NOI, SWMP, and Annual Reports. (See Part III B)			
8.5. Enhance the program to include requirements in Part I.D.5.h.(ix): (ix) The permittee may integrate the public Involvement and participation program with existing education and outreach programs in the Middle Rio Grande area. Example of existing programs include: Adopt-A- Stream Programs; Attitude Surveys; Community Hotlines (e.g. establishment of a "311"-type number and system established to handle storm-water-related concerns, setting up a public tracking/reporting system, using phones and social media); Revegetation Programs; Storm Drain Stenciling Programs; Stream cleanup and Monitoring program/events.			
8.6. Describe other proposed activities to address the Public Involvement and Participation Measure:			

DISCHARGES TO IMPAIRED WATERS

Permit Activity	Proposed Plan	Measurable Goal	Status
2.b) The permittee shall control the discharges of pollutant(s) of concern to impaired waters and waters with approved TMDLs as provided in sections (i) and (ii) below, and shall assess the success in controlling those pollutants. **(i) Discharges to Water Quality Impaired Water Bodies with an Approved TMDL** If the permittee discharges to an impaired water body with an approved TMDL (see Appendix B of permit), where stormwater has the potential to cause or contribute to the impairment, the permittee shall include in the SWMP controls targeting the pollutant(s) of concern along with any additional or modified controls required in the TMDL and this section. The SWMP and required annual reports must include information on implementing any focused controls required to reduce the pollutant(s) of concern. **(ii) Discharges Directly to Water Quality Impaired Water Bodies without an Approved TMDL:** The permittee shall also determine whether the permitted discharge is directly to one or more water quality impaired water bodies where a TMDL has not yet been approved by NMED and EPA. If the permittee discharges directly into an impaired water body without an approved TMDL, the permittee shall perform certain activities (see permit for full description of such activities).	UNM continues to implement practices that reduce bacterial contamination of stormwater. Most of these practices have multi-purpose benefits in addition to stormwater pollution prevention and bacterial reduction. These ongoing practices involve the structural best management practices (BMPs) in the operation of our facilities and grounds as well as our public education and outreach efforts. The following describes UNM's program to minimize contamination of stormwater. UNM is aware of the bacterial source tracking study in the local Middle Rio Grande watershed which identified the various source animal enteric bacteria contributions. The study indicated that birds contributed the most at roughly a third of the bacteria loading. Dogs were the second largest source. Therefore, UNM's efforts have been focused on controlling bird and dog waste impacts on stormwater. a) **Pet Waste Stations** - UNM's campus is open to the public and people do walk their dogs on campus. This activity is centered around the green spaces, e.g., the Duck Pond on the Central Campus and Golf Course on North Campus. FM has installed and maintains pet waste disposal bag dispensers on the east and west sides of the Duck Pond area. The North Campus Neighborhood Association has been stocking shopping bags for similar purposes on the southeast corner of the North Golf Course where many folks begin on the perimeter jogging trail. This is also a notable example of public involvement with stormwater pollution prevention on campus. b) **Bird Controls -** UNM continues bird control efforts, especially related to roosting pigeons on UNM buildings. Bird control efforts range from netting at Coronado dormitory trash storage	Submission of water quality monitoring results in DMRs and Annual Reports.	UNM entered into a monitoring cooperative and signed an intergovernmental agreement with several agencies during the reporting cycle. It also provided the EPA a monitoring plan and certification to start monitoring stormwater. Monitoring results (DMRs) will be reported by one of the co-permittees (AMAFCA) on behalf of the cooperative.

	area, equipment bird skirting at the Business Center and bird control wires on the Electrical Engineering & Computer Engineering building window sills. UNM also has an ongoing trapping program that captures hundreds of pigeons a year on many campus roof tops or wherever there may be a roosting problem. c) **Street and Sidewalk Sweeping** - UNM makes a great effort to keep the campus grounds beautiful. FM efforts include regular street sweeping and sidewalk sweeping. UNM's street sweeping schedule may be among the most frequent in the metro area, and this serves to protect stormwater quality from contaminants, including bacteria laden animal wastes on hard-scaping. d) **Trash & Litter Controls -**The local bacterial tracking study also indicated that humans are one of the smaller sources of bacterial contamination to stormwater. In addition to the homeless population in the metro area that may not be using bathrooms, it was recognized that leaking trash dumpsters and compactors may contribute to some of the human contamination. Therefore, lids are installed and kept closed on UNM's large trash dumpsters to keep stormwater out. The multitude of small trash receptacles along campus sidewalks, at building entrances, etc. are also always lined with trash bags and usually topped with lids that allow trash in and keep it inside. Bagging and lids also prevent wind from blowing trash out of dumpsters and receptacles. e) **Leaked Fluid**- If trash compactors leak fluids, the standard practice at UNM is to absorb the leaked fluids and dispose of the absorbent with the other solid waste. Litter is picked up daily, Monday through Friday, all over campus and is disposed of properly with other solid wastes.		

	Litter pickup includes scooping visible pet waste as well as floatables/litter. UNM notifies the COA about problems with pet wastes being left from occupants of neighboring apartment complexes who bring their dogs onto campus property to defecate. f) **Stormwater Retention Ponds** - UNM has a few stormwater retention ponds on the South Campus and on the North Campus. In addition to reducing peak flow into the local MS4, these ponds act to settle out suspended solids and expose bacteria to solar UV radiation. Solar UV disinfection and settling out suspended solids both help to reduce bacteria levels in stormwater discharged from campus. g) **Public Education and Outreach & Campus Training** - Stormwater pollution prevention training will become part of UNM's Mandatory Basic Annual Safety Training (BAST) program for all UNM employees. Additionally, UNM's Environmental Health and Safety (EHS) department conducts specialized stormwater pollution prevention training to FM employees. EHS's specialized training includes an emphasis on pet waste pickup and measures to minimize bacterial, nutrient and sediment contamination. At UNM's Welcome Back Days event at the beginning of each semester, EHS has had booths with handouts on stormwater pollution prevention including pet wastes and measures to minimize bacterial contamination. EHS's website also has information on stormwater pollution prevention including pet wastes and measures to minimize bacterial contamination. UNM continues to operate pursuant to the COA bacterial program as necessary for consistency with the new E-Coli TMDL. UNM, as a Phase 1 MS4 participant in a cooperative		

	monitoring program with the COA, AMAFCA and New Mexico Department of Transportation continues to pay a share of the monitoring costs for stormwater monitoring work. UNM remains involved in the decisions and reports that this monitoring cooperative generates until such time when a new monitoring cooperative is formed. UNM will calculate WLA for impaired waters and may coordinate efforts with other watershed permittees.		

WET WEATHER MONITORING

Permit Activity	Proposed Plan	Measurable Goal	Status
As described in Part III, A.1, permittees shall conduct wet weather monitoring to gather information on the response of receiving waters to wet weather discharges from the MS4 during both wet season (July 1 through October 31) and dry Season (November 1 through June 30). Wet Weather Monitoring shall be conducted at outfalls, internal sampling stations, and/or in-stream monitoring locations at each water of the US that runs in each entity or entities' jurisdiction(s). Permittees may choose either Option A (individual monitoring) or Option B (cooperative monitoring program). As described in Part III A.1.b: Cooperative monitoring program will monitor waters coming into the watershed (upstream) and leaving the watershed (downstream). Include sampling for TSS, TDS, COD, BOD5, DO, oil and grease, E.coli, pH, total kjeldahl nitrogen, nitrate plus nitrite, dissolved phosphorus, total ammonia plus organic nitrogen, total phosphorus, PCBs and Gross alpha. Monitoring for temperature at outfalls and/or Rio Grande monitoring locations. Include additional parameters from monitoring conducted under permits NMS000101, NMR040000 or/and	All discharges during a storm event are collected at outfall locations. • UNM and its current MS4 partners have hired the USGS to perform sample collection at 5 representative outfall locations. If new wet weather monitoring sites are installed, certification that they are operational, and actual monitoring at these sites will be provided by April 15, 2016. A detailed description of the monitoring scheme will be submitted for EPA and NMED approval by December 2015. Samples will be analyzed for all of the parameters in Part III A.1.b according to the schedule in Part III A.1.b for wet weather. • Composite samples are collected using an automated ISCO sampling device. Grab samples are collected by USGS personnel. Temperature probes continuously record air and water temperatures. Sondes are used to monitor D.O., water temperature, and conductivity.	• Provide results of the assessment in each annual report.	UNM entered into a monitoring cooperative and signed an intergovernmental agreement with several agencies during the reporting cycle. It also provided the EPA a monitoring plan and certification to start monitoring stormwater. Monitoring results (DMRs) will be reported by one of the co-permittees (AMAFCA) on behalf of the cooperative.

NMR04000I whose mean values are at or above a WQS. Sample the pollutants for a minimum of 7 storm events per location during the permit term with at least 3 events wet season and 2 events in dry season.			

DRY WEATHER DISCHARGE SCREENING OF MS4

Permit Activity	Proposed Plan	Measurable Goal	Status
As described in part III.A.2, permittee shall: Identify, investigate, and address areas within its jurisdiction that may be contributing excessive levels of pollutants to the Municipal Separate Storm Sewer System as a result of dry weather discharges (i.e., discharges from separate storm sewers that occur without the direct influence of runoff from storm events, e.g. illicit discharges, allowable non-stormwater, groundwater infiltration, etc.). Due to the arid and semi-arid conditions of the area, the dry weather discharges screening program may be carried out during both wet season (July 1 through October 31) and dry Season (November 1 through June 30). This program may be coordinated with the illicit discharge detection and elimination program required in Part I.D.5.e. Include sufficient screening points to adequately assess pollutant levels from all areas of the MS4. Screen for, at a minimum, BOD5, sediment or a parameter addressing sediment (e.g., TSS or turbidity), E. coli, Oil and Grease, nutrients, any pollutant that has been identified as cause of impairment of a waterbody receiving discharges from that portion of the MS4, including temperature. Specify the sampling and non-sampling techniques to be issued for initial screening and follow-up purposes. Sample collection and analysis need not conform to the requirements of 40 CFR Part 136; and	• There are no perennial streams in the Albuquerque Metropolitan area. As such, the dry weather screening program serves a dual purpose as an illicit discharge screening analysis. Seventeen locations, which screen 100% of the MS4 and target industrial areas, have been chosen. Should any discharge be present in a quantity sufficient for analysis, it will be screened for BOD5, sediment or a parameter addressing sediment (e.g. TSS or turbidity), *E. coli*, Oil and Grease, and nutrients. Any discharge collected will be a grab sample.	• Provide results of the assessment in each annual report.	UNM entered into a monitoring cooperative and signed an intergovernmental agreement with several agencies during the reporting cycle. It also provided the EPA a monitoring plan and certification to start monitoring stormwater. Monitoring results (DMRs) will be reported by one of the co-permittees (AMAFCA) on behalf of the cooperative. Dry weather screening at UNM is done as part of the IDDE.

Perform monitoring only when an antecedent dry period of at least seventy-two (72) hours after a rain event greater than 0.1 inch in magnitude is satisfied.			

List of Supplementary Documents

Storm drain inlets for quarterly maintenance

CMC Contract Summary Memo

Construction Site Inspection Checklist

IDDE Locations

IDDE Inspection Checklist

Table 1

UNM Storm Drain Inlets for Quarterly Maintenance and Measurement Operations

Inlet #	LOCATION
1.	West of Centennial Engineering (Bldg.122) in roadway along West Curb line
2.	West of Hibben Center (Bldg. 15) in bump out on West side of road (2-inlets)
3.	North of Zimmerman (Bldg. 53) in parking lot
4.	Walkway east of Zimmerman (Bldg. 53) and East of Collage of Education (Bldg. 57)
5.	SE of Hokona Zia (Bldg. 58) in Redondo Way
6.	NE of Simpson Hall (Bldg. 66) in Redondo Way
7.	South of Santa Clara (Bldg. 61) in Redondo Way
8.	North of SRC Commons (Bldg. 88)
9.	NE of Mesa Vista (Bldg. 56) at Area 3
10.	South side of Duck Pond
11.	SE side of Scholes Hall (Bldg. 10)
12.	SW of Chapel (Bldg. 25)
13.	East of Bandelier Hall East (Bldg. 8) at Rose Garden
14.	North side of EECE (Bldg. 46) in south end of parking lot
15.	NW of Ford Utilities (Bldg. 116) in parking lot
16.	SW corner of Novitski Hall (Bldg. 249) in SW corner of south parking lot
17.	South side Of HSSB (Bldg. 266) in walkway
18.	NW of HSSB (Bldg. 266) in lawn area
19.	NW of Novitski Hall (Bldg. 249) in SE corner of north parking lot (2-inlets)
20.	NW of Observatory (Bldg. 208) in NW corner of parking lot.

Created by FM

Version Date: Sept. 1, 2012

Bohannan Huston

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M E M O R A N D U M

DATE: August 20, 2021

TO: Patrick Chavez, PE, AMAFCA, Representative for Compliance Monitoring Cooperative (CMC) Members

FROM: Sarah Ganley, PE, ENV SP

SUBJECT: **CMC Stormwater Monitoring Reporting**
AMAFCA On-Call Task 15 – Contract Summary Memo for FY 2021

Bohannan 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. This work is through an AMAFCA on-call contract and the CMC has delegated AMAFCA to manage this task order. Included with this Task, the CMC members, except for the City of Albuquerque, have delegated AMAFCA to enter the CMC data into the EPA electronic Discharge Monitoring Report (NetDMR) forms. 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 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"). The WSB MS4 Permit was issued on December 22, 2014 for a 5-year term with an expiration date of December 19, 2019. In December 2019, the WSB MS4 Permit went into administrative continuance when EPA Region 6 did not issue a new MS4 Permit before the expiration date of the existing WSB MS4 Permit.

The required CMC sampling for the WSB MS4 Permit term (2014 to 2019) was completed in FY 2019. Until a new MS4 Permit is issued, no additional compliance stormwater sampling for the CMC is required. There were two (2) CMC monitoring results obtained, though not required by the MS4 Permit, in FY 2021. Two CMC memos were completed to report the results: *FY 2021 - CMC Wet Season, Wet Weather Stormwater Monitoring Data Verification, Analysis Results Database, and Reporting Memo* dated April 22, 2021, and *FY 2021 - CMC Dry Season, Wet Weather Stormwater Monitoring Data Verification, Analysis Results Database, and Reporting Memo* dated August 20, 2021.

For this Task, BHI has not completed any data entry related to the EPA NetDMRs for FY 2021. For AMAFCA and the CMC members that have delegated NetDMR entry to AMAFCA through signed Memorandums of Agreement, there are currently no open NetDMRs for this MS4 Permit in

the EPA NetDMR system. Attachment 1 of the *FY 2021 - CMC Dry Season, Wet Weather Stormwater Monitoring Data Verification, Analysis Results Database, and Reporting Memo* dated August 20, 2021, contains all of the lab data that would be entered into the NetDMR, if there were open and required forms.

It is recommended that the CMC members submit the two FY 2021 CMC memos with their MS4 Annual Report to EPA. As was recommended last year, if the CMC does continue wet weather compliance monitoring during administrative continuance of this MS4 Permit, the CMC members should continue to summarize, as applicable, any wet weather monitoring activity, results, and E. coli loading calculations in future MS4 Annual Reports.

SG/ab

Bohannan Huston

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M E M O R A N D U M

DATE: August 20, 2021

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

FROM: Sarah Ganley, PE, ENV SP

SUBJECT: **CMC Dry Season, Wet Weather Stormwater Monitoring Data Verification, Analysis Results Database, and Reporting Memo FY 2021 Dry Season (November 1, 2020 to June 30, 2021)**

Notification of In-Stream Water Quality Exceedances

For downstream notification purposes, the following parameters for in-stream samples taken in the Rio Grande at the Isleta Diversion Dam for the FY 2021 dry season had results that exceeded applicable water quality standards for E. coli and Polychlorinated Biphenyls (PCBs). Table 1 summarizes the samples with exceedances and the applicable water quality standard (WQS) that was exceeded. Additional details on the sampling results are provided in this memo.

Table 1: Parameters Detected Above Applicable Water Quality Standards CMC FY 2021 Dry Season Monitoring

Sampling Date Location	Parameters, Applicable Water Quality Standard (WQS), and Results Exceeding Applicable WQS	
	E. coli	**PCBs**
	WQS: 88 CFU/100 ml Pueblo of Isleta Primary Contact Ceremonial & Recreational	**WQS: 0.00017 ug/L** Pueblo of Isleta Human Health Criteria (based on fish consumption only)
4/29/2021 Rio Grande South Isleta Diversion Dam	1,573 CFU/100ml	0.000919 ug/L

Overview of Stormwater Monitoring Activity

Bohannan 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) 2021 (July 1, 2020 to June 30, 2021). 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 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 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 (MRG) Watershed Based Municipal Separate Storm Sewer System (MS4) Permit, NPDES Permit No. NMR04A000 ("WSB MS4 Permit").

The WSB MS4 Permit entered Administrative Continuance in December 2019 when U.S. Environmental Protection Agency (EPA) Region 6 did not issue a new MS4 Permit before the current MS4 Permit's expiration date. The MRG Technical Advisory Group (TAG) sent EPA a letter dated October 15, 2019, acknowledging Administrative Continuance after the expiration date of the 5-year Permit term. Until a new MS4 Permit is issued, there are no compliance monitoring requirements for the CMC in the Rio Grande. As identified in the CMC Monitoring Plan, the WSB MS4 Permit required 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 3). All Permit required samples have been obtained by the CMC, as well as the two (2) samples obtained in FY 2021 during Administrative Continuance; all CMC samples are summarized in Table 2 below.

Table 2: CMC Sample Summary
Compared to WSB MS4 Permit Requirements

No. of Storm Events Required to Sample	CMC-WSB MS4 Permit Required Samples per Season	FY (Date) Samples Obtained for CMC
1	#1 Wet Season	FY 2017 (8/10/2016)
2	#2 Wet Season	FY 2017 (9/12/2016)
3	#3 Wet Season	FY 2017 (9/21/2016)
4	#1 Dry Season	FY 2017 (11/21/2016)
5	#2 Dry Season	FY 2019 (3/13/2019)
6	Any Season	FY 2018 (Wet Season - 7/27/2017)
7	Any Season	FY 2018 (Wet Season - 9/27/2017)
Not Required	Wet Season	FY 2021 (10/28/2020)
Not Required	Dry Season	FY 2021 (4/28/2021)

During WSB MS4 Permit Administrative Continuance, the CMC members chose to continue sampling within the Rio Grande to support their MS4 program needs and gather additional data in support of the future MS4 Permit compliance. This memo reports on the wet weather stormwater monitoring activity for the FY 2021 dry season (November 1, 2020 to June 30, 2021).

The CMC Excel database was updated with the FY 2021 dry season, wet weather monitoring data as results were received. The database contains sample location, sample date, analyses conducted, methods used, applicable surface water quality standards (WQS), WSB MS4 Permit required Minimum Qualification Levels (MQL) and results. Any unusable data will be identified.

Rio Grande North
Angostura Diversion Dam

Rio Grande
Alameda Blvd

Rio Grande South
Isleta Diversion Dam

MCMAHON BLVD
ROY AV
TRAMWAY RD
ALAMEDA BLVD
PASEO DEL NORTE
OSUNA RD
MONTANO RD
SAN MATEO BLVD
WYOMING BLVD
EUBANK BLVD
JUAN TABO BLVD
TRAMWAY BLVD
UNSER BLVD
MENAUL BLVD
2ND ST
JEFFERSON ST
LOUISIANA BLVD
LOMAS BLVD
CENTRAL AV
LEAD AV
ZUNI RD
BRIDGE BLVD
98TH ST
GIBSON BLVD
ATRISCO VISTA BLVD
DENNIS CHAVEZ BLVD
RIO BRAVO BLVD
COORS BLVD
ISLETA BLVD
BROADWAY BLVD
NM 47
40
25
550

Legend

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

N
W E
S

0 0.5 1 2
Miles

CMC Monitoring

Figure 1
Monitoring Locations

AMAFCA

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P:\20180302\WR\Reports\Preliminary & Draft\Figures\MXDs\Figure1-CMCMonitoringLocations.mxd
Author: eburn

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 (BOD_5)
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, adjusted
Tetrahydrofuran
Benzo(a)pyrene
Benzo(b)fluoranthene (3, 4-Benzofluoranthene)
Benzo(k)fluoranthene
Chrysene
lndeno (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) is also tested to allow dissolved metal results to be compared to the applicable WQSs. 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 15 minutes of sample collection. All E. coli samples were submitted to the laboratory within eight (8) hours of collection in order to meet the specified hold time.

Sampling Locations:

The sampling locations are shown in Figure 1, page 3.

Rio Grande North – In-stream 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 – In-stream 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.

During this FY 2021 dry season, an E. coli only sampling point was added within the Rio Grande at Alameda Blvd. This is the location of the NMED defined stream segment divide. This sample point was added after discussion with NMED in February 2017 regarding potential refinements to E. coli loading calculations.

Sample Collection:

As mentioned previously, sample collection for the CMC is being conducted by DBS&A (through a separate on-call contract) as well as by CMC members. 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 Alameda and Rio Grande South locations.

DBS&A provided BHI with their field notes and field sample data (temperature, DO, specific conductivity, and pH) for the FY 2021 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 summary of the CMC comprehensive monitoring program activities completed for the FY 2021 dry season from November 2020 through June 2021. One (1) qualifying storm event was sampled and analyzed during the FY 2021 dry season.

- **April 28, 2021 – Qualifying Storm Event – Full Analysis of Samples.** A sample was collected at the Rio Grande North location beginning at 11:40 a.m. on April 28 and sent to the laboratory for an E. coli test. The CMC determined that the storm event beginning April 28 was a qualifying storm event. A sample in the Rio Grande at Alameda Blvd. was obtained at 1:40 p.m. on April 28 and at 6:45 a.m. on April 29, and each sample was sent to the laboratory for an E. coli test. A Rio Grande South sample was collected beginning at 7:45 a.m. on April 29; the samples from the North (from April 28) and South locations were taken to HEAL for full parameter testing.

Stormwater Quality Database for CMC

As stated previously, there was one (1) qualifying storm event during the FY 2021 dry season, wet weather monitoring sampled by the CMC, which occurred April 28, 2021. DBS&A's field notes containing DO, pH, conductivity, and temperature measurements, as well as sampling comments 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.

Database Data Entry:

The CMC Excel database was updated with the FY 2021 dry season, wet weather monitoring data. The database contains sample locations, sample date, analyses conducted, methods used, applicable surface water quality standards (WQS), WSB MS4 Permit required Minimum Quantification Levels (MQL), and analysis results. The database was updated under this Task to include the Rio Grande at Alameda sample location. Applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4, as well as the Pueblo of Isleta 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.

Water quality data was entered into the database upon receipt of the lab reports. 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 qualifying storm events for both Rio Grande North and Rio Grande South locations were entered respectively into the database. In addition, the E. coli only samples from the Rio Grande Alameda location were also entered into the database.

Data Verification and Validation:

The HEAL 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* (EPA, 2008).

As stated in the QAPP, the V&V process was completed by someone other 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 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.

All CMC FY 2021 dry season data met 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 2021 Dry Season Assessment and Evaluation of Monitoring Results

The EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016, has 33 parameters to monitor at the Rio Grande North and Rio Grande South monitoring locations. Of these 33 parameters, 15 parameters were not detected in the FY 2021 dry season samples at either the Rio Grande North or South locations. Refer to Table 3 for a list of the parameters that were not detected.

Table 3: Parameters Not Detected
CMC FY 2021 Dry Season Monitoring

Parameters Not Detected	
Oil and Grease (N-Hexane Extractable Material)	Pentachlorophenol
Ammonia	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 (other names: Di(2-ethylhexyl) phthalate, DEHP)
Dieldrin	

For the remaining 18 parameters on the CMC monitoring parameter list, only two (2) parameters (E. coli and PCBs) had exceedances of the applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4 and the Pueblo of Isleta WQS during the FY 2021 dry season. These exceedances are summarized on Table 1, page 1, and discussed below in further detail.

E. coli:

The E. coli results collected during the FY 2021 dry season are summarized in Table 4.

Table 4: E. coli Results
CMC FY 2021 Dry Season Monitoring

Date – Rio Grande Location	E. coli Results (CFU/100 ml)
April 28, 2021 – North	8.5
April 28, 2021 – Alameda	72.8
April 29, 2021 – Alameda	31
April 29, 2021 – South	1,573

At the Rio Grande North location (upstream of the Albuquerque UA, at the Angostura Diversion Dam), one (1) sample was collected and tested for E. coli and the lab result was well below the primary contact-single sample Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL) and the primary contact-single sample NMAC WQS (410 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 had a result that exceeded the Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL) and also exceeded the primary contact-single sample NMAC WQS (410 CFU/100 ml).

In addition, the CMC added an E. coli sample point in the Rio Grande at Alameda. This added analysis point was based on discussions with NMED in February 2017 on collecting actual data at the stream segment divide verses using an area percentage (as defined in the TMDL) for E. coli loading calculations. For the FY 2021 dry season storm event, two (2) samples were collected at the Alameda location and both lab results were below the primary contact-single sample Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL).

Monthly geometric mean values were not calculated and compared to applicable WQS because the CMC had only one (1) to two (2) samples per location. As a reminder, in January 2017 the CMC members clarified with NMED that 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 while the lab reports are typically in units of MPN/100mL. The graph presented in this section uses units of CFU/100 mL to be consistent with the WQS units. Refer to Figure 2 for a graphical representation of E. coli results from April 2021.

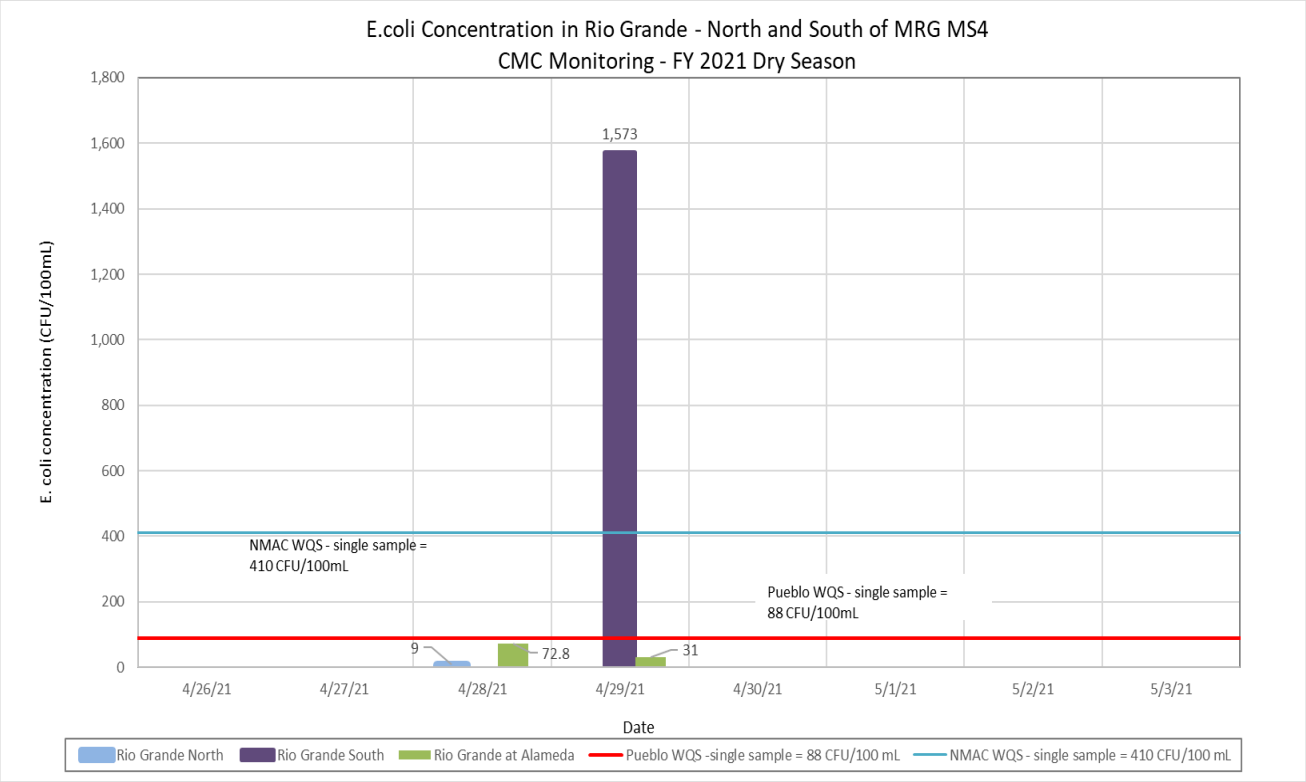

Figure 2: E. coli Results in Rio Grande
CMC Monitoring – FY 2021 Dry Season

PCBs:

There are multiple surface WQS values listed for PCBs in both the Pueblo of Isleta and the State of New Mexico standards for the various designated uses. The PCBs measured in samples collected from the Rio Grande during the FY 2021 dry season stormwater event were all below the minimum quantification level (MQL) established in EPA standards for the MS4 NPDES Permit (Appendix F, 0.2 ug/L for PCBs). The PCB results were also well below the New Mexico Surface WQS and Pueblo of Isleta Surface WQS for designated uses including drinking water (0.5 ug/L) and wildlife habitat, acute aquatic life, and chronic aquatic life (0.014 ug/L). However, the CMC sample from the Rio Grande South location was above the Pueblo of Isleta human health criteria (based on fish consumption only) WQS for surface waters. The human health-organism only criterion is based upon human consumption of fish and other aquatic life that bioaccumulate contaminants over time. The PCB results from 2016 through 2021 are shown in Figure 3 relative to several of the WQSs for PCBs.

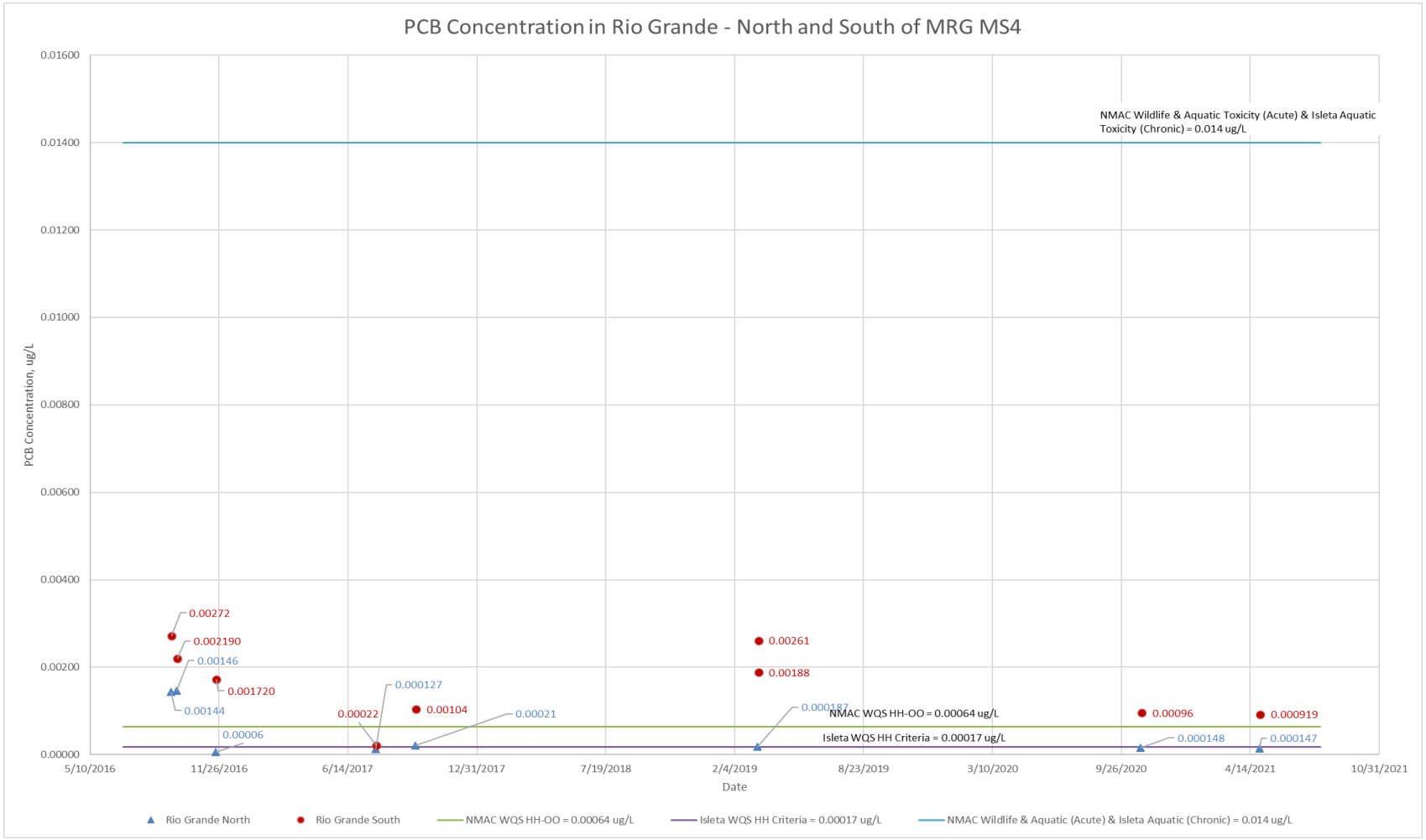

Figure 3: PCB Monitoring Results in Rio Grande
CMC Monitoring – 2016 - 2021

Dissolved Oxygen and Temperature:

Two (2) 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 and temperature. These parameters did not have any surface water quality exceedances during the FY 2021 dry season sampling.

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 2021 dry 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 from any of the CMC samples from 2016 to 2021. Refer to Figure 4 for CMC dissolved oxygen results and comparison to applicable WQS.

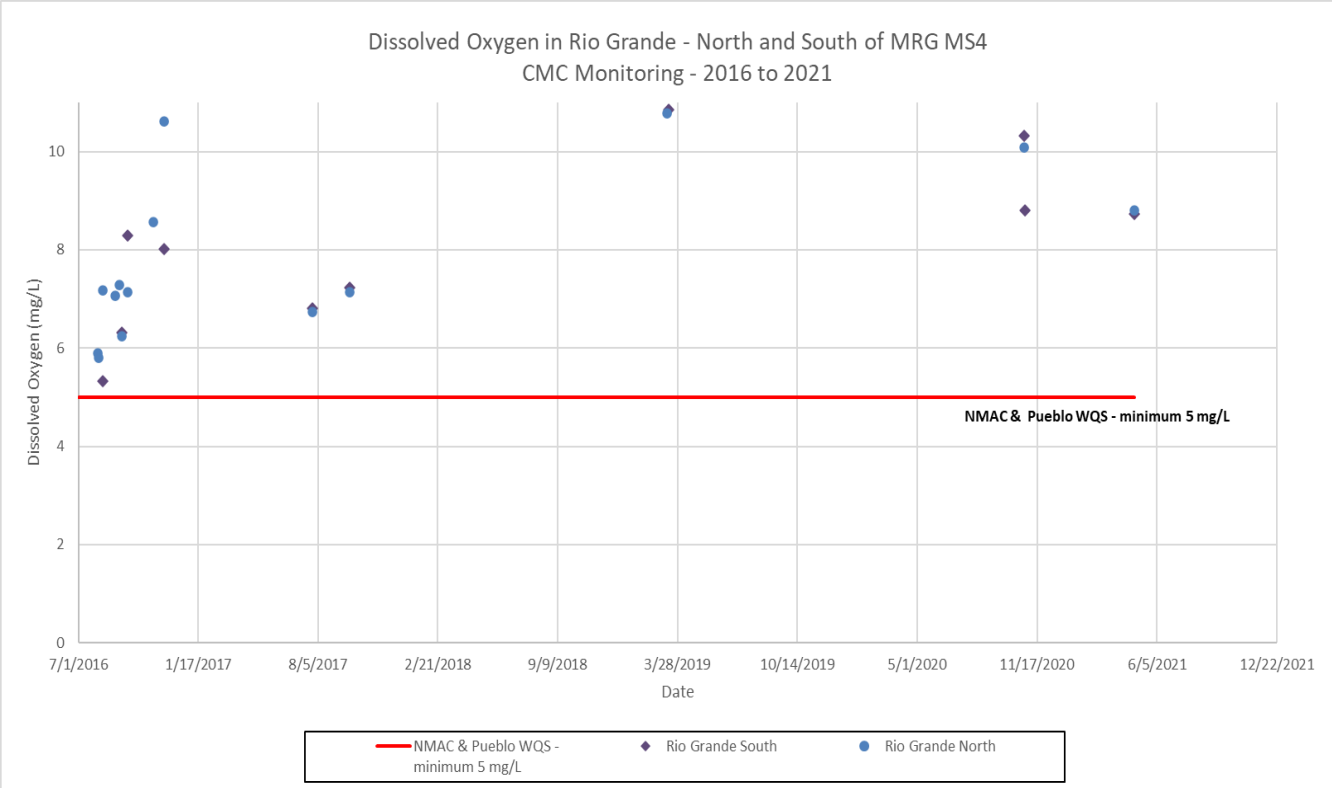

Figure 4: Dissolved Oxygen Results in Rio Grande
CMC Monitoring – 2016 - 2021

Temperature is listed in the WSB MS4 Permit as a special condition (currently only applicable to the City of Albuquerque and AMAFCA). Past data submitted to EPA and NMED by the MS4 permittees have proven that stormwater discharges into the Rio Grande are not raising the Rio Grande temperature above the WQS. The data collected during this FY 2021 dry season monitoring also supports this conclusion. All the temperature field readings taken in the Rio Grande during the CMC FY 2021 dry 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 5 for temperature results and comparison to applicable WQS for all CMC samples taken upstream and downstream of the MRG MS4 area from 2016 to 2021.

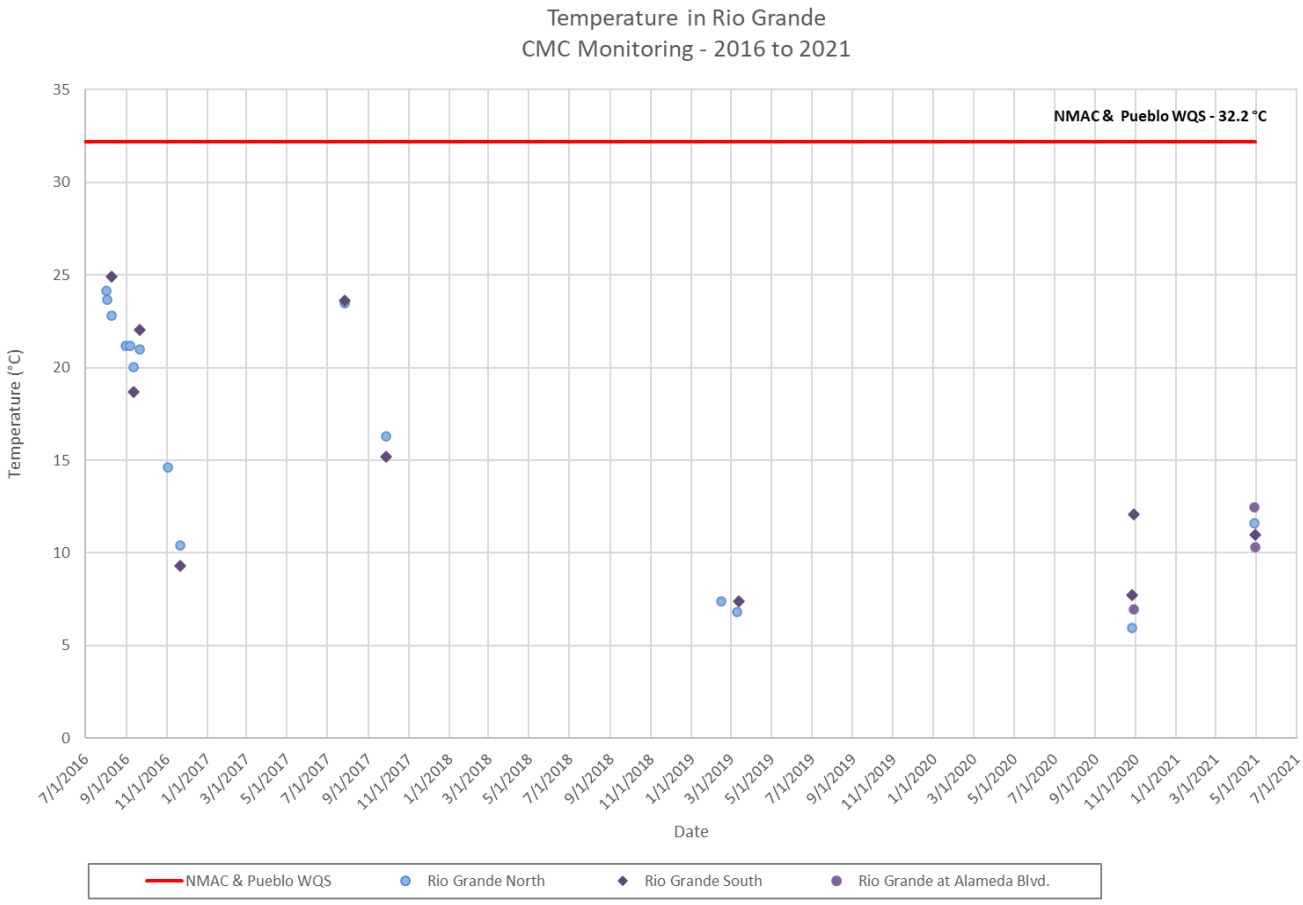

Figure 5: Temperature Monitoring Results in Rio Grande CMC Monitoring – 2016 - 2021

CMC FY 2021 Dry Season E. coli Loading Calculations and Waste Load Allocation (WLA)

Related to assessing the stormwater results, BHI has calculated the E. coli 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 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 loading calculations and assumptions comparing the calculated E. coli loading to the CMC aggregate WLA defined by NMED.

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 the *2020-2022 State of New Mexico Clean Water Act Section 303(d)/Section 305(b) Integrated Report*, December 8, 2020. NMED currently has four (4) stream segments instead of the two (2) WSB MS4 stream segments. These various stream segment designations are shown in Figure 6, page 15.

The NMED 303(d)/305(b) 2020-2022 Integrated Report tables show the most recent assessment results, and currently all segments of the Rio Grande (Isleta to Angostura Diversion) are impaired for E. coli and have a TMDL for E. coli.

The E. coli daily loading associated with the CMC group and comparison to the NMED WLA was completed for the one (1) qualifying dry season storm event – April 28-29, 2021. For this event, the CMC obtained an E. coli sample in the Rio Grande at Alameda and used this to calculate the E. coli loading for the two (2) river segments. Refer to Table 5 for a summary of the WLA comparison results. A spreadsheet that provides the detailed WLA calculations is attached to this memo.

Table 5: Summary of CMC E. Coli Loading Compared to WLA for the CMC

Date / Stream Segment	Daily Mean Flow (cfs)	Flow Conditions (cfs) *range defined by NMED*	CMC Daily E. coli Loading (CFU/day)	NMED WLA for CMC for Stream Segment and Flow Conditions (CFU/day)	Loading Compared to WLA Potential Exceedance or Acceptable
April 28-29, 2021 – Rio Grande North E. coli Concentration = 8.5 CFU/100 mL Rio Grande at Alameda E. coli Concentration = 72.8 CFU/100 mL and 31 CFU/100 mL Rio Grande South E. coli Concentration = 1,573 CFU/100 mL					
Alameda to Angostura	872	Mid	--	No Value	WLA Acceptable
Isleta to Alameda	931	Moist	2.02E+12	6.29E+10	WLA Potential Exceedance

- As Table 5 illustrates, the calculated E. coli loading for the April 28, 2021 storm event for the northern segment (Alameda to Angostura) is reported as an acceptable WLA. 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 April 28-29, 2021 event, in the Alameda to Angostura stream segment, the CMC's WLA will never be in exceedance since there is not set TMDL. This analysis used the mid-point E. coli sample result obtained in the Rio Grande at Alameda. The E. coli loading for the southern segment for the April 28, 2021 event 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 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. On page 40, the 2010 TMDL Report states, "It is important to remember that the TMDL is a planning tool to be used to achieve water quality standard. 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 means 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 meeting on February 1, 2017, and the CMC discussion with NMED on February 16, 2017, demonstrate CMC members are working toward understanding the WLA. In addition, the CMC members began implementing a refinement to the sampling plan discussed with NMED by obtaining an E. coli sample in the Rio Grande at Alameda effective the FY 2018 dry season, as feasible. This demonstrates that the CMC is continuing to investigate the potential exceedances and make improvements to monitor E. coli in the Rio Grande.

MS4 Permit Stream Segment
Alameda Bridge to Angostura Diversion
2105.1_00

Rio Grande Segment
Hwy 550 Bridge to Angostura Diversion
NM-2105.1_02

Impairments CWA 303(d) List*	TDML
E. coli	E. coli

Rio Grande Segment
Alameda Bridge to Hwy 550 Bridge
NM-2105.1_00

Impairments CWA 303(d) List*	TMDL
Gross alpha, adjusted	E. coli
PCBs - Fish Consumption Advisory	
Mercury - Fish Consumption Advisory	
PCBs	
E. coli	

Rio Grande Segment
Tijeras Arroyo to Alameda Bridge
NM-2105_51

Impairments CWA 303(d) List*	TMDL
Dissolved Oxygen	E. coli
PCBs - Fish Consumption Advisory	
Mercury - Fish Consumption Advisory	
Temperature	
E. coli	

MS4 Permit Stream Segment
Isleta Pueblo Boundary to Alameda St. Bridge
2105_50

Rio Grande Segment
Isleta Pueblo Boundary to Tijeras Arroyo
NM-2105_50

Impairments CWA 303(d) List*	TMDL
Dissolved Oxygen	E. Coli
PCBs - Fish Consumption Advisory	
Mercury - Fish Consumption Advisory	
E. coli	

MCMAHON BLVD
ELLISON DR
NM 528
4TH ST
ROY AV
ALAMEDA BLVD
PASEO DEL NORTE
OSUNA RD
MONTANO RD
2ND ST
JEFFERSON ST
SAN MATEO BLVD
WYOMING BLVD
EUBANK BLVD
JUAN TABO BLVD
TRAMWAY BLVD
CANDELARIA RD
MENAUL BLVD
LOUISIANA BLVD
3RD ST
UNSER BLVD
LOMAS BLVD
COAL AV
LEAD AV
ZUNI RD
CENTRAL AV
BRIDGE BLVD
GIBSON BLVD
COORS BLVD
ATRISCO VISTA BLVD
98TH ST
DENNIS CHAVEZ BLVD
RIO BRAVO BLVD
ISLETA BLVD
BROADWAY BLVD
I25 RAMP
NM-47
NM 147
Tijeras Arroyo
25
40
550

Legend

- MS4 Permit Stream Segments
- NMED Stream Segments
- North Diversion Channel
- Rio Grande
- Interstate Highway
- U.S. Highway
- State Highway

* Final 2020-2022 State of NM Clean Water Act Section 303(d)/Section 305(b) Integrated Report

N W E S

0 1 2 4 Miles

AMAFCA

Bohannan Huston
www.bhinc.com 800.877.5332

CMC Monitoring

Figure 6
Rio Grande Impairments & TMDL Information

P:\20210236\WR\Reports\Preliminary & Draft\Figures\MXDs\Figure6-MS4_TMDLStreamSegments_2021_0416.mxd
Author: SThompson

August 2021

Data Entry for Discharge Monitoring Reports

The WSB MS4 Permit entered Administrative Continuance in December 2019 when EPA Region 6 did not issue a new MS4 Permit before the current MS4 Permit's expiration date. Until a new MS4 Permit is issued, there are no compliance monitoring requirements for the CMC in the Rio Grande. As identified in the CMC Monitoring Plan, the WSB MS4 Permit required a minimum of seven (7) storm events be sampled at both the Rio Grande North and Rio Grande South locations. All MS4 Permit required samples have been obtained by the CMC and verified stormwater quality data from these required events have been submitted to the EPA using electronic Discharge Monitoring Report (NetDMR) forms prior to this fiscal year. Data from the NetDMRs are uploaded to a comprehensive nation-wide database that contains discharge data for facilities and other point sources that discharge directly to receiving streams.

For this Task, BHI has not completed any data entry related to the EPA NetDMRs for FY 2021. For AMAFCA and the CMC members that have delegated NetDMR entry to AMAFCA through signed Memorandums of Agreement, there are currently no open DMRs for this MS4 Permit in the EPA NetDMR system. This memo contains all of the lab data that would be entered into the NetDMR, if there were open and required forms – refer to Attachment 1.

Conclusions and Planning

During the FY 2021 dry season (November 1, 2020 to June 30, 2021), one (1) qualifying stormwater sample was obtained by the CMC. Lab results were received, and this data has been entered into the CMC Excel database. A summary of this data is provided in Attachment 1. The lab data entered is marked in the spreadsheet as "V" (verified), and data V&V (verification and validation) has been completed (refer to Attachment 2).

To summarize, monitoring results and E. coli loading calculations for the FY 2021 dry season show that:

- The WSB MS4 Permit entered Administrative Continuance in December 2019 when U.S. Environmental Protection Agency (EPA) Region 6 did not issue a new MS4 Permit before the current MS4 Permit's expiration date. Until a new MS4 Permit is issued, there are no compliance monitoring requirements for the CMC in the Rio Grande. All MS4 Permit required samples have been obtained by the CMC, as well as the two (2) samples obtained in FY 2021 (one for the wet season and one for the dry season), as reported in this memo, during Administrative Continuance.
- For the FY 2021 dry season, 15 of the 33 parameters tested were not detected in any of the Rio Grande North or South samples.
- Several key parameters all met the applicable WQS, as they have for all the CMC samples to date:
    - All dissolved oxygen results were greater than 5 mg/L (minimum WQS).
    - All temperature results were less than 32.2°C (maximum WQS).
- The PCB results were below the New Mexico Surface WQS and Pueblo of Isleta Surface WQS for designated uses including drinking water, wildlife habitat, acute aquatic life, and chronic aquatic life. However, the Rio Grande South CMC sample from April 29, 2021 was above the Pueblo of Isleta human health criteria (based on fish consumption only) WQS for surface waters.

- The calculated E. coli loading for the April 28, 2021 storm event for the northern segment (Alameda to Angostura) is reported as an acceptable WLA. 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 no 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 April 28-29, 2021 event in the Alameda to Angostura stream segment, the CMC's WLA will never be in exceedance since there is not a set TMDL. This analysis used the mid-point E. coli sample result obtained in the Rio Grande at Alameda. The E. coli loading for the southern segment for the April 28, 2021 event potentially exceeded the CMC allocated 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.

This memo completes the FY 2021 CMC reporting requirements. This memo, along with the CMC Wet Season, Wet Weather Stormwater Monitoring Data Verification, Analysis Results Database, and Reporting Memo dated April 22, 2021, Excel CMC Spreadsheet, and E. coli Loading and Comparison to Waste Load Allocation (WLA) Excel Spreadsheet provide the CMC members with monitoring data to support each member's reporting requirements to EPA. For this Task, BHI has not completed any data entry related to the EPA NetDMRs for FY 2021. For AMAFCA and the CMC members that have delegated NetDMR entry to AMAFCA through signed Memorandums of Agreement, there are currently no open DMRs for this MS4 Permit in the EPA NetDMR system. This memo contains all of the lab data that would be entered into the NetDMR, if there were open and required forms – refer to Attachment 1.

SG/ab

Attachments:

Attachment 1 – FY 2021 Lab Data Summary, Hall Environmental Analysis Laboratory Reports with BHI Notes for FY 2021 Dry Season, and DBS&A Field Data for FY 2021 Dry Season

Attachment 2 – FY 2021 Dry Season Completed Data Verification and Validation (V&V) Forms

Spreadsheets Included Separately:

- E. coli Loading and Comparison to Waste Load Allocation (WLA) Excel Spreadsheet
- Excel CMC Spreadsheet with FY 2021 Dry Season Stormwater Quality Monitoring Results

ATTACHMENT 1

FY 2021 LAB DATA SUMMARY, HALL ENVIRONMENTAL ANALYSIS LABORATORY REPORTS WITH BHI NOTES FOR FY 2021 DRY SEASON, AND DBS&A FIELD DATA FOR FY 2021 DRY SEASON

Date: August 18, 2021
Summary of Lab Results - FY 2021 Wet & Dry Season

		Rio Grande - North - At Angostura Dam								Rio Grande - South - At Isleta Dam							
Parameter	**Permit Required Units**	**Provisional or Verified**	**2021 CMC SAMPLE - EXTRA NORTH Collection Date 10/26/2020** Wet Season Sample	**Qualifier**	**Check compared to Water Quality Criterion**	**Provisional or Verified**	**2021 CMC SAMPLE - EXTRA NORTH Collection Date 4/28/2021** Dry Season Sample	**Qualifier**	**Check compared to Water Quality Criterion**	**Provisional or Verified**	**2021 CMC SAMPLE - EXTRA SOUTH Collection Date 10/28/2020** Wet Season Sample	**Qualifier**	**Check compared to Water Quality Criterion**	**Provisional or Verified**	**2021 CMC SAMPLE - EXTRA SOUTH Collection Date 4/29/2021** Dry Season Sample	**Qualifier**	**Check compared to Water Quality Criterion**
Total Suspended Solids (TSS)	mg/L	V	18	H	--	V	4		--	V	32		--	V	160		--
Total Dissolved Solids (TDS)	mg/L	V	234		OK	V	207		OK	V	348		OK	V	234	D	OK
Chemical Oxygen Demand (COD)	mg/L	V	ND		--	V	ND		--	V	ND		--	V	48.2		--
Biochemical Oxygen Demand (BOD_5)	mg/L	V	ND		--	V	<2.0		--	V	2.3	H	--	V	2.8		--
Dissolved Oxygen (DO)	mg/L	V	10.08		OK	V	8.81		OK	V	8.81		OK	V	8.73		OK
Oil and Grease (N-Hexane Extractable Material)	mg/L	V	ND		OK	V	ND		OK	V	ND		OK	V	ND		OK
E. coli	MPN (CFU/100 mL)	V	141		>WQ Standard	V	8.5		OK	V	2,420		>WQ Standard	V	1,573		>WQ Standard
pH	S.U.	V	8.49		OK	V	7.61		OK	V	8.11		OK	V	7.69		OK
Total Kjedahl Nitrogen (TKN)	mg/L	V	ND		--	V	0.42	J	--	V	0.7	J	--	V	0.56	J	--
Nitrate plus Nitrite	mg/L	V	0.34	J	OK	V	ND		OK	V	1.3		OK	V	0.59		OK
Dissolved Phosphorous	mg/L	V	0.013		--	V	0.011		--	V	0.48		--	V	0.26		--
Ammonia (mg/L as N)	mg/L	V	ND		OK	V	ND		OK	V	ND		OK	V	ND		OK
Total Nitrogen	mg/L	V	0.34	J	OK	V	0.42	J	OK	V	2.00	J	OK	V	1.15	J	OK
Total Phosphorous	mg/L	V	ND		--	V	0.026		--	V	0.63	D	--	V	0.46	D	--
PCBS (Method 1668A - sum of all congeners)	µg/L	V	0.000148	J	OK	V	0.000147	J	OK	V	0.000956	J	>WQ Standard	V	0.000919	J	>WQ Standard
Gross Alpha, Adjusted	pCi/L	V	0 ± NA		OK	V	2.96	Note - Gross Alpha was reported, not adjusted gross alpha	OK	V	3.03 ± NA		OK	V	4.32	Note - Gross Alpha was reported, not adjusted gross alpha	OK
Tetrahydrofuran	µg/L	V	ND		--	V	ND		--	V	ND		--	V	ND		--
Benzo(a)pyrene	µg/L	V	ND		OK	V	ND		OK	V	ND		OK	V	ND		OK
Benzo[b]fluoranthene (other name: 3,4-Benzofluoranthene)	µg/L	V	ND		OK	V	ND		OK	V	ND		OK	V	ND		OK
Benzo(k)fluoranthene	µg/L	V	ND		OK	V	ND		OK	V	ND		OK	V	ND		OK
Chrysene	µg/L	V	ND		OK	V	ND		OK	V	ND		OK	V	ND		OK
Indeno(1,2,3-cd)Pyrene	µg/L	V	ND		OK	V	ND		OK	V	ND		OK	V	ND		OK
Dieldrin	µg/L	V	ND	H	OK	V	ND		OK	V	ND		OK	V	ND		OK
Pentachlorophenol	µg/L	V	ND		OK	P	ND		OK	V	ND		OK	V	ND		OK
Benzidine	µg/L	V	ND		OK	V	ND		OK	V	ND		OK	V	ND		OK
Benzo(a)anthracene	µg/L	V	ND		OK	V	ND		OK	V	ND		OK	V	ND		OK
Dibenzofuran	µg/L	V	ND		--	V	ND		--	V	ND		--	V	ND		--
Dibenz(a,h)anthracene	µg/L	V	ND		OK	V	ND		OK	V	ND		OK	V	ND		OK
Chromium VI (Hexavalent)	µg/L	V	ND		OK	V	ND		OK	V	ND		OK	V	ND		OK
Dissolved Copper	µg/L	V	0.62	J	OK	V	0.57	J	OK	V	0.85	J	OK	V	0.87	J	OK
Dissolved Lead	µg/L	V	ND		OK	V	ND		OK	V	0.051	J	OK	V	ND		OK
Bis (2-ethyhexyl) Phthalate (other names: Di(2-ethylhexly)phthalate, DEHP)	µg/L	V	ND		OK	V	ND		OK	V	ND		OK	V	ND		OK
Conductivity	umhos/cm	V	385		--	V	476		--	V	589		--	V	396		--
Temperature	°C	V	5.94		OK	V	11.59		OK	V	12.06		OK	V	10.96		OK
Hardness (as $CaCO_3$)	mg/L	V	150		--	V	130		--	V	160		--	V	160		--

Data Verification/Validation and Qualifier Notes:
(R) The sample results are unusable because certain criteria were not met. The analyte may or may not be present in the sample.
(H) Sample holding time exceeded.
(J) The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.
(D) Sample was diluted by Lab due to matrix
(U) Analyte was analyzed for, but not detected above the specified detection limit.

Notes:
1. Wet Season monitoring period - July 1 to October 31 and Dry Season monitoring period - November 1 to June 30 according to the Watershed Based MS4 Permit NMR04A000.
20.6.4.105; For a mean monthly flow of 100 cfs, monthly average
concentration for TDS 1,500 mg/l or less, sulfate 500 mg/L or less, and
3. Aquatic life criteria for metals are expressed as a function of total
4. According to NMAC 20.6.4, E. coli bacteria for Primary Contact - monthly
5. Water quality criterion for metals is based on dissolved metals, NMAC
20.6.4.900.I and individual sample results compared to acute toxicity values.
6. HEAL lab method: SM 9223B Fecal Indicator. Note - lab method for units
of MPN/100 ml, lab report uses units CFU/100 ml, for this analysis assuming

ND - analyte not detected above the laboratory method detection limit
NA - not analyzed
Hatching also indicates that parameter was not analyzed

National recommended WQ criteria Human Health
https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

May 03, 2021

April 28, 2021 - Rio Grande North and Alameda E. coli Lab Results

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX:

RE: CMC

OrderNo.: 2104C04

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/28/2021 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Parameters
Rio Grande North-
Temp = 11.59°C
pH = 7.61
Conductivity (uS/cm=umho/cm) = 476
Dissolved Oxygen (mg/L) = 8.81
Rio Grande Alameda-
Temp = 10.33 °C
pH = 7.31
Conductivity (uS/cm=umho/cm) = 342
Dissolved Oxygen (mg/L) = 8.76

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order: **2104C04**
Date Reported: **5/3/2021**

CLIENT: AMAFCA
Project: CMC
Lab Order: 2104C04

Lab ID: 2104C04-001
Collection Date: 4/28/2021 12:30:00 PM
Client Sample ID: RG North-20210428
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **KMN**	
E. Coli	8.5	1.000		MPN/100	1	4/29/2021 5:10:00 PM	59692

Lab ID: 2104C04-002
Collection Date: 4/28/2021 1:40:00 PM
Client Sample ID: RG Alameda-20210428
Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **KMN**	
E. Coli	72.8	1.000		MPN/100	1	4/29/2021 5:10:00 PM	59692

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

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
PQL	Practical Quanitative Limit
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 Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: AMAFCA Work Order Number: 2104C04 RcptNo: 1

Received By: Scott Anderson 4/28/2021 3:50:00 PM SPL

Completed By: Sean Livingston 4/28/2021 3:55:22 PM S Livingston

Reviewed By: SPA 4.28.21 @ 16:25

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. 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.
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. 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: CEL 4/28/21

Special Handling (if applicable)

15. 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:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	10.1	Good				

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#: pchavez@amafca.org

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☒ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler: CJohannesen - DBSA

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 10.3 - 0.2 = 10.1 (°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 Name	Container Type and #	Preservative Type	HEAL No. 2104604	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	~~See Attached Email~~	Ecoli: enumeration				
4.28.21	1230	AQ	RGNorth-20210428	1														X				
"	1340	AQ	RG Alameda-20210428	1														X				

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4.28.21	1550		SPA	CDO	4.28.21	15:50
Date:	Time:	Relinquished by:	Received by:	Via:	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

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
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June 01, 2021

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX

April 28, 2021 - Rio Grande North Full Lab Results and April 29, 2021 - Rio Grande South Full Lab Results

RE: CMC

OrderNo.: 2104C54

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 6 sample(s) on 4/29/2021 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Parameters
Rio Grande North-
Temp = 11.59°C
pH = 7.61
Conductivity (uS/cm=umho/cm) = 476
Dissolved Oxygen (mg/L) = 8.81
Rio Grande South-
Temp = 10.96°C
pH = 7.69
Conductivity (uS/cm=umho/cm) = 396
Dissolved Oxygen (mg/L) = 8.73

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2104C54**
Date Reported: **6/1/2021**

CLIENT: AMAFCA
Client Sample ID: RG-North-20210428
Project: CMC
Collection Date: 4/28/2021 12:30:00 PM
Lab ID: 2104C54-001
Matrix: AQUEOUS
Received Date: 4/29/2021 9:48:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8081: PESTICIDES							Analyst: **LSB**	
Dieldrin	ND	0.040	0.10		µg/L	1	5/11/2021 12:58:38 PM	59722
Surr: Decachlorobiphenyl	102	0	41.7-129		%Rec	1	5/11/2021 12:58:38 PM	59722
Surr: Tetrachloro-m-xylene	70.1	0	31.8-88.5		%Rec	1	5/11/2021 12:58:38 PM	59722
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	4/29/2021 7:26:48 PM	R77061
Nitrogen, Nitrate (As N)	ND	0.10	0.50		mg/L	5	4/29/2021 7:26:48 PM	R77061
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Calcium	40	0.11	1.0		mg/L	1	5/4/2021 11:14:26 AM	59770
Chromium	ND	0.0021	0.0060		mg/L	1	5/4/2021 11:14:26 AM	59770
Magnesium	7.6	0.067	1.0		mg/L	1	5/4/2021 11:14:26 AM	59770
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Copper	0.00057	0.00013	0.0010	J	mg/L	1	4/30/2021 7:10:50 PM	B77076
Lead	ND	0.000034	0.00050		mg/L	1	4/30/2021 7:10:50 PM	B77076
SM2340B: HARDNESS							Analyst: **ELS**	
Hardness (As CaCO3)	130	2.5	6.6		mg/L	1	5/4/2021 8:04:00 AM	R77121
EPA METHOD 1664B							Analyst: **KMN**	
N-Hexane Extractable Material	ND	3.90	9.65		mg/L	1	5/5/2021 4:34:00 PM	59819
SM5210B: BOD							Analyst: **AG**	
Biochemical Oxygen Demand	DO Depletion <2.0	2.0	2.0		mg/L	1	5/5/2021 2:34:00 PM	59737
SM 4500 NH3: AMMONIA							Analyst: **CJS**	
Nitrogen, Ammonia	ND	0.36	1.0		mg/L	1	5/12/2021 3:43:00 PM	R77333
SM4500-H+B / 9040C: PH							Analyst: **MH**	
pH	8.21			H	pH units	1	5/5/2021 1:58:12 PM	R77185
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: **CJS**	
Phosphorus, Total (As P)	0.026	0.010	0.010		mg/L	1	5/7/2021 2:19:00 PM	59857
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: **KS**	
Total Dissolved Solids	207	20.0	20.0		mg/L	1	5/6/2021 3:23:00 PM	59817
SM 4500 NORG C: TKN							Analyst: **CJS**	
Nitrogen, Kjeldahl, Total	0.42	0.23	1.0	J	mg/L	1	5/13/2021 10:30:00 AM	59967
SM 2540D: TSS							Analyst: **KS**	
Suspended Solids	4.0	4.0	4.0		mg/L	1	5/5/2021 11:31:00 AM	59803

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

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
PQL	Practical Quanitative Limit
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 Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: RG-North-20210428 Dissolved
Project: CMC
Collection Date: 4/28/2021 12:30:00 PM
Lab ID: 2104C54-002
Matrix: AQUEOUS
Received Date: 4/29/2021 9:48:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: **CJS**	
Phosphorus, Total (As P)	0.011	0.010	0.010		mg/L	1	5/7/2021 2:21:00 PM	59857

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
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: RG-Isleta-20210429
Project: CMC
Collection Date: 4/29/2021 8:30:00 AM
Lab ID: 2104C54-003
Matrix: AQUEOUS
Received Date: 4/29/2021 9:48:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8081: PESTICIDES							Analyst: **LSB**	
Dieldrin	ND	0.20	0.50		µg/L	1	5/11/2021 1:25:03 PM	59722
Surr: Decachlorobiphenyl	90.9	0	41.7-129		%Rec	1	5/11/2021 1:25:03 PM	59722
Surr: Tetrachloro-m-xylene	55.9	0	31.8-88.5		%Rec	1	5/11/2021 1:25:03 PM	59722
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	4/29/2021 8:18:59 PM	R77061
Nitrogen, Nitrate (As N)	0.59	0.10	0.50		mg/L	5	4/29/2021 8:18:59 PM	R77061
EPA METHOD 200.7: METALS							Analyst: **ELS**	
Calcium	50	0.11	1.0		mg/L	1	5/4/2021 11:19:10 AM	59770
Chromium	ND	0.0021	0.0060		mg/L	1	5/4/2021 11:19:10 AM	59770
Magnesium	9.3	0.067	1.0		mg/L	1	5/4/2021 11:19:10 AM	59770
EPA 200.8: DISSOLVED METALS							Analyst: **bcv**	
Copper	0.00087	0.00013	0.0010	J	mg/L	1	4/30/2021 7:13:29 PM	B77076
Lead	ND	0.000034	0.00050		mg/L	1	4/30/2021 7:13:29 PM	B77076
SM2340B: HARDNESS							Analyst: **ELS**	
Hardness (As CaCO3)	160	2.5	6.6		mg/L	1	5/4/2021 8:04:00 AM	R77121
EPA METHOD 1664B							Analyst: **KMN**	
N-Hexane Extractable Material	ND	3.88	9.60		mg/L	1	5/5/2021 4:34:00 PM	59819
SM5210B: BOD							Analyst: **AG**	
Biochemical Oxygen Demand	2.8	2.0	2.0		mg/L	1	5/5/2021 2:34:00 PM	59737
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **KMN**	
E. Coli	1573	10.00	10.00		MPN/100	10	4/30/2021 5:13:00 PM	59720
SM 4500 NH3: AMMONIA							Analyst: **CJS**	
Nitrogen, Ammonia	ND	0.36	1.0		mg/L	1	5/12/2021 3:43:00 PM	R77333
SM4500-H+B / 9040C: PH							Analyst: **MH**	
pH	8.10			H	pH units	1	5/5/2021 2:02:26 PM	R77185
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: **CJS**	
Phosphorus, Total (As P)	0.46	0.050	0.050	D	mg/L	1	5/7/2021 2:27:00 PM	59857
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: **KS**	
Total Dissolved Solids	234	40.0	40.0	D	mg/L	1	5/6/2021 3:23:00 PM	59817
SM 4500 NORG C: TKN							Analyst: **CJS**	
Nitrogen, Kjeldahl, Total	0.56	0.23	1.0	J	mg/L	1	5/13/2021 10:30:00 AM	59967
SM 2540D: TSS							Analyst: **KS**	
Suspended Solids	160	4.0	4.0		mg/L	1	5/5/2021 11:31:00 AM	59803

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

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
PQL	Practical Quanitative Limit
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 Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: RG-Isleta-20210429
Project: CMC
Collection Date: 4/29/2021 8:30:00 AM
Lab ID: 2104C54-003
Matrix: AQUEOUS
Received Date: 4/29/2021 9:48:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID

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
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: RG-Isleta-20210429 Dissolved
Project: CMC
Collection Date: 4/29/2021 8:30:00 AM
Lab ID: 2104C54-004
Matrix: AQUEOUS
Received Date: 4/29/2021 9:48:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: **CJS**	
Phosphorus, Total (As P)	0.26	0.010	0.010		mg/L	1	5/7/2021 2:28:00 PM	59857

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
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: RG-Alameda-20210429
Project: CMC
Collection Date: 4/29/2021 6:45:00 AM
Lab ID: 2104C54-005
Matrix: AQUEOUS
Received Date: 4/29/2021 9:48:00 AM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **KMN**	
E. Coli	31	10.00	10.00		MPN/100	10	4/30/2021 5:13:00 PM	59720

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

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
PQL	Practical Quanitative Limit
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 Limit

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Client:	Hall Environmental Analysis Lab	Work Order:	MBD0802
Address:	4901 Hawkins NE Suite D	Project:	2104C54
	Albuquerque, NM 87109	Reported:	5/18/2021 09:43
Attn:	Andy Freeman		

Analytical Results Report

Sample Location:	2104C54-001A (RG-North-20210428)		
Lab/Sample Number:	MBD0802-01	Collect Date:	04/28/21 12:30
Date Received:	04/30/21 11:37	Collected By:	
Matrix:	Water		

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles							
Tetrahydrofuran	ND	ug/L	2.50	5/4/21 15:55	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*102%*		*70-130*	*5/4/21 15:55*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*92.8%*		*70-130*	*5/4/21 15:55*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*99.6%*		*70-130*	*5/4/21 15:55*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: 2104C54-001K (RG-North-20210428)
Lab/Sample Number: MBD0802-02 Collect Date: 04/28/21 12:30
Date Received: 04/30/21 11:37 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Semivolatiles							
Benzidine	ND	ug/L	0.500	5/7/21 22:48	MAH	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.500	5/7/21 22:48	MAH	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.500	5/7/21 22:48	MAH	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.500	5/7/21 22:48	MAH	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.500	5/7/21 22:48	MAH	EPA 8270D	
Chrysene	ND	ug/L	0.500	5/7/21 22:48	MAH	EPA 8270D	
Di (2-ethylhexyl) phthalate	ND	ug/L	0.500	5/7/21 22:48	MAH	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.500	5/7/21 22:48	MAH	EPA 8270D	
Dibenzofuran	ND	ug/L	0.500	5/7/21 22:48	MAH	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.500	5/7/21 22:48	MAH	EPA 8270D	
Pentachlorophenol	ND	ug/L	0.500	5/7/21 22:48	MAH	EPA 8270D	
Surrogate: 2,4,6-Tribromophenol	*80.1%*		*48-120*	*5/7/21 22:48*	*MAH*	*EPA 8270D*	
Surrogate: 2-Fluorobiphenyl	*82.0%*		*57-113*	*5/7/21 22:48*	*MAH*	*EPA 8270D*	
Surrogate: 2-Fluorophenol	*76.5%*		*37-110*	*5/7/21 22:48*	*MAH*	*EPA 8270D*	
Surrogate: Nitrobenzene-d5	*82.4%*		*65-110*	*5/7/21 22:48*	*MAH*	*EPA 8270D*	
Surrogate: Phenol-2,3,4,5,6-d5	*80.3%*		*51-112*	*5/7/21 22:48*	*MAH*	*EPA 8270D*	
Surrogate: Terphenyl-d14	*102%*		*57-133*	*5/7/21 22:48*	*MAH*	*EPA 8270D*	

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Analytical Results Report

(Continued)

Sample Location: 2104C54-003A (RG-Isleta-20210429)
Lab/Sample Number: MBD0802-03 Collect Date: 04/29/21 08:30
Date Received: 04/30/21 11:37 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles							
Tetrahydrofuran	ND	ug/L	2.50	5/4/21 16:27	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*104%*		*70-130*	*5/4/21 16:27*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*93.0%*		*70-130*	*5/4/21 16:27*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*99.7%*		*70-130*	*5/4/21 16:27*	*TEC*	*EPA 8260C*	

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Analytical Results Report

(Continued)

Sample Location: 2104C54-003M (RG-Isleta-20210429)
Lab/Sample Number: MBD0802-04 Collect Date: 04/29/21 08:30
Date Received: 04/30/21 11:37 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Semivolatiles							
Benzidine	ND	ug/L	0.500	5/7/21 23:15	MAH	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.500	5/7/21 23:15	MAH	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.500	5/7/21 23:15	MAH	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.500	5/7/21 23:15	MAH	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.500	5/7/21 23:15	MAH	EPA 8270D	
Chrysene	ND	ug/L	0.500	5/7/21 23:15	MAH	EPA 8270D	
Di (2-ethylhexyl) phthalate	ND	ug/L	0.500	5/7/21 23:15	MAH	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.500	5/7/21 23:15	MAH	EPA 8270D	
Dibenzofuran	ND	ug/L	0.500	5/7/21 23:15	MAH	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.500	5/7/21 23:15	MAH	EPA 8270D	
Pentachlorophenol	ND	ug/L	0.500	5/7/21 23:15	MAH	EPA 8270D	
Surrogate: 2,4,6-Tribromophenol	*86.1%*		*48-120*	*5/7/21 23:15*	*MAH*	*EPA 8270D*	
Surrogate: 2-Fluorobiphenyl	*80.9%*		*57-113*	*5/7/21 23:15*	*MAH*	*EPA 8270D*	
Surrogate: 2-Fluorophenol	*81.0%*		*37-110*	*5/7/21 23:15*	*MAH*	*EPA 8270D*	
Surrogate: Nitrobenzene-d5	*84.0%*		*65-110*	*5/7/21 23:15*	*MAH*	*EPA 8270D*	
Surrogate: Phenol-2,3,4,5,6-d5	*82.2%*		*51-112*	*5/7/21 23:15*	*MAH*	*EPA 8270D*	
Surrogate: Terphenyl-d14	*83.8%*		*57-133*	*5/7/21 23:15*	*MAH*	*EPA 8270D*	

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Analytical Results Report

(Continued)

Sample Location:	2104C54-006A (Trip Blank)		
Lab/Sample Number:	MBD0802-05	Collect Date:	04/28/21 12:30
Date Received:	04/30/21 11:37	Collected By:	
Matrix:	Water		

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles							
Tetrahydrofuran	ND	ug/L	0.500	5/4/21 15:24	TEC	EPA 8260C	
Surrogate: 1,2-Dichlorobenzene-d4	*103%*		*70-130*	*5/4/21 15:24*	*TEC*	*EPA 8260C*	
Surrogate: 4-Bromofluorobenzene	*95.2%*		*70-130*	*5/4/21 15:24*	*TEC*	*EPA 8260C*	
Surrogate: Toluene-d8	*98.2%*		*70-130*	*5/4/21 15:24*	*TEC*	*EPA 8260C*	

Authorized Signature,

Justin Doty For Todd Taruscio, Laboratory Manager

PQL	Practical Quantitation Limit
ND	Not Detected
MCL	EPA's Maximum Contaminant Level
Dry	Sample results reported on a dry weight basis
*	Not a state-certified analyte

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Quality Control Data

Semivolatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBE0341 - SVOC Water										
Blank (BBE0341-BLK1)					Prepared: 5/4/2021 Analyzed: 5/7/2021					
Benzo[b]fluoranthene	ND		0.500	ug/L						
Pentachlorophenol	ND		0.500	ug/L						
Indeno(1,2,3-cd)pyrene	ND		0.500	ug/L						
Dibenzofuran	ND		0.500	ug/L						
Dibenz(a,h)anthracene	ND		0.500	ug/L						
Chrysene	ND		0.500	ug/L						
Benzo[k]fluoranthene	ND		0.500	ug/L						
Benzo[a]pyrene	ND		0.500	ug/L						
Benzo[a]anthracene	ND		0.500	ug/L						
Benzidine	ND		0.500	ug/L						
Di (2-ethylhexyl) phthalate	ND		0.500	ug/L						
Surrogate: Phenol-2,3,4,5,6-d5			*42.0*	*ug/L*	*50.5*		*83.1*	*51-112*		
Surrogate: Nitrobenzene-d5			*22.5*	*ug/L*	*25.0*		*89.9*	*65-110*		
Surrogate: Terphenyl-d14			*26.6*	*ug/L*	*25.8*		*103*	*57-133*		
Surrogate: 2-Fluorophenol			*41.0*	*ug/L*	*50.0*		*82.0*	*37-110*		
Surrogate: 2-Fluorobiphenyl			*21.6*	*ug/L*	*25.5*		*84.6*	*57-113*		
Surrogate: 2,4,6-Tribromophenol			*37.0*	*ug/L*	*51.8*		*71.6*	*48-120*		
LCS (BBE0341-BS1)					Prepared: 5/4/2021 Analyzed: 5/7/2021					
Dibenz(a,h)anthracene	5.11		0.500	ug/L	5.00		102	62-120		
Benzo[k]fluoranthene	4.60		0.500	ug/L	5.00		92.0	71-121		
Pentachlorophenol	4.24		0.500	ug/L	5.00		84.8	51-118		
Indeno(1,2,3-cd)pyrene	5.08		0.500	ug/L	5.00		102	62-123		
Dibenzofuran	4.55		0.500	ug/L	5.00		91.0	75-120		
Chrysene	4.74		0.500	ug/L	5.00		94.8	74-124		
Di (2-ethylhexyl) phthalate	4.98		0.500	ug/L	5.00		99.6	60-144		
Benzo[a]anthracene	4.88		0.500	ug/L	5.00		97.6	80-120		
Benzo[a]pyrene	4.47		0.500	ug/L	5.00		89.4	66-116		
Benzo[b]fluoranthene	4.77		0.500	ug/L	5.00		95.4	72-116		

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Quality Control Data
(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBE0341 - SVOC Water (Continued)										
LCS Dup (BBE0341-BSD1)					Prepared: 5/4/2021 Analyzed: 5/7/2021					
Benzo[a]pyrene	4.57		0.500	ug/L	5.00		91.4	66-116	2.21	25
Indeno(1,2,3-cd)pyrene	4.92		0.500	ug/L	5.00		98.4	62-123	3.20	25
Dibenz(a,h)anthracene	4.89		0.500	ug/L	5.00		97.8	62-120	4.40	30
Chrysene	4.87		0.500	ug/L	5.00		97.4	74-124	2.71	25
Dibenzofuran	4.63		0.500	ug/L	5.00		92.6	75-120	1.74	25
Di (2-ethylhexyl) phthalate	5.18		0.500	ug/L	5.00		104	60-144	3.94	32
Benzo[b]fluoranthene	4.92		0.500	ug/L	5.00		98.4	72-116	3.10	25
Benzo[a]anthracene	4.98		0.500	ug/L	5.00		99.6	80-120	2.03	25
Pentachlorophenol	3.83		0.500	ug/L	5.00		76.6	51-118	10.2	25
Benzo[k]fluoranthene	4.74		0.500	ug/L	5.00		94.8	71-121	3.00	25

Quality Control Data
(Continued)

Volatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BBE0089 - VOC										
Blank (BBE0089-BLK1)					Prepared & Analyzed: 5/4/2021					
Tetrahydrofuran	ND		0.500	ug/L						
Surrogate: Toluene-d8			*25.3*	*ug/L*	*25.0*		*101*	*70-130*		
Surrogate: 4-Bromofluorobenzene			*23.2*	*ug/L*	*25.0*		*92.6*	*70-130*		
Surrogate: 1,2-Dichlorobenzene-d4			*19.6*	*ug/L*	*19.0*		*103*	*70-130*		
LCS (BBE0089-BS1)					Prepared & Analyzed: 5/4/2021					
Tetrahydrofuran	21.4		0.500	ug/L	22.7		94.1	80-120		
Matrix Spike (BBE0089-MS1)		**Source: MBD0802-01**			Prepared & Analyzed: 5/4/2021					
Tetrahydrofuran	106		2.50	ug/L	114	ND	93.5	70-130		
Matrix Spike Dup (BBE0089-MSD1)		**Source: MBD0802-01**			Prepared & Analyzed: 5/4/2021					
Tetrahydrofuran	97.6		2.50	ug/L	114	ND	85.9	70-130	8.48	25

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

MBD0802

Due: 05/14/21

SUB CONTRATOR:	Anatek ID	COMPANY: Anatek Labs, Inc.	PHONE: (208) 883-2839	FAX: (208) 882-9246	
ADDRESS:	1282 Alturas Dr		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP:	Moscow, ID 83843				

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2104C54-001A	RG-North-20210428	VOAHCL	Aqueous	4/28/2021 12:30:00 PM	3	8260: Tetrahydrofuran
2	2104C54-001K	RG-North-20210428	1LAMGU	Aqueous	4/28/2021 12:30:00 PM	2	8270 See attached list
3	2104C54-003A	RG-Isleta-20210429	VOAHCL	Aqueous	4/29/2021 8:30:00 AM	3	8260: Tetrahydrofuran
4	2104C54-003M	RG-Isleta-20210429	1LAMGU	Aqueous	4/29/2021 8:30:00 AM	2	8270 See attached list
5	2104C54-006A	Trip Blank	VOAHCL	Trip Blank		2	8260: Tetrahydrofuran Trip Blank

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.

Relinquished By:	Date: 4/29/2021	Time: 2:38 PM	Received By:	Date: 04/30/21	Time: 1137
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard X RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples ℃ Attempt to Cool ?

Comments:

MBD0802

Due: 05/14/21

Collaborative Monitoring Cooperative - Analys

Attach to Chain of Custody

Please refer to attached NPDES Permit No. NMR04A00 Appendix F. Methods and mi
(MQL's) will be those approved under 40 CFR 136 and specified in th

Analyte (Bold Indicates WQS)	CAS #	Fraction	Method #	MDL (µg/L)
[redacted]	NA	Total	200.7	2.4
[redacted]	7439-92-1	Dissolved	200.8	0.09
[redacted]	7440-50-8	Dissolved	200.8	1.00
[redacted]	7664-41-7	Total	350.1	31.82
[redacted]	17778-88-0	Total	351.2	58.78
[redacted]	14797-55-8	Total	353.2	10.17
[redacted]	1336-36-3	Total	1668	0.014
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
[redacted]	60-57-1	Total	8081	0.1
Pentachlorophenol	87-86-5	Total	8270D	0.2
Benzidine	92-87-5	Total	8270D	0.1
[redacted]	E1641638[2]	Total	HACH	5100
[redacted]	NA	Total	Method 900	0.1 pCi/L
[redacted]	E1642222[2]	Total	SM 2540C	60.4
[redacted]	NA	Total	SM 2540D	3450
[redacted]	N/A	Total	Standard Methods	980
[redacted]		Total	1664A	5000
[redacted]			SM 9223B	
[redacted]			SM 4500	
[redacted]		Dissolved	365.1	100
[redacted]		Total	365.1	100
[redacted]		Total	3500Cr C-2011	100

DAD 4/29/21

MBD0802

Due: 05/14/21

Anatek Labs, Inc.

Sample Receipt and Preservation Form

Client Name: HALL Project:

TAT: (Normal) RUSH: _____ days

Samples Received From: (FedEx) UPS USPS Client Courier Other: _____

Custody Seal on Cooler/Box: (Yes) No Custody Seals Intact: (Yes) No N/A

Number of Coolers/Boxes: 1 Type of Ice: (Ice/Ice Packs) Blue Ice Dry Ice None

Packing Material: (Bubble Wrap) Bags (Foam/Peanuts) None Other: _____

Cooler Temp As Read (°C): 4.1 Cooler Temp Corrected (°C): _____ Thermometer Used: IR-5

				Comments:
Samples Received Intact?	(Yes)	No	N/A	
Chain of Custody Present?	(Yes)	No	N/A	
Samples Received Within Hold Time?	(Yes)	No	N/A	
Samples Properly Preserved?	(Yes)	No	N/A	
VOC Vials Free of Headspace (<6mm)?	(Yes)	No	N/A	
VOC Trip Blanks Present?	(Yes)	No	N/A	
Labels and Chains Agree?	(Yes)	No	N/A	
Total Number of Sample Bottles Received: 10				

Chain of Custody Fully Completed?	(Yes)	No	N/A	
Correct Containers Received?	(Yes)	No	N/A	
Anatek Bottles Used?	Yes	(No)	Unknown	

Record preservatives (and lot numbers, if known) for containers below:

HCl → 8260 → 9 44ml x 6 + 2 TTB

Notes, comments, etc. (also use this space if contacting the client - record names and date/time)

8270 → 1L x2

Received/Inspected By: _____ Date/Time: 04/30/2021 1137

ANALYTICAL REPORT

May 11, 2021

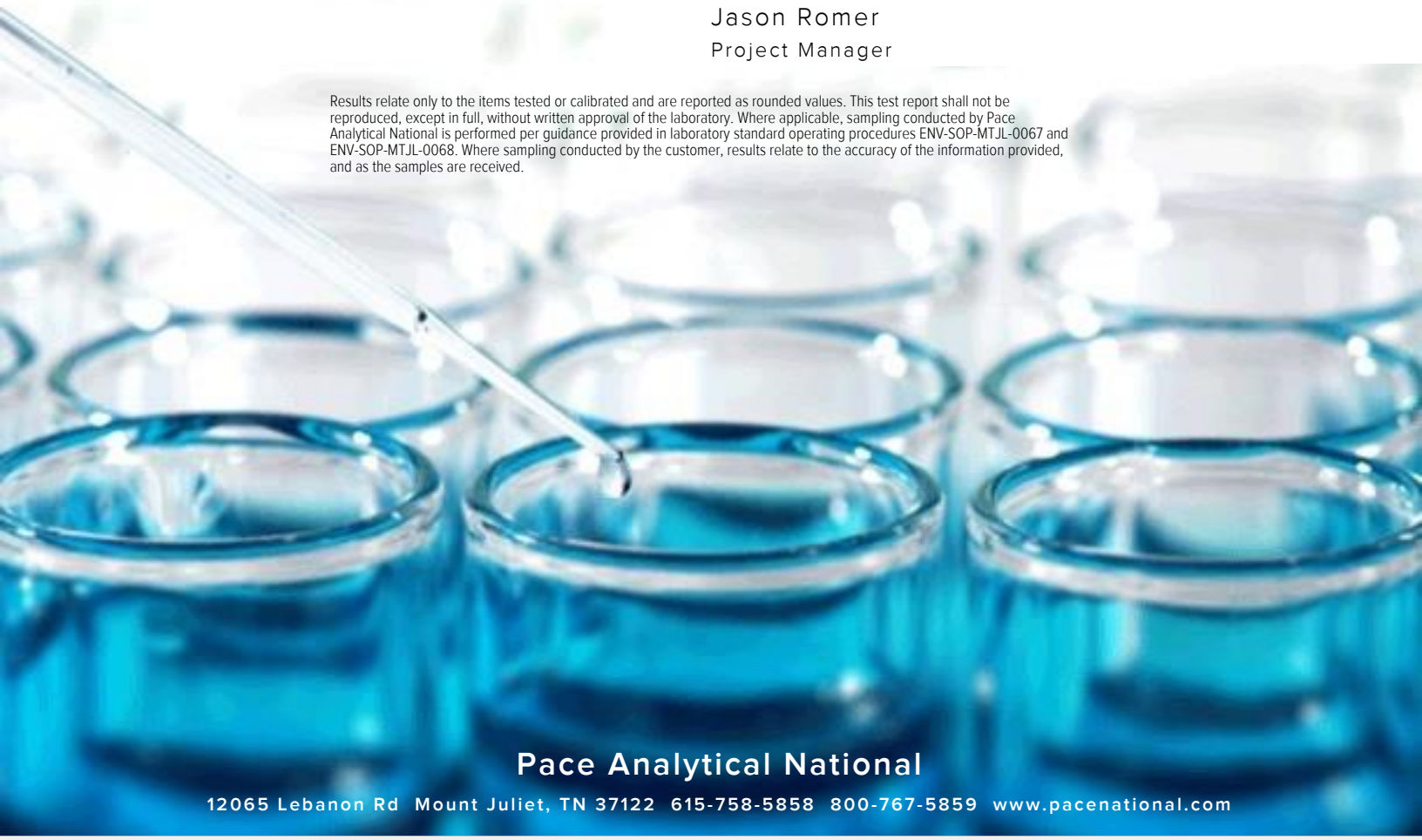
Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1346058
Samples Received:	04/30/2021
Project Number:	
Description:	

Report To: Jackie Bolte
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

Jason Romer
Project Manager



Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SAMPLE SUMMARY

2104C54-001H RG-NORTH-20210428 L1346058-01 WW

Collected by	Collected date/time	Received date/time
	04/28/21 12:30	04/30/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1663227	1	05/03/21 10:25	05/03/21 18:08	KAB	Mt. Juliet, TN

2104C54-001J RG-NORTH-20210428 L1346058-02 WW

Collected by	Collected date/time	Received date/time
	04/28/21 12:30	04/30/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 3500Cr C-2011	WG1664351	1	05/08/21 20:03	05/08/21 20:03	MSP	Mt. Juliet, TN

2104C54-003H RG-ISLETA-20210429 L1346058-03 WW

Collected by	Collected date/time	Received date/time
	04/29/21 08:30	04/30/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 410.4	WG1663227	1	05/03/21 10:25	05/03/21 18:11	KAB	Mt. Juliet, TN

2104C54-003J RG-ISLETA-20210429 L1346058-04 WW

Collected by	Collected date/time	Received date/time
	04/29/21 08:30	04/30/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 3500Cr C-2011	WG1664351	1	05/08/21 20:27	05/08/21 20:27	MSP	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Project Manager

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
COD	ND		20.0	1	05/03/2021 18:08	WG1663227

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	05/08/2021 20:03	WG1664351

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
COD	48.2		20.0	1	05/03/2021 18:11	WG1663227

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	05/08/2021 20:27	WG1664351

Method Blank (MB)

(MB) R3652835-1 05/08/21 16:53

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

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3652835-3 05/08/21 18:12

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

Original Sample (OS) • Duplicate (DUP)

(OS) • (DUP) R3652835-5 05/08/21 20:51

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

Laboratory Control Sample (LCS)

(LCS) R3652835-2 05/08/21 17:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	0.00200	0.00207	103	90.0-110	

L1344024-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1344024-01 05/08/21 18:19 • (MS) R3652835-4 05/08/21 18:27

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	0.0500	ND	0.0497	99.5	1	90.0-110	

Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) • (MS) R3652835-6 05/08/21 21:06 • (MSD) R3652835-7 05/08/21 21:13

Analyte	Spike Amount mg/l	Original Result	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		0.0501	0.0504	100	101	1	90.0-110			0.478	20

Method Blank (MB)

(MB) R3650050-1 05/03/21 17:38

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
COD	U		11.7	20.0

L1345225-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1345225-01 05/03/21 17:45 • (DUP) R3650050-3 05/03/21 17:46

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	65.2	61.1	1	6.55		20

L1346453-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1346453-01 05/03/21 17:49 • (DUP) R3650050-4 05/03/21 17:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	431	421	1	2.40		20

Laboratory Control Sample (LCS)

(LCS) R3650050-2 05/03/21 17:40

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
COD	500	505	101	90.0-110	

L1346340-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1346340-01 05/03/21 17:55 • (MS) R3650050-5 05/03/21 17:59 • (MSD) R3650050-6 05/03/21 18:00

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 %
COD	500	35.0	666	709	126	135	1	80.0-120	J5	J5	6.34	20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

B158

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

SUB CONTRATOR: **Pace TN**	COMPANY: **PACE TN**	PHONE: **(800) 767-5859**	FAX: **(615) 758-5859**
ADDRESS: **12065 Lebanon Rd**		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: **Mt. Juliet, TN 37122**			

L1346058

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2104C54-001H	RG-North-20210428	500HDPEH2SO4	Aqueous	4/28/2021 12:30:00 PM	1	COD	-01
2	2104C54-001I	RG-North-20210428	1LHDPEHNO3	Aqueous	4/28/2021 12:30:00 PM	1	Adjusted Gross Alpha	
3	2104C54-001J	RG-North-20210428	120mL	Aqueous	4/28/2021 12:30:00 PM	1	Cr 6	-02
4	2104C54-003H	RG-Isleta-20210429	500HDPEH2SO4	Aqueous	4/29/2021 8:30:00 AM	1	COD	-03
5	2104C54-003I	RG-Isleta-20210429	1LHDPEHNO3	Aqueous	4/29/2021 8:30:00 AM	1	Adjusted Gross Alpha	
6	2104C54-003J	RG-Isleta-20210429	120mL	Aqueous	4/29/2021 8:30:00 AM	1	Cr 6	-04

Sample Receipt Checklist

COC Seal Present/Intact:	Y N		If Applicable
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres.Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RAD Screen <0.5 mR/hr:	Y N		

5016 12237735

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.

Relinquished By: ITOB	Date: 4/29/2021	Time: 11:53 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 4/30/21	Time: 0915

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:

☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 2.1+0=2.1 °C A307 Attempt to Cool ?

Comments:

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

May 21, 2021

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

Re: Routine Analysis
Work Order: 18056
SDG: 2104C54

Dear Mr. Freeman:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on April 30, 2021. 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

Cynde Larkins
Project Manager

Purchase Order: IDIQ Pricing
Enclosures

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

CFA NO #18056

SUB CONTRATOR: **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	2104C54-001G	RG-North-20210428	1LAMGU	Aqueous	4/28/2021 12:30:00 PM	2	PCB Congeners 1668
2	2104C54-003G	RG-Isleta-20210429	1LAMGU	Aqueous	4/29/2021 8:30:00 AM	2	PCB Congeners 1668

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.

Relinquished By:	Date: 4/29/2021	Time: 11:50 AM	Received By: Cynde Larkins	Date: 30APR21	Time: 1005
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 6.4 °C Attempt to Cool ? ✓
Comments:

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: HALL	Work Order: 18056
Shipping Company: FedEx	Date/Time Received: 30APR21 1005

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	Custody seal/s present on cooler?	✓			Seal intact? (Yes) No
3	Chain of Custody documents included with shipment?	✓			
4	Samples requiring cold preservation within 0-6°C?			✓	Preservation Method: ice bags loose ice (blue ice) dry ice none other (describe) Temperature Blank present: Yes (No) 6.5° − 0.1 = 6.4°C
5	Aqueous samples found to have visible solids?	✓			Sample IDs, containers affected: Minimal visible solids (<1%)
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH = 7 on both. If preservative added, Lot#:
7	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
8	Samples received within holding time?	✓			Sample IDs, tests affected:
9	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
10	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
11	Number of containers received match number indicated on COC?			✓	List type and number of containers / Sample IDs, containers affected: COC lists 2 containers per sample, only 1-1L WMAG bottle per sample received
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

From: Andy Freeman
To: Cynde Larkins
Subject: RE: 2104C54
Date: Friday, April 30, 2021 7:11:40 PM

Hi Cynde,

Please proceed with analysis.

Thank you,

Andy Freeman - Hall Environmental, 4901 Hawkins NE, Albuquerque, NM 87109, 505-345-3975, 505-345-4107 fax
www.hallenvironmental.com - andy@hallenvironmental.com -
https://www.surveymonkey.com/r/NGVXRBV

For easy access to all of your past reports, setup an account on the Hall Environmental Web Portal. Just visit our website and follow the instructions for setting up an account.
We welcome your feedback. Please visit the survey monkey link to complete a brief survey on your experience with Hall Environmental.

From: Cynde Larkins <Cynde.Larkins@cfanalytical.com>
Sent: Friday, April 30, 2021 12:25 PM
To: Andy Freeman <andy@hallenvironmental.com>
Subject: 2104C54

Andy,
CFA received the samples for the job number 2104C54 in good condition, but out of recommended temperature at 6.4°C. Please let me know if we may proceed with extraction.

Also, would you verify that these should be reported to the EDL or MDL?

Thanks,

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

CFA | Cape Fear Analytical LLC

CFA is an Essential Business and remains open to support your analytical needs.

PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
Hall Environmental Analysis Laboratory (HALL)
SDG 2104C54
Work Order 18056

Method/Analysis Information

Product:	**PCB Congeners by EPA Method 1668A in Liquids**
Analytical Method:	EPA Method 1668A
Extraction Method:	SW846 3520C
Analytical Batch Number:	46817
Clean Up Batch Number:	46739
Extraction Batch Number:	46738

Sample Analysis

Samples were received at 6.4°C. (18056001,18056002).
The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
12029212	Method Blank (MB)
12029213	Laboratory Control Sample (LCS)
12029214	Laboratory Control Sample Duplicate (LCSD)
18056001	2104C54-001G RG-North-20210428
18056002	2104C54-003G RG-Isleta-20210429

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# 9.

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

Receipt Temperature
Samples were outside of the recommended range of 0-6°C. The client was notified of the temperature exceedance and the laboratory was instructed to proceed with analysis. 18056001 (2104C54-001G RG-North-20210428) and 18056002 (2104C54-003G RG-Isleta-20210429).

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
HRP875_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

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: 2104C54 CFA Work Order: 18056

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: Erin Suhrie**

Date: 21 MAY 2021 **Title: Data Validator**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056001**	**Date Collected:**	**04/28/2021 12:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-001G RG-North-20210428**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 19:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-4**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**956.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	2.28	105
2051-61-8	2-MoCB	U	ND	pg/L	2.97	105
2051-62-9	3-MoCB	U	ND	pg/L	2.59	105
13029-08-8	4-DiCB	U	ND	pg/L	15.4	105
16605-91-7	5-DiCB	U	ND	pg/L	12.7	105
25569-80-6	6-DiCB	U	ND	pg/L	12.4	105
33284-50-3	7-DiCB	U	ND	pg/L	11.0	105
34883-43-7	8-DiCB	U	ND	pg/L	11.1	105
34883-39-1	9-DiCB	U	ND	pg/L	15.0	105
33146-45-1	10-DiCB	U	ND	pg/L	10.2	105
2050-67-1	11-DiCB	U	ND	pg/L	40.9	105
2974-92-7	12-DiCB	CU	ND	pg/L	11.4	209
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	13.1	105
2050-68-2	15-DiCB	U	ND	pg/L	11.6	105
38444-78-9	16-TrCB	U	ND	pg/L	3.58	105
37680-66-3	17-TrCB	U	ND	pg/L	3.95	105
37680-65-2	18-TrCB	CU	ND	pg/L	4.94	209
38444-73-4	19-TrCB	U	ND	pg/L	4.14	105
38444-84-7	20-TrCB	CJ	6.73	pg/L	2.51	209
55702-46-0	21-TrCB	CJ	2.93	pg/L	2.59	209
38444-85-8	22-TrCB	U	ND	pg/L	2.93	105
55720-44-0	23-TrCB	U	ND	pg/L	2.59	105
55702-45-9	24-TrCB	U	ND	pg/L	2.80	105
55712-37-3	25-TrCB	U	ND	pg/L	2.32	105
38444-81-4	26-TrCB	CU	ND	pg/L	2.66	209
38444-76-7	27-TrCB	U	ND	pg/L	3.03	105
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	5.17	105
38444-77-8	32-TrCB	J	2.76	pg/L	2.74	105

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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056001**	**Date Collected:**	**04/28/2021 12:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-001G RG-North-20210428**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 19:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-4**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**956.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	2.93	105
37680-69-6	35-TrCB	U	ND	pg/L	3.07	105
38444-87-0	36-TrCB	U	ND	pg/L	2.80	105
38444-90-5	37-TrCB	U	ND	pg/L	2.99	105
53555-66-1	38-TrCB	U	ND	pg/L	3.12	105
38444-88-1	39-TrCB	U	ND	pg/L	2.57	105
38444-93-8	40-TeCB	CU	ND	pg/L	3.37	209
52663-59-9	41-TeCB	U	ND	pg/L	4.69	105
36559-22-5	42-TeCB	U	ND	pg/L	3.91	105
70362-46-8	43-TeCB	U	ND	pg/L	4.87	105
41464-39-5	44-TeCB	CU	ND	pg/L	5.90	314
70362-45-7	45-TeCB	BCJ	3.16	pg/L	2.74	209
41464-47-5	46-TeCB	U	ND	pg/L	2.84	105
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	3.56	105
41464-40-8	49-TeCB	CU	ND	pg/L	3.51	209
62796-65-0	50-TeCB	CU	ND	pg/L	2.61	209
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	BJ	6.34	pg/L	4.14	209
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	1.95	105
74338-24-2	55-TeCB	U	ND	pg/L	3.16	105
41464-43-1	56-TeCB	U	ND	pg/L	3.41	105
70424-67-8	57-TeCB	U	ND	pg/L	3.45	105
41464-49-7	58-TeCB	U	ND	pg/L	3.12	105
74472-33-6	59-TeCB	CU	ND	pg/L	2.93	314
33025-41-1	60-TeCB	U	ND	pg/L	3.03	105
33284-53-6	61-TeCB	BCJ	8.01	pg/L	3.16	418
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	3.35	105
52663-58-8	64-TeCB	U	ND	pg/L	2.82	105

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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056001**	**Date Collected:**	**04/28/2021 12:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-001G RG-North-20210428**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 19:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-4**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**956.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	U	ND	pg/L	3.28	105
73575-53-8	67-TeCB	U	ND	pg/L	2.99	105
73575-52-7	68-TeCB	U	ND	pg/L	2.84	105
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	3.43	105
74338-23-1	73-TeCB	U	ND	pg/L	2.97	105
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	3.20	105
70362-49-1	78-TeCB	U	ND	pg/L	3.56	105
41464-48-6	79-TeCB	U	ND	pg/L	3.07	105
33284-52-5	80-TeCB	U	ND	pg/L	2.82	105
70362-50-4	81-TeCB	U	ND	pg/L	2.80	105
52663-62-4	82-PeCB	U	ND	pg/L	4.50	105
60145-20-2	83-PeCB	U	ND	pg/L	4.75	105
52663-60-2	84-PeCB	U	ND	pg/L	4.25	105
65510-45-4	85-PeCB	CU	ND	pg/L	2.97	314
55312-69-1	86-PeCB	BCJ	9.50	pg/L	3.16	627
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	3.95	209
73575-57-2	89-PeCB	U	ND	pg/L	4.96	105
68194-07-0	90-PeCB	CJ	12.4	pg/L	3.39	314
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	4.58	105
73575-56-1	93-PeCB	CU	ND	pg/L	3.60	209
73575-55-0	94-PeCB	U	ND	pg/L	3.93	105
38379-99-6	95-PeCB	U	ND	pg/L	4.75	105
73575-54-9	96-PeCB	U	ND	pg/L	1.86	105

Comments:

B **The target analyte was detected in the associated blank.**

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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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056001**	**Date Collected:**	**04/28/2021 12:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-001G RG-North-20210428**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 19:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-4**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**956.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	4.06	209
38380-01-7	99-PeCB	J	3.49	pg/L	3.01	105
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	4.23	105
56558-16-8	104-PeCB	U	ND	pg/L	1.49	105
32598-14-4	105-PeCB	J	4.43	pg/L	2.70	105
70424-69-0	106-PeCB	U	ND	pg/L	3.37	105
70424-68-9	107-PeCB	U	ND	pg/L	2.38	105
70362-41-3	108-PeCB	CU	ND	pg/L	2.78	209
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	BCJ	17.4	pg/L	2.84	209
39635-32-0	111-PeCB	U	ND	pg/L	2.47	105
74472-36-9	112-PeCB	U	ND	pg/L	2.87	105
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	2.61	105
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	BJ	9.14	pg/L	2.61	105
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	2.95	105
56558-18-0	121-PeCB	U	ND	pg/L	2.70	105
76842-07-4	122-PeCB	U	ND	pg/L	3.74	105
65510-44-3	123-PeCB	U	ND	pg/L	2.55	105
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	3.14	105
39635-33-1	127-PeCB	U	ND	pg/L	3.07	105
38380-07-3	128-HxCB	CU	ND	pg/L	3.22	209

Comments:

B **The target analyte was detected in the associated blank.**

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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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056001**	**Date Collected:**	**04/28/2021 12:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-001G RG-North-20210428**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 19:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-4**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**956.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	BCJ	18.8	pg/L	3.51	314
52663-66-8	130-HxCB	U	ND	pg/L	4.33	105
61798-70-7	131-HxCB	U	ND	pg/L	4.29	105
38380-05-1	132-HxCB	BJ	5.31	pg/L	3.89	105
35694-04-3	133-HxCB	U	ND	pg/L	4.50	105
52704-70-8	134-HxCB	U	ND	pg/L	4.37	105
52744-13-5	135-HxCB	CJ	4.23	pg/L	1.92	209
38411-22-2	136-HxCB	U	ND	pg/L	2.38	105
35694-06-5	137-HxCB	U	ND	pg/L	3.41	105
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	3.53	209
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	3.87	105
41411-61-4	142-HxCB	U	ND	pg/L	4.94	105
68194-15-0	143-HxCB	U	ND	pg/L	4.81	105
68194-14-9	144-HxCB	U	ND	pg/L	2.07	105
74472-40-5	145-HxCB	U	ND	pg/L	1.42	105
51908-16-8	146-HxCB	U	ND	pg/L	3.37	105
68194-13-8	147-HxCB	BCJ	8.09	pg/L	3.56	209
74472-41-6	148-HxCB	U	ND	pg/L	2.01	105
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	1.40	105
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	1.69	105
35065-27-1	153-HxCB	BCJ	10.4	pg/L	2.93	209
60145-22-4	154-HxCB	U	ND	pg/L	1.61	105
33979-03-2	155-HxCB	U	ND	pg/L	1.28	105
38380-08-4	156-HxCB	CU	ND	pg/L	2.51	209
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	2.68	105
39635-35-3	159-HxCB	U	ND	pg/L	2.09	105
41411-62-5	160-HxCB	U	ND	pg/L	2.99	105

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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056001**	**Date Collected:**	**04/28/2021 12:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-001G RG-North-20210428**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 19:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-4**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**956.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	3.20	105
39635-34-2	162-HxCB	U	ND	pg/L	1.88	105
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	2.99	105
74472-46-1	165-HxCB	U	ND	pg/L	2.95	105
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	1.84	105
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	2.13	105
35065-30-6	170-HpCB	J	3.41	pg/L	2.59	105
52663-71-5	171-HpCB	CU	ND	pg/L	2.64	209
52663-74-8	172-HpCB	U	ND	pg/L	2.64	105
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	2.59	105
40186-70-7	175-HpCB	U	ND	pg/L	1.97	105
52663-65-7	176-HpCB	U	ND	pg/L	1.55	105
52663-70-4	177-HpCB	U	ND	pg/L	2.61	105
52663-67-9	178-HpCB	U	ND	pg/L	2.15	105
52663-64-6	179-HpCB	U	ND	pg/L	1.53	105
35065-29-3	180-HpCB	BCJ	5.44	pg/L	2.07	209
74472-47-2	181-HpCB	U	ND	pg/L	2.18	105
60145-23-5	182-HpCB	U	ND	pg/L	1.88	105
52663-69-1	183-HpCB	CU	ND	pg/L	2.26	209
74472-48-3	184-HpCB	U	ND	pg/L	1.34	105
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	1.42	105
52663-68-0	187-HpCB	U	ND	pg/L	2.82	105
74487-85-7	188-HpCB	U	ND	pg/L	1.42	105
39635-31-9	189-HpCB	U	ND	pg/L	1.72	105
41411-64-7	190-HpCB	U	ND	pg/L	2.01	105
74472-50-7	191-HpCB	U	ND	pg/L	1.95	105
74472-51-8	192-HpCB	U	ND	pg/L	1.97	105

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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056001**	**Date Collected:**	**04/28/2021 12:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-001G RG-North-20210428**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 19:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-4**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**956.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	2.84	pg/L	1.82	105
52663-78-2	195-OcCB	U	ND	pg/L	1.92	105
42740-50-1	196-OcCB	J	2.51	pg/L	2.26	105
33091-17-7	197-OcCB	CU	ND	pg/L	1.69	209
68194-17-2	198-OcCB	CU	ND	pg/L	2.64	209
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	1.69	105
2136-99-4	202-OcCB	U	ND	pg/L	1.80	105
52663-76-0	203-OcCB	U	ND	pg/L	2.01	105
74472-52-9	204-OcCB	U	ND	pg/L	1.72	105
74472-53-0	205-OcCB	U	ND	pg/L	1.42	105
40186-72-9	206-NoCB	U	ND	pg/L	1.76	105
52663-79-3	207-NoCB	U	ND	pg/L	1.38	105
52663-77-1	208-NoCB	U	ND	pg/L	1.36	105
2051-24-3	209-DeCB	U	ND	pg/L	1.28	105
1336-36-3	Total PCB Congeners	J	147	pg/L		105

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		682	2090	pg/L	32.6	(15%-150%)
13C-3-MoCB		826	2090	pg/L	39.5	(15%-150%)
13C-4-DiCB		922	2090	pg/L	44.1	(25%-150%)
13C-15-DiCB		1380	2090	pg/L	65.9	(25%-150%)
13C-19-TrCB		1270	2090	pg/L	60.7	(25%-150%)
13C-37-TrCB		1300	2090	pg/L	62.2	(25%-150%)
13C-54-TeCB		1030	2090	pg/L	49.4	(25%-150%)
13C-77-TeCB		1750	2090	pg/L	83.8	(25%-150%)
13C-81-TeCB		1770	2090	pg/L	84.9	(25%-150%)
13C-104-PeCB		1010	2090	pg/L	48.1	(25%-150%)
13C-105-PeCB		1480	2090	pg/L	70.7	(25%-150%)
13C-114-PeCB		1440	2090	pg/L	68.9	(25%-150%)
13C-118-PeCB		1400	2090	pg/L	67.1	(25%-150%)
13C-123-PeCB		1490	2090	pg/L	71.3	(25%-150%)
13C-126-PeCB		1640	2090	pg/L	78.2	(25%-150%)
13C-155-HxCB		1150	2090	pg/L	55.0	(25%-150%)
13C-156-HxCB	C	2770	4180	pg/L	66.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1410	2090	pg/L	67.3	(25%-150%)
13C-169-HxCB		1490	2090	pg/L	71.5	(25%-150%)
13C-188-HpCB		1290	2090	pg/L	61.8	(25%-150%)
13C-189-HpCB		1270	2090	pg/L	60.8	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056001**	**Date Collected:**	**04/28/2021 12:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-001G RG-North-20210428**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 19:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-4**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**956.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1370	2090	pg/L	65.6	(25%-150%)
13C-205-OcCB		1670	2090	pg/L	79.6	(25%-150%)
13C-206-NoCB		1850	2090	pg/L	88.3	(25%-150%)
13C-208-NoCB		1560	2090	pg/L	74.7	(25%-150%)
13C-209-DeCB		1690	2090	pg/L	80.9	(25%-150%)
13C-28-TrCB		1420	2090	pg/L	67.8	(30%-135%)
13C-111-PeCB		1740	2090	pg/L	83.4	(30%-135%)
13C-178-HpCB		1950	2090	pg/L	93.3	(30%-135%)

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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056002**	**Date Collected:**	**04/29/2021 08:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-003G RG-Isleta-20210429**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 21:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**945.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	1.44	106
2051-61-8	2-MoCB	U	ND	pg/L	1.90	106
2051-62-9	3-MoCB	U	ND	pg/L	3.53	106
13029-08-8	4-DiCB	U	ND	pg/L	10.7	106
16605-91-7	5-DiCB	U	ND	pg/L	8.89	106
25569-80-6	6-DiCB	U	ND	pg/L	8.67	106
33284-50-3	7-DiCB	U	ND	pg/L	7.70	106
34883-43-7	8-DiCB	U	ND	pg/L	7.79	106
34883-39-1	9-DiCB	U	ND	pg/L	10.5	106
33146-45-1	10-DiCB	U	ND	pg/L	7.72	106
2050-67-1	11-DiCB	U	ND	pg/L	83.8	106
2974-92-7	12-DiCB	CU	ND	pg/L	8.00	212
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	9.16	106
2050-68-2	15-DiCB	U	ND	pg/L	8.44	106
38444-78-9	16-TrCB	U	ND	pg/L	2.98	106
37680-66-3	17-TrCB	U	ND	pg/L	3.91	106
37680-65-2	18-TrCB	CU	ND	pg/L	7.21	212
38444-73-4	19-TrCB	U	ND	pg/L	2.16	106
38444-84-7	20-TrCB	CJ	15.5	pg/L	1.54	212
55702-46-0	21-TrCB	CJ	5.73	pg/L	1.59	212
38444-85-8	22-TrCB	J	4.85	pg/L	1.48	106
55720-44-0	23-TrCB	U	ND	pg/L	1.59	106
55702-45-9	24-TrCB	U	ND	pg/L	1.71	106
55712-37-3	25-TrCB	U	ND	pg/L	1.42	106
38444-81-4	26-TrCB	CJ	2.73	pg/L	1.63	212
38444-76-7	27-TrCB	U	ND	pg/L	1.86	106
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	11.2	106
38444-77-8	32-TrCB	U	ND	pg/L	2.92	106

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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056002**	**Date Collected:**	**04/29/2021 08:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-003G RG-Isleta-20210429**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 21:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**945.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	1.80	106
37680-69-6	35-TrCB	J	3.19	pg/L	2.09	106
38444-87-0	36-TrCB	U	ND	pg/L	1.88	106
38444-90-5	37-TrCB	U	ND	pg/L	6.77	106
53555-66-1	38-TrCB	U	ND	pg/L	2.12	106
38444-88-1	39-TrCB	U	ND	pg/L	1.73	106
38444-93-8	40-TeCB	CJ	5.37	pg/L	3.28	212
52663-59-9	41-TeCB	U	ND	pg/L	4.55	106
36559-22-5	42-TeCB	U	ND	pg/L	3.79	106
70362-46-8	43-TeCB	U	ND	pg/L	4.74	106
41464-39-5	44-TeCB	BCJ	15.8	pg/L	3.53	317
70362-45-7	45-TeCB	BCJ	3.81	pg/L	1.71	212
41464-47-5	46-TeCB	U	ND	pg/L	1.78	106
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	3.45	106
41464-40-8	49-TeCB	CJ	8.61	pg/L	3.41	212
62796-65-0	50-TeCB	BCJ	3.03	pg/L	1.63	212
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	BJ	23.5	pg/L	4.02	212
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	1.10	106
74338-24-2	55-TeCB	U	ND	pg/L	2.20	106
41464-43-1	56-TeCB	J	6.18	pg/L	2.37	106
70424-67-8	57-TeCB	U	ND	pg/L	2.41	106
41464-49-7	58-TeCB	U	ND	pg/L	2.18	106
74472-33-6	59-TeCB	CU	ND	pg/L	2.84	317
33025-41-1	60-TeCB	U	ND	pg/L	3.60	106
33284-53-6	61-TeCB	BCJ	26.4	pg/L	2.20	423
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	2.33	106
52663-58-8	64-TeCB	J	6.45	pg/L	2.73	106

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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056002**	**Date Collected:**	**04/29/2021 08:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-003G RG-Isleta-20210429**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 21:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**945.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	BJ	12.1	pg/L	2.28	106
73575-53-8	67-TeCB	U	ND	pg/L	2.07	106
73575-52-7	68-TeCB	U	ND	pg/L	1.97	106
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	2.39	106
74338-23-1	73-TeCB	U	ND	pg/L	2.88	106
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	BJ	5.33	pg/L	2.24	106
70362-49-1	78-TeCB	U	ND	pg/L	2.48	106
41464-48-6	79-TeCB	U	ND	pg/L	2.14	106
33284-52-5	80-TeCB	U	ND	pg/L	1.97	106
70362-50-4	81-TeCB	U	ND	pg/L	2.05	106
52663-62-4	82-PeCB	J	5.80	pg/L	3.51	106
60145-20-2	83-PeCB	U	ND	pg/L	3.70	106
52663-60-2	84-PeCB	J	10.4	pg/L	3.32	106
65510-45-4	85-PeCB	BCJ	7.30	pg/L	2.33	317
55312-69-1	86-PeCB	BCJ	30.8	pg/L	2.45	635
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	4.72	212
73575-57-2	89-PeCB	U	ND	pg/L	3.87	106
68194-07-0	90-PeCB	CJ	39.1	pg/L	2.64	317
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	8.51	pg/L	3.58	106
73575-56-1	93-PeCB	CU	ND	pg/L	2.79	212
73575-55-0	94-PeCB	U	ND	pg/L	3.07	106
38379-99-6	95-PeCB	BJ	30.4	pg/L	3.70	106
73575-54-9	96-PeCB	U	ND	pg/L	1.50	106

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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056002**	**Date Collected:**	**04/29/2021 08:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-003G RG-Isleta-20210429**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 21:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**945.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	3.15	212
38380-01-7	99-PeCB	J	13.4	pg/L	2.35	106
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	3.28	106
56558-16-8	104-PeCB	U	ND	pg/L	1.16	106
32598-14-4	105-PeCB	J	18.7	pg/L	2.18	106
70424-69-0	106-PeCB	U	ND	pg/L	2.60	106
70424-68-9	107-PeCB	U	ND	pg/L	2.88	106
70362-41-3	108-PeCB	CU	ND	pg/L	2.16	212
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	BCJ	56.8	pg/L	2.20	212
39635-32-0	111-PeCB	U	ND	pg/L	1.93	106
74472-36-9	112-PeCB	U	ND	pg/L	2.24	106
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	2.03	106
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	BJ	37.6	pg/L	1.99	106
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	2.31	106
56558-18-0	121-PeCB	U	ND	pg/L	2.09	106
76842-07-4	122-PeCB	U	ND	pg/L	2.90	106
65510-44-3	123-PeCB	U	ND	pg/L	1.97	106
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	2.41	106
39635-33-1	127-PeCB	U	ND	pg/L	2.39	106
38380-07-3	128-HxCB	CJ	11.6	pg/L	2.56	212

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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056002**	**Date Collected:**	**04/29/2021 08:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-003G RG-Isleta-20210429**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 21:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**945.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	83.8	pg/L	2.81	317
52663-66-8	130-HxCB	J	5.54	pg/L	3.45	106
61798-70-7	131-HxCB	U	ND	pg/L	3.41	106
38380-05-1	132-HxCB	BJ	19.3	pg/L	3.09	106
35694-04-3	133-HxCB	U	ND	pg/L	3.58	106
52704-70-8	134-HxCB	U	ND	pg/L	3.49	106
52744-13-5	135-HxCB	CU	ND	pg/L	19.4	212
38411-22-2	136-HxCB	J	7.85	pg/L	1.44	106
35694-06-5	137-HxCB	J	3.41	pg/L	2.71	106
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	2.81	212
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	13.7	pg/L	3.09	106
41411-61-4	142-HxCB	U	ND	pg/L	3.94	106
68194-15-0	143-HxCB	U	ND	pg/L	3.83	106
68194-14-9	144-HxCB	U	ND	pg/L	2.94	106
74472-40-5	145-HxCB	U	ND	pg/L	1.23	106
51908-16-8	146-HxCB	J	10.2	pg/L	2.67	106
68194-13-8	147-HxCB	CJ	44.9	pg/L	2.84	212
74472-41-6	148-HxCB	U	ND	pg/L	1.76	106
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	1.23	106
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	1.46	106
35065-27-1	153-HxCB	CJ	54.5	pg/L	2.33	212
60145-22-4	154-HxCB	U	ND	pg/L	1.40	106
33979-03-2	155-HxCB	U	ND	pg/L	1.16	106
38380-08-4	156-HxCB	CJ	9.61	pg/L	1.76	212
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	8.27	pg/L	2.14	106
39635-35-3	159-HxCB	U	ND	pg/L	1.48	106
41411-62-5	160-HxCB	U	ND	pg/L	2.39	106

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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056002**	**Date Collected:**	**04/29/2021 08:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-003G RG-Isleta-20210429**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 21:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**945.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	2.56	106
39635-34-2	162-HxCB	U	ND	pg/L	1.31	106
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	5.73	pg/L	2.39	106
74472-46-1	165-HxCB	U	ND	pg/L	2.35	106
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	BJ	4.21	pg/L	1.25	106
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	1.50	106
35065-30-6	170-HpCB	J	21.6	pg/L	1.86	106
52663-71-5	171-HpCB	CU	ND	pg/L	6.41	212
52663-74-8	172-HpCB	U	ND	pg/L	4.53	106
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	21.4	pg/L	1.82	106
40186-70-7	175-HpCB	U	ND	pg/L	1.50	106
52663-65-7	176-HpCB	J	3.13	pg/L	1.18	106
52663-70-4	177-HpCB	J	12.6	pg/L	1.86	106
52663-67-9	178-HpCB	J	5.04	pg/L	1.65	106
52663-64-6	179-HpCB	J	8.29	pg/L	1.16	106
35065-29-3	180-HpCB	CJ	47.5	pg/L	1.48	212
74472-47-2	181-HpCB	U	ND	pg/L	1.57	106
60145-23-5	182-HpCB	U	ND	pg/L	1.44	106
52663-69-1	183-HpCB	CJ	15.1	pg/L	1.61	212
74472-48-3	184-HpCB	U	ND	pg/L	1.02	106
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	1.08	106
52663-68-0	187-HpCB	J	23.1	pg/L	1.27	106
74487-85-7	188-HpCB	U	ND	pg/L	1.16	106
39635-31-9	189-HpCB	U	ND	pg/L	1.57	106
41411-64-7	190-HpCB	J	4.82	pg/L	1.42	106
74472-50-7	191-HpCB	U	ND	pg/L	1.38	106
74472-51-8	192-HpCB	U	ND	pg/L	1.40	106

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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056002**	**Date Collected:**	**04/29/2021 08:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-003G RG-Isleta-20210429**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 21:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**945.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	12.8	pg/L	1.35	106
52663-78-2	195-OcCB	J	4.65	pg/L	1.42	106
42740-50-1	196-OcCB	J	6.45	pg/L	1.63	106
33091-17-7	197-OcCB	CU	ND	pg/L	2.50	212
68194-17-2	198-OcCB	CJ	15.3	pg/L	1.65	212
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	1.90	106
2136-99-4	202-OcCB	J	3.77	pg/L	1.33	106
52663-76-0	203-OcCB	J	8.36	pg/L	1.44	106
74472-52-9	204-OcCB	U	ND	pg/L	1.23	106
74472-53-0	205-OcCB	U	ND	pg/L	1.02	106
40186-72-9	206-NoCB	J	10.8	pg/L	1.57	106
52663-79-3	207-NoCB	U	ND	pg/L	1.59	106
52663-77-1	208-NoCB	J	4.10	pg/L	1.23	106
2051-24-3	209-DeCB	U	ND	pg/L	5.59	106
1336-36-3	Total PCB Congeners	J	919	pg/L		106

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		735	2120	pg/L	34.8	(15%-150%)
13C-3-MoCB		895	2120	pg/L	42.3	(15%-150%)
13C-4-DiCB		1050	2120	pg/L	49.8	(25%-150%)
13C-15-DiCB		1460	2120	pg/L	68.9	(25%-150%)
13C-19-TrCB		1500	2120	pg/L	70.9	(25%-150%)
13C-37-TrCB		1330	2120	pg/L	62.7	(25%-150%)
13C-54-TeCB		1150	2120	pg/L	54.2	(25%-150%)
13C-77-TeCB		1790	2120	pg/L	84.4	(25%-150%)
13C-81-TeCB		1840	2120	pg/L	86.8	(25%-150%)
13C-104-PeCB		1100	2120	pg/L	51.8	(25%-150%)
13C-105-PeCB		1520	2120	pg/L	72.0	(25%-150%)
13C-114-PeCB		1500	2120	pg/L	70.8	(25%-150%)
13C-118-PeCB		1460	2120	pg/L	69.1	(25%-150%)
13C-123-PeCB		1530	2120	pg/L	72.5	(25%-150%)
13C-126-PeCB		1670	2120	pg/L	78.8	(25%-150%)
13C-155-HxCB		1160	2120	pg/L	54.7	(25%-150%)
13C-156-HxCB	C	2790	4230	pg/L	66.0	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1430	2120	pg/L	67.6	(25%-150%)
13C-169-HxCB		1500	2120	pg/L	70.9	(25%-150%)
13C-188-HpCB		1200	2120	pg/L	56.9	(25%-150%)
13C-189-HpCB		1250	2120	pg/L	59.3	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**18056002**	**Date Collected:**	**04/29/2021 08:30**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**04/30/2021 10:05**		
Client ID:	**2104C54-003G RG-Isleta-20210429**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/17/2021 21:01**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d17may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**945.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1320	2120	pg/L	62.2	(25%-150%)
13C-205-OcCB		1670	2120	pg/L	78.8	(25%-150%)
13C-206-NoCB		1830	2120	pg/L	86.5	(25%-150%)
13C-208-NoCB		1530	2120	pg/L	72.4	(25%-150%)
13C-209-DeCB		1710	2120	pg/L	80.7	(25%-150%)
13C-28-TrCB		1600	2120	pg/L	75.6	(30%-135%)
13C-111-PeCB		1970	2120	pg/L	93.1	(30%-135%)
13C-178-HpCB		2110	2120	pg/L	99.7	(30%-135%)

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.**

Quality Control Summary

PCB Congeners

Surrogate Recovery Report

SDG Number: 2104C54

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12029213	LCS for batch 46738	13C-1-MoCB		36.6	(15%-140%)
		13C-3-MoCB		39.3	(15%-140%)
		13C-4-DiCB		48.7	(30%-140%)
		13C-15-DiCB		60.7	(30%-140%)
		13C-19-TrCB		60.7	(30%-140%)
		13C-37-TrCB		49.6	(30%-140%)
		13C-54-TeCB		48.4	(30%-140%)
		13C-77-TeCB		75.3	(30%-140%)
		13C-81-TeCB		78.5	(30%-140%)
		13C-104-PeCB		64.4	(30%-140%)
		13C-105-PeCB		75.1	(30%-140%)
		13C-114-PeCB		76.0	(30%-140%)
		13C-118-PeCB		73.8	(30%-140%)
		13C-123-PeCB		77.9	(30%-140%)
		13C-126-PeCB		80.2	(30%-140%)
		13C-155-HxCB		71.0	(30%-140%)
		13C-156-HxCB	C	79.5	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		81.9	(30%-140%)
		13C-169-HxCB		83.9	(30%-140%)
		13C-188-HpCB		72.8	(30%-140%)
		13C-189-HpCB		76.6	(30%-140%)
		13C-202-OcCB		77.4	(30%-140%)
		13C-205-OcCB		94.2	(30%-140%)
		13C-206-NoCB		101	(30%-140%)
		13C-208-NoCB		90.4	(30%-140%)
		13C-209-DeCB		91.9	(30%-140%)
		13C-28-TrCB		66.7	(40%-125%)
		13C-111-PeCB		84.9	(40%-125%)
		13C-178-HpCB		91.6	(40%-125%)
12029214	LCSD for batch 46738	13C-1-MoCB		43.3	(15%-140%)
		13C-3-MoCB		45.6	(15%-140%)
		13C-4-DiCB		56.2	(30%-140%)
		13C-15-DiCB		63.3	(30%-140%)
		13C-19-TrCB		63.3	(30%-140%)
		13C-37-TrCB		45.3	(30%-140%)
		13C-54-TeCB		45.4	(30%-140%)
		13C-77-TeCB		71.8	(30%-140%)
		13C-81-TeCB		74.0	(30%-140%)
		13C-104-PeCB		61.5	(30%-140%)
		13C-105-PeCB		68.5	(30%-140%)
		13C-114-PeCB		69.8	(30%-140%)
		13C-118-PeCB		68.0	(30%-140%)
		13C-123-PeCB		71.7	(30%-140%)
		13C-126-PeCB		73.2	(30%-140%)
		13C-155-HxCB		68.5	(30%-140%)
		13C-156-HxCB	C	74.1	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		76.7	(30%-140%)
		13C-169-HxCB		78.2	(30%-140%)
		13C-188-HpCB		63.3	(30%-140%)
		13C-189-HpCB		69.6	(30%-140%)

Surrogate Recovery Report

SDG Number: 2104C54

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12029214	LCSD for batch 46738	13C-202-OcCB		69.4	(30%-140%)
		13C-205-OcCB		85.8	(30%-140%)
		13C-206-NoCB		92.3	(30%-140%)
		13C-208-NoCB		80.4	(30%-140%)
		13C-209-DeCB		80.7	(30%-140%)
		13C-28-TrCB		64.2	(40%-125%)
		13C-111-PeCB		81.2	(40%-125%)
		13C-178-HpCB		85.9	(40%-125%)
12029212	MB for batch 46738	13C-1-MoCB		44.0	(15%-150%)
		13C-3-MoCB		45.9	(15%-150%)
		13C-4-DiCB		56.2	(25%-150%)
		13C-15-DiCB		66.2	(25%-150%)
		13C-19-TrCB		64.9	(25%-150%)
		13C-37-TrCB		43.7	(25%-150%)
		13C-54-TeCB		46.1	(25%-150%)
		13C-77-TeCB		69.5	(25%-150%)
		13C-81-TeCB		73.3	(25%-150%)
		13C-104-PeCB		60.3	(25%-150%)
		13C-105-PeCB		63.2	(25%-150%)
		13C-114-PeCB		62.5	(25%-150%)
		13C-118-PeCB		61.2	(25%-150%)
		13C-123-PeCB		65.1	(25%-150%)
		13C-126-PeCB		65.1	(25%-150%)
		13C-155-HxCB		64.0	(25%-150%)
		13C-156-HxCB	C	67.7	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		70.6	(25%-150%)
		13C-169-HxCB		72.2	(25%-150%)
		13C-188-HpCB		57.6	(25%-150%)
		13C-189-HpCB		61.8	(25%-150%)
		13C-202-OcCB		61.3	(25%-150%)
		13C-205-OcCB		77.4	(25%-150%)
		13C-206-NoCB		81.6	(25%-150%)
		13C-208-NoCB		72.1	(25%-150%)
		13C-209-DeCB		70.6	(25%-150%)
		13C-28-TrCB		77.4	(30%-135%)
		13C-111-PeCB		85.5	(30%-135%)
		13C-178-HpCB		88.4	(30%-135%)
18056001	2104C54-001G RG-North-20210428	13C-1-MoCB		32.6	(15%-150%)
		13C-3-MoCB		39.5	(15%-150%)
		13C-4-DiCB		44.1	(25%-150%)
		13C-15-DiCB		65.9	(25%-150%)
		13C-19-TrCB		60.7	(25%-150%)
		13C-37-TrCB		62.2	(25%-150%)
		13C-54-TeCB		49.4	(25%-150%)
		13C-77-TeCB		83.8	(25%-150%)
		13C-81-TeCB		84.9	(25%-150%)
		13C-104-PeCB		48.1	(25%-150%)
		13C-105-PeCB		70.7	(25%-150%)
		13C-114-PeCB		68.9	(25%-150%)
		13C-118-PeCB		67.1	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: 2104C54

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
18056001	2104C54-001G RG-North-20210428	13C-123-PeCB		71.3	(25%-150%)
		13C-126-PeCB		78.2	(25%-150%)
		13C-155-HxCB		55.0	(25%-150%)
		13C-156-HxCB	C	66.2	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		67.3	(25%-150%)
		13C-169-HxCB		71.5	(25%-150%)
		13C-188-HpCB		61.8	(25%-150%)
		13C-189-HpCB		60.8	(25%-150%)
		13C-202-OcCB		65.6	(25%-150%)
		13C-205-OcCB		79.6	(25%-150%)
		13C-206-NoCB		88.3	(25%-150%)
		13C-208-NoCB		74.7	(25%-150%)
		13C-209-DeCB		80.9	(25%-150%)
		13C-28-TrCB		67.8	(30%-135%)
		13C-111-PeCB		83.4	(30%-135%)
		13C-178-HpCB		93.3	(30%-135%)
18056002	2104C54-003G RG-Isleta-20210429	13C-1-MoCB		34.8	(15%-150%)
		13C-3-MoCB		42.3	(15%-150%)
		13C-4-DiCB		49.8	(25%-150%)
		13C-15-DiCB		68.9	(25%-150%)
		13C-19-TrCB		70.9	(25%-150%)
		13C-37-TrCB		62.7	(25%-150%)
		13C-54-TeCB		54.2	(25%-150%)
		13C-77-TeCB		84.4	(25%-150%)
		13C-81-TeCB		86.8	(25%-150%)
		13C-104-PeCB		51.8	(25%-150%)
		13C-105-PeCB		72.0	(25%-150%)
		13C-114-PeCB		70.8	(25%-150%)
		13C-118-PeCB		69.1	(25%-150%)
		13C-123-PeCB		72.5	(25%-150%)
		13C-126-PeCB		78.8	(25%-150%)
		13C-155-HxCB		54.7	(25%-150%)
		13C-156-HxCB	C	66.0	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		67.6	(25%-150%)
		13C-169-HxCB		70.9	(25%-150%)
		13C-188-HpCB		56.9	(25%-150%)
		13C-189-HpCB		59.3	(25%-150%)
		13C-202-OcCB		62.2	(25%-150%)
		13C-205-OcCB		78.8	(25%-150%)
		13C-206-NoCB		86.5	(25%-150%)
		13C-208-NoCB		72.4	(25%-150%)
		13C-209-DeCB		80.7	(25%-150%)
		13C-28-TrCB		75.6	(30%-135%)
		13C-111-PeCB		93.1	(30%-135%)
		13C-178-HpCB		99.7	(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: **2104C54** **Sample Type:** **Laboratory Control Sample**

Client ID: **LCS for batch 46738** **Matrix:** **WATER**

Lab Sample ID: **12029213**

Instrument: **HRP875** **Analysis Date:** **05/07/2021 17:48** **Dilution:** **1**

Analyst: **MJC** **Prep Batch ID:** **46738**

Batch ID: **46817**

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS	1-MoCB	500		385	77	50-150
2051-62-9	LCS	3-MoCB	500		432	86.4	50-150
13029-08-8	LCS	4-DiCB	500		417	83.5	50-150
2050-68-2	LCS	15-DiCB	500		466	93.3	50-150
38444-73-4	LCS	19-TrCB	500		457	91.4	50-150
38444-90-5	LCS	37-TrCB	500		429	85.8	50-150
15968-05-5	LCS	54-TeCB	1000		1010	101	50-150
32598-13-3	LCS	77-TeCB	1000		840	84	50-150
70362-50-4	LCS	81-TeCB	1000		719	71.9	50-150
56558-16-8	LCS	104-PeCB	1000		1020	102	50-150
32598-14-4	LCS	105-PeCB	1000		838	83.8	50-150
74472-37-0	LCS	114-PeCB	1000		1020	102	50-150
31508-00-6	LCS	118-PeCB	1000		987	98.7	50-150
65510-44-3	LCS	123-PeCB	1000		877	87.7	50-150
57465-28-8	LCS	126-PeCB	1000		927	92.7	50-150
33979-03-2	LCS	155-HxCB	1000		958	95.8	50-150
38380-08-4	LCS	156-HxCB	2000	C	2010	101	50-150
69782-90-7	LCS	157-HxCB		C156			
52663-72-6	LCS	167-HxCB	1000		932	93.2	50-150
32774-16-6	LCS	169-HxCB	1000		872	87.2	50-150
74487-85-7	LCS	188-HpCB	1000		932	93.2	50-150
39635-31-9	LCS	189-HpCB	1000		903	90.3	50-150
2136-99-4	LCS	202-OcCB	1500		1540	103	50-150
74472-53-0	LCS	205-OcCB	1500		1300	86.5	50-150
40186-72-9	LCS	206-NoCB	1500		1290	86.2	50-150
52663-77-1	LCS	208-NoCB	1500		1510	101	50-150
2051-24-3	LCS	209-DeCB	1500		1400	93.5	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: **2104C54** **Sample Type:** **Laboratory Control Sample Duplicate**

Client ID: **LCSD for batch 46738** **Matrix:** **WATER**

Lab Sample ID: **12029214**

Instrument: **HRP875** **Analysis Date:** **05/07/2021 18:56** **Dilution:** **1**

Analyst: **MJC** **Prep Batch ID:** **46738**

Batch ID: **46817**

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	1-MoCB	500		400	80	50-150	3.89	0-20
2051-62-9	LCSD	3-MoCB	500		437	87.4	50-150	1.20	0-20
13029-08-8	LCSD	4-DiCB	500		430	86	50-150	3.01	0-20
2050-68-2	LCSD	15-DiCB	500		476	95.2	50-150	2.03	0-20
38444-73-4	LCSD	19-TrCB	500		461	92.1	50-150	0.807	0-20
38444-90-5	LCSD	37-TrCB	500		414	82.9	50-150	3.46	0-20
15968-05-5	LCSD	54-TeCB	1000		1020	102	50-150	0.597	0-20
32598-13-3	LCSD	77-TeCB	1000		846	84.6	50-150	0.757	0-20
70362-50-4	LCSD	81-TeCB	1000		725	72.5	50-150	0.911	0-20
56558-16-8	LCSD	104-PeCB	1000		1040	104	50-150	2.23	0-20
32598-14-4	LCSD	105-PeCB	1000		858	85.8	50-150	2.35	0-20
74472-37-0	LCSD	114-PeCB	1000		1040	104	50-150	2.29	0-20
31508-00-6	LCSD	118-PeCB	1000		1020	102	50-150	3.28	0-20
65510-44-3	LCSD	123-PeCB	1000		907	90.7	50-150	3.31	0-20
57465-28-8	LCSD	126-PeCB	1000		942	94.2	50-150	1.66	0-20
33979-03-2	LCSD	155-HxCB	1000		1020	102	50-150	6.27	0-20
38380-08-4	LCSD	156-HxCB	2000	C	2050	103	50-150	2.09	0-20
69782-90-7	LCSD	157-HxCB		C156					
52663-72-6	LCSD	167-HxCB	1000		961	96.1	50-150	3.12	0-20
32774-16-6	LCSD	169-HxCB	1000		899	89.9	50-150	3.00	0-20
74487-85-7	LCSD	188-HpCB	1000		977	97.7	50-150	4.67	0-20
39635-31-9	LCSD	189-HpCB	1000		927	92.7	50-150	2.67	0-20
2136-99-4	LCSD	202-OcCB	1500		1580	105	50-150	1.98	0-20
74472-53-0	LCSD	205-OcCB	1500		1330	88.7	50-150	2.57	0-20
40186-72-9	LCSD	206-NoCB	1500		1310	87.5	50-150	1.55	0-20
52663-77-1	LCSD	208-NoCB	1500		1560	104	50-150	3.28	0-20
2051-24-3	LCSD	209-DeCB	1500		1480	98.6	50-150	5.32	0-20

Method Blank Summary

SDG Number:	**2104C54**	**Client:**	**HALL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 46738**	**Instrument ID:**	**HRP875**	**Data File:**	**d07may21a-5**
Lab Sample ID:	**12029212**	**Prep Date:**	**04-MAY-21**	**Analyzed:**	**05/07/21 20:05**
Column:					

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 46738	12029213	d07may21a-3	05/07/21	1748
02	LCSD for batch 46738	12029214	d07may21a-4	05/07/21	1856
03	2104C54-001G RG-North-20210428	18056001	d17may21a-4	05/17/21	1952
04	2104C54-003G RG-Isleta-20210429	18056002	d17may21a-5	05/17/21	2101

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12029212**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 46738**				
Client ID:	**MB for batch 46738**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/07/2021 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d07may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	3.02	pg/L	1.00	100
2051-61-8	2-MoCB	J	3.58	pg/L	1.46	100
2051-62-9	3-MoCB	J	3.78	pg/L	1.30	100
13029-08-8	4-DiCB	U	ND	pg/L	14.8	100
16605-91-7	5-DiCB	U	ND	pg/L	14.7	100
25569-80-6	6-DiCB	U	ND	pg/L	14.1	100
33284-50-3	7-DiCB	U	ND	pg/L	12.6	100
34883-43-7	8-DiCB	U	ND	pg/L	12.7	100
34883-39-1	9-DiCB	U	ND	pg/L	16.0	100
33146-45-1	10-DiCB	U	ND	pg/L	10.3	100
2050-67-1	11-DiCB	J	42.3	pg/L	15.7	100
2974-92-7	12-DiCB	CU	ND	pg/L	14.2	200
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	15.2	100
2050-68-2	15-DiCB	U	ND	pg/L	15.1	100
38444-78-9	16-TrCB	U	ND	pg/L	2.26	100
37680-66-3	17-TrCB	U	ND	pg/L	2.36	100
37680-65-2	18-TrCB	CJ	3.26	pg/L	1.96	200
38444-73-4	19-TrCB	U	ND	pg/L	2.08	100
38444-84-7	20-TrCB	CU	ND	pg/L	4.92	200
55702-46-0	21-TrCB	CU	ND	pg/L	3.36	200
38444-85-8	22-TrCB	U	ND	pg/L	1.56	100
55720-44-0	23-TrCB	U	ND	pg/L	1.54	100
55702-45-9	24-TrCB	U	ND	pg/L	1.68	100
55712-37-3	25-TrCB	U	ND	pg/L	1.40	100
38444-81-4	26-TrCB	CU	ND	pg/L	1.70	200
38444-76-7	27-TrCB	U	ND	pg/L	1.86	100
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	J	3.26	pg/L	1.64	100
38444-77-8	32-TrCB	U	ND	pg/L	1.66	100

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data
J Value is estimated
Q Quantitative Interference; 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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12029212**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 46738**				
Client ID:	**MB for batch 46738**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/07/2021 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d07may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	1.88	100
37680-69-6	35-TrCB	U	ND	pg/L	2.42	100
38444-87-0	36-TrCB	U	ND	pg/L	2.18	100
38444-90-5	37-TrCB	U	ND	pg/L	2.52	100
53555-66-1	38-TrCB	U	ND	pg/L	2.40	100
38444-88-1	39-TrCB	U	ND	pg/L	1.98	100
38444-93-8	40-TeCB	CU	ND	pg/L	2.62	200
52663-59-9	41-TeCB	U	ND	pg/L	3.98	100
36559-22-5	42-TeCB	U	ND	pg/L	2.88	100
70362-46-8	43-TeCB	U	ND	pg/L	3.26	100
41464-39-5	44-TeCB	CJ	6.86	pg/L	2.80	300
70362-45-7	45-TeCB	CJ	2.40	pg/L	1.34	200
41464-47-5	46-TeCB	U	ND	pg/L	1.42	100
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	2.80	100
41464-40-8	49-TeCB	CU	ND	pg/L	2.64	200
62796-65-0	50-TeCB	CJ	1.56	pg/L	1.26	200
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	7.36	pg/L	3.44	200
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	1.00	100
74338-24-2	55-TeCB	U	ND	pg/L	2.16	100
41464-43-1	56-TeCB	U	ND	pg/L	2.82	100
70424-67-8	57-TeCB	U	ND	pg/L	2.36	100
41464-49-7	58-TeCB	U	ND	pg/L	2.18	100
74472-33-6	59-TeCB	CU	ND	pg/L	2.30	300
33025-41-1	60-TeCB	U	ND	pg/L	2.14	100
33284-53-6	61-TeCB	CJ	8.86	pg/L	2.20	400
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	2.38	100
52663-58-8	64-TeCB	U	ND	pg/L	2.12	100

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12029212**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 46738**				
Client ID:	**MB for batch 46738**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/07/2021 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d07may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	4.40	pg/L	2.44	100
73575-53-8	67-TeCB	U	ND	pg/L	1.98	100
73575-52-7	68-TeCB	U	ND	pg/L	1.94	100
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	2.26	100
74338-23-1	73-TeCB	U	ND	pg/L	2.28	100
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	3.52	pg/L	2.38	100
70362-49-1	78-TeCB	U	ND	pg/L	2.68	100
41464-48-6	79-TeCB	U	ND	pg/L	2.34	100
33284-52-5	80-TeCB	U	ND	pg/L	2.02	100
70362-50-4	81-TeCB	U	ND	pg/L	2.12	100
52663-62-4	82-PeCB	U	ND	pg/L	2.56	100
60145-20-2	83-PeCB	U	ND	pg/L	2.96	100
52663-60-2	84-PeCB	U	ND	pg/L	2.24	100
65510-45-4	85-PeCB	CJ	3.10	pg/L	1.74	300
55312-69-1	86-PeCB	CJ	7.30	pg/L	1.82	600
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	2.18	200
73575-57-2	89-PeCB	U	ND	pg/L	2.68	100
68194-07-0	90-PeCB	CU	ND	pg/L	5.60	300
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	2.48	100
73575-56-1	93-PeCB	CU	ND	pg/L	2.02	200
73575-55-0	94-PeCB	U	ND	pg/L	2.02	100
38379-99-6	95-PeCB	J	5.62	pg/L	2.46	100
73575-54-9	96-PeCB	U	ND	pg/L	1.24	100

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12029212**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 46738**				
Client ID:	**MB for batch 46738**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/07/2021 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d07may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	2.02	200
38380-01-7	99-PeCB	U	ND	pg/L	1.94	100
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	2.22	100
56558-16-8	104-PeCB	U	ND	pg/L	0.880	100
32598-14-4	105-PeCB	U	ND	pg/L	3.74	100
70424-69-0	106-PeCB	U	ND	pg/L	1.94	100
70424-68-9	107-PeCB	U	ND	pg/L	1.66	100
70362-41-3	108-PeCB	CU	ND	pg/L	3.08	200
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	6.34	pg/L	1.60	200
39635-32-0	111-PeCB	U	ND	pg/L	1.42	100
74472-36-9	112-PeCB	U	ND	pg/L	1.52	100
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	J	2.30	pg/L	1.78	100
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	J	5.32	pg/L	1.76	100
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	1.70	100
56558-18-0	121-PeCB	U	ND	pg/L	1.42	100
76842-07-4	122-PeCB	U	ND	pg/L	2.48	100
65510-44-3	123-PeCB	U	ND	pg/L	1.72	100
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	2.20	100
39635-33-1	127-PeCB	U	ND	pg/L	2.02	100
38380-07-3	128-HxCB	CU	ND	pg/L	2.72	200

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data
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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12029212**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 46738**				
Client ID:	**MB for batch 46738**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/07/2021 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d07may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	6.50	pg/L	2.22	300
52663-66-8	130-HxCB	U	ND	pg/L	2.62	100
61798-70-7	131-HxCB	U	ND	pg/L	2.48	100
38380-05-1	132-HxCB	J	2.38	pg/L	2.26	100
35694-04-3	133-HxCB	U	ND	pg/L	2.64	100
52704-70-8	134-HxCB	U	ND	pg/L	2.54	100
52744-13-5	135-HxCB	CU	ND	pg/L	2.64	200
38411-22-2	136-HxCB	U	ND	pg/L	1.22	100
35694-06-5	137-HxCB	U	ND	pg/L	2.20	100
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	2.10	200
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	2.18	100
41411-61-4	142-HxCB	U	ND	pg/L	2.68	100
68194-15-0	143-HxCB	U	ND	pg/L	2.62	100
68194-14-9	144-HxCB	U	ND	pg/L	1.62	100
74472-40-5	145-HxCB	U	ND	pg/L	1.06	100
51908-16-8	146-HxCB	U	ND	pg/L	2.06	100
68194-13-8	147-HxCB	CJ	4.22	pg/L	2.06	200
74472-41-6	148-HxCB	U	ND	pg/L	1.54	100
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	1.02	100
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	1.22	100
35065-27-1	153-HxCB	CJ	4.86	pg/L	1.82	200
60145-22-4	154-HxCB	U	ND	pg/L	1.24	100
33979-03-2	155-HxCB	U	ND	pg/L	1.02	100
38380-08-4	156-HxCB	CU	ND	pg/L	4.44	200
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	1.60	100
39635-35-3	159-HxCB	U	ND	pg/L	2.00	100
41411-62-5	160-HxCB	U	ND	pg/L	1.70	100

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data
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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12029212**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 46738**				
Client ID:	**MB for batch 46738**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/07/2021 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d07may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	1.82	100
39635-34-2	162-HxCB	U	ND	pg/L	1.80	100
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	1.72	100
74472-46-1	165-HxCB	U	ND	pg/L	1.72	100
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	2.26	pg/L	1.88	100
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	J	3.00	pg/L	2.16	100
35065-30-6	170-HpCB	U	ND	pg/L	2.60	100
52663-71-5	171-HpCB	CU	ND	pg/L	2.50	200
52663-74-8	172-HpCB	U	ND	pg/L	2.56	100
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	2.28	100
40186-70-7	175-HpCB	U	ND	pg/L	1.98	100
52663-65-7	176-HpCB	U	ND	pg/L	1.58	100
52663-70-4	177-HpCB	U	ND	pg/L	2.54	100
52663-67-9	178-HpCB	U	ND	pg/L	2.12	100
52663-64-6	179-HpCB	U	ND	pg/L	1.50	100
35065-29-3	180-HpCB	CJ	4.12	pg/L	2.02	200
74472-47-2	181-HpCB	U	ND	pg/L	2.20	100
60145-23-5	182-HpCB	U	ND	pg/L	1.92	100
52663-69-1	183-HpCB	CU	ND	pg/L	2.22	200
74472-48-3	184-HpCB	U	ND	pg/L	1.32	100
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	1.42	100
52663-68-0	187-HpCB	U	ND	pg/L	2.84	100
74487-85-7	188-HpCB	U	ND	pg/L	1.50	100
39635-31-9	189-HpCB	J	2.36	pg/L	1.76	100
41411-64-7	190-HpCB	U	ND	pg/L	2.00	100
74472-50-7	191-HpCB	U	ND	pg/L	1.88	100
74472-51-8	192-HpCB	U	ND	pg/L	1.84	100

Comments:

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Q Quantitative Interference; 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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12029212**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 46738**				
Client ID:	**MB for batch 46738**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/07/2021 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d07may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	U	ND	pg/L	2.66	100
52663-78-2	195-OcCB	U	ND	pg/L	2.08	100
42740-50-1	196-OcCB	U	ND	pg/L	1.94	100
33091-17-7	197-OcCB	CU	ND	pg/L	1.38	200
68194-17-2	198-OcCB	CU	ND	pg/L	1.92	200
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	1.36	100
2136-99-4	202-OcCB	U	ND	pg/L	1.58	100
52663-76-0	203-OcCB	U	ND	pg/L	1.66	100
74472-52-9	204-OcCB	U	ND	pg/L	1.44	100
74472-53-0	205-OcCB	U	ND	pg/L	1.48	100
40186-72-9	206-NoCB	U	ND	pg/L	2.06	100
52663-79-3	207-NoCB	U	ND	pg/L	1.54	100
52663-77-1	208-NoCB	U	ND	pg/L	1.48	100
2051-24-3	209-DeCB	U	ND	pg/L	3.30	100
1336-36-3	Total PCB Congeners	J	154	pg/L		100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		881	2000	pg/L	44.0	(15%-150%)
13C-3-MoCB		917	2000	pg/L	45.9	(15%-150%)
13C-4-DiCB		1120	2000	pg/L	56.2	(25%-150%)
13C-15-DiCB		1320	2000	pg/L	66.2	(25%-150%)
13C-19-TrCB		1300	2000	pg/L	64.9	(25%-150%)
13C-37-TrCB		875	2000	pg/L	43.7	(25%-150%)
13C-54-TeCB		922	2000	pg/L	46.1	(25%-150%)
13C-77-TeCB		1390	2000	pg/L	69.5	(25%-150%)
13C-81-TeCB		1470	2000	pg/L	73.3	(25%-150%)
13C-104-PeCB		1210	2000	pg/L	60.3	(25%-150%)
13C-105-PeCB		1260	2000	pg/L	63.2	(25%-150%)
13C-114-PeCB		1250	2000	pg/L	62.5	(25%-150%)
13C-118-PeCB		1220	2000	pg/L	61.2	(25%-150%)
13C-123-PeCB		1300	2000	pg/L	65.1	(25%-150%)
13C-126-PeCB		1300	2000	pg/L	65.1	(25%-150%)
13C-155-HxCB		1280	2000	pg/L	64.0	(25%-150%)
13C-156-HxCB	C	2710	4000	pg/L	67.7	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1410	2000	pg/L	70.6	(25%-150%)
13C-169-HxCB		1440	2000	pg/L	72.2	(25%-150%)
13C-188-HpCB		1150	2000	pg/L	57.6	(25%-150%)
13C-189-HpCB		1240	2000	pg/L	61.8	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12029212**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 46738**				
Client ID:	**MB for batch 46738**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/07/2021 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d07may21a-5**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1230	2000	pg/L	61.3	(25%-150%)
13C-205-OcCB		1550	2000	pg/L	77.4	(25%-150%)
13C-206-NoCB		1630	2000	pg/L	81.6	(25%-150%)
13C-208-NoCB		1440	2000	pg/L	72.1	(25%-150%)
13C-209-DeCB		1410	2000	pg/L	70.6	(25%-150%)
13C-28-TrCB		1550	2000	pg/L	77.4	(30%-135%)
13C-111-PeCB		1710	2000	pg/L	85.5	(30%-135%)
13C-178-HpCB		1770	2000	pg/L	88.4	(30%-135%)

Comments:

C **Congener has coeluters. When Cxxx, refer to congener number xxx for data**
J **Value is estimated**
Q **Quantitative Interference; 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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12029213**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 46738**				
Client ID:	**LCS for batch 46738**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/07/2021 17:48**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d07may21a-3**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		385	pg/L	1.88	100
2051-62-9	3-MoCB		432	pg/L	2.20	100
13029-08-8	4-DiCB		417	pg/L	14.7	100
2050-68-2	15-DiCB		466	pg/L	9.44	100
38444-73-4	19-TrCB		457	pg/L	2.26	100
38444-90-5	37-TrCB		429	pg/L	8.48	100
15968-05-5	54-TeCB		1010	pg/L	1.16	100
32598-13-3	77-TeCB		840	pg/L	5.44	100
70362-50-4	81-TeCB		719	pg/L	4.92	100
56558-16-8	104-PeCB		1020	pg/L	0.940	100
32598-14-4	105-PeCB		838	pg/L	4.76	100
74472-37-0	114-PeCB		1020	pg/L	4.30	100
31508-00-6	118-PeCB		987	pg/L	4.22	100
65510-44-3	123-PeCB		877	pg/L	4.26	100
57465-28-8	126-PeCB		927	pg/L	5.34	100
33979-03-2	155-HxCB		958	pg/L	0.880	100
38380-08-4	156-HxCB	C	2010	pg/L	3.38	200
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		932	pg/L	2.48	100
32774-16-6	169-HxCB		872	pg/L	2.92	100
74487-85-7	188-HpCB		932	pg/L	1.06	100
39635-31-9	189-HpCB		903	pg/L	2.04	100
2136-99-4	202-OcCB		1540	pg/L	9.12	100
74472-53-0	205-OcCB		1300	pg/L	1.78	100
40186-72-9	206-NoCB		1290	pg/L	2.42	100
52663-77-1	208-NoCB		1510	pg/L	1.76	100
2051-24-3	209-DeCB		1400	pg/L	2.60	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		731	2000	pg/L	36.6	(15%-140%)
13C-3-MoCB		786	2000	pg/L	39.3	(15%-140%)
13C-4-DiCB		973	2000	pg/L	48.7	(30%-140%)
13C-15-DiCB		1210	2000	pg/L	60.7	(30%-140%)
13C-19-TrCB		1210	2000	pg/L	60.7	(30%-140%)
13C-37-TrCB		992	2000	pg/L	49.6	(30%-140%)
13C-54-TeCB		967	2000	pg/L	48.4	(30%-140%)
13C-77-TeCB		1510	2000	pg/L	75.3	(30%-140%)
13C-81-TeCB		1570	2000	pg/L	78.5	(30%-140%)
13C-104-PeCB		1290	2000	pg/L	64.4	(30%-140%)
13C-105-PeCB		1500	2000	pg/L	75.1	(30%-140%)
13C-114-PeCB		1520	2000	pg/L	76.0	(30%-140%)
13C-118-PeCB		1480	2000	pg/L	73.8	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12029213**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 46738**				
Client ID:	**LCS for batch 46738**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/07/2021 17:48**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d07may21a-3**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		1560	2000	pg/L	77.9	(30%-140%)
13C-126-PeCB		1600	2000	pg/L	80.2	(30%-140%)
13C-155-HxCB		1420	2000	pg/L	71.0	(30%-140%)
13C-156-HxCB	C	3180	4000	pg/L	79.5	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		1640	2000	pg/L	81.9	(30%-140%)
13C-169-HxCB		1680	2000	pg/L	83.9	(30%-140%)
13C-188-HpCB		1460	2000	pg/L	72.8	(30%-140%)
13C-189-HpCB		1530	2000	pg/L	76.6	(30%-140%)
13C-202-OcCB		1550	2000	pg/L	77.4	(30%-140%)
13C-205-OcCB		1880	2000	pg/L	94.2	(30%-140%)
13C-206-NoCB		2020	2000	pg/L	101	(30%-140%)
13C-208-NoCB		1810	2000	pg/L	90.4	(30%-140%)
13C-209-DeCB		1840	2000	pg/L	91.9	(30%-140%)
13C-28-TrCB		1330	2000	pg/L	66.7	(40%-125%)
13C-111-PeCB		1700	2000	pg/L	84.9	(40%-125%)
13C-178-HpCB		1830	2000	pg/L	91.6	(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:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12029214**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 46738**				
Client ID:	**LCSD for batch 46738**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/07/2021 18:56**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d07may21a-4**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		400	pg/L	1.90	100
2051-62-9	3-MoCB		437	pg/L	2.42	100
13029-08-8	4-DiCB		430	pg/L	13.5	100
2050-68-2	15-DiCB		476	pg/L	19.2	100
38444-73-4	19-TrCB		461	pg/L	2.68	100
38444-90-5	37-TrCB		414	pg/L	7.02	100
15968-05-5	54-TeCB		1020	pg/L	1.18	100
32598-13-3	77-TeCB		846	pg/L	7.48	100
70362-50-4	81-TeCB		725	pg/L	6.90	100
56558-16-8	104-PeCB		1040	pg/L	1.06	100
32598-14-4	105-PeCB		858	pg/L	4.86	100
74472-37-0	114-PeCB		1040	pg/L	4.38	100
31508-00-6	118-PeCB		1020	pg/L	4.30	100
65510-44-3	123-PeCB		907	pg/L	4.30	100
57465-28-8	126-PeCB		942	pg/L	5.40	100
33979-03-2	155-HxCB		1020	pg/L	1.00	100
38380-08-4	156-HxCB	C	2050	pg/L	6.24	200
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		961	pg/L	4.50	100
32774-16-6	169-HxCB		899	pg/L	5.36	100
74487-85-7	188-HpCB		977	pg/L	1.42	100
39635-31-9	189-HpCB		927	pg/L	2.08	100
2136-99-4	202-OcCB		1580	pg/L	1.56	100
74472-53-0	205-OcCB		1330	pg/L	1.98	100
40186-72-9	206-NoCB		1310	pg/L	2.60	100
52663-77-1	208-NoCB		1560	pg/L	1.98	100
2051-24-3	209-DeCB		1480	pg/L	3.12	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		867	2000	pg/L	43.3	(15%-140%)
13C-3-MoCB		912	2000	pg/L	45.6	(15%-140%)
13C-4-DiCB		1120	2000	pg/L	56.2	(30%-140%)
13C-15-DiCB		1270	2000	pg/L	63.3	(30%-140%)
13C-19-TrCB		1270	2000	pg/L	63.3	(30%-140%)
13C-37-TrCB		905	2000	pg/L	45.3	(30%-140%)
13C-54-TeCB		908	2000	pg/L	45.4	(30%-140%)
13C-77-TeCB		1440	2000	pg/L	71.8	(30%-140%)
13C-81-TeCB		1480	2000	pg/L	74.0	(30%-140%)
13C-104-PeCB		1230	2000	pg/L	61.5	(30%-140%)
13C-105-PeCB		1370	2000	pg/L	68.5	(30%-140%)
13C-114-PeCB		1400	2000	pg/L	69.8	(30%-140%)
13C-118-PeCB		1360	2000	pg/L	68.0	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2104C54**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12029214**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 46738**				
Client ID:	**LCSD for batch 46738**			**Prep Basis:**	**As Received**
Batch ID:	**46817**	**Method:**	**EPA Method 1668A**		
Run Date:	**05/07/2021 18:56**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d07may21a-4**			**Dilution:**	**1**
Prep Batch:	**46738**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**04-MAY-21**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		1430	2000	pg/L	71.7	(30%-140%)
13C-126-PeCB		1460	2000	pg/L	73.2	(30%-140%)
13C-155-HxCB		1370	2000	pg/L	68.5	(30%-140%)
13C-156-HxCB	C	2960	4000	pg/L	74.1	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		1530	2000	pg/L	76.7	(30%-140%)
13C-169-HxCB		1560	2000	pg/L	78.2	(30%-140%)
13C-188-HpCB		1270	2000	pg/L	63.3	(30%-140%)
13C-189-HpCB		1390	2000	pg/L	69.6	(30%-140%)
13C-202-OcCB		1390	2000	pg/L	69.4	(30%-140%)
13C-205-OcCB		1720	2000	pg/L	85.8	(30%-140%)
13C-206-NoCB		1850	2000	pg/L	92.3	(30%-140%)
13C-208-NoCB		1610	2000	pg/L	80.4	(30%-140%)
13C-209-DeCB		1610	2000	pg/L	80.7	(30%-140%)
13C-28-TrCB		1280	2000	pg/L	64.2	(40%-125%)
13C-111-PeCB		1620	2000	pg/L	81.2	(40%-125%)
13C-178-HpCB		1720	2000	pg/L	85.9	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

ANALYTICAL REPORT

June 01, 2021

Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1346065
Samples Received:	04/30/2021
Project Number:	
Description:	
Report To:	Jackie Bolte

Entire Report Reviewed By:

John Hawkins
Project Manager

Pace Analytical National
12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

SAMPLE SUMMARY

2104C54-001I RG-NORTH-20210428 L1346065-01 Non-Potable Water

Collected by	Collected date/time	Received date/time
	04/28/21 12:30	04/30/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 900	WG1676923	1	05/26/21 13:10	05/28/21 22:57	JMR	Mt. Juliet, TN

2104C54-003I RG-ISLETA-20210429 L1346065-02 Non-Potable Water

Collected by	Collected date/time	Received date/time
	04/29/21 08:30	04/30/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 900	WG1676923	1	05/26/21 13:10	05/28/21 22:57	JMR	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Radiochemistry by Method 900

Analyte	Result pCi/l	Qualifier	Uncertainty + / -	MDA pCi/l	Analysis Date date / time	Batch
GROSS ALPHA	2.96		0.776	0.832	05/28/2021 22:57	WG1676923

COC requested adjusted gross alpha be reported. AMAFCA spoke with HEAL about result & reporting. Per HEAL the adjusted gross alpha will be be lower than the gross alpha reported here, both of which are well below the WQS of 15 pCi/l.

Radiochemistry by Method 900

Analyte	Result	Qualifier	Uncertainty	MDA	Analysis Date	Batch
	pCi/l		+ / -	pCi/l	date / time	
GROSS ALPHA	4.32		0.983	1.02	05/28/2021 22:57	WG1676923

COC requested adjusted gross alpha be reported. AMAFCA spoke with HEAL about result & reporting. Per HEAL the adjusted gross alpha will be be lower than the gross alpha reported here, both of which are well below the WQS of 15 pCi/l.

QUALITY CONTROL SUMMARY

L1346065-01,02

Method Blank (MB)

(MB) R3661069-1 05/28/21 22:57

Analyte	MB Result	MB Qualifier	MB MDA
	pCi/l		pCi/l
GROSS ALPHA	-0.263	U	0.504

L1346065-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1346065-02 05/28/21 22:57 • (DUP) R3661069-5 05/28/21 22:57

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP RER	DUP Qualifier	DUP RPD Limits	DUP RER Limit
	pCi/l	pCi/l		%			%	
GROSS ALPHA	4.32	5.73	1	28.1	0.880		20	3

Laboratory Control Sample (LCS)

(LCS) R3661069-2 05/28/21 22:57

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	pCi/l	pCi/l	%	%	
GROSS ALPHA	15.0	13.7	91.3	80.0-120	

L1346065-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1346065-01 05/28/21 22:57 • (MS) R3661069-3 05/28/21 22:57 • (MSD) R3661069-4 05/28/21 22:57

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	MS RER	RPD Limits
	pCi/l	pCi/l	pCi/l	pCi/l	%	%		%			%		%
GROSS ALPHA	18.8	2.96	23.3	23.3	108	108	1	70.0-130			0.000		20

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDA	Minimum Detectable Activity.
Rec.	Recovery.
RER	Replicate Error Ratio.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
U	Below Detectable Limits: Indicates that the analyte was not detected.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

B158

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

SUB CONTRATOR: **Pace TN**	COMPANY: **PACE TN**	PHONE: **(800) 767-5859**	FAX: **(615) 758-5859**
ADDRESS: **12065 Lebanon Rd**		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: **Mt. Juliet, TN 37122**			

L1346065

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2104C54-001H	RG-North-20210428	500HDPEH2SO4	Aqueous	4/28/2021 12:30:00 PM	1	COD
2	2104C54-001I	RG-North-20210428	1LHDPEHNO3	Aqueous	4/28/2021 12:30:00 PM	1	Adjusted Gross Alpha -01
3	2104C54-001J	RG-North-20210428	120mL	Aqueous	4/28/2021 12:30:00 PM	1	Cr 6
4	2104C54-003H	RG-Isleta-20210429	500HDPEH2SO4	Aqueous	4/29/2021 8:30:00 AM	1	COD
5	2104C54-003I	RG-Isleta-20210429	1LHDPEHNO3	Aqueous	4/29/2021 8:30:00 AM	1	Adjusted Gross Alpha -02
6	2104C54-003J	RG-Isleta-20210429	120mL	Aqueous	4/29/2021 8:30:00 AM	1	Cr 6

Sample Receipt Checklist

COC Seal Present/Intact: Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
RAD Screen <0.5 mR/hr: Y N

If Applicable
VOA Zero Headspace: Y N
Pres.Correct/Check: Y N

5016 1223 7735

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.

Relinquished By: ITG	Date: 4/29/2021	Time: 11:53 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 4/30/21	Time: 0915

TAT: Standard ☑ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 2.1+0=2.1 °C #307 Attempt to Cool ?
Comments:

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**

01-Jun-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-59819**	SampType: **MBLK**	TestCode: **EPA Method 1664B**
Client ID: **PBW**	Batch ID: **59819**	RunNo: **77203**
Prep Date: **5/5/2021**	Analysis Date: **5/5/2021**	SeqNo: **2737669** 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-59819**	SampType: **LCS**	TestCode: **EPA Method 1664B**
Client ID: **LCSW**	Batch ID: **59819**	RunNo: **77203**
Prep Date: **5/5/2021**	Analysis Date: **5/5/2021**	SeqNo: **2737670** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	35.6	10.0	40.00	0	89.0	78	114			

Sample ID: **LCSD-59819**	SampType: **LCSD**	TestCode: **EPA Method 1664B**
Client ID: **LCSS02**	Batch ID: **59819**	RunNo: **77203**
Prep Date: **5/5/2021**	Analysis Date: **5/5/2021**	SeqNo: **2737671** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	35.2	10.0	40.00	0	88.0	78	114	1.13	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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**

01-Jun-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-59770**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **59770**	RunNo: **77121**
Prep Date: **5/3/2021**	Analysis Date: **5/4/2021**	SeqNo: **2734655** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Chromium	ND	0.0060								
Magnesium	ND	1.0								

Sample ID: **LLLCS-59770**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **59770**	RunNo: **77121**
Prep Date: **5/3/2021**	Analysis Date: **5/4/2021**	SeqNo: **2734657** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.57	1.0	0.5000	0	113	50	150			J
Chromium	0.0067	0.0060	0.006000	0	112	50	150			
Magnesium	0.55	1.0	0.5000	0	111	50	150			J

Sample ID: **LCS-59770**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **59770**	RunNo: **77121**
Prep Date: **5/3/2021**	Analysis Date: **5/4/2021**	SeqNo: **2734659** 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			
Chromium	0.56	0.0060	0.5000	0	112	85	115			
Magnesium	55	1.0	50.00	0	110	85	115			

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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**
01-Jun-21

Client: AMAFCA
Project: CMC

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **B77076**	RunNo: **77076**
Prep Date:	Analysis Date: **4/30/2021**	SeqNo: **2732177** 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								

Sample ID: **LCSLL**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **B77076**	RunNo: **77076**
Prep Date:	Analysis Date: **4/30/2021**	SeqNo: **2732178** 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	103	50	150			
Lead	0.00052	0.00050	0.0005000	0	104	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **B77076**	RunNo: **77076**
Prep Date:	Analysis Date: **4/30/2021**	SeqNo: **2732179** 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	96.9	85	115			
Lead	0.012	0.00050	0.01250	0	97.7	85	115			

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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**

01-Jun-21

Client: AMAFCA

Project: CMC

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R77061**	RunNo: **77061**
Prep Date:	Analysis Date: **4/29/2021**	SeqNo: **2731791** 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: **R77061**	RunNo: **77061**
Prep Date:	Analysis Date: **4/29/2021**	SeqNo: **2731792** 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	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.8	90	110			

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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**

01-Jun-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-59722**	SampType: **MBLK**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **PBW**	Batch ID: **59722**	RunNo: **77329**
Prep Date: **4/30/2021**	Analysis Date: **5/11/2021**	SeqNo: **2744012** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	ND	0.10								
Surr: Decachlorobiphenyl	2.5		2.500		99.8	41.7	129			
Surr: Tetrachloro-m-xylene	2.0		2.500		78.2	31.8	88.5			

Sample ID: **MB-59722**	SampType: **MBLK**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **PBW**	Batch ID: **59722**	RunNo: **77329**
Prep Date: **4/30/2021**	Analysis Date: **5/11/2021**	SeqNo: **2744013** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	ND	0.10								
Surr: Decachlorobiphenyl	2.5		2.500		98.7	41.7	129			
Surr: Tetrachloro-m-xylene	2.0		2.500		79.1	31.8	88.5			

Sample ID: **LCS-59722**	SampType: **LCS**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **LCSW**	Batch ID: **59722**	RunNo: **77329**
Prep Date: **4/30/2021**	Analysis Date: **5/11/2021**	SeqNo: **2744014** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	0.44	0.10	0.5000	0	88.0	17.4	145			
Surr: Decachlorobiphenyl	2.4		2.500		97.8	41.7	129			
Surr: Tetrachloro-m-xylene	1.6		2.500		62.6	31.8	88.5			

Sample ID: **LCS-59722**	SampType: **LCS**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **LCSW**	Batch ID: **59722**	RunNo: **77329**
Prep Date: **4/30/2021**	Analysis Date: **5/11/2021**	SeqNo: **2744015** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	0.44	0.10	0.5000	0	88.7	17.4	145			
Surr: Decachlorobiphenyl	2.5		2.500		99.5	41.7	129			
Surr: Tetrachloro-m-xylene	1.7		2.500		66.2	31.8	88.5			

Sample ID: **LCSD-59722**	SampType: **LCSD**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **LCSS02**	Batch ID: **59722**	RunNo: **77329**
Prep Date: **4/30/2021**	Analysis Date: **5/11/2021**	SeqNo: **2744016** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	0.42	0.10	0.5000	0	83.7	17.4	145	5.05	20	
Surr: Decachlorobiphenyl	2.3		2.500		91.0	41.7	129	0	20	
Surr: Tetrachloro-m-xylene	1.4		2.500		55.5	31.8	88.5	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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**

01-Jun-21

Client: AMAFCA

Project: CMC

Sample ID: **LCSD-59722**	SampType: **LCSD**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **LCSS02**	Batch ID: **59722**	RunNo: **77329**
Prep Date: **4/30/2021**	Analysis Date: **5/11/2021**	SeqNo: **2744017** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	0.41	0.10	0.5000	0	83.0	17.4	145	6.63	20	
Surr: Decachlorobiphenyl	2.2		2.500		89.7	41.7	129	0	20	
Surr: Tetrachloro-m-xylene	1.5		2.500		58.2	31.8	88.5	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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**
01-Jun-21

Client: AMAFCA
Project: CMC

Sample ID: **MB-59737**	SampType: **MBLK**	TestCode: **SM5210B: BOD**							
Client ID: **PBW**	Batch ID: **59737**	RunNo: **77198**							
Prep Date: **4/30/2021**	Analysis Date: **5/5/2021**	SeqNo: **2737436**	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-59737**	SampType: **LCS**	TestCode: **SM5210B: BOD**							
Client ID: **LCSW**	Batch ID: **59737**	RunNo: **77198**							
Prep Date: **4/30/2021**	Analysis Date: **5/5/2021**	SeqNo: **2737437**	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	85.9	84.6	115.4			

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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**
01-Jun-21

Client: AMAFCA
Project: CMC

Sample ID: **MB-59720**	SampType: **MBLK**	TestCode: **SM 9223B Fecal Indicator: E. coli MPN**
Client ID: **PBW**	Batch ID: **59720**	RunNo: **77078**
Prep Date: ***4/29/2021***	Analysis Date: ***4/30/2021***	SeqNo: **2732197** Units: **MPN/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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**

01-Jun-21

Client: AMAFCA

Project: CMC

Sample ID: **MB**	SampType: **MBLK**	TestCode: **SM 4500 NH3: Ammonia**
Client ID: **PBW**	Batch ID: **R77333**	RunNo: **77333**
Prep Date:	Analysis Date: **5/12/2021**	SeqNo: **2744046** 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: **R77333**	RunNo: **77333**
Prep Date:	Analysis Date: **5/12/2021**	SeqNo: **2744047** 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.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**
01-Jun-21

Client: AMAFCA
Project: CMC

Sample ID: **MB-59857**	SampType: **MBLK**	TestCode: **EPA Method 365.1: Total Phosphorous**
Client ID: **PBW**	Batch ID: **59857**	RunNo: **77273**
Prep Date: **5/6/2021**	Analysis Date: **5/7/2021**	SeqNo: **2740716** 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-59857**	SampType: **LCS**	TestCode: **EPA Method 365.1: Total Phosphorous**
Client ID: **LCSW**	Batch ID: **59857**	RunNo: **77273**
Prep Date: **5/6/2021**	Analysis Date: **5/7/2021**	SeqNo: **2740717** 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	102	90	110			

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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**
01-Jun-21

Client: AMAFCA
Project: CMC

Sample ID: **MB-59817**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **59817**	RunNo: **77202**
Prep Date: **5/5/2021**	Analysis Date: **5/6/2021**	SeqNo: **2737645** 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-59817**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **59817**	RunNo: **77202**
Prep Date: **5/5/2021**	Analysis Date: **5/6/2021**	SeqNo: **2737646** 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.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**

01-Jun-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-59967**	SampType: **MBLK**	TestCode: **SM 4500 Norg C: TKN**
Client ID: **PBW**	Batch ID: **59967**	RunNo: **77358**
Prep Date: **5/12/2021**	Analysis Date: **5/13/2021**	SeqNo: **2745155** 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-59967**	SampType: **LCS**	TestCode: **SM 4500 Norg C: TKN**
Client ID: **LCSW**	Batch ID: **59967**	RunNo: **77358**
Prep Date: **5/12/2021**	Analysis Date: **5/13/2021**	SeqNo: **2745156** 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
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2104C54**

01-Jun-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-59803**	SampType: **MBLK**	TestCode: **SM 2540D: TSS**							
Client ID: **PBW**	Batch ID: **59803**	RunNo: **77153**							
Prep Date: **5/4/2021**	Analysis Date: **5/5/2021**	SeqNo: **2735841**	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-59803**	SampType: **LCS**	TestCode: **SM 2540D: TSS**							
Client ID: **LCSW**	Batch ID: **59803**	RunNo: **77153**							
Prep Date: **5/4/2021**	Analysis Date: **5/5/2021**	SeqNo: **2735842**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	89	4.0	92.10	0	96.6	83.71	119.44			

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
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **AMAFCA** Work Order Number: **2104C54** RcptNo: **1**

Received By: **Juan Rojas** **4/29/2021 9:48:00 AM**

Completed By: **Desiree Dominguez** **4/29/2021 11:29:04 AM**

Reviewed By: JR 4/29/21

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 12 (<2 or >12 unless noted)

Adjusted? no

Checked by: cm 4/29/21

Special Handling (if applicable)

15. 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:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.7	Good				
2	3.0	Good				

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#: pchavez@AMAFCA.org

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler: C. Johanneson - DBSA

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 3.8-0.1=3.7 (°C)

3.1-0.1=3.0

HEAL No. 2104C54

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	See attached sheet	Ecoli - enumerate
4-28-21	1230	AQ	RGNorth-20210428	numerous		-001/002											X	
4-29-21	0830	AQ	RGIsleta-20210429	numerous		003/004 ~~003~~ DAO 4/29/21											X	
4-29-21	0645	AQ	RGAlameda-20210429	1		-005												X
—	—	AQ	Trip blank	3		-006											X	

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4-29-21	0945		CDO		4/29/21	9:48
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:
RGNorth-20210428 ecoli delivered on 4/28/21
Attached Collaborative Monitoring Coop sheet
PCB's analysis by EPA method 1668

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.

Collaborative Monitoring Cooperative - Analyses List
Attach to Chain of Custody

Please refer to attached NPDES Permit No. NMR04A00 Appendix F. Methods and minimum quantification levels (MQL's) will be those approved under 40 CFR 136 and specified in the attached permit

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	0.014
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	8081	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-enumeration			SM 9223B	
pH			SM 4500	
Phosphorus		Dissolved	365.1	100
Phosphorus		Total	365.1	100
Chromium IV		Total	3500Cr C-2011	100

Samplers Chad J, Shannon W

CMC Sampling Data Sheet

Site Identification: RGNorth

Notes: Cloudy, light rain. pH sonde required multiple calibrations

Full Suite Sample Date and Time:	4/28/21 1230
Full Sample Identification:	RGNorth- 20210428
QC Samples:	Duplicate / (None) QC Sample ID:
QC samples require a DIFFERENT sample time than the environmental sample. QC Sample time:	

Full Suite Collection Point : MRGCD DAM

Full Suite Sample Volume: ~8 gal Collection Time Start: 1140 End: 1225

Field Parameters for each 2-gallon grab

Grab	Time	Temp (°C)	pH	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)
1	1140	11.79	7.10	315	8.85	81.5
2	1155	11.06	7.34	312	8.04	73.0
3	1210	11.09	7.59	312	9.17	83.6
4	1225	11.37	8.16	312	8.46	77.3
Composite	1230	11.59	7.61	476	8.81	80.9

☐Turbid Water ☒Color light brown to clear ☐Solids ☐Oil/Sheen ☒Foam ☐Odor_____

Analytical -see 2020 COC table

☒Site Photo ☒Sample Photo

Samplers C. Johannes

CMC Sampling Data Sheet

Site Identification: Isleta Dam

Notes: Clear, Sunny. pH sonde required multiple calibrations/check

Full Suite Sample Date and Time:	4/29/21 0830
Full Sample Identification:	Isleta- RG Isleta-20210429
QC Samples: Duplicate (None)	QC Sample ID:
QC samples require a DIFFERENT sample time than the environmental sample. QC Sample time:	

Full Suite Collection Point : Isleta dam

Full Suite Sample Volume: 8 6 gal Collection Time Start: 0745 End: 0830

Field Parameters for each 2-gallon grab

Grab	Time	Temp (°C)	pH	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)
1	0745	10.34	7.62	417	8.38	74.7
2	0800	10.66	7.63	396	8.54	76.7
3	0815	11.02	7.74	397	8.73	79.2
4	0830	10.85	7.65	394	8.70	78.5
Composite	0830	10.96	7.69	396	8.73	78.8

☐Turbid Water ☒Color lt brown ☒Solids ☐Oil/Sheen ☐Foam ☐Odor_____

Analytical -see 2020 COC table

☒Site Photo ☒Sample Photo

Samplers C. Johansen, S. Williams

CMC Sampling Data Sheet

Site Identification: RG Alameda

Notes:

Full Suite Sample Date and Time:	4/28/21 1340
Full Sample Identification:	RG Alameda-20210428
QC Samples: Duplicate / (None)	QC Sample ID:
QC samples require a DIFFERENT sample time than the environmental sample. QC Sample time:	

Full Suite Collection Point : Bridge

Full Suite Sample Volume: 1/2 gal Collection Time Start: 1340 End: 1340

Field Parameters for each 2-gallon grab

Grab	Time	Temp (°C)	pH	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)
1	1340	12.47	6.12	333	10.57	95.2
2						
3						
4						
Composite						

☐Turbid Water ☒Color Brown ☒Solids ☐Oil/Sheen ☐Foam ☐Odor_____

Analytical -see 2020 COC table

☒Site Photo ☒Sample Photo

Samplers C Johansen, E. Bastow

CMC Sampling Data Sheet

Site Identification: RG-Alameda

Notes:

Full Suite Sample Date and Time:	4/29/21 0645
Full Sample Identification:	RG-Alameda-20210429
QC Samples: Duplicate / None	QC Sample ID:
QC samples require a DIFFERENT sample time than the environmental sample. QC Sample time:	

Full Suite Collection Point : Bridge

Full Suite Sample Volume: 1/2 gal Collection Time Start: 0645 End: 0648

Field Parameters for each 2-gallon grab

Grab	Time	Temp (°C)	pH	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)
1	0645	10.33	7.31	342	8.76	78.2
2						
3						
4						
Composite						

☒ *Turbid Water* ☐ *Color* Brown ☐ *Solids* ☐ *Oil/Sheen* ☒ *Foam* ☐ *Odor*_____

Analytical -see 2020 COC table

☒ Site Photo ☒ Sample Photo

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#: pchavez@amafca.org

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler: C. Johannesen - DBSA

On Ice: ☐ Yes ☐ No

# of Coolers:

Cooler Temp (including CF): (°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 Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	See attached sheet	E.coli - presence/absent				
4/28/21	1230	AQ	RGNorth-20210428	numerous													X					
4-29-21	0830	AQ	RGIsleta-20210429	numerous													X					
4-29-21	0645	AQ	RGAlameda 20210429	1														X				
—	—	AQ	Trip blank	3													X					

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4/29/21	0945					
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:

RGNorth-20210428 will be delivered on 4/30/21

Attached Collaborative Monitoring Corp sheet

PCBs analysis by EPA method 1668

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.

Chain-of-Custody Record

Client: AMAFCA

Mailing Address:

Phone #:

email or Fax#: pchavez@amafca.org

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler: C Johannesen - DBA

On Ice: ☐ Yes ☐ No

# of Coolers:

Cooler Temp(including CF): (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	see attached for comment	E.coli - enumerated
4-28-21	1230	AQ	RG North-20210428	1														X
"	1340	AQ	RG Alameda-20210428	1														X

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
4-28-21	1550					

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.

ATTACHMENT 2

FY 2021 DRY SEASON COMPLETED DATA VERIFICATION AND VALIDATION (V&V) FORMS

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2021 (April 2021 – Dry Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande North – 04/28/2021
Version of Verification/Validation Procedures: QAPP – CMC SOP #2 (2/2015); AMAFCA SOP #5 (2/2019)

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:*** 8/16/2021

- -

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” as (Dissolved)).

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
Rio Grande North	4/28/2021	Lab report lists Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	Notified AMAFCA of this and verified with HEAL. BHI added note to the lab report.	Yes
______	______	______	______	______

*Note – HEAL Lab report order number 2104C54.

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 8/16/2021

- -

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:*** 8/16/2021

- -

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	04/28/2021	Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	BHI added note to the lab report.
Rio Grande North	04/28/2021	Lab report provides Gross Alpha result but did not report Adjusted Gross Alpha.	AMAFCA spoke with Lab. Results well below WQS. BHI added note to the lab report.

*Note – HEAL Lab report order number 2104C54.
Total number of occurrences: 2

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 8/16/2021

- -

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:*** 8/16/2021

- -

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.
*Note – Lab reports lists pH with hold time flag. Database uses field data reported pH, so this is hold time is not applicable.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 8/16/2021

- -

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:*** 8/16/2021

****

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

8/16/2021

Data Verifier/Validator Signature Date

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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 2021 (April 2021 – Dry Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande South – 04/29/2021
Version of Verification/Validation Procedures: QAPP – CMC SOP #2 (2/2015); AMAFCA SOP #5 (2/2019)

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:*** 8/16/2021

- -

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” as (Dissolved)).

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?
Rio Grande South	4/29/2021	Lab report lists Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	Notified AMAFCA of this and verified with HEAL. BHI added note to the lab report.	Yes
______	______	______	______	______

*Note – HEAL Lab report order number 2104C54.

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 8/16/2021

- -

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:*** 8/16/2021

- -

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 South	04/29/2021	Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	BHI added note to the lab report.
Rio Grande South	04/29/2021	Lab report provides Gross Alpha result but did not report Adjusted Gross Alpha.	AMAFCA spoke with Lab. Results well below WQS. BHI added note to the lab report.

*Note – HEAL Lab report order number 2104C54.
Total number of occurrences: 2

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 8/16/2021

- -

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:*** 8/16/2021

- -

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.
*Note – Lab reports lists pH with hold time flag. Database uses field data reported pH, so this is hold time is not applicable.
Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 8/16/2021

- -

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:*** 8/16/2021

****

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

8/16/2021

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 2021 (April 2021 – Dry Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande at Alameda (E. coli only samples) – 04/28/2021 & 04/29/2021
Version of Verification/Validation Procedures: QAPP – CMC SOP #2 (2/2015); AMAFCA SOP #5 (2/2019)

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: **<u>0</u>**

☒ **Step 1 Completed** ***Initials:*** SJG ***Date:*** 8/16/2021

- -

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:*** 8/16/2021

- -

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:*** 8/16/2021

- -

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

Total number of occurrences: 0

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 8/16/2021

- -

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:*** 8/16/2021

- -

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.

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Total number of occurrences: 0

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 8/16/2021

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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:*** 8/16/2021

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Sarah Gamez 8/16/2021

Data Verifier/Validator Signature Date

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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
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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	

Bohannan Huston

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M E M O R A N D U M

DATE: April 22, 2021

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

FROM: Craig Hoover, PE
Sarah Ganley, PE

SUBJECT: **CMC Wet Season, Wet Weather Stormwater Monitoring**
Data Verification, Analysis Results Database, and Reporting Memo
FY 2021 Wet Season (July 1, 2020 to October 31, 2020)

Notification of In-Stream Water Quality Exceedances

For downstream notification purposes, the following parameters for in-stream samples taken in the Rio Grande for the FY 2021 wet season had results that exceeded applicable water quality standards for one or more samples: E. coli and Polychlorinated Biphenyls (PCBs). Table 1 summarizes the samples with exceedances and the applicable water quality standard (WQS) that was exceeded. Additional details on the sampling results are provided in this memo.

Table 1: Parameters Detected Above Applicable Water Quality Standards
CMC FY 2021 Wet Season Monitoring

Sampling Date Location	Parameters, Applicable Water Quality Standard (WQS), and Results Exceeding Applicable WQS	
	E. coli	PCBs
	WQS: 88 CFU/100 ml Pueblo of Isleta Primary Contact Ceremonial & Recreational	**WQS: 0.00017 ug/L** Pueblo of Isleta Human Health Criteria (based on fish consumption only)
10/26/2020 Rio Grande North Angostura Diversion Dam	141 CFU/100ml	No Exceedance
10/26/2020 Rio Grande South Isleta Diversion Dam Pre-Storm Sample – E. coli Only	>2419.6 CFU/100ml	Not Tested
10/28/2020 Rio Grande at Alameda Bridge E. coli Only	98.5	Not Tested
10/28/2020 Rio Grande South Isleta Diversion Dam	>2419.6 CFU/100ml	0.000956 ug/L

Overview of Stormwater Monitoring Activity

Bohannan 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) 2021 (July 1, 2020 to June 30, 2021). 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 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 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 (MRG) Watershed Based Municipal Separate Storm Sewer System (MS4) Permit, NPDES Permit No. NMR04A000 ("WSB MS4 Permit").

The WSB MS4 Permit entered Administrative Continuance in December 2019 when U.S. Environmental Protection Agency (EPA) Region 6 did not issue a new MS4 Permit before the current MS4 Permit's expiration date. The MRG Technical Advisory Group (TAG) sent EPA a letter dated October 15, 2019, acknowledging Administrative Continuance after the expiration date of the 5-year Permit term. Until a new MS4 Permit is issued, there are no compliance monitoring requirements for the CMC in the Rio Grande. As identified in the CMC Monitoring Plan, the WSB MS4 Permit required 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 3). All Permit required samples have been obtained by the CMC, as well as the sample obtained in FY 2021 during Administrative Continuance; all CMC samples are summarized in Table 2 below.

Table 2: CMC Sample Summary
Compared to WSB MS4 Permit Requirements

No. of Storm Events Required to Sample	CMC-WSB MS4 Permit Required Samples per Season	FY (Date) Samples Obtained for CMC
1	#1 Wet Season	FY 2017 (8/10/2016)
2	#2 Wet Season	FY 2017 (9/12/2016)
3	#3 Wet Season	FY 2017 (9/21/2016)
4	#1 Dry Season	FY 2017 (11/21/2016)
5	#2 Dry Season	FY 2019 (3/13/2019)
6	Any Season	FY 2018 (Wet Season - 7/27/2017)
7	Any Season	FY 2018 (Wet Season - 9/27/2017)
Not Required	Wet Season	FY 2021 (10/28/2020)

During WSB MS4 Permit Administrative Continuance, the CMC members chose to continue sampling within the Rio Grande to support their MS4 program needs and gather additional data in support of the future MS4 Permit compliance. This memo reports on the wet weather stormwater monitoring activity for the FY 2021 wet season (July 1, 2020 to October 31, 2020).

Rio Grande North
Angostura Diversion Dam

Rio Grande
Alameda Blvd

Rio Grande South
Isleta Diversion Dam

MCMAHON BLVD
ROY AV
TRAMWAY RD
ALAMEDA BLVD
PASEO DEL NORTE
OSUNA RD
MONTANO RD
SAN MATEO BLVD
WYOMING BLVD
EUBANK BLVD
JUAN TABO BLVD
TRAMWAY BLVD
UNSER BLVD
MENAUL BLVD
2ND ST
JEFFERSON ST
LOUISIANA BLVD
LOMAS BLVD
CENTRAL AV
LEAD AV
ZUNI RD
BRIDGE BLVD
98TH ST
GIBSON BLVD
ATRISCO VISTA BLVD
DENNIS CHAVEZ BLVD
RIO BRAVO BLVD
COORS BLVD
ISLETA BLVD
BROADWAY BLVD
NM 47
40
25
550

Legend

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

N
W E
S

0 0.5 1 2
Miles

CMC Monitoring

Figure 1
Monitoring Locations

AMAFCA

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P:\20180302\WR\Reports\Preliminary & Draft\Figures\MXDs\Figure1-CMCMonitoringLocations.mxd
Author: eburn

The CMC Excel database was updated with the FY 2021 wet season, wet weather monitoring data as results were received. The database contains sample location, sample date, analyses conducted, methods used, applicable surface water quality standards (WQS), WSB MS4 Permit required Minimum Qualification Levels (MQL) and results. Any unusable data will be identified.

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 (BOD_5)
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, adjusted
Tetrahydrofuran
Benzo(a)pyrene
Benzo(b)fluoranthene (3, 4 Benzofluoranthene)
Benzo(k)fluoranthene
Chrysene
lndeno (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) was added to the parameter list to allow dissolved metal results to be compared to the applicable WQSs. 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 15 minutes of sample collection. All E. coli samples were submitted to the laboratory within eight (8) hours of collection in order to meet the specified hold time.

Sampling Locations:

The sampling locations are shown in Figure 1, page 3.

Rio Grande North – In-stream 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 – In-stream 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.

During this FY 2021 wet season, an E. coli only sampling point was added within the Rio Grande at Alameda Blvd. This is the location of the NMED defined stream segment divide. This sample point was added after discussion with NMED in February 2017 regarding potential refinements to E. coli loading calculations.

Sample Collection:

As mentioned previously, sample collection for the CMC is being conducted by DBS&A (through a separate on-call contract) as well as by CMC members. 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 Alameda and Rio Grande South locations.

DBS&A provided BHI with their field notes and field sample data (temperature, DO, specific conductivity, and pH) for the FY 2021 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 summary of the CMC comprehensive monitoring program activities completed for the FY 2021 wet season from July 2020 through October 2020. One (1) qualifying storm event was sampled and analyzed during the FY 2021 wet season.

- **October 26-28, 2020 – Qualifying Storm Event – Full Analysis of Samples.** A sample was collected at the Rio Grande North location beginning at 9:45 a.m. on October 26 and sent to the laboratory for an E. coli and BOD test. A pre-storm sample was collected at the Rio Grande South location beginning at 12:45 p.m. on October 26 and sent to the laboratory for an E. coli test. The CMC determined that the storm event beginning October 26 was a qualifying storm event. A sample in the Rio Grande at Alameda Blvd. was obtained at 12:05 p.m. on October 28. A Rio Grande South sample was collected beginning at 1:15 p.m. on October 28; the samples from the North (from October 26), Alameda Blvd., and South locations were taken to the HEAL laboratory for full parameter testing.

Stormwater Quality Database for CMC

As stated previously, there was one (1) qualifying storm event during the FY 2021 wet season, wet weather monitoring sampled by the CMC, which occurred October 26-28, 2020. DBS&A's field notes containing DO, pH, conductivity, and temperature measurements, as well as sampling comments have been received, and field results have been added to the database. Additionally, the HEAL lab 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.

Database Data Entry:

The CMC Excel database was updated with the FY 2021 wet season, wet weather monitoring data. The database contains sample locations, sample date, analyses conducted, methods used, applicable surface water quality standards (WQS), WSB MS4 Permit required Minimum Quantification Levels (MQL), and analysis results. The database was updated under this Task to include the Rio Grande at Alameda sample location. Applicable surface WQSs found in New Mexico Administrative Code (NMAC) 20.6.4, as well as the Pueblo of Isleta WQSs, 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.

Water quality data was entered into the database upon receipt of the lab reports. 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 qualifying storm events for both Rio Grande North and Rio Grande South locations were entered respectively into the database. In addition, the E. coli only samples from the Rio Grande Alameda location 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 (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 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.

There were not any CMC FY 2021 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 2021 Wet Season Assessment and Evaluation of Monitoring Results

The EPA approved WSB MS4 CMC Monitoring Plan, May 5, 2016, has 33 parameters to monitor at the Rio Grande North and Rio Grande South monitoring locations. Of these 33 parameters, 16 parameters were not detected in the FY 2021 wet season samples at either the Rio Grande North or South locations. Refer to Table 3 for a list of the parameters that were not detected.

Table 3: Parameters Not Detected
CMC FY 2021 Wet Season Monitoring

Parameters Not Detected	
COD	Dieldrin
Oil and Grease (N-Hexane Extractable Material)	Pentachlorophenol
Tetrahydrofuran	Benzidine
Benzo(a)pyrene	Benzo(a)anthracene
Benzo(b)fluoranthene (3, 4 Benzofluoranthene)	Dibenzofuran
Benzo(k)fluoranthene	Dibenzo(a,h)anthracene
Chrysene	Chromium VI (Hexavalent)
Indeno (1,2,3-cd) Pyrene	Bis (2-ethyhexyl) Phthalate (other names: Di(2-ethylhexly)phthalate, DEHP)

For the remaining 17 parameters on the CMC monitoring parameter list, only two (2) parameters (E. coli and PCBs) had exceedances of the applicable surface WQS found in New Mexico Administrative Code (NMAC) 20.6.4 and the Pueblo of Isleta WQS during the FY 2021 wet season. These exceedances are summarized on Table 1, page 1, and discussed below in further detail.

E. coli:

The E. coli results collected during the FY 2021 wet season are summarized in Table 4.

Table 4: E. coli Results
CMC FY 2021 Wet Season Monitoring

Date – Rio Grande Location	E. coli Results (CFU/100 ml)
October 26, 2020 – North	141
October 26, 2020 – South	>2419.6
October 28, 2020 – Alameda	98.5
October 28, 2020 – South	>2419.6

At the Rio Grande North location (upstream of the Albuquerque UA, at the Angostura Diversion Dam), one (1) sample was collected and tested for E. coli and the lab result exceeded the primary contact-single sample Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL), but was below the primary contact-single sample NMAC WQS (410 CFU/100 ml). At the Rio Grande South location (downstream of the MS4 UA), two (2) samples were collected and tested for E. coli and both of these samples had results that exceeded the Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL) and also exceeded the primary contact-single sample NMAC WQS (410 CFU/100 ml).

In addition, the CMC added an E. coli sample point in the Rio Grande at Alameda. This added analysis point was based on discussions with NMED in February 2017 on collecting actual data at the stream segment divide verses using an area percentage (as defined in the TMDL) for E. coli loading calculations. For the FY 2021 wet season storm event, a sample was collected at the Alameda location and the lab result exceeded the primary contact-single sample Pueblo of Isleta and Pueblo of Sandia WQS (88 CFU/100 mL), but was below the primary contact-single sample NMAC WQS (410 CFU/100 ml).

Monthly geometric mean values were not able to be calculated and compared to applicable WQSs because the CMC had only one (1) sample per location. As a reminder, in January 2017 the CMC members clarified with NMED that 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 while the lab reports are typically in units of MPN/100mL. The graph presented in this section uses units of CFU/100 mL to be consistent with the WQS units. Refer to Figure 2 for a graphical representation of E. coli results from October 2020.

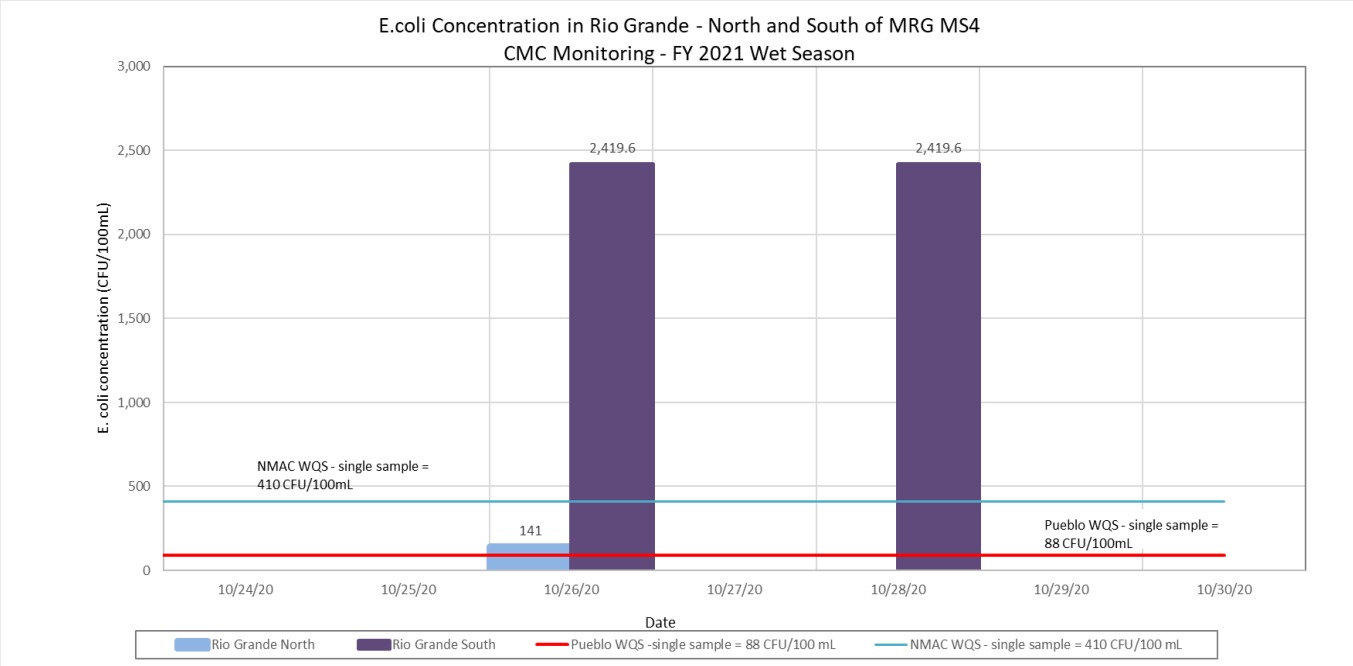

Figure 2: E. coli Results in Rio Grande
CMC Monitoring – FY 2021 Wet Season

PCBs:

There are multiple surface WQS values listed for PCBs in both the Pueblo of Isleta and the State of New Mexico standards for the various designated uses. The PCBs measured in samples collected from the Rio Grande during the FY 2021 wet season stormwater event were all below the minimum quantification level (MQL) established in EPA standards for the MS4 NPDES Permit (Appendix F, 0.2 ug/L for PCBs). The PCB results were also well below the New Mexico Surface WQSs and Pueblo of Isleta Surface WQSs for designated uses including drinking water (0.5 ug/L) and wildlife habitat, acute aquatic life, and chronic aquatic life (0.014 ug/L). However, the CMC sample from the Rio Grande South location was above the Pueblo of Isleta human health criteria (based on fish consumption only) WQS for surface waters. The human health-organism only criterion is based upon human consumption of fish and other aquatic life that bioaccumulate contaminants over time. The PCB results from 2016 through 2020 are shown in Figure 3 relative to several of the WQSs for PCBs.

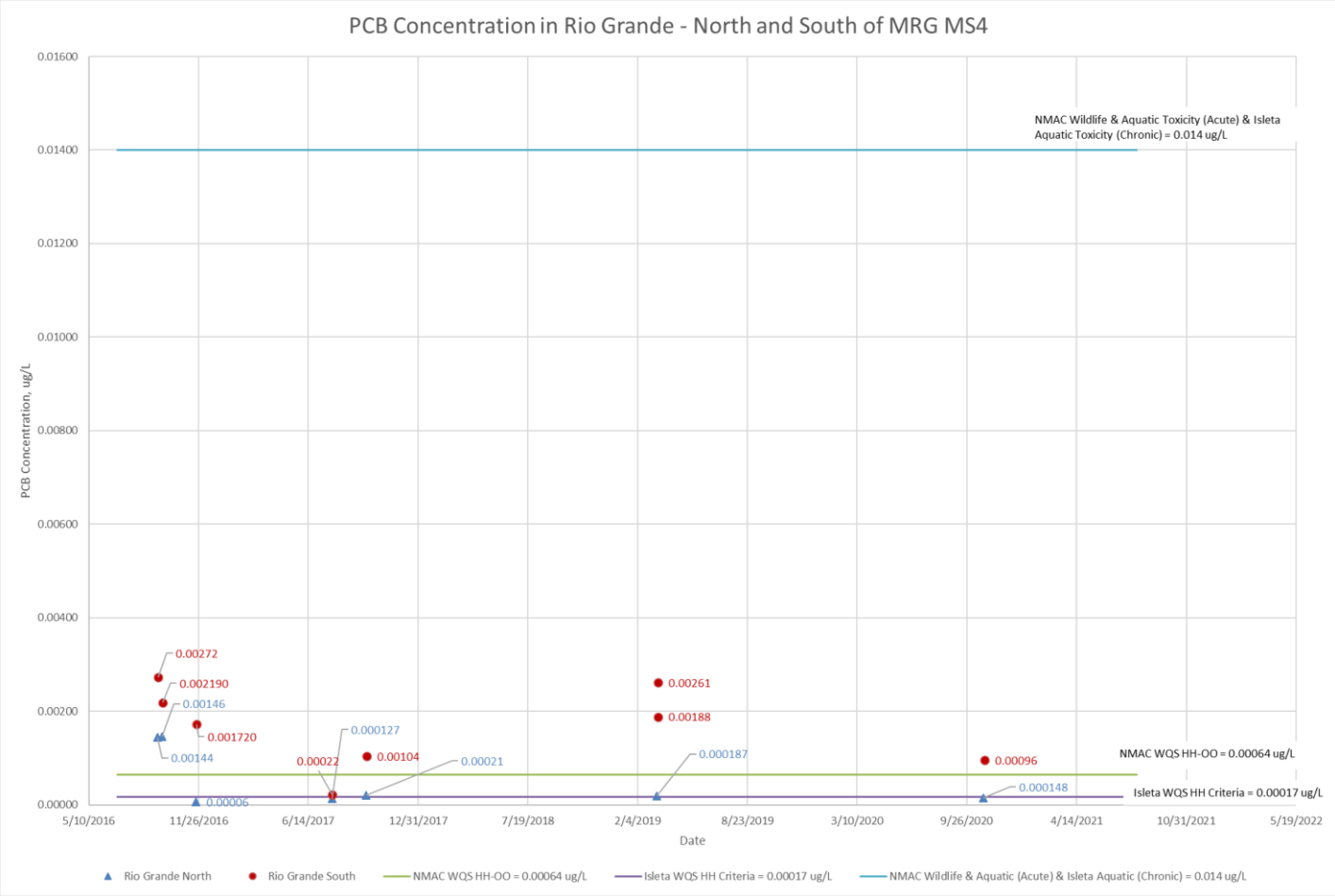

Figure 3: PCB Monitoring Results in Rio Grande
CMC Monitoring – 2016 - 2020

Dissolved Oxygen and Temperature:

Two (2) 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 and temperature. These parameters did not have any surface water quality exceedances during the FY 2021 wet season sampling.

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 2021 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 from any of the CMC samples from 2016 to 2020. Refer to Figure 4 for CMC dissolved oxygen results and comparison to applicable WQSs.

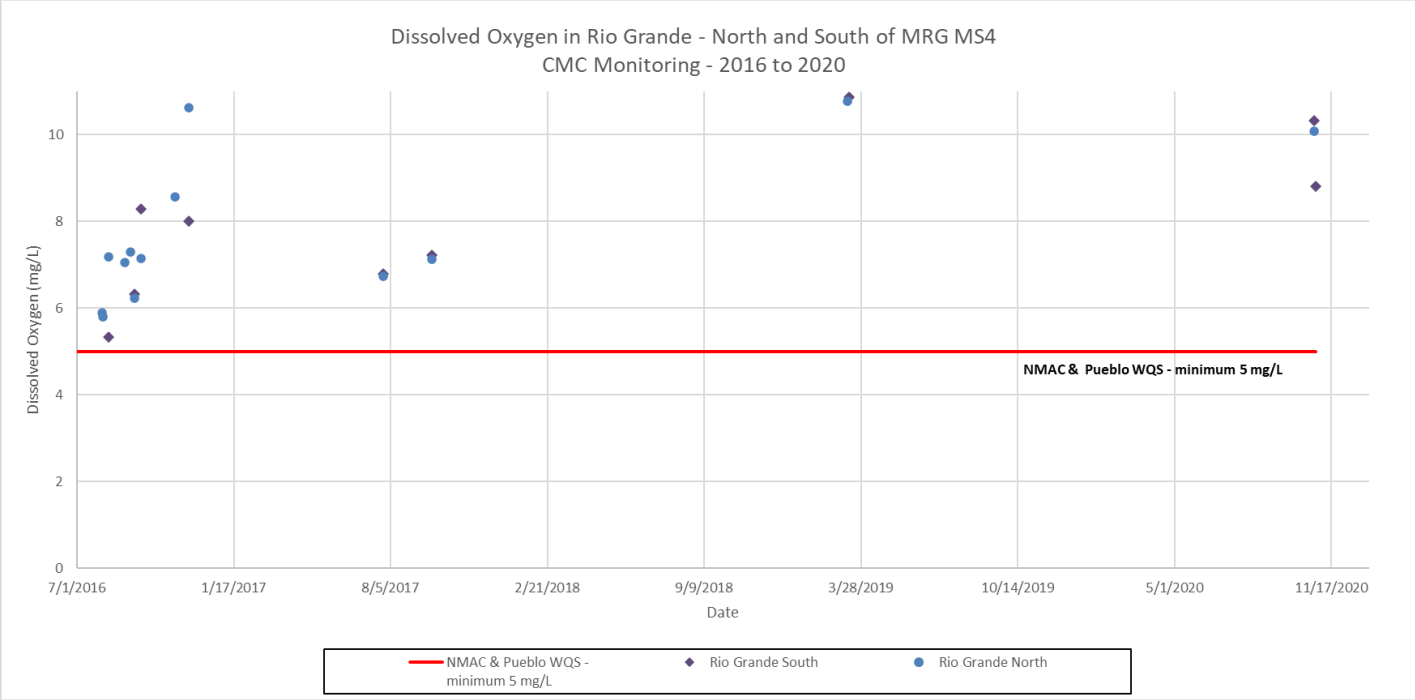

Figure 4: Dissolved Oxygen Results in Rio Grande
CMC Monitoring – 2016 - 2020

Temperature is listed in the WSB MS4 Permit as a special condition (currently only applicable to the City of Albuquerque and AMAFCA). Past data submitted to EPA and NMED by the MS4 permittees have proven that stormwater discharges into the Rio Grande are not raising the Rio Grande temperature above the WQSs. The data collected during this FY 2021 wet season monitoring also supports this conclusion. All the temperature field readings taken in the Rio Grande during the CMC FY 2021 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 5 for temperature results and comparison to applicable WQSs for all CMC samples taken upstream and downstream of the MRG MS4 area from 2016 to 2020.

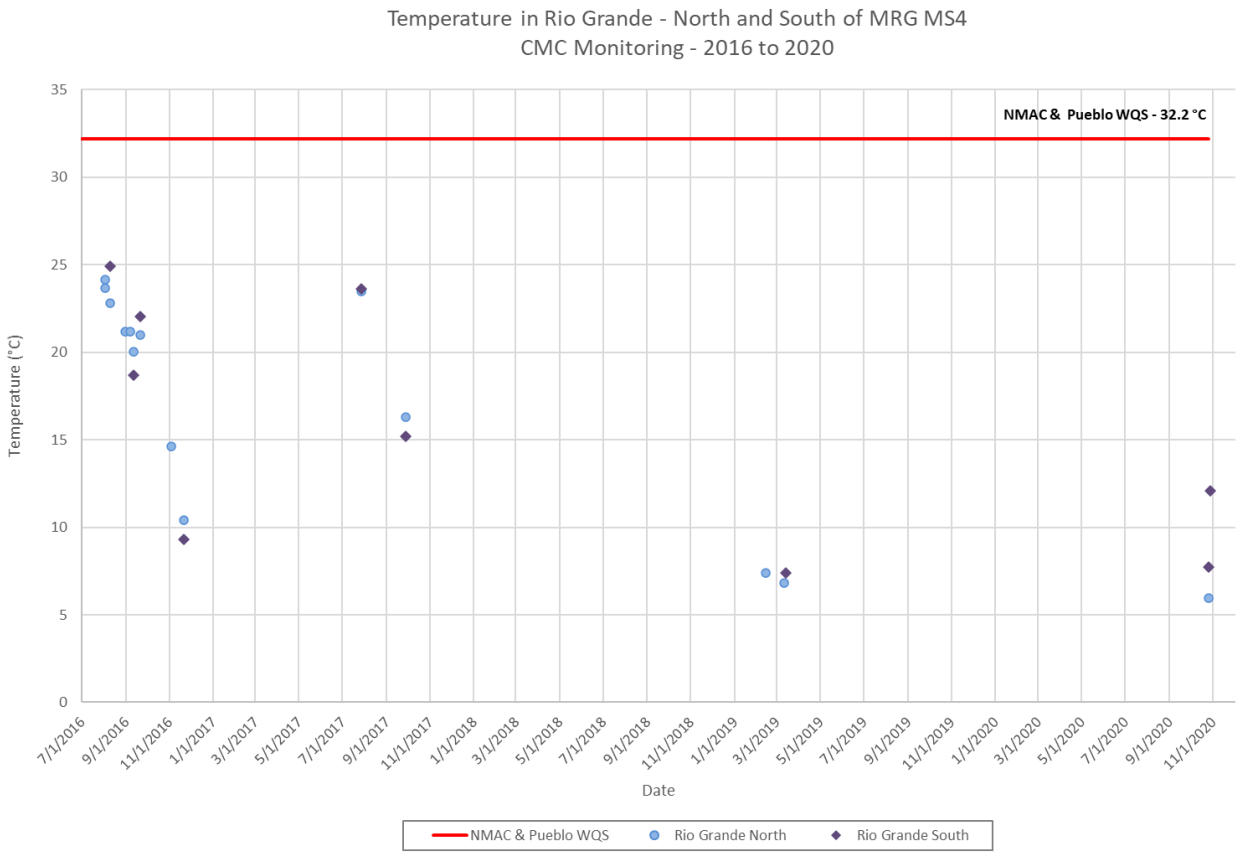

Figure 5: Temperature Monitoring Results in Rio Grande
CMC Monitoring – 2016 - 2020

CMC FY 2021 Wet Season E. coli Loading Calculations and Waste Load Allocation (WLA)

Related to assessing the stormwater results, BHI has calculated the E. coli 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 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 loading calculations and assumptions comparing the calculated E. coli loading to the CMC aggregate WLA defined by NMED.

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 "2020-2022 State of New Mexico Clean Water Act Section 303(d)/Section 305(b) Integrated Report," December 8, 2020. NMED currently has four (4) stream segments instead of the two (2) WSB MS4 stream segments. These various stream segment designations are shown in Figure 6, page 14.

The NMED 303(d)/305(b) 2020-2022 Integrated Report tables show the most recent assessment results, and currently all segments of the Rio Grande (Isleta to Angostura Diversion) are impaired for E. coli and have a TMDL for E. coli.

The E. coli daily loading associated with the CMC group and comparison to the NMED WLA was completed for the one (1) qualifying wet season storm event – October 26-28, 2020. For this event, the CMC obtained an E. coli sample in the Rio Grande at Alameda and used this to calculate the E. coli loading for the two (2) river segments. Refer to Table 5 for a summary of the WLA comparison results. A spreadsheet is attached to this memo that provides the detailed WLA calculations.

Table 5: Summary of CMC E. Coli Loading Compared to WLA for the CMC

Date / Stream Segment	Daily Mean Flow (cfs)	Flow Conditions (cfs) *range defined by NMED*	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
October 26-28, 2020 – Rio Grande North E. coli Concentration = 141.4 CFU/100 mL Rio Grande at Alameda E. coli Concentration = 98.5 CFU/100 mL Rio Grande South E. coli Concentration = >2419.6 CFU/100 mL					
Alameda to Angostura	146	Low	0.00E+00	1.68E+10	WLA Acceptable
Isleta to Alameda	180	Low	1.99E+11	3.42E+09	WLA Potential Exceedance

As Table 5 illustrates, the E. coli loading for the October 26-28, 2020 storm event for the northern segment (Alameda to Angostura) was below the WLA for the CMC MS4s. This analysis used the mid-point E. coli sample result obtained in the Rio Grande at Alameda. The E. coli loading for the southern segment for the October 26-28, 2020 storm event 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 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. On page 40, the 2010 TMDL Report states, "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

MS4 Permit Stream Segment
Alameda Bridge to Angostura Diversion
2105.1_00

Rio Grande Segment
Hwy 550 Bridge to Angostura Diversion
NM-2105.1_02

Impairments CWA 303(d) List*	TDML
E. coli	E. coli

Rio Grande Segment
Alameda Bridge to Hwy 550 Bridge
NM-2105.1_00

Impairments CWA 303(d) List*	TMDL
Gross alpha, adjusted	E. coli
PCBs - Fish Consumption Advisory	
Mercury - Fish Consumption Advisory	
PCBs	
E. coli	

Rio Grande Segment
Tijeras Arroyo to Alameda Bridge
NM-2105_51

Impairments CWA 303(d) List*	TMDL
Dissolved Oxygen	E. coli
PCBs - Fish Consumption Advisory	
Mercury - Fish Consumption Advisory	
Temperature	
E. coli	

MS4 Permit Stream Segment
Isleta Pueblo Boundary to Alameda St. Bridge
2105_50

Rio Grande Segment
Isleta Pueblo Boundary to Tijeras Arroyo
NM-2105_50

Impairments CWA 303(d) List*	TMDL
Dissolved Oxygen	E. Coli
PCBs - Fish Consumption Advisory	
Mercury - Fish Consumption Advisory	
E. coli	

MCMAHON BLVD
ELLISON DR
NM 528
4TH ST
ROY AV
ALAMEDA BLVD
PASEO DEL NORTE
OSUNA RD
MONTANO RD
2ND ST
JEFFERSON ST
SAN MATEO BLVD
WYOMING BLVD
EUBANK BLVD
JUAN TABO BLVD
TRAMWAY BLVD
CANDELARIA RD
MENAUL BLVD
LOUISIANA BLVD
3RD ST
UNSER BLVD
LOMAS BLVD
COAL AV
LEAD AV
ZUNI RD
CENTRAL AV
BRIDGE BLVD
GIBSON BLVD
COORS BLVD
ATRISCO VISTA BLVD
98TH ST
DENNIS CHAVEZ BLVD
RIO BRAVO BLVD
ISLETA BLVD
BROADWAY BLVD
I25 RAMP
NM-47
NM 147
Tijeras Arroyo
25
40
550

Legend

- MS4 Permit Stream Segments
- NMED Stream Segments
- North Diversion Channel
- Rio Grande
- Interstate Highway
- U.S. Highway
- State Highway

* Final 2020-2022 State of NM Clean Water Act Section 303(d)/Section 305(b) Integrated Report

N W E S

0 1 2 4 Miles

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CMC Monitoring

Figure 6
Rio Grande Impairments & TMDL Information

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Author: SThompson

August 2021

downstream waters" and "to provide an implicit margin of safety (MOS)." A single grab sample E. coli result meeting this very low geometric means WQSs 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 meeting on February 1, 2017, and the CMC discussion with NMED on February 16, 2017, demonstrate CMC members are working toward understanding the WLA. In addition, the CMC members began implementing a refinement to the sampling plan discussed with NMED by obtaining an E. coli sample in the Rio Grande at Alameda effective the FY 2018 wet season, as feasible. This demonstrates that the CMC is continuing to investigate the potential exceedances and make improvements to monitor E. coli in the Rio Grande.

Data Entry for Discharge Monitoring Reports

The WSB MS4 Permit entered Administrative Continuance in December 2019 when EPA Region 6 did not issue a new MS4 Permit before the current MS4 Permit's expiration date. Until a new MS4 Permit is issued, there are no compliance monitoring requirements for the CMC in the Rio Grande. As identified in the CMC Monitoring Plan, the WSB MS4 Permit required a minimum of seven (7) storm events be sampled at both the Rio Grande North and Rio Grande South locations. All MS4 Permit required samples have been obtained by the CMC and verified stormwater quality data from these required events have been submitted 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. For this Task, BHI has not completed any data entry related to the EPA DMRs for the FY 2021 wet season.

Conclusions and Planning

During the FY 2021 wet season (July 1 to October 31, 2020), one (1) qualifying stormwater sample was obtained by the CMC. Lab results were received, and this data has been entered into the CMC 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 2021 wet season show that:

- The WSB MS4 Permit entered Administrative Continuance in December 2019 when U.S. Environmental Protection Agency (EPA) Region 6 did not issue a new MS4 Permit before the current MS4 Permit's expiration date. Until a new MS4 Permit is issued, there are no compliance monitoring requirements for the CMC in the Rio Grande. All MS4 Permit required samples have been obtained by the CMC, as well as the one sample obtained in FY 2021, as reported in this memo, during Administrative Continuance.
- For the FY 2021 wet season, 16 of the 33 parameters tested were not detected in any of the Rio Grande North or South samples.

- Several key parameters all met the applicable WQSs, as they have for all the CMC samples to date:
  - All dissolved oxygen results were greater than 5 mg/L (minimum WQS).
  - All temperature results were less than 32.2 °C (maximum WQS).
- The PCB results were below the New Mexico Surface WQSs and Pueblo of Isleta Surface WQSs for designated uses including drinking water, wildlife habitat, acute aquatic life, and chronic aquatic life. However, the Rio Grande South CMC sample from October 28, 2020 was above the Pueblo of Isleta human health criteria (based on fish consumption only) WQS for surface waters.
- The calculated E. coli loading for the October 26-28, 2020 storm event for the northern segment (Alameda to Angostura) was below the WLA for the CMC MS4s. This analysis used the mid-point E. coli sample result obtained in the Rio Grande at Alameda. The E. coli loading for the southern segment for the October 26-28, 2020 event potentially exceeded the CMC allocated 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.

For planning purposes for the CMC members, the FY 2021 dry season monitoring activity (weather permitting), analytical results, and E. coli loading calculations will be summarized by BHI for the CMC in a memo due August 20, 2021.

SG/ab

Attachments:

Attachment 1 – Hall Environmental Analysis Laboratory Reports with BHI Notes for FY 2021 Wet Season & DBS&A Field Data

Attachment 2 – FY 2021 Wet Season Completed Data Verification and Validation (V&V) Forms

Spreadsheets Included Separately:

E. coli Loading and Comparison to Waste Load Allocation (WLA) Excel Spreadsheet

Excel CMC Spreadsheet with FY 2021 Wet Season Stormwater Quality Monitoring Results

ATTACHMENT 1

HALL ENVIRONMENTAL ANALYSIS LABORATORY REPORTS WITH BHI NOTES FOR FY 2021 WET SEASON & DBS&A FIELD DATA

Samplers Elizabeth Boston
Kylian Robinson

CMC Sampling Data Sheet

Site Identification: RG-North-20201026 Rio Grande @ Angostura Dam

Notes: Very cold and windy; scattered precip

Full Suite Sample Date and Time:	10/26/20 10:50
Full Sample Identification:	RG-North-20201026
QC Samples: Duplicate / (None)	QC Sample ID: N/A
QC samples require a DIFFERENT sample time than the environmental sample. QC Sample time:	

Full Suite Collection Point : Angostura Dam

Full Suite Sample Volume: 6 gallons Collection Time Start: 9:45 End: 10:30

Field Parameters for each ~~2~~ 1.5-gallon grab

Grab	Time	Temp (°C)	pH	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	ORP ~~DP~~ (mV)
1	9:45	5.90	6.76	359	10.51	83.8	234.5
2	10:00	7.59	7.89	386	10.85 ~~8.23 EB~~	89.8	233.2
3	10:15	7.49	8.46	384	10.70 ~~8.70 EB~~	86.3	234.5
4	10:30	7.53	8.57	386	9.59	80.1	
Composite	10:35	5.94	6.49	385	10.08	80.8	

☐Turbid Water ☒Color Slightly yellow ☐Solids ☐Oil/Sheen ☐Foam ☐Odor No

Analytical -see 2020 COC table

☑Site Photo ☑Sample Photo

Samplers C. Bratton K. Robinson

CMC Sampling Data Sheet

Site Identification: Isleta Dam - RG-South - 20201026

Notes: Very Cold and Windy

Full Suite Sample Date and Time:	10/26/20 12:45
Full Sample Identification:	RG-South-20201026
QC Samples: Duplicate / None	QC Sample ID:
QC samples require a DIFFERENT sample time than the environmental sample. QC Sample time:	

Full Suite Collection Point : Isleta Dam bridge w/ bucket

Full Suite Sample Volume: 1.5 gallon Collection Time Start: 12:45 End: 12:45

Field Parameters ~~for each 2-gallon grab~~

Grab	Time	Temp (°C)	pH	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)
1	12:40 1245	7.71	8.5	591	10.33	86.1
2						
3			N/A			
4				EB		
Composite						

ORP 2469

☐Turbid Water ☑Color slightly yellow ☐Solids ☐Oil/Sheen ☐Foam ☒Odor light sewer odor

Analytical -see 2020 COC table

☑Site Photo ☑Sample Photo

Samplers E Bastien + K Lylian Robinson

CMC Sampling Data Sheet

Site Identification: RG @ Alameda Bridge

Notes: Snowy conditions, ~3 inches on bridge, steady in RG

E. coli only

~~Full Suite~~ Sample Date and Time: 10/28/20

Full Sample Identification: RG-Alameda-20201028

QC Samples: Duplicate / None QC Sample ID: N/A

QC samples require a DIFFERENT sample time than the environmental sample.
QC Sample time:

E. coli

~~Full Suite~~ Collection Point : sampled Grab

Full Suite Sample Volume: 1.5 gallons Collection Time Start: 12:05 End: 12:05

Field Parameters for each 2-gallon grab

Grab	Time	Temp (°C)	pH	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)
1	1205	6.94	7.24	437	12.52	104.2
2						
3						
4						
~~Composite~~						

ORP
226.4

EB 10/28/20

☐Turbid Water ☑Color light yellow ☐Solids ☐Oil/Sheen ☐Foam ☐Odor_____

Analytical -see 2020 COC table

☑Site Photo ☑Sample Photo

Samplers E. Bastian / K Robinson

CMC Sampling Data Sheet

Site Identification: RG-South-20201028 Isleta Dam

Notes:

Full Suite Sample Date and Time:	10/28/20 14:10
Full Sample Identification:	RG-South-20201028
QC Samples: Duplicate / None	QC Sample ID:
QC samples require a DIFFERENT sample time than the environmental sample. QC Sample time:	

Full Suite Collection Point : just west of middle from Dam.

Full Suite Sample Volume: 6 ~~2~~ 1.5 gallons Collection Time Start: 13:15 End: 14:00

Field Parameters for each ~~2~~ 1.5-gallon grab

Grab	Time	Temp (°C)	pH	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	ORP (mV)
1	13:15	11.24	8.14	591	10.46	95.2	—
2	13:30	11.95	7.93	593	9.40	87.3	224.1
3	13:45	12.80	8.25	580	9.55	90.5	232.4
4	1400	13.52	8.17	590	8.58	82.6	243.8
Composite	1410	12.06	8.11	589	8.81	81.9	233.6

☐Turbid Water ☑Color light yellow cloudy ☑Solids 5-10 small sticks/leaves ☐Oil/Sheen ☐Foam Clotted ☑Odor Slight Soapy

Analytical -see 2020 COC table

☑Site Photo ☑Sample Photo

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

October 26, 2020 - Rio Grande North and South E. coli Lab Results Prior to Storm

October 28, 2020

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX:

RE: CMC OrderNo.: 2010B80

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 2 sample(s) on 10/26/2020 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Parameters
Rio Grande North-
Temp = 5.94 °C
pH = 8.49
Conductivity (uS/cm=umho/cm) = 385
Dissolved Oxygen (mg/L) = 10.08
Rio Grande South-
Temp = 7.71 °C
pH = 8.5
Conductivity (uS/cm=umho/cm) = 591
Dissolved Oxygen (mg/L) = 10.33

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2010B80**
Date Reported: **10/28/2020**

CLIENT: AMAFCA
Client Sample ID: R6-North-20200126
Project: CMC
Collection Date: 10/26/2020 10:50:00 AM
Lab ID: 2010B80-001
Matrix: AQUEOUS
Received Date: 10/26/2020 1:36:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **SMS**	
E. Coli	141.4	1.000		MPN/100	1	10/27/2020 5:06:00 PM	56051

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

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
PQL	Practical Quanitative Limit
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 Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2010B80**
Date Reported: **10/28/2020**

CLIENT: AMAFCA
Client Sample ID: R6-South-20200126
Project: CMC
Collection Date: 10/26/2020 12:45:00 PM
Lab ID: 2010B80-002 **Matrix:** AQUEOUS **Received Date:** 10/26/2020 1:36:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM 9223B FECAL INDICATOR: E. COLI MPN						Analyst: **SMS**	
E. Coli	>2419.6	1.000		MPN/100	1	10/27/2020 5:06:00 PM	56051

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

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
PQL	Practical Quanitative Limit
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 Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **AMAFCA** Work Order Number: **2010B80** RcptNo: **1**

Received By: **Juan Rojas** **10/26/2020 1:36:00 PM** Juan Rojas

Completed By: **Cheyenne Cason** **10/26/2020 1:41:13 PM**

Reviewed By: CM 10/26/20 @ 1400

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preserved added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑

IO 10/26/20

11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. 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)

15. 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:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.6	Good				

Chain-of-Custody Record

Client: AMAFCA

Mailing Address: 2600 Prospect Ave

Phone #:

email or Fax#: pchavez@amafca.org

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler: K. Robinson, E. Bastien

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.6-0=4.6 (°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 Name	Container Type and #	Preservative Type	HEAL No. 2010B80	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	E. coli - enumerated					
10/26/20	1050	AQ	RG-North-20201026	1		001											X					
10/26/20	1245	AQ	RG South-2020 1026	1		002											X					

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10-26-20	1330	K. Robinson		CDO	10/26/20	13:36
Date:	Time:	Relinquished by:	Received by:	Via:	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

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

November 04, 2020

October 26, 2020 - Rio Grande North BOD Lab Results Prior to Storm

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX:

RE: CMC OrderNo.: 2010C13

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 1 sample(s) on 10/27/2020 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Parameters
Rio Grande North-
Temp = 5.94 °C
pH = 8.49
Conductivity (uS/cm=umho/cm) = 385
Dissolved Oxygen (mg/L) = 10.08

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2010C13**
Date Reported: **11/4/2020**

CLIENT: AMAFCA
Project: CMC
Lab ID: 2010C13-001
Matrix: AQUEOUS
Client Sample ID: RG-North-20201026
Collection Date: 10/26/2020 10:50:00 AM
Received Date: 10/27/2020 3:29:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM5210B: BOD						Analyst: **AG**	
Biochemical Oxygen Demand	ND	2.0		mg/L	1	11/2/2020 12:50:00 PM	56071

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

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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C13**

04-Nov-20

Client: AMAFCA

Project: CMC

Sample ID: **MB-56071**	SampType: **MBLK**	TestCode: **SM5210B: BOD**
Client ID: **PBW**	Batch ID: **56071**	RunNo: **73077**
Prep Date: **10/28/2020**	Analysis Date: **11/2/2020**	SeqNo: **2569461** 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-56071**	SampType: **LCS**	TestCode: **SM5210B: BOD**
Client ID: **LCSW**	Batch ID: **56071**	RunNo: **73077**
Prep Date: **10/28/2020**	Analysis Date: **11/2/2020**	SeqNo: **2569462** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	124	2.0	198.0	0	62.6	84.6	115.4			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
PQL	Practical Quanitative Limit
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 Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **AMAFCA** Work Order Number: **2010C13** RcptNo: **1**

Received By: **Cheyenne Cason** **10/27/2020 3:29:00 PM**

Completed By: **Cheyenne Cason** **10/27/2020 3:46:33 PM**

Reviewed By: ENM 10/27/20 @1600

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: CMC 10/27/20

Special Handling (if applicable)

15. 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: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good				

Chain-of-Custody Record

Client: AMAFCA

Mailing Address: 2600 Prospect ane

Phone #:

email or Fax#:

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: E. Bastian

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.1+0=2.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

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)	BOD				Air Bubbles (Y or N)
						Analysis Request																
10/26/20	10:50	SW	RG-North-20201026	1-1L	P3y/None	2010013 COO1												X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
10/27/20	15:24	Elizabeth Bast	CMC CDC	10/27/20	1529
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

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

March 12, 2021

Patrick Chavez
AMAFCA
2600 Prospect Ave NE
Albuquerque, NM 87107
TEL: (505) 884-2215
FAX:

October 26, 2020 - Rio Grande North Lab Results Prior to Storm; October 28, 2020 Rio Grande at Alameda Blvd. E. Coli Result; and October 28, 2020 Rio Grande South Results

RE: CMC OrderNo.: 2010C61

Dear Patrick Chavez:

Hall Environmental Analysis Laboratory received 6 sample(s) on 10/28/2020 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 #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Field Parameters
Rio Grande North (10/26/2020)-
Temp = 5.94 °C
pH = 8.49
Conductivity (uS/cm=umho/cm) = 385
Dissolved Oxygen (mg/L) = 10.08
Rio Grande at Alameda Blvd. (10/28/2020)-
Temp = 6.94 °C
pH = 7.24
Conductivity (uS/cm=umho/cm) = 437
Dissolved Oxygen (mg/L) = 12.52
Rio Grande South (10/28/2020)-
Temp = 12.06 °C
pH = 8.11
Conductivity (uS/cm=umho/cm) = 589
Dissolved Oxygen (mg/L) = 8.81

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **2010C61**
Date Reported: **3/12/2021**

CLIENT: AMAFCA
Project: CMC
Lab ID: 2010C61-001
Matrix: AQUEOUS
Client Sample ID: RG-North-20201026
Collection Date: 10/26/2020 10:50:00 AM
Received Date: 10/28/2020 3:16:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8081: PESTICIDES							Analyst: **JME**	
Dieldrin	ND	0.076	0.10	H	µg/L	1	11/4/2020 12:27:31 PM	56166
Surr: Decachlorobiphenyl	84.6	0	38.2-102	H	%Rec	1	11/4/2020 12:27:31 PM	56166
Surr: Tetrachloro-m-xylene	75.7	0	32.3-92.4	H	%Rec	1	11/4/2020 12:27:31 PM	56166
EPA METHOD 300.0: ANIONS							Analyst: **JMT**	
Nitrate+Nitrite as N	0.34	0.061	1.0	J	mg/L	5	11/9/2020 10:04:07 PM	R73232
EPA METHOD 200.7: METALS							Analyst: **pmf**	
Calcium	47	0.11	1.0		mg/L	1	11/2/2020 8:32:54 AM	56135
Magnesium	8.3	0.067	1.0		mg/L	1	11/2/2020 8:32:54 AM	56135
EPA 200.8: DISSOLVED METALS							Analyst: **ELS**	
Copper	0.00062	0.00013	0.0010	J	mg/L	1	10/29/2020 4:37:44 PM	A73027
Lead	ND	0.000034	0.00050		mg/L	1	10/29/2020 4:37:44 PM	A73027
SM2340B: HARDNESS							Analyst: **pmf**	
Hardness (As CaCO3)	150	2.5	6.6		mg/L	1	11/2/2020	R73075
EPA METHOD 1664B							Analyst: **KMN**	
N-Hexane Extractable Material	ND	3.92	9.71		mg/L	1	11/4/2020 8:56:00 AM	56126
SM 4500 NH3: AMMONIA							Analyst: **CJS**	
Nitrogen, Ammonia	ND	0.36	1.0		mg/L	1	11/6/2020 1:59:00 PM	R73186
SM4500-H+B / 9040C: PH							Analyst: **MH**	
pH	8.15			H	pH units	1	10/30/2020 3:15:16 PM	R73062
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: **CJS**	
Phosphorus, Total (As P)	ND	0.050	0.050	D	mg/L	1	11/5/2020 11:59:00 AM	56210
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: **MH**	
Total Dissolved Solids	234	20.0	20.0		mg/L	1	10/30/2020 3:00:00 PM	56113
SM 4500 NORG C: TKN							Analyst: **OG**	
Nitrogen, Kjeldahl, Total	ND	0.23	1.0		mg/L	1	11/6/2020 1:36:00 PM	56235
SM 2540D: TSS							Analyst: **KS**	
Suspended Solids	18	4.0	4.0	H	mg/L	1	11/3/2020 12:11:00 PM	56151

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

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
PQL	Practical Quanitative Limit
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 Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: RG-North-20201026 (Diss)
Project: CMC
Collection Date: 10/26/2020 10:50:00 AM
Lab ID: 2010C61-002
Matrix: AQUEOUS
Received Date: 10/28/2020 3:16:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: **CJS**	
Phosphorus, Total (As P)	0.013	0.010	0.010		mg/L	1	11/5/2020 12:00:00 PM	56210

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.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
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 Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: RG-South-20201028
Project: CMC
Collection Date: 10/28/2020 2:10:00 PM
Lab ID: 2010C61-003
Matrix: AQUEOUS
Received Date: 10/28/2020 3:16:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8081: PESTICIDES							Analyst: **JME**	
Dieldrin	ND	0.076	0.10		µg/L	1	11/4/2020 12:54:03 PM	56166
Surr: Decachlorobiphenyl	79.7	0	38.2-102		%Rec	1	11/4/2020 12:54:03 PM	56166
Surr: Tetrachloro-m-xylene	77.4	0	32.3-92.4		%Rec	1	11/4/2020 12:54:03 PM	56166
EPA METHOD 300.0: ANIONS							Analyst: **CAS**	
Nitrogen, Nitrite (As N)	ND	0.070	0.50		mg/L	5	10/29/2020 11:03:29 A	R73035
Nitrogen, Nitrate (As N)	1.3	0.10	0.50		mg/L	5	10/29/2020 11:03:29 A	R73035
EPA METHOD 200.7: METALS							Analyst: **pmf**	
Calcium	51	0.11	1.0		mg/L	1	11/2/2020 8:43:27 AM	56135
Magnesium	9.4	0.067	1.0		mg/L	1	11/2/2020 8:43:27 AM	56135
EPA 200.8: DISSOLVED METALS							Analyst: **ELS**	
Copper	0.00085	0.00013	0.0010	J	mg/L	1	10/29/2020 4:45:32 PM	A73027
Lead	0.000051	0.000034	0.00050	J	mg/L	1	10/29/2020 4:45:32 PM	A73027
SM2340B: HARDNESS							Analyst: **pmf**	
Hardness (As CaCO3)	160	2.5	6.6		mg/L	1	11/2/2020	R73075
EPA METHOD 1664B							Analyst: **KMN**	
N-Hexane Extractable Material	ND	3.85	9.53		mg/L	1	11/4/2020 8:56:00 AM	56126
SM5210B: BOD							Analyst: **AG**	
Biochemical Oxygen Demand	2.3	2.0	2.0	H	mg/L	1	11/3/2020 12:04:00 PM	56094
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **KMN**	
E. Coli	>2419.6	1.000	1.000		MPN/100	1	10/29/2020 5:15:00 PM	56090
SM 4500 NH3: AMMONIA							Analyst: **CJS**	
Nitrogen, Ammonia	ND	0.36	1.0		mg/L	1	11/6/2020 1:59:00 PM	R73186
SM4500-H+B / 9040C: PH							Analyst: **MH**	
pH	8.11			H	pH units	1	10/30/2020 3:19:32 PM	R73062
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: **CJS**	
Phosphorus, Total (As P)	0.63	0.050	0.050	D	mg/L	1	11/5/2020 12:06:00 PM	56210
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: **MH**	
Total Dissolved Solids	348	20.0	20.0		mg/L	1	10/30/2020 3:00:00 PM	56113
SM 4500 NORG C: TKN							Analyst: **OG**	
Nitrogen, Kjeldahl, Total	0.70	0.23	1.0	J	mg/L	1	11/6/2020 1:36:00 PM	56235
SM 2540D: TSS							Analyst: **KS**	
Suspended Solids	32	4.0	4.0		mg/L	1	11/3/2020 12:11:00 PM	56151

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
PQL	Practical Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: RG-South-20201028 (Diss)
Project: CMC
Collection Date: 10/28/2020 2:10:00 PM
Lab ID: 2010C61-004
Matrix: AQUEOUS
Received Date: 10/28/2020 3:16:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 365.1: TOTAL PHOSPHOROUS							Analyst: **CJS**	
Phosphorus, Total (As P)	0.48	0.010	0.010		mg/L	1	11/5/2020 12:08:00 PM	56210

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
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: AMAFCA
Client Sample ID: RG-Alameda-20201028
Project: CMC
Collection Date: 10/28/2020 12:05:00 PM
Lab ID: 2010C61-005
Matrix: AQUEOUS
Received Date: 10/28/2020 3:16:00 PM

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed	Batch ID
SM 9223B FECAL INDICATOR: E. COLI MPN							Analyst: **KMN**	
E. Coli	98.5	1.000	1.000		MPN/100	1	10/29/2020 5:15:00 PM	56090

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

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
PQL	Practical Quanitative Limit
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 Limit

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Client:	Hall Environmental Analysis Lab	Work Order:	MAJ0864
Address:	4901 Hawkins NE Suite D	Project:	2010C61
	Albuquerque, NM 87109	Reported:	11/20/2020 11:28
Attn:	Andy Freeman		

Analytical Results Report

Sample Location:	2010C61-001A (RG-North-20201026)		
Lab/Sample Number:	MAJ0864-01	Collect Date:	10/26/20 10:50
Date Received:	10/30/20 11:33	Collected By:	
Matrix:	Water		

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles							
Tetrahydrofuran	ND	ug/L	1.00	11/2/20 16:25	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: 2010C61-001K (RG-North-20201026)
Lab/Sample Number: MAJ0864-02 Collect Date: 10/26/20 10:50
Date Received: 10/30/20 11:33 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Semivolatiles							
Benzidine	ND	ug/L	0.500	11/14/20 0:42	MAH	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.500	11/14/20 0:42	MAH	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.500	11/14/20 0:42	MAH	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.500	11/14/20 0:42	MAH	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.500	11/14/20 0:42	MAH	EPA 8270D	
Chrysene	ND	ug/L	0.500	11/14/20 0:42	MAH	EPA 8270D	
Di (2-ethylhexyl) phthalate	ND	ug/L	0.500	11/14/20 0:42	MAH	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.500	11/14/20 0:42	MAH	EPA 8270D	
Dibenzofuran	ND	ug/L	0.500	11/14/20 0:42	MAH	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.500	11/14/20 0:42	MAH	EPA 8270D	
Pentachlorophenol	ND	ug/L	0.500	11/14/20 0:42	MAH	EPA 8270D	
Surrogate: 2,4,6-Tribromophenol	*79.3%*		*41-132*	*11/14/20 0:42*	*MAH*	*EPA 8270D*	
Surrogate: 2-Fluorobiphenyl	*72.7%*		*52-119*	*11/14/20 0:42*	*MAH*	*EPA 8270D*	
Surrogate: 2-Fluorophenol	*77.6%*		*41-127*	*11/14/20 0:42*	*MAH*	*EPA 8270D*	
Surrogate: Nitrobenzene-d5	*78.5%*		*52-120*	*11/14/20 0:42*	*MAH*	*EPA 8270D*	
Surrogate: Phenol-2,3,4,5,6-d5	*82.4%*		*51-115*	*11/14/20 0:42*	*MAH*	*EPA 8270D*	
Surrogate: Terphenyl-d14	*75.8%*		*25-135*	*11/14/20 0:42*	*MAH*	*EPA 8270D*	

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Analytical Results Report

(Continued)

Sample Location: 2010C61-003A (RG-South-20201028)
Lab/Sample Number: MAJ0864-03 Collect Date: 10/28/20 14:10
Date Received: 10/30/20 11:33 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles							
Tetrahydrofuran	ND	ug/L	1.00	11/2/20 16:55	TEC	EPA 8260C	

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Analytical Results Report

(Continued)

Sample Location: 2010C61-003M (RG-South-20201028)
Lab/Sample Number: MAJ0864-04 Collect Date: 10/28/20 14:10
Date Received: 10/30/20 11:33 Collected By:
Matrix: Water

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Semivolatiles							
Benzidine	ND	ug/L	0.500	11/14/20 4:49	MAH	EPA 8270D	
Benzo[a]anthracene	ND	ug/L	0.500	11/14/20 4:49	MAH	EPA 8270D	
Benzo[a]pyrene	ND	ug/L	0.500	11/14/20 4:49	MAH	EPA 8270D	
Benzo[b]fluoranthene	ND	ug/L	0.500	11/14/20 4:49	MAH	EPA 8270D	
Benzo[k]fluoranthene	ND	ug/L	0.500	11/14/20 4:49	MAH	EPA 8270D	
Chrysene	ND	ug/L	0.500	11/14/20 4:49	MAH	EPA 8270D	
Di (2-ethylhexyl) phthalate	ND	ug/L	0.500	11/14/20 4:49	MAH	EPA 8270D	
Dibenz(a,h)anthracene	ND	ug/L	0.500	11/14/20 4:49	MAH	EPA 8270D	
Dibenzofuran	ND	ug/L	0.500	11/14/20 4:49	MAH	EPA 8270D	
Indeno(1,2,3-cd)pyrene	ND	ug/L	0.500	11/14/20 4:49	MAH	EPA 8270D	
Pentachlorophenol	ND	ug/L	0.500	11/14/20 4:49	MAH	EPA 8270D	
Surrogate: 2,4,6-Tribromophenol	*86.7%*		*41-132*	*11/14/20 4:49*	*MAH*	*EPA 8270D*	
Surrogate: 2-Fluorobiphenyl	*77.8%*		*52-119*	*11/14/20 4:49*	*MAH*	*EPA 8270D*	
Surrogate: 2-Fluorophenol	*74.5%*		*41-127*	*11/14/20 4:49*	*MAH*	*EPA 8270D*	
Surrogate: Nitrobenzene-d5	*77.3%*		*52-120*	*11/14/20 4:49*	*MAH*	*EPA 8270D*	
Surrogate: Phenol-2,3,4,5,6-d5	*79.0%*		*51-115*	*11/14/20 4:49*	*MAH*	*EPA 8270D*	
Surrogate: Terphenyl-d14	*70.9%*		*25-135*	*11/14/20 4:49*	*MAH*	*EPA 8270D*	

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Analytical Results Report

(Continued)

Sample Location:	2010C61-006A (Trip Blank)		
Lab/Sample Number:	MAJ0864-05	Collect Date:	10/28/20 14:10
Date Received:	10/30/20 11:33	Collected By:	
Matrix:	Water		

Analyte	Result	Units	PQL	Analyzed	Analyst	Method	Qualifier
Volatiles							
Tetrahydrofuran	ND	ug/L	0.500	11/2/20 17:24	TEC	EPA 8260C	

Authorized Signature,

Justin Doty For Todd Taruscio, Laboratory Manager

PQL	Practical Quantitation Limit
ND	Not Detected
MCL	EPA's Maximum Contaminant Level
Dry	Sample results reported on a dry weight basis

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Quality Control Data

Semivolatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAK0012 - SVOC Water										
Blank (BAK0012-BLK1)					Prepared: 11/2/2020 Analyzed: 11/13/2020					
Dibenzofuran	ND		0.500	ug/L						
Pentachlorophenol	ND		0.500	ug/L						
Indeno[1,2,3-cd]pyrene	ND		0.500	ug/L						
Dibenz[a,h]anthracene	ND		0.500	ug/L						
Chrysene	ND		0.500	ug/L						
bis(2-Ethylhexyl)phthalate	ND		0.500	ug/L						
Benzo[k]fluoranthene	ND		0.500	ug/L						
Benzidine	ND		0.500	ug/L						
Benzo[a]anthracene	ND		0.500	ug/L						
Benzo[a]pyrene	ND		0.500	ug/L						
Benzo[b]fluoranthene	ND		0.500	ug/L						
Surrogate: Phenol-2,3,4,5,6-d5			*41.4*	*ug/L*	*49.5*		*83.7*	*51-115*		
Surrogate: Nitrobenzene-d5			*20.7*	*ug/L*	*25.0*		*82.6*	*52-120*		
Surrogate: Terphenyl-d14			*31.4*	*ug/L*	*25.5*		*123*	*25-135*		
Surrogate: 2-Fluorophenol			*38.7*	*ug/L*	*50.0*		*77.4*	*41-127*		
Surrogate: 2-Fluorobiphenyl			*19.4*	*ug/L*	*25.5*		*76.3*	*52-119*		
Surrogate: 2,4,6-Tribromophenol			*38.9*	*ug/L*	*51.2*		*75.8*	*41-132*		
LCS (BAK0012-BS1)					Prepared: 11/2/2020 Analyzed: 11/13/2020					
Chrysene	4.24		0.500	ug/L	5.00		84.8	50-130		
Dibenz[a,h]anthracene	3.61		0.500	ug/L	5.00		72.2	50-130		
Benzo[a]anthracene	4.13		0.500	ug/L	5.00		82.6	50-130		
Benzo[a]pyrene	3.87		0.500	ug/L	5.00		77.4	50-130		
Benzo[b]fluoranthene	4.59		0.500	ug/L	5.00		91.8	50-130		
Benzo[k]fluoranthene	4.48		0.500	ug/L	5.00		89.6	50-130		
bis(2-Ethylhexyl)phthalate	3.99		0.500	ug/L	5.00		79.8	50-130		
Dibenzofuran	4.29		0.500	ug/L	5.00		85.8	50-130		
Indeno[1,2,3-cd]pyrene	3.77		0.500	ug/L	5.00		75.4	50-130		
Pentachlorophenol	3.55		0.500	ug/L	5.00		71.0	50-130		
Surrogate: Phenol-2,3,4,5,6-d5			*44.4*	*ug/L*	*49.5*		*89.7*	*51-115*		
Surrogate: Nitrobenzene-d5			*21.9*	*ug/L*	*25.0*		*87.6*	*52-120*		
Surrogate: Terphenyl-d14			*23.0*	*ug/L*	*25.5*		*90.4*	*25-135*		
Surrogate: 2-Fluorophenol			*42.8*	*ug/L*	*50.0*		*85.6*	*41-127*		
Surrogate: 2-Fluorobiphenyl			*21.5*	*ug/L*	*25.5*		*84.2*	*52-119*		
Surrogate: 2,4,6-Tribromophenol			*41.9*	*ug/L*	*51.2*		*81.8*	*41-132*		

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Quality Control Data
(Continued)

Semivolatiles (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAK0012 - SVOC Water (Continued)										
LCS Dup (BAK0012-BSD1)					Prepared: 11/2/2020 Analyzed: 11/13/2020					
Dibenz[a,h]anthracene	2.98		0.500	ug/L	5.00		59.6	50-130	19.1	25
Dibenzofuran	4.20		0.500	ug/L	5.00		84.0	50-130	2.12	25
Indeno[1,2,3-cd]pyrene	3.63		0.500	ug/L	5.00		72.6	50-130	3.78	25
Chrysene	4.28		0.500	ug/L	5.00		85.6	50-130	0.939	25
Benzo[a]pyrene	3.77		0.500	ug/L	5.00		75.4	50-130	2.62	25
Pentachlorophenol	3.47		0.500	ug/L	5.00		69.4	50-130	2.28	25
bis(2-Ethylhexyl)phthalate	3.78		0.500	ug/L	5.00		75.6	50-130	5.41	25
Benzo[b]fluoranthene	4.18		0.500	ug/L	5.00		83.6	50-130	9.35	25
Benzo[a]anthracene	4.32		0.500	ug/L	5.00		86.4	50-130	4.50	25
Benzo[k]fluoranthene	4.39		0.500	ug/L	5.00		87.8	50-130	2.03	25
Surrogate: Phenol-2,3,4,5,6-d5			*44.2*	*ug/L*	*49.5*		*89.3*	*51-115*		
Surrogate: Nitrobenzene-d5			*21.4*	*ug/L*	*25.0*		*85.7*	*52-120*		
Surrogate: Terphenyl-d14			*23.4*	*ug/L*	*25.5*		*91.7*	*25-135*		
Surrogate: 2-Fluorophenol			*42.0*	*ug/L*	*50.0*		*84.1*	*41-127*		
Surrogate: 2-Fluorobiphenyl			*21.6*	*ug/L*	*25.5*		*84.7*	*52-119*		
Surrogate: 2,4,6-Tribromophenol			*43.6*	*ug/L*	*51.2*		*85.1*	*41-132*		

Quality Control Data
(Continued)

Volatiles

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: BAK0042 - VOC										
Blank (BAK0042-BLK1)					Prepared & Analyzed: 11/2/2020					
Tetrahydrofuran	ND		0.500	ug/L						
LCS (BAK0042-BS1)					Prepared & Analyzed: 11/2/2020					
Tetrahydrofuran	18.8		0.500	ug/L	22.7		82.6	80-120		
Matrix Spike (BAK0042-MS1)		**Source: MAJ0864-01**			Prepared & Analyzed: 11/2/2020					
Tetrahydrofuran	21.6		0.500	ug/L	22.7	ND	95.0	70-130		
Matrix Spike Dup (BAK0042-MSD1)		**Source: MAJ0864-01**			Prepared & Analyzed: 11/2/2020					
Tetrahydrofuran	22.1		0.500	ug/L	22.7	ND	97.4	70-130	2.52	25

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environ

MAJ0864

Due: 11/13/20

Website: clien

SUB CONTRATOR	**Anatek ID**	COMPANY: **Anatek Labs, Inc.**	PHONE: **(208) 883-2839**	FAX: **(208) 882-9246**	
ADDRESS:	**1282 Alturas Dr**		ACCOUNT #:	EMAIL:	
CITY, STATE, ZIP	**Moscow, ID 83843**				

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2010C61-001A	RG-North-20201026	VOAHCL	Aqueous	10/26/2020 10:50:00 AM	3	8260: Tetrahydrofuran
2	2010C61-001K	RG-North-20201026	1LAMGU	Aqueous	10/26/2020 10:50:00 AM	2	8270 See attached list
3	2010C61-003A	RG-South-20201028	VOAHCL	Aqueous	10/28/2020 2:10:00 PM	3	8260: Tetrahydrofuran
4	2010C61-003M	RG-South-20201028	1LAMGU	Aqueous	10/28/2020 2:10:00 PM	2	8270 See attached list
5	2010C61-006A	Trip Blank	VOAHCL	Trip Blan		2	8260: Tetrahydrofuran Trip Blank

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.

Relinquished By:	Date: **10/29/2020**	Time: **12:04 PM**	Received By:	Date:	Time: 1133
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard X RUSH Next BD 2nd BD 3rd BD

REPORT TRANSMITTAL DESIRED:

HARDCOPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY

Temp of samples C Attempt to Cool ?

Comments:

MAJ0864

Due: 11/13/20

Collaborative Monitoring Cooperative - Analyses List

Attach to Chain of Custody

Please refer to attached NPDES Permit No. NMR04A00 Appendix F. Methods and minimum qu
(MQL's) will be those approved under 40 CFR 136 and specified in the attached

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	0.014
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	8081	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

ENM 10/29/20

MAJ0864

Due: 11/13/20

Anatek Labs, Inc.

Sample Receipt and Preservation Form

Client Name: HALL Project: *(apply Anatek sample label here)*

TAT: Normal RUSH: _____ days

Samples Received From: FedEx UPS USPS Client Courier Other: _____

Custody Seal on Cooler/Box: Yes No Custody Seals Intact: Yes No N/A

Number of Coolers/Boxes: 1 Type of Ice: Ice/Ice Packs Blue Ice Dry Ice None

Packing Material: Bubble Wrap Bags Foam/Peanuts None Other: _____

Cooler Temp As Read (°C): 0.1 Cooler Temp Corrected (°C): — Thermometer Used: IR-5

				Comments:
Samples Received Intact?	Yes	No	N/A	
Chain of Custody Present?	Yes	No	N/A	
Samples Received Within Hold Time?	Yes	No	N/A	
Samples Properly Preserved?	Yes	No	N/A	
VOC Vials Free of Headspace (<6mm)?	Yes	No	N/A	
VOC Trip Blanks Present?	Yes	No	N/A	
Labels and Chains Agree?	Yes	No	N/A	
Total Number of Sample Bottles Received: ~~10~~ 10 HS				
Chain of Custody Fully Completed?	Yes	No	N/A	
Correct Containers Received?	Yes	No	N/A	
Anatek Bottles Used?	Yes	No	Unknown	

Record preservatives (and lot numbers, if known) for containers below:

HCl → VOC 8260 → 9 44ml X 6 + 2 TB

Notes, comments, etc. (also use this space if contacting the client - record names and date/time)

8270 → 500ml X 2

Received/Inspected By: _____ Date/Time: 10/30/2020 1133

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

November 06, 2020

Hall Environmental Analysis Laboratory

Sample Delivery Group:	L1279622
Samples Received:	10/30/2020
Project Number:	
Description:	

Report To: Jackie Bolte
4901 Hawkins NE
Albuquerque, NM 87109

Entire Report Reviewed By:

John Hawkins
Project Manager

TABLE OF CONTENTS

2010C61-001H/J RG-NORTH-20201026 L1279622-01 WW

Collected by	Collected date/time	Received date/time
	10/26/20 10:50	10/30/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 3500Cr C-2011	WG1569603	1	11/03/20 18:51	11/03/20 18:51	GB	Mt. Juliet, TN
Wet Chemistry by Method 410.4	WG1571427	1	11/05/20 09:37	11/05/20 17:13	LRP	Mt. Juliet, TN

2010C61-003H/J RG-SOUTH-20201028 L1279622-02 WW

Collected by	Collected date/time	Received date/time
	10/28/20 14:10	10/30/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 3500Cr C-2011	WG1569603	1	11/03/20 18:58	11/03/20 18:58	GB	Mt. Juliet, TN
Wet Chemistry by Method 410.4	WG1571427	1	11/05/20 09:37	11/05/20 17:13	LRP	Mt. Juliet, TN

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

John Hawkins
Project Manager

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	11/03/2020 18:51	WG1569603

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
COD	ND		20.0	1	11/05/2020 17:13	WG1571427

Wet Chemistry by Method 3500Cr C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Hexavalent Chromium	ND		0.000500	1	11/03/2020 18:58	WG1569603

Wet Chemistry by Method 410.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
COD	ND		20.0	1	11/05/2020 17:13	WG1571427

Method Blank (MB)

(MB) R3589278-1 11/03/20 16:42

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

L1277385-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1277385-01 11/03/20 17:36 • (DUP) R3589278-3 11/03/20 17:44

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

L1280221-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1280221-01 11/03/20 20:56 • (DUP) R3589278-7 11/03/20 21:04

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	ND	ND	1	0.909		20

Laboratory Control Sample (LCS)

(LCS) R3589278-2 11/03/20 16:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	0.00200	0.00197	98.5	90.0-110	

L1279574-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1279574-01 11/03/20 18:21 • (MS) R3589278-4 11/03/20 18:29

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	0.0500	0.000742	0.0501	98.7	1	90.0-110	

L1280214-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1280214-02 11/03/20 20:34 • (MS) R3589278-5 11/03/20 20:41 • (MSD) R3589278-6 11/03/20 20:49

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	0.160	0.199	0.200	78.8	79.8	1	90.0-110	E J6	E J6	0.252	20

Method Blank (MB)

(MB) R3589914-1 11/05/20 17:10

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
COD	U		11.7	20.0

L1277374-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1277374-01 11/05/20 17:11 • (DUP) R3589914-3 11/05/20 17:11

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	357	372	1	4.13		20

L1279644-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1279644-01 11/05/20 17:15 • (DUP) R3589914-6 11/05/20 17:15

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

Laboratory Control Sample (LCS)

(LCS) R3589914-2 11/05/20 17:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
COD	500	510	102	90.0-110	

L1279548-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1279548-01 11/05/20 17:12 • (MS) R3589914-4 11/05/20 17:12 • (MSD) R3589914-5 11/05/20 17:12

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 %
COD	500	ND	529	523	103	102	1	80.0-120			1.23	20

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
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.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state “ND” (Not Detected) or “BDL” (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

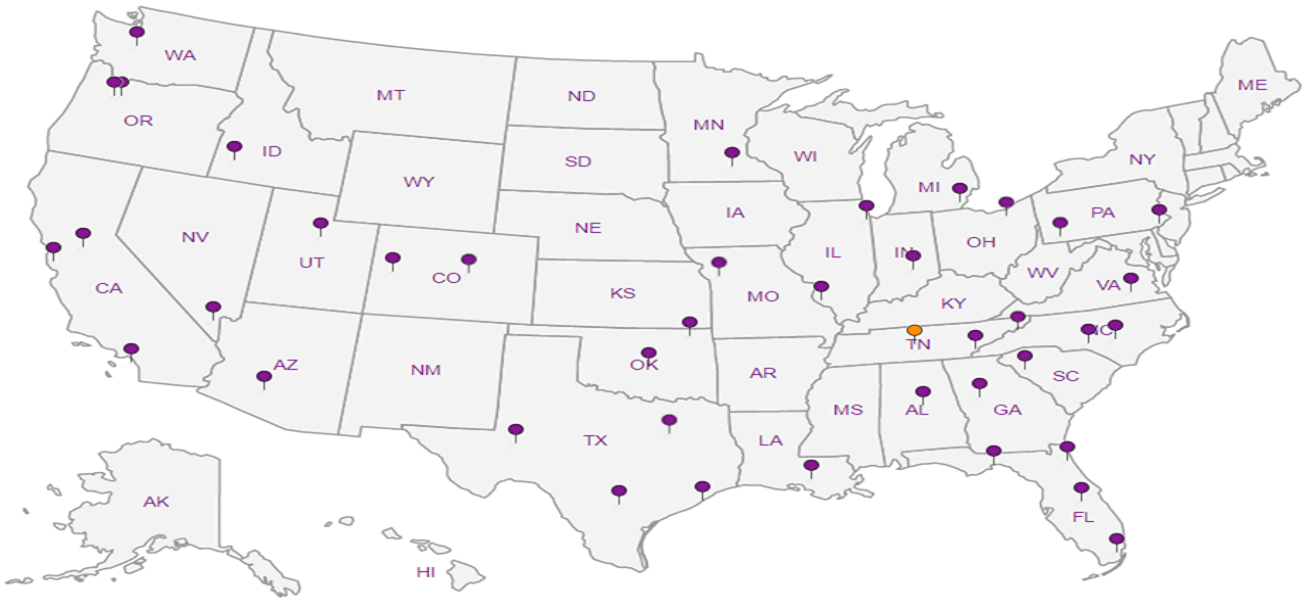
Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [6] Wastewater n/a Accreditation not applicable

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: OF:

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
D155
Website: clients.hal... ...onmental.com

Sample Receipt Checklist

COC Seal Present/Intact:	__Y__N	If Applicable	
COC Signed/Accurate:	__Y__N	VOA Zero Headspace:	__Y__N
Bottles arrive intact:	__Y__N	Pres.Correct/Check:	__Y__N
Correct bottles used:	__Y__N		
Sufficient volume sent:	__Y__N		
RAD Screen <0.5 mR/hr:	__Y__N		

SUB CONTRATOR:	Pace TN	COMPANY:	PACE TN	PHONE: (800) 767-5859	FAX: (615) 758-5859
ADDRESS:	12065 Lebanon Rd			ACCOUNT #:	EMAIL:
CITY, STATE, ZIP:	Mt. Juliet, TN 37122				L1279622

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS	
1	2010C61-001H	RG-North-20201026	500HDPEH2SO4	Aqueous	10/26/2020 10:50:00 AM	1	COD	-01 ~~-01~~
2	2010C61-001J	RG-North-20201026	120mL	Aqueous	10/26/2020 10:50:00 AM	1	Cr 6	-01 ~~-02~~
3	2010C61-003H	RG-South-20201028	500HDPEH2SO4	Aqueous	10/28/2020 2:10:00 PM	1	COD	-02 ~~-03~~
4	2010C61-003J	RG-South-20201028	120mL	Aqueous	10/28/2020 2:10:00 PM	1	Cr 6	-02 ~~-04~~

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.

Relinquished By:	Date: 10/29/2020	Time: 9:25 AM	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date: 10/30	Time: 0900

TAT: Standard X RUSH Next BD 2nd BD 3rd BD

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY

Temp of samples 3.5-3.3°C Attempt to Cool ? OK

Comments:

COC SZ

RAD SCREEN: <0.5 mR/hr

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

December 08, 2020

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

Re: Routine Analysis
Work Order: 17326
SDG: 2010C61

Dear Mr. Freeman:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 30, 2020. 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

Cynde Larkins
Project Manager

Purchase Order: IDIQ Pricing
Enclosures

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

CFA WO#17326

SUB CONTRATOR: 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	2010C61-001G	RG-North-20201026	1LAMGU	Aqueous	10/26/2020 10:50:00 AM	2	PCB Congeners 1668
2	2010C61-003G	RG-South-20201028	1LAMGU	Aqueous	10/28/2020 2:10:00 PM	2	PCB Congeners 1668

ENM 10129/20

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.

Relinquished By:	Date: 10/29/2020	Time: 9:26 AM	Received By: Cynde Larkins	Date: 30OCT20	Time: 1000
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard X RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples 5.9 °C Attempt to Cool ? ✓
Comments:

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: HALL	Work Order: 17326
Shipping Company: FedEx	Date/Time Received: 30OCT20 1000

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	Custody seal/s present on cooler?	✓			Seal intact? (Yes) No
3	Chain of Custody documents included with shipment?	✓			
4	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags loose ice (blue ice) dry ice none other (describe) Temperature Blank present: Yes (No) 5.9° + 0.0 = 5.9°C
5	Aqueous samples found to have visible solids?	✓			Sample IDs, containers affected: Minimal visible solids (<1%)
5	Samples requiring chemical preservation at proper pH?	✓			Sample IDs, containers affected and pH observed: all-pH=8 If preservative added, Lot#:
7	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
8	Samples received within holding time?	✓			Sample IDs, tests affected:
9	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
10	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
11	Number of containers received match number indicated on COC?			✓	List type and number of containers / Sample IDs, containers affected: 1-1L WMAG bottle per sample, COC lists 2.
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: HALL	Work Order: 17326
Shipping Company: FedEx	Date/Time Received: 24NOV20 1136

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	Custody seal/s present on cooler?	✓			Seal intact? (Yes) No
3	Chain of Custody documents included with shipment?			✓	
4	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: ice bags (blue ice) dry ice none other (describe) Temperature Blank present: Yes (No) 5.3° + 0.0 = 5.3°C
5	Aqueous samples found to have visible solids?	✓			Sample IDs, containers affected: Minimal visible solids (<1%)
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH = 7 If preservative added, Lot#:
7	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
8	Samples received within holding time?	✓			Sample IDs, tests affected:
9	Sample IDs on COC match IDs on containers?			✓	Sample IDs, containers affected: Using original COC. Sample ID's end in "K"
10	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
11	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: 2-1L NMAG bottles
12	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Replacement samples for re-extract.

Checklist performed by: Initials: CL Date: 24NOV20

CF-UD-F-7

PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
Hall Environmental Analysis Laboratory (HALL)
SDG 2010C61
Work Order 17326

Method/Analysis Information

Product:	**PCB Congeners by EPA Method 1668A in Liquids**
Analytical Method:	EPA Method 1668A
Extraction Method:	SW846 3520C
Analytical Batch Number:	45453
Clean Up Batch Number:	45452
Extraction Batch Number:	45451

Sample Analysis

Samples were received at 5.3°C. (17326001,17326002). The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
12028047	Method Blank (MB)
12028048	Laboratory Control Sample (LCS)
12028049	Laboratory Control Sample Duplicate (LCSD)
17326001	2010C61-001G RG-North-20201026
17326002	2010C61-003G RG-South-20201028

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# 7.

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

Receipt Temperature
Samples were received within temperature requirements.

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
Samples were re-extracted due to laboratory contamination in the associated method blank. 17326001 (2010C61-001G RG-North-20201026) and 17326002 (2010C61-003G RG-South-20201028).

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
HRP875_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: 2010C61 CFA Work Order: 17326

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: Erin Suhrie**

Date: 08 DEC 2020 **Title: Data Validator**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326001**	**Date Collected:**	**10/26/2020 10:50**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-001G RG-North-20201026**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 00:12**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-6**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**928.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	5.19	108
2051-61-8	2-MoCB	U	ND	pg/L	5.19	108
2051-62-9	3-MoCB	U	ND	pg/L	4.29	108
13029-08-8	4-DiCB	U	ND	pg/L	20.1	108
16605-91-7	5-DiCB	U	ND	pg/L	11.4	108
25569-80-6	6-DiCB	U	ND	pg/L	10.2	108
33284-50-3	7-DiCB	U	ND	pg/L	8.85	108
34883-43-7	8-DiCB	U	ND	pg/L	8.87	108
34883-39-1	9-DiCB	U	ND	pg/L	12.3	108
33146-45-1	10-DiCB	U	ND	pg/L	9.80	108
2050-67-1	11-DiCB	U	ND	pg/L	33.2	108
2974-92-7	12-DiCB	CU	ND	pg/L	9.89	215
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	10.9	108
2050-68-2	15-DiCB	U	ND	pg/L	9.26	108
38444-78-9	16-TrCB	U	ND	pg/L	3.83	108
37680-66-3	17-TrCB	U	ND	pg/L	4.29	162
37680-65-2	18-TrCB	CU	ND	pg/L	4.54	215
38444-73-4	19-TrCB	U	ND	pg/L	5.39	108
38444-84-7	20-TrCB	BCJ	9.22	pg/L	2.89	215
55702-46-0	21-TrCB	CU	ND	pg/L	5.67	215
38444-85-8	22-TrCB	U	ND	pg/L	3.25	108
55720-44-0	23-TrCB	U	ND	pg/L	2.80	108
55702-45-9	24-TrCB	U	ND	pg/L	3.14	108
55712-37-3	25-TrCB	U	ND	pg/L	2.54	108
38444-81-4	26-TrCB	CU	ND	pg/L	3.17	215
38444-76-7	27-TrCB	U	ND	pg/L	3.34	108
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	BJ	7.69	pg/L	2.95	108
38444-77-8	32-TrCB	U	ND	pg/L	2.97	108

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326001**	**Date Collected:**	**10/26/2020 10:50**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-001G RG-North-20201026**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 00:12**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-6**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**928.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	3.36	108
37680-69-6	35-TrCB	U	ND	pg/L	3.04	108
38444-87-0	36-TrCB	U	ND	pg/L	2.91	108
38444-90-5	37-TrCB	U	ND	pg/L	2.93	108
53555-66-1	38-TrCB	U	ND	pg/L	2.99	108
38444-88-1	39-TrCB	U	ND	pg/L	2.48	108
38444-93-8	40-TeCB	CU	ND	pg/L	4.46	215
52663-59-9	41-TeCB	U	ND	pg/L	6.20	162
36559-22-5	42-TeCB	U	ND	pg/L	4.33	162
70362-46-8	43-TeCB	U	ND	pg/L	4.35	108
41464-39-5	44-TeCB	CU	ND	pg/L	12.3	323
70362-45-7	45-TeCB	CU	ND	pg/L	2.74	215
41464-47-5	46-TeCB	U	ND	pg/L	2.97	108
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	4.14	162
41464-40-8	49-TeCB	CU	ND	pg/L	6.35	215
62796-65-0	50-TeCB	CU	ND	pg/L	2.61	215
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	BJ	13.9	pg/L	4.82	215
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	2.15	108
74338-24-2	55-TeCB	U	ND	pg/L	2.61	108
41464-43-1	56-TeCB	BJ	3.86	pg/L	2.71	108
70424-67-8	57-TeCB	U	ND	pg/L	2.86	108
41464-49-7	58-TeCB	U	ND	pg/L	2.63	108
74472-33-6	59-TeCB	CU	ND	pg/L	3.36	323
33025-41-1	60-TeCB	U	ND	pg/L	2.58	108
33284-53-6	61-TeCB	BCJ	15.9	pg/L	2.58	431
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	2.80	108
52663-58-8	64-TeCB	U	ND	pg/L	4.24	108

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326001**	**Date Collected:**	**10/26/2020 10:50**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-001G RG-North-20201026**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 00:12**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-6**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**928.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	BJ	8.90	pg/L	2.93	215
73575-53-8	67-TeCB	U	ND	pg/L	2.39	108
73575-52-7	68-TeCB	U	ND	pg/L	2.30	108
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	2.76	108
74338-23-1	73-TeCB	U	ND	pg/L	3.36	108
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	2.97	108
70362-49-1	78-TeCB	U	ND	pg/L	3.21	108
41464-48-6	79-TeCB	U	ND	pg/L	2.61	108
33284-52-5	80-TeCB	U	ND	pg/L	2.48	108
70362-50-4	81-TeCB	U	ND	pg/L	2.84	108
52663-62-4	82-PeCB	U	ND	pg/L	4.93	108
60145-20-2	83-PeCB	U	ND	pg/L	5.60	108
52663-60-2	84-PeCB	U	ND	pg/L	4.26	108
65510-45-4	85-PeCB	CU	ND	pg/L	3.40	323
55312-69-1	86-PeCB	BCJ	9.74	pg/L	3.55	646
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	4.09	215
73575-57-2	89-PeCB	U	ND	pg/L	5.04	162
68194-07-0	90-PeCB	BCJ	9.78	pg/L	3.60	323
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	4.78	108
73575-56-1	93-PeCB	CU	ND	pg/L	3.73	215
73575-55-0	94-PeCB	U	ND	pg/L	3.81	108
38379-99-6	95-PeCB	BJ	8.10	pg/L	4.63	108
73575-54-9	96-PeCB	U	ND	pg/L	2.13	162

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326001**	**Date Collected:**	**10/26/2020 10:50**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-001G RG-North-20201026**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 00:12**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-6**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**928.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	3.77	215
38380-01-7	99-PeCB	U	ND	pg/L	3.38	108
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	4.16	108
56558-16-8	104-PeCB	U	ND	pg/L	1.81	215
32598-14-4	105-PeCB	J	5.92	pg/L	3.81	162
70424-69-0	106-PeCB	U	ND	pg/L	3.90	108
70424-68-9	107-PeCB	U	ND	pg/L	3.02	108
70362-41-3	108-PeCB	CU	ND	pg/L	3.42	215
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	BCJ	10.3	pg/L	2.89	215
39635-32-0	111-PeCB	U	ND	pg/L	2.80	108
74472-36-9	112-PeCB	U	ND	pg/L	2.89	108
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	3.68	108
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	J	11.8	pg/L	3.58	108
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	3.27	108
56558-18-0	121-PeCB	U	ND	pg/L	2.76	108
76842-07-4	122-PeCB	U	ND	pg/L	4.74	108
65510-44-3	123-PeCB	U	ND	pg/L	3.42	108
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	4.09	108
39635-33-1	127-PeCB	U	ND	pg/L	3.79	108
38380-07-3	128-HxCB	CJ	2.82	pg/L	2.50	215

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326001**	**Date Collected:**	**10/26/2020 10:50**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-001G RG-North-20201026**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 00:12**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-6**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**928.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	9.28	pg/L	2.61	323
52663-66-8	130-HxCB	U	ND	pg/L	3.23	108
61798-70-7	131-HxCB	U	ND	pg/L	3.02	108
38380-05-1	132-HxCB	U	ND	pg/L	2.78	108
35694-04-3	133-HxCB	U	ND	pg/L	3.19	108
52704-70-8	134-HxCB	U	ND	pg/L	3.17	162
52744-13-5	135-HxCB	CU	ND	pg/L	2.63	215
38411-22-2	136-HxCB	U	ND	pg/L	1.85	108
35694-06-5	137-HxCB	U	ND	pg/L	2.65	162
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	2.54	215
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	2.67	108
41411-61-4	142-HxCB	U	ND	pg/L	3.32	162
68194-15-0	143-HxCB	U	ND	pg/L	3.14	108
68194-14-9	144-HxCB	U	ND	pg/L	2.39	108
74472-40-5	145-HxCB	U	ND	pg/L	1.57	108
51908-16-8	146-HxCB	U	ND	pg/L	2.54	108
68194-13-8	147-HxCB	BCJ	4.78	pg/L	2.52	215
74472-41-6	148-HxCB	U	ND	pg/L	2.30	108
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	1.51	108
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	1.85	108
35065-27-1	153-HxCB	BCJ	6.44	pg/L	2.24	215
60145-22-4	154-HxCB	U	ND	pg/L	1.90	108
33979-03-2	155-HxCB	U	ND	pg/L	1.40	108
38380-08-4	156-HxCB	CJ	2.80	pg/L	2.46	215
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	1.98	108
39635-35-3	159-HxCB	U	ND	pg/L	1.72	108
41411-62-5	160-HxCB	U	ND	pg/L	2.09	108

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326001**	**Date Collected:**	**10/26/2020 10:50**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-001G RG-North-20201026**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 00:12**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-6**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**928.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	2.26	108
39635-34-2	162-HxCB	U	ND	pg/L	1.57	108
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	2.15	108
74472-46-1	165-HxCB	U	ND	pg/L	2.13	108
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	1.68	108
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	1.90	108
35065-30-6	170-HpCB	U	ND	pg/L	2.48	108
52663-71-5	171-HpCB	CU	ND	pg/L	2.50	215
52663-74-8	172-HpCB	U	ND	pg/L	2.52	108
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	2.28	108
40186-70-7	175-HpCB	U	ND	pg/L	2.18	108
52663-65-7	176-HpCB	U	ND	pg/L	1.70	108
52663-70-4	177-HpCB	U	ND	pg/L	2.50	108
52663-67-9	178-HpCB	U	ND	pg/L	2.35	108
52663-64-6	179-HpCB	U	ND	pg/L	1.64	108
35065-29-3	180-HpCB	CU	ND	pg/L	2.00	215
74472-47-2	181-HpCB	U	ND	pg/L	2.15	108
60145-23-5	182-HpCB	U	ND	pg/L	2.07	108
52663-69-1	183-HpCB	CU	ND	pg/L	2.18	215
74472-48-3	184-HpCB	U	ND	pg/L	1.46	108
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	1.55	108
52663-68-0	187-HpCB	BJ	2.58	pg/L	1.85	108
74487-85-7	188-HpCB	U	ND	pg/L	1.57	162
39635-31-9	189-HpCB	U	ND	pg/L	2.37	108
41411-64-7	190-HpCB	U	ND	pg/L	1.90	108
74472-50-7	191-HpCB	U	ND	pg/L	1.85	108
74472-51-8	192-HpCB	U	ND	pg/L	1.83	108

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326001**	**Date Collected:**	**10/26/2020 10:50**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-001G RG-North-20201026**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 00:12**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-6**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**928.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	2.33	pg/L	2.28	108
52663-78-2	195-OcCB	U	ND	pg/L	2.46	108
42740-50-1	196-OcCB	U	ND	pg/L	2.13	108
33091-17-7	197-OcCB	CU	ND	pg/L	1.55	215
68194-17-2	198-OcCB	CJ	2.37	pg/L	2.11	215
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	1.55	108
2136-99-4	202-OcCB	U	ND	pg/L	1.66	108
52663-76-0	203-OcCB	U	ND	pg/L	1.81	108
74472-52-9	204-OcCB	U	ND	pg/L	1.59	108
74472-53-0	205-OcCB	U	ND	pg/L	1.94	108
40186-72-9	206-NoCB	U	ND	pg/L	4.09	108
52663-79-3	207-NoCB	U	ND	pg/L	3.08	108
52663-77-1	208-NoCB	U	ND	pg/L	2.93	108
2051-24-3	209-DeCB	U	ND	pg/L	2.56	108
1336-36-3	Total PCB Congeners	J	148	pg/L		108

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		904	2150	pg/L	42.0	(15%-150%)
13C-3-MoCB		1040	2150	pg/L	48.3	(15%-150%)
13C-4-DiCB		1090	2150	pg/L	50.7	(25%-150%)
13C-15-DiCB		1520	2150	pg/L	70.4	(25%-150%)
13C-19-TrCB		1270	2150	pg/L	58.8	(25%-150%)
13C-37-TrCB		1430	2150	pg/L	66.2	(25%-150%)
13C-54-TeCB		1200	2150	pg/L	55.9	(25%-150%)
13C-77-TeCB		1630	2150	pg/L	75.7	(25%-150%)
13C-81-TeCB		1630	2150	pg/L	75.8	(25%-150%)
13C-104-PeCB		1310	2150	pg/L	60.9	(25%-150%)
13C-105-PeCB		1600	2150	pg/L	74.5	(25%-150%)
13C-114-PeCB		1580	2150	pg/L	73.4	(25%-150%)
13C-118-PeCB		1570	2150	pg/L	72.7	(25%-150%)
13C-123-PeCB		1660	2150	pg/L	76.8	(25%-150%)
13C-126-PeCB		1730	2150	pg/L	80.3	(25%-150%)
13C-155-HxCB		1370	2150	pg/L	63.4	(25%-150%)
13C-156-HxCB	C	3060	4310	pg/L	71.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1590	2150	pg/L	73.9	(25%-150%)
13C-169-HxCB		1700	2150	pg/L	79.1	(25%-150%)
13C-188-HpCB		1480	2150	pg/L	68.6	(25%-150%)
13C-189-HpCB		1580	2150	pg/L	73.2	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326001**	**Date Collected:**	**10/26/2020 10:50**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-001G RG-North-20201026**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 00:12**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-6**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**928.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1460	2150	pg/L	67.8	(25%-150%)
13C-205-OcCB		1670	2150	pg/L	77.6	(25%-150%)
13C-206-NoCB		1740	2150	pg/L	81.0	(25%-150%)
13C-208-NoCB		1500	2150	pg/L	69.8	(25%-150%)
13C-209-DeCB		1640	2150	pg/L	76.2	(25%-150%)
13C-28-TrCB		1580	2150	pg/L	73.2	(30%-135%)
13C-111-PeCB		1750	2150	pg/L	81.4	(30%-135%)
13C-178-HpCB		1890	2150	pg/L	87.8	(30%-135%)

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326002**	**Date Collected:**	**10/28/2020 14:10**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-003G RG-South-20201028**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 01:22**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-7**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**939.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	5.64	106
2051-61-8	2-MoCB	U	ND	pg/L	5.66	106
2051-62-9	3-MoCB	U	ND	pg/L	4.73	106
13029-08-8	4-DiCB	U	ND	pg/L	25.1	106
16605-91-7	5-DiCB	U	ND	pg/L	12.5	106
25569-80-6	6-DiCB	U	ND	pg/L	11.2	106
33284-50-3	7-DiCB	U	ND	pg/L	9.66	106
34883-43-7	8-DiCB	U	ND	pg/L	9.68	106
34883-39-1	9-DiCB	U	ND	pg/L	13.4	106
33146-45-1	10-DiCB	U	ND	pg/L	11.9	106
2050-67-1	11-DiCB	BJ	66.0	pg/L	12.0	106
2974-92-7	12-DiCB	CU	ND	pg/L	10.8	213
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	11.9	106
2050-68-2	15-DiCB	U	ND	pg/L	9.96	106
38444-78-9	16-TrCB	U	ND	pg/L	4.36	106
37680-66-3	17-TrCB	U	ND	pg/L	5.87	160
37680-65-2	18-TrCB	CU	ND	pg/L	9.51	213
38444-73-4	19-TrCB	U	ND	pg/L	6.15	106
38444-84-7	20-TrCB	BCJ	16.0	pg/L	3.30	213
55702-46-0	21-TrCB	BCJ	7.22	pg/L	3.41	213
38444-85-8	22-TrCB	J	5.96	pg/L	3.26	106
55720-44-0	23-TrCB	U	ND	pg/L	3.19	106
55702-45-9	24-TrCB	U	ND	pg/L	3.60	106
55712-37-3	25-TrCB	U	ND	pg/L	2.89	106
38444-81-4	26-TrCB	CJ	4.09	pg/L	3.53	213
38444-76-7	27-TrCB	U	ND	pg/L	3.81	106
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	BJ	14.0	pg/L	3.36	106
38444-77-8	32-TrCB	U	ND	pg/L	3.98	106

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326002**	**Date Collected:**	**10/28/2020 14:10**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-003G RG-South-20201028**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 01:22**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-7**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**939.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	3.85	106
37680-69-6	35-TrCB	U	ND	pg/L	3.49	106
38444-87-0	36-TrCB	U	ND	pg/L	3.34	106
38444-90-5	37-TrCB	J	6.07	pg/L	3.34	106
53555-66-1	38-TrCB	U	ND	pg/L	3.45	106
38444-88-1	39-TrCB	U	ND	pg/L	2.83	106
38444-93-8	40-TeCB	BCJ	6.77	pg/L	5.73	213
52663-59-9	41-TeCB	U	ND	pg/L	9.47	160
36559-22-5	42-TeCB	U	ND	pg/L	6.62	160
70362-46-8	43-TeCB	U	ND	pg/L	6.64	106
41464-39-5	44-TeCB	CU	ND	pg/L	26.7	319
70362-45-7	45-TeCB	CU	ND	pg/L	4.87	213
41464-47-5	46-TeCB	U	ND	pg/L	3.26	106
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	6.30	160
41464-40-8	49-TeCB	BCJ	12.2	pg/L	5.87	213
62796-65-0	50-TeCB	CJ	3.68	pg/L	2.85	213
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	BJ	31.5	pg/L	7.36	213
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	2.41	106
74338-24-2	55-TeCB	U	ND	pg/L	3.24	106
41464-43-1	56-TeCB	BJ	7.17	pg/L	3.38	106
70424-67-8	57-TeCB	U	ND	pg/L	3.55	106
41464-49-7	58-TeCB	U	ND	pg/L	3.26	106
74472-33-6	59-TeCB	CU	ND	pg/L	5.15	319
33025-41-1	60-TeCB	J	3.64	pg/L	3.21	106
33284-53-6	61-TeCB	BCJ	34.1	pg/L	3.21	426
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	3.49	106
52663-58-8	64-TeCB	U	ND	pg/L	7.56	106

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326002**	**Date Collected:**	**10/28/2020 14:10**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-003G RG-South-20201028**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 01:22**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-7**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**939.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	BJ	17.8	pg/L	3.64	213
73575-53-8	67-TeCB	U	ND	pg/L	2.96	106
73575-52-7	68-TeCB	U	ND	pg/L	2.87	106
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	3.43	106
74338-23-1	73-TeCB	U	ND	pg/L	5.13	106
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	5.32	106
70362-49-1	78-TeCB	U	ND	pg/L	3.98	106
41464-48-6	79-TeCB	U	ND	pg/L	3.24	106
33284-52-5	80-TeCB	U	ND	pg/L	3.07	106
70362-50-4	81-TeCB	U	ND	pg/L	3.62	106
52663-62-4	82-PeCB	U	ND	pg/L	6.94	106
60145-20-2	83-PeCB	U	ND	pg/L	7.88	106
52663-60-2	84-PeCB	J	9.88	pg/L	5.98	106
65510-45-4	85-PeCB	CU	ND	pg/L	4.79	319
55312-69-1	86-PeCB	BCJ	28.9	pg/L	5.00	639
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	5.75	213
73575-57-2	89-PeCB	U	ND	pg/L	7.09	160
68194-07-0	90-PeCB	BCJ	42.6	pg/L	5.04	319
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	10.8	pg/L	6.70	106
73575-56-1	93-PeCB	CU	ND	pg/L	5.24	213
73575-55-0	94-PeCB	U	ND	pg/L	5.36	106
38379-99-6	95-PeCB	BJ	37.6	pg/L	6.49	106
73575-54-9	96-PeCB	U	ND	pg/L	2.53	160

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326002**	**Date Collected:**	**10/28/2020 14:10**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-003G RG-South-20201028**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 01:22**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-7**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**939.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	5.28	213
38380-01-7	99-PeCB	BJ	14.1	pg/L	4.75	106
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	5.83	106
56558-16-8	104-PeCB	U	ND	pg/L	2.06	213
32598-14-4	105-PeCB	J	19.6	pg/L	4.60	160
70424-69-0	106-PeCB	U	ND	pg/L	4.68	106
70424-68-9	107-PeCB	U	ND	pg/L	3.64	106
70362-41-3	108-PeCB	CU	ND	pg/L	4.13	213
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	BCJ	49.6	pg/L	4.07	213
39635-32-0	111-PeCB	U	ND	pg/L	3.94	106
74472-36-9	112-PeCB	U	ND	pg/L	4.07	106
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	4.51	106
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	J	42.8	pg/L	4.28	106
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	4.60	106
56558-18-0	121-PeCB	U	ND	pg/L	3.90	106
76842-07-4	122-PeCB	U	ND	pg/L	5.70	106
65510-44-3	123-PeCB	U	ND	pg/L	4.19	106
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	4.77	106
39635-33-1	127-PeCB	U	ND	pg/L	4.56	106
38380-07-3	128-HxCB	CJ	9.92	pg/L	3.32	213

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326002**	**Date Collected:**	**10/28/2020 14:10**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-003G RG-South-20201028**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 01:22**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-7**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**939.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	79.3	pg/L	3.49	319
52663-66-8	130-HxCB	U	ND	pg/L	4.34	106
61798-70-7	131-HxCB	U	ND	pg/L	4.02	106
38380-05-1	132-HxCB	J	20.6	pg/L	3.70	106
35694-04-3	133-HxCB	U	ND	pg/L	4.24	106
52704-70-8	134-HxCB	U	ND	pg/L	4.24	160
52744-13-5	135-HxCB	BCJ	23.3	pg/L	3.53	213
38411-22-2	136-HxCB	J	7.96	pg/L	2.87	106
35694-06-5	137-HxCB	U	ND	pg/L	3.53	160
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	3.38	213
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	12.4	pg/L	3.55	106
41411-61-4	142-HxCB	U	ND	pg/L	4.41	160
68194-15-0	143-HxCB	U	ND	pg/L	4.19	106
68194-14-9	144-HxCB	J	4.00	pg/L	3.75	106
74472-40-5	145-HxCB	U	ND	pg/L	2.47	106
51908-16-8	146-HxCB	U	ND	pg/L	11.7	106
68194-13-8	147-HxCB	CJ	51.3	pg/L	3.36	213
74472-41-6	148-HxCB	U	ND	pg/L	3.62	106
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	2.36	106
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	2.87	106
35065-27-1	153-HxCB	BCJ	64.4	pg/L	2.98	213
60145-22-4	154-HxCB	U	ND	pg/L	2.96	106
33979-03-2	155-HxCB	U	ND	pg/L	2.23	106
38380-08-4	156-HxCB	CJ	8.79	pg/L	2.92	213
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	6.22	pg/L	2.64	106
39635-35-3	159-HxCB	U	ND	pg/L	2.06	106
41411-62-5	160-HxCB	U	ND	pg/L	2.77	106

Comments:

B **The target analyte was detected in the associated blank.**

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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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326002**	**Date Collected:**	**10/28/2020 14:10**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-003G RG-South-20201028**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 01:22**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-7**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**939.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	3.02	106
39635-34-2	162-HxCB	U	ND	pg/L	1.89	106
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	5.11	106
74472-46-1	165-HxCB	U	ND	pg/L	2.83	106
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	3.60	pg/L	2.00	106
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	2.34	106
35065-30-6	170-HpCB	J	19.6	pg/L	4.19	106
52663-71-5	171-HpCB	CJ	7.28	pg/L	4.21	213
52663-74-8	172-HpCB	J	4.41	pg/L	4.26	106
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	20.2	pg/L	3.85	106
40186-70-7	175-HpCB	U	ND	pg/L	2.96	106
52663-65-7	176-HpCB	J	3.02	pg/L	2.32	106
52663-70-4	177-HpCB	J	14.5	pg/L	4.21	106
52663-67-9	178-HpCB	U	ND	pg/L	5.13	106
52663-64-6	179-HpCB	J	8.51	pg/L	2.23	106
35065-29-3	180-HpCB	CJ	41.1	pg/L	3.36	213
74472-47-2	181-HpCB	U	ND	pg/L	3.62	106
60145-23-5	182-HpCB	U	ND	pg/L	2.83	106
52663-69-1	183-HpCB	CU	ND	pg/L	13.1	213
74472-48-3	184-HpCB	U	ND	pg/L	1.98	106
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	2.13	106
52663-68-0	187-HpCB	BJ	21.9	pg/L	2.53	106
74487-85-7	188-HpCB	U	ND	pg/L	2.17	160
39635-31-9	189-HpCB	U	ND	pg/L	2.53	106
41411-64-7	190-HpCB	U	ND	pg/L	4.41	106
74472-50-7	191-HpCB	U	ND	pg/L	3.15	106
74472-51-8	192-HpCB	U	ND	pg/L	3.09	106

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326002**	**Date Collected:**	**10/28/2020 14:10**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-003G RG-South-20201028**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 01:22**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-7**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**939.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	9.86	pg/L	2.43	106
52663-78-2	195-OcCB	J	4.38	pg/L	2.60	106
42740-50-1	196-OcCB	U	ND	pg/L	4.58	106
33091-17-7	197-OcCB	CU	ND	pg/L	1.89	213
68194-17-2	198-OcCB	CU	ND	pg/L	11.8	213
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	1.92	106
2136-99-4	202-OcCB	J	2.55	pg/L	2.00	106
52663-76-0	203-OcCB	J	6.39	pg/L	2.21	106
74472-52-9	204-OcCB	U	ND	pg/L	1.96	106
74472-53-0	205-OcCB	U	ND	pg/L	2.06	106
40186-72-9	206-NoCB	J	5.19	pg/L	4.60	106
52663-79-3	207-NoCB	U	ND	pg/L	3.41	106
52663-77-1	208-NoCB	U	ND	pg/L	3.21	106
2051-24-3	209-DeCB	J	2.92	pg/L	2.77	106
1336-36-3	Total PCB Congeners	J	956	pg/L		106

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		855	2130	pg/L	40.2	(15%-150%)
13C-3-MoCB		967	2130	pg/L	45.4	(15%-150%)
13C-4-DiCB		966	2130	pg/L	45.4	(25%-150%)
13C-15-DiCB		1370	2130	pg/L	64.4	(25%-150%)
13C-19-TrCB		1150	2130	pg/L	54.1	(25%-150%)
13C-37-TrCB		1400	2130	pg/L	65.8	(25%-150%)
13C-54-TeCB		1150	2130	pg/L	53.9	(25%-150%)
13C-77-TeCB		1640	2130	pg/L	76.9	(25%-150%)
13C-81-TeCB		1610	2130	pg/L	75.8	(25%-150%)
13C-104-PeCB		1270	2130	pg/L	59.9	(25%-150%)
13C-105-PeCB		1530	2130	pg/L	72.0	(25%-150%)
13C-114-PeCB		1510	2130	pg/L	70.7	(25%-150%)
13C-118-PeCB		1500	2130	pg/L	70.5	(25%-150%)
13C-123-PeCB		1590	2130	pg/L	74.5	(25%-150%)
13C-126-PeCB		1690	2130	pg/L	79.4	(25%-150%)
13C-155-HxCB		1300	2130	pg/L	61.0	(25%-150%)
13C-156-HxCB	C	2940	4260	pg/L	69.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1520	2130	pg/L	71.4	(25%-150%)
13C-169-HxCB		1600	2130	pg/L	75.4	(25%-150%)
13C-188-HpCB		1380	2130	pg/L	64.6	(25%-150%)
13C-189-HpCB		1500	2130	pg/L	70.4	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**17326002**	**Date Collected:**	**10/28/2020 14:10**	**Matrix:**	**WATER**
Client Sample:	**1668A Water**	**Date Received:**	**11/24/2020 11:36**		
Client ID:	**2010C61-003G RG-South-20201028**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/28/2020 01:22**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-7**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**939.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1360	2130	pg/L	63.9	(25%-150%)
13C-205-OcCB		1580	2130	pg/L	74.1	(25%-150%)
13C-206-NoCB		1630	2130	pg/L	76.6	(25%-150%)
13C-208-NoCB		1420	2130	pg/L	66.6	(25%-150%)
13C-209-DeCB		1540	2130	pg/L	72.3	(25%-150%)
13C-28-TrCB		1570	2130	pg/L	73.7	(30%-135%)
13C-111-PeCB		1750	2130	pg/L	82.3	(30%-135%)
13C-178-HpCB		1800	2130	pg/L	84.8	(30%-135%)

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.**

Quality Control Summary

PCB Congeners

Surrogate Recovery Report

SDG Number: 2010C61

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12028048	LCS for batch 45451	13C-1-MoCB		41.8	(15%-140%)
		13C-3-MoCB		46.4	(15%-140%)
		13C-4-DiCB		48.3	(30%-140%)
		13C-15-DiCB		64.8	(30%-140%)
		13C-19-TrCB		55.5	(30%-140%)
		13C-37-TrCB		63.3	(30%-140%)
		13C-54-TeCB		53.7	(30%-140%)
		13C-77-TeCB		74.7	(30%-140%)
		13C-81-TeCB		75.2	(30%-140%)
		13C-104-PeCB		58.9	(30%-140%)
		13C-105-PeCB		74.8	(30%-140%)
		13C-114-PeCB		72.8	(30%-140%)
		13C-118-PeCB		72.8	(30%-140%)
		13C-123-PeCB		76.3	(30%-140%)
		13C-126-PeCB		81.6	(30%-140%)
		13C-155-HxCB		60.0	(30%-140%)
		13C-156-HxCB	C	72.8	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		74.6	(30%-140%)
		13C-169-HxCB		80.7	(30%-140%)
		13C-188-HpCB		63.7	(30%-140%)
		13C-189-HpCB		73.8	(30%-140%)
		13C-202-OcCB		65.9	(30%-140%)
		13C-205-OcCB		77.2	(30%-140%)
		13C-206-NoCB		81.5	(30%-140%)
		13C-208-NoCB		69.3	(30%-140%)
		13C-209-DeCB		76.1	(30%-140%)
		13C-28-TrCB		68.9	(40%-125%)
		13C-111-PeCB		76.1	(40%-125%)
		13C-178-HpCB		83.5	(40%-125%)
12028049	LCSD for batch 45451	13C-1-MoCB		41.4	(15%-140%)
		13C-3-MoCB		46.8	(15%-140%)
		13C-4-DiCB		49.3	(30%-140%)
		13C-15-DiCB		62.7	(30%-140%)
		13C-19-TrCB		54.9	(30%-140%)
		13C-37-TrCB		62.3	(30%-140%)
		13C-54-TeCB		56.0	(30%-140%)
		13C-77-TeCB		71.6	(30%-140%)
		13C-81-TeCB		72.2	(30%-140%)
		13C-104-PeCB		60.8	(30%-140%)
		13C-105-PeCB		71.7	(30%-140%)
		13C-114-PeCB		70.4	(30%-140%)
		13C-118-PeCB		70.2	(30%-140%)
		13C-123-PeCB		73.2	(30%-140%)
		13C-126-PeCB		76.1	(30%-140%)
		13C-155-HxCB		63.1	(30%-140%)
		13C-156-HxCB	C	68.9	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		72.2	(30%-140%)
		13C-169-HxCB		76.1	(30%-140%)
		13C-188-HpCB		67.5	(30%-140%)
		13C-189-HpCB		72.1	(30%-140%)

PCB Congeners

Surrogate Recovery Report

SDG Number: 2010C61

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12028049	LCSD for batch 45451	13C-202-OcCB		68.0	(30%-140%)
		13C-205-OcCB		78.2	(30%-140%)
		13C-206-NoCB		83.3	(30%-140%)
		13C-208-NoCB		71.3	(30%-140%)
		13C-209-DeCB		79.1	(30%-140%)
		13C-28-TrCB		67.9	(40%-125%)
		13C-111-PeCB		74.3	(40%-125%)
		13C-178-HpCB		82.9	(40%-125%)
12028047	MB for batch 45451	13C-1-MoCB		37.7	(15%-150%)
		13C-3-MoCB		44.4	(15%-150%)
		13C-4-DiCB		45.9	(25%-150%)
		13C-15-DiCB		66.3	(25%-150%)
		13C-19-TrCB		54.0	(25%-150%)
		13C-37-TrCB		58.3	(25%-150%)
		13C-54-TeCB		47.9	(25%-150%)
		13C-77-TeCB		67.7	(25%-150%)
		13C-81-TeCB		67.9	(25%-150%)
		13C-104-PeCB		52.6	(25%-150%)
		13C-105-PeCB		65.8	(25%-150%)
		13C-114-PeCB		64.3	(25%-150%)
		13C-118-PeCB		63.9	(25%-150%)
		13C-123-PeCB		67.5	(25%-150%)
		13C-126-PeCB		72.0	(25%-150%)
		13C-155-HxCB		53.9	(25%-150%)
		13C-156-HxCB	C	62.5	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		64.8	(25%-150%)
		13C-169-HxCB		69.4	(25%-150%)
		13C-188-HpCB		57.6	(25%-150%)
		13C-189-HpCB		65.1	(25%-150%)
		13C-202-OcCB		58.5	(25%-150%)
		13C-205-OcCB		68.2	(25%-150%)
		13C-206-NoCB		71.4	(25%-150%)
		13C-208-NoCB		61.8	(25%-150%)
		13C-209-DeCB		66.9	(25%-150%)
		13C-28-TrCB		68.7	(30%-135%)
		13C-111-PeCB		74.1	(30%-135%)
		13C-178-HpCB		80.6	(30%-135%)
17326001	2010C61-001G RG-North-20201026	13C-1-MoCB		42.0	(15%-150%)
		13C-3-MoCB		48.3	(15%-150%)
		13C-4-DiCB		50.7	(25%-150%)
		13C-15-DiCB		70.4	(25%-150%)
		13C-19-TrCB		58.8	(25%-150%)
		13C-37-TrCB		66.2	(25%-150%)
		13C-54-TeCB		55.9	(25%-150%)
		13C-77-TeCB		75.7	(25%-150%)
		13C-81-TeCB		75.8	(25%-150%)
		13C-104-PeCB		60.9	(25%-150%)
		13C-105-PeCB		74.5	(25%-150%)
		13C-114-PeCB		73.4	(25%-150%)
		13C-118-PeCB		72.7	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: 2010C61

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
17326001	2010C61-001G RG-North-20201026	13C-123-PeCB		76.8	(25%-150%)
		13C-126-PeCB		80.3	(25%-150%)
		13C-155-HxCB		63.4	(25%-150%)
		13C-156-HxCB	C	71.1	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		73.9	(25%-150%)
		13C-169-HxCB		79.1	(25%-150%)
		13C-188-HpCB		68.6	(25%-150%)
		13C-189-HpCB		73.2	(25%-150%)
		13C-202-OcCB		67.8	(25%-150%)
		13C-205-OcCB		77.6	(25%-150%)
		13C-206-NoCB		81.0	(25%-150%)
		13C-208-NoCB		69.8	(25%-150%)
		13C-209-DeCB		76.2	(25%-150%)
		13C-28-TrCB		73.2	(30%-135%)
		13C-111-PeCB		81.4	(30%-135%)
		13C-178-HpCB		87.8	(30%-135%)
17326002	2010C61-003G RG-South-20201028	13C-1-MoCB		40.2	(15%-150%)
		13C-3-MoCB		45.4	(15%-150%)
		13C-4-DiCB		45.4	(25%-150%)
		13C-15-DiCB		64.4	(25%-150%)
		13C-19-TrCB		54.1	(25%-150%)
		13C-37-TrCB		65.8	(25%-150%)
		13C-54-TeCB		53.9	(25%-150%)
		13C-77-TeCB		76.9	(25%-150%)
		13C-81-TeCB		75.8	(25%-150%)
		13C-104-PeCB		59.9	(25%-150%)
		13C-105-PeCB		72.0	(25%-150%)
		13C-114-PeCB		70.7	(25%-150%)
		13C-118-PeCB		70.5	(25%-150%)
		13C-123-PeCB		74.5	(25%-150%)
		13C-126-PeCB		79.4	(25%-150%)
		13C-155-HxCB		61.0	(25%-150%)
		13C-156-HxCB	C	69.1	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		71.4	(25%-150%)
		13C-169-HxCB		75.4	(25%-150%)
		13C-188-HpCB		64.6	(25%-150%)
		13C-189-HpCB		70.4	(25%-150%)
		13C-202-OcCB		63.9	(25%-150%)
		13C-205-OcCB		74.1	(25%-150%)
		13C-206-NoCB		76.6	(25%-150%)
		13C-208-NoCB		66.6	(25%-150%)
		13C-209-DeCB		72.3	(25%-150%)
		13C-28-TrCB		73.7	(30%-135%)
		13C-111-PeCB		82.3	(30%-135%)
		13C-178-HpCB		84.8	(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: 2010C61 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 45451 **Matrix:** WATER

Lab Sample ID: 12028048

Instrument: HRP875 **Analysis Date:** 11/27/2020 20:44 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 45451

Batch ID: 45453

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS	1-MoCB	500		560	112	50-150
2051-62-9	LCS	3-MoCB	500		619	124	50-150
13029-08-8	LCS	4-DiCB	500		498	99.6	50-150
2050-68-2	LCS	15-DiCB	500		612	122	50-150
38444-73-4	LCS	19-TrCB	500		554	111	50-150
38444-90-5	LCS	37-TrCB	500		591	118	50-150
15968-05-5	LCS	54-TeCB	1000		1060	106	50-150
32598-13-3	LCS	77-TeCB	1000		1130	113	50-150
70362-50-4	LCS	81-TeCB	1000		896	89.6	50-150
56558-16-8	LCS	104-PeCB	1000		1130	113	50-150
32598-14-4	LCS	105-PeCB	1000		1010	101	50-150
74472-37-0	LCS	114-PeCB	1000		1220	122	50-150
31508-00-6	LCS	118-PeCB	1000		1310	131	50-150
65510-44-3	LCS	123-PeCB	1000		1090	109	50-150
57465-28-8	LCS	126-PeCB	1000		1170	117	50-150
33979-03-2	LCS	155-HxCB	1000		1120	112	50-150
38380-08-4	LCS	156-HxCB	2000	C	2340	117	50-150
69782-90-7	LCS	157-HxCB		C156			
52663-72-6	LCS	167-HxCB	1000		1100	110	50-150
32774-16-6	LCS	169-HxCB	1000		1190	119	50-150
74487-85-7	LCS	188-HpCB	1000		1130	113	50-150
39635-31-9	LCS	189-HpCB	1000		1160	116	50-150
2136-99-4	LCS	202-OcCB	1500		1660	110	50-150
74472-53-0	LCS	205-OcCB	1500		1600	107	50-150
40186-72-9	LCS	206-NoCB	1500		1560	104	50-150
52663-77-1	LCS	208-NoCB	1500		1720	114	50-150
2051-24-3	LCS	209-DeCB	1500		1650	110	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: 2010C61 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 45451 **Matrix:** WATER

Lab Sample ID: 12028049

Instrument: HRP875 **Analysis Date:** 11/27/2020 21:53 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 45451

Batch ID: 45453

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	1-MoCB	500		559	112	50-150	0.164	0-20
2051-62-9	LCSD	3-MoCB	500		649	130	50-150	4.71	0-20
13029-08-8	LCSD	4-DiCB	500		454	90.8	50-150	9.22	0-20
2050-68-2	LCSD	15-DiCB	500		620	124	50-150	1.28	0-20
38444-73-4	LCSD	19-TrCB	500		574	115	50-150	3.50	0-20
38444-90-5	LCSD	37-TrCB	500		581	116	50-150	1.85	0-20
15968-05-5	LCSD	54-TeCB	1000		1040	104	50-150	1.93	0-20
32598-13-3	LCSD	77-TeCB	1000		1120	112	50-150	0.794	0-20
70362-50-4	LCSD	81-TeCB	1000		898	89.8	50-150	0.305	0-20
56558-16-8	LCSD	104-PeCB	1000		1130	113	50-150	0.165	0-20
32598-14-4	LCSD	105-PeCB	1000		964	96.4	50-150	4.75	0-20
74472-37-0	LCSD	114-PeCB	1000		1210	121	50-150	0.734	0-20
31508-00-6	LCSD	118-PeCB	1000		1220	122	50-150	6.58	0-20
65510-44-3	LCSD	123-PeCB	1000		1100	110	50-150	0.808	0-20
57465-28-8	LCSD	126-PeCB	1000		1170	117	50-150	0.300	0-20
33979-03-2	LCSD	155-HxCB	1000		1130	113	50-150	0.928	0-20
38380-08-4	LCSD	156-HxCB	2000	C	2350	118	50-150	0.388	0-20
69782-90-7	LCSD	157-HxCB		C156					
52663-72-6	LCSD	167-HxCB	1000		1080	108	50-150	1.35	0-20
32774-16-6	LCSD	169-HxCB	1000		1200	120	50-150	0.752	0-20
74487-85-7	LCSD	188-HpCB	1000		1120	112	50-150	0.836	0-20
39635-31-9	LCSD	189-HpCB	1000		1170	117	50-150	1.05	0-20
2136-99-4	LCSD	202-OcCB	1500		1640	109	50-150	1.04	0-20
74472-53-0	LCSD	205-OcCB	1500		1590	106	50-150	0.820	0-20
40186-72-9	LCSD	206-NoCB	1500		1560	104	50-150	0.313	0-20
52663-77-1	LCSD	208-NoCB	1500		1710	114	50-150	0.298	0-20
2051-24-3	LCSD	209-DeCB	1500		1660	110	50-150	0.498	0-20

Method Blank Summary

SDG Number:	**2010C61**	**Client:**	**HALL001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 45451**	**Instrument ID:**	**HRP875**	**Data File:**	**d27nov20a_2-5**
Lab Sample ID:	**12028047**	**Prep Date:**	**26-NOV-20**	**Analyzed:**	**11/27/20 23:03**
Column:					

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 45451	12028048	d27nov20a_2-3	11/27/20	2044
02	LCSD for batch 45451	12028049	d27nov20a_2-4	11/27/20	2153
03	2010C61-001G RG-North-20201026	17326001	d27nov20a_2-6	11/28/20	0012
04	2010C61-003G RG-South-20201028	17326002	d27nov20a_2-7	11/28/20	0122

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12028047**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 45451**				
Client ID:	**MB for batch 45451**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/27/2020 23:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-5**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	ND	pg/L	5.68	100
2051-61-8	2-MoCB	U	ND	pg/L	5.62	100
2051-62-9	3-MoCB	U	ND	pg/L	4.62	100
13029-08-8	4-DiCB	U	ND	pg/L	21.3	100
16605-91-7	5-DiCB	U	ND	pg/L	10.5	100
25569-80-6	6-DiCB	U	ND	pg/L	9.36	100
33284-50-3	7-DiCB	U	ND	pg/L	8.12	100
34883-43-7	8-DiCB	U	ND	pg/L	8.12	100
34883-39-1	9-DiCB	U	ND	pg/L	11.3	100
33146-45-1	10-DiCB	U	ND	pg/L	10.2	100
2050-67-1	11-DiCB	J	54.3	pg/L	10.0	100
2974-92-7	12-DiCB	CU	ND	pg/L	9.06	200
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	ND	pg/L	10.0	100
2050-68-2	15-DiCB	U	ND	pg/L	8.48	100
38444-78-9	16-TrCB	U	ND	pg/L	3.44	100
37680-66-3	17-TrCB	U	ND	pg/L	3.86	150
37680-65-2	18-TrCB	CU	ND	pg/L	3.48	200
38444-73-4	19-TrCB	U	ND	pg/L	4.88	100
38444-84-7	20-TrCB	CJ	5.58	pg/L	2.60	200
55702-46-0	21-TrCB	CJ	3.94	pg/L	2.70	200
38444-85-8	22-TrCB	U	ND	pg/L	3.08	100
55720-44-0	23-TrCB	U	ND	pg/L	2.52	100
55702-45-9	24-TrCB	U	ND	pg/L	2.84	100
55712-37-3	25-TrCB	U	ND	pg/L	2.30	100
38444-81-4	26-TrCB	CU	ND	pg/L	2.80	200
38444-76-7	27-TrCB	U	ND	pg/L	3.00	100
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	J	6.32	pg/L	2.66	100
38444-77-8	32-TrCB	U	ND	pg/L	2.68	100

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12028047**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 45451**				
Client ID:	**MB for batch 45451**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/27/2020 23:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-5**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	ND	pg/L	3.04	100
37680-69-6	35-TrCB	U	ND	pg/L	3.06	100
38444-87-0	36-TrCB	U	ND	pg/L	2.94	100
38444-90-5	37-TrCB	U	ND	pg/L	2.94	100
53555-66-1	38-TrCB	U	ND	pg/L	3.02	100
38444-88-1	39-TrCB	U	ND	pg/L	2.48	100
38444-93-8	40-TeCB	CJ	3.78	pg/L	3.36	200
52663-59-9	41-TeCB	U	ND	pg/L	5.54	150
36559-22-5	42-TeCB	U	ND	pg/L	3.88	150
70362-46-8	43-TeCB	U	ND	pg/L	3.90	100
41464-39-5	44-TeCB	CJ	11.1	pg/L	3.50	300
70362-45-7	45-TeCB	CU	ND	pg/L	2.68	200
41464-47-5	46-TeCB	U	ND	pg/L	2.92	100
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	ND	pg/L	3.70	150
41464-40-8	49-TeCB	CJ	5.84	pg/L	3.44	200
62796-65-0	50-TeCB	CU	ND	pg/L	2.56	200
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	14.7	pg/L	4.32	200
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	ND	pg/L	2.26	100
74338-24-2	55-TeCB	U	ND	pg/L	2.84	100
41464-43-1	56-TeCB	J	4.10	pg/L	2.96	100
70424-67-8	57-TeCB	U	ND	pg/L	3.12	100
41464-49-7	58-TeCB	U	ND	pg/L	2.84	100
74472-33-6	59-TeCB	CU	ND	pg/L	3.02	300
33025-41-1	60-TeCB	U	ND	pg/L	3.20	100
33284-53-6	61-TeCB	CJ	14.5	pg/L	2.82	400
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	ND	pg/L	3.06	100
52663-58-8	64-TeCB	U	ND	pg/L	2.82	100

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12028047**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 45451**				
Client ID:	**MB for batch 45451**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/27/2020 23:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-5**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	8.96	pg/L	3.20	200
73575-53-8	67-TeCB	U	ND	pg/L	2.60	100
73575-52-7	68-TeCB	U	ND	pg/L	2.50	100
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	3.00	100
74338-23-1	73-TeCB	U	ND	pg/L	3.00	100
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	3.08	100
70362-49-1	78-TeCB	U	ND	pg/L	3.50	100
41464-48-6	79-TeCB	U	ND	pg/L	2.84	100
33284-52-5	80-TeCB	U	ND	pg/L	2.68	100
70362-50-4	81-TeCB	U	ND	pg/L	3.10	100
52663-62-4	82-PeCB	U	ND	pg/L	5.08	100
60145-20-2	83-PeCB	U	ND	pg/L	5.76	100
52663-60-2	84-PeCB	U	ND	pg/L	4.38	100
65510-45-4	85-PeCB	CU	ND	pg/L	3.86	300
55312-69-1	86-PeCB	CJ	9.66	pg/L	3.66	600
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	ND	pg/L	4.20	200
73575-57-2	89-PeCB	U	ND	pg/L	5.20	150
68194-07-0	90-PeCB	CJ	9.36	pg/L	3.70	300
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	ND	pg/L	4.92	100
73575-56-1	93-PeCB	CU	ND	pg/L	3.84	200
73575-55-0	94-PeCB	U	ND	pg/L	3.94	100
38379-99-6	95-PeCB	J	8.40	pg/L	4.76	100
73575-54-9	96-PeCB	U	ND	pg/L	2.36	150

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12028047**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 45451**				
Client ID:	**MB for batch 45451**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/27/2020 23:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-5**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	ND	pg/L	3.88	200
38380-01-7	99-PeCB	J	5.18	pg/L	3.48	100
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	4.28	100
56558-16-8	104-PeCB	U	ND	pg/L	2.00	200
32598-14-4	105-PeCB	U	ND	pg/L	3.32	150
70424-69-0	106-PeCB	U	ND	pg/L	3.44	100
70424-68-9	107-PeCB	U	ND	pg/L	2.66	100
70362-41-3	108-PeCB	CU	ND	pg/L	3.02	200
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	11.0	pg/L	2.98	200
39635-32-0	111-PeCB	U	ND	pg/L	2.90	100
74472-36-9	112-PeCB	U	ND	pg/L	2.98	100
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	ND	pg/L	3.18	100
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	10.2	100
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	ND	pg/L	3.36	100
56558-18-0	121-PeCB	U	ND	pg/L	2.84	100
76842-07-4	122-PeCB	U	ND	pg/L	4.18	100
65510-44-3	123-PeCB	U	ND	pg/L	3.08	100
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	ND	pg/L	3.50	100
39635-33-1	127-PeCB	U	ND	pg/L	3.34	100
38380-07-3	128-HxCB	CU	ND	pg/L	3.02	200

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12028047**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 45451**				
Client ID:	**MB for batch 45451**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/27/2020 23:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-5**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CU	ND	pg/L	7.72	300
52663-66-8	130-HxCB	U	ND	pg/L	3.92	100
61798-70-7	131-HxCB	U	ND	pg/L	3.66	100
38380-05-1	132-HxCB	U	ND	pg/L	3.36	100
35694-04-3	133-HxCB	U	ND	pg/L	3.86	100
52704-70-8	134-HxCB	U	ND	pg/L	3.86	150
52744-13-5	135-HxCB	CJ	3.16	pg/L	2.16	200
38411-22-2	136-HxCB	U	ND	pg/L	1.76	100
35694-06-5	137-HxCB	U	ND	pg/L	3.22	150
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	ND	pg/L	3.08	200
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	ND	pg/L	3.24	100
41411-61-4	142-HxCB	U	ND	pg/L	4.02	150
68194-15-0	143-HxCB	U	ND	pg/L	3.82	100
68194-14-9	144-HxCB	U	ND	pg/L	2.28	100
74472-40-5	145-HxCB	U	ND	pg/L	1.50	100
51908-16-8	146-HxCB	U	ND	pg/L	3.08	100
68194-13-8	147-HxCB	CJ	3.76	pg/L	3.06	200
74472-41-6	148-HxCB	U	ND	pg/L	2.20	100
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	ND	pg/L	1.44	100
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	ND	pg/L	1.76	100
35065-27-1	153-HxCB	CJ	6.66	pg/L	2.72	200
60145-22-4	154-HxCB	U	ND	pg/L	1.80	100
33979-03-2	155-HxCB	U	ND	pg/L	1.32	100
38380-08-4	156-HxCB	CU	ND	pg/L	3.58	200
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	ND	pg/L	2.40	100
39635-35-3	159-HxCB	U	ND	pg/L	1.76	100
41411-62-5	160-HxCB	U	ND	pg/L	2.52	100

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12028047**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 45451**				
Client ID:	**MB for batch 45451**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/27/2020 23:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-5**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	ND	pg/L	2.74	100
39635-34-2	162-HxCB	U	ND	pg/L	1.60	100
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	ND	pg/L	2.60	100
74472-46-1	165-HxCB	U	ND	pg/L	2.58	100
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	ND	pg/L	1.72	100
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	ND	pg/L	1.98	100
35065-30-6	170-HpCB	U	ND	pg/L	2.76	100
52663-71-5	171-HpCB	CU	ND	pg/L	2.76	200
52663-74-8	172-HpCB	U	ND	pg/L	2.80	100
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	ND	pg/L	2.54	100
40186-70-7	175-HpCB	U	ND	pg/L	2.22	100
52663-65-7	176-HpCB	U	ND	pg/L	1.74	100
52663-70-4	177-HpCB	U	ND	pg/L	2.76	100
52663-67-9	178-HpCB	U	ND	pg/L	2.42	100
52663-64-6	179-HpCB	U	ND	pg/L	1.68	100
35065-29-3	180-HpCB	CU	ND	pg/L	2.20	200
74472-47-2	181-HpCB	U	ND	pg/L	2.38	100
60145-23-5	182-HpCB	U	ND	pg/L	2.12	100
52663-69-1	183-HpCB	CU	ND	pg/L	2.42	200
74472-48-3	184-HpCB	U	ND	pg/L	1.50	100
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	ND	pg/L	1.60	100
52663-68-0	187-HpCB	J	3.02	pg/L	1.90	100
74487-85-7	188-HpCB	U	ND	pg/L	1.68	150
39635-31-9	189-HpCB	U	ND	pg/L	2.10	100
41411-64-7	190-HpCB	U	ND	pg/L	2.10	100
74472-50-7	191-HpCB	U	ND	pg/L	2.06	100
74472-51-8	192-HpCB	U	ND	pg/L	2.02	100

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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12028047**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 45451**				
Client ID:	**MB for batch 45451**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/27/2020 23:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-5**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	U	ND	pg/L	2.12	100
52663-78-2	195-OcCB	U	ND	pg/L	2.28	100
42740-50-1	196-OcCB	U	ND	pg/L	1.86	100
33091-17-7	197-OcCB	CU	ND	pg/L	1.36	200
68194-17-2	198-OcCB	CU	ND	pg/L	1.84	200
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	ND	pg/L	1.36	100
2136-99-4	202-OcCB	U	ND	pg/L	1.44	100
52663-76-0	203-OcCB	U	ND	pg/L	1.58	100
74472-52-9	204-OcCB	U	ND	pg/L	1.40	100
74472-53-0	205-OcCB	U	ND	pg/L	1.80	100
40186-72-9	206-NoCB	U	ND	pg/L	3.92	100
52663-79-3	207-NoCB	U	ND	pg/L	3.00	100
52663-77-1	208-NoCB	U	ND	pg/L	2.96	100
2051-24-3	209-DeCB	U	ND	pg/L	2.38	100
1336-36-3	Total PCB Congeners	J	194	pg/L		100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		754	2000	pg/L	37.7	(15%-150%)
13C-3-MoCB		887	2000	pg/L	44.4	(15%-150%)
13C-4-DiCB		918	2000	pg/L	45.9	(25%-150%)
13C-15-DiCB		1330	2000	pg/L	66.3	(25%-150%)
13C-19-TrCB		1080	2000	pg/L	54.0	(25%-150%)
13C-37-TrCB		1170	2000	pg/L	58.3	(25%-150%)
13C-54-TeCB		958	2000	pg/L	47.9	(25%-150%)
13C-77-TeCB		1350	2000	pg/L	67.7	(25%-150%)
13C-81-TeCB		1360	2000	pg/L	67.9	(25%-150%)
13C-104-PeCB		1050	2000	pg/L	52.6	(25%-150%)
13C-105-PeCB		1320	2000	pg/L	65.8	(25%-150%)
13C-114-PeCB		1290	2000	pg/L	64.3	(25%-150%)
13C-118-PeCB		1280	2000	pg/L	63.9	(25%-150%)
13C-123-PeCB		1350	2000	pg/L	67.5	(25%-150%)
13C-126-PeCB		1440	2000	pg/L	72.0	(25%-150%)
13C-155-HxCB		1080	2000	pg/L	53.9	(25%-150%)
13C-156-HxCB	C	2500	4000	pg/L	62.5	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1300	2000	pg/L	64.8	(25%-150%)
13C-169-HxCB		1390	2000	pg/L	69.4	(25%-150%)
13C-188-HpCB		1150	2000	pg/L	57.6	(25%-150%)
13C-189-HpCB		1300	2000	pg/L	65.1	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12028047**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 45451**				
Client ID:	**MB for batch 45451**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/27/2020 23:03**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-5**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-202-OcCB		1170	2000	pg/L	58.5	(25%-150%)
13C-205-OcCB		1360	2000	pg/L	68.2	(25%-150%)
13C-206-NoCB		1430	2000	pg/L	71.4	(25%-150%)
13C-208-NoCB		1240	2000	pg/L	61.8	(25%-150%)
13C-209-DeCB		1340	2000	pg/L	66.9	(25%-150%)
13C-28-TrCB		1370	2000	pg/L	68.7	(30%-135%)
13C-111-PeCB		1480	2000	pg/L	74.1	(30%-135%)
13C-178-HpCB		1610	2000	pg/L	80.6	(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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12028048**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 45451**				
Client ID:	**LCS for batch 45451**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/27/2020 20:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-3**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		560	pg/L	6.24	100
2051-62-9	3-MoCB		619	pg/L	5.66	100
13029-08-8	4-DiCB		498	pg/L	19.0	100
2050-68-2	15-DiCB		612	pg/L	9.00	100
38444-73-4	19-TrCB		554	pg/L	5.14	100
38444-90-5	37-TrCB		591	pg/L	7.02	100
15968-05-5	54-TeCB		1060	pg/L	2.04	100
32598-13-3	77-TeCB		1130	pg/L	7.64	100
70362-50-4	81-TeCB		896	pg/L	7.40	100
56558-16-8	104-PeCB		1130	pg/L	1.66	200
32598-14-4	105-PeCB		1010	pg/L	8.60	150
74472-37-0	114-PeCB		1220	pg/L	8.40	100
31508-00-6	118-PeCB		1310	pg/L	8.14	100
65510-44-3	123-PeCB		1090	pg/L	7.88	100
57465-28-8	126-PeCB		1170	pg/L	9.20	100
33979-03-2	155-HxCB		1120	pg/L	1.34	100
38380-08-4	156-HxCB	C	2340	pg/L	9.40	200
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1100	pg/L	6.52	100
32774-16-6	169-HxCB		1190	pg/L	7.60	100
74487-85-7	188-HpCB		1130	pg/L	1.74	150
39635-31-9	189-HpCB		1160	pg/L	3.48	100
2136-99-4	202-OcCB		1660	pg/L	1.88	100
74472-53-0	205-OcCB		1600	pg/L	2.88	100
40186-72-9	206-NoCB		1560	pg/L	3.72	100
52663-77-1	208-NoCB		1720	pg/L	2.92	100
2051-24-3	209-DeCB		1650	pg/L	2.22	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		837	2000	pg/L	41.8	(15%-140%)
13C-3-MoCB		928	2000	pg/L	46.4	(15%-140%)
13C-4-DiCB		966	2000	pg/L	48.3	(30%-140%)
13C-15-DiCB		1300	2000	pg/L	64.8	(30%-140%)
13C-19-TrCB		1110	2000	pg/L	55.5	(30%-140%)
13C-37-TrCB		1270	2000	pg/L	63.3	(30%-140%)
13C-54-TeCB		1070	2000	pg/L	53.7	(30%-140%)
13C-77-TeCB		1490	2000	pg/L	74.7	(30%-140%)
13C-81-TeCB		1500	2000	pg/L	75.2	(30%-140%)
13C-104-PeCB		1180	2000	pg/L	58.9	(30%-140%)
13C-105-PeCB		1500	2000	pg/L	74.8	(30%-140%)
13C-114-PeCB		1460	2000	pg/L	72.8	(30%-140%)
13C-118-PeCB		1460	2000	pg/L	72.8	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12028048**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 45451**				
Client ID:	**LCS for batch 45451**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/27/2020 20:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-3**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		1530	2000	pg/L	76.3	(30%-140%)
13C-126-PeCB		1630	2000	pg/L	81.6	(30%-140%)
13C-155-HxCB		1200	2000	pg/L	60.0	(30%-140%)
13C-156-HxCB	C	2910	4000	pg/L	72.8	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		1490	2000	pg/L	74.6	(30%-140%)
13C-169-HxCB		1610	2000	pg/L	80.7	(30%-140%)
13C-188-HpCB		1270	2000	pg/L	63.7	(30%-140%)
13C-189-HpCB		1480	2000	pg/L	73.8	(30%-140%)
13C-202-OcCB		1320	2000	pg/L	65.9	(30%-140%)
13C-205-OcCB		1540	2000	pg/L	77.2	(30%-140%)
13C-206-NoCB		1630	2000	pg/L	81.5	(30%-140%)
13C-208-NoCB		1390	2000	pg/L	69.3	(30%-140%)
13C-209-DeCB		1520	2000	pg/L	76.1	(30%-140%)
13C-28-TrCB		1380	2000	pg/L	68.9	(40%-125%)
13C-111-PeCB		1520	2000	pg/L	76.1	(40%-125%)
13C-178-HpCB		1670	2000	pg/L	83.5	(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:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12028049**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 45451**				
Client ID:	**LCSD for batch 45451**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/27/2020 21:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-4**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		559	pg/L	15.1	100
2051-62-9	3-MoCB		649	pg/L	12.4	100
13029-08-8	4-DiCB		454	pg/L	35.3	100
2050-68-2	15-DiCB		620	pg/L	17.5	100
38444-73-4	19-TrCB		574	pg/L	22.9	100
38444-90-5	37-TrCB		581	pg/L	15.2	100
15968-05-5	54-TeCB		1040	pg/L	5.40	100
32598-13-3	77-TeCB		1120	pg/L	12.4	100
70362-50-4	81-TeCB		898	pg/L	11.7	100
56558-16-8	104-PeCB		1130	pg/L	3.50	200
32598-14-4	105-PeCB		964	pg/L	11.7	150
74472-37-0	114-PeCB		1210	pg/L	11.6	100
31508-00-6	118-PeCB		1220	pg/L	11.4	100
65510-44-3	123-PeCB		1100	pg/L	10.9	100
57465-28-8	126-PeCB		1170	pg/L	12.3	100
33979-03-2	155-HxCB		1130	pg/L	2.12	100
38380-08-4	156-HxCB	C	2350	pg/L	12.2	200
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1080	pg/L	8.46	100
32774-16-6	169-HxCB		1200	pg/L	9.80	100
74487-85-7	188-HpCB		1120	pg/L	2.86	150
39635-31-9	189-HpCB		1170	pg/L	5.44	100
2136-99-4	202-OcCB		1640	pg/L	3.02	100
74472-53-0	205-OcCB		1590	pg/L	4.04	100
40186-72-9	206-NoCB		1560	pg/L	8.04	100
52663-77-1	208-NoCB		1710	pg/L	5.70	100
2051-24-3	209-DeCB		1660	pg/L	3.62	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		828	2000	pg/L	41.4	(15%-140%)
13C-3-MoCB		935	2000	pg/L	46.8	(15%-140%)
13C-4-DiCB		986	2000	pg/L	49.3	(30%-140%)
13C-15-DiCB		1250	2000	pg/L	62.7	(30%-140%)
13C-19-TrCB		1100	2000	pg/L	54.9	(30%-140%)
13C-37-TrCB		1250	2000	pg/L	62.3	(30%-140%)
13C-54-TeCB		1120	2000	pg/L	56.0	(30%-140%)
13C-77-TeCB		1430	2000	pg/L	71.6	(30%-140%)
13C-81-TeCB		1440	2000	pg/L	72.2	(30%-140%)
13C-104-PeCB		1220	2000	pg/L	60.8	(30%-140%)
13C-105-PeCB		1430	2000	pg/L	71.7	(30%-140%)
13C-114-PeCB		1410	2000	pg/L	70.4	(30%-140%)
13C-118-PeCB		1400	2000	pg/L	70.2	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**2010C61**	**Client:**	**HALL001**	**Project:**	**HALL00113**
Lab Sample ID:	**12028049**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 45451**				
Client ID:	**LCSD for batch 45451**			**Prep Basis:**	**As Received**
Batch ID:	**45453**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/27/2020 21:53**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d27nov20a_2-4**			**Dilution:**	**1**
Prep Batch:	**45451**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-NOV-20**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		1460	2000	pg/L	73.2	(30%-140%)
13C-126-PeCB		1520	2000	pg/L	76.1	(30%-140%)
13C-155-HxCB		1260	2000	pg/L	63.1	(30%-140%)
13C-156-HxCB	C	2760	4000	pg/L	68.9	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		1440	2000	pg/L	72.2	(30%-140%)
13C-169-HxCB		1520	2000	pg/L	76.1	(30%-140%)
13C-188-HpCB		1350	2000	pg/L	67.5	(30%-140%)
13C-189-HpCB		1440	2000	pg/L	72.1	(30%-140%)
13C-202-OcCB		1360	2000	pg/L	68.0	(30%-140%)
13C-205-OcCB		1560	2000	pg/L	78.2	(30%-140%)
13C-206-NoCB		1670	2000	pg/L	83.3	(30%-140%)
13C-208-NoCB		1430	2000	pg/L	71.3	(30%-140%)
13C-209-DeCB		1580	2000	pg/L	79.1	(30%-140%)
13C-28-TrCB		1360	2000	pg/L	67.9	(40%-125%)
13C-111-PeCB		1490	2000	pg/L	74.3	(40%-125%)
13C-178-HpCB		1660	2000	pg/L	82.9	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

November 20, 2020

Andy Freeman
Hall Environmental
4901 Hawkins NE
Albuquerque, NM 87109

RE: Project: 2010C61
Pace Project No.: 30390293

Dear Andy Freeman:

Enclosed are the analytical results for sample(s) received by the laboratory on October 30, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacquelyn Collins
jacquelyn.collins@pacelabs.com
(724)850-5612
Project Manager

Enclosures

cc: Ms. Jackie Ball, Hall Environmental
Michelle Garcia, Hall Environmental

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

CERTIFICATIONS

Project: 2010C61
Pace Project No.: 30390293

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

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SAMPLE SUMMARY

Project: 2010C61
Pace Project No.: 30390293

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30390293001	**2010C61-001I RG-North-20201026**	Water	10/26/20 10:50	10/30/20 09:10
30390293002	**2010C61-003I RG-South-20201028**	Water	10/28/20 14:10	10/30/20 09:10

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE ANALYTE COUNT

Project: 2010C61
Pace Project No.: 30390293

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30390293001	**2010C61-001I RG-North-20201026**	EPA 900.0	CLA	1	PASI-PA
		EPA 900.0	CMC	1	PASI-PA
		ASTM D5174-97	RMK	1	PASI-PA
30390293002	**2010C61-003I RG-South-20201028**	EPA 900.0	CLA	1	PASI-PA
		EPA 900.0	CMC	1	PASI-PA
		ASTM D5174-97	RMK	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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PROJECT NARRATIVE

Project: 2010C61
Pace Project No.: 30390293

Method: **EPA 900.0**
Description: 900.0 Gross Alpha/Beta
Client: Hall Environmental
Date: November 20, 2020

General Information:
2 samples were analyzed for EPA 900.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: 2010C61
Pace Project No.: 30390293

Method: **EPA 900.0**
Description: Adjusted Gross Alpha
Client: Hall Environmental
Date: November 20, 2020

General Information:
2 samples were analyzed for EPA 900.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: 2010C61
Pace Project No.: 30390293

Method: **ASTM D5174-97**
Description: D517497 Total Uranium KPA
Client: Hall Environmental
Date: November 20, 2020

General Information:
2 samples were analyzed for ASTM D5174-97 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
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Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 2010C61
Pace Project No.: 30390293

Sample: 2010C61-001I RG-North-20201026 **Lab ID: 30390293001** Collected: 10/26/20 10:50 Received: 10/30/20 09:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Gross Alpha	EPA 900.0	**0.922 ± 0.999 (1.93) C:NA T:NA**	pCi/L	11/17/20 07:37	12587-46-1	
		Pace Analytical Services - Greensburg				
Adjusted Gross Alpha	EPA 900.0	**0.000 ± NA (NA) C:NA T:NA**	pCi/L	11/20/20 13:34		
		Pace Analytical Services - Greensburg				
Total Uranium	ASTM D5174-97	**2.34 ± 0.053 (0.262) C:NA T:NA**	ug/L	11/18/20 10:56	7440-61-1	

Sample: 2010C61-003I RG-South-20201028 **Lab ID: 30390293002** Collected: 10/28/20 14:10 Received: 10/30/20 09:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
		Pace Analytical Services - Greensburg				
Gross Alpha	EPA 900.0	**4.27 ± 1.89 (2.86) C:NA T:NA**	pCi/L	11/16/20 18:41	12587-46-1	
		Pace Analytical Services - Greensburg				
Adjusted Gross Alpha	EPA 900.0	**3.03 ± NA (NA) C:NA T:NA**	pCi/L	11/20/20 13:34		
		Pace Analytical Services - Greensburg				
Total Uranium	ASTM D5174-97	**1.83 ± 0.028 (0.262) C:NA T:NA**	ug/L	11/19/20 15:43	7440-61-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Greensburg, PA 15601
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QUALITY CONTROL - RADIOCHEMISTRY

Project: 2010C61
Pace Project No.: 30390293

QC Batch: 422619
QC Batch Method: EPA 900.0
Analysis Method: EPA 900.0
Analysis Description: 900.0 Gross Alpha/Beta
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30390293001, 30390293002

METHOD BLANK: 2042725
Matrix: Water
Associated Lab Samples: 30390293001, 30390293002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Gross Alpha	-0.117 ± 0.635 (1.88) C:NA T:NA	pCi/L	11/17/20 07:26	

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 2010C61
Pace Project No.: 30390293

QC Batch: 421707
QC Batch Method: ASTM D5174-97
Analysis Method: ASTM D5174-97
Analysis Description: D5174.97 Total Uranium KPA
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 30390293001, 30390293002

METHOD BLANK: 2038256 Matrix: Water
Associated Lab Samples: 30390293001, 30390293002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Total Uranium	0.053 ± 0.002 (0.262) C:NA T:NA	ug/L	11/18/20 10:42	

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

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

QUALIFIERS

Project: 2010C61
Pace Project No.: 30390293

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.

TNTC - Too Numerous To Count

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 - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

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: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. Is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.

Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(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.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

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

SUB CONTRATOR: **Pace-Greensburg**	COMPANY: **Pace Analytical Services, Inc.**	PHONE: **(724) 850-5600**	FAX: **(724) 850-5601**
ADDRESS: **1638 Roseytown Rd Ste 2,3,4**		ACCOUNT #:	EMAIL:
CITY, STATE, ZIP: **Greensburg, PA 15601**			

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2010C61-001I	RG-North-20201026	1LHDPEHNO3	Aqueous	10/26/2020 10:50:00 AM	1	Adjusted Gross Alpha
2	2010C61-003I	RG-South-20201028	1LHDPEHNO3	Aqueous	10/28/2020 2:10:00 PM	1	Adjusted Gross Alpha

001
002

WO#: 30390293

30390293

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.

Relinquished By:	Date: 10/29/2020	Time: 8:56 AM	Received By:	Date: 10/30/20	Time: 0910
Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

TAT: Standard ☒ RUSH Next BD ☐ 2nd BD ☐ 3rd BD ☐

REPORT TRANSMITTAL DESIRED:
☐ HARDCOPY (extra cost) ☐ FAX ☐ EMAIL ☐ ONLINE

FOR LAB USE ONLY
Temp of samples N/A °C Attempt to Cool ? NO
Comments:

Page 12 of 13

Pittsburgh Lab Sample Condition Upon Receipt

Pace Analytical® Client Name: Hall Environmental Project # # 30390293

Label	RM
LIMS Login	RM

Courier: ☑ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other ________

Tracking #: 7719 4365 8365

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☑ no

Thermometer Used N/A Type of Ice: Wet Blue (None)

Cooler Temperature Observed Temp — °C Correction Factor: — °C Final Temp: — °C

Temp should be above freezing to 6°C

Comments:	Yes	No	N/A	pH paper Lot# 1000401 / Date and Initials of person examining contents: RM 11-2-20
Chain of Custody Present:	✓			1.
Chain of Custody Filled Out:	✓			2.
Chain of Custody Relinquished:	✓			3.
Sampler Name & Signature on COC:		✓		4.
Sample Labels match COC:	✓			5.
-Includes date/time/ID Matrix: WT				
Samples Arrived within Hold Time:	✓			6.
Short Hold Time Analysis (<72hr remaining):		✓		7.
Rush Turn Around Time Requested:		✓		8.
Sufficient Volume:	✓			9.
Correct Containers Used:	✓			10.
-Pace Containers Used:		✓		
Containers Intact:	✓			11.
Orthophosphate field filtered			✓	12.
Hex Cr Aqueous sample field filtered			✓	13.
Organic Samples checked for dechlorination:			✓	14.
Filtered volume received for Dissolved tests			✓	15.
All containers have been checked for preservation. exceptions: VOA, coliform, TOC, O&G, Phenolics, Radon, Non-aqueous matrix	✓			16. PH<2
All containers meet method preservation requirements.	✓			Initial when completed RM / Date/time of preservation / Lot # of added preservative
Headspace in VOA Vials (>6mm):			✓	17.
Trip Blank Present:			✓	18.
Trip Blank Custody Seals Present			✓	
Rad Samples Screened < 0.5 mrem/hr	✓			Initial when completed: RM Date: 11-2-20

Client Notification/ Resolution:

Person Contacted: ________ Date/Time: ________ Contacted By: ________

Comments/ Resolution: ________

☐ **A check in this box indicates that additional information has been stored in ereports.**

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

*PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.

J:\QAQC\Master\Document Management\Sample Mgt\Sample Condition Upon Receipt Pittsburgh (C056-9 5April2019)

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-56126**	SampType: **MBLK**	TestCode: **EPA Method 1664B**							
Client ID: **PBW**	Batch ID: **56126**	RunNo: **73108**							
Prep Date: **11/3/2020**	Analysis Date: **11/4/2020**	SeqNo: **2571804**	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-56126**	SampType: **LCS**	TestCode: **EPA Method 1664B**							
Client ID: **LCSW**	Batch ID: **56126**	RunNo: **73108**							
Prep Date: **11/3/2020**	Analysis Date: **11/4/2020**	SeqNo: **2571805**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	36.6	10.0	40.00	0	91.5	78	114			

Sample ID: **LCSD-56126**	SampType: **LCSD**	TestCode: **EPA Method 1664B**							
Client ID: **LCSS02**	Batch ID: **56126**	RunNo: **73108**							
Prep Date: **11/3/2020**	Analysis Date: **11/4/2020**	SeqNo: **2571806**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
N-Hexane Extractable Material	37.4	10.0	40.00	0	93.5	78	114	2.16	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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-56135**	SampType: **MBLK**	TestCode: **EPA Method 200.7: Metals**
Client ID: **PBW**	Batch ID: **56135**	RunNo: **73075**
Prep Date: **11/1/2020**	Analysis Date: **11/2/2020**	SeqNo: **2569232** 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: **LCSLL-56135**	SampType: **LCSLL**	TestCode: **EPA Method 200.7: Metals**
Client ID: **BatchQC**	Batch ID: **56135**	RunNo: **73075**
Prep Date: **11/1/2020**	Analysis Date: **11/2/2020**	SeqNo: **2569237** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.52	1.0	0.5000	0	104	50	150			J
Magnesium	0.52	1.0	0.5000	0	103	50	150			J

Sample ID: **LCS-56135**	SampType: **LCS**	TestCode: **EPA Method 200.7: Metals**
Client ID: **LCSW**	Batch ID: **56135**	RunNo: **73075**
Prep Date: **11/1/2020**	Analysis Date: **11/2/2020**	SeqNo: **2569239** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	48	1.0	50.00	0	96.8	85	115			
Magnesium	49	1.0	50.00	0	98.1	85	115			

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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **2010C61-001FMS**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **RG-North-20201026**	Batch ID: **A73027**	RunNo: **73027**
Prep Date:	Analysis Date: **10/29/2020**	SeqNo: **2567244** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.025	0.0010	0.02500	0.0006224	96.8	70	130			
Lead	0.013	0.00050	0.01250	0	101	70	130			

Sample ID: **2010C61-001FMSD**	SampType: **MSD**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **RG-North-20201026**	Batch ID: **A73027**	RunNo: **73027**
Prep Date:	Analysis Date: **10/29/2020**	SeqNo: **2567245** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.025	0.0010	0.02500	0.0006224	97.3	70	130	0.545	20	
Lead	0.013	0.00050	0.01250	0	100	70	130	0.452	20	

Sample ID: **2010C61-003FMS**	SampType: **MS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **RG-South-20201028**	Batch ID: **A73027**	RunNo: **73027**
Prep Date:	Analysis Date: **10/29/2020**	SeqNo: **2567247** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Copper	0.026	0.0010	0.02500	0.0008515	103	70	130			
Lead	0.013	0.00050	0.01250	.00005139	105	70	130			

Sample ID: **MB**	SampType: **MBLK**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **PBW**	Batch ID: **A73027**	RunNo: **73027**
Prep Date:	Analysis Date: **10/29/2020**	SeqNo: **2567267** 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								

Sample ID: **LLLCS**	SampType: **LCSLL**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **BatchQC**	Batch ID: **A73027**	RunNo: **73027**
Prep Date:	Analysis Date: **10/29/2020**	SeqNo: **2567268** 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	110	50	150			
Lead	0.00055	0.00050	0.0005000	0	111	50	150			

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A73027**	RunNo: **73027**
Prep Date:	Analysis Date: **10/29/2020**	SeqNo: **2567269** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **LCS**	SampType: **LCS**	TestCode: **EPA 200.8: Dissolved Metals**
Client ID: **LCSW**	Batch ID: **A73027**	RunNo: **73027**
Prep Date:	Analysis Date: **10/29/2020**	SeqNo: **2567269** 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	96.8	85	115			
Lead	0.013	0.00050	0.01250	0	102	85	115			

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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R73035**	RunNo: **73035**
Prep Date:	Analysis Date: **10/29/2020**	SeqNo: **2567522** 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: **R73035**	RunNo: **73035**
Prep Date:	Analysis Date: **10/29/2020**	SeqNo: **2567527** 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	98.1	90	110			

Sample ID: **2010C61-001AMS**	SampType: **ms**	TestCode: **EPA Method 300.0: Anions**
Client ID: **RG-North-20201026**	Batch ID: **R73232**	RunNo: **73232**
Prep Date:	Analysis Date: **11/9/2020**	SeqNo: **2576829** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	16	1.0	17.50	0.3440	88.8	85.4	110			

Sample ID: **MB**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R73232**	RunNo: **73232**
Prep Date:	Analysis Date: **11/9/2020**	SeqNo: **2576834** 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: **R73232**	RunNo: **73232**
Prep Date:	Analysis Date: **11/9/2020**	SeqNo: **2576836** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.3	0.20	3.500	0	94.0	90	110			

Sample ID: **2010C61-001AMSD**	SampType: **msd**	TestCode: **EPA Method 300.0: Anions**
Client ID: **RG-North-20201026**	Batch ID: **R73232**	RunNo: **73232**
Prep Date:	Analysis Date: **11/9/2020**	SeqNo: **2576857** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	16	1.0	17.50	0.3440	89.2	85.4	110	0.399	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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-56166**	SampType: **MBLK**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **PBW**	Batch ID: **56166**	RunNo: **73124**
Prep Date: **11/3/2020**	Analysis Date: **11/4/2020**	SeqNo: **2571220** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	ND	0.10								
Surr: Decachlorobiphenyl	1.5		2.500		59.2	38.2	102			
Surr: Tetrachloro-m-xylene	1.5		2.500		59.5	32.3	92.4			

Sample ID: **LCS-56166**	SampType: **LCS**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **LCSW**	Batch ID: **56166**	RunNo: **73124**
Prep Date: **11/3/2020**	Analysis Date: **11/4/2020**	SeqNo: **2571221** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	0.35	0.10	0.5000	0	69.7	17.4	145			
Surr: Decachlorobiphenyl	1.8		2.500		73.3	38.2	102			
Surr: Tetrachloro-m-xylene	1.7		2.500		67.5	32.3	92.4			

Sample ID: **LCSD-56166**	SampType: **LCSD**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **LCSS02**	Batch ID: **56166**	RunNo: **73124**
Prep Date: **11/3/2020**	Analysis Date: **11/4/2020**	SeqNo: **2571222** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	0.48	0.10	0.5000	0	95.6	17.4	145	31.4	20	R
Surr: Decachlorobiphenyl	2.5		2.500		99.9	38.2	102	0	20	
Surr: Tetrachloro-m-xylene	2.0		2.500		78.4	32.3	92.4	0	20	

Sample ID: **MB-56166**	SampType: **MBLK**	TestCode: **EPA Method 8081: PESTICIDES**
Client ID: **PBW**	Batch ID: **56166**	RunNo: **73124**
Prep Date: **11/3/2020**	Analysis Date: **11/4/2020**	SeqNo: **2571226** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Dieldrin	ND	0.10								
Surr: Decachlorobiphenyl	1.5		2.500		60.1	38.2	102			
Surr: Tetrachloro-m-xylene	1.6		2.500		62.0	32.3	92.4			

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
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-56094**	SampType: **MBLK**	TestCode: **SM5210B: BOD**							
Client ID: **PBW**	Batch ID: **56094**	RunNo: **73094**							
Prep Date: **10/29/2020**	Analysis Date: **11/3/2020**	SeqNo: **2570048**	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-56094**	SampType: **LCS**	TestCode: **SM5210B: BOD**							
Client ID: **LCSW**	Batch ID: **56094**	RunNo: **73094**							
Prep Date: **10/29/2020**	Analysis Date: **11/3/2020**	SeqNo: **2570049**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	176	2.0	198.0	0	88.9	84.6	115.4			R

NOTES:

R-RPD between dilutions >30%

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
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-56090**	SampType: **MBLK**	TestCode: **SM 9223B Fecal Indicator: E. coli MPN**
Client ID: **PBW**	Batch ID: **56090**	RunNo: **73015**
Prep Date: **10/28/2020**	Analysis Date: **10/29/2020**	SeqNo: **2566688** Units: **MPN/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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **MB**	SampType: **MBLK**	TestCode: **SM 4500 NH3: Ammonia**
Client ID: **PBW**	Batch ID: **R73186**	RunNo: **73186**
Prep Date:	Analysis Date: **11/6/2020**	SeqNo: **2574097** 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: **R73186**	RunNo: **73186**
Prep Date:	Analysis Date: **11/6/2020**	SeqNo: **2574098** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Ammonia	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
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-56210**	SampType: **MBLK**	TestCode: **EPA Method 365.1: Total Phosphorous**
Client ID: **PBW**	Batch ID: **56210**	RunNo: **73152**
Prep Date: **11/4/2020**	Analysis Date: **11/5/2020**	SeqNo: **2573241** 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-56210**	SampType: **LCS**	TestCode: **EPA Method 365.1: Total Phosphorous**
Client ID: **LCSW**	Batch ID: **56210**	RunNo: **73152**
Prep Date: **11/4/2020**	Analysis Date: **11/5/2020**	SeqNo: **2573242** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Total (As P)	0.24	0.010	0.2500	0	95.3	90	110			

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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-56113**	SampType: **MBLK**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **PBW**	Batch ID: **56113**	RunNo: **73044**
Prep Date: **10/29/2020**	Analysis Date: **10/30/2020**	SeqNo: **2567736** 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-56113**	SampType: **LCS**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **LCSW**	Batch ID: **56113**	RunNo: **73044**
Prep Date: **10/29/2020**	Analysis Date: **10/30/2020**	SeqNo: **2567737** 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			

Sample ID: **2010C61-001CDUP**	SampType: **DUP**	TestCode: **SM2540C MOD: Total Dissolved Solids**
Client ID: **RG-North-20201026**	Batch ID: **56113**	RunNo: **73044**
Prep Date: **10/29/2020**	Analysis Date: **10/30/2020**	SeqNo: **2567739** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	243	20.0						3.77	10	

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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-56235**	SampType: **MBLK**	TestCode: **SM 4500 Norg C: TKN**							
Client ID: **PBW**	Batch ID: **56235**	RunNo: **73185**							
Prep Date: **11/5/2020**	Analysis Date: **11/6/2020**	SeqNo: **2574077**	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-56235**	SampType: **LCS**	TestCode: **SM 4500 Norg C: TKN**							
Client ID: **LCSW**	Batch ID: **56235**	RunNo: **73185**							
Prep Date: **11/5/2020**	Analysis Date: **11/6/2020**	SeqNo: **2574078**	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			

Sample ID: **2010C61-001CMS**	SampType: **MS**	TestCode: **SM 4500 Norg C: TKN**							
Client ID: **RG-North-20201026**	Batch ID: **56235**	RunNo: **73185**							
Prep Date: **11/5/2020**	Analysis Date: **11/6/2020**	SeqNo: **2574080**	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	75	125			

Sample ID: **2010C61-001CMSD**	SampType: **MSD**	TestCode: **SM 4500 Norg C: TKN**							
Client ID: **RG-North-20201026**	Batch ID: **56235**	RunNo: **73185**							
Prep Date: **11/5/2020**	Analysis Date: **11/6/2020**	SeqNo: **2574081**	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	75	125	2.70	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
PQL	Practical Quanitative Limit
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 Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010C61**

12-Mar-21

Client: AMAFCA

Project: CMC

Sample ID: **MB-56151**	SampType: **MBLK**	TestCode: **SM 2540D: TSS**
Client ID: **PBW**	Batch ID: **56151**	RunNo: **73090**
Prep Date: **11/2/2020**	Analysis Date: **11/3/2020**	SeqNo: **2569868** 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-56151**	SampType: **LCS**	TestCode: **SM 2540D: TSS**
Client ID: **LCSW**	Batch ID: **56151**	RunNo: **73090**
Prep Date: **11/2/2020**	Analysis Date: **11/3/2020**	SeqNo: **2569869** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Suspended Solids	100	4.0	92.10	0	113	83.71	119.44			

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
PQL	Practical Quanitative Limit
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 Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **AMAFCA** Work Order Number: **2010C61** RcptNo: **1**

Received By: **Sean Livingston** **10/28/2020 3:16:00 PM** Sean Livingston

Completed By: **Erin Melendrez** **10/28/2020 4:25:22 PM**

Reviewed By: JR 10/28/20 @ 16:38
CAC 10/29/20

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Client

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: 12 (<2 or >12 unless noted)
Adjusted? NO
Checked by: JR 10/29/20

(BOD/unpres./E COLI; SGL rejected

Special Handling (if applicable)

15. 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: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.8	Good				
2	0.4	Good				

Chain-of-Custody Record

Client: AMAFCA

Mailing Address: 2600 Prospect Ave

Phone #:

email or Fax#:

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: CMC

Project #:

Project Manager: Patrick Chavez

Sampler: E. Bastien

On Ice: ☑ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 5.4±0.5=5.9 0.4±0.4=0.4 (°C)

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2010C61	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	See attached list	E. coli (Enumeration)				
10/26/20	10:50	SW	RG-North-20201026			-001/-002											X					
10/28/20	14:10	SW	RG-South-20201028			-003/-004											X	X				
10/28/20	12:05	SW	RG-Alameda-20201028			-005												X				
			Trip Blank			-006																
			ENH 10/29/20																			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/26	15:10	Elizabeth Bastien	SGL	COO	10/26/20	15:16
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks: Note: RG-North-20201026 turned in already E. coli + BOD due to short hold times.

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.

Collaborative Monitoring Cooperative - Analyses List
Attach to Chain of Custody

Please refer to attached NPDES Permit No. NMR04A00 Appendix F. Methods and minimum quantification levels (MQL's) will be those approved under 40 CFR 136 and specified in the attached permit

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	0.014
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	8081	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

ATTACHMENT 2

FY 2021 WET SEASON COMPLETED DATA VERIFICATION AND VALIDATION (V&V) FORMS

Attachment 1.1 Water Quality Sample Data Verification and Validation Worksheet

Study Name: Compliance Monitoring Cooperative (CMC)
Year: FY 2021 (October 2020 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande North – 10/26/2020
Version of Verification/Validation Procedures: QAPP – CMC SOP #2 (2/2015); AMAFCA SOP #5 (2/2019)

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:*** 4/22/2021

- -

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" as (Diss)).

RID	Submittal Date	Missing or Incorrect Parameters	Action Taken	Re-verified?

Rio Grande North	10/26/2020	Lab report lists Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	Notified AMAFCA of this and verified with HEAL. BHI added note to the lab report.	Yes
_____	_____	_____	_____	_____

*Note – HEAL Lab report order number 2010C61.

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 4/22/2021

- -

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:*** 4/22/2021

- -

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	10/26/2020	Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	BHI added note to the lab report.

*Note – HEAL Lab report order number 2010C61.

Total number of occurrences: 1

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 4/22/2021

- -

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:*** 4/22/2021

- -

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?*
Rio Grande North	10/26/2021	Dieldrin	No	Surface water sample	H	Yes
Rio Grande North	10/26/2021	TSS	No	Surface water sample	H	Yes

*See validation procedures to determine which associated data need to be flagged.
*Note – Lab reports lists pH with hold time flag. Database uses field data reported pH, so this is hold time is not applicable.
Total number of occurrences: 2

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 4/22/2021

- -

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:*** 4/22/2021

****

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

4/22/2021

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 2021 (October 2020 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande at Alameda – 10/28/20
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015); AMAFCA SOP #5 (2/2019)

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:*** 4/22/2021

- -

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:*** 4/22/2021

- -

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:*** 4/22/2021

- -

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

Total number of occurrences: 1

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 4/22/2021

- -

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:*** 4/22/2021

- -

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:*** 4/22/2021

- -

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?*
______	______	______	______	______	______		________
______	______	______	______	______	______		________

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 4/22/2021

****

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

[signature] 4/22/2021

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 2021 (October 2020 – Wet Season Sample)
Project Coordinator: For Data Review and Reporting – SJG, BHI
V&V Reviewer: SJG
Data covered by this worksheet: Rio Grande South – 10/28/20
Version of Verification/Validation Procedures: QAPP – SOP #2 (2/2015); AMAFCA SOP #5 (2/2019)

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:*** 4/22/2021

- -

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?
Rio Grande South	10/28/2020	Lab report lists Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	Notified AMAFCA of this and verified with HEAL. BHI added note to the lab report.	Yes
_____	_____	_____	_____	_____

*Note – HEAL Lab report order number 2010C61.

☒ **Step 2 Completed** ***Initials:*** SJG ***Date:*** 4/22/2021

- -

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:*** 4/22/2021

- -

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 South	10/28/2020	Lab report provides Dissolved Phosphorous results as "Total Phosphorous" for "filtered sample".	BHI added note to the lab report.

*Note – HEAL Lab report order number 2010C61.
Total number of occurrences: 1

☒ **Step 4 Completed** ***Initials:*** SJG ***Date:*** 4/22/2021

- -

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:*** 4/22/2021

- -

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?*
Rio Grande South	10/28/2021	BOD	No	Surface water sample	H	Yes
______	______	______	______	______		_________

*See validation procedures to determine which associated data need to be flagged.
*Note – Lab reports lists pH with hold time flag. Database uses field data reported pH, so this is hold time is not applicable.
Total number of occurrences: 1

☒ **Step 6 Completed** ***Initials:*** SJG ***Date:*** 4/22/2021

- -

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?*
______	______	______	______	______	______		_________
______	______	______	______	______	______		_________

Total number of occurrences: 0

☒ **Step 7 Completed** ***Initials:*** SJG ***Date:*** 4/22/2021

****

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

4/22/2021

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	

UNIVERSITY OF NEW MEXICO STORM WATER COMPLIANCE INSPECTION CHECKLIST

	PROJECT NAME:			
	STORM WATER COMPLIANCE INSPECTION – DURING CONSTRUCTION			
		YES	**NO**	**NA**
1	The contractor has posted the EPA Permit or the Notice of Intent form and the name of the site contact person at the entrance to the construction site.			
2	The contractor has provided a copy of the completed Notice of Intent and the Storm Water Pollution Prevention Plan (SWP3) to UNM.			
3	An up to date copy of the SWP3 is available on site.			
4	The Contractor has adhered to the sequence of soil disturbance activities identified in the SWP3.			
5	The Contractor has been instructed in the emergency procedures to follow in the event of a hazardous material release, if required.			
6	The Contractor has recorded the dates of major construction activities involving grading, stabilization, and work suspension.			
7	The Contractor has scheduled inspections of storm water control measures and discharge points; and the inspections are being performed by qualified personnel at the frequency stated in the SWP3.			
8	The Contractor has filed completed, signed inspection reports with the SWP3 that identify the dates of inspection, weather conditions, findings, and corrective actions.			
9	When an inspection reveals a requirement to amend the SWP3, the Contractor revises the SWP3 and provides the amended SWP3 to UNM within seven days.			
	Site Checks:			
10	Have disturbed areas been stabilized?			
11	Are storm drains protected?			
12	Are material stockpiles stabilized or isolated?			
13	Is sediment or debris visible at drains or discharge locations?			
14	Has sediment or loose gravel from the site entrance gotten on the street?			
15	Are any oils or chemicals stored near storm drains, discharge locations, or surface waters?			
16	Are runoff control measures (filter fabric, hay bales, silt fencing, etc.) being adequately maintained?			
17	Are any sediment ponds / traps silted to 1/4 capacity or more?			
	Additional Comments / Observations:			
	Inspector's Name:			
	Inspection Date/Time:			
	Weather Conditions:			
	Inspector's Signature:			

	STORM WATER COMPLIANCE INSPECTION – POST CONSTRUCTION FINAL			
		YES	NO	NA
18	Contractor has completed all soil disturbing activities at the site.			
19	All storm water discharges associated with construction activity have been			
	eliminated.			
20	The Contractor has removed all temporary erosion and sediment control measures, or will provide for their removal at the appropriate time as identified in the SWP3.			
21	The Contractor has achieved final stabilization of all areas of the construction site for which he is responsible, where soil disturbing activities have been performed.			
22	Contractor has completed and submitted a Notice of Termination (NOT) to EPA within 30 days after:			
a	Final stabilization of all portions of the site for which the Contractor is responsible; or			
b	Another Operator has assumed control of all areas of the site that have not been finally stabilized; or			
c	Coverage under an alternate NPDES permit has been obtained.			
23	The Contractor has provided a copy of the Notice of Termination to UNM			
	Additional Comments / Observations:			
	Insector's Name:			
	Inspection Date/Time:			
	Weather Conditions: Overcast.			
	Inspector's Signature:			

Table 4. Potential Sources of Illicit Discharges at UNM

Name	Building No.	Description	Priority	Full Address (in Albuquerque, NM)
Automotive Center	216	Automotive repair shops	High	1800 Tucker Rd. NE
Championship Golf Course	304	Lawn and garden services	High	3601 University Blvd. SE
North Golf Course	290	Lawn and garden services	High	2201 Tucker Ave NE
University Services (surplus property)	267	Surplus property and assets	High	1128 University Blvd. NE
Centennial Engineering	112	Research and education	Medium	Redondo Drive
Center for High Technology Materials	338	Research and education	Medium	1313 Goddard SE
Crystal Growth	331	Research and education	Medium	1000 University Blvd
Food Services	77, 48, 102, 60, 160, 201, 235	Eating places	Medium	Numerous
Ford Utilities Plant	116	Utilities	Medium	300 University Blvd. NE
Landscape Equipment Building	0276A	Lawn and garden services	Medium	1713 Las Lomas Rd. NE
Landscape Storage Building	213	Lawn and garden services	Medium	
Manufacturing Training and Technology Center	341	Research, development, and education	Medium	800 Bradbury Drive SE, Suite 235
Mechanical Engineering	122	Research and education	Medium	Redondo Drive
Recycling	276	Scrap and waste materials	Medium	1008 University Blvd. NE
Storage Yards	274	Public warehousing and storage	Medium	1703 Lomas Blvd. NE
Lomas Chiller and Cogeneration Plant	176	Utility	Medium	1925 Las Lomas Rd NE
Student Union Building	60	Food and copy services	Medium	1 Roma Ave NE
Clark Hall	22	Chemical & research laboratory supplier, education	Low	300 Terrace St. NE
Hospital	235	General medical and surgical hospitals	Low	2211 Lomas Blvd. NE
Safety and Risk Services	233	Hazardous waste storage	Low	1801 Tucker Ave NE
Sign Shop	219	Signs and advertising specialties	Low	1710 Tucker Rd. NE

University of New Mexico
Storm Water Pollution Prevention Inspection Form

FACILITY INFORMATION			
FACILITY NAME:		FACILITY TYPE:	
ADDRESS:		FACILITY CONTACT:	
CITY:	STATE:	ZIP:	PHONE:
CONTACT PERSON(S) AND TITLE(S):			EMAIL:
	PHONE:	EMAIL:	
	PHONE:	EMAIL:	

AUDITOR INFORMATION		
LEAD AUDITOR:	SITE VISIT TIME:	SITE VISIT DATE:
AUDITOR:		

FACILITY ACTIVITIES				STORED ONSITE CHEMICALS			
Activity	**Yes**	**No**	**Subcontract to:**	**Material**	**Quantity**	**Container**	**Stormwater Exposure?**
Maintenance							
Equipment Maintenance							
Vehicle Maintenance							
Other Maintenance							
Painting							
Equipment Painting/Stripping							
Vehicle Painting/Stripping							
Other Painting/Stripping							
Cleaning							
Vehicle Washing							
Equipment Degrease/Washing							
Other Washing							
Storage							
Oil & Haz Chemical Storage							
Vehicle Storage							
Equipment Storage							
Salt/Sidewalk Deicers							
Handling & Disposal of Waste & Materials							
Haz-Mat/Waste Generation							
Solid Waste Generation							
Pet/Animal Waste							
Fuel Storage and Delivery							
Vehicle Fueling							
Equipment Fueling							
Fuel Storage							
Tanks (UST/AST)							
Building and Grounds Maintenance							
Floor Wash Down							
Landscape Maintenance							
Pest / Weed Control							
Sidewalk/Pavement Anti-icing							
Other							

Pollutant Impacts:
Sediment ☐ Nutrients ☐ Bacteria/Viruses ☐ Oil/Grease ☐ Metals ☐ Organics ☐ Pesticides ☐
Gross Pollutants ☐ Oxygen Demanding Substances ☐

1.0 DOCUMENTATION		Comments
Facility Inspections and Maintenance Documentation		
1.4 Retain waste generation and disposal documentation	☐ YES ☐ NO ☐ NA	
1.5 Activities inspected for non-stormwater discharges	☐ YES ☐ NO ☐ NA	
1.6 Routine Facility Inspections Performed	☐ YES ☐ NO ☐ NA	
1.7 Other (Submission of Annual Report to EPA):		
Training		
1.8 Stormwater training for all applicable employees	☐ YES ☐ NO ☐ NA	
1.9 Waste management training	☐ YES ☐ NO ☐ NA	
1.10 Fuel spill response training	☐ YES ☐ NO ☐ NA	
1.11 Herb/Pesticide Appliction Certification/Training	☐ YES ☐ NO ☐ NA	
1.12 Other:		
Other Documentation		
1.13 Do you have cumulative 1,320 aboveground fuel/oil storage? SPCC Plan available? Date of Plan?	☐ YES ☐ NO ☐ NA	
REQUIRED ACTION(S): ☐ NONE		
2.0 GENERAL HOUSEKEEPING	☐ NA	
2.1 Exposed areas clean and orderly	☐ YES ☐ NO	
2.2 Biodegradable or less hazardous products used where possible? (i.e. citrus based products)	☐ YES ☐ NO	
2.3 Material inventory limited	☐ YES ☐ NO	
2.4 Signs posted near outdoor hose bibs listing use restrictions	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		
3.0 SPILL PREVENTION	☐ NA	
3.1 Spill Response Plan posted & current	☐ YES ☐ NO	
3.2 Spill kits located where spills are probable to occur	☐ YES ☐ NO	
3.3 Spill kits stocked with appropriate materials	☐ YES ☐ NO	
3.4 Spill(s) or staining observed	☐ YES ☐ NO	
3.5 Drip pans/ spill mats/ booms used	☐ YES ☐ NO	
3.6 Collected spill materials properly disposed	☐ YES ☐ NO	
3.7 Spill History	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

4.0 MAINTENANCE ACTIVITIES ☐ NA ☐ Subcontrator:		**Comments**
4.1 Performed indoors or under storm resistant cover when practical	☐ YES ☐ NO	
4.2 Performed away from storm drains or drains covered	☐ YES ☐ NO	
4.3 Parts cleaning & degreasing performed indoors or under cover	☐ YES ☐ NO	
4.4 Designated areas for temp tanker/materials truck parking	☐ YES ☐ NO	
4.5 Exposure to run-on & run-off minimized	☐ YES ☐ NO	
4.6 Oil, grease, solvents, batteries, etc. recycled	☐ YES ☐ NO	
4.7 Other:	☐ YES ☐ NO	

REQUIRED ACTION(S):
☐ NONE

5.0 FUEL STORAGE AND DELIVERY ☐ NA		
5.1 "No Topping Off" signs present at vehicle fueling station	☐ YES ☐ NO	
5.2 Fueling tanks fitted with monitoring and alarm equip	☐ YES ☐ NO	
5.3 Fueling tanks fitted with breakaway hose connections	☐ YES ☐ NO	
5.4 Accidental releases blocked from reaching storm drains	☐ YES ☐ NO	
5.5 Equipment fueled in designated areas	☐ YES ☐ NO	
5.6 Other:	☐ YES ☐ NO	

REQUIRED ACTION(S):
☐ NONE

6.0 HAZARDOUS WASTE/MATERIAL STORAGE AREAS ☐ NA		
6.1 Materials stored indoors and away from exit doors or under storm-resistant cover when practical	☐ YES ☐ NO	
6.2 Outdoor materials stored and handled in paved areas	☐ YES ☐ NO	
6.3 Contained by berms, secondary containment, etc.	☐ YES ☐ NO	
6.4 Secondary containment adequately sized	☐ YES ☐ NO	
6.5 Containers clearly labeled and appropriate	☐ YES ☐ NO	
6.6 Liquids dispensed from upright drums w/ hand pumps	☐ YES ☐ NO	
6.7 Signage posted indicating materials being stored	☐ YES ☐ NO	
6.8 MSDS available	☐ YES ☐ NO	
6.9 Bone yard(s) present	☐ YES ☐ NO	

REQUIRED ACTION(S):
☐ NONE

7.0 SOLID WASTE ☐ YES ☐ NO ☐ Subcontractor:		
7.1 Waste and unusable material disposed of properly	☐ YES ☐ NO	
7.2 Garbage collection area properly maintained	☐ YES ☐ NO	
7.3 Dumpster drains equipped with plugs	☐ YES ☐ NO	
7.4 Dumpster lids closed	☐ YES ☐ NO	

REQUIRED ACTION(S):
☐ NONE

8.0 BUILDING & GROUNDS MAINTENANCE		Comments
Building Maintenance	☐ YES ☐ NO ☐ Subcontractors:	
8.1 Building maintenance waste disposed of properly	☐ YES ☐ NO	
8.2 Interior floor cleaning water properly disposed	☐ YES ☐ NO	
8.3 Indoor oil/water separator maintenanced	☐ YES ☐ NO	
8.4 Fire fighting foam deluge system tested and maintained, if applicable	☐ YES ☐ NO	
8.5 Other:		
Grounds Maintenance	☐ YES ☐ NO ☐ Subcontractor:	
8.6 Landscaping waste properly disposed	☐ YES ☐ NO	
8.7 Exterior ground surfaces cleaned properly	☐ YES ☐ NO	
8.8 Use of pesticide, herbicide and fertilizer minimized	☐ YES ☐ NO	
8.9 Records for pesticide/herbicide use?	☐ YES ☐ NO	
8.10 Landscaping provided for erosion control	☐ YES ☐ NO	
8.11 Outdoor oil/water separator maintenanced	☐ YES ☐ NO	
8.12 Other:	☐ NA	
Storm Drains		
8.13 Storm drains clean and free of debris	☐ YES ☐ NO	
8.14 Storm drains labeled "no dumping, drains to river"	☐ YES ☐ NO	
8.15 Stormwater control devices maintained (e.g., hay bales, basins)	☐ YES ☐ NO	
8.16 Catch basins clean and maintained	☐ YES ☐ NO	
8.17 Other:	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

9.0 SIDEWALK / ROAD DEICING	☐ NA	
9.1 Does tenant perform sidewalk deicing?	☐ YES ☐ NO	
9.2 Does tenant perform roadway deicing?	☐ YES ☐ NO	
9.3 Salt storage areas are protected from stormwater?	☐ YES ☐ NO	
9.4 Tracks annual volume of salt used?	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

10.0 NON-STORMWATER DISCHARGES OBSERVED		
10.1 Evidence of illicit discharges and improper disposal (i.e. wash waters, waste water, chemicals, etc)	☐ YES ☐ NO	
10.2 Irrigation runoff	☐ YES ☐ NO	
10.3 Building condensation	☐ YES ☐ NO	
10.4 Other (NPDES permits):	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

11.0 MISCELLANEOUS WASTES		
11.1 Animal wastes generated	☐ YES ☐ NO	
11.2 Kitchen/food wastes generated	☐ YES ☐ NO	
11.3 Waste removed on a regular basis	☐ YES ☐ NO	
11.4 Other:	☐ YES ☐ NO	
REQUIRED ACTION(S): ☐ NONE		

12.0 VEHICLE AND EQUIPMENT CLEANING				
Wash the following? (3.1)	Dry-Wash	WET-WASH		Other / Comment
		Inside	Outside in Permitted Area	
Vehicles ☐ YES ☐ NO ☐ SUB:				
Equipment ☐ YES ☐ NO ☐ SUB:				
Other: ☐ YES ☐ NO ☐ SUB:				
Washing areas permitted ☐ YES ☐ NO				

13.0 VEHICLE AND EQUIPMENT STORAGE				
Store the following? (4.1)	Inside	OUTSIDE		Other / Comment
		Under Cover	Away from Drains	
Vehicles ☐ YES ☐ NO ☐ SUB				
Equipment ☐ YES ☐ NO ☐ SUB				
Other: ☐ YES ☐ NO ☐ SUB				
Storage areas maintained ☐ YES ☐ NO				

14.0 DESCRIPTION OF STORM WATER DRAINAGE

15.0 DESCRIPTION OF EXISTING STRUCTURAL BMPS AND CONDITION

INSPECTION SUMMARY

Major Non-Compliances Issues (Immediate threat to stormwater)

Minor Non-Compliance Issues (potential threat to stormwater/documentation)

INSPECTOR SIGNATURE			Time Complete	Contact Initials
Name:	Signature:			
Name:	Signature:			

University of New Mexico
Illicit Discharge Incident Report Form

RESPONDER INFORMATION - *hotline incidents only*		
Responder:	Call Date:	Call Time:
REPORTER INFORMATION		
Incident Time:	Incident Date:	
Precipiation (inches) in past 24-48 hrs:		
Caller Contact Information:		

INCIDENT LOCATION - *complete one or more below*				
Latitude and Longitude:				
Stream address or outfall #:				
Closest street address:				
Nearby landmark:				
Primary Location Description			**Secondary Location Description**	
☐ Stream Corridor *(In or adjacent to stream)*	☐ Outfall		☐ In-Stream Flow	☐ Along Banks
☐ Upland Area *(Land not adjacent to stream)*	☐ Near Storm Drain		☐Near other water source (storm water pond, wetland, etc.):	
Narrative Description of Location:				

UPLOAD PROBLEM INDICATOR DESCRIPTION		
☐ Dumping	☐ Oil/solvents/chemicals	☐Sewage
☐ Wash water, suds, etc.	☐ Other:	

STREAM CORRIDOR PROBLEM INDICATOR DESCRIPTION				
Odor	☐ None	☐ Sewage	☐ Rancid/Sour	☐ Petroleum (gas)
	☐ Sulfide (rotten eggs); natural	☐ Other:		
Appearance	☐ Normal	☐ Oil Sheen	☐ Cloudy	☐ Suds
	☐ Other:			
Floatables	☐ None	☐ Sewage (toilet paper, etc)	☐ Algae	☐ Dead Fish
	☐ Other:	☐ Outfall		
Narrative description of problem indicators:				
Suspected Violator (Name, personal or vehicle description, license plate # , etc)				