

Final Project Report

2RF-141 - Cotton Draw Recycling Facility ID [fVV2325636574]

**Devon Energy's Produced Water Desalination Trial of Crystal
Clearwater Resources Spontaneous Evaporation and Condensation
Technology (SPEC)**

Project Period: May 30, 2024 – June 28, 2024

Report Prepared by:

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August 23, 2024

Ms. Victoria Venegas
New Mexico EMNRD
Oil Conservation Division

RE: Submission of Final Report of the Produced Water Treatment Research Pilot Project at the Devon Energy Cotton Draw Recycle Containment (2RF-141).

Dear Ms. Venegas:

Devon Energy Corporation is pleased to inform you that it has completed the final report for the pilot project as required by the conditions of approval granted by the Oil Conservation Division (OCD) on March 19, 2024. The enclosed report provides comprehensive documentation and analysis of the project, including the following key components:

- Attachments, photos, etc. to document closure activities,
- All analytical testing results, along with a summary documenting any exceedances, if applicable,
- Volume of produced water treated,
- Volumes of produced water sent back to the Cotton Draw Recycling Facility,
- Project duration,
- Summary of any releases of produced water and clean-up activities,
- A summary of all waste disposal activities, including receiving SWMF, and
- An overall discussion of the pilot project's success and/or lessons learned.

Thank you for granting the two-week extension on the report due date. Because of this extension, more data was able to be included in the report. However, not all reports have been received to date. In order to not delay the report any longer, Devon utilized the available data.

We believe the enclosed report meets all the requirements set forth by the OCD and provides a thorough account of the project's execution and outcomes. Should you require any additional information or have any questions regarding the report, please do not hesitate to contact us.

Sincerely,

A handwritten signature in black ink that reads "Josh Bruening".

Josh Bruening
Supervisor, Construction and Facilities Engineering

Enclosure: Final Report for Pilot Project

State of New Mexico
Energy Minerals and Natural Resources
Department Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

<https://www.emnrd.nm.gov/ocd/ocd-e-permitting/>

Recycling Facility and/or Recycling Containment

Type of Facility: ☐ Recycling Facility ☒ Recycling Containment*
Type of action: ☐ Permit ☐ Registration
☐ Modification ☐ Extension
☐ Closure ☒ Other (explain) Produced Water Pilot Project

* At the time C-147 is submitted to the division for a Recycling Containment, a copy shall be provided to the surface owner.

Be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.
Operator: Devon Energy Corporation (For multiple operators attach page with information) OGRID #: 6137
Address: 333 West Sheridan, Oklahoma City, Oklahoma 737102-8260
Facility or well name (include API# if associated with a well): Cotton Draw Recycle Facility
OCD Permit Number: 2RF-141 (For new facilities the permit number will be assigned by the district office)
U/L or Qtr/Qtr 1 Section 22 Township 25 South Range 31 County: Eddy
Surface Owner: ☐ Federal ☒ State ☐ Private ☐ Tribal Trust or Indian Allotment

2.
☐ **Recycling Facility:**
Location of recycling facility (if applicable): Latitude _____ Longitude _____ NAD83
Proposed Use: ☐ Drilling* ☐ Completion* ☐ Production* ☐ Plugging *
**The re-use of produced water may NOT be used until fresh water zones are cased and cemented*
☐ Other, *requires permit for other uses. Describe use, process, testing, volume of produced water and ensure there will be no adverse impact on groundwater or surface water.*
☐ Fluid Storage
☐ Above ground tanks ☐ Recycling containment ☒ Activity permitted under 19.15.17 NMAC explain type _____
☐ Activity permitted under 19.15.36 NMAC explain type: _____ ☐ Other explain _____
☐ For multiple or additional recycling containments, attach design and location information of each containment
☐ **Closure Report (required within 60 days of closure completion):** ☐ Recycling Facility Closure Completion Date: _____

3.
☐ **Recycling Containment:**
☐ Annual Extension after initial 5 years (attach summary of monthly leak detection inspections for previous year)
Center of Recycling Containment (if applicable): Latitude _____ Longitude _____ NAD83
☐ For multiple or additional recycling containments, attach design and location information of each containment
☐ Lined ☐ Liner type: Thickness _____ mil ☐ LLDPE ☐ HDPE ☐ PVC ☐ Other _____
☐ String-Reinforced
Liner Seams: ☐ Welded ☐ Factory ☐ Other _____ Volume: _____ bbl Dimensions: L _____ x W _____ x D _____
☐ Recycling Containment Closure Completion Date: _____

4.

Bonding:

- ☐ Covered under bonding pursuant to 19.15.8 NMAC per 19.15.34.15(A)(2) NMAC **(These containments are limited to only the wells owned or operated by the owners of the containment.)**
- ☐ Bonding in accordance with 19.15.34.15(A)(1). Amount of bond \$_____ **(work on these facilities cannot commence until bonding amounts are approved)**
- ☐ Attach closure cost estimate and documentation on how the closure cost was calculated.

5.

Fencing:

- ☐ Four foot height, four strands of barbed wire evenly spaced between one and four feet
- ☐ Alternate. Please specify_____

6.

Signs:

- ☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers
- ☐ Signed in compliance with 19.15.16.8 NMAC

7.

Variances:

Justifications and/or demonstrations that the proposed variance will afford reasonable protection against contamination of fresh water, human health, and the environment.

Check the below box only if a variance is requested:

- ☐ Variance(s): Requests must be submitted to the appropriate division district for consideration of approval. If a Variance is requested, include the variance information on a separate page and attach it to the C-147 as part of the application.

If a Variance is requested, it must be approved prior to implementation.

8.

Siting Criteria for Recycling Containment

Instructions: The applicant must provide attachments that demonstrate compliance for each siting criteria below as part of the application. Potential examples of the siting attachment source material are provided below under each criteria.

General siting

Ground water is less than 50 feet below the bottom of the Recycling Containment.

NM Office of the State Engineer - iWATERS database search; USGS; Data obtained from nearby wells

☐ Yes ☐ No
☐ NA

Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to NMSA 1978, Section 3-27-3, as amended.

☐ Yes ☐ No
☐ NA

- Written confirmation or verification from the municipality; written approval obtained from the municipality

Within the area overlying a subsurface mine.

☐ Yes ☐ No

- Written confirmation or verification or map from the NM EMNRD-Mining and Minerals Division

Within an unstable area.

☐ Yes ☐ No

- Engineering measures incorporated into the design; NM Bureau of Geology & Mineral Resources; USGS; NM Geological Society; topographic map

Within a 100-year floodplain. FEMA map

☐ Yes ☐ No

Within 300 feet of a continuously flowing watercourse, or 200 feet of any other significant watercourse, or lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark).

☐ Yes ☐ No

- Topographic map; visual inspection (certification) of the proposed site

Within 1000 feet from a permanent residence, school, hospital, institution, or church in existence at the time of initial application.

☐ Yes ☐ No

- Visual inspection (certification) of the proposed site; aerial photo; satellite image

Within 500 horizontal feet of a spring or a fresh water well used for domestic or stock watering purposes, in existence at the time of initial application.

☐ Yes ☐ No

- NM Office of the State Engineer - iWATERS database search; visual inspection (certification) of the proposed site

Within 500 feet of a wetland.

☐ Yes ☐ No

- US Fish and Wildlife Wetland Identification map; topographic map; visual inspection (certification) of the proposed site

9.

Recycling Facility and/or Containment Checklist:

Instructions: Each of the following items must be attached to the application. Indicate, by a check mark in the box, that the documents are attached.

- ☐ Design Plan - based upon the appropriate requirements.
- ☐ Operating and Maintenance Plan - based upon the appropriate requirements.
- ☐ Closure Plan - based upon the appropriate requirements.
- ☐ Site Specific Groundwater Data -
- ☐ Siting Criteria Compliance Demonstrations –
- ☐ **Certify that notice of the C-147 (only) has been sent to the surface owner(s)**

10.

Operator Application Certification:

I hereby certify that the information and attachments submitted with this application are true, accurate and complete to the best of my knowledge and belief.

Name (Print): Josh Bruening Title: Supervisor, Construction and Facilities
 Signature: Josh Bruening Date: 8/23/2024
 e-mail address: josh.bruening@dvn.com Telephone: 405-552-7882

11.

OCD Representative Signature: Victoria Venegas Approval Date: 09/06/2024

Title: Environmental Specialist OCD Permit Number: 2RF-141

- ☒ OCD Conditions _____
- ☐ Additional OCD Conditions on Attachment _____

1. Executive Summary

Devon Energy performed a 29-day produced water desalination pilot in which a treatment train concept was implemented. The train consisted of pretreatment, treatment, and post treatment. The primary technology tested was Crystal Clearwater Resources (CCR) proprietary Spontaneous Evaporation and Condensation Technology (SPEC). The SPEC unit is a six-stage, low-pressure, thermal distillation system. Post treatment technologies were granular activated carbon (GAC) to remove organics and two ammonia removal technologies were trialed. The first ammonia treatment was electrolysis provided by Truclear. The second ammonia treatment was CCR's proprietary technology called "No-mmonia".

The purpose of the pilot was to evaluate the water quality that could be achieved in the treatment train for both the distillate/clean effluent and the concentrated brine waste stream. The data collected from this pilot will hopefully inform regulators while developing appropriate regulations for produced water use outside of oil and gas.

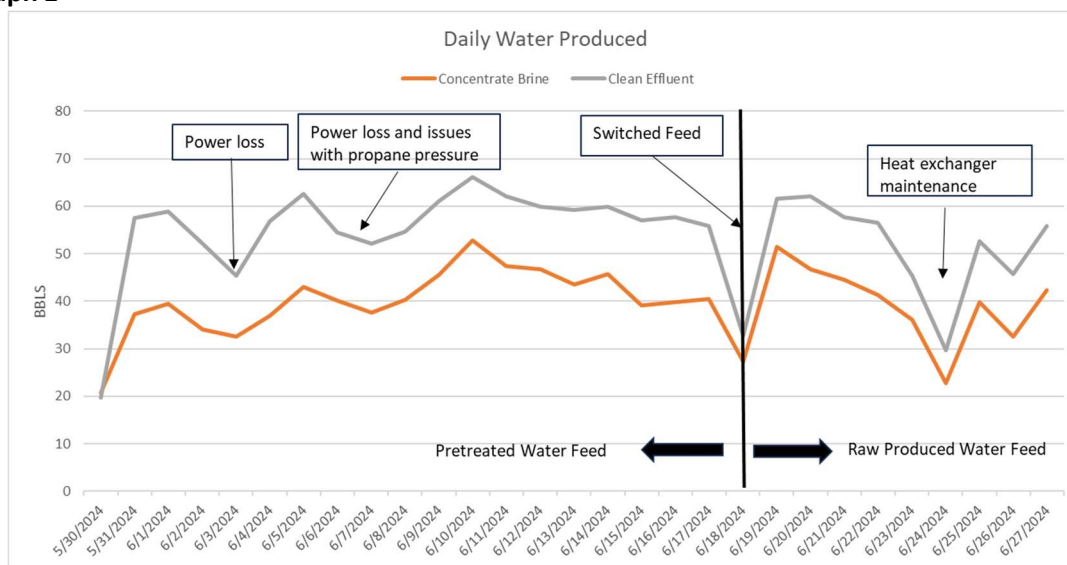
During the 29-day trial, the plant ran continuously (24 hours) and achieved 97% uptime. Devon tested two types of feed water: treated produced water and raw produced water. During the trial, the influent quality ranged between 95,600 and 125,000 mg/l TDS and averaged 113,520 TDS. Throughout the trial, the CCR SPEC technology was able to consistently produce a distillate that was less than 500 TDS. The post treatment polishing of the SPEC distillate was able to effectively remove BTEX and ammonia.

2. Project Timeline/Volumes

In May, the location of the desalination trial was leveled, containment was installed, and water storage was spotted (frac tanks and poly tanks) prior to CCR rigging up their equipment. All equipment related to the pretreatment was already on location because it is utilized to treat water for certain drilling and completions activities. The SPEC unit was delivered and spotted on 5/21/2024 and rig up continued until 5/30/2024. The boiler technician was delayed and not able to come and calibrate the boiler until 5/30 which delayed the start of processing water.

Devon began processing water on 5/30/2024 and continued through 6/27/2024. Graph 1 shows the daily volumes of clean effluent and concentrated brine that were produced over the trial period.

Graph 1



Noted on Graph 1 are non-productive time events. There were two unexpected power outages at the facility early in the trial that caused downtime as the plant had to be brought back online afterwards. Additionally, there was a pressure issue in the propane tanks that caused the burner to not work efficiently and impacted production. On 6/18/2024, the plant switched from running treated produced water to raw produced water as the feed to determine if a pretreatment step in the treatment train is required. There was an impact on production this day as time was taken to do maintenance and to clean out the feed water frac tank. During this maintenance, there was a clean in place portal on one of the heat exchangers that broke, removing the ability to flush the heat exchanger while the unit was operating. This led to a need on 6/24/2024 to shut down and manually clean the heat exchanger as there was buildup of hydrocarbons (likely asphaltene) that were in the raw produced water feed.

Table 1 is a summary of the total volumes treated and produced during the trial. Other than water sent to the lab for analysis, all water was discharged daily into the Cotton Draw 22 pond for use in oil and gas operations.

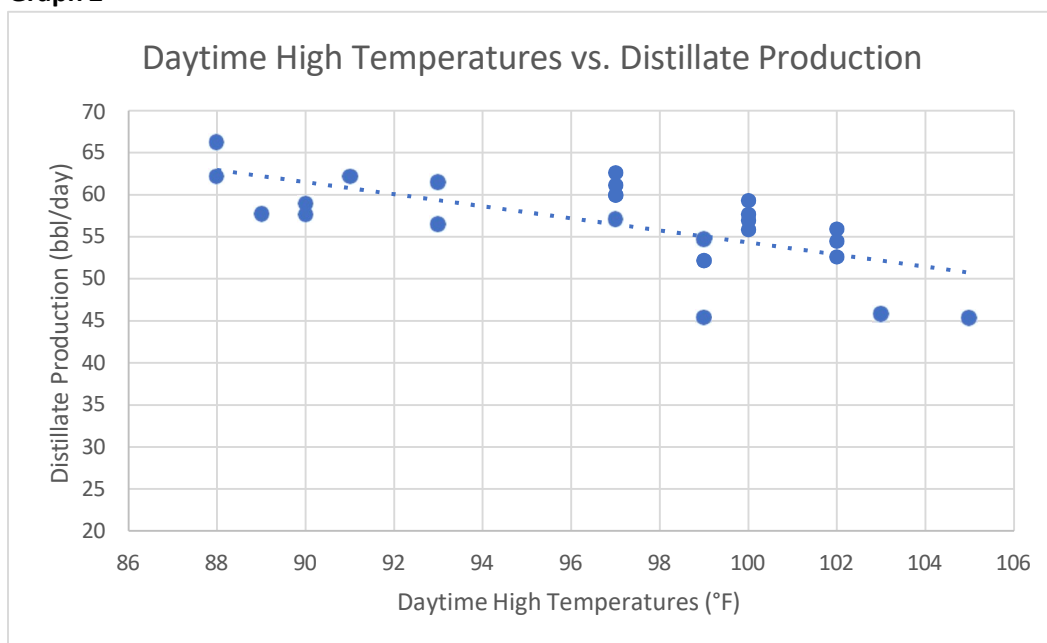
Table 1

	Treated	Raw	Total	Avg. BBLs/Day
Days	20	9	29	
Feed	1,885	821	2,706	93
Clean Effluent	1,087	358	1,444	50
Concentrated Brine	791	467	1,258	43

The SPEC pilot plant was designed to run 150bbls/day of feed water through the plant. This was not achieved for two primary reasons. First, Devon requested that the concentrated brine be increased to ~280,000TDS vs. ~240,000 TDS to test if the plant could consistently produce a 10-

pound brine. Increasing the concentration of the waste stream reduces the amount of feed needed for the plant. Secondly, the ambient temperatures of Southeast New Mexico had adverse effects on the air fin cooler used in the process. Just as an air conditioner may have a difficult time keeping a home cool on extremely hot days, the air fin cooler had the same issues. Graph 2 shows the correlation between daily distillate production and the daytime high temperatures.

Graph 2



3. Releases of Produced Water and Waste Disposal activities

There were no releases of any produced water, and no waste was generated that needed to be disposed of during the pilot. All waste streams were liquid and discharged into the Cotton Draw 22 pond and utilized in drilling and completion operations.

4. Process Flow and Sampling Points

Figure 1 is a process flow of the treatment train. From left to right, feed water (treated produced or raw) was fed into the CCR SPEC unit. The SPEC unit is where most of the cleaning of the water is done. On average, the feed was 113,520 mg/l TDS and the distillate from the thermal process was <500mg/l TDS. The water was then processed through granular activated carbon (GAC) to remove residual organics in the distillate. The effluent after the GAC is often referred to as "polished distillate". After GAC, water was treated for ammonia. Devon trialed two ammonia removal technologies that will be discussed in more detail later in the report. Finally, the concentrated brine was sampled as well. The concentrated brine is where all the waste from the SPEC unit goes.

The yellow numbers in Figure 1 outline the sampling points that will be referred to throughout the analysis. Below is a list of definitions that correspond to the analysis and Figure 1:

1. Feed
2. CCR Clean Effluent (unpolished)

3. Post Carbon (GAC, Polished)
4. Post Electrolysis or Post No-mmonia (Ammonia Removal)
5. Concentrated Brine

Figure 1

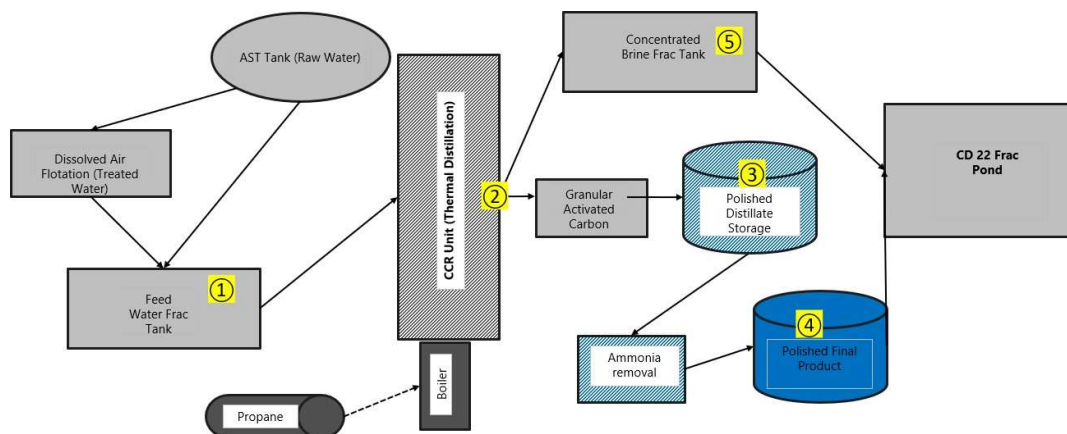


Table 2 shows the days samples were taken and what streams were sent to the lab. Devon hired Tetra Tech, a consulting group, to be a third party to gather samples and send to Pace Analytical ("Pace"). There were five days that Tetra Tech took samples. Three sets of pretreated feed water samples gathered because there was a mix up at Pace on 6/5 and 6/12. Pace did not send the appropriate containers to gather the samples for testing Devon wanted performed. Because of this, it was decided to extend the time running treated produced feed to ensure the data was captured to appropriately analyze the products with treaded produced feed water.

Table 2

	Sample Point	Pretreated Feed			Raw Feed	
		6/5/2024	6/12/2024	6/18/2024	6/25/2024	6/27/2024
Feed Water	1	X	X	X	X	X
CCR Effluent	2	X	X	X	X	X
Post Carbon	3	X	X	X	X	X
Post Electrolysis	4		X			
Post No-mmonia	4			X	X	X
Concentrated Brine	5	X	X	X	X	X

5. Analytical Results

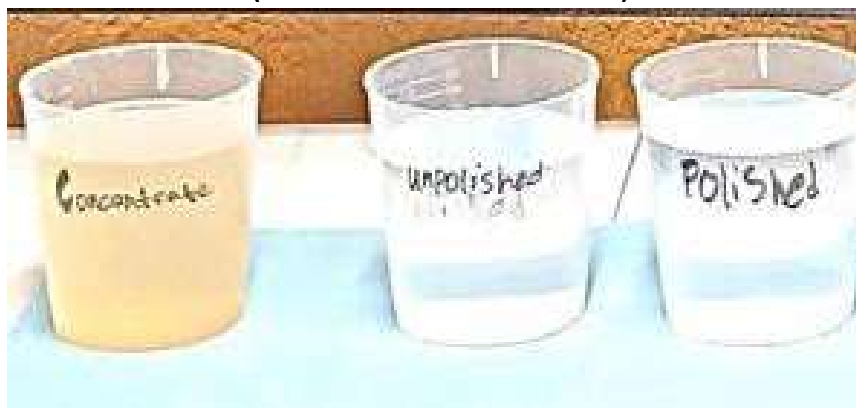
As mentioned in the volumes section of this report, Devon processed treated produced water and raw produced water. Treated produced water is produced water that has had suspended solids removed, iron removed, and bacteria killed. This is done by treating the water with

chemicals such as hydrogen peroxide, a coagulant, and a flocculant. After the chemicals are injected, the water is processed through a dissolved air flotation (DAF) unit. For purposes of the treatment train, this is the pretreatment step. The pictures below are examples of the products produced from the different feed water. Picture 1 was taken when the feed water was treated produced water. Picture 2 was taken when the feed water was raw water (i.e. no pretreatment in the treatment train).

There is not a noticeable difference in clean effluent quality (unpolished and polished) depending on the feed. However, there is a significant difference in the concentrated brine depending on the pretreatment. When treated produced water is used, all the solids and iron are removed by the DAF unit. When raw water is processed, all the suspended solids and iron end up in the concentrated brine stream as waste as you can see in the color difference of the concentrate in Pictures 1 and 2.

For smoother operations, using treated water feed is preferred because it will likely reduce the amount of maintenance required. Just in the 29-day trial, the first 20 days of running treated water there were no indications of buildup in the system. After transitioning to raw water, in less than a week, there was build up that required a shutdown to clean the heat exchanger.

Picture 1: 6.15.2024 (Treated Produced Feed Water)



Picture 2: 6/21/2024 (Raw Water Feed)



Total Dissolved Solids

Table 3 provides the average levels in milligrams per liter (mg/l) for major inorganic constituents of interest. These data show the SPEC process significantly reduces the TDS of the water. The lab did not capture bicarbonate data on CCR Clean effluent and therefore the CCR clean effluent data points are not particularly helpful. The post carbon results are likely closer to the actual TDS produced by the SPEC process. Overall, it is apparent the SPEC process produces a very clean distillate, and the majority of dissolved solids ultimately end up in the concentrated brine.

Table 3

"Polished"						
mg/l	Feed	CCR Clean Effluent	Post Carbon	Post Electrolysis	Post No-mmonia	Concentrated Brine
Sodium	37,620	3	31	142	164	78,200
Calcium	6,262	1	1	18	1	13,333
Magnesium	584	1	1	15	1	1,197
Potassium	795	1	23	51	1	1,533
Bicarbonate	253	0	278	275	257	128
Chloride	73,660	7	15	192	20	157,000
Sulfate	464	32	16	56	5	992
Dissolved Solids	113,520	15	150	522	377	254,000

Metals

Table 4 is a summary of the sample concentrations averages for the metals and heavy metals analysis which showed >1mg/l concentration in the feed and the subsequent concentrated brine and other streams. The typical metals and heavy metals of concern for surface discharge are arsenic, cadmium and lead. These were found in less than <1ppm concentrations in the feed and where non-detect in the polished effluent. The other metals of concern are barium and strontium, while these are found in relatively high concentrations in the feed, the SPEC process reduced the concentrations to <0.02mg/l in the effluent.

Table 4

mg/l	Feed	CCR Clean Effluent	Post Carbon	Post Electrolysis	Post No-mmonia	Concentrated Brine
Arsenic	0.3	0.0	0.0	0.0	0.0	0.0
Barium	4.4	0.0	0.0	0.1	0.0	8.4
Cadmium	0.1	0.0	0.0	0.0	0.0	0.0
Chromium	0.3	0.0	0.0	0.0	0.0	0.0
Iron	10.2	0.1	0.1	0.1	0.1	38.1
Lead	0.2	0.0	0.0	0.0	0.0	0.0
Lithium	23.4	0.0	0.0	0.1	0.0	58.6
Phosphorus	3.2	0.1	6.3	0.9	0.7	0.0

Selenium	0.3	0.0	0.0	0.0	0.0	0.0
Aluminum	6.4	0.2	0.2	0.2	0.2	10.0
Antimony	0.3	0.0	0.0	0.0	0.0	0.0
Beryllium	0.1	0.0	0.0	0.0	0.0	0.0
Copper	0.3	0.0	0.0	0.0	0.0	0.0
Nickel	0.3	0.0	0.0	0.0	0.0	0.0
Silicon	17.0	0.2	9.9	5.5	3.4	23.8
Strontium	709.2	0.1	0.0	0.6	0.1	1835.0
Thallium	0.3	0.0	0.0	0.0	0.0	0.0
Vanadium	0.0	0.0	0.0	0.0	0.0	0.0
Zinc	1.6	0.1	0.1	0.1	0.1	2.5
Silver	0.2	0.0	0.0	0.0	0.0	0.0
Boron	93.3	0.4	0.4	0.1	0.8	192.0

Benzene, Ethylbenzene, Toluene and Xylenes (BTEX)

The majority of the BTEX components were found to be non-detect or <1 parts per billion after going through post treatment. The CCR spec unit reduces BTEX by ~74%. However, additional polishing to remove the residual BTEX is required and is accomplished by the GAC in the treatment train. There is a slight reduction in BTEX in the No-mmonia process but the majority of the polishing for BTEX is accomplished by GAC. In addition to BTEX being removed, total petroleum hydrocarbons are reduced from 15.88 mg/l to <1 mg/l after GAC.

Table 5

mg/l	Feed	CCR Clean Effluent	Post Carbon	Post Electrolysis	Post No-mmonia
Benzene	4.24	1.15	0.01	0.00	0.00
Ethylbenzene	0.11	0.02	0.01	0.00	0.00
Toluene	3.41	0.93	0.01	0.00	0.01
Xylenes, Total	1.56	0.40	0.02	0.00	0.01

Ammonia

Devon trialed two ammonia treatment technologies. The first was an electrolysis technology by TruClear. Only one sample was sent to the lab because field testing showed ammonia levels of >40ppm after treatment. The official lab results from Pace confirmed the field test and showed the electrolysis removed ~50% of the ammonia from the CCR clean effluent. The target for ammonia levels was <10mg/l which was not achieved by electrolysis.

Devon also trialed a proprietary ammonia treatment technology developed by CCR. CCR is calling this “No-mmonia” and does not want to disclose the technology until there is a patent filed. Field tests of No-mmonia treated water showed “not detected” and therefore samples of No-mmonia water were sent to the laboratory for confirmation.

As you can see in Table 4, the feed water averaged 555 mg/l of ammonia. The SPEC unit reduces ammonia levels by 80% to 90%. The GAC treatment does not remove significant amounts of ammonia. CCR's No-mmonia process consistently reduced ammonia levels to <1mg/l where electrolysis still had ~40mg/l after treatment.

Table 6

mg/l	Feed	CCR Clean Effluent	Post Carbon	Post Electrolysis	Post No-mmonia	Concentrated Brine
Ammonia	555	91	87	40	0	1,069

Perfluoroalkyls and Polyfluoroalkyl Substances (PFAS)

PFAS was only detected in the feed on June 19 (still waiting on analysis for June 28) as shown on Table 7. Devon checked operational reports that day and did not notice anything unusual about the feed water and it is unknown where the PFAS could have been introduced into the system.

Table 7

(ng/l)	6/6/2024	6/12/2024	6/19/2024	6/26/2024
Perfluorobutanoic acid (PFBA)	0	0	200	0
Perfluoropentanoic acid (PFPeA)	0	0	350	0
Perfluorohexanoic acid (PFHxA)	0	0	720	0
Perfluorooctanoic acid (PFOA)	0	0	49	0
Perfluorobutanesulfonic acid (PFBS)	0	0	110	0
Perfluorooctanesulfonic acid (PFOS)	0	0	200	0

Table 8 summarizes the PFAS found from all 5 sampling points on June 19. The results are puzzling because there clearly is a reduction of PFAS after distillation in the SPEC unit, but there is not a subsequent rise in PFAS in the concentrated brine. Additionally, several constituents increased downstream of the SPEC unit after GAC and No-mmonia treatment. However, if these processes added PFAS, it would be apparent in the other samples taken. More tests need to be done related to PFAS in the future to confirm the presence in produced water. Note that PFAS results are listed in nanograms per liter (ng/l). One nanogram is equal to 0.000001 milligram. Therefore, the level of PFAS seen in the 6/19 samples was a very small amount.

Table 8

6/19/2024 Sample (ng/l)	Feed	CCR Clean Effluent	Post Carbon	Post No-mmonia	Concentrated brine
Perfluorobutanoic acid (PFBA)	200	0	0	5	0
Perfluoropentanoic acid (PFPeA)	350	0	0	9	0
Perfluorohexanoic acid (PFHxA)	720	0	4	14	47
Perfluorooctanoic acid (PFOA)	49	1	2	1	30
Perfluorobutanesulfonic acid (PFBS)	110	0	0	2	0
Perfluorooctanesulfonic acid (PFOS)	200	0	7	4	78

Radionuclides or Naturally Occurring Radioactive Materials (NORMs)

Table 9 is a summary of the NORMs tested during the trial period. The unit of measure is pico curies per liter (pCi/L). As shown, >99% of Gross Alpha, Gross Beta, Radium 226 and Radium 228 are removed from the CCR clean effluent.

Table 9

pCi/l	Feed	CCR Clean Effluent	Post Carbon	Post Electrolysis	Post No-mmonia	Concentrated Brine
GROSS ALPHA	1,690.0	1.5	3.9	0.5	0.3	2,395.0
GROSS BETA	1,543.8	1.1	19.2	41.6	0.8	2,670.0
RADIUM-226	106.4	1.1	0.9	0.1	0.3	111.6
RADIUM-228	432.4	-0.3	-0.2	-0.3	0.5	748.0
URANIUM-234	0.4	0.2	0.3	0.1	0.4	0.2
URANIUM-235	0.0	0.0	0.1	0.0	0.0	0.0
URANIUM-238	0.2	0.2	0.1	0.0	0.3	0.1

All Analytical Testing Results

Devon expects a total of 63 reports from Pace. As of August 23, 2024, Devon has received 53 of the expected reports. The reports are in PDF form and include the samples results, quality control summary for all analysis and a chain of custody.

Due to the number and size of the files of the analytical results, the link below contains all of the files. Victoria Venegas and Leigh Barr at the OCD have been given permissions to access the data.

[Devon Desal Analytical Reports](#)

In addition to the data captured by Devon, the New Mexico Produced Water Research Consortium gathered samples to be sent to a third-party lab, Eurofins, and to take water to New Mexico State University for testing as well. Devon has not received the analysis from the consortium yet but can share those results with OCD when it is received.

6. Closure activity

After the trial, Devon restored the location back to its original state as shown in Pictures 3, 4, and 5.

Picture 3:



Picture 4:



Picture 5



7. Summary

Devon Energy Corporation, in collaboration with Crystal Clearwater Resources, has successfully completed a desalination project that demonstrated the feasibility of treating produced water to meet surface discharge standards of other states. Given the current regulatory environment in New Mexico, which restricts the discharge of produced water into the environment, Devon is exploring the utilization of this treated water within its own operations. The clean distillate produced from the treatment train can replace freshwater currently used in drilling operations, such as for cementing and cleaning frac tanks. Additionally, the concentrated brine waste stream can be repurposed as a 10-pound brine fluid for drilling mud or as a kill fluid in workover operations. The pilot project provided samples to test the consistent production of a 10-pound brine without reaching saturation. Devon had cement and mud vendors qualify both the clean distillate and the concentrated brine for their operations.

Building a commercial desalination plant would enable Devon to use these products in oil and gas operations, reducing the volume of water injected and the demand on freshwater resources. This strategic move would also decrease truck traffic by situating the desalination plant centrally within Devon's operations. By constructing a unit for internal use, Devon could collect more samples over time to ensure the water meets environmental discharge standards for future applications. Additionally, the plant could serve as a testing ground for continuous monitoring devices and provide distillate water samples to other industries, such as green hydrogen production and data centers, which are exploring the use of desalinated produced water. This project would not only support sustainable water management but also offers ancillary benefits, including operational efficiencies and environmental stewardship.

**2RF-141 - COTTON DRAW
RECYCLING FACILITY ID
[fVV2325636574]**

**[6137] Devon Energy
Production Company, L.P. –
Produced Water Treatment
Research Pilot Project
Devon Desal Analytical
Reports**

09/06/2024

Venegas, Victoria, EMNRD

From: Venegas, Victoria, EMNRD
Sent: Friday, September 6, 2024 9:50 AM
To: Bruening, Josh
Subject: [6137] Devon Energy Production Company, L.P. – Produced Water Treatment Research Pilot Project
Attachments: C-147 2RF-141 - COTTON DRAW RECYCLING FACILITY ID [fVV2325636574] 09.06.2024.pdf

[6137] Devon Energy Production Company, L.P. – Produced Water Treatment Research Pilot Project.

Good morning Mr. Bruening,
NMOCD has reviewed the closure report submitted by [6137] DEVON ENERGY PRODUCTION COMPANY, LP on 08/23/2024, for the Produced Water Treatment Research Pilot Project associated with 2RF-141 - COTTON DRAW RECYCLING FACILITY ID [fVV2325636574]. The closure report has been approved. Please note that according to 19.15.34.14.G: “The re-vegetation and reclamation obligations imposed by federal, state trust land or tribal agencies on lands managed by those agencies shall supersede these provisions and govern the obligations of any operator subject to those provisions, provided that the other requirements provide equal or better protection of fresh water, human health, and the environment.” Per 19.15.34.14.H, the operator shall notify the Division when reclamation and re-vegetation are complete.

Please let me know if you have any additional questions.
Regards,

Victoria Venegas • Environmental Specialist
Environmental Bureau
EMNRD - Oil Conservation Division
506 W. Texas Ave. Artesia, NM 88210
(575) 909-0269 | Victoria.Venegas@emnrd.nm.gov
<https://www.emnrd.nm.gov/oecd/>





ANALYTICAL REPORT

August 21, 2024

- ¹Cp
- ²Tc
- ³Ss
- ⁴Cn
- ⁵Sr
- ⁶Qc
- ⁷Gl
- ⁸Al
- ⁹Sc

Devon Energy - Oklahoma City, OK

Sample Delivery Group: L1745594
Samples Received: 06/12/2024
Project Number: 212C-HN-02831
Description: Desalination Pilot
Site: CCR
Report To: Paul Barbour
333 W Sheridan Avenue
Oklahoma City, OK 73102-5015

Entire Report Reviewed By:

Jennifer Gambill

Jennifer Gambill
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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SAMPLE SUMMARY

FEED L1745594-01 WW

Collected by
Danny Daniels

Collected date/time
06/11/24 08:25

Received date/time
06/12/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2319402	1	07/09/24 15:22	07/09/24 15:22	BMD	Mt. Juliet, TN
Calculated Results	WG2319627	1	07/12/24 10:00	07/12/24 10:00	JTM	Mt. Juliet, TN
Gravimetric Analysis by Method 2540 C-2011	WG2307104	1	06/18/24 13:32	06/18/24 15:17	DLS	Mt. Juliet, TN
Gravimetric Analysis by Method 2540 D-2015	WG2304801	1	06/13/24 17:42	06/17/24 17:20	DLS	Mt. Juliet, TN
Wet Chemistry by Method 120.1	WG2307326	1	06/18/24 15:45	06/18/24 15:45	KA	Mt. Juliet, TN
Wet Chemistry by Method 130.1	WG2303609	125	06/14/24 11:30	06/14/24 22:34	CAT	Mt. Juliet, TN
Wet Chemistry by Method 1664A	WG2319684	1	07/09/24 13:41	07/09/24 20:18	DAL	Mt. Juliet, TN
Wet Chemistry by Method 2120 B-2011	WG2304210	5	06/13/24 08:50	06/13/24 08:50	ARV	Mt. Juliet, TN
Wet Chemistry by Method 2130 B-2011	WG2303800	1	06/12/24 15:32	06/12/24 15:32	ARV	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2304312	1	06/13/24 12:13	06/13/24 12:13	KA	Mt. Juliet, TN
Wet Chemistry by Method 2580	WG2304774	1	06/19/24 10:51	06/19/24 10:51	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2303460	10	06/13/24 02:43	06/13/24 02:43	JDG	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2308300	1000	06/20/24 14:56	06/20/24 14:56	JDG	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG2319402	200	07/09/24 15:22	07/09/24 15:22	BMD	Mt. Juliet, TN
Wet Chemistry by Method 3500Cr B-2011	WG2303796	1	06/12/24 15:14	06/12/24 15:14	SJA	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2316294	50	07/02/24 22:00	07/03/24 10:48	JAS	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2307824	1	06/19/24 19:53	06/19/24 19:53	JAS	Mt. Juliet, TN
Wet Chemistry by Method 410.4	WG2307826	10	06/19/24 14:15	06/19/24 17:34	CAH	Mt. Juliet, TN
Wet Chemistry by Method 4500CI G-2011	WG2304244	1	06/17/24 12:00	06/17/24 12:00	CAH	Mt. Juliet, TN
Wet Chemistry by Method 4500CN E-2016	WG2307543	1	06/19/24 08:18	06/19/24 14:37	JAS	Mt. Juliet, TN
Wet Chemistry by Method 4500H+ B-2011	WG2305923	1	06/15/24 22:10	06/15/24 22:10	KRB	Mt. Juliet, TN
Wet Chemistry by Method 4500O G-2016	WG2311521	1	06/25/24 10:15	06/25/24 10:15	BGE	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2303606	1	06/12/24 12:22	06/12/24 12:22	SJA	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2303094	1	06/13/24 14:41	06/13/24 14:41	JAR	Mt. Juliet, TN
Wet Chemistry by Method 4500SO3 B-2011	WG2301827	1	06/13/24 14:00	06/13/24 14:00	SJA	Mt. Juliet, TN
Wet Chemistry by Method 5210 B-2016	WG2305728	10	06/15/24 12:37	06/20/24 09:37	HMH	Mt. Juliet, TN
Wet Chemistry by Method 5210 B-2016	WG2305912	10	06/15/24 16:22	06/20/24 11:51	HMH	Mt. Juliet, TN
Wet Chemistry by Method 5310 B-2014	WG2318648	20	07/09/24 21:15	07/09/24 21:15	SJF	Mt. Juliet, TN
Wet Chemistry by Method 5310 B-2014	WG2308789	2	06/20/24 13:04	06/20/24 20:12	SJF	Mt. Juliet, TN
Wet Chemistry by Method 5540 C-2011	WG2303692	1	06/12/24 14:47	06/12/24 17:31	ARV	Mt. Juliet, TN
Mercury by Method 245.1	WG2303814	10	06/14/24 22:48	06/16/24 19:13	AKB	Mt. Juliet, TN
Metals (ICP) by Method 200.7	WG2319627	50	07/11/24 08:23	07/11/24 22:15	DJS	Mt. Juliet, TN
Metals (ICPMS) by Method 200.8	WG2324349	100	07/20/24 13:39	08/15/24 17:56	JPD	Mt. Juliet, TN
Metals (ICPMS) by Method 200.8	WG2324349	1000	07/20/24 13:39	08/15/24 17:10	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 624.1	WG2310431	1	06/23/24 02:02	06/23/24 02:02	GLN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 624.1	WG2310676	25	06/24/24 07:34	06/24/24 07:34	GLN	Mt. Juliet, TN
TPH by TCEQ Method 1005	WG2311292	1	06/25/24 10:48	06/25/24 18:42	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 625.1	WG2306373	1	06/18/24 17:35	06/18/24 23:56	DSH	Mt. Juliet, TN
Subcontracted Analyses	WG2304561	1	07/02/24 00:00	07/02/24 00:00	ANF	Indianapolis, IN 46268
Subcontracted Analyses	WG2304567	1	07/02/24 00:00	07/02/24 00:00	ANF	Beaver, WV 25813
Subcontracted Analyses	WG2304569	1	07/08/24 00:00	07/08/24 00:00	-	Green Bay, WI 54302

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

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.



Jennifer Gambill
Project Manager

Project Narrative

L1745594 -01 contains subout data that is included after the chain of custody.

Sample Delivery Group (SDG) Narrative

The following analysis were performed from an unpreserved, insufficiently or inadequately preserved sample.

Lab Sample ID	Project Sample ID	Method
L1745594-01	FEED	4500O G-2016, 1664A

The Laboratory is not accredited for specific analytes on the associated Sample/Method. These analytes are flagged in the Sample Results section of the report with an asterisk (*).

Lab Sample ID	Project Sample ID	Method
L1745594-01	FEED	300.0

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Collected date/time: 06/11/24 08:25

L1745594

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium,Trivalent	ND	Q	0.0100	1	07/12/2024 10:00	WG2319627
Organic Nitrogen	59.3		12.5	1	07/09/2024 15:22	WG2319402

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	118000		1000	1	06/18/2024 15:17	WG2307104

Gravimetric Analysis by Method 2540 D-2015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Suspended Solids	42.5		3.33	1	06/17/2024 17:20	WG2304801

Wet Chemistry by Method 120.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	145000		10.0	1	06/18/2024 15:45	WG2307326

Sample Narrative:

L1745594-01 WG2307326: at 25C

Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	15000		3750	125	06/14/2024 22:34	WG2303609

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Oil & Grease (Hexane Extr)	ND		5.56	1	07/09/2024 20:18	WG2319684

Wet Chemistry by Method 2120 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Color, Apparent	50.0	Q	5.00	5	06/13/2024 08:50	WG2304210

Sample Narrative:

L1745594-01 WG2304210: 6.66

Wet Chemistry by Method 2130 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Turbidity	7.13		0.400	1	06/12/2024 15:32	WG2303800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Alkalinity	258		20.0	1	06/13/2024 12:13	WG2304312
Alkalinity,Bicarbonate	258		20.0	1	06/13/2024 12:13	WG2304312
Alkalinity,Carbonate	ND		20.0	1	06/13/2024 12:13	WG2304312

Sample Narrative:

Collected date/time: 06/11/24 08:25

L1745594

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
L1745594-01 WG2304312: Endpoint pH 4.5 headspace						

¹ Cp

² Tc

Wet Chemistry by Method 2580

Analyte	Result mV	Qualifier	Dilution	Analysis date / time	Batch
ORP	178	T8	1	06/19/2024 10:51	WG2304774

³ Ss

⁴ Cn

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
*Bromide	665		10.0	10	06/13/2024 02:43	WG2303460
Chloride	65700		1000	1000	06/20/2024 14:56	WG2308300
Fluoride	ND		1.50	10	06/13/2024 02:43	WG2303460
Nitrate as (N)	ND		1.00	10	06/13/2024 02:43	WG2303460
Nitrite as (N)	ND		1.00	10	06/13/2024 02:43	WG2303460
Sulfate	360		50.0	10	06/13/2024 02:43	WG2303460

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

Wet Chemistry by Method 350.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Ammonia Nitrogen	456		50.0	200	07/09/2024 15:22	WG2319402

⁹ Sc

Sample Narrative:

L1745594-01 WG2319402: Dilution due to matrix interference

Wet Chemistry by Method 3500Cr B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND	J6 Q	0.0100	1	06/12/2024 15:14	WG2303796

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	515		12.5	50	07/03/2024 10:48	WG2316294

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	ND		0.100	1	06/19/2024 19:53	WG2307824

Wet Chemistry by Method 410.4

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
COD	5500		200	10	06/19/2024 17:34	WG2307826

Wet Chemistry by Method 4500Cl G-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chlorine,residual	ND	T8	0.100	1	06/17/2024 12:00	WG2304244

Collected date/time: 06/11/24 08:25

L1745594

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RD L	Dilution	Analysis date / time	Batch
Cyanide	ND		0.00500	1	06/19/2024 14:37	WG2307543

¹ Cp

² Tc

Wet Chemistry by Method 4500H+ B-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.83	T8	1	06/15/2024 22:10	WG2305923

³ Ss

⁴ Cn

Sample Narrative:

L1745594-01 WG2305923: 6.83 at 19.4C

⁵ Sr

Wet Chemistry by Method 4500O G-2016

Analyte	Result	Qualifier	RD L	Dilution	Analysis date / time	Batch
Dissolved Oxygen	9.7 at 10.9c	T8	3	1	06/25/2024 10:15	WG2311521

⁶ Qc

⁷ Gl

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	RD L	Dilution	Analysis date / time	Batch
Phosphate,Ortho	ND	J6	0.0300	1	06/12/2024 12:22	WG2303606

⁸ Al

⁹ Sc

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	RD L	Dilution	Analysis date / time	Batch
Sulfide	0.0900		0.0500	1	06/13/2024 14:41	WG2303094

Wet Chemistry by Method 4500SO3 B-2011

Analyte	Result	Qualifier	RD L	Dilution	Analysis date / time	Batch
Sulfite	ND	T8	3.00	1	06/13/2024 14:00	WG2301827

Wet Chemistry by Method 5210 B-2016

Analyte	Result	Qualifier	RD L	Dilution	Analysis date / time	Batch
BOD	108	B1 Q	100	10	06/20/2024 09:37	WG2305728
CBOD	109	B1 Q	100	10	06/20/2024 11:51	WG2305912

Wet Chemistry by Method 5310 B-2014

Analyte	Result	Qualifier	RD L	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	67.3		20.0	20	07/09/2024 21:15	WG2318648

Wet Chemistry by Method 5310 B-2014

Analyte	Result	Qualifier	RD L	Dilution	Analysis date / time	Batch
DOC	65.0	Q	2.00	2	06/20/2024 20:12	WG2308789

Wet Chemistry by Method 5540 C-2011

Analyte	Result	Qualifier	RD L	Dilution	Analysis date / time	Batch
MBAS	0.602		0.100	1	06/12/2024 17:31	WG2303692

Collected date/time: 06/11/24 08:25

L1745594

Mercury by Method 245.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND	J6 O1	0.00200	10	06/16/2024 19:13	WG2303814

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Metals (ICP) by Method 200.7

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Aluminum	ND		10.0	50	07/11/2024 22:15	WG2319627
Antimony	ND		0.500	50	07/11/2024 22:15	WG2319627
Arsenic	ND		0.500	50	07/11/2024 22:15	WG2319627
Barium	4.14		0.250	50	07/11/2024 22:15	WG2319627
Beryllium	ND		0.100	50	07/11/2024 22:15	WG2319627
Cadmium	ND		0.100	50	07/11/2024 22:15	WG2319627
Chromium	ND		0.500	50	07/11/2024 22:15	WG2319627
Copper	ND		0.500	50	07/11/2024 22:15	WG2319627
Lead	ND		0.250	50	07/11/2024 22:15	WG2319627
Lithium	20.9		0.750	50	07/11/2024 22:15	WG2319627
Nickel	ND		0.500	50	07/11/2024 22:15	WG2319627
Selenium	ND		0.500	50	07/11/2024 22:15	WG2319627
Silicon	15.3		10.0	50	07/11/2024 22:15	WG2319627
Silver	ND		0.250	50	07/11/2024 22:15	WG2319627
Strontium	663		0.500	50	07/11/2024 22:15	WG2319627
Thallium	ND		0.500	50	07/11/2024 22:15	WG2319627
Zinc	ND		2.50	50	07/11/2024 22:15	WG2319627
Phosphorus	ND		5.00	50	07/11/2024 22:15	WG2319627

Metals (ICPMS) by Method 200.8

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	84.5		40.0	1000	08/15/2024 17:10	WG2324349
Calcium	6990		100	100	08/15/2024 17:56	WG2324349
Cobalt	ND		0.200	100	08/15/2024 17:56	WG2324349
Iron	ND		10.0	100	08/15/2024 17:56	WG2324349
Magnesium	588		100	100	08/15/2024 17:56	WG2324349
Manganese	0.913		0.500	100	08/15/2024 17:56	WG2324349
Molybdenum	ND		0.500	100	08/15/2024 17:56	WG2324349
Potassium	ND		1000	1000	08/15/2024 17:10	WG2324349
Sodium	38500		200	100	08/15/2024 17:56	WG2324349
Tin	ND		0.400	100	08/15/2024 17:56	WG2324349
Titanium	ND		1.00	100	08/15/2024 17:56	WG2324349

Sample Narrative:

L1745594-01 WG2324349: Dilution due to matrix interference.

Volatile Organic Compounds (GC/MS) by Method 624.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	0.767		0.0250	25	06/24/2024 07:34	WG2310676
Bromodichloromethane	ND		0.00100	1	06/23/2024 02:02	WG2310431
Bromoform	ND		0.00100	1	06/23/2024 02:02	WG2310431
Bromomethane	ND		0.00500	1	06/23/2024 02:02	WG2310431
Carbon tetrachloride	ND		0.00100	1	06/23/2024 02:02	WG2310431
Chlorobenzene	ND		0.00100	1	06/23/2024 02:02	WG2310431
Chlorodibromomethane	ND		0.00100	1	06/23/2024 02:02	WG2310431
Chloroethane	ND		0.00500	1	06/23/2024 02:02	WG2310431
2-Chloroethyl vinyl ether	ND		0.0500	1	06/23/2024 02:02	WG2310431
Chloroform	ND		0.00500	1	06/23/2024 02:02	WG2310431

Collected date/time: 06/11/24 08:25

L1745594

Volatile Organic Compounds (GC/MS) by Method 624.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chloromethane	ND		0.00250	1	06/23/2024 02:02	WG2310431
1,2-Dichlorobenzene	ND		0.00100	1	06/23/2024 02:02	WG2310431
1,3-Dichlorobenzene	ND		0.00100	1	06/23/2024 02:02	WG2310431
1,4-Dichlorobenzene	ND		0.00100	1	06/23/2024 02:02	WG2310431
Dichlorodifluoromethane	ND		0.00500	1	06/23/2024 02:02	WG2310431
1,1-Dichloroethane	ND		0.00100	1	06/23/2024 02:02	WG2310431
1,2-Dichloroethane	ND		0.00100	1	06/23/2024 02:02	WG2310431
1,1-Dichloroethene	ND		0.00100	1	06/23/2024 02:02	WG2310431
trans-1,2-Dichloroethene	ND		0.00100	1	06/23/2024 02:02	WG2310431
1,2-Dichloropropane	ND		0.00100	1	06/23/2024 02:02	WG2310431
cis-1,3-Dichloropropene	ND		0.00100	1	06/23/2024 02:02	WG2310431
trans-1,3-Dichloropropene	ND		0.00100	1	06/23/2024 02:02	WG2310431
Ethylbenzene	0.0228		0.00100	1	06/23/2024 02:02	WG2310431
Methylene Chloride	ND		0.00500	1	06/23/2024 02:02	WG2310431
Methyl tert-butyl ether	ND		0.00100	1	06/23/2024 02:02	WG2310431
Naphthalene	ND		0.00500	1	06/23/2024 02:02	WG2310431
1,1,2,2-Tetrachloroethane	ND		0.00100	1	06/23/2024 02:02	WG2310431
Tetrachloroethene	ND		0.00100	1	06/23/2024 02:02	WG2310431
Toluene	0.687		0.0250	25	06/24/2024 07:34	WG2310676
1,1,1-Trichloroethane	ND		0.00100	1	06/23/2024 02:02	WG2310431
1,1,2-Trichloroethane	ND		0.00100	1	06/23/2024 02:02	WG2310431
Trichloroethene	ND		0.00100	1	06/23/2024 02:02	WG2310431
Trichlorofluoromethane	ND		0.00500	1	06/23/2024 02:02	WG2310431
Vinyl chloride	ND		0.00100	1	06/23/2024 02:02	WG2310431
o-Xylene	0.0777		0.00100	1	06/23/2024 02:02	WG2310431
m&p-Xylene	0.233		0.00200	1	06/23/2024 02:02	WG2310431
Xylenes, Total	0.311		0.00300	1	06/23/2024 02:02	WG2310431
(S) Toluene-d8	103		80.0-120		06/23/2024 02:02	WG2310431
(S) Toluene-d8	106		80.0-120		06/24/2024 07:34	WG2310676
(S) 4-Bromofluorobenzene	99.4		80.0-120		06/23/2024 02:02	WG2310431
(S) 4-Bromofluorobenzene	106		80.0-120		06/24/2024 07:34	WG2310676
(S) 1,2-Dichloroethane-d4	97.5		70.0-130		06/23/2024 02:02	WG2310431
(S) 1,2-Dichloroethane-d4	98.5		70.0-130		06/24/2024 07:34	WG2310676

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

TPH by TCEQ Method 1005

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH C6 - C12	2.03		0.900	1	06/25/2024 18:42	WG2311292
TPH C12 - C28	2.08		0.900	1	06/25/2024 18:42	WG2311292
TPH C28 - C35	ND		0.900	1	06/25/2024 18:42	WG2311292
TPH C6 - C35	4.11		0.900	1	06/25/2024 18:42	WG2311292
(S) o-Terphenyl	85.0		70.0-130		06/25/2024 18:42	WG2311292
(S) 1-chlorooctane	79.3		70.0-130		06/25/2024 18:42	WG2311292

Semi Volatile Organic Compounds (GC/MS) by Method 625.1

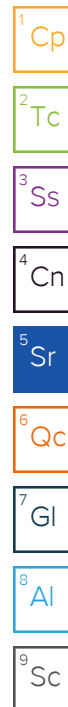
Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Acenaphthylene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Anthracene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Benzidine	ND	C6	0.0100	1	06/18/2024 23:56	WG2306373
Benzo(a)anthracene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Benzo(b)fluoranthene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Benzo(k)fluoranthene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Benzo(g,h,i)perylene	ND		0.00100	1	06/18/2024 23:56	WG2306373

Collected date/time: 06/11/24 08:25

L1745594

Semi Volatile Organic Compounds (GC/MS) by Method 625.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzo(a)pyrene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Bis(2-chloroethoxy)methane	ND		0.0100	1	06/18/2024 23:56	WG2306373
Bis(2-chloroethyl)ether	ND		0.0100	1	06/18/2024 23:56	WG2306373
2,2-Oxybis(1-Chloropropane)	ND		0.0100	1	06/18/2024 23:56	WG2306373
4-Bromophenyl-phenylether	ND		0.0100	1	06/18/2024 23:56	WG2306373
2-Chloronaphthalene	ND		0.00100	1	06/18/2024 23:56	WG2306373
4-Chlorophenyl-phenylether	ND		0.0100	1	06/18/2024 23:56	WG2306373
Chrysene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Dibenz(a,h)anthracene	ND		0.00100	1	06/18/2024 23:56	WG2306373
3,3-Dichlorobenzidine	ND		0.0100	1	06/18/2024 23:56	WG2306373
2,4-Dinitrotoluene	ND		0.0100	1	06/18/2024 23:56	WG2306373
2,6-Dinitrotoluene	ND		0.0100	1	06/18/2024 23:56	WG2306373
1,2-Diphenylhydrazine	ND	N2	0.0100	1	06/18/2024 23:56	WG2306373
Fluoranthene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Fluorene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Hexachlorobenzene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Hexachloro-1,3-butadiene	ND		0.0100	1	06/18/2024 23:56	WG2306373
Hexachlorocyclopentadiene	ND		0.0100	1	06/18/2024 23:56	WG2306373
Hexachloroethane	ND		0.0100	1	06/18/2024 23:56	WG2306373
Indeno(1,2,3-cd)pyrene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Isophorone	ND		0.0100	1	06/18/2024 23:56	WG2306373
Naphthalene	0.00234		0.00100	1	06/18/2024 23:56	WG2306373
Nitrobenzene	ND		0.0100	1	06/18/2024 23:56	WG2306373
n-Nitrosodimethylamine	ND		0.0100	1	06/18/2024 23:56	WG2306373
n-Nitrosodiphenylamine	ND		0.0100	1	06/18/2024 23:56	WG2306373
n-Nitrosodi-n-propylamine	ND		0.0100	1	06/18/2024 23:56	WG2306373
Phenanthrene	ND		0.00100	1	06/18/2024 23:56	WG2306373
Benzylbutyl phthalate	ND		0.00300	1	06/18/2024 23:56	WG2306373
Bis(2-ethylhexyl)phthalate	ND		0.00300	1	06/18/2024 23:56	WG2306373
Di-n-butyl phthalate	ND		0.00300	1	06/18/2024 23:56	WG2306373
Diethyl phthalate	ND		0.00300	1	06/18/2024 23:56	WG2306373
Dimethyl phthalate	ND		0.00300	1	06/18/2024 23:56	WG2306373
Di-n-octyl phthalate	ND		0.00300	1	06/18/2024 23:56	WG2306373
Pyrene	ND		0.00100	1	06/18/2024 23:56	WG2306373
1,2,4-Trichlorobenzene	ND		0.0100	1	06/18/2024 23:56	WG2306373
4-Chloro-3-methylphenol	ND		0.0100	1	06/18/2024 23:56	WG2306373
2-Chlorophenol	ND		0.0100	1	06/18/2024 23:56	WG2306373
2,4-Dichlorophenol	ND		0.0100	1	06/18/2024 23:56	WG2306373
2,4-Dimethylphenol	ND		0.0100	1	06/18/2024 23:56	WG2306373
4,6-Dinitro-2-methylphenol	ND		0.0100	1	06/18/2024 23:56	WG2306373
2,4-Dinitrophenol	ND		0.0100	1	06/18/2024 23:56	WG2306373
2-Nitrophenol	ND		0.0100	1	06/18/2024 23:56	WG2306373
4-Nitrophenol	ND		0.0100	1	06/18/2024 23:56	WG2306373
Pentachlorophenol	ND		0.0100	1	06/18/2024 23:56	WG2306373
Phenol	0.116		0.0100	1	06/18/2024 23:56	WG2306373
2,4,6-Trichlorophenol	ND		0.0100	1	06/18/2024 23:56	WG2306373
(S) Nitrobenzene-d5	70.8		15.0-314		06/18/2024 23:56	WG2306373
(S) 2-Fluorobiphenyl	59.1		22.0-127		06/18/2024 23:56	WG2306373
(S) p-Terphenyl-d14	79.2		29.0-141		06/18/2024 23:56	WG2306373
(S) Phenol-d5	53.5		8.00-424		06/18/2024 23:56	WG2306373
(S) 2-Fluorophenol	55.6		10.0-120		06/18/2024 23:56	WG2306373
(S) 2,4,6-Tribromophenol	59.6		10.0-153		06/18/2024 23:56	WG2306373



Gravimetric Analysis by Method 2540 C-2011 [L1745594-01](#)

Method Blank (MB)

(MB) R4084429-1 06/18/24 15:17

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		10.0	10.0

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1746357-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1746357-01 06/18/24 15:17 • (DUP) R4084429-3 06/18/24 15:17

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Dissolved Solids	274	286	1	4.29		10

L1746357-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1746357-02 06/18/24 15:17 • (DUP) R4084429-4 06/18/24 15:17

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Dissolved Solids	315	327	1	3.74		10

Laboratory Control Sample (LCS)

(LCS) R4084429-2 06/18/24 15:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Dissolved Solids	8800	8640	98.2	85.0-115	

Method Blank (MB)

(MB) R4083186-1 06/17/24 17:20

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Suspended Solids	U		2.50	2.50

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745357-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1745357-03 06/17/24 17:20 • (DUP) R4083186-3 06/17/24 17:20

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Suspended Solids	13.6	12.4	1	9.23		10

L1745626-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745626-01 06/17/24 17:20 • (DUP) R4083186-4 06/17/24 17:20

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Suspended Solids	22.8	19.6	1	15.1	P1	10

Laboratory Control Sample (LCS)

(LCS) R4083186-2 06/17/24 17:20

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Suspended Solids	773	700	90.6	85.0-115	

Wet Chemistry by Method 120.1

L1745594-01

Method Blank (MB)

(MB) R4083350-1 06/18/24 15:45

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:
BLANK: at 25C

L1745594-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745594-01 06/18/24 15:45 • (DUP) R4083350-3 06/18/24 15:45

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	145000	142000	1	2.02		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1747717-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747717-01 06/18/24 15:45 • (DUP) R4083350-4 06/18/24 15:45

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	192000	190000	1	1.31		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R4083350-2 06/18/24 15:45

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	733	738	101	85.0-115	

Sample Narrative:
LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Wet Chemistry by Method 130.1

[L1745594-01](#)

Method Blank (MB)

(MB) R4082037-1 06/14/24 21:48

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hardness (colorimetric) as CaCO3	U		15.0	30.0

L1745940-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1745940-04 06/14/24 22:07 • (DUP) R4082037-5 06/14/24 22:09

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hardness (colorimetric) as CaCO3	ND	ND	1	0.000		20

L1746357-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1746357-01 06/14/24 22:14 • (DUP) R4082037-7 06/14/24 22:15

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hardness (colorimetric) as CaCO3	212	212	2	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4082037-2 06/14/24 21:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hardness (colorimetric) as CaCO3	100	98.3	98.3	85.0-115	

L1743769-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1743769-01 06/14/24 21:51 • (MS) R4082037-3 06/14/24 21:52 • (MSD) R4082037-4 06/14/24 21:53

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 %
Hardness (colorimetric) as CaCO3	100	ND	103	105	103	105	1	80.0-120			1.92	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Wet Chemistry by Method 130.1 [L1745594-01](#)

L1745940-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1745940-04 06/14/24 22:07 • (MS) R4082037-6 06/14/24 22:10

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Hardness (colorimetric) as CaCO3	100	ND	97.0	97.0	1	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Wet Chemistry by Method 1664A [L1745594-01](#)

Method Blank (MB)

(MB) R4091766-1 07/09/24 20:18

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Oil & Grease (Hexane Extr)	U		1.16	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) R4091766-2 07/09/24 20:18 • (LCSD) R4091766-3 07/09/24 20:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Oil & Grease (Hexane Extr)	40.0	34.6	34.9	86.5	87.3	78.0-114			0.863	20

L1751280-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1751280-01 07/09/24 20:18 • (MS) R4091766-4 07/09/24 20:18

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Oil & Grease (Hexane Extr)	40.0	ND	41.7	104	1	78.0-114	

Wet Chemistry by Method 2120 B-2011

[L1745594-01](#)

L1745929-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745929-01 06/13/24 08:50 • (DUP) R4081084-1 06/13/24 08:50

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pcu	pcu		%		%
Color, Apparent	1.00	1.00	1	0.000		20

Sample Narrative:

OS: 8.20

DUP: 8.20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Wet Chemistry by Method 2130 B-2011 [L1745594-01](#)

Method Blank (MB)

(MB) R4080784-1 06/12/24 15:32

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	NTU		NTU	NTU
Turbidity	U		0.200	0.400

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745594-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745594-01 06/12/24 15:32 • (DUP) R4080784-3 06/12/24 15:32

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	NTU	NTU		%		%
Turbidity	7.13	6.42	1	10.5		20

Laboratory Control Sample (LCS)

(LCS) R4080784-2 06/12/24 15:32

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	NTU	NTU	%	%	
Turbidity	40.0	38.8	97.0	90.0-110	

Wet Chemistry by Method 2320 B-2011

[L1745594-01](#)

Method Blank (MB)

(MB) R4081367-2 06/13/24 11:28

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Alkalinity	U		8.45	20.0
Alkalinity,Bicarbonate	U		8.45	20.0
Alkalinity,Carbonate	U		8.45	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1745594-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745594-01 06/13/24 12:13 • (DUP) R4081367-3 06/13/24 12:19

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Alkalinity	258	260	1	0.533		20
Alkalinity,Bicarbonate	258	260	1	0.533		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1745831-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1745831-04 06/13/24 14:07 • (DUP) R4081367-4 06/13/24 14:14

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Alkalinity	704	705	1	0.105		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Wet Chemistry by Method 2320 B-2011

Laboratory Control Sample (LCS)

(LCS) R4081367-1 06/13/24 11:19

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Alkalinity	100	103	103	90.0-110	

Sample Narrative:
LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

W02304774

Wet Chemistry by Method 2580

[L1745594-01](#)

L1745594-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745594-01 06/19/24 10:51 • (DUP) R4083652-3 06/19/24 10:51

Analyte	Original Result	DUP Result	Dilution	DUP Diff	DUP Qualifier	DUP Diff Limits
	mV	mV		mV		mV
ORP	178	180	1	1.50		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745600-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745600-01 06/19/24 10:51 • (DUP) R4083652-4 06/19/24 10:51

Analyte	Original Result	DUP Result	Dilution	DUP Diff	DUP Qualifier	DUP Diff Limits
	mV	mV		mV		mV
ORP	159	159	1	0.000		20

L1745606-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745606-01 06/19/24 10:51 • (DUP) R4083652-5 06/19/24 10:51

Analyte	Original Result	DUP Result	Dilution	DUP Diff	DUP Qualifier	DUP Diff Limits
	mV	mV		mV		mV
ORP	159	159	1	0.000		20

L1746183-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1746183-01 06/19/24 10:51 • (DUP) R4083652-6 06/19/24 10:51

Analyte	Original Result	DUP Result	Dilution	DUP Diff	DUP Qualifier	DUP Diff Limits
	mV	mV		mV		mV
ORP	118	119	1	1.40		20

L1746183-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1746183-02 06/19/24 10:51 • (DUP) R4083652-7 06/19/24 10:51

Analyte	Original Result	DUP Result	Dilution	DUP Diff	DUP Qualifier	DUP Diff Limits
	mV	mV		mV		mV
ORP	118	116	1	1.90		20

L1746183-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1746183-03 06/19/24 10:51 • (DUP) R4083652-8 06/19/24 10:51

Analyte	Original Result	DUP Result	Dilution	DUP Diff	DUP Qualifier	DUP Diff Limits
	mV	mV		mV		mV
ORP	106	103	1	2.60		20

Wet Chemistry by Method 2580 [L1745594-01](#)

L1747713-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747713-01 06/19/24 10:51 • (DUP) R4083652-9 06/19/24 10:51

Analyte	Original Result	DUP Result	Dilution	DUP Diff	DUP Qualifier	DUP Diff Limits
	mV	mV		mV		mV
ORP	150	151	1	0.800		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1747717-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747717-01 06/19/24 10:51 • (DUP) R4083652-10 06/19/24 10:51

Analyte	Original Result	DUP Result	Dilution	DUP Diff	DUP Qualifier	DUP Diff Limits
	mV	mV		mV		mV
ORP	238	235	1	2.60		20

⁷Gl

⁸Al

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

(LCS) R4083652-1 06/19/24 10:51 • (LCSD) R4083652-2 06/19/24 10:51

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	Diff	Diff Limits
	mV	mV	mV	%	%	%			mV	mV
ORP	238	230	233	96.4	97.8	90.0-110			3.30	20

⁹Sc

Method Blank (MB)

(MB) R4082965-1 06/12/24 14:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Bromide	U		0.353	1.00
Fluoride	U		0.0640	0.150
Nitrate as (N)	U		0.0480	0.100
Nitrite as (N)	0.0569	J	0.0420	0.100
Sulfate	U		0.594	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1739166-54 Original Sample (OS) • Duplicate (DUP)

(OS) L1739166-54 06/12/24 22:15 • (DUP) R4082965-3 06/12/24 22:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	ND	ND	1	0.000		15
Fluoride	ND	ND	1	0.000		15
Nitrate as (N)	0.534	0.538	1	0.877		15
Nitrite as (N)	ND	ND	1	0.000		15
Sulfate	ND	ND	1	1.33		15

L1745656-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745656-01 06/13/24 04:16 • (DUP) R4082965-6 06/13/24 04:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	1.76	1.68	1	4.87		15
Fluoride	0.810	0.820	1	1.30		15
Nitrate as (N)	3.63	3.67	1	0.926		15
Nitrite as (N)	0.302	0.306	1	1.12		15

Laboratory Control Sample (LCS)

(LCS) R4082965-2 06/12/24 15:11

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Bromide	40.0	38.3	95.8	90.0-110	
Fluoride	8.00	8.17	102	90.0-110	
Nitrate as (N)	8.00	7.69	96.1	90.0-110	
Nitrite as (N)	8.00	8.12	102	90.0-110	
Sulfate	40.0	38.6	96.6	90.0-110	

Wet Chemistry by Method 300.0 [L1745594-01](#)

L1739166-54 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1739166-54 06/12/24 22:15 • (MS) R4082965-4 06/12/24 22:41 • (MSD) R4082965-5 06/12/24 22:55

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 %
Bromide	40.0	ND	39.4	39.7	98.5	99.1	1	80.0-120			0.638	15
Fluoride	8.00	ND	8.16	8.21	102	103	1	80.0-120			0.684	15
Nitrate as (N)	8.00	0.534	8.28	8.34	96.9	97.6	1	80.0-120			0.705	15
Nitrite as (N)	8.00	ND	8.21	8.26	103	103	1	80.0-120			0.579	15
Sulfate	40.0	ND	41.4	41.5	97.2	97.4	1	80.0-120			0.174	15

L1745656-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1745656-01 06/13/24 04:16 • (MS) R4082965-7 06/13/24 04:43

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Bromide	40.0	1.76	38.9	92.8	1	80.0-120	
Fluoride	8.00	0.810	8.91	101	1	80.0-120	
Nitrate as (N)	8.00	3.63	11.0	92.2	1	80.0-120	
Nitrite as (N)	8.00	0.302	8.48	102	1	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Wet Chemistry by Method 300.0

L1745594-01

Method Blank (MB)

(MB) R4084509-1 06/20/24 09:10

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Chloride	U		0.379	1.00

L1741459-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1741459-06 06/20/24 12:09 • (DUP) R4084509-3 06/20/24 12:22

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Chloride	3.85	3.80	1	1.25		15

L1747059-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1747059-07 06/20/24 16:26 • (DUP) R4084509-5 06/20/24 16:39

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Chloride	2520	2530	100	0.188		15

Laboratory Control Sample (LCS)

(LCS) R4084509-2 06/20/24 09:23

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Chloride	40.0	38.5	96.2	90.0-110	

L1741459-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1741459-06 06/20/24 12:09 • (MS) R4084509-4 06/20/24 12:35

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Chloride	40.0	3.85	42.1	95.5	1	80.0-120	

L1747059-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1747059-07 06/20/24 16:26 • (MS) R4084509-6 06/20/24 16:52 • (MSD) R4084509-7 06/20/24 17:04

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Chloride	40.0	2520	2050	2040	0.000	0.000	100	80.0-120	✓	✓	0.556	15

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Wet Chemistry by Method 350.1

L1745594-01

Method Blank (MB)

(MB) R4091667-1 07/09/24 15:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Ammonia Nitrogen	U		0.117	0.250

L1752250-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1752250-05 07/09/24 15:51 • (DUP) R4091667-3 07/09/24 15:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ammonia Nitrogen	5.10	5.14	1	0.723		10

L1752250-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1752250-06 07/09/24 16:01 • (DUP) R4091667-6 07/09/24 16:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Ammonia Nitrogen	6.45	6.41	1	0.668		10

Laboratory Control Sample (LCS)

(LCS) R4091667-2 07/09/24 15:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ammonia Nitrogen	7.50	7.50	100	90.0-110	

L1752250-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1752250-05 07/09/24 15:51 • (MS) R4091667-4 07/09/24 15:58 • (MSD) R4091667-5 07/09/24 16:00

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 %
Ammonia Nitrogen	5.00	5.10	9.77	9.93	93.5	96.7	1	90.0-110			1.61	10

L1752250-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1752250-06 07/09/24 16:01 • (MS) R4091667-7 07/09/24 16:04

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Ammonia Nitrogen	5.00	6.45	11.1	92.9	1	90.0-110	E

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

Wet Chemistry by Method 3500Cr B-2011 [L1745594-01](#)

Method Blank (MB)

(MB) R4080791-1 06/12/24 15:13

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chromium,Hexavalent	U		0.00300	0.0100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745600-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745600-01 06/12/24 15:15 • (DUP) R4080791-5 06/12/24 15:15

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

Laboratory Control Sample (LCS)

(LCS) R4080791-2 06/12/24 15:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium,Hexavalent	0.500	0.508	102	80.0-120	

L1745594-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745594-01 06/12/24 15:14 • (MS) R4080791-3 06/12/24 15:15 • (MSD) R4080791-4 06/12/24 15:15

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 %
Chromium,Hexavalent	0.500	ND	0.0130	0.0130	2.60	2.60	1	75.0-125	J6	J6	0.000	20

Method Blank (MB)

(MB) R4089590-1 07/03/24 10:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Kjeldahl Nitrogen, TKN	U		0.140	0.250

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1752027-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1752027-01 07/03/24 10:25 • (DUP) R4089590-3 07/03/24 10:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Kjeldahl Nitrogen, TKN	9.42	10.8	1	13.6		20

L1752040-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1752040-01 07/03/24 10:51 • (DUP) R4089590-6 07/03/24 10:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Kjeldahl Nitrogen, TKN	101	99.5	10	1.50		20

Laboratory Control Sample (LCS)

(LCS) R4089590-2 07/03/24 10:13

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Kjeldahl Nitrogen, TKN	12.3	14.7	120	80.0-120	

L1752027-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1752027-01 07/03/24 10:25 • (MS) R4089590-4 07/03/24 10:30 • (MSD) R4089590-5 07/03/24 10:31

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Kjeldahl Nitrogen, TKN	5.00	9.42	16.2	16.6	136	144	1	90.0-110	J5	J5	2.44	20

L1752040-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1752040-01 07/03/24 10:51 • (MS) R4089590-7 07/03/24 10:54

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/l	mg/l	mg/l	%		%	
Kjeldahl Nitrogen, TKN	5.00	101	108	140	10	90.0-110	V

Wet Chemistry by Method 353.2

L1745594-01

Method Blank (MB)

(MB) R4083991-1 06/19/24 19:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Nitrate-Nitrite	U		0.0500	0.100

L1747985-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747985-01 06/19/24 20:07 • (DUP) R4083991-3 06/19/24 20:08

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	1.81	1.84	1	1.64		20

L1747989-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1747989-03 06/19/24 20:12 • (DUP) R4083991-4 06/19/24 20:13

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.772	0.787	1	1.92		20

Laboratory Control Sample (LCS)

(LCS) R4083991-2 06/19/24 19:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.38	95.2	90.0-110	

L1748019-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1748019-01 06/19/24 20:21 • (MS) R4083991-5 06/19/24 20:22 • (MSD) R4083991-6 06/19/24 20:23

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 %
Nitrate-Nitrite	2.50	ND	1.22	1.19	48.8	47.6	1	90.0-110	J6	J6	2.49	20

L1748057-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1748057-01 06/19/24 20:27 • (MS) R4083991-7 06/19/24 20:28

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	ND	1.86	74.4	1	90.0-110	J6

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4083937-1 06/19/24 17:33

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

L1747278-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747278-01 06/19/24 17:35 • (DUP) R4083937-3 06/19/24 17:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
COD	334	339	1	1.51		20

L1747938-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747938-01 06/19/24 17:40 • (DUP) R4083937-6 06/19/24 17:40

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
COD	ND	21.6	1	12.7		20

Laboratory Control Sample (LCS)

(LCS) R4083937-2 06/19/24 17:33

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
COD	500	539	108	90.0-110	

L1747841-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1747841-01 06/19/24 17:37 • (MS) R4083937-4 06/19/24 17:37 • (MSD) R4083937-5 06/19/24 17:37

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
COD	500	ND	522	519	104	104	1	90.0-110			0.667	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Wet Chemistry by Method 4500Cl G-2011 [L1745594-01](#)

Method Blank (MB)

(MB) R4082638-1 06/17/24 12:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chlorine,residual	U		0.0260	0.100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1746000-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1746000-01 06/17/24 12:02 • (DUP) R4082638-3 06/17/24 12:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chlorine,residual	1.67	1.65	1	1.51		20

⁷Gl

⁸Al

Laboratory Control Sample (LCS)

(LCS) R4082638-2 06/17/24 12:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chlorine,residual	1.00	0.935	93.5	85.0-115	

⁹Sc

Method Blank (MB)

(MB) R4083823-1 06/19/24 14:27

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Cyanide	U		0.00180	0.00500

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745594-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745594-01 06/19/24 14:37 • (DUP) R4083823-5 06/19/24 14:38

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Cyanide	ND	ND	1	0.000		20

L1745656-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1745656-02 06/19/24 14:51 • (DUP) R4083823-6 06/19/24 14:53

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4083823-2 06/19/24 14:28

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	mg/l	mg/l	%	%	
Cyanide	0.100	0.102	102	87.1-120	

L1745463-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745463-02 06/19/24 14:32 • (MS) R4083823-3 06/19/24 14:34 • (MSD) R4083823-4 06/19/24 14:35

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Cyanide	0.100	ND	0.0981	0.0924	98.1	92.4	1	90.0-110			5.98	20

L1746464-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1746464-01 06/15/24 22:10 • (DUP) R4082257-2 06/15/24 22:10

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.42	7.41	1	0.135		1

Sample Narrative:
OS: 7.42 at 20C
DUP: 7.41 at 19.9C

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1747187-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1747187-04 06/15/24 22:10 • (DUP) R4082257-3 06/15/24 22:10

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.73	7.73	1	0.000		1

Sample Narrative:
OS: 7.73 at 20.2C
DUP: 7.73 at 20.7C

Laboratory Control Sample (LCS)

(LCS) R4082257-1 06/15/24 22:10

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:
LCS: 10.02 at 21.1C

Wet Chemistry by Method 4500P E-2011 [L1745594-01](#)

Method Blank (MB)

(MB) R4080639-1 06/12/24 12:22

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphate,Ortho	U		0.0140	0.0300

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745600-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745600-01 06/12/24 12:34 • (DUP) R4080639-5 06/12/24 12:35

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP RPD Limits %
Phosphate,Ortho	0.947	0.946	1	0.106	20

Laboratory Control Sample (LCS)

(LCS) R4080639-2 06/12/24 12:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphate,Ortho	0.245	0.274	112	85.0-115	

L1745594-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745594-01 06/12/24 12:22 • (MS) R4080639-3 06/12/24 12:23 • (MSD) R4080639-4 06/12/24 12:23

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 %
Phosphate,Ortho	0.500	ND	0.180	0.196	30.6	33.8	1	80.0-120	J6	J6	8.51	20

Sample Narrative:

- MS: spike failed due to sample matrix
- MSD: spike failed due to sample matrix

Method Blank (MB)

(MB) R4081355-1 06/13/24 14:36

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Sulfide	U		0.0250	0.0500

L1745437-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1745437-04 06/13/24 14:39 • (DUP) R4081355-5 06/13/24 14:40

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

L1745940-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1745940-02 06/13/24 14:43 • (DUP) R4081355-6 06/13/24 14:43

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

Laboratory Control Sample (LCS)

(LCS) R4081355-2 06/13/24 14:36

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Sulfide	0.500	0.563	113	85.0-115	

L1745437-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745437-01 06/13/24 14:37 • (MS) R4081355-3 06/13/24 14:38 • (MSD) R4081355-4 06/13/24 14:38

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Sulfide	0.500	ND	0.546	0.510	109	102	1	80.0-120			6.82	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Wet Chemistry by Method 4500SO3 B-2011 [L1745594-01](#)

Method Blank (MB)

(MB) R4081384-1 06/13/24 14:00

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Sulfite	U		1.19	3.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1743861-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1743861-01 06/13/24 14:00 • (DUP) R4081384-3 06/13/24 14:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Sulfite	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4081384-2 06/13/24 14:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	mg/l	mg/l	%	%	
Sulfite	20.0	19.0	95.0	85.0-115	

L1745600-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745600-01 06/13/24 14:00 • (MS) R4081384-4 06/13/24 14:00 • (MSD) R4081384-5 06/13/24 14:00

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Sulfite	20.0	ND	19.0	19.0	95.0	95.0	1	85.0-115			0.000	20

Method Blank (MB)

(MB) R4084334-1 06/20/24 08:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
BOD	U	B1	0.200	0.200

L1747033-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747033-01 06/20/24 09:49 • (DUP) R4084334-3 06/20/24 09:55

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
BOD	54.4	50.4	1	7.5		30

L1747232-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747232-01 06/20/24 10:35 • (DUP) R4084334-4 06/20/24 10:37

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
BOD	11.9	14.5	1	19.5	K9	30

Laboratory Control Sample (LCS)

(LCS) R4084334-2 06/20/24 09:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
BOD	198	180	90.7	84.6-115	

Laboratory Control Sample (LCS)

(LCS) R4084334-5 06/20/24 11:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
BOD	198	175	88.3	84.6-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4084337-1 06/20/24 08:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
CBOD	U	B1	0.200	0.200

L1745600-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745600-01 06/20/24 11:55 • (DUP) R4084337-3 06/20/24 12:00

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
CBOD	13.8	12.1	1	13.1		30

Laboratory Control Sample (LCS)

(LCS) R4084337-2 06/20/24 09:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
CBOD	198	167	84.6	84.6-115	

Laboratory Control Sample (LCS)

(LCS) R4084337-4 06/20/24 12:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
CBOD	198	173	87.3	84.6-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4084753-2 06/20/24 13:40

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
DOC	0.137	⬇	0.106	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745594-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745594-01 06/20/24 20:12 • (DUP) R4084753-5 06/20/24 21:02

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
DOC	65.0	65.2	2	0.353		20

L1748638-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1748638-01 06/21/24 00:40 • (DUP) R4084753-6 06/21/24 00:55

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
DOC	2.44	3.05	1	22.3	P1	20

Laboratory Control Sample (LCS)

(LCS) R4084753-1 06/20/24 13:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
DOC	25.0	23.5	94.2	85.0-115	

L1745743-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745743-01 06/20/24 17:09 • (MS) R4084753-3 06/20/24 17:29 • (MSD) R4084753-4 06/20/24 17:48

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
DOC	25.0	2.26	25.8	25.4	94.3	92.6	1	80.0-120			1.68	20

L1748638-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1748638-02 06/21/24 01:17 • (MS) R4084753-7 06/21/24 01:34 • (MSD) R4084753-8 06/21/24 01:50

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 %
DOC	25.0	2.17	25.8	25.5	94.5	93.3	1	80.0-120			1.17	20

Wet Chemistry by Method 5310 B-2014

L1745594-01

Method Blank (MB)

(MB) R4091882-2 07/09/24 19:17

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TOC (Total Organic Carbon)	0.128	⬇	0.102	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1750854-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1750854-03 07/09/24 21:52 • (DUP) R4091882-3 07/09/24 22:13

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	4.33	4.40	1	1.56		20

L1751259-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1751259-01 07/10/24 02:22 • (DUP) R4091882-6 07/10/24 02:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	2.10	2.26	1	7.38		20

Laboratory Control Sample (LCS)

(LCS) R4091882-1 07/09/24 19:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC (Total Organic Carbon)	25.0	24.1	96.6	85.0-115	

L1750854-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1750854-04 07/09/24 22:34 • (MS) R4091882-4 07/09/24 22:57 • (MSD) R4091882-5 07/09/24 23:19

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 %
TOC (Total Organic Carbon)	25.0	4.73	28.6	28.6	95.5	95.5	1	85.0-115			0.000	20

L1751259-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1751259-02 07/10/24 02:56 • (MS) R4091882-9 07/10/24 03:18 • (MSD) R4091882-10 07/10/24 03:40

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 %
TOC (Total Organic Carbon)	25.0	ND	24.5	24.6	95.6	95.9	1	85.0-115			0.326	20

Method Blank (MB)

(MB) R4080905-1 06/12/24 17:28

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
MBAS	U		0.0190	0.100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745600-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745600-01 06/12/24 17:32 • (DUP) R4080905-3 06/12/24 17:32

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
MBAS	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4080905-2 06/12/24 17:29

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
MBAS	1.00	1.00	100	85.0-115	

L1745711-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745711-01 06/12/24 17:33 • (MS) R4080905-4 06/12/24 17:33 • (MSD) R4080905-5 06/12/24 17:34

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
MBAS	1.00	ND	0.991	1.03	99.1	103	1	85.0-115			4.25	20

Mercury by Method 245.1 [L1745594-01](#)

Method Blank (MB)

(MB) R4082442-1 06/16/24 19:08

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.000100	0.000200

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

Laboratory Control Sample (LCS)

(LCS) R4082442-2 06/16/24 19:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Mercury	0.00300	0.00330	110	85.0-115	

⁷Gl

⁸Al

⁹Sc

L1745594-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745594-01 06/16/24 19:13 • (MS) R4082442-4 06/16/24 19:18 • (MSD) R4082442-5 06/16/24 19:21

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Mercury	0.0300	ND	0.00211	0.00230	7.02	7.67	10	70.0-130	<u>J6</u>	<u>J6</u>	8.86	20

Metals (ICP) by Method 200.7

L1745594-01

Method Blank (MB)

(MB) R4092826-1 07/11/24 18:16

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Aluminum	U		0.0592	0.200
Antimony	U		0.00398	0.0100
Arsenic	U		0.00645	0.0100
Barium	U		0.000795	0.00500
Beryllium	U		0.000401	0.00200
Cadmium	U		0.000552	0.00200
Chromium	U		0.00163	0.0100
Copper	U		0.00226	0.0100
Lead	U		0.00227	0.00500
Lithium	U		0.00689	0.0150
Nickel	U		0.00182	0.0100
Selenium	U		0.00616	0.0100
Silicon	U		0.0771	0.200
Silver	U		0.00131	0.00500
Strontium	U		0.000683	0.0100
Thallium	U		0.00460	0.0100
Zinc	U		0.00578	0.0500
Phosphorus	U		0.00760	0.100

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4092826-2 07/11/24 18:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	10.0	10.2	102	85.0-115	
Antimony	1.00	1.01	101	85.0-115	
Arsenic	1.00	1.01	101	85.0-115	
Barium	1.00	1.06	106	85.0-115	
Beryllium	1.00	1.03	103	85.0-115	
Cadmium	1.00	1.04	104	85.0-115	
Chromium	1.00	1.06	106	85.0-115	
Copper	1.00	1.05	105	85.0-115	
Lead	1.00	1.01	101	85.0-115	
Lithium	1.00	1.02	102	85.0-115	
Nickel	1.00	0.992	99.2	85.0-115	
Selenium	1.00	1.00	100	85.0-115	
Silicon	1.00	0.972	97.2	85.0-115	
Silver	0.200	0.192	96.0	85.0-115	
Strontium	1.00	1.03	103	85.0-115	

Laboratory Control Sample (LCS)

(LCS) R4092826-2 07/11/24 18:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Thallium	1.00	1.04	104	85.0-115	
Zinc	1.00	1.03	103	85.0-115	
Phosphorus	1.00	0.986	98.6	85.0-115	

L1753030-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753030-01 07/11/24 18:19 • (MS) R4092826-4 07/11/24 18:23 • (MSD) R4092826-5 07/11/24 18:24

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	10.0	ND	10.2	10.2	102	102	1	70.0-130			0.296	20
Antimony	1.00	ND	1.02	1.02	102	102	1	70.0-130			0.0428	20
Arsenic	1.00	ND	1.03	1.03	103	103	1	70.0-130			0.243	20
Barium	1.00	ND	1.06	1.06	106	106	1	70.0-130			0.101	20
Beryllium	1.00	ND	1.03	1.03	103	103	1	70.0-130			0.0772	20
Cadmium	1.00	ND	1.04	1.04	104	104	1	70.0-130			0.276	20
Chromium	1.00	ND	1.06	1.06	106	106	1	70.0-130			0.265	20
Copper	1.00	ND	1.04	1.04	104	104	1	70.0-130			0.0838	20
Lead	1.00	ND	1.02	1.02	102	102	1	70.0-130			0.376	20
Lithium	1.00	ND	1.02	1.02	102	102	1	70.0-130			0.256	20
Nickel	1.00	ND	1.00	1.00	100	100	1	70.0-130			0.442	20
Selenium	1.00	ND	1.03	1.04	103	104	1	70.0-130			0.367	20
Silicon	1.00	ND	0.990	0.989	99.0	98.9	1	70.0-130			0.0887	20
Silver	0.200	ND	0.191	0.191	95.4	95.7	1	70.0-130			0.339	20
Strontium	1.00	ND	1.03	1.04	103	103	1	70.0-130			0.187	20
Thallium	1.00	ND	1.06	1.05	106	105	1	70.0-130			0.394	20
Zinc	1.00	ND	1.03	1.03	103	103	1	70.0-130			0.499	20
Phosphorus	1.00	ND	1.01	1.01	101	101	1	70.0-130			0.771	20

L1753030-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753030-02 07/11/24 18:26 • (MS) R4092826-6 07/11/24 18:28 • (MSD) R4092826-7 07/11/24 18:29

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	10.0	ND	10.3	10.3	103	103	1	70.0-130			0.135	20
Antimony	1.00	ND	1.04	1.04	104	104	1	70.0-130			0.422	20
Arsenic	1.00	ND	1.04	1.03	104	103	1	70.0-130			0.878	20
Barium	1.00	ND	1.05	1.07	105	106	1	70.0-130			0.982	20
Beryllium	1.00	ND	1.04	1.04	104	104	1	70.0-130			0.402	20
Cadmium	1.00	ND	1.05	1.05	105	105	1	70.0-130			0.470	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Metals (ICP) by Method 200.7 [L1745594-01](#)

L1753030-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753030-02 07/11/24 18:26 • (MS) R4092826-6 07/11/24 18:28 • (MSD) R4092826-7 07/11/24 18:29

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Chromium	1.00	ND	1.07	1.07	107	107	1	70.0-130			0.0417	20
Copper	1.00	ND	1.05	1.05	105	105	1	70.0-130			0.276	20
Lead	1.00	ND	1.03	1.02	103	102	1	70.0-130			0.0531	20
Lithium	1.00	ND	1.04	1.03	104	103	1	70.0-130			1.10	20
Nickel	1.00	ND	1.02	1.00	102	100	1	70.0-130			1.29	20
Selenium	1.00	ND	1.04	1.04	104	104	1	70.0-130			0.164	20
Silicon	1.00	ND	1.00	0.995	100	99.5	1	70.0-130			0.969	20
Silver	0.200	ND	0.192	0.192	95.9	95.8	1	70.0-130			0.0858	20
Strontium	1.00	ND	1.05	1.05	105	104	1	70.0-130			0.397	20
Thallium	1.00	ND	1.05	1.06	105	106	1	70.0-130			0.822	20
Zinc	1.00	ND	1.04	1.04	104	104	1	70.0-130			0.565	20
Phosphorus	1.00	ND	1.03	1.03	103	103	1	70.0-130			0.107	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Metals (ICPMS) by Method 200.8

L1745594-01

Method Blank (MB)

(MB) R4107488-1 08/15/24 16:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0177	0.0400
Calcium	U		0.112	1.00
Cobalt	U		0.000142	0.00200
Iron	U		0.0447	0.100
Magnesium	U		0.0690	1.00
Manganese	U		0.000982	0.00500
Molybdenum	U		0.000841	0.00500
Potassium	U		0.151	1.00
Sodium	U		0.513	2.00
Tin	U		0.00106	0.00400
Titanium	U		0.00172	0.0100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4107488-2 08/15/24 16:53

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	0.0500	0.0464	92.7	85.0-115	
Calcium	5.00	4.96	99.1	85.0-115	
Cobalt	0.0500	0.0536	107	85.0-115	
Iron	1.00	0.982	98.2	85.0-115	
Magnesium	5.00	4.96	99.1	85.0-115	
Manganese	0.0500	0.0501	100	85.0-115	
Molybdenum	0.0500	0.0500	100	85.0-115	
Potassium	5.00	4.62	92.4	85.0-115	
Sodium	5.00	4.96	99.2	85.0-115	
Tin	0.0500	0.0480	96.0	85.0-115	
Titanium	0.0500	0.0518	104	85.0-115	

L1745600-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745600-01 08/15/24 17:33 • (MS) R4107488-7 08/15/24 17:39 • (MSD) R4107488-8 08/15/24 17:43

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 %
Boron	0.0500	0.0583	0.103	0.103	89.0	89.7	1	70.0-130			0.375	20
Calcium	5.00	18.2	22.9	22.6	93.5	87.0	1	70.0-130			1.42	20
Cobalt	0.0500	ND	0.0531	0.0515	106	102	1	70.0-130			2.99	20
Iron	1.00	ND	1.01	0.988	101	98.8	1	70.0-130			1.82	20
Magnesium	5.00	14.9	19.5	19.3	91.0	88.0	1	70.0-130			0.784	20

Metals (ICPMS) by Method 200.8 [L1745594-01](#)

L1745600-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745600-01 08/15/24 17:33 • (MS) R4107488-7 08/15/24 17:39 • (MSD) R4107488-8 08/15/24 17:43

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Manganese	0.0500	0.0354	0.0842	0.0853	97.6	99.7	1	70.0-130			1.24	20
Molybdenum	0.0500	ND	0.0538	0.0514	105	100	1	70.0-130			4.56	20
Potassium	5.00	50.8	54.1	53.2	65.5	47.7	1	70.0-130	<u>V</u>	<u>V</u>	1.67	20
Sodium	5.00	142	142	142	4.12	0.000	1	70.0-130	<u>V</u>	<u>V</u>	0.195	20
Tin	0.0500	ND	0.0508	0.0489	102	97.7	1	70.0-130			3.87	20
Titanium	0.0500	ND	0.0552	0.0521	110	104	1	70.0-130			5.76	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Volatile Organic Compounds (GC/MS) by Method 624.1

L1745594-01

Method Blank (MB)

(MB) R4085420-2 06/22/24 23:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromodichloromethane	U		0.000136	0.00100
Bromoform	U		0.000129	0.00100
Bromomethane	U		0.000605	0.00500
Carbon tetrachloride	U		0.000128	0.00100
Chlorobenzene	U		0.000116	0.00100
Chlorodibromomethane	U		0.000140	0.00100
Chloroethane	U		0.000192	0.00500
2-Chloroethyl vinyl ether	U		0.000575	0.0500
Chloroform	U		0.000111	0.00500
Chloromethane	U		0.000960	0.00250
1,2-Dichlorobenzene	U		0.000107	0.00100
1,3-Dichlorobenzene	U		0.000110	0.00100
1,4-Dichlorobenzene	U		0.000120	0.00100
Dichlorodifluoromethane	U		0.000374	0.00500
1,1-Dichloroethane	U		0.000100	0.00100
1,2-Dichloroethane	U		0.0000819	0.00100
1,1-Dichloroethene	U		0.000188	0.00100
trans-1,2-Dichloroethene	U		0.000149	0.00100
1,2-Dichloropropane	U		0.000149	0.00100
cis-1,3-Dichloropropene	U		0.000111	0.00100
trans-1,3-Dichloropropene	U		0.000118	0.00100
Ethylbenzene	U		0.000137	0.00100
Methylene Chloride	U		0.000430	0.00500
Methyl tert-butyl ether	U		0.000101	0.00100
Naphthalene	U		0.00100	0.00500
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100
Tetrachloroethene	U		0.000300	0.00100
1,1,1-Trichloroethane	U		0.000149	0.00100
1,1,2-Trichloroethane	U		0.000158	0.00100
Trichloroethene	U		0.000190	0.00100
Trichlorofluoromethane	U		0.000160	0.00500
Vinyl chloride	U		0.000234	0.00100
o-Xylene	U		0.000174	0.00100
m&p-Xylene	U		0.000430	0.00200
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	102			80.0-120
(S) 4-Bromofluorobenzene	93.0			80.0-120
(S) 1,2-Dichloroethane-d4	98.2			70.0-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4085420-1 06/22/24 23:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromodichloromethane	0.00500	0.00534	107	65.0-135	
Bromoform	0.00500	0.00473	94.6	70.0-130	
Bromomethane	0.00500	0.00173	34.6	15.0-185	
Carbon tetrachloride	0.00500	0.00523	105	70.0-130	
Chlorobenzene	0.00500	0.00540	108	65.0-135	
Chlorodibromomethane	0.00500	0.00506	101	70.0-135	
Chloroethane	0.00500	0.00552	110	40.0-160	
2-Chloroethyl vinyl ether	0.0250	0.0247	98.8	0.100-225	
Chloroform	0.00500	0.00564	113	70.0-135	
Chloromethane	0.00500	0.00546	109	0.100-205	
1,2-Dichlorobenzene	0.00500	0.00532	106	65.0-135	
1,3-Dichlorobenzene	0.00500	0.00538	108	70.0-130	
1,4-Dichlorobenzene	0.00500	0.00533	107	65.0-135	
Dichlorodifluoromethane	0.00500	0.00533	107	49.0-155	
1,1-Dichloroethane	0.00500	0.00601	120	70.0-130	
1,2-Dichloroethane	0.00500	0.00589	118	70.0-130	
1,1-Dichloroethene	0.00500	0.00528	106	50.0-150	
trans-1,2-Dichloroethene	0.00500	0.00558	112	70.0-130	
1,2-Dichloropropane	0.00500	0.00593	119	35.0-165	
cis-1,3-Dichloropropene	0.00500	0.00517	103	25.0-175	
trans-1,3-Dichloropropene	0.00500	0.00478	95.6	50.0-150	
Ethylbenzene	0.00500	0.00548	110	60.0-140	
Methylene Chloride	0.00500	0.00595	119	60.0-140	
Methyl tert-butyl ether	0.00500	0.00551	110	64.0-123	
Naphthalene	0.00500	0.00367	73.4	62.0-128	
1,1,2,2-Tetrachloroethane	0.00500	0.00512	102	60.0-140	
Tetrachloroethene	0.00500	0.00564	113	70.0-130	
1,1,1-Trichloroethane	0.00500	0.00571	114	70.0-130	
1,1,2-Trichloroethane	0.00500	0.00557	111	70.0-130	
Trichloroethene	0.00500	0.00562	112	65.0-135	
Trichlorofluoromethane	0.00500	0.00490	98.0	50.0-150	
Vinyl chloride	0.00500	0.00511	102	5.00-195	
o-Xylene	0.00500	0.00512	102	78.0-120	
m&p-Xylene	0.0100	0.0111	111	77.0-120	
Xylenes, Total	0.0150	0.0162	108	77.0-120	
(S) Toluene-d8			103	80.0-120	
(S) 4-Bromofluorobenzene			97.9	80.0-120	
(S) 1,2-Dichloroethane-d4			97.1	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Volatile Organic Compounds (GC/MS) by Method 624.1 [L1745594-01](#)

Method Blank (MB)

(MB) R4085597-2 06/23/24 21:42

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
Toluene	U		0.000278	0.00100
(S) Toluene-d8	105			80.0-120
(S) 4-Bromofluorobenzene	94.4			80.0-120
(S) 1,2-Dichloroethane-d4	107			70.0-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4085597-1 06/23/24 20:56

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00578	116	65.0-135	
Toluene	0.00500	0.00539	108	70.0-130	
(S) Toluene-d8			102	80.0-120	
(S) 4-Bromofluorobenzene			98.0	80.0-120	
(S) 1,2-Dichloroethane-d4			104	70.0-130	

Method Blank (MB)

(MB) R4086661-1 06/25/24 16:30

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH C6 - C12	U		0.600	0.900
TPH C12 - C28	U		0.600	0.900
TPH C28 - C35	U		0.600	0.900
TPH C6 - C35	U		0.600	0.900
(S) o-Terphenyl	86.1			70.0-130
(S) 1-chlorooctane	80.2			70.0-130

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

(LCS) R4086661-5 06/26/24 09:20 • (LCSD) R4086661-2 06/25/24 17:13

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH C6 - C12	41.7	31.7	36.1	76.0	86.6	75.0-125			13.0	20
TPH C12 - C28	41.7	34.4	38.7	82.5	92.8	75.0-125			11.8	20
TPH C6 - C35	83.4	66.1	74.8	79.3	89.7	75.0-125			12.3	20
(S) o-Terphenyl				82.5	89.6	70.0-130				
(S) 1-chlorooctane				80.1	91.4	70.0-130				

L1747669-22 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1747669-22 06/25/24 17:36 • (MS) R4086661-3 06/25/24 17:58 • (MSD) R4086661-4 06/25/24 18:19

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 %
TPH C6 - C12	39.0	ND	29.3	31.0	75.1	79.5	1	75.0-125			5.64	20
TPH C12 - C28	39.0	ND	31.4	33.0	80.5	84.6	1	75.0-125			4.97	20
TPH C6 - C35	78.1	ND	60.7	64.0	77.7	82.1	1	75.0-125			5.29	20
(S) o-Terphenyl					79.8	82.7		70.0-130				
(S) 1-chlorooctane					77.4	83.8		70.0-130				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

Method Blank (MB)

(MB) R4083840-2 06/18/24 23:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acenaphthene	U		0.0000886	0.00100
Acenaphthylene	U		0.0000921	0.00100
Anthracene	U		0.0000804	0.00100
Benzidine	U		0.00374	0.0100
Benzo(a)anthracene	U		0.000199	0.00100
Benzo(b)fluoranthene	U		0.000130	0.00100
Benzo(k)fluoranthene	U		0.000120	0.00100
Benzo(g,h,i)perylene	U		0.000121	0.00100
Benzo(a)pyrene	U		0.0000381	0.00100
Bis(2-chlorethoxy)methane	U		0.000116	0.0100
Bis(2-chloroethyl)ether	U		0.000137	0.0100
2,2-Oxybis(1-Chloropropane)	U		0.000210	0.0100
4-Bromophenyl-phenylether	U		0.0000877	0.0100
2-Chloronaphthalene	U		0.0000648	0.00100
4-Chlorophenyl-phenylether	U		0.0000926	0.0100
Chrysene	U		0.000130	0.00100
Dibenz(a,h)anthracene	U		0.0000644	0.00100
3,3-Dichlorobenzidine	U		0.000212	0.0100
2,4-Dinitrotoluene	U		0.0000983	0.0100
2,6-Dinitrotoluene	U		0.000250	0.0100
1,2-Diphenylhydrazine	U	N2	0.000105	0.0100
Fluoranthene	U		0.000102	0.00100
Fluorene	U		0.0000844	0.00100
Hexachlorobenzene	U		0.0000755	0.00100
Hexachloro-1,3-butadiene	U		0.0000968	0.0100
Hexachlorocyclopentadiene	U		0.0000598	0.0100
Hexachloroethane	U		0.000127	0.0100
Indeno(1,2,3-cd)pyrene	U		0.000279	0.00100
Isophorone	U		0.000143	0.0100
Naphthalene	U		0.000159	0.00100
Nitrobenzene	U		0.000297	0.0100
n-Nitrosodimethylamine	U		0.000998	0.0100
n-Nitrosodiphenylamine	U		0.00237	0.0100
n-Nitrosodi-n-propylamine	U		0.000261	0.0100
Phenanthrene	U		0.000112	0.00100
Benzylbutyl phthalate	U		0.000765	0.00300
Bis(2-ethylhexyl)phthalate	U		0.000895	0.00300
Di-n-butyl phthalate	U		0.000453	0.00300
Diethyl phthalate	U		0.000287	0.00300
Dimethyl phthalate	U		0.000260	0.00300

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Semi Volatile Organic Compounds (GC/MS) by Method 625.1

L1745594-01

Method Blank (MB)

(MB) R4083840-2 06/18/24 23:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Di-n-octyl phthalate	U		0.000932	0.00300
Pyrene	U		0.000107	0.00100
1,2,4-Trichlorobenzene	U		0.0000698	0.0100
4-Chloro-3-methylphenol	U		0.000131	0.0100
2-Chlorophenol	U		0.000133	0.0100
2,4-Dichlorophenol	U		0.000102	0.0100
2,4-Dimethylphenol	U		0.0000636	0.0100
4,6-Dinitro-2-methylphenol	U		0.00112	0.0100
2,4-Dinitrophenol	U		0.00593	0.0100
2-Nitrophenol	U		0.000117	0.0100
4-Nitrophenol	U		0.000143	0.0100
Pentachlorophenol	U		0.000313	0.0100
Phenol	U		0.00433	0.0100
2,4,6-Trichlorophenol	U		0.000100	0.0100
(S) Nitrobenzene-d5	76.7			15.0-314
(S) 2-Fluorobiphenyl	73.4			22.0-127
(S) p-Terphenyl-d14	73.8			29.0-141
(S) Phenol-d5	26.6			8.00-424
(S) 2-Fluorophenol	42.6			10.0-120
(S) 2,4,6-Tribromophenol	54.0			10.0-153

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4083840-1 06/18/24 23:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0500	0.0345	69.0	47.0-145	
Acenaphthylene	0.0500	0.0383	76.6	33.0-145	
Anthracene	0.0500	0.0383	76.6	27.0-133	
Benzidine	0.100	0.0109	10.9	1.00-120	
Benzo(a)anthracene	0.0500	0.0400	80.0	33.0-143	
Benzo(b)fluoranthene	0.0500	0.0409	81.8	24.0-159	
Benzo(k)fluoranthene	0.0500	0.0415	83.0	11.0-162	
Benzo(g,h,i)perylene	0.0500	0.0361	72.2	1.00-219	
Benzo(a)pyrene	0.0500	0.0395	79.0	17.0-163	
Bis(2-chlorethoxy)methane	0.0500	0.0351	70.2	1.00-219	
Bis(2-chloroethyl)ether	0.0500	0.0381	76.2	33.0-185	
2,2-Oxybis(1-Chloropropane)	0.0500	0.0350	70.0	36.0-166	
4-Bromophenyl-phenylether	0.0500	0.0379	75.8	53.0-127	

Semi Volatile Organic Compounds (GC/MS) by Method 625.1

L1745594-01

Laboratory Control Sample (LCS)

(LCS) R4083840-1 06/18/24 23:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
2-Chloronaphthalene	0.0500	0.0342	68.4	60.0-120	
4-Chlorophenyl-phenylether	0.0500	0.0389	77.8	25.0-158	
Chrysene	0.0500	0.0383	76.6	17.0-168	
Dibenz(a,h)anthracene	0.0500	0.0356	71.2	1.00-227	
3,3-Dichlorobenzidine	0.100	0.0771	77.1	1.00-262	
2,4-Dinitrotoluene	0.0500	0.0437	87.4	39.0-139	
2,6-Dinitrotoluene	0.0500	0.0410	82.0	50.0-158	
1,2-Diphenylhydrazine	0.0500	0.0403	80.6	37.0-125	N2
Fluoranthene	0.0500	0.0405	81.0	26.0-137	
Fluorene	0.0500	0.0373	74.6	59.0-121	
Hexachlorobenzene	0.0500	0.0329	65.8	1.00-152	
Hexachloro-1,3-butadiene	0.0500	0.0330	66.0	24.0-120	
Hexachlorocyclopentadiene	0.0500	0.0280	56.0	10.0-120	
Hexachloroethane	0.0500	0.0346	69.2	40.0-120	
Indeno(1,2,3-cd)pyrene	0.0500	0.0340	68.0	1.00-171	
Isophorone	0.0500	0.0353	70.6	21.0-196	
Naphthalene	0.0500	0.0316	63.2	21.0-133	
Nitrobenzene	0.0500	0.0353	70.6	35.0-180	
n-Nitrosodimethylamine	0.0500	0.0305	61.0	10.0-120	
n-Nitrosodiphenylamine	0.0500	0.0384	76.8	44.0-120	
n-Nitrosodi-n-propylamine	0.0500	0.0392	78.4	1.00-230	
Phenanthrene	0.0500	0.0384	76.8	54.0-120	
Benzylbutyl phthalate	0.0500	0.0415	83.0	1.00-152	
Bis(2-ethylhexyl)phthalate	0.0500	0.0395	79.0	8.00-158	
Di-n-butyl phthalate	0.0500	0.0401	80.2	1.00-120	
Diethyl phthalate	0.0500	0.0396	79.2	1.00-120	
Dimethyl phthalate	0.0500	0.0393	78.6	1.00-120	
Di-n-octyl phthalate	0.0500	0.0377	75.4	4.00-146	
Pyrene	0.0500	0.0415	83.0	52.0-120	
1,2,4-Trichlorobenzene	0.0500	0.0332	66.4	44.0-142	
4-Chloro-3-methylphenol	0.0500	0.0290	58.0	22.0-147	
2-Chlorophenol	0.0500	0.0274	54.8	23.0-134	
2,4-Dichlorophenol	0.0500	0.0304	60.8	39.0-135	
2,4-Dimethylphenol	0.0500	0.0374	74.8	32.0-120	
4,6-Dinitro-2-methylphenol	0.0500	0.0519	104	1.00-181	
2,4-Dinitrophenol	0.0500	0.0476	95.2	1.00-191	
2-Nitrophenol	0.0500	0.0350	70.0	29.0-182	
4-Nitrophenol	0.0500	0.0147	29.4	1.00-132	
Pentachlorophenol	0.0500	0.0303	60.6	14.0-176	
Phenol	0.0500	0.0140	28.0	5.00-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4083840-1 06/18/24 23:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4,6-Trichlorophenol	0.0500	0.0396	79.2	37.0-144	
(S) Nitrobenzene-d5			65.6	15.0-314	
(S) 2-Fluorobiphenyl			71.3	22.0-127	
(S) p-Terphenyl-d14			72.9	29.0-141	
(S) Phenol-d5			26.5	8.00-424	
(S) 2-Fluorophenol			36.0	10.0-120	
(S) 2,4,6-Tribromophenol			63.5	10.0-153	

L1747367-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1747367-01 06/19/24 02:46 • (MS) R4083840-3 06/19/24 03:07 • (MSD) R4083840-4 06/19/24 03:28

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 %
Acenaphthene	0.0500	ND	0.0291	0.0319	58.2	63.8	1	47.0-145			9.18	48
Acenaphthylene	0.0500	ND	0.0329	0.0356	65.8	71.2	1	33.0-145			7.88	74
Anthracene	0.0500	ND	0.0360	0.0372	72.0	74.4	1	27.0-133			3.28	66
Benzydine	0.100	ND	0.0405	0.0402	40.5	40.2	1	1.00-120			0.743	40
Benzo(a)anthracene	0.0500	ND	0.0372	0.0405	74.4	81.0	1	33.0-143			8.49	53
Benzo(b)fluoranthene	0.0500	ND	0.0376	0.0423	75.2	84.6	1	24.0-159			11.8	71
Benzo(k)fluoranthene	0.0500	ND	0.0386	0.0415	77.2	83.0	1	11.0-162			7.24	63
Benzo(g,h,i)perylene	0.0500	ND	0.0302	0.0327	60.4	65.4	1	1.00-219			7.95	97
Benzo(a)pyrene	0.0500	ND	0.0368	0.0407	73.6	81.4	1	17.0-163			10.1	72
Bis(2-chlorethoxy)methane	0.0500	ND	0.0284	0.0320	56.8	64.0	1	33.0-184			11.9	54
Bis(2-chloroethyl)ether	0.0500	ND	0.0278	0.0300	55.6	60.0	1	12.0-158			7.61	108
2,2-Oxybis(1-Chloropropane)	0.0500	ND	0.0261	0.0289	52.2	57.8	1	36.0-166			10.2	76
4-Bromophenyl-phenylether	0.0500	ND	0.0337	0.0346	67.4	69.2	1	53.0-127			2.64	43
2-Chloronaphthalene	0.0500	ND	0.0285	0.0311	57.0	62.2	1	60.0-120	J6		8.72	24
4-Chlorophenyl-phenylether	0.0500	ND	0.0330	0.0362	66.0	72.4	1	25.0-158			9.25	61
Chrysene	0.0500	ND	0.0353	0.0385	70.6	77.0	1	17.0-168			8.67	87
Dibenz(a,h)anthracene	0.0500	ND	0.0298	0.0318	59.6	63.6	1	1.00-227			6.49	126
3,3-Dichlorobenzidine	0.100	ND	0.0696	0.0720	69.6	72.0	1	1.00-262			3.39	108
2,4-Dinitrotoluene	0.0500	ND	0.0412	0.0439	82.4	87.8	1	39.0-139			6.35	42
2,6-Dinitrotoluene	0.0500	ND	0.0380	0.0402	76.0	80.4	1	50.0-158			5.63	48
1,2-Diphenylhydrazine	0.0500	ND	0.0348	0.0372	69.6	74.4	1	18.0-156	N2	N2	6.67	34
Fluoranthene	0.0500	ND	0.0369	0.0394	73.8	78.8	1	26.0-137			6.55	66
Fluorene	0.0500	ND	0.0320	0.0345	64.0	69.0	1	59.0-121			7.52	38
Hexachlorobenzene	0.0500	ND	0.0300	0.0307	60.0	61.4	1	1.00-152			2.31	55
Hexachloro-1,3-butadiene	0.0500	ND	0.0256	0.0293	51.2	58.6	1	24.0-120			13.5	62
Hexachlorocyclopentadiene	0.0500	ND	0.0206	0.0249	41.2	49.8	1	10.0-146			18.9	34

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Semi Volatile Organic Compounds (GC/MS) by Method 625.1 L1745594-01

L1747367-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1747367-01 06/19/24 02:46 • (MS) R4083840-3 06/19/24 03:07 • (MSD) R4083840-4 06/19/24 03:28

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 %
Hexachloroethane	0.0500	ND	0.0268	0.0296	53.6	59.2	1	40.0-120			9.93	52
Indeno(1,2,3-cd)pyrene	0.0500	ND	0.0292	0.0319	58.4	63.8	1	1.00-171			8.84	99
Isophorone	0.0500	ND	0.0293	0.0333	58.6	66.6	1	21.0-196			12.8	93
Naphthalene	0.0500	ND	0.0262	0.0287	52.4	57.4	1	21.0-133			9.11	65
Nitrobenzene	0.0500	ND	0.0303	0.0333	60.6	66.6	1	35.0-180			9.43	62
n-Nitrosodimethylamine	0.0500	ND	0.0268	0.0296	53.6	59.2	1	10.0-120			9.93	40
n-Nitrosodiphenylamine	0.0500	ND	0.0373	0.0369	74.6	73.8	1	16.0-160			1.08	28
n-Nitrosodi-n-propylamine	0.0500	ND	0.0308	0.0340	61.6	68.0	1	1.00-230			9.88	87
Phenanthrene	0.0500	ND	0.0361	0.0371	72.2	74.2	1	54.0-120			2.73	39
Benzylbutyl phthalate	0.0500	ND	0.0418	0.0460	83.6	92.0	1	1.00-152			9.57	60
Bis(2-ethylhexyl)phthalate	0.0500	ND	0.0360	0.0390	72.0	78.0	1	8.00-158			8.00	82
Di-n-butyl phthalate	0.0500	ND	0.0366	0.0389	73.2	77.8	1	1.00-120			6.09	47
Diethyl phthalate	0.0500	ND	0.0357	0.0385	71.4	77.0	1	1.00-120			7.55	100
Dimethyl phthalate	0.0500	ND	0.0348	0.0368	69.6	73.6	1	1.00-120			5.59	183
Di-n-octyl phthalate	0.0500	ND	0.0344	0.0367	68.8	73.4	1	4.00-146			6.47	69
Pyrene	0.0500	ND	0.0419	0.0463	83.8	92.6	1	52.0-120			9.98	49
1,2,4-Trichlorobenzene	0.0500	ND	0.0271	0.0303	54.2	60.6	1	44.0-142			11.1	50
4-Chloro-3-methylphenol	0.0500	ND	0.0300	0.0301	60.0	60.2	1	22.0-147			0.333	73
2-Chlorophenol	0.0500	ND	0.0239	0.0251	47.8	50.2	1	23.0-134			4.90	61
2,4-Dichlorophenol	0.0500	ND	0.0273	0.0297	54.6	59.4	1	39.0-135			8.42	50
2,4-Dimethylphenol	0.0500	ND	0.0362	0.0363	72.4	72.6	1	32.0-120			0.276	58
4,6-Dinitro-2-methylphenol	0.0500	ND	0.0483	0.0505	96.6	101	1	1.00-181			4.45	203
2,4-Dinitrophenol	0.0500	ND	0.0439	0.0504	87.8	101	1	1.00-191			13.8	132
2-Nitrophenol	0.0500	ND	0.0304	0.0337	60.8	67.4	1	29.0-182			10.3	55
4-Nitrophenol	0.0500	ND	0.0152	0.0169	30.4	33.8	1	1.00-132			10.6	131
Pentachlorophenol	0.0500	ND	0.0310	0.0332	62.0	66.4	1	14.0-176			6.85	86
Phenol	0.0500	ND	0.0144	0.0134	28.8	26.8	1	5.00-120			7.19	64
2,4,6-Trichlorophenol	0.0500	ND	0.0347	0.0372	69.4	74.4	1	37.0-144			6.95	58
(S) Nitrobenzene-d5					0.000	0.000		15.0-314	J2	J2		
(S) 2-Fluorobiphenyl					0.000	0.000		22.0-127	J2	J2		
(S) p-Terphenyl-d14					0.000	0.000		29.0-141	J2	J2		
(S) Phenol-d5					0.000	0.000		8.00-424	J2	J2		
(S) 2-Fluorophenol					0.000	0.000		10.0-120	J2	J2		
(S) 2,4,6-Tribromophenol					0.000	0.000		10.0-153	J2	J2		

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Cp

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Tc

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Ss

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Cn

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Sr

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Sc

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.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
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
B1	The blank depletion was greater than the recommended maximum depletion of 0.2mg/L.
C6	The initial calibration verification standard (SSCV) associated with this data responded low.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
K9	Test replicates show more than 30% difference between high and low values.
N2	Analyte reported using a calibration and validation based on Azobenzene (CAS 103-33-3). 1,2-Diphenylhydrazine decomposes into Azobenzene during the analysis.

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Qualifier	Description
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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	LA000356
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.

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Released to Imaging: 9/6/2024 9:52:49 AM

Released to Imaging: 9/6/2024 9:52:49 AM

Released to Imaging: 9/6/2024 9:52:49 AM



July 01, 2024

Jimmy Huckaba
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122

RE: Project: Desalination Pilot/WG2304561
Pace Project No.: 50376506

Dear Jimmy Huckaba:

Enclosed are the analytical results for sample(s) received by the laboratory on June 21, 2024. 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 - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Randal Rastorfer".

Randal Rastorfer
randal.rastorfer@pacelabs.com
(614)301-3304
Project Manager

Enclosures

cc: Pace National Subout Team, Pace National



REPORT OF LABORATORY ANALYSIS

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without the written consent of Pace Analytical Services, LLC.



7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: Desalination Pilot/WG2304561

Pace Project No.: 50376506

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268

Illinois Accreditation #: 200074

Indiana Drinking Water Laboratory #: C-49-06

Kansas/TNI Certification #: E-10177

Kentucky UST Agency Interest #: 80226

Kentucky WW Laboratory ID #: 98019

Michigan Drinking Water Laboratory #9050

Oklahoma Laboratory #: 9204

Texas Certification #: T104704355

Washington Dept of Ecology #: C1081

Wisconsin Laboratory #: 999788130

USDA Foreign Soil Permit #: 525-23-13-23119

USDA Compliance Agreement #: IN-SL-22-001

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Desalination Pilot/WG2304561
Pace Project No.: 50376506

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50376506001	FEED	Water	06/11/24 08:25	06/21/24 09:30

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SAMPLE ANALYTE COUNT

Project: Desalination Pilot/WG2304561
Pace Project No.: 50376506

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50376506001	FEED	EPA 9056	ADM	1	PASI-I

PASI-I = Pace Analytical Services - Indianapolis

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SUMMARY OF DETECTION

Project: Desalination Pilot/WG2304561
Pace Project No.: 50376506

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50376506001	FEED					
EPA 9056	Iodide	93.3	mg/L	50.0	06/28/24 19:28	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Desalination Pilot/WG2304561
Pace Project No.: 50376506

Sample: FEED		Lab ID: 50376506001		Collected: 06/11/24 08:25		Received: 06/21/24 09:30		Matrix: Water	
Parameters		Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC		Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Iodide	93.3	mg/L	50.0	100			06/28/24 19:28		

REPORT OF LABORATORY ANALYSIS



QUALITY CONTROL DATA

Project: Desalination Pilot/WG2304561

Pace Project No.: 50376506

QC Batch: 797279

Analysis Method: EPA 9056

QC Batch Method: EPA 9056

Analysis Description: 9056 Iodide by IC

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50376506001

METHOD BLANK: 3648082

Matrix: Water

Associated Lab Samples: 50376506001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iodide	mg/L	ND	0.50	06/28/24 10:15	

LABORATORY CONTROL SAMPLE: 3648083

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iodide	mg/L	5	4.7	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3648084 3648085

Parameter	Units	50376505001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iodide	mg/L	251	500	500	715	731	93	96	80-120	2	15	

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Desalination Pilot/WG2304561

Pace Project No.: 50376506

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.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Desalination Pilot/WG2304561
Pace Project No.: 50376506

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50376506001	FEED	EPA 9056	797279		

REPORT OF LABORATORY ANALYSIS

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Sub-Contract Chain of Custody

Batch Date/Time: 06/13/24 13:25

Sub-Contract Lab: PACEIIN

Address: 7726 Moller Rd.

City/State: Indianapolis, IN 46268

Contact:

Randal.Rastorfer@pacelabs.com

Owner Lab: PACEMTJL

Address: 12065 Lebanon Rd.

City/State: Mt. Juliet, TN 37122

Phone: (615) 773-9756

Fax: (615) 758-5859

WO: WG2304561

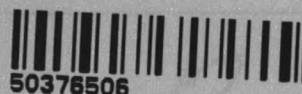
Email: MTJLSuboutTeam@pacelabs.com

Results Due Date: 07/25/24

ESC Purchase Order #: L1745594

Send Reports to: James C Huckaba

WO# : 50376506



50376506

12065 Lebanon Rd.

Mt. Juliet, TN 37122

Phone: (615) 773-9756

Fax: (615) 758-5859

Sample ID Container ID	Matrix	State	Collect Date	Description	Sample Number Lab Use Only	Sample Comments Lab Use Only
FEED S47979981	WW	NM	06/11/24 08:25	Iodide	2. L1745594-01	

*= Container used for multiple Samples and/or Analyses

Relinquished by: [Signature] Date 6-13-24Received by: FedEx Date _____Relinquished by: FedEx Date 6-21-24 0930Received by: Mail Stop / PACE Date 6-21-24 0930

F-IN-Q-290-rev.27, 13Jun2024



SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: NMS 06-21-2024 1725

1. Courier: ☒ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ NOW/JETT ☐ OTHER _____2. Custody Seal on Cooler/Box Present: ☒ Yes ☐ No(If yes) Seals Intact: ☒ Yes ☐ No (leave blank if no seals were present)

3. Thermometer: 1 2 3 4 5 6 7 8 9 A B C D E F G H I

4. Cooler Temperature(s): 1.8 11.8

(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. Packing Material: ☒ Bubble Wrap ☐ Bubble Bags☐ None ☐ Other _____6. Ice Type: ☒ Wet ☐ Blue ☐ None7. Was the PM notified of out of temp cooler?: ☐ Yes ☐ No

Cooler temp should be above freezing to 6°C

8. EZ Bottle Order? ☐ Yes ☒ NoIf yes but not on COC
what is the EZ Bottle
Order Number?:

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR, CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		X	All containers needing acid/base preservation have been pH CHECKED?: Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.			
Short Hold Time Analysis (48 hours or less)? Analysis:		X	Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form			X
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:		Residual Chlorine Check (SVOC 625 Pest/PCB 608)	Present	Absent	N/A
Rush TAT Requested (4 days or less):		X	Residual Chlorine Check (Total/Amenable/Free Cyanide)			X
Custody Signatures Present?	X		Headspace Wisconsin Sulfide?			X
Containers Intact?:	X		Headspace in VOA Vials (>6mm): See Container Count form for details	Present	Absent	No VOA Vials Sent
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	X		Trip Blank Present?		X	
Extra labels on Terracore Vials? (soils only)		X	Trip Blank Custody Seals?:			X

COMMENTS: Less than a quarter volume in container. NMS 6-21-24

COC PAGE 1 of 1

Sample Container Count

** Place a PINK dot on containers
that are out of conformance **

COC Line Item	WGFU	WGKU	BG1U	MeOH (only)	DG9H	VG9H	VOA VIAL HS (≥6mm)	VG9U	DG9U	VG9T	AMBER GLASS						PLASTIC								OTHER				Matrix				
				SBS																													
				DI																													
				R																													
1																																	
2																																	
3																																	
4																																	
5																																	
6																																	
7																																	
8																																	
9																																	
10																																	
11																																	
12																																	

Container Codes

Glass				Plastic			
DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic	NT3U	Non Teflon 250mL unpreserved plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic	BP4U	125mL unpreserved plastic
DG9S	40mL H2SO4 amber vial	CG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic	BP4N	125mL HNO3 plastic
DG9T	40mL Na Thio amber vial	CG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic	BP4S	125mL H2SO4 plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac	Miscellaneous	
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic		
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic	Syringe Kit	
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic	LL Cr+6 sampling kit	
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic	ZPLC	Ziploc Bag
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac	R	Terracore Kit
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic	SP5T	120mL Coliform Sodium Thiosulfate
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	GN	General Container
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered	U	Summa Can (air sample)
CG3F	250mL clear glass HCl, Field Filter	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic	WT	Water
BG1H	1L HCl clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic	SL	Solid
BG1S	1L H2SO4 clear glass	AG3B	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic	OL	Oil
						NAL	Non-aqueous liquid
						WP	Wipe



July 01, 2024

Subout Team
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122

RE: Project: L1745594
Pace Project No.: 30694606

Dear Subout Team:

Enclosed are the analytical results for sample(s) received by the laboratory on June 24, 2024. 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 - Beaver

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nikayla M. Yasurek

Nikayla M. Yasurek
nikayla.yasurek@pacelabs.com
(724)850-5600
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: L1745594

Pace Project No.: 30694606

Pace Analytical Services Beaver

225 Industrial Park Road, Beaver, WV 25813

Virginia VELAP 460148

West Virginia DEP 060

West Virginia DHHR 00412CM

North Carolina DEQ 466

Kentucky Wastewater Certification KY90039

Pennsylvania DEP 68-00839

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: L1745594

Pace Project No.: 30694606

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30694606001	L1745594-01	Water	06/11/24 08:25	06/24/24 09:58

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: L1745594

Pace Project No.: 30694606

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30694606001	L1745594-01	SM 5910B-11	SDW	1	PASI-BV

PASI-BV = Pace Analytical Services - Beaver

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ANALYTICAL RESULTS

Project: L1745594

Pace Project No.: 30694606

Sample: L1745594-01 **Lab ID: 30694606001** Collected: 06/11/24 08:25 Received: 06/24/24 09:58 Matrix: Water

Comments: • Per client, run out of temp and hold.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
UV254 SUVA Absorbing Organincs		Analytical Method: SM 5910B-11 Pace Analytical Services - Beaver						
U254 UV Absorbing Organic	0.16	cm-1	0.0030	1		06/25/24 16:20		1c,H3, N2

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: L1745594

Pace Project No.: 30694606

QC Batch: 678050

Analysis Method: SM 5910B-11

QC Batch Method: SM 5910B-11

Analysis Description: UV254 SUVA Absorbing Organincs

Laboratory: Pace Analytical Services - Beaver

Associated Lab Samples: 30694606001

METHOD BLANK: 3301477

Matrix: Water

Associated Lab Samples: 30694606001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
U254 UV Absorbing Organic	cm-1	ND	0.0030	06/25/24 16:07	N2

LABORATORY CONTROL SAMPLE: 3301478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
U254 UV Absorbing Organic	cm-1	0.072	0.084	116	80-120	N2

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QUALIFIERS

Project: L1745594
Pace Project No.: 30694606

DEFINITIONS

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MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

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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.

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LCS(D) - Laboratory Control Sample (Duplicate)

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RPD - Relative Percent Difference

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SG - Silica Gel - Clean-Up

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Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1c	Sample matrix behaves abnormal to typical samples
H3	Sample was received or analysis requested beyond the recognized method holding time.
N2	The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L1745594

Pace Project No.: 30694606

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30694606001	L1745594-01	SM 5910B-11	678050		

REPORT OF LABORATORY ANALYSIS

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Sub-Contract Chain of Custody

Batch Date/Time: 06/13/24 13:30
Sub-Contract Lab: PACEBWV
Address: 225 Industrial Park Road
City/State: Beaver, WV 25813
Contact:
Stacy.Heasley@pacelabs.com
Owner Lab: PACEMTJL
Address: 12065 Lebanon Rd.
City/State: Mt. Juliet, TN 37122
Phone: (615) 773-9756
Fax: (615) 758-5859

WO: WG2304567
Email: MTJLSuboutTeam@pacelabs.com
Results Due Date: 07/11/24
ESC Purchase Order #: L1745594
Send Reports to: James C Huckaba



12065 Lebanon Rd.
Mt. Juliet, TN 37122
Phone: (615) 773-9756
Fax: (615) 758-5859

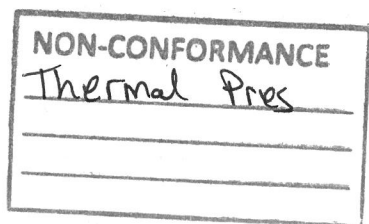
Sample ID Container ID	Matrix	State	Collect Date	Description	Sample Number Lab Use Only	Sample Comments Lab Use Only
FEED	WW	NM	06/11/24 08:25	UV-254	2. L1745594-01	UV-254

Relinquished by: _____ Date: 6-13-24

Recieved by: Chita Date: 6-24-24 0958

Relinquished by: _____ Date: _____

Recieved by: _____ Date: _____



WO# : 30694606



DC#_Title: ENV-FRM-BEAV-0058 v03_Pace WV Sample Condition Upon Receipt (SCUR)
Effective Date: 2/8/2023

WO#: 30694606

PM: NMY Due Date: 07/09/24
CLIENT: ESC

LIMS30 Lab Sample Condition Upon Receipt (West Vi

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ 3rd Party Courier ☐ Pace ☐ Other

Tracking #:

Custody Seal on Cooler/Box/Containers Present: ☒ yes ☐ no

Seals intact: ☒ yes ☐ no

Thermometer Used 27 Type of Ice Wet Blue None

Cooler Temperature Observed Temp 14.2 °C Correction Factor: 0 °C Final Temp: 14.2 °C

Thermal Preservation Requirement Met Yes ☒ No ☐

pH paper Lot#	Date and Initials of person examining contents:
---------------	---

	Yes	No	N/A
Chain of Custody Present:	☒	☐	☐
Chain of Custody Filled Out:	☒	☐	☐
Chain of Custody Relinquished:	☒	☐	☐
Sampler Name & Signature on COC:	☐	☒	☐
Sample Labels match COC:	☒	☐	☐
-Includes date/time/ID	☒	☐	☐
Matrix:	☒	☐	☐
Samples Arrived within Hold Time:	☒	☐	☐
Short Hold Time Analysis (<72hr remaining):	☒	☐	☐
Rush Turn Around Time Requested:	☒	☐	☐
Sufficient Volume:	☒	☐	☐
Correct Containers Used:	☒	☐	☐
-Pace Containers Used:	☒	☐	☐
Containers Intact:	☒	☐	☐
Orthophosphate field filtered:	☐	☐	☒
Hex Cr Aqueous sample field filtered:	☐	☐	☒
-pH adjusted within 24 hours? (If yes, indicate acid lot #)	☐	☐	☒
Filtered volume received for Dissolved tests:	☐	☐	☒
All containers have been checked for chemical preservation:	☐	☐	☒
exceptions: VOA, coliform, O&G, LLMercury, Non-aqueous matrix			
All containers meet method/chemical preservation requirements:	☐	☐	☒
Initial when completed:	☐	☐	☒
Date:	☐	☐	☒
Tests not preserved:	☒	☐	☐
Headspace in VOA Vials:	☐	☐	☒
Trip Blank Present:	☐	☐	☒
Initial when completed:	☐	☐	☒
Date:	☐	☐	☒

Comments:

*PM review is documented electronically in LIMS, when the Project Manager closes the SRF Review schedule in LIMS. The status may be reviewed in the Status section of the Workorder Edit Screen.



July 08, 2024

MTJLSuboutTeam
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122

RE: Project: L1745594 WG2304569
Pace Project No.: 40280057

Dear MTJLSuboutTeam:

Enclosed are the analytical results for sample(s) received by the laboratory on June 21, 2024. 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 - Green Bay

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Angela Lane".

Angela Lane
angela.lane@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Jimmy Huckaba, Pace Analytical Allen
Pace National Subout Team, Pace National



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: L1745594 WG2304569

Pace Project No.: 40280057

Pace Analytical Services Green Bay

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

South Carolina Certification #: 83006001

Texas Certification #: T104704529-21-8

Virginia VELAP Certification ID: 11873

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-21-00008

Federal Fish & Wildlife Permit #: 51774A

REPORT OF LABORATORY ANALYSIS

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1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: L1745594 WG2304569

Pace Project No.: 40280057

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40280057001	FEED	Water	06/11/24 08:25	06/21/24 09:25

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1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: L1745594 WG2304569

Pace Project No.: 40280057

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40280057001	FEED	SM 2710F	HML	2

PASI-G = Pace Analytical Services - Green Bay

REPORT OF LABORATORY ANALYSIS

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1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: L1745594 WG2304569

Pace Project No.: 40280057

Sample: FEED Lab ID: 40280057001 Collected: 06/11/24 08:25 Received: 06/21/24 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Specific Gravity /Bulk Density		Analytical Method: SM 2710F Pace Analytical Services - Green Bay							
Density	1.1	g/mL			1		07/08/24 14:18		
Specific Gravity	1.1	no units			1		07/08/24 14:18		

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: L1745594 WG2304569

Pace Project No.: 40280057

QC Batch: 478937

QC Batch Method: SM 2710F

Analysis Method: SM 2710F

Analysis Description: Specific Gravity /Bulk Density

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40280057001

SAMPLE DUPLICATE: 2743267

Parameter	Units	40280525001 Result	Dup Result	RPD	Max RPD	Qualifiers
Density	g/mL	1.1	1.1	1	20	
Specific Gravity	no units	1.1	1.1	1	20	

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

REPORT OF LABORATORY ANALYSIS

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Date: 07/08/2024 03:31 PM

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QUALIFIERS

Project: L1745594 WG2304569

Pace Project No.: 40280057

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.

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Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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Date: 07/08/2024 03:31 PM

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L1745594 WG2304569
Pace Project No.: 40280057

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40280057001	FEED	SM 2710F	478937		

REPORT OF LABORATORY ANALYSIS

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40280057

Sub-Contract Chain of Custody

Batch Date/Time: 06/13/24 13:32
Sub-Contract Lab: PACEGBWI
Address: 1241 Bellvue Street, Suite
9

City/State: Green Bay, WI 54302

Contact:

Angela.Lane@pacelabs.com

Owner Lab: PACEMTJL

Address: 12065 Lebanon Rd.

City/State: Mt. Juliet, TN 37122

Phone: (615) 773-9756

Fax: (615) 758-5859

WO: WG2304569

Email: MTJLSuboutTeam@pacelabs.com

Results Due Date: 07/25/24

ESC Purchase Order #: L1745594

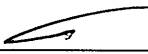
Send Reports to: James C Huckaba



12065 Lebanon Rd.
Mt. Juliet, TN 37122
Phone: (615) 773-9756
Fax: (615) 758-5859

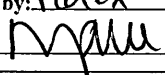
Sample ID Container ID	Matrix	State	Collect Date	Description	Sample Number Lab Use Only	Sample Comments Lab Use Only
FEED S47980002	WW	NM	06/11/24 08:25	Specific Gravity	2. L1745594-01	001

*= Container used for multiple Samples and/or Analyses

Relinquished by:  Date: 6-13-24

Received by: _____ Date: _____

Relinquished by: Fedex Date: 6/24/25

Received by:  Date: 6/24/25

DC#_Title: ENV-FRM-GBAY-0035 v03_Sample Preservation Receipt Form

Effective Date: 8/16/2022

Client Name: Pace Natural

Sample Preservation Receipt Form

Project #

40280057

All containers needing preservation have been checked and noted below:

☐ Yes ☐ No☒ N/A

Lab Lot# of pH paper:

Lab Std #ID of preservation (if pH adjusted):

Initial when completed:

Date/Time:

Pace Lab #	Glass						Plastic						Vials					Jars				General				VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)	
	AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC								GN 1
001																																	2.5 / 5
002																																	2.5 / 5
003																																	2.5 / 5
004																																	2.5 / 5
005																																	2.5 / 5
006																																	2.5 / 5
007																																	2.5 / 5
008																																	2.5 / 5
009																																	2.5 / 5
010																																	2.5 / 5
011																																	2.5 / 5
012																																	2.5 / 5
013																																	2.5 / 5
014																																	2.5 / 5
015																																	2.5 / 5
016																																	2.5 / 5
017																																	2.5 / 5
018																																	2.5 / 5
019																																	2.5 / 5
020																																	2.5 / 5

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other:

Headspace in VOA Vials (>6mm): ☐ Yes ☐ No ☒ N/A *If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	125 mL poly unpres.
						GN 2	

Page 1 of 2

DC#_Title: ENV-FRM-GBAY-0014 v03_SCUR
Effective Date: 8/17/2022

Sample Condition Upon Receipt Form (SCUR)

Project #:

Client Name: Pace National

Courier: ☐ CS Logistics ☒ Fed Ex ☐ Speedee ☐ UPS ☐ Walto
☐ Client ☐ Pace Other: _____

Tracking #: 7315 3206 1293Custody Seal on Cooler/Box Present: ☐ yes ☐ no Seals intact: ☐ yes ☐ noCustody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ noPacking Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ OtherThermometer Used SR - 120 Type of Ice: Wet Blue Dry NoneCooler Temperature Uncorr: 0.0 /Corr: 0.0 ☐ Meltwater OnlyTemp Blank Present: ☒ yes ☐ noBiological Tissue is Frozen: ☐ yes ☐ no

Temp should be above freezing to 6°C.

Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Person examining contents:

Date: 8/21/24 /Initials: mttLabeled By Initials: AK

Chain of Custody Present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody Filled Out:	☐ Yes ☐ No ☐ N/A	2.
Chain of Custody Relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler Name & Signature on COC:	☐ Yes ☐ No ☒ N/A	4. <u>IRho mtt Gbiky</u>
Samples Arrived within Hold Time:	☒ Yes ☐ No	5.
- DI VOA Samples frozen upon receipt	☐ Yes ☐ No	Date/Time:
Short Hold Time Analysis (<72hr):	☐ Yes ☒ No	6.
Rush Turn Around Time Requested:	☐ Yes ☒ No	7.
Sufficient Volume:		8.
For Analysis: ☒ Yes ☐ No MS/MSD: ☐ Yes ☒ No ☐ N/A		
Correct Containers Used:	☐ Yes ☒ No	9.
Correct Type: Pace Green Bay, <u>Pace IR</u> , Non-Pace		
Containers Intact:	☒ Yes ☐ No	10.
Filtered volume received for Dissolved tests	☐ Yes ☐ No ☒ N/A	11.
Sample Labels match COC:	☒ Yes ☐ No ☐ N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>W</u>		
Trip Blank Present:	☐ Yes ☐ No ☒ N/A	13.
Trip Blank Custody Seals Present	☐ Yes ☐ No ☒ N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

Person Contacted: _____

Date/Time: _____

If checked, see attached form for additional comments ☐

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logi

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ANALYTICAL REPORT

July 09, 2024

Devon Energy - Oklahoma City, OK

Sample Delivery Group: L1745595
Samples Received: 06/12/2024
Project Number: 212C-HN-02831
Description: Desalination Pilot
Site: CCR
Report To: Paul Barbour
333 W Sheridan Avenue
Oklahoma City, OK 73102-5015

¹Cp²Tc³Ss⁴Cn⁵Sr⁶Qc⁷Gl⁸Al⁹Sc

Entire Report Reviewed By:

A handwritten signature in blue ink that reads "Jennifer Gambill".

Jennifer Gambill
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
FEED L1745595-01	5	⁴ Cn
Qc: Quality Control Summary	6	
Radiochemistry by Method 900	6	⁵ Sr
Radiochemistry by Method 904/9320	7	
Radiochemistry by Method D3972 U-02	8	⁶ Qc
Radiochemistry by Method SM7500Ra B M	9	⁷ Gl
Gl: Glossary of Terms	10	
Al: Accreditations & Locations	11	⁸ Al
Sc: Sample Chain of Custody	12	⁹ Sc

FEED L1745595-01 Non-Potable Water

Collected by
Danny Daniels

Collected date/time
06/11/24 08:25

Received date/time
06/12/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 900	WG2304332	1	06/13/24 09:43	06/24/24 18:22	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2304628	1	06/13/24 15:13	06/28/24 18:43	DDD	Mt. Juliet, TN
Radiochemistry by Method D3972 U-02	WG2305008	1	06/17/24 10:11	06/18/24 22:24	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2304485	1	06/14/24 14:48	06/27/24 07:21	ASN	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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.



Jennifer Gambill
Project Manager



Collected date/time: 06/11/24 08:25

L1745595

Radiochemistry by Method 900

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
GROSS ALPHA	2090		948	952	1070	611	06/24/2024 18:22	WG2304332
GROSS BETA	1390		612	4.10	750	391	06/24/2024 18:22	WG2304332

Radiochemistry by Method 904/9320

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-228	332		2.18	2.30	0.755	0.395	06/28/2024 18:43	WG2304628
(T) Barium	76.8					30.0-143	06/28/2024 18:43	WG2304628
(T) Yttrium	76.8					30.0-136	06/28/2024 18:43	WG2304628

Radiochemistry by Method D3972 U-02

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
URANIUM-234	0.283	J	0.264	0.418	0.304	0.231	06/18/2024 22:24	WG2305008
URANIUM-235	-0.0205	U	0.0460	0.200	0.242	0.200	06/18/2024 22:24	WG2305008
URANIUM-238	0.409		0.294	0.448	0.242	0.200	06/18/2024 22:24	WG2305008
(T) URANIUM-232	74.6					30.0-110	06/18/2024 22:24	WG2305008

Radiochemistry by Method SM7500Ra B M

Analyte	Result	Qualifier	2 sigma CE	TPU	MDA	Lc	Analysis Date	Batch
	pCi/l		+ / -	+ / -	pCi/l	pCi/l	date / time	
RADIUM-226	99.7		3.19	14.9	0.263	0.126	06/27/2024 07:21	WG2304485
(T) Barium-133	96.0					30.0-143	06/27/2024 07:21	WG2304485

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4083927-1 06/19/24 13:10

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
GROSS ALPHA	0.0744	U	0.539	0.810	0.468
GROSS BETA	-0.870	U	1.21	1.67	0.873

L1745601-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745601-01 06/19/24 13:10 • (DUP) R4083927-3 06/19/24 13:10

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
GROSS ALPHA	0.500	2.81	4.23	2.46	-0.438	2.35	3.81	2.24	200	0.256	U	20	3
GROSS BETA	41.6	4.04	3.42	1.81	38.0	4.44	4.42	2.31	9.10	0.603		20	3

Laboratory Control Sample (LCS)

(LCS) R4083927-2 06/19/24 13:10

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
GROSS ALPHA	15.0	15.5	104	80.0-120	
GROSS BETA	40.3	40.0	99.2	80.0-120	

L1745329-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745329-07 06/19/24 13:10 • (MS) R4083927-6 06/19/24 16:47 • (MSD) R4083927-7 06/19/24 16:47

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
GROSS ALPHA	42.9	-2.05	47.8	51.0	111	119	1	70.0-130			6.46		20
GROSS BETA	115	2.43	128	126	110	107	1	70.0-130			1.97		20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320

L1745595-01

Method Blank (MB)

(MB) R4090007-1 06/28/24 18:43

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.0755	<u>U</u>	0.190	0.354	0.186
(T) Barium	82.6		82.6		
(T) Yttrium	94.6		94.6		

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1746164-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1746164-06 06/28/24 18:43 • (DUP) R4090007-5 06/28/24 18:43

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.955	0.362	0.647	0.339	1.38	0.381	0.670	0.349	36.5	0.810		20	3
(T) Barium	94.6				101	101							
(T) Yttrium	108				108	108							

Laboratory Control Sample (LCS)

(LCS) R4090007-2 06/28/24 18:43

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.05	81.0	80.0-120	
(T) Barium			96.6		
(T) Yttrium			107		

L1745337-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745337-06 06/28/24 18:43 • (MS) R4090007-3 06/28/24 18:43 • (MSD) R4090007-4 06/28/24 18:43

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	0.427	18.4	16.8	108	97.7	1	70.0-130			9.44		20
(T) Barium		89.1			89.4	107							
(T) Yttrium		96.5			102	104							

Method Blank (MB)

(MB) R4084957-1 06/18/24 22:24

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
URANIUM-234	0.0792		0.0474	0.0527	0.0343
URANIUM-235	0.0265	J	0.0264	0.0309	0.0234
URANIUM-238	0.0501		0.0335	0.0309	0.0234
(T) URANIUM-232	72.1		72.1		

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745595-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745595-01 06/18/24 22:24 • (DUP) R4084957-5 06/18/24 22:24

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
URANIUM-234	0.283	0.264	0.304	0.231	0.200	0.278	0.405	0.278	34.3	0.216	J	20	3
URANIUM-235	-0.0205	0.0460	0.242	0.200	-0.0200	0.0439	0.231	0.191	0.000	0.00755	J	20	3
URANIUM-238	0.409	0.294	0.242	0.200	0.0301	0.116	0.264	0.207	173	1.20	J	20	3
(T) URANIUM-232	74.6				77.9	77.9							

Laboratory Control Sample (LCS)

(LCS) R4084957-2 06/18/24 22:24

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
URANIUM-234	5.03	5.42	108	80.0-120	
URANIUM-238	4.90	5.65	115	80.0-120	
(T) URANIUM-232			73.2		

L1745310-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745310-02 06/20/24 23:32 • (MS) R4084957-3 06/18/24 22:24 • (MSD) R4084957-6 06/20/24 09:30

Analyte	Spike Amount Bq/l	Original Result Bq/l	MS Result Bq/l	MSD Result Bq/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
URANIUM-234	0.744	0.0333	0.746	0.800	95.7	103	1	75.0-125			7.08		20
URANIUM-238	0.725	0.0538	0.732	0.822	93.5	106	1	75.0-125			11.6		20
(T) URANIUM-232					31.1	12.8				C2			

Radiochemistry by Method SM7500Ra B M

L1745595-01

Method Blank (MB)

(MB) R4084462-1 06/18/24 22:23

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.00378	<u>U</u>	0.0438	0.0832	0.0559
(T) Barium-133	91.9		91.9		

1
Cp

2
Tc

3
Ss

4
Cn

L1745601-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745601-01 06/18/24 22:24 • (DUP) R4084462-5 06/18/24 22:23

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	0.144	0.262	0.407	0.271	-0.0689	0.262	0.520	0.334	200	0.575	<u>U</u>	20	3
(T) Barium-133	85.1				69.0	69.0							

5
Sr

6
Qc

7
Gl

Laboratory Control Sample (LCS)

(LCS) R4084462-2 06/18/24 22:23

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.64	113	75.0-125	
(T) Barium-133			90.1		

8
Al

9
Sc

L1745310-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745310-01 06/18/24 22:23 • (MS) R4084462-3 06/18/24 22:23 • (MSD) R4084462-4 06/18/24 22:23

Analyte	Spike Amount Bq/l	Original Result Bq/l	MS Result Bq/l	MSD Result Bq/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	0.740	0.00667	0.719	0.747	96.2	100	1	75.0-125			3.81		20
(T) Barium-133		97.9			93.1	99.3							

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.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
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
C2	Tracer recovery limits have been exceeded; values are outside lower control limits.
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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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	LA000356
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.

¹Cp

²Tc

³Ss

⁴Cn

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⁶Qc

⁷Gl

⁸Al

⁹Sc

[illegible]

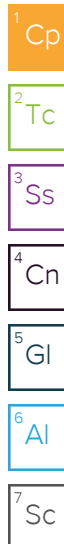
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Released to Imaging: 9/6/2024 9:52:49 AM



ANALYTICAL REPORT

June 28, 2024

**Devon Energy - Oklahoma City, OK**

Sample Delivery Group: L1745597
Samples Received: 06/12/2024
Project Number: 212C-HN-02831
Description: Desalination Pilot
Site: CCR
Report To: Paul Barbour
333 W Sheridan Avenue
Oklahoma City, OK 73102-5015

Entire Report Reviewed By:

A handwritten signature in blue ink that reads "Jennifer Gambill".

Jennifer Gambill
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Gl: Glossary of Terms	5	³ Ss
Al: Accreditations & Locations	6	⁴ Cn
Sc: Sample Chain of Custody	7	⁵ Gl
		⁶ Al
		⁷ Sc

FEED L1745597-01 GW

Collected by
Danny Daniels

Collected date/time
06/11/24 08:25

Received date/time
06/12/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG2304574	1	06/28/24 00:00	06/28/24 00:00	-	East Longmeadow, MA 01028

¹Cp

²Tc

³Ss

⁴Cn

⁵Gl

⁶Al

⁷Sc

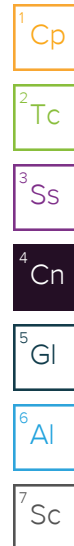
All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples 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.



Jennifer Gambill
Project Manager

Project Narrative

L1745597 -01 contains subout data that is included after the chain of custody.



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

SDG	Sample Delivery Group.
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.
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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

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

1Cp

2Tc

3Ss

4Cn

5Gl

6Al

7Sc

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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	LA000356
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.

¹Cp

²Tc

³Ss

⁴Cn

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⁶Al

⁷Sc

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June 28, 2024

Subout Team
Pace National - TN
12065 Lebanon Road
Mt. Juliet, TN 37122

Project Location: NM
Client Job Number:
Project Number: WG2304574
Laboratory Work Order Number: 24F2230

Enclosed are results of analyses for samples as received by the laboratory on June 17, 2024. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Kaitlyn".

Kaitlyn A. Feliciano
Project Manager

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Pace National - TN
12065 Lebanon Road
Mt. Juliet, TN 37122
ATTN: Subout Team

REPORT DATE: 6/28/2024

PURCHASE ORDER NUMBER: L1745597

PROJECT NUMBER: WG2304574

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 24F2230

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: NM

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
FEED	24F2230-01	Ground Water		Draft Method 1633	



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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

Draft Method 1633**Qualifications:****D-03**

Sample diluted pre-extraction due to elevated TSS pre-analysis result.

Analyte & Samples(s) Qualified:

24F2230-01[FEED]

H-01

Recommended sample holding time was exceeded, but analysis was performed before 2X the allowable holding time.

Analyte & Samples(s) Qualified:**Total Suspended Solids**

24F2230-01[FEED]

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:**13C2-4:2FTS**

24F2230-01[FEED]

1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)

24F2230-01[FEED]

D9-NEtFOSE

S106606-CCV2, S106606-CCV3

N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)

S106606-CCV2, S106606-CCV3

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington

Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: NM

Sample Description:

Work Order: 24F2230

Date Received: 6/17/2024

Field Sample #: FEED

Sampled: 6/11/2024 08:25

Sample ID: 24F2230-01

Sample Matrix: Ground Water

Sample Flags: D-03

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	40	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluoropentanoic acid (PFPeA)	ND	20	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorohexanoic acid (PFHxA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluoroheptanoic acid (PFHpA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorooctanoic acid (PFOA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorononanoic acid (PFNA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorodecanoic acid (PFDA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluoroundecanoic acid (PFUnA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorododecanoic acid (PFDoA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorotridecanoic acid (PFTrDA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorotetradecanoic acid (PFTeDA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorobutanesulfonic acid (PFBS)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluoropentanesulfonic acid (PFPeS)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorohexanesulfonic acid (PFHxS)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluoroheptanesulfonic acid (PFHpS)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorooctanesulfonic acid (PFOS)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorononanesulfonic acid (PFNS)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorodecanesulfonic acid (PFDS)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorododecanesulfonic acid (PFDoS)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	ND	40	ng/L	1	S-29	Draft Method 1633	6/26/24	6/27/24 5:01	AB
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	ND	40	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	ND	40	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluorooctanesulfonamide (PFOSA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
N-methyl perfluorooctanesulfonamide (NMeFOSA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
N-ethyl perfluorooctanesulfonamide (NEtFOSA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
N-MeFOSAA (NMeFOSAA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
N-EtFOSAA (NEtFOSAA)	ND	10	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
N-methylperfluorooctanesulfonamidoethanol (NMeFOSE)	ND	100	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	ND	100	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	40	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	40	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
9Cl-PF3ONS (F53B Minor)	ND	40	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
11Cl-PF3OUDS (F53B Major)	ND	40	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
3-Perfluoropropyl propanoic acid (FPrPA) (3:3FTCA)	ND	100	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
2H,2H,3H,3H-Perfluorooctanoic acid(FPePA)(5:3FTCA)	ND	500	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
3-Perfluoroheptyl propanoic acid (FHPrPA) (7:3FTCA)	ND	500	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	20	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND	20	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: NM

Sample Description:

Work Order: 24F2230

Date Received: 6/17/2024

Field Sample #: FEED

Sampled: 6/11/2024 08:25

Sample ID: 24F2230-01

Sample Matrix: Ground Water

Sample Flags: D-03

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND	20	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	20	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:01	AB
Surrogates	% Recovery		Recovery Limits		Flag/Qual				
13C4-PFBA	57.2		10-130					6/27/24 5:01	
13C5-PFPeA	84.8		35-150					6/27/24 5:01	
13C5-PFHxA	72.6		55-150					6/27/24 5:01	
13C4-PFHpA	72.9		55-150					6/27/24 5:01	
13C8-PFOA	70.9		60-140					6/27/24 5:01	
13C9-PFNA	67.1		55-140					6/27/24 5:01	
13C6-PFDA	64.8		50-140					6/27/24 5:01	
13C7-PFUnA	67.3		30-140					6/27/24 5:01	
13C2-PFDoA	65.0		10-150					6/27/24 5:01	
13C2-PFTeDA	57.4		10-130					6/27/24 5:01	
13C3-PFBS	79.3		55-150					6/27/24 5:01	
13C3-PFHxS	69.1		55-150					6/27/24 5:01	
13C8-PFOS	63.9		45-140					6/27/24 5:01	
13C2-4:2FTS	51.1	*	60-200		S-29			6/27/24 5:01	
13C2-6:2FTS	62.5		60-200					6/27/24 5:01	
13C2-8:2FTS	56.3		50-200					6/27/24 5:01	
13C8-PFOSA	57.5		30-130					6/27/24 5:01	
D3-NMeFOSA	57.2		15-130					6/27/24 5:01	
D5-NEtFOSA	61.8		10-130					6/27/24 5:01	
D3-NMeFOSAA	55.9		45-200					6/27/24 5:01	
D5-NEtFOSAA	59.6		10-200					6/27/24 5:01	
D7-NMeFOSE	67.0		10-150					6/27/24 5:01	
D9-NEtFOSE	71.0		10-150					6/27/24 5:01	
13C3-HFPO-DA	65.9		25-160					6/27/24 5:01	



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Project Location: NM

Sample Description:

Work Order: 24F2230

Date Received: 6/17/2024

Sampled: 6/11/2024 08:25

Field Sample #: FEED

Sample ID: 24F2230-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Suspended Solids	640	10	mg/L	1	H-01	Draft Method 1633	6/18/24	6/18/24 13:03	LL



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Sample Extraction Data

Draft Method 1633

Lab Number [Field ID]	Batch	Initial [mL]	Date
24F2230-01 [FEED]	B377572	50.0	06/18/24

Prep Method:Draft Method 1633 Analytical Method:Draft Method 1633 Leachates were extracted on 6/18/2024 per NO PREP in Batch B377572

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
24F2230-01 [FEED]	B377883	50.0	5.00	06/26/24



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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B377883 - Draft Method 1633										
Blank (B377883-BLK1)										
				Prepared: 06/26/24 Analyzed: 06/27/24						
Perfluorobutanoic acid (PFBA)	ND	3.9	ng/L							
Perfluoropentanoic acid (PFPeA)	ND	1.9	ng/L							
Perfluorohexanoic acid (PFHxA)	ND	0.97	ng/L							
Perfluoroheptanoic acid (PFHpA)	ND	0.97	ng/L							
Perfluorooctanoic acid (PFOA)	ND	0.97	ng/L							
Perfluorononanoic acid (PFNA)	ND	0.97	ng/L							
Perfluorodecanoic acid (PFDA)	ND	0.97	ng/L							
Perfluoroundecanoic acid (PFUnA)	ND	0.97	ng/L							
Perfluorododecanoic acid (PFDoA)	ND	0.97	ng/L							
Perfluorotridecanoic acid (PFTrDA)	ND	0.97	ng/L							
Perfluorotetradecanoic acid (PFTeDA)	ND	0.97	ng/L							
Perfluorobutanesulfonic acid (PFBS)	ND	0.97	ng/L							
Perfluoropentanesulfonic acid (PFPeS)	ND	0.97	ng/L							
Perfluorohexanesulfonic acid (PFHxS)	ND	0.97	ng/L							
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.97	ng/L							
Perfluorooctanesulfonic acid (PFOS)	ND	0.97	ng/L							
Perfluorononanesulfonic acid (PFNS)	ND	0.97	ng/L							
Perfluorodecanesulfonic acid (PFDS)	ND	0.97	ng/L							
Perfluorododecanesulfonic acid (PFDoS)	ND	0.97	ng/L							
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	ND	3.9	ng/L							
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	ND	3.9	ng/L							
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	ND	3.9	ng/L							
Perfluorooctanesulfonamide (PFOSA)	ND	0.97	ng/L							
N-methyl perfluorooctanesulfonamide (NMeFOSA)	ND	0.97	ng/L							
N-ethyl perfluorooctanesulfonamide (NEtFOSA)	ND	0.97	ng/L							
N-MeFOSAA (NMeFOSAA)	ND	0.97	ng/L							
N-EtFOSAA (NEtFOSAA)	ND	0.97	ng/L							
N-methylperfluorooctanesulfonamidoethanol (NMeFOSE)	ND	9.7	ng/L							
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	ND	9.7	ng/L							
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	3.9	ng/L							
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	3.9	ng/L							
9Cl-PF3ONS (F53B Minor)	ND	3.9	ng/L							
11Cl-PF3OUdS (F53B Major)	ND	3.9	ng/L							
3-Perfluoropropyl propanoic acid (FPrPA) (3:3FTCA)	ND	9.7	ng/L							
2H,2H,3H,3H-Perfluorooctanoic acid(FPePA)(5:3FTCA)	ND	49	ng/L							
3-Perfluoroheptyl propanoic acid (FHpPA) (7:3FTCA)	ND	49	ng/L							
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	1.9	ng/L							
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND	1.9	ng/L							
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND	1.9	ng/L							
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	ng/L							
Surrogate: 13C4-PFBA	82.8		ng/L	97.2		85.2	10-130			



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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B377883 - Draft Method 1633

Blank (B377883-BLK1)

Prepared: 06/26/24 Analyzed: 06/27/24

Surrogate: 13C5-PFPeA	47.7		ng/L	48.6		98.1	35-150			
Surrogate: 13C5-PFHxA	20.5		ng/L	24.3		84.3	55-150			
Surrogate: 13C4-PFHpA	19.9		ng/L	24.3		82.0	55-150			
Surrogate: 13C8-PFOA	19.8		ng/L	24.3		81.4	60-140			
Surrogate: 13C9-PFNA	9.45		ng/L	12.1		77.8	55-140			
Surrogate: 13C6-PFDA	10.1		ng/L	12.1		83.2	50-140			
Surrogate: 13C7-PFUnA	10.6		ng/L	12.1		87.2	30-140			
Surrogate: 13C2-PFDoA	9.99		ng/L	12.1		82.2	10-150			
Surrogate: 13C2-PFTeDA	9.31		ng/L	12.1		76.6	10-130			
Surrogate: 13C3-PFBS	21.6		ng/L	24.3		88.9	55-150			
Surrogate: 13C3-PFHxS	20.9		ng/L	24.3		85.8	55-150			
Surrogate: 13C8-PFOS	20.2		ng/L	24.3		83.1	45-140			
Surrogate: 13C2-4:2FTS	39.4		ng/L	48.6		81.1	60-200			
Surrogate: 13C2-6:2FTS	39.7		ng/L	48.6		81.6	60-200			
Surrogate: 13C2-8:2FTS	39.6		ng/L	48.6		81.5	50-200			
Surrogate: 13C8-PFOA	18.1		ng/L	24.3		74.6	30-130			
Surrogate: D3-NMeFOSA	17.5		ng/L	24.3		72.0	15-130			
Surrogate: D5-NEtFOSA	19.3		ng/L	24.3		79.6	10-130			
Surrogate: D3-NMeFOSAA	35.3		ng/L	48.6		72.7	45-200			
Surrogate: D5-NEtFOSAA	33.9		ng/L	48.6		69.8	10-200			
Surrogate: D7-NMeFOSE	205		ng/L	243		84.5	10-150			
Surrogate: D9-NEtFOSE	224		ng/L	243		92.4	10-150			
Surrogate: 13C3-HFPO-DA	74.3		ng/L	97.2		76.4	25-160			

LCS (B377883-BS1)

Prepared: 06/26/24 Analyzed: 06/27/24

Perfluorobutanoic acid (PFBA)	93.5	4.0	ng/L	95.1		98.3	58-148			
Perfluoropentanoic acid (PFPeA)	47.3	2.0	ng/L	47.5		99.6	54-152			
Perfluorohexanoic acid (PFHxA)	23.0	0.99	ng/L	23.8		97.0	55-152			
Perfluoroheptanoic acid (PFHpA)	22.6	0.99	ng/L	23.8		95.3	54-154			
Perfluorooctanoic acid (PFOA)	22.7	0.99	ng/L	23.8		95.4	52-161			
Perfluorononanoic acid (PFNA)	22.7	0.99	ng/L	23.8		95.6	59-149			
Perfluorodecanoic acid (PFDA)	22.8	0.99	ng/L	23.8		95.8	52-147			
Perfluoroundecanoic acid (PFUnA)	21.8	0.99	ng/L	23.8		91.9	48-159			
Perfluorododecanoic acid (PFDoA)	22.9	0.99	ng/L	23.8		96.4	64-142			
Perfluorotridecanoic acid (PFTTrDA)	20.4	0.99	ng/L	23.8		85.9	49-148			
Perfluorotetradecanoic acid (PFTeDA)	22.7	0.99	ng/L	23.8		95.5	47-161			
Perfluorobutanesulfonic acid (PFBS)	20.2	0.99	ng/L	21.1		96.0	62-144			
Perfluoropentanesulfonic acid (PFPeS)	21.9	0.99	ng/L	22.3		97.9	59-151			
Perfluorohexanesulfonic acid (PFHxS)	19.7	0.99	ng/L	21.7		90.4	57-146			
Perfluoroheptanesulfonic acid (PFHpS)	23.5	0.99	ng/L	22.6		104	55-152			
Perfluorooctanesulfonic acid (PFOS)	20.7	0.99	ng/L	22.0		93.8	58-149			
Perfluorononanesulfonic acid (PFNS)	23.3	0.99	ng/L	22.9		102	52-148			
Perfluorodecanesulfonic acid (PFDS)	22.9	0.99	ng/L	22.9		100	51-147			
Perfluorododecanesulfonic acid (PFDoS)	21.7	0.99	ng/L	23.1		94.3	36-145			
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	90.9	4.0	ng/L	89.1		102	67-146			
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	87.3	4.0	ng/L	90.3		96.7	61-151			
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	90.7	4.0	ng/L	91.5		99.1	63-152			
Perfluorooctanesulfonamide (PFOSA)	21.8	0.99	ng/L	23.8		91.6	61-148			
N-methyl perfluorooctanesulfonamide (NMeFOSA)	23.1	0.99	ng/L	23.8		97.1	63-145			



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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B377883 - Draft Method 1633

LCS (B377883-BS1)

Prepared: 06/26/24 Analyzed: 06/27/24

N-ethyl perfluorooctanesulfonamide (NEtFOSA)	23.5	0.99	ng/L	23.8		98.8	65-139			
N-MeFOSAA (NMeFOSAA)	21.1	0.99	ng/L	23.8		88.6	58-144			
N-EtFOSAA (NEtFOSAA)	19.2	0.99	ng/L	23.8		80.7	59-146			
N-methylperfluorooctanesulfonamidoethanol (NMeFOSE)	239	9.9	ng/L	238		100	71-136			
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	244	9.9	ng/L	238		103	69-137			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	100	4.0	ng/L	95.1		106	63-144			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	107	4.0	ng/L	89.7		120	68-146			
9Cl-PF3ONS (F53B Minor)	111	4.0	ng/L	89.1		125	56-156			
11Cl-PF3OUdS (F53B Major)	112	4.0	ng/L	89.7		125	46-156			
3-Perfluoropropyl propanoic acid (FPPrPA) (3:3FTCA)	210	9.9	ng/L	238		88.5	62-129			
2H,2H,3H,3H-Perfluorooctanoic acid(FPePA)(5:3FTCA)	1130	50	ng/L	1190		95.1	63-134			
3-Perfluoroheptyl propanoic acid (FHpPA) (7:3FTCA)	1060	50	ng/L	1190		89.5	50-138			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEA)	48.1	2.0	ng/L	42.3		114	56-151			
Perfluoro-3-methoxypropanoic acid (PFMPA)	43.4	2.0	ng/L	47.5		91.3	51-145			
Perfluoro-4-methoxybutanoic acid (PFMBA)	41.0	2.0	ng/L	47.5		86.2	55-148			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	63.7	2.0	ng/L	47.5		134	48-161			
Surrogate: 13C4-PFBA	74.1		ng/L	99.0		74.8	10-130			
Surrogate: 13C5-PFPeA	44.9		ng/L	49.5		90.7	35-150			
Surrogate: 13C5-PFHxA	18.3		ng/L	24.8		73.8	55-150			
Surrogate: 13C4-PFHpA	18.3		ng/L	24.8		73.8	55-150			
Surrogate: 13C8-PFOA	17.6		ng/L	24.8		71.2	60-140			
Surrogate: 13C9-PFNA	9.05		ng/L	12.4		73.1	55-140			
Surrogate: 13C6-PFDA	8.86		ng/L	12.4		71.5	50-140			
Surrogate: 13C7-PFUnA	9.31		ng/L	12.4		75.3	30-140			
Surrogate: 13C2-PFDoA	9.29		ng/L	12.4		75.1	10-150			
Surrogate: 13C2-PFTeDA	8.34		ng/L	12.4		67.4	10-130			
Surrogate: 13C3-PFBS	19.4		ng/L	24.8		78.2	55-150			
Surrogate: 13C3-PFHxS	18.5		ng/L	24.8		74.6	55-150			
Surrogate: 13C8-PFOS	17.7		ng/L	24.8		71.7	45-140			
Surrogate: 13C2-4:2FTS	35.5		ng/L	49.5		71.7	60-200			
Surrogate: 13C2-6:2FTS	35.4		ng/L	49.5		71.5	60-200			
Surrogate: 13C2-8:2FTS	37.4		ng/L	49.5		75.4	50-200			
Surrogate: 13C8-PFOSA	18.0		ng/L	24.8		72.7	30-130			
Surrogate: D3-NMeFOSA	16.5		ng/L	24.8		66.6	15-130			
Surrogate: D5-NEtFOSA	18.1		ng/L	24.8		73.2	10-130			
Surrogate: D3-NMeFOSAA	34.1		ng/L	49.5		69.0	45-200			
Surrogate: D5-NEtFOSAA	34.9		ng/L	49.5		70.5	10-200			
Surrogate: D7-NMeFOSE	193		ng/L	248		78.0	10-150			
Surrogate: D9-NEtFOSE	210		ng/L	248		84.7	10-150			
Surrogate: 13C3-HFPO-DA	63.6		ng/L	99.0		64.2	25-160			

MRL Check (B377883-MRL1)

Prepared: 06/26/24 Analyzed: 06/27/24

Perfluorobutanoic acid (PFBA)	8.40	3.9	ng/L	7.78		108	44-157			
Perfluoropentanoic acid (PFPeA)	4.08	1.9	ng/L	3.89		105	57-148			



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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B377883 - Draft Method 1633

MRL Check (B377883-MRL1)

Prepared: 06/26/24 Analyzed: 06/27/24

Perfluorohexanoic acid (PFHxA)	2.05	0.97	ng/L	1.94		105	62-149			
Perfluoroheptanoic acid (PFHpA)	1.84	0.97	ng/L	1.94		94.8	56-150			
Perfluorooctanoic acid (PFOA)	2.31	0.97	ng/L	1.94		119	57-161			
Perfluorononanoic acid (PFNA)	1.91	0.97	ng/L	1.94		98.4	53-157			
Perfluorodecanoic acid (PFDA)	2.04	0.97	ng/L	1.94		105	43-158			
Perfluoroundecanoic acid (PFUnA)	1.87	0.97	ng/L	1.94		96.0	50-155			
Perfluorododecanoic acid (PFDoA)	1.91	0.97	ng/L	1.94		98.2	60-141			
Perfluorotridecanoic acid (PFTrDA)	1.71	0.97	ng/L	1.94		88.1	52-140			
Perfluorotetradecanoic acid (PFTeDA)	1.82	0.97	ng/L	1.94		93.6	52-156			
Perfluorobutanesulfonic acid (PFBS)	1.77	0.97	ng/L	1.73		103	63-145			
Perfluoropentanesulfonic acid (PFPeS)	1.94	0.97	ng/L	1.83		106	58-144			
Perfluorohexanesulfonic acid (PFHxS)	1.90	0.97	ng/L	1.78		107	44-158			
Perfluoroheptanesulfonic acid (PFHpS)	2.03	0.97	ng/L	1.85		110	51-150			
Perfluorooctanesulfonic acid (PFOS)	1.82	0.97	ng/L	1.80		101	43-162			
Perfluorononanesulfonic acid (PFNS)	1.85	0.97	ng/L	1.87		98.8	46-151			
Perfluorodecanesulfonic acid (PFDS)	1.84	0.97	ng/L	1.88		98.3	50-144			
Perfluorododecanesulfonic acid (PFDoS)	1.71	0.97	ng/L	1.89		90.9	30-138			
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	7.22	3.9	ng/L	7.29		99.1	52-158			
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	7.59	3.9	ng/L	7.39		103	48-158			
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	7.99	3.9	ng/L	7.48		107	46-165			
Perfluorooctanesulfonamide (PFOSA)	2.00	0.97	ng/L	1.94		103	47-163			
N-methyl perfluorooctanesulfonamide (NMeFOSA)	2.04	0.97	ng/L	1.94		105	54-155			
N-ethyl perfluorooctanesulfonamide (NEtFOSA)	2.17	0.97	ng/L	1.94		112	49-156			
N-MeFOSAA (NMeFOSAA)	2.06	0.97	ng/L	1.94		106	32-160			
N-EtFOSAA (NEtFOSAA)	1.67	0.97	ng/L	1.94		86.0	51-154			
N-methylperfluorooctanesulfonamidoethanol (NMeFOSE)	20.8	9.7	ng/L	19.4		107	56-151			
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	21.1	9.7	ng/L	19.4		109	60-147			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.36	3.9	ng/L	7.78		94.6	58-154			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	7.66	3.9	ng/L	7.34		104	61-148			
9Cl-PF3ONS (F53B Minor)	7.95	3.9	ng/L	7.29		109	44-167			
11Cl-PF3OUDS (F53B Major)	7.43	3.9	ng/L	7.34		101	36-158			
3-Perfluoropropyl propanoic acid (FPrPA) (3:3FTCA)	17.2	9.7	ng/L	19.4		88.6	32-161			
2H,2H,3H,3H-Perfluorooctanoic acid (FPePA)(5:3FTCA)	84.9	49	ng/L	97.2		87.4	39-156			
3-Perfluoroheptyl propanoic acid (FHpPA) (7:3FTCA)	76.5	49	ng/L	97.2		78.7	36-149			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	3.51	1.9	ng/L	3.46		101	56-144			
Perfluoro-3-methoxypropanoic acid (PFMPA)	3.37	1.9	ng/L	3.89		86.6	48-150			
Perfluoro-4-methoxybutanoic acid (PFMBA)	3.12	1.9	ng/L	3.89		80.3	49-154			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	4.99	1.9	ng/L	3.89		128	47-160			
Surrogate: 13C4-PFBA	70.7		ng/L	97.2		72.7	10-130			
Surrogate: 13C5-PFPeA	40.7		ng/L	48.6		83.7	35-150			
Surrogate: 13C5-PFHxA	17.3		ng/L	24.3		71.2	55-150			



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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B377883 - Draft Method 1633

MRL Check (B377883-MRL1)

Prepared: 06/26/24 Analyzed: 06/27/24

Surrogate: 13C4-PFHpA	17.2		ng/L	24.3		70.7	55-150			
Surrogate: 13C8-PFOA	16.9		ng/L	24.3		69.4	60-140			
Surrogate: 13C9-PFNA	8.90		ng/L	12.1		73.2	55-140			
Surrogate: 13C6-PFDA	7.96		ng/L	12.1		65.5	50-140			
Surrogate: 13C7-PFUnA	8.14		ng/L	12.1		67.0	30-140			
Surrogate: 13C2-PFDoA	8.11		ng/L	12.1		66.7	10-150			
Surrogate: 13C2-PFTeDA	7.53		ng/L	12.1		62.0	10-130			
Surrogate: 13C3-PFBS	17.9		ng/L	24.3		73.8	55-150			
Surrogate: 13C3-PFHxS	17.2		ng/L	24.3		70.6	55-150			
Surrogate: 13C8-PFOS	16.6		ng/L	24.3		68.5	45-140			
Surrogate: 13C2-4:2FTS	33.4		ng/L	48.6		68.8	60-200			
Surrogate: 13C2-6:2FTS	32.5		ng/L	48.6		67.0	60-200			
Surrogate: 13C2-8:2FTS	33.7		ng/L	48.6		69.4	50-200			
Surrogate: 13C8-PFOSA	16.3		ng/L	24.3		66.9	30-130			
Surrogate: D3-NMeFOSA	13.6		ng/L	24.3		56.1	15-130			
Surrogate: D5-NEtFOSA	15.0		ng/L	24.3		61.8	10-130			
Surrogate: D3-NMeFOSAA	31.0		ng/L	48.6		63.7	45-200			
Surrogate: D5-NEtFOSAA	31.1		ng/L	48.6		64.1	10-200			
Surrogate: D7-NMeFOSE	176		ng/L	243		72.3	10-150			
Surrogate: D9-NEtFOSE	190		ng/L	243		78.2	10-150			
Surrogate: 13C3-HFPO-DA	62.2		ng/L	97.2		64.0	25-160			



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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B377572 - Draft Method 1633

Blank (B377572-BLK1)				Prepared & Analyzed: 06/18/24						
Total Suspended Solids	ND	5.0	mg/L							
LCS (B377572-BS1)				Prepared & Analyzed: 06/18/24						
Total Suspended Solids	151	5.0	mg/L	200		75.5	51.5-130			



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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
D-03	Sample diluted pre-extraction due to elevated TSS pre-analysis result.
H-01	Recommended sample holding time was exceeded, but analysis was performed before 2X the allowable holding time.
S-29	Extracted Internal Standard is outside of control limits.



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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
Draft Method 1633 in Water	
Total Suspended Solids	CT,MA,NH,NY,RI,NC,ME,VA
Perfluorobutanoic acid (PFBA)	NH-P,NY,PA,WV,CT
Perfluoropentanoic acid (PFPeA)	NH-P,NY,PA,WV,CT
Perfluorohexanoic acid (PFHxA)	NH-P,NY,PA,WV,CT
Perfluoroheptanoic acid (PFHpA)	NH-P,NY,PA,WV,CT
Perfluorooctanoic acid (PFOA)	NH-P,NY,PA,WV,CT
Perfluorononanoic acid (PFNA)	NH-P,NY,PA,WV,CT
Perfluorodecanoic acid (PFDA)	NH-P,NY,PA,WV,CT
Perfluoroundecanoic acid (PFUnA)	NH-P,NY,PA,WV,CT
Perfluorododecanoic acid (PFDoA)	NH-P,NY,PA,WV,CT
Perfluorotridecanoic acid (PFTrDA)	NH-P,NY,PA,WV,CT
Perfluorotetradecanoic acid (PFTeDA)	NH-P,NY,PA,WV,CT
Perfluorobutanesulfonic acid (PFBS)	NH-P,NY,PA,WV,CT
Perfluoropentanesulfonic acid (PFPeS)	NH-P,NY,PA,WV,CT
Perfluorohexanesulfonic acid (PFHxS)	NH-P,NY,PA,WV,CT
Perfluoroheptanesulfonic acid (PFHpS)	NH-P,NY,PA,WV,CT
Perfluorooctanesulfonic acid (PFOS)	NH-P,NY,PA,WV,CT
Perfluorononanesulfonic acid (PFNS)	NH-P,PA,WV,CT
Perfluorodecanesulfonic acid (PFDS)	NH-P,PA,WV,CT
Perfluorododecanesulfonic acid (PFDoS)	NH-P,PA,WV,CT
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	NH-P,PA,WV,CT
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	NH-P,NY,PA,WV,CT
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	NH-P,NY,PA,WV,CT
Perfluorooctanesulfonamide (PFOSA)	NH-P,PA,WV,CT
N-methyl perfluorooctanesulfonamide (NMeFOSA)	NH-P,PA,WV,CT
N-ethyl perfluorooctanesulfonamide (NEtFOSA)	NH-P,PA,WV,CT
N-MeFOSAA (NMeFOSAA)	NH-P,NY,PA,WV,CT
N-EtFOSAA (NEtFOSAA)	NH-P,NY,PA,WV,CT
N-methylperfluorooctanesulfonamidoethanol(NMeFOSE)	NH-P,PA,WV,CT
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	NH-P,PA,WV,CT
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,NY,PA,WV,CT
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,NY,PA,WV,CT
9Cl-PF3ONS (F53B Minor)	NH-P,NY,PA,WV,CT
11Cl-PF3OUdS (F53B Major)	NH-P,NY,PA,WV,CT
3-Perfluoropropyl propanoic acid (FPrPA)(3:3FTCA)	NH-P,PA,WV,CT
2H,2H,3H,3H-Perfluorooctanoic acid(FPePA)(5:3FTCA)	NH-P,PA,WV,CT
3-Perfluoroheptyl propanoic acid (FHpPA)(7:3FTCA)	NH-P,PA,WV,CT
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEA)	NH-P,NY,PA,WV,CT
Perfluoro-3-methoxypropanoic acid (PFMPA)	NH-P,NY,PA,WV,CT
Perfluoro-4-methoxybutanoic acid (PFMBA)	NH-P,PA,WV,CT
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P,PA,WV,CT



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Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
MA	Massachusetts DEP	M-MA100	06/30/2025
CT	Connecticut Department of Public Health	PH-0821	12/31/2024
NY	New York State Department of Health	10899 NELAP	04/1/2025
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2025
RI	Rhode Island Department of Health	LAO00373	12/30/2024
NC	North Carolina Div. of Water Quality	652	12/31/2024
ME	State of Maine	MA00100	06/9/2025
VA	Commonwealth of Virginia	460217	12/14/2024
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2024
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2025
WV	West Virginia DEP Division of Water and Waste Management	419	08/31/2024

24F2230 HF

Sub-Contract Chain of Custody

Batch Date/Time: 06/13/24 13:38
Sub-Contract Lab: PACEELMA
Address: 39 Spruce St
City/State: East Longmeadow, MA
01028
Contact:
elonprojectmanagers@pacelabs.com
Owner Lab: PACEMTJL
Address: 12065 Lebanon Rd.
City/State: Mt. Juliet, TN 37122
Phone: (615) 773-9756
Fax: (615) 758-5859

WO: WG2304574
Email: MTJLSuboutTeam@pacelabs.com
Results Due Date: 07/11/24
ESC Purchase Order #: L1745597
Send Reports to: James C Huckaba



12065 Lebanon Rd.
Mt. Juliet, TN 37122
Phone: (615) 773-9756
Fax: (615) 758-5859

Sample ID Container ID	Matrix	State	Collect Date	Description	Sample Number Lab Use Only	Sample Comments Lab Use Only
FEED	GW	NM	06/11/24 08:25	SUBPFASI633	2. L1745597-01	

Relinquished by: [Signature] Date 6-13-24
Received by: [Signature] 4-8°C Date 6-15-24 1020
Relinquished by: _____ Date _____
Received by: _____ Date _____



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DELIVERED

Saturday

6/15/24 at 10:20 AM

Signed for by: A.MULINARE

↓ Obtain proof of delivery

DELIVERY STATUS

Delivered ✓

🔍 Report missing package

TRACKING ID

746408488995 ✎ ☆

FROM

MOUNT JULIET, TN US

Label Created

6/14/24 3:37 PM

NASHVILLE, TN

6/14/24 3:30 PM

ON THE WAY

WINDSOR LOCKS, CT

6/15/24 8:19 AM

OUT FOR DELIVERY

WINDSOR LOCKS, CT

6/15/24 8:23 AM

DELIVERED

East Longmeadow, MA US

Delivered

6/15/24 at 10:20 AM



[View travel history](#)

Want updates on this shipment? Enter your email and we will do the rest!

Your email

✖ Your email is a required field.

SUBMIT

	DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist
	Effective Date: 06/11/2024

Log In Back-Sheet

Login Sample Receipt Checklist – (Rejection Criteria Listing
– Using Acceptance Policy) Any False statement will be
brought to the attention of the Client – True or False

Client Roll TN
 Project NA
 MCP/RCP Required MA
 Deliverable Package Requirement MA
 Location MA
 PWSID# (When Applicable) N/A
 Arrival Method:
 Courier ☐ Fed Ex ☒ Walk In ☐ Other ☐
 Received By / Date / Time AM 6/15/24 1020
 Back-Sheet By / Date / Time LA 6/17/24 1246
 Temperature Method gun # 6
 WV samples: Yes (see note*) / ☒ No (follow normal procedure)
 Temp ☒ < 6° C Actual Temperature 48
 Rush Samples: Yes / ☒ No Notify
 Short Hold: Yes ☒ No Notify

	True	False
Received on Ice	☒	☐
Received in Cooler	☒	☐
Custody Seal: DATE TIME	☒	☒
COC Relinquished	☒	☐
COC/Samples Labels Agree	☒	☐
All Samples in Good Condition	☒	☐
Samples Received within Holding Time	☒	☐
Is there enough Volume	☒ (12)	☒
Proper Media/Container Used	☒	☐
Splitting Samples Required	☐	☒
MS/MSD	☐	☒
Trip Blanks	☐	☒
Lab to Filters	☒	☒
COC Legible	☒	☐
COC Included: (Check all included)		
Client ☒	Analysis ☒	Sampler Name ☒
Project ☒	IDs ☒	Collection Date/Time ☒
All Samples Proper pH: ☒ (N/A) ☐		

Notes regarding Samples/COC outside of SOP:

1. m. 20 L Volume

Additional Container Notes

*Note: West Virginia requires all samples to have their
temperature taken. Note any outliers.





ANALYTICAL REPORT

June 28, 2024

- ¹Cp
- ²Tc
- ³Ss
- ⁴Cn
- ⁵Sr
- ⁶Qc
- ⁷Gl
- ⁸Al
- ⁹Sc

Devon Energy - Oklahoma City, OK

Sample Delivery Group: L1745599
Samples Received: 06/12/2024
Project Number: 212L-HN-02831
Description: Desalination Pilot
Site: CCR
Report To: Paul Barbour
333 W Sheridan Avenue
Oklahoma City, OK 73102-5015

Entire Report Reviewed By:

Jennifer Gambill
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

Cp: Cover Page	1	¹ Cp
Tc: Table of Contents	2	
Ss: Sample Summary	3	² Tc
Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
POST CARBON FILTER L1745599-01	5	
Qc: Quality Control Summary	7	⁴ Cn
Wet Chemistry by Method 120.1	7	⁵ Sr
Wet Chemistry by Method 300.0	8	
Wet Chemistry by Method 4500Cl G-2011	10	⁶ Qc
Wet Chemistry by Method 4500H+ B-2011	11	
Wet Chemistry by Method 4500P E-2011	12	⁷ Gl
Metals (ICP) by Method 200.7	13	⁸ Al
Volatile Organic Compounds (GC/MS) by Method 624.1	14	
Gl: Glossary of Terms	16	⁹ Sc
Al: Accreditations & Locations	17	
Sc: Sample Chain of Custody	18	

POST CARBON FILTER L1745599-01 WW

Collected by
Danny Daniels

Collected date/time
06/11/24 08:00

Received date/time
06/12/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 120.1	WG2306106	1	06/16/24 13:45	06/16/24 13:45	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2310885	1	06/27/24 11:35	06/27/24 11:35	GEB	Mt. Juliet, TN
Wet Chemistry by Method 4500CI G-2011	WG2304244	1	06/17/24 12:01	06/17/24 12:01	CAH	Mt. Juliet, TN
Wet Chemistry by Method 4500H+ B-2011	WG2304074	1	06/14/24 21:10	06/14/24 21:10	KRB	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2303606	10	06/12/24 12:34	06/12/24 12:34	SJA	Mt. Juliet, TN
Metals (ICP) by Method 200.7	WG2309867	1	06/23/24 06:43	06/23/24 18:46	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 624.1	WG2307291	1	06/18/24 17:09	06/18/24 17:09	GLN	Mt. Juliet, TN

1

Cp

2

Tc

3

Ss

4

Cn

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Sr

6

Qc

7

Gl

8

Al

9

Sc

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.



Jennifer Gambill
Project Manager

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Wet Chemistry by Method 120.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	umhos/cm		umhos/cm		date / time	
Specific Conductance	440		10.0	1	06/16/2024 13:45	WG2306106

Sample Narrative:
L1745599-01 WG2306106: at 25C

Wet Chemistry by Method 300.0

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chloride	2.31		1.00	1	06/27/2024 11:35	WG2310885

Wet Chemistry by Method 4500Cl G-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Chlorine,residual	ND	T8	0.100	1	06/17/2024 12:01	WG2304244

Wet Chemistry by Method 4500H+ B-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	8.72	T8	1	06/14/2024 21:10	WG2304074

Sample Narrative:
L1745599-01 WG2304074: 8.72 at 22.5C

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Phosphate,Ortho	6.01		0.300	10	06/12/2024 12:34	WG2303606

Metals (ICP) by Method 200.7

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Lead	ND		0.00500	1	06/23/2024 18:46	WG2309867
Phosphorus	5.99		0.100	1	06/23/2024 18:46	WG2309867

Volatile Organic Compounds (GC/MS) by Method 624.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	ND		0.00100	1	06/18/2024 17:09	WG2307291
Bromodichloromethane	ND		0.00100	1	06/18/2024 17:09	WG2307291
Bromoform	ND		0.00100	1	06/18/2024 17:09	WG2307291
Bromomethane	ND	J3	0.00500	1	06/18/2024 17:09	WG2307291
Carbon tetrachloride	ND		0.00100	1	06/18/2024 17:09	WG2307291
Chlorobenzene	ND		0.00100	1	06/18/2024 17:09	WG2307291
Chlorodibromomethane	ND		0.00100	1	06/18/2024 17:09	WG2307291
Chloroethane	ND		0.00500	1	06/18/2024 17:09	WG2307291
2-Chloroethyl vinyl ether	ND		0.0500	1	06/18/2024 17:09	WG2307291
Chloroform	ND		0.00500	1	06/18/2024 17:09	WG2307291
Chloromethane	ND		0.00250	1	06/18/2024 17:09	WG2307291
1,2-Dichlorobenzene	ND		0.00100	1	06/18/2024 17:09	WG2307291
1,3-Dichlorobenzene	ND		0.00100	1	06/18/2024 17:09	WG2307291
1,4-Dichlorobenzene	ND		0.00100	1	06/18/2024 17:09	WG2307291
Dichlorodifluoromethane	ND		0.00500	1	06/18/2024 17:09	WG2307291
1,1-Dichloroethane	ND		0.00100	1	06/18/2024 17:09	WG2307291

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Collected date/time: 06/11/24 08:00

L1745599

Volatile Organic Compounds (GC/MS) by Method 624.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
1,2-Dichloroethane	ND		0.00100	1	06/18/2024 17:09	WG2307291
1,1-Dichloroethene	ND		0.00100	1	06/18/2024 17:09	WG2307291
trans-1,2-Dichloroethene	ND		0.00100	1	06/18/2024 17:09	WG2307291
1,2-Dichloropropane	ND		0.00100	1	06/18/2024 17:09	WG2307291
cis-1,3-Dichloropropene	ND		0.00100	1	06/18/2024 17:09	WG2307291
trans-1,3-Dichloropropene	ND		0.00100	1	06/18/2024 17:09	WG2307291
Ethylbenzene	ND		0.00100	1	06/18/2024 17:09	WG2307291
Methylene Chloride	ND		0.00500	1	06/18/2024 17:09	WG2307291
Methyl tert-butyl ether	ND		0.00100	1	06/18/2024 17:09	WG2307291
Naphthalene	ND		0.00500	1	06/18/2024 17:09	WG2307291
1,1,2,2-Tetrachloroethane	ND		0.00100	1	06/18/2024 17:09	WG2307291
Tetrachloroethene	ND		0.00100	1	06/18/2024 17:09	WG2307291
Toluene	ND		0.00100	1	06/18/2024 17:09	WG2307291
1,1,1-Trichloroethane	ND		0.00100	1	06/18/2024 17:09	WG2307291
1,1,2-Trichloroethane	ND		0.00100	1	06/18/2024 17:09	WG2307291
Trichloroethene	ND		0.00100	1	06/18/2024 17:09	WG2307291
Trichlorofluoromethane	ND		0.00500	1	06/18/2024 17:09	WG2307291
Vinyl chloride	ND		0.00100	1	06/18/2024 17:09	WG2307291
o-Xylene	ND		0.00100	1	06/18/2024 17:09	WG2307291
m&p-Xylene	ND		0.00200	1	06/18/2024 17:09	WG2307291
Xylenes, Total	ND		0.00300	1	06/18/2024 17:09	WG2307291
(S) Toluene-d8	97.8		80.0-120		06/18/2024 17:09	WG2307291
(S) 4-Bromofluorobenzene	96.1		80.0-120		06/18/2024 17:09	WG2307291
(S) 1,2-Dichloroethane-d4	112		70.0-130		06/18/2024 17:09	WG2307291

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4082349-1 06/16/24 13:45

Analyte	MB Result umhos/cm	<u>MB Qualifier</u>	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:
BLANK: at 25C

L1745599-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745599-01 06/16/24 13:45 • (DUP) R4082349-3 06/16/24 13:45

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Specific Conductance	440	440	1	0.000		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1747273-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747273-01 06/16/24 13:45 • (DUP) R4082349-4 06/16/24 13:45

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Specific Conductance	1970	1970	1	0.355		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R4082349-2 06/16/24 13:45

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Specific Conductance	733	737	101	85.0-115	

Sample Narrative:
LCS: at 25C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R4087624-1 06/27/24 08:23

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Chloride	U		0.379	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745609-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745609-01 06/27/24 11:44 • (DUP) R4087624-3 06/27/24 11:54

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Chloride	70.5	71.3	1	1.07		15

L1745609-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1745609-02 06/27/24 12:22 • (DUP) R4087624-6 06/27/24 12:32

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Chloride	95.0	94.8	1	0.265		15

Laboratory Control Sample (LCS)

(LCS) R4087624-2 06/27/24 08:32

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Chloride	40.0	40.6	101	90.0-110	

L1745609-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745609-01 06/27/24 11:44 • (MS) R4087624-4 06/27/24 12:03 • (MSD) R4087624-5 06/27/24 12:13

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Chloride	40.0	70.5	99.2	99.1	71.7	71.4	1	80.0-120	J6	J6	0.124	15

Sample Narrative:

- MS: Spike failure due to matrix interference
- MSD: Spike failure due to matrix interference

Wet Chemistry by Method 300.0 [L1745599-01](#)

L1745609-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1745609-02 06/27/24 12:22 • (MS) R4087624-7 06/27/24 12:41

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	40.0	95.0	118	57.4	1	80.0-120	<u>J6</u>

Sample Narrative:
MS: Spike failure due to matrix interference

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4082638-1 06/17/24 12:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chlorine,residual	U		0.0260	0.100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1746000-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1746000-01 06/17/24 12:02 • (DUP) R4082638-3 06/17/24 12:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chlorine,residual	1.67	1.65	1	1.51		20

Laboratory Control Sample (LCS)

(LCS) R4082638-2 06/17/24 12:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chlorine,residual	1.00	0.935	93.5	85.0-115	

⁷Gl

⁸Al

⁹Sc

L1745599-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745599-01 06/14/24 21:10 • (DUP) R4082028-2 06/14/24 21:10

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.72	8.71	1	0.115		1

Sample Narrative:
OS: 8.72 at 22.5C
DUP: 8.71 at 22.6C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1746000-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1746000-02 06/14/24 21:10 • (DUP) R4082028-3 06/14/24 21:10

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.20	8.20	1	0.000		1

Sample Narrative:
OS: 8.2 at 21.8C
DUP: 8.2 at 21.8C

Laboratory Control Sample (LCS)

(LCS) R4082028-1 06/14/24 21:10

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:
LCS: 10.01 at 22.3C

Method Blank (MB)

(MB) R4080639-1 06/12/24 12:22

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Phosphate,Ortho	U		0.0140	0.0300

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745600-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745600-01 06/12/24 12:34 • (DUP) R4080639-5 06/12/24 12:35

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP RPD Limits
Phosphate,Ortho	0.947	0.946	1	0.106	20

Laboratory Control Sample (LCS)

(LCS) R4080639-2 06/12/24 12:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Phosphate,Ortho	0.245	0.274	112	85.0-115	

L1745594-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745594-01 06/12/24 12:22 • (MS) R4080639-3 06/12/24 12:23 • (MSD) R4080639-4 06/12/24 12:23

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 %
Phosphate,Ortho	0.500	ND	0.180	0.196	30.6	33.8	1	80.0-120	J6	J6	8.51	20

Sample Narrative:

- MS: spike failed due to sample matrix
- MSD: spike failed due to sample matrix

Metals (ICP) by Method 200.7 [L1745599-01](#)

Method Blank (MB)

(MB) R4085429-1 06/23/24 17:43

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Lead	U		0.00227	0.00500
Phosphorus	U		0.00760	0.100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4085429-2 06/23/24 17:45

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lead	1.00	1.06	106	85.0-115	
Phosphorus	1.00	1.05	105	85.0-115	

L1745461-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745461-01 06/23/24 17:47 • (MS) R4085429-4 06/23/24 17:51 • (MSD) R4085429-5 06/23/24 17:53

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 %
Lead	1.00	ND	1.07	1.04	107	104	1	70.0-130			2.42	20
Phosphorus	1.00	ND	1.12	1.08	112	108	1	70.0-130			4.05	20

L1745474-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745474-03 06/23/24 17:54 • (MS) R4085429-6 06/23/24 17:56 • (MSD) R4085429-7 06/23/24 17:58

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 %
Lead	1.00	ND	1.06	1.08	106	108	1	70.0-130			1.66	20
Phosphorus	1.00	0.375	1.47	1.53	110	115	1	70.0-130			3.51	20

Volatile Organic Compounds (GC/MS) by Method 624.1

L1745599-01

Method Blank (MB)

(MB) R4083389-3 06/18/24 15:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
Bromodichloromethane	U		0.000136	0.00100
Bromoform	U		0.000129	0.00100
Bromomethane	U		0.000605	0.00500
Carbon tetrachloride	U		0.000128	0.00100
Chlorobenzene	U		0.000116	0.00100
Chlorodibromomethane	U		0.000140	0.00100
Chloroethane	U		0.000192	0.00500
2-Chloroethyl vinyl ether	U		0.000575	0.0500
Chloroform	U		0.000111	0.00500
Chloromethane	U		0.000960	0.00250
1,2-Dichlorobenzene	U		0.000107	0.00100
1,3-Dichlorobenzene	U		0.000110	0.00100
1,4-Dichlorobenzene	U		0.000120	0.00100
Dichlorodifluoromethane	U		0.000374	0.00500
1,1-Dichloroethane	U		0.000100	0.00100
1,2-Dichloroethane	U		0.0000819	0.00100
1,1-Dichloroethene	U		0.000188	0.00100
trans-1,2-Dichloroethene	U		0.000149	0.00100
1,2-Dichloropropane	U		0.000149	0.00100
cis-1,3-Dichloropropene	U		0.000111	0.00100
trans-1,3-Dichloropropene	U		0.000118	0.00100
Ethylbenzene	U		0.000137	0.00100
Methylene Chloride	U		0.000430	0.00500
Methyl tert-butyl ether	U		0.000101	0.00100
Naphthalene	U		0.00100	0.00500
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100
Tetrachloroethene	U		0.000300	0.00100
Toluene	U		0.000278	0.00100
1,1,1-Trichloroethane	U		0.000149	0.00100
1,1,2-Trichloroethane	U		0.000158	0.00100
Trichloroethene	U		0.000190	0.00100
Trichlorofluoromethane	U		0.000160	0.00500
Vinyl chloride	U		0.000234	0.00100
o-Xylene	U		0.000174	0.00100
m&p-Xylene	U		0.000430	0.00200
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	98.1			80.0-120
(S) 4-Bromofluorobenzene	95.4			80.0-120
(S) 1,2-Dichloroethane-d4	113			70.0-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R4083389-1 06/18/24 13:52 • (LCSD) R4083389-2 06/18/24 14:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.00500	0.00464	0.00479	92.8	95.8	65.0-135			3.18	20
Bromodichloromethane	0.00500	0.00504	0.00492	101	98.4	65.0-135			2.41	20
Bromoform	0.00500	0.00444	0.00478	88.8	95.6	70.0-130			7.38	20
Bromomethane	0.00500	0.00460	0.00363	92.0	72.6	15.0-185		J3	23.6	20
Carbon tetrachloride	0.00500	0.00562	0.00590	112	118	70.0-130			4.86	20
Chlorobenzene	0.00500	0.00442	0.00461	88.4	92.2	65.0-135			4.21	20
Chlorodibromomethane	0.00500	0.00471	0.00486	94.2	97.2	70.0-135			3.13	20
Chloroethane	0.00500	0.00451	0.00415	90.2	83.0	40.0-160			8.31	20
2-Chloroethyl vinyl ether	0.0250	0.0241	0.0245	96.4	98.0	0.100-225			1.65	20
Chloroform	0.00500	0.00483	0.00509	96.6	102	70.0-135			5.24	20
Chloromethane	0.00500	0.00597	0.00612	119	122	0.100-205			2.48	20
1,2-Dichlorobenzene	0.00500	0.00431	0.00458	86.2	91.6	65.0-135			6.07	20
1,3-Dichlorobenzene	0.00500	0.00449	0.00465	89.8	93.0	70.0-130			3.50	20
1,4-Dichlorobenzene	0.00500	0.00453	0.00463	90.6	92.6	65.0-135			2.18	20
Dichlorodifluoromethane	0.00500	0.00572	0.00554	114	111	49.0-155			3.20	20
1,1-Dichloroethane	0.00500	0.00492	0.00519	98.4	104	70.0-130			5.34	20
1,2-Dichloroethane	0.00500	0.00549	0.00578	110	116	70.0-130			5.15	20
1,1-Dichloroethene	0.00500	0.00411	0.00434	82.2	86.8	50.0-150			5.44	20
trans-1,2-Dichloroethene	0.00500	0.00447	0.00466	89.4	93.2	70.0-130			4.16	20
1,2-Dichloropropane	0.00500	0.00504	0.00521	101	104	35.0-165			3.32	20
cis-1,3-Dichloropropene	0.00500	0.00474	0.00485	94.8	97.0	25.0-175			2.29	20
trans-1,3-Dichloropropene	0.00500	0.00465	0.00481	93.0	96.2	50.0-150			3.38	20
Ethylbenzene	0.00500	0.00440	0.00462	88.0	92.4	60.0-140			4.88	20
Methylene Chloride	0.00500	0.00433	0.00474	86.6	94.8	60.0-140			9.04	20
Methyl tert-butyl ether	0.00500	0.00493	0.00514	98.6	103	64.0-123			4.17	20
Naphthalene	0.00500	0.00355	0.00425	71.0	85.0	62.0-128			17.9	20
1,1,2,2-Tetrachloroethane	0.00500	0.00505	0.00508	101	102	60.0-140			0.592	20
Tetrachloroethene	0.00500	0.00471	0.00472	94.2	94.4	70.0-130			0.212	20
Toluene	0.00500	0.00459	0.00474	91.8	94.8	70.0-130			3.22	20
1,1,1-Trichloroethane	0.00500	0.00542	0.00545	108	109	70.0-130			0.552	20
1,1,2-Trichloroethane	0.00500	0.00453	0.00488	90.6	97.6	70.0-130			7.44	20
Trichloroethene	0.00500	0.00467	0.00488	93.4	97.6	65.0-135			4.40	20
Trichlorofluoromethane	0.00500	0.00416	0.00391	83.2	78.2	50.0-150			6.20	20
Vinyl chloride	0.00500	0.00548	0.00523	110	105	5.00-195			4.67	20
o-Xylene	0.00500	0.00442	0.00449	88.4	89.8	78.0-120			1.57	20
m&p-Xylene	0.0100	0.00875	0.00919	87.5	91.9	77.0-120			4.91	20
Xylenes, Total	0.0150	0.0132	0.0137	88.0	91.3	77.0-120			3.72	20
(S) Toluene-d8				101	99.9	80.0-120				
(S) 4-Bromofluorobenzene				94.9	97.1	80.0-120				
(S) 1,2-Dichloroethane-d4				110	108	70.0-130				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
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
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	LA000356
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.

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Released to Imaging: 9/6/2024 9:52:49 AM



ANALYTICAL REPORT

August 21, 2024

Devon Energy - Oklahoma City, OK

Sample Delivery Group: L1745600
Samples Received: 06/12/2024
Project Number: 212C-HN-02831
Description: Desalination Pilot
Site: CCR
Report To: Paul Barbour
333 W Sheridan Avenue
Oklahoma City, OK 73102-5015

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Entire Report Reviewed By:

A handwritten signature in blue ink that reads "Jennifer Gambill".

Jennifer Gambill
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

POST ELECTROLYSIS L1745600-01 WW

Collected by
Danny Daniels

Collected date/time
06/11/24 10:45

Received date/time
06/12/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2319402	1	07/09/24 15:24	07/09/24 15:24	BMD	Mt. Juliet, TN
Calculated Results	WG2319627	1	07/11/24 18:36	07/11/24 18:36	ZSA	Mt. Juliet, TN
Gravimetric Analysis by Method 2540 C-2011	WG2305071	1	06/14/24 17:05	06/15/24 15:40	AEC	Mt. Juliet, TN
Gravimetric Analysis by Method 2540 D-2015	WG2304801	1	06/13/24 17:42	06/17/24 17:20	DLS	Mt. Juliet, TN
Wet Chemistry by Method 120.1	WG2306108	1	06/16/24 14:16	06/16/24 14:16	BJM	Mt. Juliet, TN
Wet Chemistry by Method 130.1	WG2303609	1	06/14/24 11:30	06/14/24 21:59	CAT	Mt. Juliet, TN
Wet Chemistry by Method 1664A	WG2319684	1	07/09/24 13:41	07/09/24 20:18	DAL	Mt. Juliet, TN
Wet Chemistry by Method 2120 B-2011	WG2304210	1	06/13/24 08:50	06/13/24 08:50	ARV	Mt. Juliet, TN
Wet Chemistry by Method 2130 B-2011	WG2303800	1	06/12/24 15:32	06/12/24 15:32	ARV	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG2304311	1	06/13/24 11:14	06/13/24 11:14	KA	Mt. Juliet, TN
Wet Chemistry by Method 2580	WG2304774	1	06/19/24 10:51	06/19/24 10:51	BJM	Mt. Juliet, TN
Wet Chemistry by Method 300.0	WG2303460	1	06/13/24 03:36	06/13/24 03:36	JDG	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG2319402	10	07/09/24 15:24	07/09/24 15:24	BMD	Mt. Juliet, TN
Wet Chemistry by Method 3500Cr B-2011	WG2303796	1	06/12/24 15:15	06/12/24 15:15	SJA	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2317744	1	07/08/24 10:11	07/09/24 08:55	KMB	Mt. Juliet, TN
Wet Chemistry by Method 351.2	WG2320159	4	07/10/24 10:22	07/11/24 14:06	JAS	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG2307824	1	06/19/24 19:54	06/19/24 19:54	JAS	Mt. Juliet, TN
Wet Chemistry by Method 410.4	WG2312260	1	06/26/24 10:00	06/26/24 15:22	ARV	Mt. Juliet, TN
Wet Chemistry by Method 4500CI G-2011	WG2304244	1	06/17/24 12:02	06/17/24 12:02	CAH	Mt. Juliet, TN
Wet Chemistry by Method 4500CN E-2016	WG2307543	1	06/19/24 08:18	06/19/24 14:40	JAS	Mt. Juliet, TN
Wet Chemistry by Method 4500H+ B-2011	WG2305923	1	06/15/24 22:10	06/15/24 22:10	KRB	Mt. Juliet, TN
Wet Chemistry by Method 4500O G-2016	WG2311521	1	06/25/24 10:18	06/25/24 10:18	BGE	Mt. Juliet, TN
Wet Chemistry by Method 4500P E-2011	WG2303606	1	06/12/24 12:34	06/12/24 12:34	SJA	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG2306080	1	06/17/24 09:29	06/17/24 09:29	SDE	Mt. Juliet, TN
Wet Chemistry by Method 4500SO3 B-2011	WG2301827	1	06/13/24 14:00	06/13/24 14:00	SJA	Mt. Juliet, TN
Wet Chemistry by Method 5210 B-2016	WG2305728	1	06/15/24 12:41	06/20/24 09:42	HMH	Mt. Juliet, TN
Wet Chemistry by Method 5210 B-2016	WG2305912	1	06/15/24 16:24	06/20/24 11:55	HMH	Mt. Juliet, TN
Wet Chemistry by Method 5310 B-2014	WG2308789	1	06/20/24 13:04	06/20/24 16:49	SJF	Mt. Juliet, TN
Wet Chemistry by Method 5310 B-2014	WG2318648	20	07/09/24 21:32	07/09/24 21:32	SJF	Mt. Juliet, TN
Wet Chemistry by Method 5540 C-2011	WG2303692	1	06/12/24 14:47	06/12/24 17:32	ARV	Mt. Juliet, TN
Mercury by Method 245.1	WG2303814	1	06/14/24 22:48	06/16/24 19:23	AKB	Mt. Juliet, TN
Metals (ICP) by Method 200.7	WG2319627	1	07/11/24 08:23	07/11/24 18:36	ZSA	Mt. Juliet, TN
Metals (ICPMS) by Method 200.8	WG2324349	1	07/24/24 08:19	08/15/24 17:33	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 624.1	WG2310431	1	06/23/24 02:25	06/23/24 02:25	GLN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 624.1	WG2310676	1	06/24/24 01:15	06/24/24 01:15	GLN	Mt. Juliet, TN
TPH by TCEQ Method 1005	WG2311292	1	06/25/24 10:48	06/25/24 19:03	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 625.1	WG2306373	1	06/18/24 17:35	06/19/24 03:49	DSH	Mt. Juliet, TN
Subcontracted Analyses	WG2304577	1	07/01/24 00:00	07/01/24 00:00	ANF	Indianapolis, IN 46268
Subcontracted Analyses	WG2304584	1	07/02/24 00:00	07/02/24 00:00	ANF	Beaver, WV 25813
Subcontracted Analyses	WG2304593	1	07/08/24 00:00	07/08/24 00:00	-	Green Bay, WI 54302

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

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.

Jennifer Gambill

Jennifer Gambill
Project Manager

Project Narrative

L1745600 -01 contains subout data that is included after the chain of custody.

Sample Delivery Group (SDG) Narrative

The following analysis were performed from an unpreserved, insufficiently or inadequately preserved sample.

Lab Sample ID	Project Sample ID	Method
L1745600-01	POST ELECTROLYSIS	1664A, 4500O G-2016

The Laboratory is not accredited for specific analytes on the associated Sample/Method. These analytes are flagged in the Sample Results section of the report with an asterisk (*).

Lab Sample ID	Project Sample ID	Method
L1745600-01	POST ELECTROLYSIS	300.0

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Calculated Results

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	ND		0.0100	1	07/11/2024 18:36	WG2319627
Organic Nitrogen	ND		0.250	1	07/09/2024 15:24	WG2319402

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
6	Qc
7	Gl
8	Al
9	Sc

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	522		20.0	1	06/15/2024 15:40	WG2305071

Gravimetric Analysis by Method 2540 D-2015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Suspended Solids	ND		5.00	1	06/17/2024 17:20	WG2304801

Wet Chemistry by Method 120.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	1370		10.0	1	06/16/2024 14:16	WG2306108

Sample Narrative:
L1745600-01 WG2306108: at 25C

Wet Chemistry by Method 130.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Hardness (colorimetric) as CaCO3	106		30.0	1	06/14/2024 21:59	WG2303609

Wet Chemistry by Method 1664A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Oil & Grease (Hexane Extr)	ND		5.56	1	07/09/2024 20:18	WG2319684

Wet Chemistry by Method 2120 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Color, Apparent	1.00		1.00	1	06/13/2024 08:50	WG2304210

Sample Narrative:
L1745600-01 WG2304210: 7.61

Wet Chemistry by Method 2130 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Turbidity	0.474		0.400	1	06/12/2024 15:32	WG2303800

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Alkalinity	275		20.0	1	06/13/2024 11:14	WG2304311
Alkalinity, Bicarbonate	275		20.0	1	06/13/2024 11:14	WG2304311
Alkalinity, Carbonate	ND		20.0	1	06/13/2024 11:14	WG2304311

Sample Narrative:

Wet Chemistry by Method 2320 B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
L1745600-01 WG2304311: Endpoint pH 4.5 headspace						

Wet Chemistry by Method 2580

Analyte	Result mV	Qualifier	Dilution	Analysis date / time	Batch
ORP	159	T8	1	06/19/2024 10:51	WG2304774

Wet Chemistry by Method 300.0

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
*Bromide	2.19		1.00	1	06/13/2024 03:36	WG2303460
Chloride	192		1.00	1	06/13/2024 03:36	WG2303460
Fluoride	ND		0.150	1	06/13/2024 03:36	WG2303460
Nitrate as (N)	1.03		0.100	1	06/13/2024 03:36	WG2303460
Nitrite as (N)	ND		0.100	1	06/13/2024 03:36	WG2303460
Sulfate	56.4		5.00	1	06/13/2024 03:36	WG2303460

Wet Chemistry by Method 350.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Ammonia Nitrogen	39.8		2.50	10	07/09/2024 15:24	WG2319402

Wet Chemistry by Method 3500Cr B-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	ND	Q	0.0100	1	06/12/2024 15:15	WG2303796

Wet Chemistry by Method 351.2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Kjeldahl Nitrogen, TKN	27.9	E J4	0.250	1	07/09/2024 08:55	WG2317744
Kjeldahl Nitrogen, TKN	44.8	Q	1.00	4	07/11/2024 14:06	WG2320159

Sample Narrative:
L1745600-01 WG2317744: Instrument QC failure

Wet Chemistry by Method 353.2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	1.14		0.100	1	06/19/2024 19:54	WG2307824

Wet Chemistry by Method 410.4

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
COD	30.3		20.0	1	06/26/2024 15:22	WG2312260

Wet Chemistry by Method 4500Cl G-2011

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chlorine,residual	ND	T8	0.100	1	06/17/2024 12:02	WG2304244

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Collected date/time: 06/11/24 10:45

L1745600

Wet Chemistry by Method 4500CN E-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Cyanide	ND		0.00500	1	06/19/2024 14:40	WG2307543

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Wet Chemistry by Method 4500H+ B-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.99	T8	1	06/15/2024 22:10	WG2305923

Sample Narrative:

L1745600-01 WG2305923: 7.99 at 19.5C

Wet Chemistry by Method 4500O G-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Oxygen	11.5 at 10.4c	T8	3	1	06/25/2024 10:18	WG2311521

Wet Chemistry by Method 4500P E-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Phosphate,Ortho	0.947		0.0300	1	06/12/2024 12:34	WG2303606

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfide	ND		0.0500	1	06/17/2024 09:29	WG2306080

Wet Chemistry by Method 4500SO3 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfite	ND	T8	3.00	1	06/13/2024 14:00	WG2301827

Wet Chemistry by Method 5210 B-2016

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
BOD	13.7	B1 Q	3.33	1	06/20/2024 09:42	WG2305728
CBOD	13.8	B1 Q	3.33	1	06/20/2024 11:55	WG2305912

Wet Chemistry by Method 5310 B-2014

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
DOC	7.59	Q	1.00	1	06/20/2024 16:49	WG2308789

Wet Chemistry by Method 5310 B-2014

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TOC (Total Organic Carbon)	ND		20.0	20	07/09/2024 21:32	WG2318648

Wet Chemistry by Method 5540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
MBAS	ND		0.100	1	06/12/2024 17:32	WG2303692

Collected date/time: 06/11/24 10:45

Mercury by Method 245.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Mercury	ND		0.000200	1	06/16/2024 19:23	WG2303814

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Metals (ICP) by Method 200.7

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Aluminum	ND		0.200	1	07/11/2024 18:36	WG2319627
Antimony	ND		0.0100	1	07/11/2024 18:36	WG2319627
Arsenic	ND		0.0100	1	07/11/2024 18:36	WG2319627
Barium	0.0675		0.00500	1	07/11/2024 18:36	WG2319627
Beryllium	ND		0.00200	1	07/11/2024 18:36	WG2319627
Cadmium	ND		0.00200	1	07/11/2024 18:36	WG2319627
Chromium	ND		0.0100	1	07/11/2024 18:36	WG2319627
Copper	ND		0.0100	1	07/11/2024 18:36	WG2319627
Lead	ND		0.00500	1	07/11/2024 18:36	WG2319627
Lithium	0.0659		0.0150	1	07/11/2024 18:36	WG2319627
Nickel	ND		0.0100	1	07/11/2024 18:36	WG2319627
Selenium	ND		0.0100	1	07/11/2024 18:36	WG2319627
Silicon	5.50		0.200	1	07/11/2024 18:36	WG2319627
Silver	ND		0.00500	1	07/11/2024 18:36	WG2319627
Strontium	0.589		0.0100	1	07/11/2024 18:36	WG2319627
Thallium	ND		0.0100	1	07/11/2024 18:36	WG2319627
Vanadium	ND		0.0200	1	07/11/2024 18:36	WG2319627
Zinc	ND		0.0500	1	07/11/2024 18:36	WG2319627
Phosphorus	0.917		0.100	1	07/11/2024 18:36	WG2319627

Metals (ICPMS) by Method 200.8

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Boron	0.0583		0.0400	1	08/15/2024 17:33	WG2324349
Calcium	18.2		1.00	1	08/15/2024 17:33	WG2324349
Cobalt	ND		0.00200	1	08/15/2024 17:33	WG2324349
Iron	ND		0.100	1	08/15/2024 17:33	WG2324349
Magnesium	14.9		1.00	1	08/15/2024 17:33	WG2324349
Manganese	0.0354		0.00500	1	08/15/2024 17:33	WG2324349
Molybdenum	ND		0.00500	1	08/15/2024 17:33	WG2324349
Potassium	50.8	V	1.00	1	08/15/2024 17:33	WG2324349
Sodium	142	V	2.00	1	08/15/2024 17:33	WG2324349
Tin	ND		0.00400	1	08/15/2024 17:33	WG2324349
Titanium	ND		0.0100	1	08/15/2024 17:33	WG2324349

Volatile Organic Compounds (GC/MS) by Method 624.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	06/24/2024 01:15	WG2310676
Bromodichloromethane	ND		0.00100	1	06/23/2024 02:25	WG2310431
Bromoform	0.00133		0.00100	1	06/23/2024 02:25	WG2310431
Bromomethane	ND		0.00500	1	06/23/2024 02:25	WG2310431
Carbon tetrachloride	ND		0.00100	1	06/23/2024 02:25	WG2310431
Chlorobenzene	ND		0.00100	1	06/23/2024 02:25	WG2310431
Chlorodibromomethane	ND		0.00100	1	06/23/2024 02:25	WG2310431
Chloroethane	ND		0.00500	1	06/23/2024 02:25	WG2310431
2-Chloroethyl vinyl ether	ND		0.0500	1	06/23/2024 02:25	WG2310431
Chloroform	ND		0.00500	1	06/23/2024 02:25	WG2310431
Chloromethane	ND		0.00250	1	06/23/2024 02:25	WG2310431
1,2-Dichlorobenzene	ND		0.00100	1	06/23/2024 02:25	WG2310431

Collected date/time: 06/11/24 10:45

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Volatile Organic Compounds (GC/MS) by Method 624.1

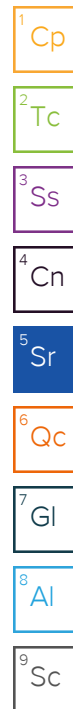
Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
1,3-Dichlorobenzene	ND		0.00100	1	06/23/2024 02:25	WG2310431
1,4-Dichlorobenzene	ND		0.00100	1	06/23/2024 02:25	WG2310431
Dichlorodifluoromethane	ND		0.00500	1	06/23/2024 02:25	WG2310431
1,1-Dichloroethane	ND		0.00100	1	06/23/2024 02:25	WG2310431
1,2-Dichloroethane	ND		0.00100	1	06/23/2024 02:25	WG2310431
1,1-Dichloroethene	ND		0.00100	1	06/23/2024 02:25	WG2310431
trans-1,2-Dichloroethene	ND		0.00100	1	06/23/2024 02:25	WG2310431
1,2-Dichloropropane	ND		0.00100	1	06/23/2024 02:25	WG2310431
cis-1,3-Dichloropropene	ND		0.00100	1	06/23/2024 02:25	WG2310431
trans-1,3-Dichloropropene	ND		0.00100	1	06/23/2024 02:25	WG2310431
Ethylbenzene	ND		0.00100	1	06/23/2024 02:25	WG2310431
Methylene Chloride	ND		0.00500	1	06/23/2024 02:25	WG2310431
Methyl tert-butyl ether	ND		0.00100	1	06/23/2024 02:25	WG2310431
Naphthalene	ND		0.00500	1	06/23/2024 02:25	WG2310431
1,1,2,2-Tetrachloroethane	ND		0.00100	1	06/23/2024 02:25	WG2310431
Tetrachloroethene	ND		0.00100	1	06/23/2024 02:25	WG2310431
Toluene	ND		0.00100	1	06/24/2024 01:15	WG2310676
1,1,1-Trichloroethane	ND		0.00100	1	06/23/2024 02:25	WG2310431
1,1,2-Trichloroethane	ND		0.00100	1	06/23/2024 02:25	WG2310431
Trichloroethene	ND		0.00100	1	06/23/2024 02:25	WG2310431
Trichlorofluoromethane	ND		0.00500	1	06/23/2024 02:25	WG2310431
Vinyl chloride	ND		0.00100	1	06/23/2024 02:25	WG2310431
o-Xylene	ND		0.00100	1	06/23/2024 02:25	WG2310431
m&p-Xylene	ND		0.00200	1	06/23/2024 02:25	WG2310431
Xylenes, Total	ND		0.00300	1	06/23/2024 02:25	WG2310431
(S) Toluene-d8	105		80.0-120		06/23/2024 02:25	WG2310431
(S) Toluene-d8	108		80.0-120		06/24/2024 01:15	WG2310676
(S) 4-Bromofluorobenzene	97.6		80.0-120		06/23/2024 02:25	WG2310431
(S) 4-Bromofluorobenzene	104		80.0-120		06/24/2024 01:15	WG2310676
(S) 1,2-Dichloroethane-d4	100		70.0-130		06/23/2024 02:25	WG2310431
(S) 1,2-Dichloroethane-d4	98.7		70.0-130		06/24/2024 01:15	WG2310676

TPH by TCEQ Method 1005

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH C6 - C12	ND		0.900	1	06/25/2024 19:03	WG2311292
TPH C12 - C28	ND		0.900	1	06/25/2024 19:03	WG2311292
TPH C28 - C35	ND		0.900	1	06/25/2024 19:03	WG2311292
TPH C6 - C35	ND		0.900	1	06/25/2024 19:03	WG2311292
(S) o-Terphenyl	81.9		70.0-130		06/25/2024 19:03	WG2311292
(S) 1-chlorooctane	76.8		70.0-130		06/25/2024 19:03	WG2311292

Semi Volatile Organic Compounds (GC/MS) by Method 625.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Acenaphthylene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Anthracene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Benzidine	ND	C6	0.0100	1	06/19/2024 03:49	WG2306373
Benzo(a)anthracene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Benzo(b)fluoranthene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Benzo(k)fluoranthene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Benzo(g,h,i)perylene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Benzo(a)pyrene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Bis(2-chlorethoxy)methane	ND		0.0100	1	06/19/2024 03:49	WG2306373

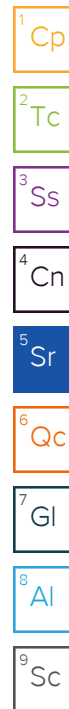


Collected date/time: 06/11/24 10:45

L1745600

Semi Volatile Organic Compounds (GC/MS) by Method 625.1

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Bis(2-chloroethyl)ether	ND		0.0100	1	06/19/2024 03:49	WG2306373
2,2-Oxybis(1-Chloropropane)	ND		0.0100	1	06/19/2024 03:49	WG2306373
4-Bromophenyl-phenylether	ND		0.0100	1	06/19/2024 03:49	WG2306373
2-Chloronaphthalene	ND		0.00100	1	06/19/2024 03:49	WG2306373
4-Chlorophenyl-phenylether	ND		0.0100	1	06/19/2024 03:49	WG2306373
Chrysene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Dibenz(a,h)anthracene	ND		0.00100	1	06/19/2024 03:49	WG2306373
3,3-Dichlorobenzidine	ND		0.0100	1	06/19/2024 03:49	WG2306373
2,4-Dinitrotoluene	ND		0.0100	1	06/19/2024 03:49	WG2306373
2,6-Dinitrotoluene	ND		0.0100	1	06/19/2024 03:49	WG2306373
1,2-Diphenylhydrazine	ND	N2	0.0100	1	06/19/2024 03:49	WG2306373
Fluoranthene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Fluorene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Hexachlorobenzene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Hexachloro-1,3-butadiene	ND		0.0100	1	06/19/2024 03:49	WG2306373
Hexachlorocyclopentadiene	ND		0.0100	1	06/19/2024 03:49	WG2306373
Hexachloroethane	ND		0.0100	1	06/19/2024 03:49	WG2306373
Indeno(1,2,3-cd)pyrene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Isophorone	ND		0.0100	1	06/19/2024 03:49	WG2306373
Naphthalene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Nitrobenzene	ND		0.0100	1	06/19/2024 03:49	WG2306373
n-Nitrosodimethylamine	ND		0.0100	1	06/19/2024 03:49	WG2306373
n-Nitrosodiphenylamine	ND		0.0100	1	06/19/2024 03:49	WG2306373
n-Nitrosodi-n-propylamine	ND		0.0100	1	06/19/2024 03:49	WG2306373
Phenanthrene	ND		0.00100	1	06/19/2024 03:49	WG2306373
Benzylbutyl phthalate	ND		0.00300	1	06/19/2024 03:49	WG2306373
Bis(2-ethylhexyl)phthalate	ND		0.00300	1	06/19/2024 03:49	WG2306373
Di-n-butyl phthalate	ND		0.00300	1	06/19/2024 03:49	WG2306373
Diethyl phthalate	ND		0.00300	1	06/19/2024 03:49	WG2306373
Dimethyl phthalate	ND		0.00300	1	06/19/2024 03:49	WG2306373
Di-n-octyl phthalate	ND		0.00300	1	06/19/2024 03:49	WG2306373
Pyrene	ND		0.00100	1	06/19/2024 03:49	WG2306373
1,2,4-Trichlorobenzene	ND		0.0100	1	06/19/2024 03:49	WG2306373
4-Chloro-3-methylphenol	ND		0.0100	1	06/19/2024 03:49	WG2306373
2-Chlorophenol	ND		0.0100	1	06/19/2024 03:49	WG2306373
2,4-Dichlorophenol	ND		0.0100	1	06/19/2024 03:49	WG2306373
2,4-Dimethylphenol	ND		0.0100	1	06/19/2024 03:49	WG2306373
4,6-Dinitro-2-methylphenol	ND		0.0100	1	06/19/2024 03:49	WG2306373
2,4-Dinitrophenol	ND		0.0100	1	06/19/2024 03:49	WG2306373
2-Nitrophenol	ND		0.0100	1	06/19/2024 03:49	WG2306373
4-Nitrophenol	ND		0.0100	1	06/19/2024 03:49	WG2306373
Pentachlorophenol	ND		0.0100	1	06/19/2024 03:49	WG2306373
Phenol	ND		0.0100	1	06/19/2024 03:49	WG2306373
2,4,6-Trichlorophenol	ND		0.0100	1	06/19/2024 03:49	WG2306373
(S) Nitrobenzene-d5	68.0		15.0-314		06/19/2024 03:49	WG2306373
(S) 2-Fluorobiphenyl	61.2		22.0-127		06/19/2024 03:49	WG2306373
(S) p-Terphenyl-d14	71.2		29.0-141		06/19/2024 03:49	WG2306373
(S) Phenol-d5	22.0		8.00-424		06/19/2024 03:49	WG2306373
(S) 2-Fluorophenol	31.3		10.0-120		06/19/2024 03:49	WG2306373
(S) 2,4,6-Tribromophenol	54.0		10.0-153		06/19/2024 03:49	WG2306373



Method Blank (MB)

(MB) R4082440-1 06/15/24 15:40

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		10.0	10.0

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1745586-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745586-01 06/15/24 15:40 • (DUP) R4082440-3 06/15/24 15:40

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	214	222	1	3.67		10

L1745726-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745726-01 06/15/24 15:40 • (DUP) R4082440-4 06/15/24 15:40

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	348	358	1	2.83		10

Laboratory Control Sample (LCS)

(LCS) R4082440-2 06/15/24 15:40

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	mg/l	mg/l	%	%	
Dissolved Solids	8800	8660	98.4	85.0-115	

Method Blank (MB)

(MB) R4083186-1 06/17/24 17:20

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Suspended Solids	U		2.50	2.50

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745357-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1745357-03 06/17/24 17:20 • (DUP) R4083186-3 06/17/24 17:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	13.6	12.4	1	9.23		10

L1745626-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745626-01 06/17/24 17:20 • (DUP) R4083186-4 06/17/24 17:20

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Suspended Solids	22.8	19.6	1	15.1	P1	10

Laboratory Control Sample (LCS)

(LCS) R4083186-2 06/17/24 17:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Suspended Solids	773	700	90.6	85.0-115	

Method Blank (MB)

(MB) R4082360-1 06/16/24 14:16

Analyte	MB Result umhos/cm	MB Qualifier	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

Sample Narrative:
BLANK: at 25C

L1746285-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1746285-01 06/16/24 14:16 • (DUP) R4082360-3 06/16/24 14:16

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	3100	3130	1	0.963		20

Sample Narrative:
OS: at 25C
DUP: at 25C

L1747053-25 Original Sample (OS) • Duplicate (DUP)

(OS) L1747053-25 06/16/24 14:16 • (DUP) R4082360-4 06/16/24 14:16

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	ND	ND	1	0.000		20

Sample Narrative:
OS: at 25C
DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R4082360-2 06/16/24 14:16

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	733	722	98.5	85.0-115	

Sample Narrative:
LCS: at 25C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R4082037-1 06/14/24 21:48

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Hardness (colorimetric) as CaCO3	U		15.0	30.0

L1745940-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1745940-04 06/14/24 22:07 • (DUP) R4082037-5 06/14/24 22:09

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hardness (colorimetric) as CaCO3	ND	ND	1	0.000		20

L1746357-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1746357-01 06/14/24 22:14 • (DUP) R4082037-7 06/14/24 22:15

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hardness (colorimetric) as CaCO3	212	212	2	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4082037-2 06/14/24 21:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hardness (colorimetric) as CaCO3	100	98.3	98.3	85.0-115	

L1743769-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1743769-01 06/14/24 21:51 • (MS) R4082037-3 06/14/24 21:52 • (MSD) R4082037-4 06/14/24 21:53

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 %
Hardness (colorimetric) as CaCO3	100	ND	103	105	103	105	1	80.0-120			1.92	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Wet Chemistry by Method 130.1 [L1745600-01](#)

L1745940-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1745940-04 06/14/24 22:07 • (MS) R4082037-6 06/14/24 22:10

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Hardness (colorimetric) as CaCO3	100	ND	97.0	97.0	1	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Wet Chemistry by Method 1664A [L1745600-01](#)

Method Blank (MB)

(MB) R4091766-1 07/09/24 20:18

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Oil & Grease (Hexane Extr)	U		1.16	5.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) R4091766-2 07/09/24 20:18 • (LCSD) R4091766-3 07/09/24 20:18

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Oil & Grease (Hexane Extr)	40.0	34.6	34.9	86.5	87.3	78.0-114			0.863	20

L1751280-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1751280-01 07/09/24 20:18 • (MS) R4091766-4 07/09/24 20:18

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Oil & Grease (Hexane Extr)	40.0	ND	41.7	104	1	78.0-114	

L1745929-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745929-01 06/13/24 08:50 • (DUP) R4081084-1 06/13/24 08:50

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pcu	pcu		%		%
Color, Apparent	1.00	1.00	1	0.000		20

Sample Narrative:

OS: 8.20
DUP: 8.20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Wet Chemistry by Method 2130 B-2011 [L1745600-01](#)

Method Blank (MB)

(MB) R4080784-1 06/12/24 15:32

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	NTU		NTU	NTU
Turbidity	U		0.200	0.400

L1745594-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745594-01 06/12/24 15:32 • (DUP) R4080784-3 06/12/24 15:32

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	NTU	NTU		%		%
Turbidity	7.13	6.42	1	10.5		20

Laboratory Control Sample (LCS)

(LCS) R4080784-2 06/12/24 15:32

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	NTU	NTU	%	%	
Turbidity	40.0	38.8	97.0	90.0-110	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Wet Chemistry by Method 2320 B-2011

L1745600-01

Method Blank (MB)

(MB) R4081368-2 06/13/24 10:40

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Alkalinity	U		8.45	20.0
Alkalinity,Bicarbonate	U		8.45	20.0
Alkalinity,Carbonate	U		8.45	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1744585-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1744585-01 06/13/24 10:48 • (DUP) R4081368-3 06/13/24 10:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP RPD Limits %
Alkalinity	99.0	97.6	1	1.47	20
Alkalinity,Bicarbonate	99.0	97.6	1	1.47	20
Alkalinity,Carbonate	ND	ND	1	0.000	20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1746000-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1746000-02 06/13/24 12:41 • (DUP) R4081368-4 06/13/24 12:45

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP RPD Limits %
Alkalinity	87.5	85.6	1	2.16	20
Alkalinity,Bicarbonate	87.5	85.6	1	2.16	20
Alkalinity,Carbonate	ND	ND	1	0.000	20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Wet Chemistry by Method 2320 B-2011

Laboratory Control Sample (LCS)

(LCS) R4081368-1 06/13/24 10:35

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Alkalinity	100	99.7	99.7	90.0-110	

Sample Narrative:
LCS: Endpoint pH 4.5

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1745594-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745594-01 06/19/24 10:51 • (DUP) R4083652-3 06/19/24 10:51						
	Original Result	DUP Result	Dilution	DUP Diff	<u>DUP Qualifier</u>	DUP Diff Limits
Analyte	mV	mV		mV		mV
ORP	178	180	1	1.50		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745600-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745600-01 06/19/24 10:51 • (DUP) R4083652-4 06/19/24 10:51						
	Original Result	DUP Result	Dilution	DUP Diff	<u>DUP Qualifier</u>	DUP Diff Limits
Analyte	mV	mV		mV		mV
ORP	159	159	1	0.000		20

L1745606-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745606-01 06/19/24 10:51 • (DUP) R4083652-5 06/19/24 10:51						
	Original Result	DUP Result	Dilution	DUP Diff	<u>DUP Qualifier</u>	DUP Diff Limits
Analyte	mV	mV		mV		mV
ORP	159	159	1	0.000		20

L1746183-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1746183-01 06/19/24 10:51 • (DUP) R4083652-6 06/19/24 10:51						
	Original Result	DUP Result	Dilution	DUP Diff	<u>DUP Qualifier</u>	DUP Diff Limits
Analyte	mV	mV		mV		mV
ORP	118	119	1	1.40		20

L1746183-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1746183-02 06/19/24 10:51 • (DUP) R4083652-7 06/19/24 10:51						
	Original Result	DUP Result	Dilution	DUP Diff	<u>DUP Qualifier</u>	DUP Diff Limits
Analyte	mV	mV		mV		mV
ORP	118	116	1	1.90		20

L1746183-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1746183-03 06/19/24 10:51 • (DUP) R4083652-8 06/19/24 10:51						
	Original Result	DUP Result	Dilution	DUP Diff	<u>DUP Qualifier</u>	DUP Diff Limits
Analyte	mV	mV		mV		mV
ORP	106	103	1	2.60		20

L1747713-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747713-01 06/19/24 10:51 • (DUP) R4083652-9 06/19/24 10:51

Analyte	Original Result	DUP Result	Dilution	DUP Diff	DUP Qualifier	DUP Diff Limits
	mV	mV		mV		mV
ORP	150	151	1	0.800		20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1747717-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747717-01 06/19/24 10:51 • (DUP) R4083652-10 06/19/24 10:51

Analyte	Original Result	DUP Result	Dilution	DUP Diff	DUP Qualifier	DUP Diff Limits
	mV	mV		mV		mV
ORP	238	235	1	2.60		20

⁷Gl

⁸Al

⁹Sc

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

(LCS) R4083652-1 06/19/24 10:51 • (LCSD) R4083652-2 06/19/24 10:51

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	Diff	Diff Limits
	mV	mV	mV	%	%	%			mV	mV
ORP	238	230	233	96.4	97.8	90.0-110			3.30	20

Method Blank (MB)

(MB) R4082965-1 06/12/24 14:58

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Bromide	U		0.353	1.00
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Nitrate as (N)	U		0.0480	0.100
Nitrite as (N)	0.0569	J	0.0420	0.100
Sulfate	U		0.594	5.00

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1739166-54 Original Sample (OS) • Duplicate (DUP)

(OS) L1739166-54 06/12/24 22:15 • (DUP) R4082965-3 06/12/24 22:28

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	ND	ND	1	0.000		15
Chloride	7.49	7.55	1	0.887		15
Fluoride	ND	ND	1	0.000		15
Nitrate as (N)	0.534	0.538	1	0.877		15
Nitrite as (N)	ND	ND	1	0.000		15
Sulfate	ND	ND	1	1.33		15

L1745656-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745656-01 06/13/24 04:16 • (DUP) R4082965-6 06/13/24 04:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	1.76	1.68	1	4.87		15
Fluoride	0.810	0.820	1	1.30		15
Nitrate as (N)	3.63	3.67	1	0.926		15
Nitrite as (N)	0.302	0.306	1	1.12		15

Laboratory Control Sample (LCS)

(LCS) R4082965-2 06/12/24 15:11

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Bromide	40.0	38.3	95.8	90.0-110	
Chloride	40.0	38.6	96.5	90.0-110	
Fluoride	8.00	8.17	102	90.0-110	

Laboratory Control Sample (LCS)

(LCS) R4082965-2 06/12/24 15:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Nitrate as (N)	8.00	7.69	96.1	90.0-110	
Nitrite as (N)	8.00	8.12	102	90.0-110	
Sulfate	40.0	38.6	96.6	90.0-110	

L1739166-54 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1739166-54 06/12/24 22:15 • (MS) R4082965-4 06/12/24 22:41 • (MSD) R4082965-5 06/12/24 22:55

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Bromide	40.0	ND	39.4	39.7	98.5	99.1	1	80.0-120			0.638	15
Chloride	40.0	7.49	45.3	45.6	94.5	95.2	1	80.0-120			0.545	15
Fluoride	8.00	ND	8.16	8.21	102	103	1	80.0-120			0.684	15
Nitrate as (N)	8.00	0.534	8.28	8.34	96.9	97.6	1	80.0-120			0.705	15
Nitrite as (N)	8.00	ND	8.21	8.26	103	103	1	80.0-120			0.579	15
Sulfate	40.0	ND	41.4	41.5	97.2	97.4	1	80.0-120			0.174	15

L1745656-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1745656-01 06/13/24 04:16 • (MS) R4082965-7 06/13/24 04:43

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Bromide	40.0	1.76	38.9	92.8	1	80.0-120	
Fluoride	8.00	0.810	8.91	101	1	80.0-120	
Nitrate as (N)	8.00	3.63	11.0	92.2	1	80.0-120	
Nitrite as (N)	8.00	0.302	8.48	102	1	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4091667-1 07/09/24 15:19

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Ammonia Nitrogen	U		0.117	0.250

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1752250-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1752250-05 07/09/24 15:51 • (DUP) R4091667-3 07/09/24 15:52

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Ammonia Nitrogen	5.10	5.14	1	0.723		10

L1752250-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1752250-06 07/09/24 16:01 • (DUP) R4091667-6 07/09/24 16:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Ammonia Nitrogen	6.45	6.41	1	0.668		10

Laboratory Control Sample (LCS)

(LCS) R4091667-2 07/09/24 15:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Ammonia Nitrogen	7.50	7.50	100	90.0-110	

L1752250-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1752250-05 07/09/24 15:51 • (MS) R4091667-4 07/09/24 15:58 • (MSD) R4091667-5 07/09/24 16:00

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Ammonia Nitrogen	5.00	5.10	9.77	9.93	93.5	96.7	1	90.0-110			1.61	10

L1752250-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1752250-06 07/09/24 16:01 • (MS) R4091667-7 07/09/24 16:04

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Ammonia Nitrogen	5.00	6.45	11.1	92.9	1	90.0-110	E

Wet Chemistry by Method 3500Cr B-2011 [L1745600-01](#)

Method Blank (MB)

(MB) R4080791-1 06/12/24 15:13

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chromium,Hexavalent	U		0.00300	0.0100

L1745600-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745600-01 06/12/24 15:15 • (DUP) R4080791-5 06/12/24 15:15

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

Laboratory Control Sample (LCS)

(LCS) R4080791-2 06/12/24 15:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Chromium,Hexavalent	0.500	0.508	102	80.0-120	

L1745594-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745594-01 06/12/24 15:14 • (MS) R4080791-3 06/12/24 15:15 • (MSD) R4080791-4 06/12/24 15:15

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 %
Chromium,Hexavalent	0.500	ND	0.0130	0.0130	2.60	2.60	1	75.0-125	J6	J6	0.000	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4092615-1 07/11/24 13:19

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Kjeldahl Nitrogen, TKN	U		0.140	0.250

L1753035-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1753035-02 07/11/24 13:30 • (DUP) R4092615-5 07/11/24 13:34

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP RPD Limits %
Kjeldahl Nitrogen, TKN	1.72	1.63	1	5.37	20

Laboratory Control Sample (LCS)

(LCS) R4092615-2 07/11/24 13:20

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Kjeldahl Nitrogen, TKN	12.3	13.5	110	80.0-120	

L1752997-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1752997-02 07/11/24 14:02 • (MS) R4092615-6 07/11/24 14:03 • (MSD) R4092615-7 07/11/24 14:04

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 %
Kjeldahl Nitrogen, TKN	5.00	23.6	28.4	30.8	96.0	144	2	90.0-110		V	8.11	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4083991-1 06/19/24 19:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Nitrate-Nitrite	U		0.0500	0.100

L1747985-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747985-01 06/19/24 20:07 • (DUP) R4083991-3 06/19/24 20:08

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	1.81	1.84	1	1.64		20

L1747989-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1747989-03 06/19/24 20:12 • (DUP) R4083991-4 06/19/24 20:13

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	0.772	0.787	1	1.92		20

Laboratory Control Sample (LCS)

(LCS) R4083991-2 06/19/24 19:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrate-Nitrite	2.50	2.38	95.2	90.0-110	

L1748019-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1748019-01 06/19/24 20:21 • (MS) R4083991-5 06/19/24 20:22 • (MSD) R4083991-6 06/19/24 20:23

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 %
Nitrate-Nitrite	2.50	ND	1.22	1.19	48.8	47.6	1	90.0-110	J6	J6	2.49	20

L1748057-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1748057-01 06/19/24 20:27 • (MS) R4083991-7 06/19/24 20:28

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	2.50	ND	1.86	74.4	1	90.0-110	J6

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4086821-1 06/26/24 15:20

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1749184-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1749184-01 06/26/24 15:22 • (DUP) R4086821-5 06/26/24 15:22

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
COD	1130	1200	5	6.24		20

L1750197-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1750197-01 06/26/24 15:22 • (DUP) R4086821-6 06/26/24 15:23

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) R4086821-2 06/26/24 15:21

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
COD	500	526	105	90.0-110	

L1745600-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745600-01 06/26/24 15:22 • (MS) R4086821-3 06/26/24 15:22 • (MSD) R4086821-4 06/26/24 15:22

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	30.3	566	559	107	106	1	90.0-110			1.29	20

Wet Chemistry by Method 4500Cl G-2011 [L1745600-01](#)

Method Blank (MB)

(MB) R4082638-1 06/17/24 12:00

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Chlorine,residual	U		0.0260	0.100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1746000-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1746000-01 06/17/24 12:02 • (DUP) R4082638-3 06/17/24 12:03

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Chlorine,residual	1.67	1.65	1	1.51		20

Laboratory Control Sample (LCS)

(LCS) R4082638-2 06/17/24 12:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Chlorine,residual	1.00	0.935	93.5	85.0-115	

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R4083823-1 06/19/24 14:27

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Cyanide	U		0.00180	0.00500

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745594-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745594-01 06/19/24 14:37 • (DUP) R4083823-5 06/19/24 14:38

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Cyanide	ND	ND	1	0.000		20

L1745656-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1745656-02 06/19/24 14:51 • (DUP) R4083823-6 06/19/24 14:53

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Cyanide	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4083823-2 06/19/24 14:28

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	mg/l	mg/l	%	%	
Cyanide	0.100	0.102	102	87.1-120	

L1745463-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745463-02 06/19/24 14:32 • (MS) R4083823-3 06/19/24 14:34 • (MSD) R4083823-4 06/19/24 14:35

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Cyanide	0.100	ND	0.0981	0.0924	98.1	92.4	1	90.0-110			5.98	20

L1746464-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1746464-01 06/15/24 22:10 • (DUP) R4082257-2 06/15/24 22:10

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.42	7.41	1	0.135		1

Sample Narrative:
OS: 7.42 at 20C
DUP: 7.41 at 19.9C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1747187-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1747187-04 06/15/24 22:10 • (DUP) R4082257-3 06/15/24 22:10

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.73	7.73	1	0.000		1

Sample Narrative:
OS: 7.73 at 20.2C
DUP: 7.73 at 20.7C

Laboratory Control Sample (LCS)

(LCS) R4082257-1 06/15/24 22:10

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:
LCS: 10.02 at 21.1C

Wet Chemistry by Method 4500P E-2011 [L1745600-01](#)

Method Blank (MB)

(MB) R4080639-1 06/12/24 12:22

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Phosphate,Ortho	U		0.0140	0.0300

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745600-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745600-01 06/12/24 12:34 • (DUP) R4080639-5 06/12/24 12:35

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
Phosphate,Ortho	0.947	0.946	1	0.106		20

Laboratory Control Sample (LCS)

(LCS) R4080639-2 06/12/24 12:22

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Phosphate,Ortho	0.245	0.274	112	85.0-115	

L1745594-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745594-01 06/12/24 12:22 • (MS) R4080639-3 06/12/24 12:23 • (MSD) R4080639-4 06/12/24 12:23

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Phosphate,Ortho	0.500	ND	0.180	0.196	30.6	33.8	1	80.0-120	<u>J6</u>	<u>J6</u>	8.51	20

Sample Narrative:

- MS: spike failed due to sample matrix
- MSD: spike failed due to sample matrix

Method Blank (MB)

(MB) R4082532-1 06/17/24 09:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Sulfide	U		0.0250	0.0500

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745600-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745600-01 06/17/24 09:29 • (DUP) R4082532-3 06/17/24 09:29

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

L1746991-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1746991-04 06/17/24 09:51 • (DUP) R4082532-6 06/17/24 09:53

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Sulfide	0.102	0.102	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4082532-2 06/17/24 09:28

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Sulfide	0.500	0.545	109	85.0-115	

L1745940-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745940-04 06/17/24 09:34 • (MS) R4082532-4 06/17/24 09:34 • (MSD) R4082532-5 06/17/24 09:35

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 %
Sulfide	0.500	ND	0.537	0.558	107	112	1	80.0-120			3.84	20

Wet Chemistry by Method 4500SO3 B-2011 [L1745600-01](#)

Method Blank (MB)

(MB) R4081384-1 06/13/24 14:00

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Sulfite	U		1.19	3.00

L1743861-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1743861-01 06/13/24 14:00 • (DUP) R4081384-3 06/13/24 14:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Sulfite	ND	ND	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R4081384-2 06/13/24 14:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	mg/l	mg/l	%	%	
Sulfite	20.0	19.0	95.0	85.0-115	

L1745600-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745600-01 06/13/24 14:00 • (MS) R4081384-4 06/13/24 14:00 • (MSD) R4081384-5 06/13/24 14:00

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Sulfite	20.0	ND	19.0	19.0	95.0	95.0	1	85.0-115			0.000	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4084334-1 06/20/24 08:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
BOD	U	B1	0.200	0.200

L1747033-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747033-01 06/20/24 09:49 • (DUP) R4084334-3 06/20/24 09:55

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
BOD	54.4	50.4	1	7.5		30

L1747232-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1747232-01 06/20/24 10:35 • (DUP) R4084334-4 06/20/24 10:37

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
BOD	11.9	14.5	1	19.5	K9	30

Laboratory Control Sample (LCS)

(LCS) R4084334-2 06/20/24 09:31

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
BOD	198	180	90.7	84.6-115	

Laboratory Control Sample (LCS)

(LCS) R4084334-5 06/20/24 11:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
BOD	198	175	88.3	84.6-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4084337-1 06/20/24 08:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
CBOD	U	B1	0.200	0.200

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1745600-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745600-01 06/20/24 11:55 • (DUP) R4084337-3 06/20/24 12:00

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
CBOD	13.8	12.1	1	13.1		30

Laboratory Control Sample (LCS)

(LCS) R4084337-2 06/20/24 09:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
CBOD	198	167	84.6	84.6-115	

Laboratory Control Sample (LCS)

(LCS) R4084337-4 06/20/24 12:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
CBOD	198	173	87.3	84.6-115	

Method Blank (MB)

(MB) R4084753-2 06/20/24 13:40

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
DOC	0.137	⬇	0.106	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1745594-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745594-01 06/20/24 20:12 • (DUP) R4084753-5 06/20/24 21:02

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
DOC	65.0	65.2	2	0.353		20

L1748638-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1748638-01 06/21/24 00:40 • (DUP) R4084753-6 06/21/24 00:55

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
DOC	2.44	3.05	1	22.3	P1	20

Laboratory Control Sample (LCS)

(LCS) R4084753-1 06/20/24 13:26

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
DOC	25.0	23.5	94.2	85.0-115	

L1745743-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745743-01 06/20/24 17:09 • (MS) R4084753-3 06/20/24 17:29 • (MSD) R4084753-4 06/20/24 17:48

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
DOC	25.0	2.26	25.8	25.4	94.3	92.6	1	80.0-120			1.68	20

L1748638-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1748638-02 06/21/24 01:17 • (MS) R4084753-7 06/21/24 01:34 • (MSD) R4084753-8 06/21/24 01:50

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 %
DOC	25.0	2.17	25.8	25.5	94.5	93.3	1	80.0-120			1.17	20

Wet Chemistry by Method 5310 B-2014

L1745600-01

Method Blank (MB)

(MB) R4091882-2 07/09/24 19:17

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TOC (Total Organic Carbon)	0.128	⬇	0.102	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1750854-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1750854-03 07/09/24 21:52 • (DUP) R4091882-3 07/09/24 22:13

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	4.33	4.40	1	1.56		20

L1751259-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1751259-01 07/10/24 02:22 • (DUP) R4091882-6 07/10/24 02:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
TOC (Total Organic Carbon)	2.10	2.26	1	7.38		20

Laboratory Control Sample (LCS)

(LCS) R4091882-1 07/09/24 19:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TOC (Total Organic Carbon)	25.0	24.1	96.6	85.0-115	

L1750854-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1750854-04 07/09/24 22:34 • (MS) R4091882-4 07/09/24 22:57 • (MSD) R4091882-5 07/09/24 23:19

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 %
TOC (Total Organic Carbon)	25.0	4.73	28.6	28.6	95.5	95.5	1	85.0-115			0.000	20

L1751259-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1751259-02 07/10/24 02:56 • (MS) R4091882-9 07/10/24 03:18 • (MSD) R4091882-10 07/10/24 03:40

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 %
TOC (Total Organic Carbon)	25.0	ND	24.5	24.6	95.6	95.9	1	85.0-115			0.326	20

Wet Chemistry by Method 5540 C-2011 [L1745600-01](#)

Method Blank (MB)

(MB) R4080905-1 06/12/24 17:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
MBAS	U		0.0190	0.100

L1745600-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745600-01 06/12/24 17:32 • (DUP) R4080905-3 06/12/24 17:32

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP RPD Limits
	mg/l	mg/l		%	%
MBAS	ND	ND	1	0.000	20

Laboratory Control Sample (LCS)

(LCS) R4080905-2 06/12/24 17:29

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
MBAS	1.00	1.00	100	85.0-115	

L1745711-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745711-01 06/12/24 17:33 • (MS) R4080905-4 06/12/24 17:33 • (MSD) R4080905-5 06/12/24 17:34

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
MBAS	1.00	ND	0.991	1.03	99.1	103	1	85.0-115			4.25	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Mercury by Method 245.1 [L1745600-01](#)

Method Blank (MB)

(MB) R4082442-1 06/16/24 19:08

Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.000100	0.000200

¹Cp

²Tc

³Ss

Laboratory Control Sample (LCS)

(LCS) R4082442-2 06/16/24 19:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Mercury	0.00300	0.00330	110	85.0-115	

⁴Cn

⁵Sr

L1745594-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745594-01 06/16/24 19:13 • (MS) R4082442-4 06/16/24 19:18 • (MSD) R4082442-5 06/16/24 19:21

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Mercury	0.0300	ND	0.00211	0.00230	7.02	7.67	10	70.0-130	<u>J6</u>	<u>J6</u>	8.86	20

⁶Qc

⁷Gl

⁸Al

⁹Sc

Metals (ICP) by Method 200.7 [L1745600-01](#)

Method Blank (MB)

(MB) R4092826-1 07/11/24 18:16

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Aluminum	U		0.0592	0.200
Antimony	U		0.00398	0.0100
Arsenic	U		0.00645	0.0100
Barium	U		0.000795	0.00500
Beryllium	U		0.000401	0.00200
Cadmium	U		0.000552	0.00200
Chromium	U		0.00163	0.0100
Copper	U		0.00226	0.0100
Lead	U		0.00227	0.00500
Lithium	U		0.00689	0.0150
Nickel	U		0.00182	0.0100
Selenium	U		0.00616	0.0100
Silicon	U		0.0771	0.200
Silver	U		0.00131	0.00500
Strontium	U		0.000683	0.0100
Thallium	U		0.00460	0.0100
Vanadium	U		0.00662	0.0200
Zinc	U		0.00578	0.0500
Phosphorus	U		0.00760	0.100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4092826-2 07/11/24 18:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Aluminum	10.0	10.2	102	85.0-115	
Antimony	1.00	1.01	101	85.0-115	
Arsenic	1.00	1.01	101	85.0-115	
Barium	1.00	1.06	106	85.0-115	
Beryllium	1.00	1.03	103	85.0-115	
Cadmium	1.00	1.04	104	85.0-115	
Chromium	1.00	1.06	106	85.0-115	
Copper	1.00	1.05	105	85.0-115	
Lead	1.00	1.01	101	85.0-115	
Lithium	1.00	1.02	102	85.0-115	
Nickel	1.00	0.992	99.2	85.0-115	
Selenium	1.00	1.00	100	85.0-115	
Silicon	1.00	0.972	97.2	85.0-115	
Silver	0.200	0.192	96.0	85.0-115	

Metals (ICP) by Method 200.7 [L1745600-01](#)

Laboratory Control Sample (LCS)

(LCS) R4092826-2 07/11/24 18:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Strontium	1.00	1.03	103	85.0-115	
Thallium	1.00	1.04	104	85.0-115	
Vanadium	1.00	1.01	101	85.0-115	
Zinc	1.00	1.03	103	85.0-115	
Phosphorus	1.00	0.986	98.6	85.0-115	

L1753030-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753030-01 07/11/24 18:19 • (MS) R4092826-4 07/11/24 18:23 • (MSD) R4092826-5 07/11/24 18:24

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	10.0	ND	10.2	10.2	102	102	1	70.0-130			0.296	20
Antimony	1.00	ND	1.02	1.02	102	102	1	70.0-130			0.0428	20
Arsenic	1.00	ND	1.03	1.03	103	103	1	70.0-130			0.243	20
Barium	1.00	ND	1.06	1.06	106	106	1	70.0-130			0.101	20
Beryllium	1.00	ND	1.03	1.03	103	103	1	70.0-130			0.0772	20
Cadmium	1.00	ND	1.04	1.04	104	104	1	70.0-130			0.276	20
Chromium	1.00	ND	1.06	1.06	106	106	1	70.0-130			0.265	20
Copper	1.00	ND	1.04	1.04	104	104	1	70.0-130			0.0838	20
Lead	1.00	ND	1.02	1.02	102	102	1	70.0-130			0.376	20
Lithium	1.00	ND	1.02	1.02	102	102	1	70.0-130			0.256	20
Nickel	1.00	ND	1.00	1.00	100	100	1	70.0-130			0.442	20
Selenium	1.00	ND	1.03	1.04	103	104	1	70.0-130			0.367	20
Silicon	1.00	ND	0.990	0.989	99.0	98.9	1	70.0-130			0.0887	20
Silver	0.200	ND	0.191	0.191	95.4	95.7	1	70.0-130			0.339	20
Strontium	1.00	ND	1.03	1.04	103	103	1	70.0-130			0.187	20
Thallium	1.00	ND	1.06	1.05	106	105	1	70.0-130			0.394	20
Vanadium	1.00	ND	1.01	1.01	101	101	1	70.0-130			0.201	20
Zinc	1.00	ND	1.03	1.03	103	103	1	70.0-130			0.499	20
Phosphorus	1.00	ND	1.01	1.01	101	101	1	70.0-130			0.771	20

L1753030-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753030-02 07/11/24 18:26 • (MS) R4092826-6 07/11/24 18:28 • (MSD) R4092826-7 07/11/24 18:29

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Aluminum	10.0	ND	10.3	10.3	103	103	1	70.0-130			0.135	20
Antimony	1.00	ND	1.04	1.04	104	104	1	70.0-130			0.422	20
Arsenic	1.00	ND	1.04	1.03	104	103	1	70.0-130			0.878	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Metals (ICP) by Method 200.7 [L1745600-01](#)

L1753030-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1753030-02 07/11/24 18:26 • (MS) R4092826-6 07/11/24 18:28 • (MSD) R4092826-7 07/11/24 18:29

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 %
Barium	1.00	ND	1.05	1.07	105	106	1	70.0-130			0.982	20
Beryllium	1.00	ND	1.04	1.04	104	104	1	70.0-130			0.402	20
Cadmium	1.00	ND	1.05	1.05	105	105	1	70.0-130			0.470	20
Chromium	1.00	ND	1.07	1.07	107	107	1	70.0-130			0.0417	20
Copper	1.00	ND	1.05	1.05	105	105	1	70.0-130			0.276	20
Lead	1.00	ND	1.03	1.02	103	102	1	70.0-130			0.0531	20
Lithium	1.00	ND	1.04	1.03	104	103	1	70.0-130			1.10	20
Nickel	1.00	ND	1.02	1.00	102	100	1	70.0-130			1.29	20
Selenium	1.00	ND	1.04	1.04	104	104	1	70.0-130			0.164	20
Silicon	1.00	ND	1.00	0.995	100	99.5	1	70.0-130			0.969	20
Silver	0.200	ND	0.192	0.192	95.9	95.8	1	70.0-130			0.0858	20
Strontium	1.00	ND	1.05	1.05	105	104	1	70.0-130			0.397	20
Thallium	1.00	ND	1.05	1.06	105	106	1	70.0-130			0.822	20
Vanadium	1.00	ND	1.02	1.02	102	102	1	70.0-130			0.333	20
Zinc	1.00	ND	1.04	1.04	104	104	1	70.0-130			0.565	20
Phosphorus	1.00	ND	1.03	1.03	103	103	1	70.0-130			0.107	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Metals (ICPMS) by Method 200.8

L1745600-01

Method Blank (MB)

(MB) R4107488-1 08/15/24 16:50

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Boron	U		0.0177	0.0400
Calcium	U		0.112	1.00
Cobalt	U		0.000142	0.00200
Iron	U		0.0447	0.100
Magnesium	U		0.0690	1.00
Manganese	U		0.000982	0.00500
Molybdenum	U		0.000841	0.00500
Potassium	U		0.151	1.00
Sodium	U		0.513	2.00
Tin	U		0.00106	0.00400
Titanium	U		0.00172	0.0100

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4107488-2 08/15/24 16:53

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Boron	0.0500	0.0464	92.7	85.0-115	
Calcium	5.00	4.96	99.1	85.0-115	
Cobalt	0.0500	0.0536	107	85.0-115	
Iron	1.00	0.982	98.2	85.0-115	
Magnesium	5.00	4.96	99.1	85.0-115	
Manganese	0.0500	0.0501	100	85.0-115	
Molybdenum	0.0500	0.0500	100	85.0-115	
Potassium	5.00	4.62	92.4	85.0-115	
Sodium	5.00	4.96	99.2	85.0-115	
Tin	0.0500	0.0480	96.0	85.0-115	
Titanium	0.0500	0.0518	104	85.0-115	

L1745600-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745600-01 08/15/24 17:33 • (MS) R4107488-7 08/15/24 17:39 • (MSD) R4107488-8 08/15/24 17:43

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 %
Boron	0.0500	0.0583	0.103	0.103	89.0	89.7	1	70.0-130			0.375	20
Calcium	5.00	18.2	22.9	22.6	93.5	87.0	1	70.0-130			1.42	20
Cobalt	0.0500	ND	0.0531	0.0515	106	102	1	70.0-130			2.99	20
Iron	1.00	ND	1.01	0.988	101	98.8	1	70.0-130			1.82	20
Magnesium	5.00	14.9	19.5	19.3	91.0	88.0	1	70.0-130			0.784	20

Metals (ICPMS) by Method 200.8

L1745600-01

L1745600-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745600-01 08/15/24 17:33 • (MS) R4107488-7 08/15/24 17:39 • (MSD) R4107488-8 08/15/24 17:43

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 %
Manganese	0.0500	0.0354	0.0842	0.0853	97.6	99.7	1	70.0-130			1.24	20
Molybdenum	0.0500	ND	0.0538	0.0514	105	100	1	70.0-130			4.56	20
Potassium	5.00	50.8	54.1	53.2	65.5	47.7	1	70.0-130	V	V	1.67	20
Sodium	5.00	142	142	142	4.12	0.000	1	70.0-130	V	V	0.195	20
Tin	0.0500	ND	0.0508	0.0489	102	97.7	1	70.0-130			3.87	20
Titanium	0.0500	ND	0.0552	0.0521	110	104	1	70.0-130			5.76	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4085420-2 06/22/24 23:49

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromodichloromethane	U		0.000136	0.00100
Bromoform	U		0.000129	0.00100
Bromomethane	U		0.000605	0.00500
Carbon tetrachloride	U		0.000128	0.00100
Chlorobenzene	U		0.000116	0.00100
Chlorodibromomethane	U		0.000140	0.00100
Chloroethane	U		0.000192	0.00500
2-Chloroethyl vinyl ether	U		0.000575	0.0500
Chloroform	U		0.000111	0.00500
Chloromethane	U		0.000960	0.00250
1,2-Dichlorobenzene	U		0.000107	0.00100
1,3-Dichlorobenzene	U		0.000110	0.00100
1,4-Dichlorobenzene	U		0.000120	0.00100
Dichlorodifluoromethane	U		0.000374	0.00500
1,1-Dichloroethane	U		0.000100	0.00100
1,2-Dichloroethane	U		0.0000819	0.00100
1,1-Dichloroethene	U		0.000188	0.00100
trans-1,2-Dichloroethene	U		0.000149	0.00100
1,2-Dichloropropane	U		0.000149	0.00100
cis-1,3-Dichloropropene	U		0.000111	0.00100
trans-1,3-Dichloropropene	U		0.000118	0.00100
Ethylbenzene	U		0.000137	0.00100
Methylene Chloride	U		0.000430	0.00500
Methyl tert-butyl ether	U		0.000101	0.00100
Naphthalene	U		0.00100	0.00500
1,1,2,2-Tetrachloroethane	U		0.000133	0.00100
Tetrachloroethene	U		0.000300	0.00100
1,1,1-Trichloroethane	U		0.000149	0.00100
1,1,2-Trichloroethane	U		0.000158	0.00100
Trichloroethene	U		0.000190	0.00100
Trichlorofluoromethane	U		0.000160	0.00500
Vinyl chloride	U		0.000234	0.00100
o-Xylene	U		0.000174	0.00100
m&p-Xylene	U		0.000430	0.00200
Xylenes, Total	U		0.000174	0.00300
(S) Toluene-d8	102			80.0-120
(S) 4-Bromofluorobenzene	93.0			80.0-120
(S) 1,2-Dichloroethane-d4	98.2			70.0-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4085420-1 06/22/24 23:03

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Bromodichloromethane	0.00500	0.00534	107	65.0-135	
Bromoform	0.00500	0.00473	94.6	70.0-130	
Bromomethane	0.00500	0.00173	34.6	15.0-185	
Carbon tetrachloride	0.00500	0.00523	105	70.0-130	
Chlorobenzene	0.00500	0.00540	108	65.0-135	
Chlorodibromomethane	0.00500	0.00506	101	70.0-135	
Chloroethane	0.00500	0.00552	110	40.0-160	
2-Chloroethyl vinyl ether	0.0250	0.0247	98.8	0.100-225	
Chloroform	0.00500	0.00564	113	70.0-135	
Chloromethane	0.00500	0.00546	109	0.100-205	
1,2-Dichlorobenzene	0.00500	0.00532	106	65.0-135	
1,3-Dichlorobenzene	0.00500	0.00538	108	70.0-130	
1,4-Dichlorobenzene	0.00500	0.00533	107	65.0-135	
Dichlorodifluoromethane	0.00500	0.00533	107	49.0-155	
1,1-Dichloroethane	0.00500	0.00601	120	70.0-130	
1,2-Dichloroethane	0.00500	0.00589	118	70.0-130	
1,1-Dichloroethene	0.00500	0.00528	106	50.0-150	
trans-1,2-Dichloroethene	0.00500	0.00558	112	70.0-130	
1,2-Dichloropropane	0.00500	0.00593	119	35.0-165	
cis-1,3-Dichloropropene	0.00500	0.00517	103	25.0-175	
trans-1,3-Dichloropropene	0.00500	0.00478	95.6	50.0-150	
Ethylbenzene	0.00500	0.00548	110	60.0-140	
Methylene Chloride	0.00500	0.00595	119	60.0-140	
Methyl tert-butyl ether	0.00500	0.00551	110	64.0-123	
Naphthalene	0.00500	0.00367	73.4	62.0-128	
1,1,2,2-Tetrachloroethane	0.00500	0.00512	102	60.0-140	
Tetrachloroethene	0.00500	0.00564	113	70.0-130	
1,1,1-Trichloroethane	0.00500	0.00571	114	70.0-130	
1,1,2-Trichloroethane	0.00500	0.00557	111	70.0-130	
Trichloroethene	0.00500	0.00562	112	65.0-135	
Trichlorofluoromethane	0.00500	0.00490	98.0	50.0-150	
Vinyl chloride	0.00500	0.00511	102	5.00-195	
o-Xylene	0.00500	0.00512	102	78.0-120	
m&p-Xylene	0.0100	0.0111	111	77.0-120	
Xylenes, Total	0.0150	0.0162	108	77.0-120	
(S) Toluene-d8			103	80.0-120	
(S) 4-Bromofluorobenzene			97.9	80.0-120	
(S) 1,2-Dichloroethane-d4			97.1	70.0-130	

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Volatile Organic Compounds (GC/MS) by Method 624.1 [L1745600-01](#)

Method Blank (MB)

(MB) R4085597-2 06/23/24 21:42

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
Toluene	U		0.000278	0.00100
(S) Toluene-d8	105			80.0-120
(S) 4-Bromofluorobenzene	94.4			80.0-120
(S) 1,2-Dichloroethane-d4	107			70.0-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R4085597-1 06/23/24 20:56

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00578	116	65.0-135	
Toluene	0.00500	0.00539	108	70.0-130	
(S) Toluene-d8			102	80.0-120	
(S) 4-Bromofluorobenzene			98.0	80.0-120	
(S) 1,2-Dichloroethane-d4			104	70.0-130	

Method Blank (MB)

(MB) R4086661-1 06/25/24 16:30

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH C6 - C12	U		0.600	0.900
TPH C12 - C28	U		0.600	0.900
TPH C28 - C35	U		0.600	0.900
TPH C6 - C35	U		0.600	0.900
(S) o-Terphenyl	86.1			70.0-130
(S) 1-chlorooctane	80.2			70.0-130

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

(LCS) R4086661-5 06/26/24 09:20 • (LCSD) R4086661-2 06/25/24 17:13

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH C6 - C12	41.7	31.7	36.1	76.0	86.6	75.0-125			13.0	20
TPH C12 - C28	41.7	34.4	38.7	82.5	92.8	75.0-125			11.8	20
TPH C6 - C35	83.4	66.1	74.8	79.3	89.7	75.0-125			12.3	20
(S) o-Terphenyl				82.5	89.6	70.0-130				
(S) 1-chlorooctane				80.1	91.4	70.0-130				

L1747669-22 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1747669-22 06/25/24 17:36 • (MS) R4086661-3 06/25/24 17:58 • (MSD) R4086661-4 06/25/24 18:19

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 %
TPH C6 - C12	39.0	ND	29.3	31.0	75.1	79.5	1	75.0-125			5.64	20
TPH C12 - C28	39.0	ND	31.4	33.0	80.5	84.6	1	75.0-125			4.97	20
TPH C6 - C35	78.1	ND	60.7	64.0	77.7	82.1	1	75.0-125			5.29	20
(S) o-Terphenyl					79.8	82.7		70.0-130				
(S) 1-chlorooctane					77.4	83.8		70.0-130				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

Method Blank (MB)

(MB) R4083840-2 06/18/24 23:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acenaphthene	U		0.0000886	0.00100
Acenaphthylene	U		0.0000921	0.00100
Anthracene	U		0.0000804	0.00100
Benzidine	U		0.00374	0.0100
Benzo(a)anthracene	U		0.000199	0.00100
Benzo(b)fluoranthene	U		0.000130	0.00100
Benzo(k)fluoranthene	U		0.000120	0.00100
Benzo(g,h,i)perylene	U		0.000121	0.00100
Benzo(a)pyrene	U		0.0000381	0.00100
Bis(2-chlorethoxy)methane	U		0.000116	0.0100
Bis(2-chloroethyl)ether	U		0.000137	0.0100
2,2-Oxybis(1-Chloropropane)	U		0.000210	0.0100
4-Bromophenyl-phenylether	U		0.0000877	0.0100
2-Chloronaphthalene	U		0.0000648	0.00100
4-Chlorophenyl-phenylether	U		0.0000926	0.0100
Chrysene	U		0.000130	0.00100
Dibenz(a,h)anthracene	U		0.0000644	0.00100
3,3-Dichlorobenzidine	U		0.000212	0.0100
2,4-Dinitrotoluene	U		0.0000983	0.0100
2,6-Dinitrotoluene	U		0.000250	0.0100
1,2-Diphenylhydrazine	U	N2	0.000105	0.0100
Fluoranthene	U		0.000102	0.00100
Fluorene	U		0.0000844	0.00100
Hexachlorobenzene	U		0.0000755	0.00100
Hexachloro-1,3-butadiene	U		0.0000968	0.0100
Hexachlorocyclopentadiene	U		0.0000598	0.0100
Hexachloroethane	U		0.000127	0.0100
Indeno(1,2,3-cd)pyrene	U		0.000279	0.00100
Isophorone	U		0.000143	0.0100
Naphthalene	U		0.000159	0.00100
Nitrobenzene	U		0.000297	0.0100
n-Nitrosodimethylamine	U		0.000998	0.0100
n-Nitrosodiphenylamine	U		0.00237	0.0100
n-Nitrosodi-n-propylamine	U		0.000261	0.0100
Phenanthrene	U		0.000112	0.00100
Benzylbutyl phthalate	U		0.000765	0.00300
Bis(2-ethylhexyl)phthalate	U		0.000895	0.00300
Di-n-butyl phthalate	U		0.000453	0.00300
Diethyl phthalate	U		0.000287	0.00300
Dimethyl phthalate	U		0.000260	0.00300

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Semi Volatile Organic Compounds (GC/MS) by Method 625.1

L1745600-01

Method Blank (MB)

(MB) R4083840-2 06/18/24 23:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Di-n-octyl phthalate	U		0.000932	0.00300
Pyrene	U		0.000107	0.00100
1,2,4-Trichlorobenzene	U		0.0000698	0.0100
4-Chloro-3-methylphenol	U		0.000131	0.0100
2-Chlorophenol	U		0.000133	0.0100
2,4-Dichlorophenol	U		0.000102	0.0100
2,4-Dimethylphenol	U		0.0000636	0.0100
4,6-Dinitro-2-methylphenol	U		0.00112	0.0100
2,4-Dinitrophenol	U		0.00593	0.0100
2-Nitrophenol	U		0.000117	0.0100
4-Nitrophenol	U		0.000143	0.0100
Pentachlorophenol	U		0.000313	0.0100
Phenol	U		0.00433	0.0100
2,4,6-Trichlorophenol	U		0.000100	0.0100
(S) Nitrobenzene-d5	76.7			15.0-314
(S) 2-Fluorobiphenyl	73.4			22.0-127
(S) p-Terphenyl-d14	73.8			29.0-141
(S) Phenol-d5	26.6			8.00-424
(S) 2-Fluorophenol	42.6			10.0-120
(S) 2,4,6-Tribromophenol	54.0			10.0-153

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4083840-1 06/18/24 23:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0500	0.0345	69.0	47.0-145	
Acenaphthylene	0.0500	0.0383	76.6	33.0-145	
Anthracene	0.0500	0.0383	76.6	27.0-133	
Benzidine	0.100	0.0109	10.9	1.00-120	
Benzo(a)anthracene	0.0500	0.0400	80.0	33.0-143	
Benzo(b)fluoranthene	0.0500	0.0409	81.8	24.0-159	
Benzo(k)fluoranthene	0.0500	0.0415	83.0	11.0-162	
Benzo(g,h,i)perylene	0.0500	0.0361	72.2	1.00-219	
Benzo(a)pyrene	0.0500	0.0395	79.0	17.0-163	
Bis(2-chlorethoxy)methane	0.0500	0.0351	70.2	1.00-219	
Bis(2-chloroethyl)ether	0.0500	0.0381	76.2	33.0-185	
2,2-Oxybis(1-Chloropropane)	0.0500	0.0350	70.0	36.0-166	
4-Bromophenyl-phenylether	0.0500	0.0379	75.8	53.0-127	

Semi Volatile Organic Compounds (GC/MS) by Method 625.1

L1745600-01

Laboratory Control Sample (LCS)

(LCS) R4083840-1 06/18/24 23:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
2-Chloronaphthalene	0.0500	0.0342	68.4	60.0-120	
4-Chlorophenyl-phenylether	0.0500	0.0389	77.8	25.0-158	
Chrysene	0.0500	0.0383	76.6	17.0-168	
Dibenz(a,h)anthracene	0.0500	0.0356	71.2	1.00-227	
3,3-Dichlorobenzidine	0.100	0.0771	77.1	1.00-262	
2,4-Dinitrotoluene	0.0500	0.0437	87.4	39.0-139	
2,6-Dinitrotoluene	0.0500	0.0410	82.0	50.0-158	
1,2-Diphenylhydrazine	0.0500	0.0403	80.6	37.0-125	N2
Fluoranthene	0.0500	0.0405	81.0	26.0-137	
Fluorene	0.0500	0.0373	74.6	59.0-121	
Hexachlorobenzene	0.0500	0.0329	65.8	1.00-152	
Hexachloro-1,3-butadiene	0.0500	0.0330	66.0	24.0-120	
Hexachlorocyclopentadiene	0.0500	0.0280	56.0	10.0-120	
Hexachloroethane	0.0500	0.0346	69.2	40.0-120	
Indeno(1,2,3-cd)pyrene	0.0500	0.0340	68.0	1.00-171	
Isophorone	0.0500	0.0353	70.6	21.0-196	
Naphthalene	0.0500	0.0316	63.2	21.0-133	
Nitrobenzene	0.0500	0.0353	70.6	35.0-180	
n-Nitrosodimethylamine	0.0500	0.0305	61.0	10.0-120	
n-Nitrosodiphenylamine	0.0500	0.0384	76.8	44.0-120	
n-Nitrosodi-n-propylamine	0.0500	0.0392	78.4	1.00-230	
Phenanthrene	0.0500	0.0384	76.8	54.0-120	
Benzylbutyl phthalate	0.0500	0.0415	83.0	1.00-152	
Bis(2-ethylhexyl)phthalate	0.0500	0.0395	79.0	8.00-158	
Di-n-butyl phthalate	0.0500	0.0401	80.2	1.00-120	
Diethyl phthalate	0.0500	0.0396	79.2	1.00-120	
Dimethyl phthalate	0.0500	0.0393	78.6	1.00-120	
Di-n-octyl phthalate	0.0500	0.0377	75.4	4.00-146	
Pyrene	0.0500	0.0415	83.0	52.0-120	
1,2,4-Trichlorobenzene	0.0500	0.0332	66.4	44.0-142	
4-Chloro-3-methylphenol	0.0500	0.0290	58.0	22.0-147	
2-Chlorophenol	0.0500	0.0274	54.8	23.0-134	
2,4-Dichlorophenol	0.0500	0.0304	60.8	39.0-135	
2,4-Dimethylphenol	0.0500	0.0374	74.8	32.0-120	
4,6-Dinitro-2-methylphenol	0.0500	0.0519	104	1.00-181	
2,4-Dinitrophenol	0.0500	0.0476	95.2	1.00-191	
2-Nitrophenol	0.0500	0.0350	70.0	29.0-182	
4-Nitrophenol	0.0500	0.0147	29.4	1.00-132	
Pentachlorophenol	0.0500	0.0303	60.6	14.0-176	
Phenol	0.0500	0.0140	28.0	5.00-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R4083840-1 06/18/24 23:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
2,4,6-Trichlorophenol	0.0500	0.0396	79.2	37.0-144	
(S) Nitrobenzene-d5			65.6	15.0-314	
(S) 2-Fluorobiphenyl			71.3	22.0-127	
(S) p-Terphenyl-d14			72.9	29.0-141	
(S) Phenol-d5			26.5	8.00-424	
(S) 2-Fluorophenol			36.0	10.0-120	
(S) 2,4,6-Tribromophenol			63.5	10.0-153	

L1747367-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1747367-01 06/19/24 02:46 • (MS) R4083840-3 06/19/24 03:07 • (MSD) R4083840-4 06/19/24 03:28

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 %
Acenaphthene	0.0500	ND	0.0291	0.0319	58.2	63.8	1	47.0-145			9.18	48
Acenaphthylene	0.0500	ND	0.0329	0.0356	65.8	71.2	1	33.0-145			7.88	74
Anthracene	0.0500	ND	0.0360	0.0372	72.0	74.4	1	27.0-133			3.28	66
Benidine	0.100	ND	0.0405	0.0402	40.5	40.2	1	1.00-120			0.743	40
Benzo(a)anthracene	0.0500	ND	0.0372	0.0405	74.4	81.0	1	33.0-143			8.49	53
Benzo(b)fluoranthene	0.0500	ND	0.0376	0.0423	75.2	84.6	1	24.0-159			11.8	71
Benzo(k)fluoranthene	0.0500	ND	0.0386	0.0415	77.2	83.0	1	11.0-162			7.24	63
Benzo(g,h,i)perylene	0.0500	ND	0.0302	0.0327	60.4	65.4	1	1.00-219			7.95	97
Benzo(a)pyrene	0.0500	ND	0.0368	0.0407	73.6	81.4	1	17.0-163			10.1	72
Bis(2-chlorethoxy)methane	0.0500	ND	0.0284	0.0320	56.8	64.0	1	33.0-184			11.9	54
Bis(2-chloroethyl)ether	0.0500	ND	0.0278	0.0300	55.6	60.0	1	12.0-158			7.61	108
2,2-Oxybis(1-Chloropropane)	0.0500	ND	0.0261	0.0289	52.2	57.8	1	36.0-166			10.2	76
4-Bromophenyl-phenylether	0.0500	ND	0.0337	0.0346	67.4	69.2	1	53.0-127			2.64	43
2-Chloronaphthalene	0.0500	ND	0.0285	0.0311	57.0	62.2	1	60.0-120	J6		8.72	24
4-Chlorophenyl-phenylether	0.0500	ND	0.0330	0.0362	66.0	72.4	1	25.0-158			9.25	61
Chrysene	0.0500	ND	0.0353	0.0385	70.6	77.0	1	17.0-168			8.67	87
Dibenz(a,h)anthracene	0.0500	ND	0.0298	0.0318	59.6	63.6	1	1.00-227			6.49	126
3,3-Dichlorobenzidine	0.100	ND	0.0696	0.0720	69.6	72.0	1	1.00-262			3.39	108
2,4-Dinitrotoluene	0.0500	ND	0.0412	0.0439	82.4	87.8	1	39.0-139			6.35	42
2,6-Dinitrotoluene	0.0500	ND	0.0380	0.0402	76.0	80.4	1	50.0-158			5.63	48
1,2-Diphenylhydrazine	0.0500	ND	0.0348	0.0372	69.6	74.4	1	18.0-156	N2	N2	6.67	34
Fluoranthene	0.0500	ND	0.0369	0.0394	73.8	78.8	1	26.0-137			6.55	66
Fluorene	0.0500	ND	0.0320	0.0345	64.0	69.0	1	59.0-121			7.52	38
Hexachlorobenzene	0.0500	ND	0.0300	0.0307	60.0	61.4	1	1.00-152			2.31	55
Hexachloro-1,3-butadiene	0.0500	ND	0.0256	0.0293	51.2	58.6	1	24.0-120			13.5	62
Hexachlorocyclopentadiene	0.0500	ND	0.0206	0.0249	41.2	49.8	1	10.0-146			18.9	34

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Semi Volatile Organic Compounds (GC/MS) by Method 625.1 L1745600-01

L1747367-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1747367-01 06/19/24 02:46 • (MS) R4083840-3 06/19/24 03:07 • (MSD) R4083840-4 06/19/24 03:28

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 %
Hexachloroethane	0.0500	ND	0.0268	0.0296	53.6	59.2	1	40.0-120			9.93	52
Indeno(1,2,3-cd)pyrene	0.0500	ND	0.0292	0.0319	58.4	63.8	1	1.00-171			8.84	99
Isophorone	0.0500	ND	0.0293	0.0333	58.6	66.6	1	21.0-196			12.8	93
Naphthalene	0.0500	ND	0.0262	0.0287	52.4	57.4	1	21.0-133			9.11	65
Nitrobenzene	0.0500	ND	0.0303	0.0333	60.6	66.6	1	35.0-180			9.43	62
n-Nitrosodimethylamine	0.0500	ND	0.0268	0.0296	53.6	59.2	1	10.0-120			9.93	40
n-Nitrosodiphenylamine	0.0500	ND	0.0373	0.0369	74.6	73.8	1	16.0-160			1.08	28
n-Nitrosodi-n-propylamine	0.0500	ND	0.0308	0.0340	61.6	68.0	1	1.00-230			9.88	87
Phenanthrene	0.0500	ND	0.0361	0.0371	72.2	74.2	1	54.0-120			2.73	39
Benzylbutyl phthalate	0.0500	ND	0.0418	0.0460	83.6	92.0	1	1.00-152			9.57	60
Bis(2-ethylhexyl)phthalate	0.0500	ND	0.0360	0.0390	72.0	78.0	1	8.00-158			8.00	82
Di-n-butyl phthalate	0.0500	ND	0.0366	0.0389	73.2	77.8	1	1.00-120			6.09	47
Diethyl phthalate	0.0500	ND	0.0357	0.0385	71.4	77.0	1	1.00-120			7.55	100
Dimethyl phthalate	0.0500	ND	0.0348	0.0368	69.6	73.6	1	1.00-120			5.59	183
Di-n-octyl phthalate	0.0500	ND	0.0344	0.0367	68.8	73.4	1	4.00-146			6.47	69
Pyrene	0.0500	ND	0.0419	0.0463	83.8	92.6	1	52.0-120			9.98	49
1,2,4-Trichlorobenzene	0.0500	ND	0.0271	0.0303	54.2	60.6	1	44.0-142			11.1	50
4-Chloro-3-methylphenol	0.0500	ND	0.0300	0.0301	60.0	60.2	1	22.0-147			0.333	73
2-Chlorophenol	0.0500	ND	0.0239	0.0251	47.8	50.2	1	23.0-134			4.90	61
2,4-Dichlorophenol	0.0500	ND	0.0273	0.0297	54.6	59.4	1	39.0-135			8.42	50
2,4-Dimethylphenol	0.0500	ND	0.0362	0.0363	72.4	72.6	1	32.0-120			0.276	58
4,6-Dinitro-2-methylphenol	0.0500	ND	0.0483	0.0505	96.6	101	1	1.00-181			4.45	203
2,4-Dinitrophenol	0.0500	ND	0.0439	0.0504	87.8	101	1	1.00-191			13.8	132
2-Nitrophenol	0.0500	ND	0.0304	0.0337	60.8	67.4	1	29.0-182			10.3	55
4-Nitrophenol	0.0500	ND	0.0152	0.0169	30.4	33.8	1	1.00-132			10.6	131
Pentachlorophenol	0.0500	ND	0.0310	0.0332	62.0	66.4	1	14.0-176			6.85	86
Phenol	0.0500	ND	0.0144	0.0134	28.8	26.8	1	5.00-120			7.19	64
2,4,6-Trichlorophenol	0.0500	ND	0.0347	0.0372	69.4	74.4	1	37.0-144			6.95	58
(S) Nitrobenzene-d5					0.000	0.000		15.0-314	J2	J2		
(S) 2-Fluorobiphenyl					0.000	0.000		22.0-127	J2	J2		
(S) p-Terphenyl-d14					0.000	0.000		29.0-141	J2	J2		
(S) Phenol-d5					0.000	0.000		8.00-424	J2	J2		
(S) 2-Fluorophenol					0.000	0.000		10.0-120	J2	J2		
(S) 2,4,6-Tribromophenol					0.000	0.000		10.0-153	J2	J2		

1

Cp

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Tc

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Ss

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Cn

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Sr

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Qc

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Gl

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Al

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Sc

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.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
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
B1	The blank depletion was greater than the recommended maximum depletion of 0.2mg/L.
C6	The initial calibration verification standard (SSCV) associated with this data responded low.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J4	The associated batch QC was outside the established quality control range for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
K9	Test replicates show more than 30% difference between high and low values.
N2	Analyte reported using a calibration and validation based on Azobenzene (CAS 103-33-3). 1,2-Diphenylhydrazine decomposes into Azobenzene during the analysis.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.

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9Sc

Qualifier	Description
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

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⁷Gl

⁸Al

⁹Sc

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	LA000356
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.

¹Cp

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Released to Imaging: 9/6/2024 9:52:49 AM

[illegible]

Company Name/Address: Devon Energy - Oklahoma City, OK 333 W Sheridan Avenue Oklahoma City, OK 73102-5015		Billing Information: Paul Barbour 333 W Sheridan Avenue Oklahoma City, OK 73102-5015 Email To: paul.barbour@dvn.com		Pres Chk		Analysis / Container / Preservative								Chain of Custody Page <u>9</u> of <u>9</u>			
Report to: Paul Barbour		Project Description: Desalination Pilot		City/State Collected: JAL, NM		Please Circle: PT ☒ MT ☐ CT ☐ ET ☐		Wet Chem 500mlHDPE-NoPres								 PEOPLE ADVANCING SCIENCE MT JULIET, TN 12065 Lebanon Rd Mount Juliet, TN 37122 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubs/pas-standard-terms.pdf	
Phone: 405-228-4308		Client Project # 212C-HU-02831		Lab Project # DEVENEOCOK-EFFLUENT		SDG # U745600											
Collected by (print): CCR		Site/Facility ID # CCR		P.O. #		Table #											
Collected by (signature): CCR		Rush? (Lab MUST Be Notified) ___ Same Day ___ Five Day ___ Next Day ___ 5 Day (Rad Only) ___ Two Day ___ 10 Day (Rad Only) ___ Three Day		Quote #		Acctnum: DEVENEOCOK Template: T253859											
Immediately Packed on Ice N ___ Y ___		Date Results Needed		No. of Cntrs		Prelogin: P1081549 PM: 3500 Jennifer Gambill PB: BW 6/7											
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Shipped Via: FedEX Priority									
POST ELECTROLYSIS		G	GW	6-11-24	1045	28	X	Remarks Sample # (lab only) -01									
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other		Remarks: Samples returned via: ___ UPS ___ FedEx ___ Courier		Tracking #		pH _____ Temp _____ Flow _____ Other _____		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 If Applicable VOA Zero Headspace: ☒ Y ☐ N Preservation Correct/Checked: ☒ Y ☐ N RAD Screen <0.5 mR/hr: ☒ Y ☐ N									
Relinquished by: (Signature) [Signature]		Date: 6-11-24	Time: 1600	Received by: (Signature) [Signature]		Trip Blank Received: Yes/No NO / MeOH		If preservation required by Login: Date/Time									
Relinquished by: (Signature) [Signature]		Date: 6/11/24	Time: 1645	Received by: (Signature) [Signature]		Temp: 43.0-3=4.6 NFAU		Bottles Received: 18		Hold:							
Relinquished by: (Signature) [Signature]		Date: 6-12-24	Time: 0800	Received for lab by: (Signature) [Signature]		Date: 6-12-24		Time: 0800		Condition: NCF / OK							



July 01, 2024

Jimmy Huckaba
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122

RE: Project: WG2304577
Pace Project No.: 50376508

Dear Jimmy Huckaba:

Enclosed are the analytical results for sample(s) received by the laboratory on June 21, 2024. 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 - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Randal Rastorfer".

Randal Rastorfer
randal.rastorfer@pacelabs.com
(614)301-3304
Project Manager

Enclosures

cc: Pace National Subout Team, Pace National



REPORT OF LABORATORY ANALYSIS

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7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: WG2304577

Pace Project No.: 50376508

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268

Illinois Accreditation #: 200074

Indiana Drinking Water Laboratory #: C-49-06

Kansas/TNI Certification #: E-10177

Kentucky UST Agency Interest #: 80226

Kentucky WW Laboratory ID #: 98019

Michigan Drinking Water Laboratory #9050

Oklahoma Laboratory #: 9204

Texas Certification #: T104704355

Washington Dept of Ecology #: C1081

Wisconsin Laboratory #: 999788130

USDA Foreign Soil Permit #: 525-23-13-23119

USDA Compliance Agreement #: IN-SL-22-001

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SAMPLE SUMMARY

Project: WG2304577

Pace Project No.: 50376508

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50376508001	POST ELECTROLYSIS	Water	06/11/24 10:45	06/21/24 09:30

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SAMPLE ANALYTE COUNT

Project: WG2304577

Pace Project No.: 50376508

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50376508001	POST ELECTROLYSIS	EPA 9056	ADM	1	PASI-I

PASI-I = Pace Analytical Services - Indianapolis

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ANALYTICAL RESULTS

Project: WG2304577

Pace Project No.: 50376508

Sample: POST ELECTROLYSIS		Lab ID: 50376508001	Collected: 06/11/24 10:45	Received: 06/21/24 09:30	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 Iodide by IC		Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis						
Iodide	ND	mg/L	0.50	1		06/29/24 13:07		

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QUALITY CONTROL DATA

Project: WG2304577

Pace Project No.: 50376508

QC Batch: 797279

Analysis Method: EPA 9056

QC Batch Method: EPA 9056

Analysis Description: 9056 Iodide by IC

Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50376508001

METHOD BLANK: 3648082

Matrix: Water

Associated Lab Samples: 50376508001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Iodide	mg/L	ND	0.50	06/28/24 10:15	

LABORATORY CONTROL SAMPLE: 3648083

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iodide	mg/L	5	4.7	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3648084 3648085

Parameter	Units	50376505001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Iodide	mg/L	251	500	500	715	731	93	96	80-120	2	15	

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.

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QUALIFIERS

Project: WG2304577

Pace Project No.: 50376508

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.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: WG2304577

Pace Project No.: 50376508

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50376508001	POST ELECTROLYSIS	EPA 9056	797279		

REPORT OF LABORATORY ANALYSIS

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Sub-Contract Chain of Custody

Batch Date/Time: 06/13/24 13:41
Sub-Contract Lab: PACEIIN
Address: 7726 Moller Rd.
City/State: Indianapolis, IN 46268
Contact:
Randal.Rastorfer@pacelabs.com
Owner Lab: PACEMTJL
Address: 12065 Lebanon Rd.
City/State: Mt. Juliet, TN 37122
Phone: (615) 773-9756
Fax: (615) 758-5859

WO: WG2304577
Email: MTJLSuboutTeam@pacelabs.com
Results Due Date: 07/11/24
ESC Purchase Order #: L1745600
Send Reports to: James C Huckaba



12065 Lebanon Rd.
Mt. Juliet, TN 37122
Phone: (615) 773-9756
Fax: (615) 758-5859

Sample ID Container ID	Matrix	State	Collect Date	Description	Sample Number Lab Use Only	Sample Comments Lab Use Only
POST ELECTROLYSIS 48027098	WW	NM	06/11/24 10:45	Iodide	2. L1745600-01	

*= Container used for multiple Samples and/or Analyses

Relinquished by: [Signature] Date 6-13-24

Received by: FedEx Date _____

Relinquished by: FedEx Date 6-21-24 0930

Received by: Mail Slits/PACE Date 6-21-24 0930

WO# : 50376508**50376508**



SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: NMS 06-21-2024 1725

1. Courier: ☒ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ NOW/JETT ☐ OTHER _____2. Custody Seal on Cooler/Box Present: ☒ Yes ☐ No(If yes) Seals Intact: ☒ Yes ☐ No (leave blank if no seals were present)

3. Thermometer: 1 2 3 4 5 6 7 8 9 A B C D E F G H I

4. Cooler Temperature(s): 1.8 11.8
(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. Packing Material:

☒ Bubble Wrap ☐ Bubble Bags☐ None ☐ Other _____6. Ice Type: ☒ Wet ☐ Blue ☐ None7. Was the PM notified of out of temp cooler?: ☐ Yes ☐ No
Cooler temp should be above freezing to 6°C8. EZ Bottle Order? ☐ Yes ☒ NoIf yes but not on COC
what is the EZ Bottle
Order Number?:

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR, CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		X	All containers needing acid/base preservation have been pH CHECKED?: Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.			
Short Hold Time Analysis (48 hours or less)? Analysis:		X	Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form			X
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
Rush TAT Requested (4 days or less):		X	Residual Chlorine Check (SVOC 625 Pest/PCB 608)			X
			Residual Chlorine Check (Total/Amenable/Free Cyanide)			X
Custody Signatures Present?	X		Headspace Wisconsin Sulfide?			X
Containers Intact?:	X		Headspace in VOA Vials (>6mm): See Container Count form for details	Present	Absent	No VOA Vials Sent X
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	X		Trip Blank Present?		X	
Extra labels on Terracore Vials? (soils only)		X	Trip Blank Custody Seals?:			X

COMMENTS: Less than a quarter amount of volume in container. NMS 6-21-24

COC PAGE 1 of 1

Sample Container Count

** Place a PINK dot on containers
that are out of conformance **

COC Line Item	WG <u>F</u> U	WG <u>K</u> U	BG <u>1</u> U	MeOH (only)	DG <u>9</u> H	VG <u>9</u> H	VOA VIAL HS (>6mm)	VG <u>9</u> U	DG <u>9</u> U	VG <u>9</u> T	AMBER GLASS						PLASTIC								OTHER				Matrix	Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide ZnAc			
				SBS							R	AG <u>0</u> U	AG <u>1</u> H	AG <u>1</u> U	AG <u>3</u> U	AG <u>3</u> S	AG <u>3</u> SF	AG <u>3</u> B	BP <u>1</u> U	BP <u>1</u> N	BP <u>2</u> U	BP <u>3</u> U	BP <u>3</u> N	BP <u>3</u> F	BP <u>3</u> S	BP <u>3</u> B	BP <u>3</u> Z	CG <u>3</u> H		CG <u>3</u> F	Syringe Kit	BP <u>4</u> U	Red	Yellow	Green	Black
				DI																													HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
1																								1			Σ									
2																																				
3																																				
4																																				
5																																				
6																																				
7																																				
8																																				
9																																				
10																																				
11																																				
12																																				

Container Codes

Glass				Plastic			
DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic	NT3U	Non Teflon 250mL unpreserved plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic	BP4U	125mL unpreserved plastic
DG9S	40mL H2SO4 amber vial	CG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic	BP4N	125mL HNO3 plastic
DG9T	40mL Na Thio amber vial	CG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic	BP4S	125mL H2SO4 plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac	Miscellaneous	
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic		
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic	Syringe Kit	LL Cr+6 sampling kit
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic	ZPLC	Ziploc Bag
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic	R	Terracore Kit
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac	SP5T	120mL Coliform Sodium Thiosulfate
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic	GN	General Container
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic	U	Summa Can (air sample)
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered	WT	Water
CG3F	250mL clear glass HCl, Field Filter	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic	SL	Solid
BG1H	1L HCl clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic	OL	Oil
BG1S	1L H2SO4 clear glass	AG3B	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic	NAL	Non-aqueous liquid
						WP	Wipe



July 01, 2024

Subout Team
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122

RE: Project: L1745600
Pace Project No.: 30694607

Dear Subout Team:

Enclosed are the analytical results for sample(s) received by the laboratory on June 24, 2024. 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 - Beaver

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Nikayla M. Yasurek

Nikayla M. Yasurek
nikayla.yasurek@pacelabs.com
(724)850-5600
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: L1745600

Pace Project No.: 30694607

Pace Analytical Services Beaver

225 Industrial Park Road, Beaver, WV 25813

Virginia VELAP 460148

West Virginia DEP 060

West Virginia DHHR 00412CM

North Carolina DEQ 466

Kentucky Wastewater Certification KY90039

Pennsylvania DEP 68-00839

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: L1745600

Pace Project No.: 30694607

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30694607001	L1745600-01	Water	06/11/24 10:45	06/24/24 09:58

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: L1745600

Pace Project No.: 30694607

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30694607001	L1745600-01	SM 5910B-11	SDW	1	PASI-BV

PASI-BV = Pace Analytical Services - Beaver

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: L1745600

Pace Project No.: 30694607

Sample: L1745600-01 **Lab ID: 30694607001** Collected: 06/11/24 10:45 Received: 06/24/24 09:58 Matrix: Water

Comments: • Per client, run out of temp and hold.

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
UV254 SUVA Absorbing Organincs		Analytical Method: SM 5910B-11 Pace Analytical Services - Beaver						
U254 UV Absorbing Organic	0.0045	cm-1	0.0030	1		06/25/24 16:21		H3,N2

REPORT OF LABORATORY ANALYSIS

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Date: 07/01/2024 02:33 PM

Page 5 of 10



QUALITY CONTROL DATA

Project: L1745600

Pace Project No.: 30694607

QC Batch: 678050

Analysis Method: SM 5910B-11

QC Batch Method: SM 5910B-11

Analysis Description: UV254 SUVA Absorbing Organincs

Laboratory: Pace Analytical Services - Beaver

Associated Lab Samples: 30694607001

METHOD BLANK: 3301477

Matrix: Water

Associated Lab Samples: 30694607001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
U254 UV Absorbing Organic	cm-1	ND	0.0030	06/25/24 16:07	N2

LABORATORY CONTROL SAMPLE: 3301478

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
U254 UV Absorbing Organic	cm-1	0.072	0.084	116	80-120	N2

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

REPORT OF LABORATORY ANALYSIS

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Date: 07/01/2024 02:33 PM

Page 6 of 10



QUALIFIERS

Project: L1745600
Pace Project No.: 30694607

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.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H3 Sample was received or analysis requested beyond the recognized method holding time.
N2 The lab does not hold NELAC/TNI accreditation for this parameter but other accreditations/certifications may apply. A complete list of accreditations/certifications is available upon request.

REPORT OF LABORATORY ANALYSIS

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Date: 07/01/2024 02:33 PM

Page 7 of 10



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L1745600
Pace Project No.: 30694607

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30694607001	L1745600-01	SM 5910B-11	678050		

REPORT OF LABORATORY ANALYSIS

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Sub-Contract Chain of Custody

Batch Date/Time: 06/13/24 13:48
 Sub-Contract Lab: PACEBWV
 Address: 225 Industrial Park Road
 City/State: Beaver, WV 25813

Contact:

Stacy Heasley@pacelabs.com
 Owner Lab: PACEMTJL

Address: 12065 Lebanon Rd.
 City/State: Mt. Juliet, TN 37122
 Phone: (615) 773-9756
 Fax: (615) 758-5859

WO: WG2304584

Email: MTJLSuboutTeam@pacelabs.com

Results Due Date: 07/11/24

ESC Purchase Order #: L1745600

Send Reports to: James C Huckaba



12065 Lebanon Rd.
 Mt. Juliet, TN 37122
 Phone: (615) 773-9756
 Fax: (615) 758-5859

Sample ID Container ID	Matrix	State	Collect Date	Description	Sample Number Lab Use Only	Sample Comments Lab Use Only
POST ELECTROLYSIS	WW	NM	06/11/24 10:45	UV-254	2. L1745600-01	UV-254

Relinquished by: C. Wilson

Date: 6-13-24

Received by: C. Wilson

Date: 6-24-24 0958

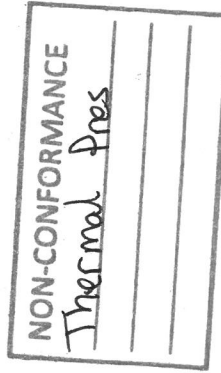
Relinquished by: _____

Date: _____

Received by: _____

Date: _____

WO#: 30694607



DC#_Title: ENV-FRM-BEAV-0058 v03_Pace WV Sample Condition Upon Receipt'
Effective Date: 2/8/2023

WO#: 30694607
PM: NMY Due Date: 07/09/24
CLIENT: ESC

LIMS30 Lab Sample Condition Upon Receipt (West Virg

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ 3rd Party Courier ☐ Pace ☐ Other

Tracking #:

Custody Seal on Cooler/Box/Containers Present: ☒ yes ☐ no

Seals intact: ☒ yes ☐ no

Thermometer Used

Type of Ice: Wet Blue None

Cooler Temperature

Observed Temp 14.2 °C

Correction Factor: 0 °C

Final Temp: 14.2 °C

Thermal Preservation Requirement Met Yes ☒ No ☐

pH paper Lot#	Date and Initials of person examining contents:
---------------	---

	Yes	No	N/A
Chain of Custody Present:	☒		
Chain of Custody Filled Out:	☒		
Chain of Custody Relinquished:	☒		
Sampler Name & Signature on COC:		☒	
Sample Labels match COC:	☒		
-Includes date/time/ID			
Matrix: <u>Sub</u>			
Samples Arrived within Hold Time:	☒		
Short Hold Time Analysis (<72hr remaining):	☒		
Rush Turn Around Time Requested:	☒		
Sufficient Volume:	☒		
Correct Containers Used:	☒		
-Pace Containers Used:	☒		
Containers Intact:	☒		
Orthophosphate field filtered:			☒
Hex Cr Aqueous sample field filtered:			☒
-pH adjusted within 24 hours? (if yes, indicate acid lot #)			☒
Filtered volume received for Dissolved tests:			☒
All containers have been checked for chemical preservation:			☒
exceptions: VOA, collform, O&G, LLMercury, Non-aqueous matrix			
All containers meet method/chemical preservation requirements:			
Initial when completed:			Date: <u>6-24-24</u>
Tests not preserved:			
Headspace in VOA Vials:			☒
Trip Blank Present:			☒
Initial when completed:			Date: <u>6-24-24</u>

Comments:

*PM review is documented electronically in LIMS, when the Project Manager closes the SRF Review schedule in LIMS. The status may be reviewed in the Status section of the Workorder Edit Screen.



July 08, 2024

MTJLSuboutTeam
Pace National
12065 Lebanon Rd
Mt. Juliet, TN 37122

RE: Project: L1745600 WG2304593
Pace Project No.: 40280056

Dear MTJLSuboutTeam:

Enclosed are the analytical results for sample(s) received by the laboratory on June 21, 2024. 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 - Green Bay

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Angela Lane".

Angela Lane
angela.lane@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Jimmy Huckaba, Pace Analytical Allen
Pace National Subout Team, Pace National



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: L1745600 WG2304593

Pace Project No.: 40280056

Pace Analytical Services Green Bay

1241 Bellevue Street, Green Bay, WI 54302

Florida/NELAP Certification #: E87948

Illinois Certification #: 200050

Kentucky UST Certification #: 82

Louisiana Certification #: 04168

Minnesota Certification #: 055-999-334

New York Certification #: 12064

North Dakota Certification #: R-150

South Carolina Certification #: 83006001

Texas Certification #: T104704529-21-8

Virginia VELAP Certification ID: 11873

Wisconsin Certification #: 405132750

Wisconsin DATCP Certification #: 105-444

USDA Soil Permit #: P330-21-00008

Federal Fish & Wildlife Permit #: 51774A

REPORT OF LABORATORY ANALYSIS

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1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: L1745600 WG2304593

Pace Project No.: 40280056

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40280056001	POST ELECTROLYSIS	Water	06/11/24 10:45	06/21/24 09:25

REPORT OF LABORATORY ANALYSIS

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1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: L1745600 WG2304593

Pace Project No.: 40280056

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40280056001	POST ELECTROLYSIS	SM 2710F	HML	2

PASI-G = Pace Analytical Services - Green Bay

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: L1745600 WG2304593
Pace Project No.: 40280056

Sample: POST ELECTROLYSIS Lab ID: 40280056001 Collected: 06/11/24 10:45 Received: 06/21/24 09:25 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Specific Gravity /Bulk Density		Analytical Method: SM 2710F Pace Analytical Services - Green Bay							
Density	0.99	g/mL			1		07/08/24 12:32		
Specific Gravity	1.0	no units			1		07/08/24 12:32		

REPORT OF LABORATORY ANALYSIS

**QUALITY CONTROL DATA**

Project: L1745600 WG2304593

Pace Project No.: 40280056

QC Batch: 478937

QC Batch Method: SM 2710F

Analysis Method: SM 2710F

Analysis Description: Specific Gravity /Bulk Density

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40280056001

SAMPLE DUPLICATE: 2743267

Parameter	Units	40280525001 Result	Dup Result	RPD	Max RPD	Qualifiers
Density	g/mL	1.1	1.1	1	20	
Specific Gravity	no units	1.1	1.1	1	20	

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.

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Date: 07/08/2024 03:30 PM

Page 6 of 11



QUALIFIERS

Project: L1745600 WG2304593

Pace Project No.: 40280056

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.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

REPORT OF LABORATORY ANALYSIS

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Date: 07/08/2024 03:30 PM

Page 7 of 11



QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: L1745600 WG2304593
Pace Project No.: 40280056

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40280056001	POST ELECTROLYSIS	SM 2710F	478937		

REPORT OF LABORATORY ANALYSIS

Date: 07/08/2024 03:30 PM

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40280056

Sub-Contract Chain of Custody

Batch Date/Time: 06/13/24 13:57
 Sub-Contract Lab: PACEGBWI
 Address: 1241 Bellvue Street, Suite
 9

City/State: Green Bay, WI 54302

Contact:

Angela.Lane@pacelabs.com

Owner Lab: PACEMTJL

Address: 12065 Lebanon Rd.

City/State: Mt. Juliet, TN 37122

Phone: (615) 773-9756

Fax: (615) 758-5859

WO: WG2304593

Email: MTJLSuboutTeam@pacelabs.com

Results Due Date: 07/11/24

ESC Purchase Order #: L1745600

Send Reports to: James C Huckaba



12065 Lebanon Rd.
 Mt. Juliet, TN 37122
 Phone: (615) 773-9756
 Fax: (615) 758-5859

Sample ID Container ID	Matrix	State	Collect Date	Description	Sample Number Lab Use Only	Sample Comments Lab Use Only
POST ELECTROLYSIS 48027107	WW	NM	06/11/24 10:45	Specific Gravity	2. L1745600-01	CS1

*= Container used for multiple Samples and/or Analyses

Relinquished by: [Signature] Date 6-13-24

Received by: _____ Date _____

Relinquished by: Fedex Date 6/14/24 09:25

Received by: [Signature] Date 6/14/24 09:25

DC#_Title: ENV-FRM-GBAY-0035 v03_Sample Preservation Receipt Form

Effective Date: 8/16/2022

Client Name:

Pace Natural

Sample Preservation Receipt Form

Project #

40280056

All containers needing preservation have been checked and noted below:

☐ Yes☐ No☒ N/A

Lab Lot# of pH paper.

Lab Std #ID of preservation (if pH adjusted):

Initial when
completed:Date/
Time:

Pace Lab #	Glass						Plastic						Vials					Jars				General				VOA Vials (≥6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	BP2Z	VG9C	DG9T	VG9U	VG9H	VG9M	VG9D	JG9U	JG9U	WGFU	WPFU	SP5T	ZPLC							
001																																2.5 / 5
002																																2.5 / 5
003																																2.5 / 5
004																																2.5 / 5
005																																2.5 / 5
006																																2.5 / 5
007																																2.5 / 5
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017																																2.5 / 5
018																																2.5 / 5
019																																2.5 / 5
020																																2.5 / 5

Exceptions to preservation check VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____

Headspace in VOA Vials (>6mm): ☐ Yes ☐ No ☒ N/A

*If yes look in headspace column

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	VG9C	40 mL clear ascorbic w/ HCl	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG5U	100 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH + Zn	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres					GN 1	125 mL poly unpres.
						GN 2	

Page 1 of 2

DC#_Title: ENV-FRM-GBAY-0014 v03_SCUR

Effective Date: 8/17/2022

Sample Condition Upon Receipt Form (SCUR)

Project #:

Client Name: Pace NationalCourier: ☐ CS Logistics ☒ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco
☐ Client ☐ Pace Other: _____Tracking #: 7315 3206 1293Custody Seal on Cooler/Box Present: ☒ yes ☐ no Seals intact: ☒ yes ☐ noCustody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☒ noPacking Material: ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____Thermometer Used SR - 120Type of Ice: Wet Blue Dry None☐ Meltwater OnlyCooler Temperature Uncorr: 0.0 /Corr: 0.0Temp Blank Present: ☒ yes ☐ noBiological Tissue is Frozen: ☐ yes ☐ no

Temp should be above freezing to 6°C.

Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Person examining contents:

Date: 8/23/24 /Initials: mttLabeled By Initials: AK

Chain of Custody Present:	☒ Yes ☐ No ☐ N/A	1.
Chain of Custody Filled Out:	☒ Yes ☐ No ☐ N/A	2.
Chain of Custody Relinquished:	☒ Yes ☐ No ☐ N/A	3.
Sampler Name & Signature on COC:	☐ Yes ☐ No ☒ N/A	4. <u>IRMS mtt Chiky</u>
Samples Arrived within Hold Time:	☒ Yes ☐ No	5.
- DI VOA Samples frozen upon receipt	☐ Yes ☐ No	Date/Time:
Short Hold Time Analysis (<72hr):	☐ Yes ☒ No	6.
Rush Turn Around Time Requested:	☐ Yes ☒ No	7.
Sufficient Volume:		8.
For Analysis: ☒ Yes ☐ No MS/MSD: ☐ Yes ☒ No ☐ N/A		
Correct Containers Used:	☒ Yes ☐ No	9.
Correct Type: Pace Green Bay, <u>Pace IR</u> , Non-Pace		
Containers Intact:	☒ Yes ☐ No	10.
Filtered volume received for Dissolved tests	☐ Yes ☐ No ☒ N/A	11.
Sample Labels match COC:	☒ Yes ☐ No ☐ N/A	12.
-Includes date/time/ID/Analysis Matrix: <u>W</u>		
Trip Blank Present:	☐ Yes ☐ No ☒ N/A	13.
Trip Blank Custody Seals Present	☐ Yes ☐ No ☒ N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution:

If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample logi

Page 2 of 2



ANALYTICAL REPORT

July 09, 2024

- ¹Cp
- ²Tc
- ³Ss
- ⁴Cn
- ⁵Sr
- ⁶Qc
- ⁷Gl
- ⁸Al
- ⁹Sc

Devon Energy - Oklahoma City, OK

Sample Delivery Group: L1745601
Samples Received: 06/12/2024
Project Number: 212C-HN-02831
Description: Desalination Pilot
Site: CCR
Report To: Paul Barbour
333 W Sheridan Avenue
Oklahoma City, OK 73102-5015

Entire Report Reviewed By:

Jennifer Gambill
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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Cn: Case Narrative	4	
Sr: Sample Results	5	³ Ss
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Radiochemistry by Method 904/9320	7	
Radiochemistry by Method D3972 U-02	8	⁶ Qc
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Gl: Glossary of Terms	10	
Al: Accreditations & Locations	11	⁸ Al
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POST ELECTROLYSIS L1745601-01 Non-Potable Water

Collected by
Danny Daniels

Collected date/time
06/11/24 10:45

Received date/time
06/12/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Radiochemistry by Method 900	WG2304332	1	06/13/24 09:43	06/19/24 13:10	SNR	Mt. Juliet, TN
Radiochemistry by Method 904/9320	WG2304628	1	06/13/24 15:13	06/28/24 18:43	DDD	Mt. Juliet, TN
Radiochemistry by Method D3972 U-02	WG2305008	1	06/17/24 10:11	06/18/24 22:24	RGT	Mt. Juliet, TN
Radiochemistry by Method SM7500Ra B M	WG2304485	1	06/14/24 14:48	06/18/24 22:24	RGT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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.



Jennifer Gambill
Project Manager



Radiochemistry by Method 900

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
GROSS ALPHA	0.500	<u>U</u>	2.81	2.84	4.23	2.46	06/19/2024 13:10	WG2304332
GROSS BETA	41.6		4.04	0.204	3.42	1.81	06/19/2024 13:10	WG2304332

¹Cp

²Tc

³Ss

Radiochemistry by Method 904/9320

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-228	-0.288	<u>U</u>	0.214	0.314	0.412	0.217	06/28/2024 18:43	WG2304628
(T) Barium	97.6					30.0-143	06/28/2024 18:43	WG2304628
(T) Yttrium	104					30.0-136	06/28/2024 18:43	WG2304628

⁴Cn

⁵Sr

⁶Qc

Radiochemistry by Method D3972 U-02

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
URANIUM-234	0.146	<u>J</u>	0.213	0.378	0.321	0.234	06/18/2024 22:24	WG2305008
URANIUM-235	0.0289	<u>U</u>	0.104	0.270	0.224	0.185	06/18/2024 22:24	WG2305008
URANIUM-238	0.0389	<u>U</u>	0.104	0.270	0.224	0.185	06/18/2024 22:24	WG2305008
(T) URANIUM-232	69.9					30.0-110	06/18/2024 22:24	WG2305008

⁷Gl

⁸Al

⁹Sc

Radiochemistry by Method SM7500Ra B M

Analyte	Result pCi/l	Qualifier	2 sigma CE + / -	TPU + / -	MDA pCi/l	Lc pCi/l	Analysis Date date / time	Batch
RADIUM-226	0.144	<u>U</u>	0.262	0.0983	0.407	0.271	06/18/2024 22:24	WG2304485
(T) Barium-133	85.1					30.0-143	06/18/2024 22:24	WG2304485

Method Blank (MB)

(MB) R4083927-1 06/19/24 13:10

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
GROSS ALPHA	0.0744	U	0.539	0.810	0.468
GROSS BETA	-0.870	U	1.21	1.67	0.873

L1745601-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745601-01 06/19/24 13:10 • (DUP) R4083927-3 06/19/24 13:10

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
GROSS ALPHA	0.500	2.81	4.23	2.46	-0.438	2.35	3.81	2.24	200	0.256	U	20	3
GROSS BETA	41.6	4.04	3.42	1.81	38.0	4.44	4.42	2.31	9.10	0.603		20	3

Laboratory Control Sample (LCS)

(LCS) R4083927-2 06/19/24 13:10

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
GROSS ALPHA	15.0	15.5	104	80.0-120	
GROSS BETA	40.3	40.0	99.2	80.0-120	

L1745329-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745329-07 06/19/24 13:10 • (MS) R4083927-6 06/19/24 16:47 • (MSD) R4083927-7 06/19/24 16:47

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
GROSS ALPHA	42.9	-2.05	47.8	51.0	111	119	1	70.0-130			6.46		20
GROSS BETA	115	2.43	128	126	110	107	1	70.0-130			1.97		20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method 904/9320 [L1745601-01](#)

Method Blank (MB)

(MB) R4090007-1 06/28/24 18:43

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-228	0.0755	<u>U</u>	0.190	0.354	0.186
(T) Barium	82.6		82.6		
(T) Yttrium	94.6		94.6		

L1746164-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1746164-06 06/28/24 18:43 • (DUP) R4090007-5 06/28/24 18:43

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-228	0.955	0.362	0.647	0.339	1.38	0.381	0.670	0.349	36.5	0.810		20	3
(T) Barium	94.6				101	101							
(T) Yttrium	108				108	108							

Laboratory Control Sample (LCS)

(LCS) R4090007-2 06/28/24 18:43

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-228	5.00	4.05	81.0	80.0-120	
(T) Barium			96.6		
(T) Yttrium			107		

L1745337-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745337-06 06/28/24 18:43 • (MS) R4090007-3 06/28/24 18:43 • (MSD) R4090007-4 06/28/24 18:43

Analyte	Spike Amount pCi/l	Original Result pCi/l	MS Result pCi/l	MSD Result pCi/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-228	16.7	0.427	18.4	16.8	108	97.7	1	70.0-130			9.44		20
(T) Barium		89.1			89.4	107							
(T) Yttrium		96.5			102	104							

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4084957-1 06/18/24 22:24

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
URANIUM-234	0.0792		0.0474	0.0527	0.0343
URANIUM-235	0.0265	J	0.0264	0.0309	0.0234
URANIUM-238	0.0501		0.0335	0.0309	0.0234
(T) URANIUM-232	72.1		72.1		

L1745595-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745595-01 06/18/24 22:24 • (DUP) R4084957-5 06/18/24 22:24

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
URANIUM-234	0.283	0.264	0.304	0.231	0.200	0.278	0.405	0.278	34.3	0.216	J	20	3
URANIUM-235	-0.0205	0.0460	0.242	0.200	-0.0200	0.0439	0.231	0.191	0.000	0.00755	J	20	3
URANIUM-238	0.409	0.294	0.242	0.200	0.0301	0.116	0.264	0.207	173	1.20	J	20	3
(T) URANIUM-232	74.6				77.9	77.9							

Laboratory Control Sample (LCS)

(LCS) R4084957-2 06/18/24 22:24

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
URANIUM-234	5.03	5.42	108	80.0-120	
URANIUM-238	4.90	5.65	115	80.0-120	
(T) URANIUM-232			73.2		

L1745310-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745310-02 06/20/24 23:32 • (MS) R4084957-3 06/18/24 22:24 • (MSD) R4084957-6 06/20/24 09:30

Analyte	Spike Amount Bq/l	Original Result Bq/l	MS Result Bq/l	MSD Result Bq/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
URANIUM-234	0.744	0.0333	0.746	0.800	95.7	103	1	75.0-125			7.08		20
URANIUM-238	0.725	0.0538	0.732	0.822	93.5	106	1	75.0-125			11.6		20
(T) URANIUM-232					31.1	12.8				C2			

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Radiochemistry by Method SM7500Ra B M

L1745601-01

Method Blank (MB)

(MB) R4084462-1 06/18/24 22:23

Analyte	MB Result pCi/l	MB Qualifier	MB 2 sigma CE + / -	MB MDA pCi/l	MB Lc pCi/l
Radium-226	0.00378	<u>U</u>	0.0438	0.0832	0.0559
(T) Barium-133	91.9		91.9		

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1745601-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1745601-01 06/18/24 22:24 • (DUP) R4084462-5 06/18/24 22:23

Analyte	Original Result pCi/l	Original 2 sigma CE + / -	Original MDA pCi/l	Original Lc pCi/l	DUP Result pCi/l	DUP 2 sigma CE + / -	DUP MDA pCi/l	DUP Lc pCi/l	DUP RPD %	DUP RER	DUP Qualifier	DUP RPD Limits %	DUP RER Limit
Radium-226	0.144	0.262	0.407	0.271	-0.0689	0.262	0.520	0.334	200	0.575	<u>U</u>	20	3
(T) Barium-133	85.1				69.0	69.0							

Laboratory Control Sample (LCS)

(LCS) R4084462-2 06/18/24 22:23

Analyte	Spike Amount pCi/l	LCS Result pCi/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Radium-226	5.00	5.64	113	75.0-125	
(T) Barium-133			90.1		

L1745310-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1745310-01 06/18/24 22:23 • (MS) R4084462-3 06/18/24 22:23 • (MSD) R4084462-4 06/18/24 22:23

Analyte	Spike Amount Bq/l	Original Result Bq/l	MS Result Bq/l	MSD Result Bq/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	MS RER	RPD Limits %
Radium-226	0.740	0.00667	0.719	0.747	96.2	100	1	75.0-125			3.81		20
(T) Barium-133		97.9			93.1	99.3							

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.
(T)	Tracer - A radioisotope of known concentration added to a solution of chemically equivalent radioisotopes at a known concentration to assist in monitoring the yield of the chemical separation.
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
C2	Tracer recovery limits have been exceeded; values are outside lower control limits.
J	The identification of the analyte is acceptable; the reported value is an estimate.
U	Below Detectable Limits: Indicates that the analyte was not detected.

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	LA000356
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.

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Released to Imaging: 9/6/2024 9:52:49 AM

Released to Imaging: 9/6/2024 9:52:49 AM

Released to Imaging: 9/6/2024 9:52:49 AM



ANALYTICAL REPORT

June 28, 2024

¹Cp

²Tc

³Ss

⁴Cn

⁵Gl

⁶Al

⁷Sc

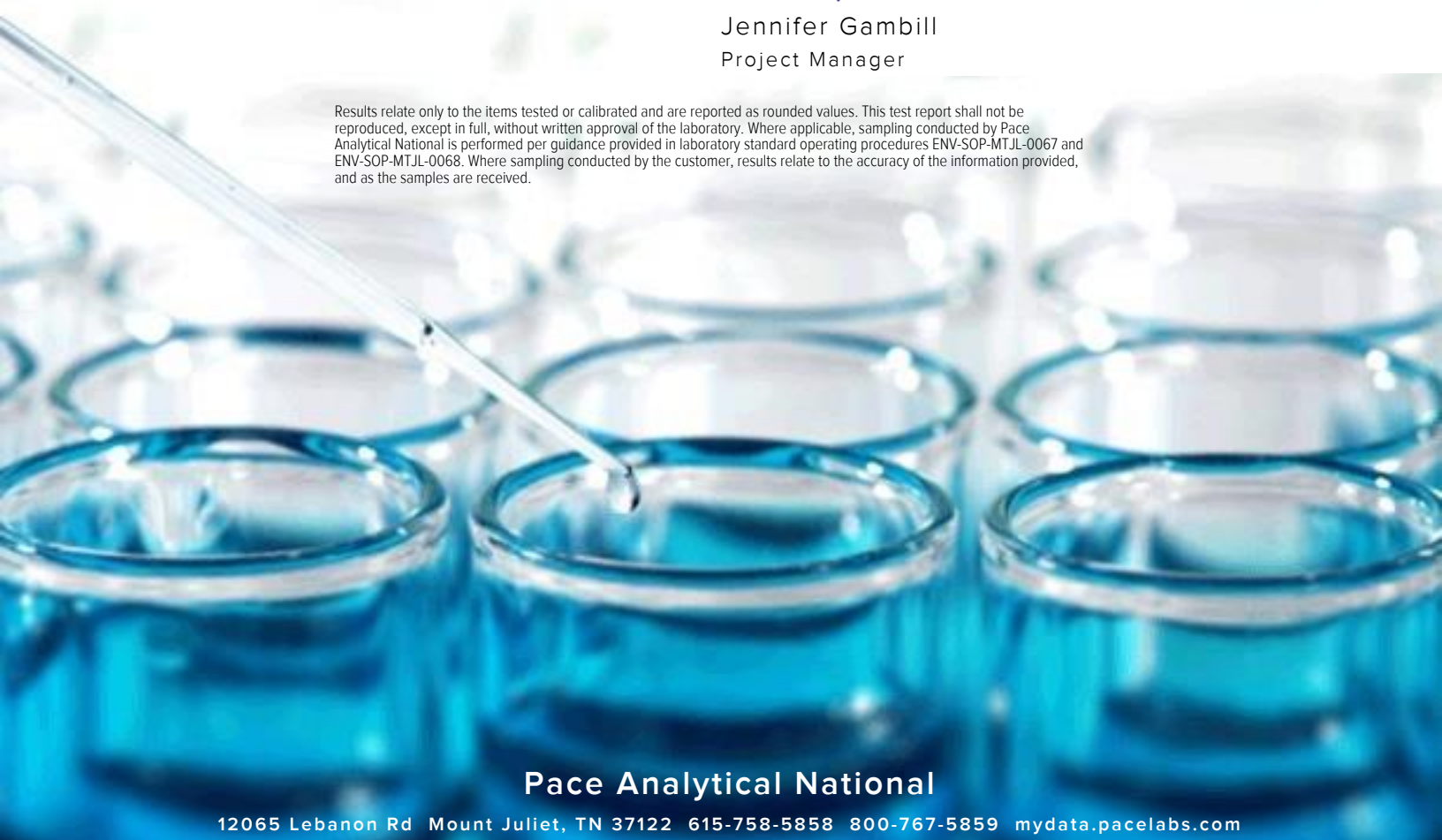
Devon Energy - Oklahoma City, OK

Sample Delivery Group: L1745602
Samples Received: 06/12/2024
Project Number: 212C-HN-02831
Description: Desalination Pilot
Site: CCR
Report To: Paul Barbour
333 W Sheridan Avenue
Oklahoma City, OK 73102-5015

Entire Report Reviewed By:

Jennifer Gambill
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 mydata.pacelabs.com

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Gl: Glossary of Terms	5	³ Ss
Al: Accreditations & Locations	6	⁴ Cn
Sc: Sample Chain of Custody	7	⁵ Gl
		⁶ Al
		⁷ Sc

POST ELECTROLYSIS L1745602-01 GW

Collected by
Danny Daniels

Collected date/time
06/11/24 10:45

Received date/time
06/12/24 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Subcontracted Analyses	WG2304598	1	06/28/24 00:00	06/28/24 00:00	-	East Longmeadow, MA 01028

¹Cp

²Tc

³Ss

⁴Cn

⁵Gl

⁶Al

⁷Sc

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.



Jennifer Gambill
Project Manager

Project Narrative

L1745602 -01 contains subout data that is included after the chain of custody.

1

Cp

2

Tc

3

Ss

4

Cn

5

Gl

6

Al

7

Sc

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

SDG	Sample Delivery Group.
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

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

1Cp

2Tc

3Ss

4Cn

5Gl

6Al

7Sc

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	LA000356
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.

¹Cp

²Tc

³Ss

⁴Cn

⁵Gl

⁶Al

⁷Sc

Released to Imaging: 9/6/2024 9:52:49 AM

Released to Imaging: 9/6/2024 9:52:49 AM

Released to Imaging: 9/6/2024 9:52:49 AM



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

June 28, 2024

Subout Team
Pace National - TN
12065 Lebanon Road
Mt. Juliet, TN 37122

Project Location: NM
Client Job Number:
Project Number: WG2304598
Laboratory Work Order Number: 24F2231

Enclosed are results of analyses for samples as received by the laboratory on June 15, 2024. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Kaitlyn A. Feliciano
Project Manager

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Pace National - TN
12065 Lebanon Road
Mt. Juliet, TN 37122
ATTN: Subout Team

REPORT DATE: 6/28/2024

PURCHASE ORDER NUMBER: L1745602

PROJECT NUMBER: WG2304598

ANALYTICAL SUMMARY

WORK ORDER NUMBER: 24F2231

The results of analyses performed on the following samples submitted to CON-TEST, a Pace Analytical Laboratory, are found in this report.

PROJECT LOCATION: NM

FIELD SAMPLE #	LAB ID:	MATRIX	SAMPLE DESCRIPTION	TEST	SUB LAB
POST ELECTROLYSIS	24F2231-01	Ground Water		Draft Method 1633	



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CASE NARRATIVE SUMMARY

All reported results are within defined laboratory quality control objectives unless listed below or otherwise qualified in this report.

Draft Method 1633**Qualifications:****D-04**

Sample extracted at a dilution due to insufficient volume provided.

Analyte & Samples(s) Qualified:

24F2231-01[POST ELECTROLYSIS]

H-01

Recommended sample holding time was exceeded, but analysis was performed before 2X the allowable holding time.

Analyte & Samples(s) Qualified:**Total Suspended Solids**

24F2231-01[POST ELECTROLYSIS]

S-29

Extracted Internal Standard is outside of control limits.

Analyte & Samples(s) Qualified:**D9-NEtFOSE**

S106606-CCV2, S106606-CCV3

N-ethylperfluorooctanesulfonamidoethanol (NEtFO)

S106606-CCV2, S106606-CCV3

The results of analyses reported only relate to samples submitted to Con-Test, a Pace Analytical Laboratory, for testing.

I certify that the analyses listed above, unless specifically listed as subcontracted, if any, were performed under my direction according to the approved methodologies listed in this document, and that based upon my inquiry of those individuals immediately responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete.

Lisa A. Worthington
Technical Representative



39 Spruce Street * East Longmeadow, MA 01028 * FAX 413/525-6405 * TEL. 413/525-2332

Project Location: NM

Sample Description:

Work Order: 24F2231

Date Received: 6/15/2024

Field Sample #: POST ELECTROLYSIS

Sampled: 6/11/2024 10:45

Sample ID: 24F2231-01

Sample Matrix: Ground Water

Sample Flags: D-04

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluorobutanoic acid (PFBA)	ND	7.1	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluoropentanoic acid (PFPeA)	ND	3.6	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorohexanoic acid (PFHxA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluoroheptanoic acid (PFHpA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorooctanoic acid (PFOA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorononanoic acid (PFNA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorodecanoic acid (PFDA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluoroundecanoic acid (PFUnA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorododecanoic acid (PFDoA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorotridecanoic acid (PFTrDA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorotetradecanoic acid (PFTeDA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorobutanesulfonic acid (PFBS)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluoropentanesulfonic acid (PFPeS)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorohexanesulfonic acid (PFHxS)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluoroheptanesulfonic acid (PFHpS)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorooctanesulfonic acid (PFOS)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorononanesulfonic acid (PFNS)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorodecanesulfonic acid (PFDS)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorododecanesulfonic acid (PFDoS)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	ND	7.1	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	ND	7.1	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	ND	7.1	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluorooctanesulfonamide (PFOSA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
N-methyl perfluorooctanesulfonamide (NMeFOSA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
N-ethyl perfluorooctanesulfonamide (NEtFOSA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
N-MeFOSAA (NMeFOSAA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
N-EtFOSAA (NEtFOSAA)	ND	1.8	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
N-methylperfluorooctanesulfonamidoethanol (NMeFOSE)	ND	18	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	ND	18	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	7.1	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
4,8-Dioxo-3H-perfluorononanoic acid (ADONA)	ND	7.1	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
9Cl-PF3ONS (F53B Minor)	ND	7.1	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
11Cl-PF3OUs (F53B Major)	ND	7.1	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
3-Perfluoropropyl propanoic acid (FPrPA) (3:3FTCA)	ND	18	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
2H,2H,3H,3H-Perfluorooctanoic acid(FPePA)(5:3FTCA)	ND	89	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
3-Perfluoroheptyl propanoic acid (FHPrPA) (7:3FTCA)	ND	89	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	ND	3.6	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND	3.6	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB



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Project Location: NM

Sample Description:

Work Order: 24F2231

Date Received: 6/15/2024

Field Sample #: POST ELECTROLYSIS

Sampled: 6/11/2024 10:45

Sample ID: 24F2231-01

Sample Matrix: Ground Water

Sample Flags: D-04

Semivolatile Organic Compounds by - LC/MS-MS

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND	3.6	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	3.6	ng/L	1		Draft Method 1633	6/26/24	6/27/24 5:17	AB
Surrogates	% Recovery	Recovery Limits	Flag/Qual						
13C4-PFBA	71.2	10-130						6/27/24 5:17	
13C5-PFPeA	88.0	35-150						6/27/24 5:17	
13C5-PFHxA	71.2	55-150						6/27/24 5:17	
13C4-PFHpA	71.3	55-150						6/27/24 5:17	
13C8-PFOA	69.9	60-140						6/27/24 5:17	
13C9-PFNA	68.9	55-140						6/27/24 5:17	
13C6-PFDA	65.5	50-140						6/27/24 5:17	
13C7-PFUnA	64.6	30-140						6/27/24 5:17	
13C2-PFDoA	62.9	10-150						6/27/24 5:17	
13C2-PFTeDA	59.7	10-130						6/27/24 5:17	
13C3-PFBS	75.1	55-150						6/27/24 5:17	
13C3-PFHxS	69.5	55-150						6/27/24 5:17	
13C8-PFOS	66.5	45-140						6/27/24 5:17	
13C2-4:2FTS	62.2	60-200						6/27/24 5:17	
13C2-6:2FTS	65.0	60-200						6/27/24 5:17	
13C2-8:2FTS	61.3	50-200						6/27/24 5:17	
13C8-PFOSA	65.2	30-130						6/27/24 5:17	
D3-NMeFOSA	56.1	15-130						6/27/24 5:17	
D5-NEtFOSA	61.0	10-130						6/27/24 5:17	
D3-NMeFOSAA	60.4	45-200						6/27/24 5:17	
D5-NEtFOSAA	60.6	10-200						6/27/24 5:17	
D7-NMeFOSE	63.9	10-150						6/27/24 5:17	
D9-NEtFOSE	66.0	10-150						6/27/24 5:17	
13C3-HFPO-DA	70.2	25-160						6/27/24 5:17	



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Project Location: NM

Sample Description:

Work Order: 24F2231

Date Received: 6/15/2024

Field Sample #: POST ELECTROLYSIS

Sampled: 6/11/2024 10:45

Sample ID: 24F2231-01

Sample Matrix: Ground Water

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total)

Analyte	Results	RL	Units	Dilution	Flag/Qual	Method	Date Prepared	Date/Time Analyzed	Analyst
Total Suspended Solids	34	10	mg/L	1	H-01	Draft Method 1633	6/18/24	6/18/24 13:03	LL



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Sample Extraction Data

Draft Method 1633

Lab Number [Field ID]	Batch	Initial [mL]	Date
24F2231-01 [POST ELECTROLYSIS]	B377572	50.0	06/18/24

Prep Method:Draft Method 1633 Analytical Method:Draft Method 1633 Leachates were extracted on 6/18/2024 per NO PREP in Batch B377572

Lab Number [Field ID]	Batch	Initial [mL]	Final [mL]	Date
24F2231-01 [POST ELECTROLYSIS]	B377883	281	5.00	06/26/24



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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B377883 - Draft Method 1633

Blank (B377883-BLK1)

Prepared: 06/26/24 Analyzed: 06/27/24

Perfluorobutanoic acid (PFBA)	ND	3.9	ng/L
Perfluoropentanoic acid (PFPeA)	ND	1.9	ng/L
Perfluorohexanoic acid (PFHxA)	ND	0.97	ng/L
Perfluoroheptanoic acid (PFHpA)	ND	0.97	ng/L
Perfluorooctanoic acid (PFOA)	ND	0.97	ng/L
Perfluorononanoic acid (PFNA)	ND	0.97	ng/L
Perfluorodecanoic acid (PFDA)	ND	0.97	ng/L
Perfluoroundecanoic acid (PFUnA)	ND	0.97	ng/L
Perfluorododecanoic acid (PFDoA)	ND	0.97	ng/L
Perfluorotridecanoic acid (PFTrDA)	ND	0.97	ng/L
Perfluorotetradecanoic acid (PFTeDA)	ND	0.97	ng/L
Perfluorobutanesulfonic acid (PFBS)	ND	0.97	ng/L
Perfluoropentanesulfonic acid (PFPeS)	ND	0.97	ng/L
Perfluorohexanesulfonic acid (PFHxS)	ND	0.97	ng/L
Perfluoroheptanesulfonic acid (PFHpS)	ND	0.97	ng/L
Perfluorooctanesulfonic acid (PFOS)	ND	0.97	ng/L
Perfluorononanesulfonic acid (PFNS)	ND	0.97	ng/L
Perfluorodecanesulfonic acid (PFDS)	ND	0.97	ng/L
Perfluorododecanesulfonic acid (PFDoS)	ND	0.97	ng/L
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	ND	3.9	ng/L
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	ND	3.9	ng/L
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	ND	3.9	ng/L
Perfluorooctanesulfonamide (PFOSA)	ND	0.97	ng/L
N-methyl perfluorooctanesulfonamide (NMeFOSA)	ND	0.97	ng/L
N-ethyl perfluorooctanesulfonamide (NEtFOSA)	ND	0.97	ng/L
N-MeFOSAA (NMeFOSAA)	ND	0.97	ng/L
N-EtFOSAA (NEtFOSAA)	ND	0.97	ng/L
N-methylperfluorooctanesulfonamidoethanol (NMeFOSE)	ND	9.7	ng/L
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	ND	9.7	ng/L
Hexafluoropropylene oxide dimer acid (HFPO-DA)	ND	3.9	ng/L
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	ND	3.9	ng/L
9Cl-PF3ONS (F53B Minor)	ND	3.9	ng/L
11Cl-PF3OUdS (F53B Major)	ND	3.9	ng/L
3-Perfluoropropyl propanoic acid (FPrPA) (3:3FTCA)	ND	9.7	ng/L
2H,2H,3H,3H-Perfluorooctanoic acid(FPePA)(5:3FTCA)	ND	49	ng/L
3-Perfluoroheptyl propanoic acid (FHpPA) (7:3FTCA)	ND	49	ng/L
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEESA)	ND	1.9	ng/L
Perfluoro-3-methoxypropanoic acid (PFMPA)	ND	1.9	ng/L
Perfluoro-4-methoxybutanoic acid (PFMBA)	ND	1.9	ng/L
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	ND	1.9	ng/L
Surrogate: 13C4-PFBA	82.8		ng/L

97.2

85.2

10-130



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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B377883 - Draft Method 1633

Blank (B377883-BLK1)

Prepared: 06/26/24 Analyzed: 06/27/24

Surrogate: 13C5-PFPeA	47.7		ng/L	48.6		98.1	35-150			
Surrogate: 13C5-PFHxA	20.5		ng/L	24.3		84.3	55-150			
Surrogate: 13C4-PFHpA	19.9		ng/L	24.3		82.0	55-150			
Surrogate: 13C8-PFOA	19.8		ng/L	24.3		81.4	60-140			
Surrogate: 13C9-PFNA	9.45		ng/L	12.1		77.8	55-140			
Surrogate: 13C6-PFDA	10.1		ng/L	12.1		83.2	50-140			
Surrogate: 13C7-PFUnA	10.6		ng/L	12.1		87.2	30-140			
Surrogate: 13C2-PFDoA	9.99		ng/L	12.1		82.2	10-150			
Surrogate: 13C2-PFTeDA	9.31		ng/L	12.1		76.6	10-130			
Surrogate: 13C3-PFBS	21.6		ng/L	24.3		88.9	55-150			
Surrogate: 13C3-PFHxS	20.9		ng/L	24.3		85.8	55-150			
Surrogate: 13C8-PFOS	20.2		ng/L	24.3		83.1	45-140			
Surrogate: 13C2-4:2FTS	39.4		ng/L	48.6		81.1	60-200			
Surrogate: 13C2-6:2FTS	39.7		ng/L	48.6		81.6	60-200			
Surrogate: 13C2-8:2FTS	39.6		ng/L	48.6		81.5	50-200			
Surrogate: 13C8-PFOA	18.1		ng/L	24.3		74.6	30-130			
Surrogate: D3-NMeFOSA	17.5		ng/L	24.3		72.0	15-130			
Surrogate: D5-NEtFOSA	19.3		ng/L	24.3		79.6	10-130			
Surrogate: D3-NMeFOSAA	35.3		ng/L	48.6		72.7	45-200			
Surrogate: D5-NEtFOSAA	33.9		ng/L	48.6		69.8	10-200			
Surrogate: D7-NMeFOSE	205		ng/L	243		84.5	10-150			
Surrogate: D9-NEtFOSE	224		ng/L	243		92.4	10-150			
Surrogate: 13C3-HFPO-DA	74.3		ng/L	97.2		76.4	25-160			

LCS (B377883-BS1)

Prepared: 06/26/24 Analyzed: 06/27/24

Perfluorobutanoic acid (PFBA)	93.5	4.0	ng/L	95.1		98.3	58-148			
Perfluoropentanoic acid (PFPeA)	47.3	2.0	ng/L	47.5		99.6	54-152			
Perfluorohexanoic acid (PFHxA)	23.0	0.99	ng/L	23.8		97.0	55-152			
Perfluoroheptanoic acid (PFHpA)	22.6	0.99	ng/L	23.8		95.3	54-154			
Perfluorooctanoic acid (PFOA)	22.7	0.99	ng/L	23.8		95.4	52-161			
Perfluorononanoic acid (PFNA)	22.7	0.99	ng/L	23.8		95.6	59-149			
Perfluorodecanoic acid (PFDA)	22.8	0.99	ng/L	23.8		95.8	52-147			
Perfluoroundecanoic acid (PFUnA)	21.8	0.99	ng/L	23.8		91.9	48-159			
Perfluorododecanoic acid (PFDoA)	22.9	0.99	ng/L	23.8		96.4	64-142			
Perfluorotridecanoic acid (PFTTrDA)	20.4	0.99	ng/L	23.8		85.9	49-148			
Perfluorotetradecanoic acid (PFTeDA)	22.7	0.99	ng/L	23.8		95.5	47-161			
Perfluorobutanesulfonic acid (PFBS)	20.2	0.99	ng/L	21.1		96.0	62-144			
Perfluoropentanesulfonic acid (PFPeS)	21.9	0.99	ng/L	22.3		97.9	59-151			
Perfluorohexanesulfonic acid (PFHxS)	19.7	0.99	ng/L	21.7		90.4	57-146			
Perfluoroheptanesulfonic acid (PFHpS)	23.5	0.99	ng/L	22.6		104	55-152			
Perfluorooctanesulfonic acid (PFOS)	20.7	0.99	ng/L	22.0		93.8	58-149			
Perfluorononanesulfonic acid (PFNS)	23.3	0.99	ng/L	22.9		102	52-148			
Perfluorodecanesulfonic acid (PFDS)	22.9	0.99	ng/L	22.9		100	51-147			
Perfluorododecanesulfonic acid (PFDoS)	21.7	0.99	ng/L	23.1		94.3	36-145			
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	90.9	4.0	ng/L	89.1		102	67-146			
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	87.3	4.0	ng/L	90.3		96.7	61-151			
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	90.7	4.0	ng/L	91.5		99.1	63-152			
Perfluorooctanesulfonamide (PFOSA)	21.8	0.99	ng/L	23.8		91.6	61-148			
N-methyl perfluorooctanesulfonamide (NMeFOSA)	23.1	0.99	ng/L	23.8		97.1	63-145			



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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B377883 - Draft Method 1633

LCS (B377883-BS1)

Prepared: 06/26/24 Analyzed: 06/27/24

N-ethyl perfluorooctanesulfonamide (NEtFOSA)	23.5	0.99	ng/L	23.8		98.8	65-139			
N-MeFOSAA (NMeFOSAA)	21.1	0.99	ng/L	23.8		88.6	58-144			
N-EtFOSAA (NEtFOSAA)	19.2	0.99	ng/L	23.8		80.7	59-146			
N-methylperfluorooctanesulfonamidoethanol (NMeFOSE)	239	9.9	ng/L	238		100	71-136			
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	244	9.9	ng/L	238		103	69-137			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	100	4.0	ng/L	95.1		106	63-144			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	107	4.0	ng/L	89.7		120	68-146			
9Cl-PF3ONS (F53B Minor)	111	4.0	ng/L	89.1		125	56-156			
11Cl-PF3OUdS (F53B Major)	112	4.0	ng/L	89.7		125	46-156			
3-Perfluoropropyl propanoic acid (FPrPA) (3:3FTCA)	210	9.9	ng/L	238		88.5	62-129			
2H,2H,3H,3H-Perfluorooctanoic acid(FPePA)(5:3FTCA)	1130	50	ng/L	1190		95.1	63-134			
3-Perfluoroheptyl propanoic acid (FHpPA) (7:3FTCA)	1060	50	ng/L	1190		89.5	50-138			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEA)	48.1	2.0	ng/L	42.3		114	56-151			
Perfluoro-3-methoxypropanoic acid (PFMPA)	43.4	2.0	ng/L	47.5		91.3	51-145			
Perfluoro-4-methoxybutanoic acid (PFMBA)	41.0	2.0	ng/L	47.5		86.2	55-148			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	63.7	2.0	ng/L	47.5		134	48-161			
Surrogate: 13C4-PFBA	74.1		ng/L	99.0		74.8	10-130			
Surrogate: 13C5-PFPeA	44.9		ng/L	49.5		90.7	35-150			
Surrogate: 13C5-PFHxA	18.3		ng/L	24.8		73.8	55-150			
Surrogate: 13C4-PFHpA	18.3		ng/L	24.8		73.8	55-150			
Surrogate: 13C8-PFOA	17.6		ng/L	24.8		71.2	60-140			
Surrogate: 13C9-PFNA	9.05		ng/L	12.4		73.1	55-140			
Surrogate: 13C6-PFDA	8.86		ng/L	12.4		71.5	50-140			
Surrogate: 13C7-PFUnA	9.31		ng/L	12.4		75.3	30-140			
Surrogate: 13C2-PFDoA	9.29		ng/L	12.4		75.1	10-150			
Surrogate: 13C2-PFTeDA	8.34		ng/L	12.4		67.4	10-130			
Surrogate: 13C3-PFBS	19.4		ng/L	24.8		78.2	55-150			
Surrogate: 13C3-PFHxS	18.5		ng/L	24.8		74.6	55-150			
Surrogate: 13C8-PFOS	17.7		ng/L	24.8		71.7	45-140			
Surrogate: 13C2-4:2FTS	35.5		ng/L	49.5		71.7	60-200			
Surrogate: 13C2-6:2FTS	35.4		ng/L	49.5		71.5	60-200			
Surrogate: 13C2-8:2FTS	37.4		ng/L	49.5		75.4	50-200			
Surrogate: 13C8-PFOSA	18.0		ng/L	24.8		72.7	30-130			
Surrogate: D3-NMeFOSA	16.5		ng/L	24.8		66.6	15-130			
Surrogate: D5-NEtFOSA	18.1		ng/L	24.8		73.2	10-130			
Surrogate: D3-NMeFOSAA	34.1		ng/L	49.5		69.0	45-200			
Surrogate: D5-NEtFOSAA	34.9		ng/L	49.5		70.5	10-200			
Surrogate: D7-NMeFOSE	193		ng/L	248		78.0	10-150			
Surrogate: D9-NEtFOSE	210		ng/L	248		84.7	10-150			
Surrogate: 13C3-HFPO-DA	63.6		ng/L	99.0		64.2	25-160			

MRL Check (B377883-MRL1)

Prepared: 06/26/24 Analyzed: 06/27/24

Perfluorobutanoic acid (PFBA)	8.40	3.9	ng/L	7.78		108	44-157			
Perfluoropentanoic acid (PFPeA)	4.08	1.9	ng/L	3.89		105	57-148			



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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B377883 - Draft Method 1633

MRL Check (B377883-MRL1)

Prepared: 06/26/24 Analyzed: 06/27/24

Perfluorohexanoic acid (PFHxA)	2.05	0.97	ng/L	1.94		105	62-149			
Perfluoroheptanoic acid (PFHpA)	1.84	0.97	ng/L	1.94		94.8	56-150			
Perfluorooctanoic acid (PFOA)	2.31	0.97	ng/L	1.94		119	57-161			
Perfluorononanoic acid (PFNA)	1.91	0.97	ng/L	1.94		98.4	53-157			
Perfluorodecanoic acid (PFDA)	2.04	0.97	ng/L	1.94		105	43-158			
Perfluoroundecanoic acid (PFUnA)	1.87	0.97	ng/L	1.94		96.0	50-155			
Perfluorododecanoic acid (PFDoA)	1.91	0.97	ng/L	1.94		98.2	60-141			
Perfluorotridecanoic acid (PFTrDA)	1.71	0.97	ng/L	1.94		88.1	52-140			
Perfluorotetradecanoic acid (PFTeDA)	1.82	0.97	ng/L	1.94		93.6	52-156			
Perfluorobutanesulfonic acid (PFBS)	1.77	0.97	ng/L	1.73		103	63-145			
Perfluoropentanesulfonic acid (PFPeS)	1.94	0.97	ng/L	1.83		106	58-144			
Perfluorohexanesulfonic acid (PFHxS)	1.90	0.97	ng/L	1.78		107	44-158			
Perfluoroheptanesulfonic acid (PFHpS)	2.03	0.97	ng/L	1.85		110	51-150			
Perfluorooctanesulfonic acid (PFOS)	1.82	0.97	ng/L	1.80		101	43-162			
Perfluorononanesulfonic acid (PFNS)	1.85	0.97	ng/L	1.87		98.8	46-151			
Perfluorodecanesulfonic acid (PFDS)	1.84	0.97	ng/L	1.88		98.3	50-144			
Perfluorododecanesulfonic acid (PFDoS)	1.71	0.97	ng/L	1.89		90.9	30-138			
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	7.22	3.9	ng/L	7.29		99.1	52-158			
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	7.59	3.9	ng/L	7.39		103	48-158			
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	7.99	3.9	ng/L	7.48		107	46-165			
Perfluorooctanesulfonamide (PFOSA)	2.00	0.97	ng/L	1.94		103	47-163			
N-methyl perfluorooctanesulfonamide (NMeFOSA)	2.04	0.97	ng/L	1.94		105	54-155			
N-ethyl perfluorooctanesulfonamide (NEtFOSA)	2.17	0.97	ng/L	1.94		112	49-156			
N-MeFOSAA (NMeFOSAA)	2.06	0.97	ng/L	1.94		106	32-160			
N-EtFOSAA (NEtFOSAA)	1.67	0.97	ng/L	1.94		86.0	51-154			
N-methylperfluorooctanesulfonamidoethanol (NMeFOSE)	20.8	9.7	ng/L	19.4		107	56-151			
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	21.1	9.7	ng/L	19.4		109	60-147			
Hexafluoropropylene oxide dimer acid (HFPO-DA)	7.36	3.9	ng/L	7.78		94.6	58-154			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	7.66	3.9	ng/L	7.34		104	61-148			
9Cl-PF3ONS (F53B Minor)	7.95	3.9	ng/L	7.29		109	44-167			
11Cl-PF3OUDS (F53B Major)	7.43	3.9	ng/L	7.34		101	36-158			
3-Perfluoropropyl propanoic acid (FPrPA) (3:3FTCA)	17.2	9.7	ng/L	19.4		88.6	32-161			
2H,2H,3H,3H-Perfluorooctanoic acid (FPePA)(5:3FTCA)	84.9	49	ng/L	97.2		87.4	39-156			
3-Perfluoroheptyl propanoic acid (FHpPA) (7:3FTCA)	76.5	49	ng/L	97.2		78.7	36-149			
Perfluoro(2-ethoxyethane)sulfonic acid (PFEESA)	3.51	1.9	ng/L	3.46		101	56-144			
Perfluoro-3-methoxypropanoic acid (PFMPA)	3.37	1.9	ng/L	3.89		86.6	48-150			
Perfluoro-4-methoxybutanoic acid (PFMBA)	3.12	1.9	ng/L	3.89		80.3	49-154			
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	4.99	1.9	ng/L	3.89		128	47-160			
Surrogate: 13C4-PFBA	70.7		ng/L	97.2		72.7	10-130			
Surrogate: 13C5-PFPeA	40.7		ng/L	48.6		83.7	35-150			
Surrogate: 13C5-PFHxA	17.3		ng/L	24.3		71.2	55-150			



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QUALITY CONTROL

Semivolatile Organic Compounds by - LC/MS-MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B377883 - Draft Method 1633

MRL Check (B377883-MRL1)

Prepared: 06/26/24 Analyzed: 06/27/24

Surrogate: 13C4-PFHpA	17.2		ng/L	24.3		70.7	55-150			
Surrogate: 13C8-PFOA	16.9		ng/L	24.3		69.4	60-140			
Surrogate: 13C9-PFNA	8.90		ng/L	12.1		73.2	55-140			
Surrogate: 13C6-PFDA	7.96		ng/L	12.1		65.5	50-140			
Surrogate: 13C7-PFUnA	8.14		ng/L	12.1		67.0	30-140			
Surrogate: 13C2-PFDoA	8.11		ng/L	12.1		66.7	10-150			
Surrogate: 13C2-PFTeDA	7.53		ng/L	12.1		62.0	10-130			
Surrogate: 13C3-PFBS	17.9		ng/L	24.3		73.8	55-150			
Surrogate: 13C3-PFHxS	17.2		ng/L	24.3		70.6	55-150			
Surrogate: 13C8-PFOS	16.6		ng/L	24.3		68.5	45-140			
Surrogate: 13C2-4:2FTS	33.4		ng/L	48.6		68.8	60-200			
Surrogate: 13C2-6:2FTS	32.5		ng/L	48.6		67.0	60-200			
Surrogate: 13C2-8:2FTS	33.7		ng/L	48.6		69.4	50-200			
Surrogate: 13C8-PFOSA	16.3		ng/L	24.3		66.9	30-130			
Surrogate: D3-NMeFOSA	13.6		ng/L	24.3		56.1	15-130			
Surrogate: D5-NEtFOSA	15.0		ng/L	24.3		61.8	10-130			
Surrogate: D3-NMeFOSAA	31.0		ng/L	48.6		63.7	45-200			
Surrogate: D5-NEtFOSAA	31.1		ng/L	48.6		64.1	10-200			
Surrogate: D7-NMeFOSE	176		ng/L	243		72.3	10-150			
Surrogate: D9-NEtFOSE	190		ng/L	243		78.2	10-150			
Surrogate: 13C3-HFPO-DA	62.2		ng/L	97.2		64.0	25-160			



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QUALITY CONTROL

Conventional Chemistry Parameters by EPA/APHA/SW-846 Methods (Total) - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B377572 - Draft Method 1633

Blank (B377572-BLK1)				Prepared & Analyzed: 06/18/24						
Total Suspended Solids	ND	5.0	mg/L							
LCS (B377572-BS1)				Prepared & Analyzed: 06/18/24						
Total Suspended Solids	151	5.0	mg/L	200		75.5	51.5-130			



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FLAG/QUALIFIER SUMMARY

*	QC result is outside of established limits.
†	Wide recovery limits established for difficult compound.
‡	Wide RPD limits established for difficult compound.
#	Data exceeded client recommended or regulatory level
ND	Not Detected
RL	Reporting Limit is at the level of quantitation (LOQ)
DL	Detection Limit is the lower limit of detection determined by the MDL study
MCL	Maximum Contaminant Level
	Percent recoveries and relative percent differences (RPDs) are determined by the software using values in the calculation which have not been rounded.
	No results have been blank subtracted unless specified in the case narrative section.
D-04	Sample extracted at a dilution due to insufficient volume provided.
H-01	Recommended sample holding time was exceeded, but analysis was performed before 2X the allowable holding time.
S-29	Extracted Internal Standard is outside of control limits.



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CERTIFICATIONS

Certified Analyses included in this Report

Analyte	Certifications
Draft Method 1633 in Water	
Total Suspended Solids	CT,MA,NH,NY,RI,NC,ME,VA
Perfluorobutanoic acid (PFBA)	NH-P,NY,PA,WV,CT
Perfluoropentanoic acid (PFPeA)	NH-P,NY,PA,WV,CT
Perfluorohexanoic acid (PFHxA)	NH-P,NY,PA,WV,CT
Perfluoroheptanoic acid (PFHpA)	NH-P,NY,PA,WV,CT
Perfluorooctanoic acid (PFOA)	NH-P,NY,PA,WV,CT
Perfluorononanoic acid (PFNA)	NH-P,NY,PA,WV,CT
Perfluorodecanoic acid (PFDA)	NH-P,NY,PA,WV,CT
Perfluoroundecanoic acid (PFUnA)	NH-P,NY,PA,WV,CT
Perfluorododecanoic acid (PFDoA)	NH-P,NY,PA,WV,CT
Perfluorotridecanoic acid (PFTrDA)	NH-P,NY,PA,WV,CT
Perfluorotetradecanoic acid (PFTeDA)	NH-P,NY,PA,WV,CT
Perfluorobutanesulfonic acid (PFBS)	NH-P,NY,PA,WV,CT
Perfluoropentanesulfonic acid (PFPeS)	NH-P,NY,PA,WV,CT
Perfluorohexanesulfonic acid (PFHxS)	NH-P,NY,PA,WV,CT
Perfluoroheptanesulfonic acid (PFHpS)	NH-P,NY,PA,WV,CT
Perfluorooctanesulfonic acid (PFOS)	NH-P,NY,PA,WV,CT
Perfluorononanesulfonic acid (PFNS)	NH-P,PA,WV,CT
Perfluorodecanesulfonic acid (PFDS)	NH-P,PA,WV,CT
Perfluorododecanesulfonic acid (PFDoS)	NH-P,PA,WV,CT
1H,1H,2H,2H-Perfluorohexane sulfonic acid (4:2FTS)	NH-P,PA,WV,CT
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2FTS)	NH-P,NY,PA,WV,CT
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2FTS)	NH-P,NY,PA,WV,CT
Perfluorooctanesulfonamide (PFOSA)	NH-P,PA,WV,CT
N-methyl perfluorooctanesulfonamide (NMeFOSA)	NH-P,PA,WV,CT
N-ethyl perfluorooctanesulfonamide (NEtFOSA)	NH-P,PA,WV,CT
N-MeFOSAA (NMeFOSAA)	NH-P,NY,PA,WV,CT
N-EtFOSAA (NEtFOSAA)	NH-P,NY,PA,WV,CT
N-methylperfluorooctanesulfonamidoethanol(NMeFOSE)	NH-P,PA,WV,CT
N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	NH-P,PA,WV,CT
Hexafluoropropylene oxide dimer acid (HFPO-DA)	NH-P,NY,PA,WV,CT
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	NH-P,NY,PA,WV,CT
9Cl-PF3ONS (F53B Minor)	NH-P,NY,PA,WV,CT
11Cl-PF3OUdS (F53B Major)	NH-P,NY,PA,WV,CT
3-Perfluoropropyl propanoic acid (FPrPA)(3:3FTCA)	NH-P,PA,WV,CT
2H,2H,3H,3H-Perfluorooctanoic acid(FPePA)(5:3FTCA)	NH-P,PA,WV,CT
3-Perfluoroheptyl propanoic acid (FHpPA)(7:3FTCA)	NH-P,PA,WV,CT
Perfluoro(2-ethoxyethane)sulfonic acid (PFEEA)	NH-P,NY,PA,WV,CT
Perfluoro-3-methoxypropanoic acid (PFMPA)	NH-P,NY,PA,WV,CT
Perfluoro-4-methoxybutanoic acid (PFMBA)	NH-P,PA,WV,CT
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	NH-P,PA,WV,CT



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Con-Test, a Pace Environmental Laboratory, operates under the following certifications and accreditations:

Code	Description	Number	Expires
MA	Massachusetts DEP	M-MA100	06/30/2025
CT	Connecticut Department of Public Health	PH-0821	12/31/2024
NY	New York State Department of Health	10899 NELAP	04/1/2025
NH	New Hampshire Environmental Lab	2516 NELAP	02/5/2025
RI	Rhode Island Department of Health	LAO00373	12/30/2024
NC	North Carolina Div. of Water Quality	652	12/31/2024
ME	State of Maine	MA00100	06/9/2025
VA	Commonwealth of Virginia	460217	12/14/2024
NH-P	New Hampshire Environmental Lab	2557 NELAP	09/6/2024
PA	Commonwealth of Pennsylvania DEP	68-05812	06/30/2025
WV	West Virginia DEP Division of Water and Waste Management	419	08/31/2024

24(-2231) HF

Sub-Contract Chain of Custody

Batch Date/Time: 06/13/24 14:01
Sub-Contract Lab: PACEELMA
Address: 39 Spruce St
City/State: East Longmeadow, MA
01028

Contact:
elonprojectmanagers@pacelabs.com

Owner Lab: PACEMTJL
Address: 12065 Lebanon Rd.
City/State: Mt. Juliet, TN 37122
Phone: (615) 773-9756
Fax: (615) 758-5859

WO: WG2304598
Email: MTJLSuboutTeam@pacelabs.com
Results Due Date: 07/11/24
ESC Purchase Order #: L1745602
Send Reports to: James C Huckaba



12065 Lebanon Rd.
Mt. Juliet, TN 37122
Phone: (615) 773-9756
Fax: (615) 758-5859

Sample ID Container ID	Matrix	State	Collect Date	Description	Sample Number Lab Use Only	Sample Comments Lab Use Only
POST ELECTROLYSIS	GW	NM	06/11/24 10:45	SUBPFAS1633	2. L1745602-01	

Relinquished by: [Signature] Date 6-13-24

Received by: [Signature] 4-8-C Date 6-15-24 1020

Relinquished by: _____ Date _____

Received by: _____ Date _____



FedEx® Tracking



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DELIVERED

Saturday

6/15/24 at 10:20 AM

Signed for by: A.MULINARE

↓ Obtain proof of delivery

DELIVERY STATUS

Delivered ✓

📦 Report missing package

TRACKING ID

746408488995 ✎ ☆

FROM
MOUNT JULIET, TN US
Label Created
6/14/24 3:37 PM

NASHVILLE, TN
6/14/24 3:30 PM

ON THE WAY
WINDSOR LOCKS, CT
6/15/24 8:19 AM

OUT FOR DELIVERY
WINDSOR LOCKS, CT
6/15/24 8:23 AM

DELIVERED
East Longmeadow, MA US
Delivered
6/15/24 at 10:20 AM

↓ [View travel history](#)

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Your email

SUBMIT

✖ Your email is a required field.

	DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist
	Effective Date: 06/11/2024

Log In Back-Sheet

Client Pace T&E
 Project MA
 MCP/RCP Required NA
 Deliverable Package Requirement NA
 Location MA
 PWSID# (When Applicable) MA
 Arrival Method:
 Courier ☐ Fed Ex ☒ Walk In ☐ Other ☐
 Received By / Date / Time AM 6/15/24 1020
 Back-Sheet By / Date / Time LA 6/15/24 1253
 Temperature Method gas # 6
 WV samples: Yes (see note*) ☒ No (follow normal procedure) ☐
 Temp ✓ 6° C Actual Temperature 4.8
 Rush Samples: Yes ☒ No ☐ Notify ☐
 Short Hold: Yes ☒ No ☐ Notify ☐

Notes regarding Samples/COC outside of SOP:

1m9K2 Volume

Login Sample Receipt Checklist – (Rejection Criteria Listing
 – Using Acceptance Policy) Any False statement will be
 brought to the attention of the Client – True or False

	True	False
Received on Ice	☒	☐
Received in Cooler	☒	☐
Custody Seal: DATE TIME	☐	☒
COC Relinquished	☒	☐
COC/Samples Labels Agree	☒	☐
All Samples in Good Condition	☒	☐
Samples Received within Holding Time	☒	☐
Is there enough Volume	☐	☒
Proper Media/Container Used	☒	☒
Splitting Samples Required	☐	☒
MS/MSD	☐	☒
Trip Blanks	☐	☒
Lab to Filters	☐	☒
COC Legible	☒	☐
COC included: (Check all included)		
Client ☒	Analysis ☒	Sampler Name ☐
Project ☒	IDs ☒	Collection Date/Time ☒
All Samples Proper pH: <u>N/A</u> ☐ ☐		

Additional Container Notes

*Note: West Virginia requires all samples to have their
 temperature taken. Note any outliers.

	DC#_Title: ENV-FRM-ELON-0001 v08_Sample Receiving Checklist
	Effective Date: 06/11/2024

Sample	Soils Jars (Circle Amb/Clear)	Ambers				Plastics								VOA Vials					Other / Fill in	
		1 Liter	250ml	100ml	1 Liter	500ml	250ml	Unpreserved	HCl	MeOH	D.I. Water	BiSulfate	Col/Bact							
1	16oz Amb/Clear																			
2	8oz Amb/Clear																			
3	4oz Amb/Clear																			
4	2oz Amb/Clear																			
5	Unpreserved																			
6	HCL																			
7	Sulfuric																			
8	Sulfuric																			
9	Phosphoric																			
10	HCl																			
11	Unpreserved																			
12	Unpreserved																			
13	Sulfuric																			
14	Unpreserved																			
15	Sulfuric																			
16	Unpreserved																			
17	HCL																			
18	Sulfuric																			
19	Phosphoric																			
20	HCl																			

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico

Energy, Minerals and Natural Resources

Oil Conservation Division

1220 S. St Francis Dr.

Santa Fe, NM 87505

CONDITIONS

Action 376956

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 376956
	Action Type: [C-147] Water Recycle Long (C-147L)

CONDITIONS

Created By	Condition	Condition Date
vvenegas	NMOCD has reviewed the closure report submitted by [6137] DEVON ENERGY PRODUCTION COMPANY, LP on 08/23/2024, for the Produced Water Treatment Research Pilot Project associated with 2RF-141 - COTTON DRAW RECYCLING FACILITY ID [fVV2325636574]. The closure report has been approved. Please note that according to 19.15.34.14.G: "The re-vegetation and reclamation obligations imposed by federal, state trust land or tribal agencies on lands managed by those agencies shall supersede these provisions and govern the obligations of any operator subject to those provisions, provided that the other requirements provide equal or better protection of fresh water, human health, and the environment." Per 19.15.34.14.H, the operator shall notify the Division when reclamation and re-vegetation are complete.	9/6/2024