

February 22, 2019

Mr. Rick Allison  
North Central Environmental Protection Specialist  
Colorado Oil and Gas Conservation Commission  
1120 Lincoln Street, Suite 801  
Denver, CO 80203

**RE: Form 27 Summary Letter and Remediation Work Plan  
Greeley Gas Plant  
Spill Release Point ID #443870**

Mr. Allison:

Tasman Geosciences, Inc. (Tasman) on behalf of DCP Midstream, L.P. (DCP) has prepared this Form 27 Summary Letter and Remediation Work Plan to detail field activities that occurred at the Greeley Gas Plant (Site) as part of an ongoing soil and groundwater investigation associated with subsurface impacts identified during previously completed construction activities involving the replacement of a produced water sump and secondary containment. Additionally, a remediation work plan has been developed for the Site to address residual petroleum hydrocarbon impacts as described herein.

**Background and Site Remediation Activities**

The Site is located in the southeastern quarter of the southwestern quarter of Section 25, Township 5 North, Range 66 West and the approximate coordinates are 40.363785 degrees north and - 104.729330 degrees west (Figure 1). The Site is located approximately 0.3 miles east of the intersection of 36<sup>th</sup> Avenue and 49<sup>th</sup> Street within the DCP Greeley Gas Plant Facility in Weld County, Colorado.

On November 3, 2015, a condensate release occurred at the Site as a result of human error associated with operation of a condensate tank drain valve. The incident resulted in overfilling of a buried produced water sump (sump) and associated secondary containment. Upon discovery of the release, the DCP operator closed the valve and initiated clean-up activities. Pooled condensate fluids were recovered from the produced water sump and secondary containment via vacuum truck operations. Spill response activities were described in an initial Form 19 (Document Number 400930015) and the Colorado Oil and Gas Conservation Commission (COGCC) issued Spill/Release Point ID number 443870 for the Site. A subsequent Form 19 Supplemental was issued to the COGCC on November 13, 2015 (Document Number 400936411) and detailed the root cause of the incident.

During initial remediation activities on November 3, 2015, impacted soils within the secondary containment area, with approximate dimensions of 25-feet by 25-feet, were removed to 4-feet below ground surface (bgs). A small amount of impacted soils were also identified immediately outside of the secondary containment but were observed to extend less than 6-inches bgs.

Approximately 30 cubic yards (CY) of impacted soils from within and outside the secondary containment area were removed via excavation and transported for off-Site disposal at an approved waste disposal facility.

On December 2, 2015, three confirmation soil samples (Greeley G.P. #1, #2, and #3) were collected from the base of excavation at locations illustrated on Figure 2, and submitted to Origins Laboratory, Inc. (Origins) in Denver, Colorado for benzene, toluene, ethylbenzene, total xylenes (BTEX) analysis using United States Environmental Protection Agency (USEPA) method 8260C. All three soil samples were returned with analytical results below the COGCC Table 910-1 standards (COGCC standards) for soil, however sample Greeley G.P.#3 was reported with a benzene concentration of 0.168 milligrams per kilogram (mg/kg), which is slightly below the COGCC standard of 0.17 mg/kg. The analytical data is summarized in the attached Table 1 and the analytical report is provided in Appendix A.

Due to the analytical result being very near the standard for benzene, DCP intended to perform additional excavation activities to further remove remaining impacted soil. However, prior to scheduling excavation activities, DCP Operations determined that the existing sump did not meet updated standard safety equipment requirements necessary to prevent a similar event from re-occurring. Therefore, additional soil excavation activities were postponed pending new equipment design, procurement, and installation.

During August 2017, DCP initiated the sump and secondary containment replacement activities. During removal activities, the integrity of the old sump was observed to be compromised and leaking. Therefore, DCP planned additional soil investigation and delineation activities to be conducted at the Site subsequent to installation and testing of the new sump and ancillary equipment.

### Soil Boring Investigation

On November 29, 2018, Tasman on behalf of DCP conducted Site investigation and delineation activities and four soil borings were advanced to approximate depths of 16-feet below ground surface (bgs) at the locations illustrated on Figure 2 using a combination of hydro-excavation (hydrovac), hand auguring, and direct push drilling methods. Due to the Site being located within a gas plant facility, health and safety protocols required soft digging practices via hydrovac to 10-foot bgs to visually clear the area of potential buried utilities. During the hydrovac process, attempts were made to sample the boring at 1-foot to 2-foot intervals using a hand auger. Following hydrovac activities, direct push drilling methods with continuous core sampling was utilized to characterize and sample soils at 1-foot intervals from 10-feet to 16-feet bgs. During auguring and drilling activities, recovered soils were field screened with a handheld photoionization detector (PID) and standard headspace soil sampling techniques, and observations of lithology characteristics, visual staining, odors, and PID measurements were recorded for each location. Details of each boring are recorded on the attached lithologic logs provided as Appendix B. Laboratory soil samples were collected from each soil boring at representative depths within the vadose zone slightly above the presumed groundwater interface and at locations with elevated PID detections.

Soil samples were submitted under chain of custody procedures to Origins for analysis of BTEX and total petroleum hydrocarbons gasoline range organics (TPH-GRO) using USEPA method 8260C and TPH diesel range organics (DRO) using USEPA Method 8015C. The laboratory analytical data are summarized in Table 1, illustrated on Figure 2, and the laboratory analytical report is provided in Appendix A.

The laboratory analytical results, summarized on Table 1, indicated that the samples collected at depths between 6-feet and 8-feet bgs exhibited minimal hydrocarbon impacts that were reported below COGCC standards and/or laboratory reporting limits. At soil sample BH04@2', collected from shallow soils in proximity to the sump, benzene (4.42 mg/kg), total xylenes (284 mg/kg), and TPH-GRO/DRO (4,705 mg/kg) were reported above the respective COGCC standards. Based on review of construction activities for the new sump equipment, the shallow impacts observed at 2-foot bgs were likely a result of residual impacts present in soils that were utilized for backfill and were not representative of shallow impacts resulting from the initial release.

During the November 29, 2018 field investigation, groundwater was identified at approximately 10 to 11-foot bgs. Field screening of soils in the saturated zone from 10-feet to 16-feet at sample locations BH01 and BH04 were observed to have visual staining, noticeable hydrocarbon odors, and elevated PID readings. Soil samples were not collected for laboratory analysis within the saturated water bearing zone due to monitoring well installation for subsequent evaluation of groundwater conditions at the Site. Monitoring well installation and groundwater monitoring activities are further detailed below.

#### Monitoring Well Installation and Groundwater Investigation

During the November 29, 2018 Site investigation, groundwater monitoring wells were installed at the four soil boring locations illustrated on Figure 2 to delineate groundwater conditions and hydraulic characteristics. Monitoring wells were constructed using standard practices as detailed in the lithologic soil boring logs provided in Appendix B. Additionally, the wells were completed below grade and set within traffic rated steel well monuments set within concrete aprons. For groundwater monitoring purposes, borehole (BH) designations were changed to monitoring well (MW) locations.

On December 4, 2018, initial groundwater monitoring activities were conducted and included Site-wide groundwater elevation gauging, well development, and sample collection. The well screen and sand pack for each well location was developed prior to groundwater sampling by purging a minimum of 10 well volumes of water until consistent groundwater re-charge was observed and water turbidity was reduced. Following well development, standard hand-bailing sample collection methods were conducted utilizing disposable polyethylene bailers.

A second round of groundwater monitoring was completed at the Site on February 1, 2019 to confirm initial results and provide an additional data set for evaluation. The four (4) wells were gauged for current groundwater elevations using an oil/water interface probe, and subsequently sampled utilizing standard hand-bailing collection methods.

Samples from both the December 4, 2018 and the February 2, 2019 monitoring event, were submitted under chain of custody procedures to Origins for analysis of BTEX using USEPA method 8260C. Table 2 summarizes groundwater elevations measured during the monitoring events and Figures 3 and 4 illustrate the hydraulic gradient observed at the Site. Table 3 summarizes BTEX concentrations in groundwater and the analytical reports are included in Appendix C. Analytical results are also displayed on Figure 5. Groundwater monitoring observations and results for the monitoring events are summarized below:

- Groundwater elevations indicate that groundwater flow at the Site generally trends to the southeast.
- Benzene was above the COGCC standard of 5 micrograms per liter ( $\mu\text{g/L}$ ) during the December 2018 and February 2019 monitoring events at MW01 (6,290  $\mu\text{g/L}$  and 4,740  $\mu\text{g/L}$ ), MW02 (24.1  $\mu\text{g/L}$  and 13.9  $\mu\text{g/L}$ ), MW04 (562  $\mu\text{g/L}$  and 123  $\mu\text{g/L}$ ), respectively, and at MW03 (13.6  $\mu\text{g/L}$ ) during the December 2018 event. Benzene was reported below the COGCC standard at MW03 (1.36  $\mu\text{g/L}$ ) during the February 2019 event.
- Toluene was above the COGCC standard of 560  $\mu\text{g/L}$  during the February 2019 monitoring event at MW01 (1,050  $\mu\text{g/L}$ ) but below the COGCC standard during the December 2018 event at that location. Toluene was below laboratory detection limits and/or COGCC standards at MW02, MW03, and MW04 during the December 2018 and February 2019 monitoring events.
- Ethylbenzene was below laboratory detection limits and/or the COGCC standard of 700  $\mu\text{g/L}$  at the four monitoring well locations during the December 2018 and February 2019 monitoring events.
- Total xylenes were reported above the COGCC standard of 1,400  $\mu\text{g/L}$  during the December 2018 and February 2019 monitoring events at MW01 (4,800  $\mu\text{g/L}$  and 4,370  $\mu\text{g/L}$ ) and MW04 (2,310  $\mu\text{g/L}$  and 1,550  $\mu\text{g/L}$ ), respectively. Total xylenes were reported below laboratory detection limits and/or the COGCC standard at MW02 and MW03 during the December 2018 and February 2019 monitoring events.

Based on the groundwater monitoring results summarized above and illustrated on Figure 5, additional groundwater monitoring activities are needed for the Site to further delineate impacts to groundwater. The proposed Remediation Work Plan for further Site assessment and groundwater monitoring activities is detailed below.

### **Remediation Work Plan**

Based on the groundwater monitoring activities described above, additional investigation and delineation activities at the Site are required. Two additional downgradient groundwater monitoring wells are proposed to be installed at the locations illustrated on Figure 5. Proposed monitoring well locations are positioned to be hydraulically down-gradient from the previously installed source area wells and positioned just beyond the facilities fenced boundary. Monitoring wells will be advanced and constructed with similar methods as described above and in accordance with DCP facility health and safety protocols.

Subsequent to groundwater monitoring well installation and development, the well locations and top of casing elevations will be surveyed and standard groundwater sampling activities will be conducted. Groundwater samples will be submitted for laboratory analysis of BTEX using USEPA Method 8260C. The groundwater monitoring results of the proposed well locations will be issued to the COGCC via a Form 27 submittal.

Should you have any questions regarding this letter and the activities discussed herein, please contact me by phone at (303) 396-7887 or by e-mail at [jcarrington@tasman-geo.com](mailto:jcarrington@tasman-geo.com).

Sincerely,

James Carrington  
Project Scientist  
Tasman Geosciences

Enclosures:

Table 1 – Soil Sample Analytical Results Summary Table  
Table 2 – Summary of Groundwater Elevation Data  
Table 3 – Summary of BTEX Concentrations in Groundwater

Figure 1 – Site Location Map  
Figure 2 – Soil Analytical Results  
Figure 3 – Groundwater Elevation Map – December 4, 2018  
Figure 4 – Groundwater Elevation Map – February 1, 2019  
Figure 5 – Groundwater Analytical Results & Proposed Well Locations Map

Appendix A – Soil Sample Laboratory Analytical Report  
Appendix B – Lithologic Soil Boring Logs  
Appendix C – Groundwater Sample Laboratory Analytical Reports

cc:  
Mr. Branden Hayes – DCP Midstream  
Mr. Stephen W. Weathers, P.G. – DCP Midstream  
File

## **TABLES**

**TABLE 1**  
**DCP MIDSTREAM - GREELEY GAS PLANT**  
**SOIL SAMPLE ANALYTICAL RESULTS SUMMARY TABLE**

Sample ID	Date Sampled	PID Reading (PPM)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TPH (mg/kg) <sup>2</sup>
Greeley G.P. #1	12/2/2015	NA	<0.050	1.20	0.203	3.34	NA
Greeley G.P. #2	12/2/2015	NA	0.066	1.56	0.253	4.26	NA
Greeley G.P. #3	12/2/2015	NA	0.168	3.33	0.333	4.64	NA
BH01 @ 8.0'	11/29/2018	791	<0.002	<0.002	<0.002	<0.002	63.6
BH02 @ 6.0'	11/29/2018	2.1	<0.002	<0.002	<0.002	<0.002	<50
BH03 @ 7.0'	11/29/2018	4.5	<0.002	<0.002	<0.002	<0.002	<50
BH04 @ 2.0'	11/29/2018	870	<b>4.42</b>	3.76	13.6	<b>284</b>	<b>4,705</b>
BH04 @ 7.0'	11/29/2018	560	<0.002	<0.002	<0.002	<0.002	<50
<b>COGCC standards for Soil (mg/kg)<sup>(1)</sup></b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>500</b>

1). Standards for Soil are referenced from the 2 CCR 404-1, Table 910-1, effective January 30, 2015.

2). TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.

GRO - Gasoline range organics.

DRO - Diesel range organics.

mg/kg= Milligrams per kilogram.

PID - Photoionization Detector

ppm - Parts per million

NA - Not Analyzed

Bold values indicate an exceedance of the COGCC soil standards for the Site.

**TABLE 2**  
**SUMMARY OF GROUNDWATER ELEVATION DATA**  
**DCP GREELEY GAS PLANT**  
**WELD COUNTY, COLORADO**

Location	Date	Depth to Groundwater (feet)	Depth to Product (feet)	Free Phase Hydrocarbon Thickness (feet)	Total Depth (feet)	TOC Elevation (feet amsl)	Groundwater Elevation (feet amsl)	Change in Groundwater Elevation Since Previous Event <sup>1</sup> (feet)
MW01	12/4/2018	9.79	NM	--	13.83	4,678.49	4,668.70	NA
MW01	2/1/2019	10.46	NM	--	13.83	4,678.49	4,668.03	-0.67
MW02	12/4/2018	10.53	NM	--	14.20	4,679.37	4,668.84	NA
MW02	2/1/2019	11.22	NM	--	14.23	4,679.37	4,668.15	-0.69
MW03	12/4/2018	10.76	NM	--	14.63	4,679.67	4,668.91	NA
MW03	2/1/2019	11.41	NM	--	14.67	4,679.67	4,668.26	-0.65
MW04	12/4/2018	10.64	NM	--	14.08	4,679.44	4,668.80	NA
MW04	2/1/2019	11.32	NM	--	14.13	4,679.44	4,668.12	-0.68
Average change in groundwater elevation (December 4, 2018 to February 1, 2019)								-0.67

Notes:

1- Changes in groundwater elevation calculated by subtracting the measurement collected during the previous monitoring event from the measurement collected during the most recent monitoring event.

amsl = feet above mean sea level

TOC = top of casing

Groundwater elevation = (TOC Elevation - Measured Depth to Water)

NA = Not Applicable

**TABLE 3  
SUMMARY OF BTEX CONCENTRATIONS IN GROUNDWATER  
DCP GREELEY GAS PLANT  
WELD COUNTY, COLORADO**

Location Identification	Sample Date	Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Total Xylenes (µg/l)	Comments
<b>COGCC Standards (µg/L)</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	
MW01	12/4/2018	<b>6,290</b>	27.8	512	<b>4,800</b>	
MW01	2/1/2019	<b>4,740</b>	<b>1,050</b>	648	<b>4,370</b>	
MW02	12/4/2018	<b>24.1</b>	<1.00	<1.00	<1.00	
MW02	2/1/2019	<b>13.9</b>	<1.00	<1.00	<1.00	
MW03	12/4/2018	<b>13.6</b>	<1.00	<1.00	<1.00	
MW03	2/1/2019	1.36	<1.00	<1.00	<1.00	
MW04	12/4/2018	<b>562</b>	66.7	244	<b>2,310</b>	
MW04	2/1/2019	<b>123</b>	7.96	230	<b>1,550</b>	

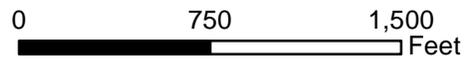
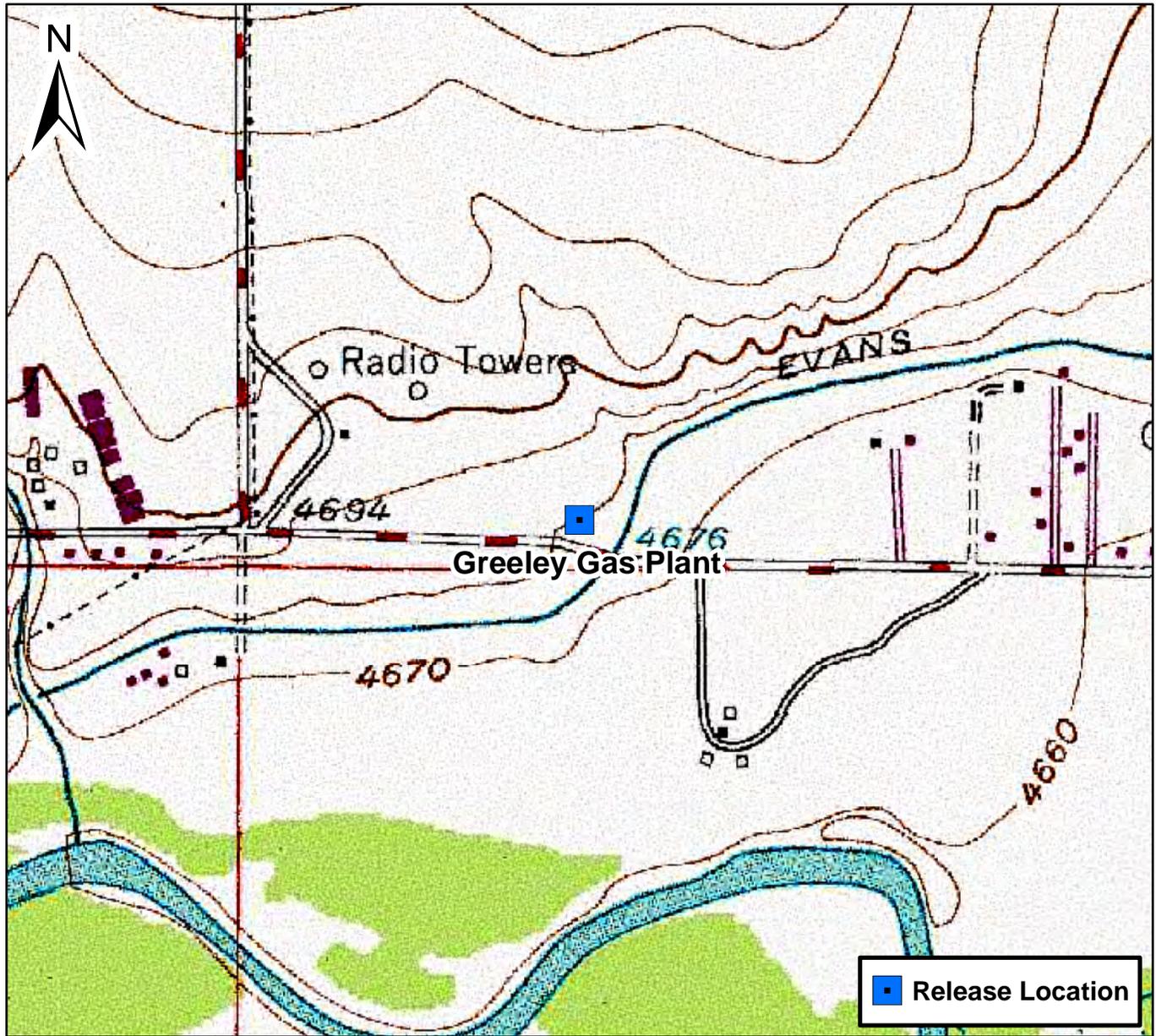
Notes:

1). The environmental cleanup standards for groundwater that are applicable to this site are the Colorado Oil and Gas Conservation Commission (COGCC) standards for contaminants in groundwater according to Table 910-1 of the COGCC 900 Series Rule for E&P Waste Management.

**Bold red** values indicate an exceedance of the COGCC groundwater standards for the Site.

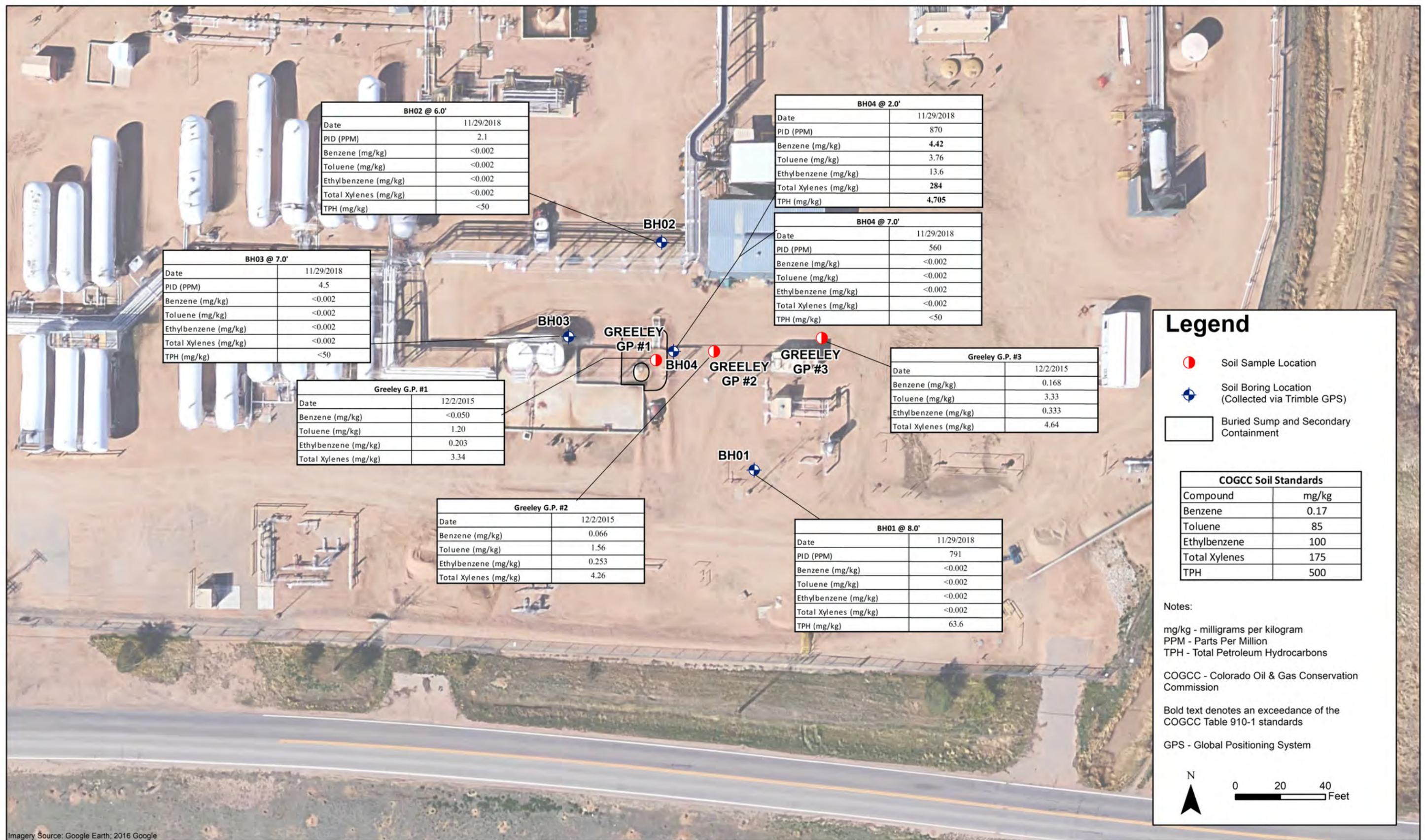
µg/L = micrograms per liter.

## **FIGURES**



**Figure 1**  
 Site Location Map  
 Greeley Gas Plant  
 SESW S25 T5N R66W  
 Weld County, Colorado





DATE: February 2019  
 DESIGNED BY: B. Humphrey  
 DRAWN BY: D. Cavinder



**DCP Midstream  
 Greeley Gas Plant**  
 SESW Section 25, Township 5 North, Range 66 West  
 Weld County, Colorado

Soil Analytical  
 Results Map

Figure  
 2



Imagery Source: Google Earth: 2016 Google

DATE:	November 2018
DESIGNED BY:	B. Humphrey
DRAWN BY:	D. Arnold



**TASMAN** Tasman Geosciences, Inc  
6899 Pecos Street - Unit C  
GEOSCIENCES Denver, CO 80221

**DCP Midstream  
Greeley Gas Plant**  
SESW Section 25, Township 5 North, Range 66 West  
Weld County, Colorado

Groundwater Elevation  
Contour Map  
(December 4, 2018)

Figure  
3



Imagery Source: Google Earth: 2016 Google

DATE:	February 2019
DESIGNED BY:	B. Humphrey
DRAWN BY:	D. Cavinder

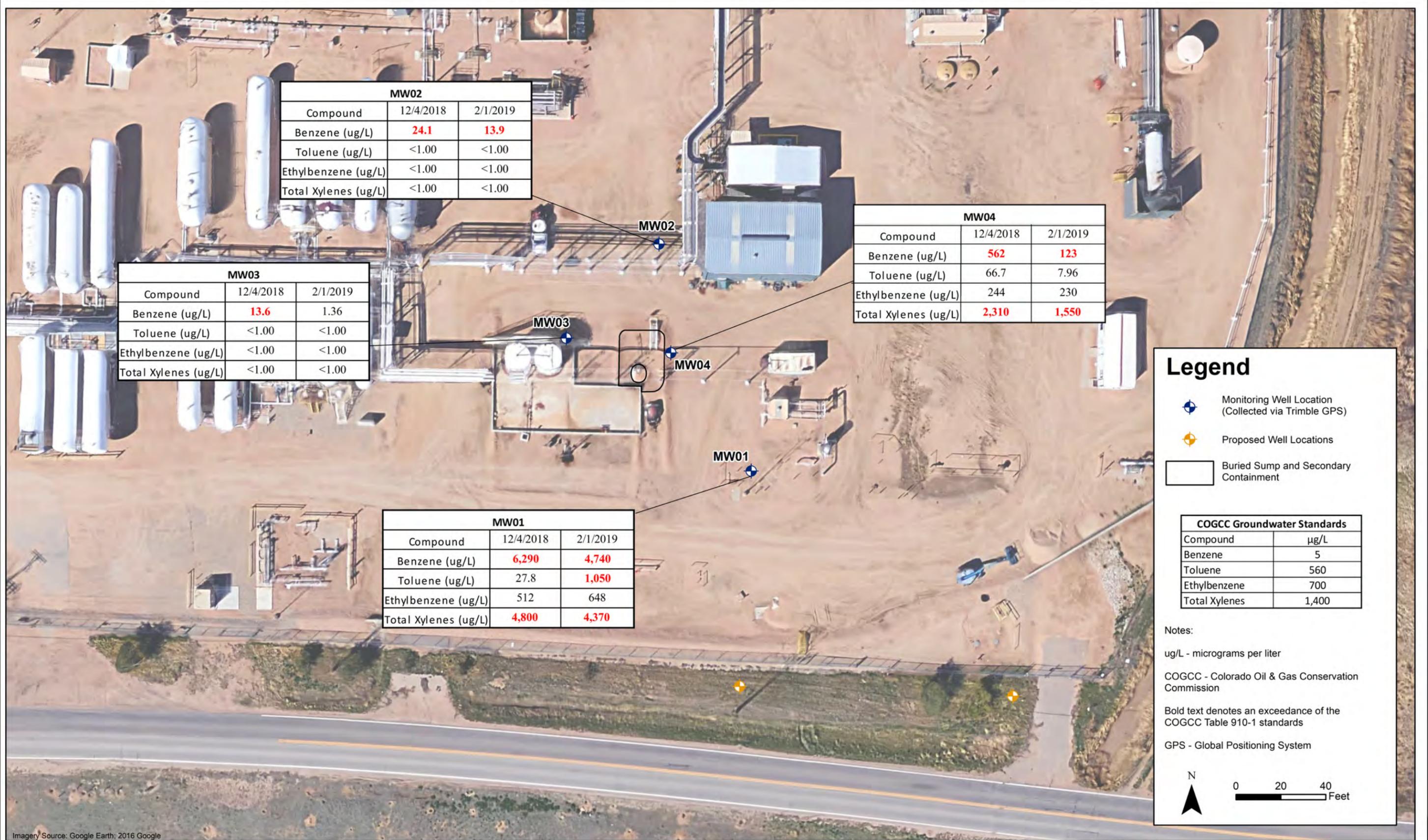


**TASMAN** Tasman Geosciences, Inc  
 6899 Pecos Street - Unit C  
 GEOSCIENCES Denver, CO 80221

**DCP Midstream  
 Greeley Gas Plant**  
 SESW Section 25, Township 5 North, Range 66 West  
 Weld County, Colorado

Groundwater Elevation  
 Contour Map  
 (February 1, 2019)

**Figure  
 4**



MW02		
Compound	12/4/2018	2/1/2019
Benzene (ug/L)	<b>24.1</b>	<b>13.9</b>
Toluene (ug/L)	<1.00	<1.00
Ethylbenzene (ug/L)	<1.00	<1.00
Total Xylenes (ug/L)	<1.00	<1.00

MW03		
Compound	12/4/2018	2/1/2019
Benzene (ug/L)	<b>13.6</b>	1.36
Toluene (ug/L)	<1.00	<1.00
Ethylbenzene (ug/L)	<1.00	<1.00
Total Xylenes (ug/L)	<1.00	<1.00

MW04		
Compound	12/4/2018	2/1/2019
Benzene (ug/L)	<b>562</b>	<b>123</b>
Toluene (ug/L)	66.7	7.96
Ethylbenzene (ug/L)	244	230
Total Xylenes (ug/L)	<b>2,310</b>	<b>1,550</b>

MW01		
Compound	12/4/2018	2/1/2019
Benzene (ug/L)	<b>6,290</b>	<b>4,740</b>
Toluene (ug/L)	27.8	<b>1,050</b>
Ethylbenzene (ug/L)	512	648
Total Xylenes (ug/L)	<b>4,800</b>	<b>4,370</b>

### Legend

- Monitoring Well Location (Collected via Trimble GPS)
- Proposed Well Locations
- Buried Sump and Secondary Containment

COGCC Groundwater Standards	
Compound	µg/L
Benzene	5
Toluene	560
Ethylbenzene	700
Total Xylenes	1,400

Notes:  
 ug/L - micrograms per liter  
 COGCC - Colorado Oil & Gas Conservation Commission  
 Bold text denotes an exceedance of the COGCC Table 910-1 standards  
 GPS - Global Positioning System



DATE: February 2019  
 DESIGNED BY: B. Humphrey  
 DRAWN BY: D. Cavinder



**DCP Midstream  
 Greeley Gas Plant**  
 SESW Section 25, Township 5 North, Range 66 West  
 Weld County, Colorado

Groundwater Analytical Results  
 & Proposed Well Locations Map

Figure  
 5

Imagery Source: Google Earth: 2016 Google

## **APPENDIX A**

December 09, 2015

**DCP Midstream**

**Branden Hayes**

**3026 4th Ave.**

**Greeley, CO 80631 CO 80631**

**Project Name - Greeley Gas Plant**

**Project Number - [none]**

Attached are your analytical results for Greeley Gas Plant received by Origins Laboratory, Inc. December 04, 2015. This project is associated with Origins project number X512063-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



DCP Midstream  
3026 4th Ave.  
Greeley, CO 80631CO 80631

Branden Hayes  
Project Number: [none]  
Project: Greeley Gas Plant

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Greeley G.P. #1	X512063-01	Soil	December 2, 2015 13:00	12/04/2015 09:53
Greeley G.P. #2	X512063-02	Soil	December 2, 2015 13:10	12/04/2015 09:53
Greeley G.P. #3	X512063-03	Soil	December 2, 2015 13:20	12/04/2015 09:53

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



DCP Midstream  
 3026 4th Ave.  
 Greeley, CO 80631CO 80631

Branden Hayes  
 Project Number: [none]  
 Project: Greeley Gas Plant

Origins Laboratory

F-012207-01-R1  
 Effective Date: 01/09/12

**Sample Receipt Checklist**

Origins Work Order: XS12063

Client: DCP Midstream

Client Project ID: Greeley Gas Plant

Checklist Completed by: Jesse Smith

Shipped Via: Hand  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 12/4/15

Airbill #: NA

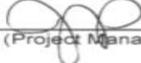
Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_ (Describe)

Cooler Number/Temperature: 1 / 0.2 °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °C

Thermometer ID: T203

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		Y		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		Y		
Were all samples received intact <sup>(1)</sup> ?	X			
Was adequate sample volume provided <sup>(1)</sup> ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		Y		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	X			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	X			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	X			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH < 2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			X	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) 

Date/Time Reviewed 12/4/15

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

DCP Midstream  
 3026 4th Ave.  
 Greeley, CO 80631CO 80631

Branden Hayes  
 Project Number: [none]  
 Project: Greeley Gas Plant

**Greelev G.P. #1**  
**12/2/2015 1:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X512063-01 (Soil)**

**BTEX by EPA 8260C**

Benzene	ND	0.050	mg/kg	25	B5L0402	12/04/2015	12/04/2015	
Toluene	<b>1.20</b>	0.050	"	"	"	"	"	
Ethylbenzene	<b>0.203</b>	0.050	"	"	"	"	"	
Xylenes, total	<b>3.34</b>	0.050	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	80.0 %	70-130			"	"	"	
Surrogate: Toluene-d8	105 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.0 %	70-130			"	"	"	

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

DCP Midstream  
 3026 4th Ave.  
 Greeley, CO 80631CO 80631

Branden Hayes  
 Project Number: [none]  
 Project: Greeley Gas Plant

**Greelev G.P. #2**  
**12/2/2015 1:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X512063-02 (Soil)**

**BTEX by EPA 8260C**

Benzene	0.066	0.050	mg/kg	25	B5L0402	12/04/2015	12/04/2015	
Toluene	1.56	0.050	"	"	"	"	"	
Ethylbenzene	0.253	0.050	"	"	"	"	"	
Xylenes, total	4.26	0.050	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	82.4 %	70-130			"	"	"	
Surrogate: Toluene-d8	106 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.2 %	70-130			"	"	"	

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

DCP Midstream  
 3026 4th Ave.  
 Greeley, CO 80631CO 80631

Branden Hayes  
 Project Number: [none]  
 Project: Greeley Gas Plant

**Greelev G.P. #3**  
**12/2/2015 1:20:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X512063-03 (Soil)**

**BTEX by EPA 8260C**

Benzene	0.168	0.050	mg/kg	25	B5L0402	12/04/2015	12/04/2015	
Toluene	3.33	0.050	"	"	"	"	"	
Ethylbenzene	0.333	0.050	"	"	"	"	"	
Xylenes, total	4.64	0.050	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	82.4 %	70-130			"	"	"	
Surrogate: Toluene-d8	108 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	94.8 %	70-130			"	"	"	

Origins Laboratory, Inc.



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DCP Midstream  
 3026 4th Ave.  
 Greeley, CO 80631CO 80631

Branden Hayes  
 Project Number: [none]  
 Project: Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5L0402 - EPA 5030 (soil)**

**Blank (B5L0402-BLK1)**

Prepared: 12/04/2015 Analyzed: 12/04/2015

Benzene	ND	0.002	mg/kg							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		104	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.3	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

Origins Laboratory, Inc.



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DCP Midstream  
 3026 4th Ave.  
 Greeley, CO 80631CO 80631

Branden Hayes  
 Project Number: [none]  
 Project: Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5L0402 - EPA 5030 (soil)**

**LCS (B5L0402-BS1)**

Prepared: 12/04/2015 Analyzed: 12/04/2015

Benzene	0.091	0.002	mg/kg	0.100		90.7	77.1-124			
Toluene	0.089	0.002	"	0.100		89.1	74.5-128			
Ethylbenzene	0.090	0.002	"	0.100		89.8	66.4-127			
m,p-Xylene	0.181	0.004	"	0.200		90.4	76.6-124			
o-Xylene	0.091	0.002	"	0.100		90.8	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.4	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

Origins Laboratory, Inc.



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DCP Midstream  
 3026 4th Ave.  
 Greeley, CO 80631CO 80631

Branden Hayes  
 Project Number: [none]  
 Project: Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B5L0402 - EPA 5030 (soil)

Matrix Spike (B5L0402-MS1)	Source: X512043-02			Prepared: 12/04/2015 Analyzed: 12/04/2015						
Benzene	0.101	0.002	mg/kg	0.100	ND	101	71.8-126			
Toluene	0.101	0.002	"	0.100	ND	101	65.1-130			
Ethylbenzene	0.103	0.002	"	0.100	ND	103	62.2-130			
m,p-Xylene	0.208	0.004	"	0.200	ND	104	46.5-137			
o-Xylene	0.104	0.002	"	0.100	ND	104	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

Origins Laboratory, Inc.



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DCP Midstream  
 3026 4th Ave.  
 Greeley, CO 80631CO 80631

Branden Hayes  
 Project Number: [none]  
 Project: Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B5L0402 - EPA 5030 (soil)**

<b>Matrix Spike Dup (B5L0402-MSD1)</b>	<b>Source: X512043-02</b>			<b>Prepared: 12/04/2015 Analyzed: 12/04/2015</b>						
Benzene	0.106	0.002	mg/kg	0.100	ND	106	71.8-126	4.41	11.3	
Toluene	0.106	0.002	"	0.100	ND	106	65.1-130	3.96	15.4	
Ethylbenzene	0.107	0.002	"	0.100	ND	107	62.2-130	3.90	19.6	
m,p-Xylene	0.215	0.004	"	0.200	ND	108	46.5-137	3.32	19.2	
o-Xylene	0.107	0.002	"	0.100	ND	107	54.2-134	2.79	17.9	
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		99.0	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

Origins Laboratory, Inc.



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DCP Midstream  
3026 4th Ave.  
Greeley, CO 80631CO 80631

Branden Hayes  
Project Number: [none]  
Project: Greeley Gas Plant

---

### Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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---

Jen Pellegrini For Noelle Doyle Mathis, President



December 06, 2018

**Tasman Geosciences**

**Brian Humphrey**

**6899 Pecos Street, Unit C**

**Denver**

**CO 80211**

**Project Name - DCP Greeley Gas Plant**

**Project Number - [none]**

Attached are your analytical results for DCP Greeley Gas Plant received by Origins Laboratory, Inc. November 30, 2018. This project is associated with Origins project number Y812002-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Brian Humphrey  
Project Number: [none]  
Project: DCP Greeley Gas Plant

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01@8.0'	Y812002-01	Soil	November 29, 2018 11:00	11/30/2018 17:00
BH02@6.0'	Y812002-02	Soil	November 29, 2018 14:10	11/30/2018 17:00
BH03@7.0'	Y812002-03	Soil	November 29, 2018 15:00	11/30/2018 17:00
BH04@7.0'	Y812002-04	Soil	November 29, 2018 14:45	11/30/2018 17:00
BH04@2.0'	Y812002-05	Soil	November 29, 2018 13:15	11/30/2018 17:00

Per the email from Brian on 12/05/18, sample B04@2.0' was taken off hold.

Per the phone call from James on 12/05/18, GRO by 8260 was added to all samples.

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

Jen Pellegrini For Noelle Doyle Mathis, President



Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

Origins Laboratory

F-012207-01-R1  
 Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: YB12002

Client: Tasman  
 Client Project ID: DCP Greeley Gas Plant

Checklist Completed by: JG

Shipped Via: HD  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A

Date/time completed: 12/13/2018

Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_

Cooler Number/Temperature: 1 13.5 °C 1 °C 1 °C 1 °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH < 2 for samples preserved with HNO3, HCL, H2SO4) / (pH > 10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) [Signature]

Date/Time Reviewed 12/14/18

Origins Laboratory, Inc.

Jefe Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH01@8.0'**

**11/29/2018 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y812002-01 (Soil)**

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	<b>63.3</b>	50.0	mg/kg	1	B8L0403	KDK	12/04/2018	12/05/2018	
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Surrogate: <i>o</i> -Terphenyl	85.3 %	59-131			"	"	"	"	
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	<b>0.315</b>	0.200	mg/kg	1	B8L0404	JTD	12/04/2018	12/05/2018	
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Benzene	ND	0.002	"	"	"	JTD	"	"	U
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Toluene	ND	0.002	"	"	"	JTD	"	"	U
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Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
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Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U
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Surrogate: 1,2-Dichloroethane-d4	87.7 %	70-130			"	"	"	"	
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Surrogate: Toluene-d8	104 %	70-130			"	"	"	"	
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Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"	"	
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Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH02@6.0'**

**11/29/2018 2:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y812002-02 (Soil)**

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8L0403	KDK	12/04/2018	12/05/2018	U
Surrogate: <i>o</i> -Terphenyl	84.5 %	59-131			"	"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8L0404	JTD	12/04/2018	12/05/2018	U
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.6 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH03@7.0'**

**11/29/2018 3:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y812002-03 (Soil)**

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8L0403	KDK	12/04/2018	12/05/2018	U
Surrogate: o-Terphenyl	88.9 %	59-131			"	"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8L0404	JTD	12/04/2018	12/05/2018	U
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.4 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH04@7.0'**

**11/29/2018 2:45:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y812002-04 (Soil)**

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	ND	50.0	mg/kg	1	B8L0403	KDK	12/04/2018	12/05/2018	U
Surrogate: o-Terphenyl	87.1 %	59-131			"	"	"	"	

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8L0404	JTD	12/04/2018	12/05/2018	U
Benzene	ND	0.002	"	"	"	JTD	"	"	U
Toluene	ND	0.002	"	"	"	JTD	"	"	U
Ethylbenzene	ND	0.002	"	"	"	JTD	"	"	U
Xylenes, total	ND	0.002	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.9 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH04@2.0'**

**11/29/2018 1:15:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y812002-05 (Soil)**

**Diesel Range Organics (DRO/TEPH) by EPA 8015C**

Diesel (C10-C28)	<b>945</b>	50.0	mg/kg	1	B8L0502	JTD	12/05/2018	12/06/2018
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Surrogate: <i>o</i> -Terphenyl	99.9 %	59-131			"	"	"	"
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	<b>3760</b>	500	mg/kg	2500	B8L0501	KDK	12/05/2018	12/06/2018
Benzene	<b>4.42</b>	0.050	"	25	"	KDK	"	12/06/2018
Toluene	<b>3.76</b>	0.050	"	"	"	KDK	"	"
Ethylbenzene	<b>13.6</b>	4.98	"	2500	"	KDK	"	12/06/2018
Xylenes, total	<b>284</b>	4.98	"	"	"	KDK	"	"

Surrogate: 1,2-Dichloroethane-d4	93.0 %	70-130			"	"	"	"
Surrogate: Toluene-d8	87.8 %	70-130			"	"	"	12/06/2018
Surrogate: 4-Bromofluorobenzene	110 %	70-130			"	"	"	12/06/2018

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B8L0404 - EPA 5030 (soil)</b>										
<b>Blank (B8L0404-BLK1)</b>										
					Prepared: 12/04/2018 Analyzed: 12/04/2018					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		106	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.3	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B8L0404 - EPA 5030 (soil)</b>										
<b>Blank (B8L0404-BLK2)</b>										
					Prepared: 12/04/2018 Analyzed: 12/04/2018					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.1	70-130			

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 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B8L0404 - EPA 5030 (soil)**

**LCS (B8L0404-BS1)**

Prepared: 12/04/2018 Analyzed: 12/04/2018

Benzene	0.105	0.002	mg/kg	0.100		105	77.1-124			
Toluene	0.089	0.002	"	0.100		88.5	74.5-128			
Ethylbenzene	0.092	0.002	"	0.100		92.2	66.4-127			
m,p-Xylene	0.182	0.004	"	0.200		90.8	76.6-124			
o-Xylene	0.091	0.002	"	0.100		90.9	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		107	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		91.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

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Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B8L0404 - EPA 5030 (soil)**

**LCS (B8L0404-BS2)**

Prepared: 12/04/2018 Analyzed: 12/04/2018

Benzene	0.116	0.002	mg/kg	0.100		116	77.1-124			
Toluene	0.098	0.002	"	0.100		98.3	74.5-128			
Ethylbenzene	0.096	0.002	"	0.100		96.3	66.4-127			
m,p-Xylene	0.191	0.004	"	0.200		95.5	76.6-124			
o-Xylene	0.096	0.002	"	0.100		95.9	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.9	70-130			

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Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L0404 - EPA 5030 (soil)

Matrix Spike (B8L0404-MS1)	Source: Y811452-01			Prepared: 12/04/2018 Analyzed: 12/04/2018						
Benzene	0.119	0.002	mg/kg	0.100	ND	119	71.8-126			
Toluene	0.098	0.002	"	0.100	ND	97.6	65.1-130			
Ethylbenzene	0.093	0.002	"	0.100	ND	92.5	62.2-130			
m,p-Xylene	0.187	0.004	"	0.200	0.001	92.7	46.5-137			
o-Xylene	0.095	0.002	"	0.100	0.0004	94.5	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		116	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		90.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L0404 - EPA 5030 (soil)

Matrix Spike (B8L0404-MS2)	Source: Y811452-02			Prepared: 12/04/2018 Analyzed: 12/04/2018						
Benzene	0.113	0.002	mg/kg	0.100	ND	113	71.8-126			
Toluene	0.093	0.002	"	0.100	ND	93.1	65.1-130			
Ethylbenzene	0.090	0.002	"	0.100	ND	90.1	62.2-130			
m,p-Xylene	0.180	0.004	"	0.200	0.0009	89.9	46.5-137			
o-Xylene	0.092	0.002	"	0.100	ND	92.0	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		110	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		90.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L0404 - EPA 5030 (soil)

Matrix Spike Dup (B8L0404-MSD1)	Source: Y811452-01			Prepared: 12/04/2018 Analyzed: 12/04/2018						
Benzene	0.120	0.002	mg/kg	0.100	ND	120	71.8-126	0.284	11.3	
Toluene	0.099	0.002	"	0.100	ND	98.5	65.1-130	0.979	15.4	
Ethylbenzene	0.093	0.002	"	0.100	ND	93.4	62.2-130	0.925	19.6	
m,p-Xylene	0.186	0.004	"	0.200	0.001	92.4	46.5-137	0.290	19.2	
o-Xylene	0.095	0.002	"	0.100	0.0004	94.8	54.2-134	0.294	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		113	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		90.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L0404 - EPA 5030 (soil)

Matrix Spike Dup (B8L0404-MSD2)	Source: Y811452-02			Prepared: 12/04/2018 Analyzed: 12/04/2018						
Benzene	0.114	0.002	mg/kg	0.100	ND	114	71.8-126	0.0881	11.3	
Toluene	0.093	0.002	"	0.100	ND	93.3	65.1-130	0.193	15.4	
Ethylbenzene	0.089	0.002	"	0.100	ND	89.4	62.2-130	0.758	19.6	
m,p-Xylene	0.177	0.004	"	0.200	0.0009	88.5	46.5-137	1.52	19.2	
o-Xylene	0.090	0.002	"	0.100	ND	90.3	54.2-134	1.93	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		110	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		90.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B8L0501 - EPA 5030 (soil)**

**Blank (B8L0501-BLK1)**

Prepared: 12/05/2018 Analyzed: 12/05/2018

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.5	70-130			

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Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B8L0501 - EPA 5030 (soil)**

**Blank (B8L0501-BLK2)**

Prepared: 12/05/2018 Analyzed: 12/05/2018

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.6	70-130			

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Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B8L0501 - EPA 5030 (soil)**

**LCS (B8L0501-BS1)**

Prepared: 12/05/2018 Analyzed: 12/05/2018

Benzene	0.113	0.002	mg/kg	0.100		113	77.1-124			
Toluene	0.095	0.002	"	0.100		94.7	74.5-128			
Ethylbenzene	0.092	0.002	"	0.100		92.0	66.4-127			
m,p-Xylene	0.182	0.004	"	0.200		91.0	76.6-124			
o-Xylene	0.093	0.002	"	0.100		93.0	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		91.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B8L0501 - EPA 5030 (soil)**

**LCS (B8L0501-BS2)**

Prepared: 12/05/2018 Analyzed: 12/05/2018

Benzene	0.120	0.002	mg/kg	0.100		120	77.1-124			
Toluene	0.102	0.002	"	0.100		102	74.5-128			
Ethylbenzene	0.101	0.002	"	0.100		101	66.4-127			
m,p-Xylene	0.201	0.004	"	0.200		101	76.6-124			
o-Xylene	0.101	0.002	"	0.100		101	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		91.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L0501 - EPA 5030 (soil)

Matrix Spike (B8L0501-MS1)	Source: Y812046-01			Prepared: 12/05/2018 Analyzed: 12/05/2018						
Benzene	0.125	0.002	mg/kg	0.100	ND	125	71.8-126			
Toluene	0.105	0.002	"	0.100	ND	105	65.1-130			
Ethylbenzene	0.105	0.002	"	0.100	ND	105	62.2-130			
m,p-Xylene	0.208	0.004	"	0.200	ND	104	46.5-137			
o-Xylene	0.105	0.002	"	0.100	0.0004	105	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		91.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L0501 - EPA 5030 (soil)

Matrix Spike (B8L0501-MS2)	Source: Y812046-02			Prepared: 12/05/2018 Analyzed: 12/05/2018						
Benzene	0.121	0.002	mg/kg	0.100	ND	121	71.8-126			
Toluene	0.102	0.002	"	0.100	ND	102	65.1-130			
Ethylbenzene	0.101	0.002	"	0.100	ND	101	62.2-130			
m,p-Xylene	0.200	0.004	"	0.200	ND	100	46.5-137			
o-Xylene	0.101	0.002	"	0.100	0.0004	100	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		91.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	70-130			

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Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L0501 - EPA 5030 (soil)

Matrix Spike Dup (B8L0501-MSD1)	Source: Y812046-01			Prepared: 12/05/2018 Analyzed: 12/05/2018						
Benzene	0.120	0.002	mg/kg	0.100	ND	120	71.8-126	3.45	11.3	
Toluene	0.102	0.002	"	0.100	ND	102	65.1-130	2.92	15.4	
Ethylbenzene	0.102	0.002	"	0.100	ND	102	62.2-130	3.00	19.6	
m,p-Xylene	0.201	0.004	"	0.200	ND	100	46.5-137	3.36	19.2	
o-Xylene	0.101	0.002	"	0.100	0.0004	101	54.2-134	3.61	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.5	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		91.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8L0501 - EPA 5030 (soil)

Matrix Spike Dup (B8L0501-MSD2)	Source: Y812046-02			Prepared: 12/05/2018 Analyzed: 12/05/2018						
Benzene	0.115	0.002	mg/kg	0.100	ND	115	71.8-126	4.92	11.3	
Toluene	0.097	0.002	"	0.100	ND	96.8	65.1-130	5.19	15.4	
Ethylbenzene	0.096	0.002	"	0.100	ND	95.8	62.2-130	5.05	19.6	
m,p-Xylene	0.189	0.004	"	0.200	ND	94.5	46.5-137	5.60	19.2	
o-Xylene	0.096	0.002	"	0.100	0.0004	95.3	54.2-134	4.99	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		90.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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6899 Pecos Street, Unit C  
Denver CO 80211

Brian Humphrey  
Project Number: [none]  
Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B8L0403 - EPA 3550B**

<b>Blank (B8L0403-BLK1)</b>					Prepared: 12/04/2018 Analyzed: 12/04/2018					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	40		"	50.0		79.3	59-131			
<b>Blank (B8L0403-BLK2)</b>					Prepared: 12/04/2018 Analyzed: 12/04/2018					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	39		"	50.0		77.9	59-131			
<b>LCS (B8L0403-BS1)</b>					Prepared: 12/04/2018 Analyzed: 12/04/2018					
Diesel (C10-C28)	1010	50.0	mg/kg	1000		101	64-121			
Surrogate: o-Terphenyl	47		"	50.0		94.3	59-131			
<b>LCS (B8L0403-BS2)</b>					Prepared: 12/04/2018 Analyzed: 12/04/2018					
Diesel (C10-C28)	958	50.0	mg/kg	1000		95.8	64-121			
Surrogate: o-Terphenyl	45		"	50.0		90.1	59-131			
<b>Matrix Spike (B8L0403-MS1)</b>		<b>Source: Y811452-01</b>			Prepared: 12/04/2018 Analyzed: 12/04/2018					
Diesel (C10-C28)	864	50.0	mg/kg	1000	ND	86.4	53-125			
Surrogate: o-Terphenyl	40		"	50.0		81.0	59-131			
<b>Matrix Spike (B8L0403-MS2)</b>		<b>Source: Y811452-02</b>			Prepared: 12/04/2018 Analyzed: 12/04/2018					
Diesel (C10-C28)	813	50.0	mg/kg	1000	ND	81.3	53-125			
Surrogate: o-Terphenyl	38		"	50.0		76.2	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B8L0403 - EPA 3550B</b>										
<b>Matrix Spike Dup (B8L0403-MSD1)</b>		<b>Source: Y811452-01</b>			Prepared: 12/04/2018 Analyzed: 12/04/2018					
Diesel (C10-C28)	874	50.0	mg/kg	1000	ND	87.4	53-125	1.23	20	
Surrogate: o-Terphenyl	41		"	50.0		81.3	59-131			
<b>Matrix Spike Dup (B8L0403-MSD2)</b>		<b>Source: Y811452-02</b>			Prepared: 12/04/2018 Analyzed: 12/04/2018					
Diesel (C10-C28)	909	50.0	mg/kg	1000	ND	90.9	53-125	11.1	20	
Surrogate: o-Terphenyl	41		"	50.0		81.6	59-131			
<b>Batch B8L0502 - EPA 3580</b>										
<b>Blank (B8L0502-BLK1)</b>					Prepared: 12/05/2018 Analyzed: 12/05/2018					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	39		"	50.0		77.7	59-131			
<b>Blank (B8L0502-BLK2)</b>					Prepared: 12/05/2018 Analyzed: 12/05/2018					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	39		"	50.0		78.9	59-131			
<b>LCS (B8L0502-BS1)</b>					Prepared: 12/05/2018 Analyzed: 12/05/2018					
Diesel (C10-C28)	985	50.0	mg/kg	1000		98.5	64-121			
Surrogate: o-Terphenyl	48		"	50.0		96.2	59-131			
<b>LCS (B8L0502-BS2)</b>					Prepared: 12/05/2018 Analyzed: 12/05/2018					
Diesel (C10-C28)	961	50.0	mg/kg	1000		96.1	64-121			
Surrogate: o-Terphenyl	46		"	50.0		91.3	59-131			
<b>Matrix Spike (B8L0502-MS1)</b>		<b>Source: Y812046-01</b>			Prepared: 12/05/2018 Analyzed: 12/05/2018					
Diesel (C10-C28)	913	50.0	mg/kg	1000	ND	91.3	53-125			
Surrogate: o-Terphenyl	42		"	50.0		84.0	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Extractable Petroleum Hydrocarbons by 8015C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B8L0502 - EPA 3580</b>										
<b>Matrix Spike (B8L0502-MS2)</b>		<b>Source: Y812046-02</b>			Prepared: 12/05/2018 Analyzed: 12/05/2018					
Diesel (C10-C28)	959	50.0	mg/kg	1000	ND	95.9	53-125			
Surrogate: o-Terphenyl	45		"	50.0		90.9	59-131			
<b>Matrix Spike Dup (B8L0502-MSD1)</b>		<b>Source: Y812046-01</b>			Prepared: 12/05/2018 Analyzed: 12/05/2018					
Diesel (C10-C28)	916	50.0	mg/kg	1000	ND	91.6	53-125	0.411	20	
Surrogate: o-Terphenyl	43		"	50.0		85.6	59-131			
<b>Matrix Spike Dup (B8L0502-MSD2)</b>		<b>Source: Y812046-02</b>			Prepared: 12/05/2018 Analyzed: 12/05/2018					
Diesel (C10-C28)	958	50.0	mg/kg	1000	ND	95.8	53-125	0.114	20	
Surrogate: o-Terphenyl	45		"	50.0		90.9	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Brian Humphrey  
Project Number: [none]  
Project: DCP Greeley Gas Plant

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### Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

## **APPENDIX B**



## Borehole Logging Form

	SITE NAME: Greeley Gas Plant	CLIENT NAME: DCP
Date Started: 11/29/2018	Location: BH01	
Date Completed: 11/29/2018	TOC Elevation: 4678.49	DTW: 10'
Type of Drill: Direct Push Probe	Geologist: J. Carrington	
Bit Size: 2-1/2"	Project Manager: B. Humphrey	

Drilling Company: Tasman

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1	Well Screen							
2			100	38		SW	Coarse Sand, w/ gravels, minimal fines, Brown, light TPH odor (via hand auger)	
3								
4								
5				100	80		SW	Coarse Sand, w/ gravels, minimal fines, Brown, light TPH odor (via hand auger)
6								
7				100	210			Coarse Sand, decrease in gravels, inc. in moisture Well-graded, grey, TPH odor (via hand auger)
8				100	791	yes @ 11:00		As above
9	Sand Pack		50	54			As above, decrease in TPH odor, grey (via hand auger)	
10			60	35			As above	
11			60	1038		SM	Finer sands, well-graded, with silt, no gravel, Grey, TPH odor. (Via continuous core)	
12								
13							As above	
14							As above	
15							As above	
16					720		SW	Coarse Sand, w/ gravels, minimal fines, Brown, degraded TPH odor (via continuous core) Boring depth = 16'.
17								
18								
19								
20								

Well Backfill Materials:

- Concrete with flush mount monument
- Hydrated bentonite with 10% grout mix
- Hydrated bentonite



## Borehole Logging Form

<b>SITE NAME: Greeley Gas Plant</b>		<b>CLIENT NAME: DCP</b>	
Date Started: 11/29/2018	Location: BH02		
Date Completed: 11/29/2018	TOC Elevation: 4679.37	DTW: 10'	
Type of Drill: Direct Push Probe	Geologist: J. Carrington		
Bit Size: 2-1/2"	Project Manager: B. Humphrey		

Drilling Company: Tasman

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1	Well Screen Sand Pack		100	0.5		SM	Silty sands, fill material, w/ coarse sands, Blank, no odor. (Via hand auger)	
2			100	42		SM	As above, increase in fines, black no odor. (via and auger)	
3								
4				100	23		SW	Coarse Sand, w/ gravels, minimal fines, Grey, no odor (via hand auger)
5								
6				100	2.1	yes @ 14:10	SW	As above
7								
8								
9								
10			35	2.0		SW	As above, loss of recovery due to coarseness	
11				15		SW	As above	
12				13		SW	As above	
13								
14				5.0		SM	As above, increase in fines, trace gravels	
15							Brown, no staining, no odor. As above	
16				1.6		SM	As above	
17							Boring depth = 16'.	
18								
19								
20								

Well Backfill Materials:

- Concrete with flush mount monument
- Hydrated bentonite with 10% grout mix
- Hydrated bentonite



## Borehole Logging Form

	SITE NAME: Greeley Gas Plant	CLIENT NAME: DCP
Date Started: 11/29/2018	Location: BH03	
Date Completed: 11/29/2018	TOC Elevation: 4679.67	DTW: 11'
Type of Drill: Direct Push Probe	Geologist: J. Carrington	
Bit Size: 2-1/2"	Project Manager: B. Humphrey	

Drilling Company: Tasman

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1	Well Screen Sand Pack		100	58.0		SM	Silty sand, with clay fines, coarse sand, trace gravels, Black, no odor (via hand auger)	
2								
3								
4				100	23		SW	Coarse Sands, well graded, w/ gravels, Grey/black, no odor (via hand auger)
5								
6								
7				100	4.5	yes @ 15:00	SW	As above
8								
9								
10								
11	▼							
12								
13								
14			100	3.5		SW	Coarse sands, well graded, increase in grain size, w/ gravels, no staining, no odor	
15								
16				1.8		SP	Finer sands intermixed, no gravel, no staining No odor. End of boring = 16' bgs	
17								
18								
19								
20								

Well Backfill Materials:

- Concrete with flush mount monument
- Hydrated bentonite with 10% grout mix
- Hydrated bentonite



## Borehole Logging Form

	SITE NAME: Greeley Gas Plant	CLIENT NAME: DCP
Date Started: 11/29/2018	Location: BH04	
Date Completed: 11/29/2018	TOC Elevation: 4679.44	DTW: 10'
Type of Drill: Direct Push Probe	Geologist: J. Carrington	
Bit Size: 2-1/2"	Project Manager: B. Humphrey	

Drilling Company: Tasman

Depth (feet)	Well Completion	Sample Type	% Recovery	PID (ppm)	Laboratory Sample	USCS	Description	
1	Well Screen Sand Pack							
2			100	870	Yes	SW	Sandy silt, some clay- cohesive, w/ gravels and coarse sands, black staining, TPH odor (via hand auger)	
3								
4								
5				100	51		SW	Coarse sand, w/ larger gravels, light brown, no staining, no odor (via hand auger)
6								
7								
8				100	560	yes @ 11:45	SW	As above, increase in moisture, grey/ black Staining, TPH Odor (via hand auger)
9								
10			100	25		SW	Coarse sands, well graded, with gravel, no staining, no odor (via hand auger)	
11								
12			100	1310			As above, increase in TPH odor, grey staining	
13							As above	
14			100	1197			As above	
15			100	600.0			As above	
16			100	225		SW	As above, increase in finer sands, no gravel Grey, light TPH odor, Boring depth = 16'.	
17								
18								
19								
20								

Well Backfill Materials:

- Concrete with flush mount monument
- Hydrated bentonite with 10% grout mix
- Hydrated bentonite

## **APPENDIX C**

December 10, 2018

Tasman Geosciences

Brian Humphrey

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - DCP Greeley Gas Plant**

**Project Number - [none]**

Attached are your analytical results for DCP Greeley Gas Plant received by Origins Laboratory, Inc. December 04, 2018. This project is associated with Origins project number Y812042-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Brian Humphrey  
Project Number: [none]  
Project: DCP Greeley Gas Plant

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	Y812042-01	Water	December 4, 2018 12:00	12/04/2018 17:00
BH02	Y812042-02	Water	December 4, 2018 11:30	12/04/2018 17:00
BH03	Y812042-03	Water	December 4, 2018 11:25	12/04/2018 17:00
BH04	Y812042-04	Water	December 4, 2018 12:05	12/04/2018 17:00

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

Origins Laboratory

F-012207-01-R1  
 Effective Date: 01/09/12

**Sample Receipt Checklist**

Origins Work Order: Y912042 Client: Tasman  
 Client Project ID: DCP - Greeley Gas Plant  
 Checklist Completed by: JG Shipped Via: HD  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Date/time completed: 12/5/2018 Airbill #: N/A  
 Matrix(s) Received: (Check all that apply): Soil/Solid  Water  Other   
 Cooler Number/Temperature: 1 / 3.8 °C          /          °C          /          °C (Describe)  
 Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

[Signature]  
 Reviewed by (Project Manager)

12/6/18  
 Date/Time Reviewed

Origins Laboratory, Inc.

[Signature: Jen Pellegrini]

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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH01**

**12/4/2018 12:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y812042-01 (Water)**

**BTEX by EPA 8260C**

Benzene	<b>6290</b>	100	ug/L	100	B8L0603	KDK	12/06/2018	12/07/2018	
Toluene	<b>27.8</b>	1.00	"	1	"	KDK	"	12/06/2018	
Ethylbenzene	<b>512</b>	100	"	100	"	KDK	"	12/07/2018	
Xylenes, total	<b>4800</b>	100	"	"	"	KDK	"	"	
Surrogate: 1,2-Dichloroethane-d4	97.9 %			84-121		"	"	"	
Surrogate: Toluene-d8	101 %			85-115		"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %			84-114		"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH02**

**12/4/2018 11:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y812042-02 (Water)**

**BTEX by EPA 8260C**

Benzene	24.1	1.00	ug/L	1	B8L0603	KDK	12/06/2018	12/07/2018	
Toluene	ND	1.00	"	"	"	KDK	"	12/06/2018	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	12/07/2018	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	110 %	84-121			"	"		12/06/2018	
Surrogate: Toluene-d8	101 %	85-115			"	"		"	
Surrogate: 4-Bromofluorobenzene	103 %	84-114			"	"		"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH03**

**12/4/2018 11:25:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.  
 Y812042-03 (Water)**

**BTEX by EPA 8260C**

Benzene	13.6	1.00	ug/L	1	B8L0603	KDK	12/06/2018	12/06/2018	
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	114 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	102 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH04**

**12/4/2018 12:05:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y812042-04 (Water)**

**BTEX by EPA 8260C**

Benzene	562	50.0	ug/L	50	B8L0603	KDK	12/06/2018	12/07/2018	
Toluene	66.7	1.00	"	1	"	KDK	"	12/06/2018	
Ethylbenzene	244	50.0	"	50	"	KDK	"	12/07/2018	
Xylenes, total	2310	50.0	"	"	"	KDK	"	"	
Surrogate: 1,2-Dichloroethane-d4	103 %	84-121			"	"		12/06/2018	
Surrogate: Toluene-d8	103 %	85-115			"	"		12/07/2018	
Surrogate: 4-Bromofluorobenzene	99.3 %	84-114			"	"		"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B8L0603 - EPA 5030B (Water)**

**Blank (B8L0603-BLK1)**

Prepared: 12/06/2018 Analyzed: 12/06/2018

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	67		"	62.5	107		84-121			
Surrogate: Toluene-d8	65		"	62.5	104		85-115			
Surrogate: 4-Bromofluorobenzene	65		"	62.5	104		84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B8L0603 - EPA 5030B (Water)**

**LCS (B8L0603-BS1)**

Prepared: 12/06/2018 Analyzed: 12/06/2018

Benzene	49.4	1.00	ug/L	50.0		98.8	73.3-129			
Toluene	55.1	1.00	"	50.0		110	76.2-123			
Ethylbenzene	57.9	1.00	"	50.0		116	73.6-130			
m,p-Xylene	117	2.00	"	100		117	76.1-126			
o-Xylene	55.7	1.00	"	50.0		111	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	84-121			
Surrogate: Toluene-d8	66		"	62.5		105	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B8L0603 - EPA 5030B (Water)**

<b>Matrix Spike (B8L0603-MS1)</b>	<b>Source: Y812033-01</b>			<b>Prepared: 12/06/2018 Analyzed: 12/06/2018</b>						
Benzene	53.0	1.00	ug/L	50.0	ND	106	74-130			
Toluene	56.6	1.00	"	50.0	0.100	113	73-131			
Ethylbenzene	59.2	1.00	"	50.0	0.320	118	76-132			
m,p-Xylene	121	2.00	"	100	0.850	120	69-139			
o-Xylene	57.5	1.00	"	50.0	0.470	114	74-131			
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		105	84-121			
Surrogate: Toluene-d8	64		"	62.5		103	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B8L0603 - EPA 5030B (Water)**

<b>Matrix Spike Dup (B8L0603-MSD1)</b>	<b>Source: Y812033-01</b>			<b>Prepared: 12/06/2018 Analyzed: 12/06/2018</b>						
Benzene	48.3	1.00	ug/L	50.0	ND	96.6	74-130	9.35	20	
Toluene	51.7	1.00	"	50.0	0.100	103	73-131	9.18	20	
Ethylbenzene	52.9	1.00	"	50.0	0.320	105	76-132	11.3	20	
m,p-Xylene	107	2.00	"	100	0.850	106	69-139	12.5	20	
o-Xylene	52.5	1.00	"	50.0	0.470	104	74-131	9.17	20	
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5		109	84-121			
Surrogate: Toluene-d8	64		"	62.5		103	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.8	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Brian Humphrey  
Project Number: [none]  
Project: DCP Greeley Gas Plant

---

**Notes and Definitions**

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

---

Jen Pellegrini For Noelle Doyle Mathis, President

February 07, 2019

Tasman Geosciences

Brian Humphrey

6899 Pecos Street, Unit C

Denver

CO 80211

**Project Name - DCP Greeley Gas Plant**

**Project Number - [none]**

Attached are your analytical results for DCP Greeley Gas Plant received by Origins Laboratory, Inc. February 01, 2019. This project is associated with Origins project number Y902024-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Brian Humphrey  
Project Number: [none]  
Project: DCP Greeley Gas Plant

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	Y902024-01	Water	February 1, 2019 11:05	02/01/2019 16:45
BH02	Y902024-02	Water	February 1, 2019 10:45	02/01/2019 16:45
BH03	Y902024-03	Water	February 1, 2019 10:30	02/01/2019 16:45
BH04	Y902024-04	Water	February 1, 2019 10:55	02/01/2019 16:45

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President



Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

Origins Laboratory

F-012207-01-R1  
 Effective Date: 01/09/12

**Sample Receipt Checklist**

Origins Work Order: Y902024

Client: Tasman  
 Client Project ID: DCP Greeley Gas Plant

Checklist Completed by: JG

Shipped Via: HD  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A

Date/time completed: 2/4/2019

Matrix(s) Received: (Check all that apply): Soil/Solid  Water  Other:

Cooler Number/Temperature: 1 / 5.7 °C      /      °C      /      °C      /      °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)?</sup>		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)?</sup>	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? <b>If yes, contact client and note in narrative.</b>		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked <sup>(1)?</sup> (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCl, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

VP  
 Reviewed by (Project Manager)

2/5/19  
 Date/Time Reviewed

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH01**

**2/1/2019 11:05:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902024-01 (Water)**

**BTEX by EPA 8260C**

Benzene	4740	100	ug/L	100	B9B0501	JTD	02/05/2019	02/05/2019	
Toluene	1050	100	"	"	"	JTD	"	"	
Ethylbenzene	648	100	"	"	"	JTD	"	"	
Xylenes, total	4370	100	"	"	"	JTD	"	"	
Surrogate: 1,2-Dichloroethane-d4	97.4 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	99.7 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH02**

**2/1/2019 10:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902024-02 (Water)**

**BTEX by EPA 8260C**

Benzene	13.9	1.00	ug/L	1	B9B0501	JTD	02/05/2019	02/05/2019	
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.3 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	98.0 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.0 %	84-114			"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH03**

**2/1/2019 10:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902024-03 (Water)**

**BTEX by EPA 8260C**

Benzene	1.36	1.00	ug/L	1	B9B0501	JTD	02/05/2019	02/05/2019	
Toluene	ND	1.00	"	"	"	JTD	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JTD	"	"	U
Xylenes, total	ND	1.00	"	"	"	JTD	"	"	U

Surrogate: 1,2-Dichloroethane-d4	96.8 %	84-121			"	"	"	"	
Surrogate: Toluene-d8	99.2 %	85-115			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.1 %	84-114			"	"	"	"	

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 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**BH04**

**2/1/2019 10:55:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y902024-04 (Water)**

**BTEX by EPA 8260C**

Benzene	123	20.0	ug/L	20	B9B0501	JTD	02/05/2019	02/05/2019	
Toluene	7.96	1.00	"	1	"	JTD	"	02/05/2019	
Ethylbenzene	230	20.0	"	20	"	JTD	"	02/05/2019	
Xylenes, total	1550	20.0	"	"	"	JTD	"	"	
Surrogate: 1,2-Dichloroethane-d4	95.7 %			84-121		"	"	"	
Surrogate: Toluene-d8	101 %			85-115		"	"	"	
Surrogate: 4-Bromofluorobenzene	99.7 %			84-114		"	"	"	

Origins Laboratory, Inc.



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 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B0501 - EPA 5030B (Water)**

**Blank (B9B0501-BLK1)**

Prepared: 02/05/2019 Analyzed: 02/05/2019

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		95.1	84-121			
Surrogate: Toluene-d8	61		"	62.5		98.3	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		96.9	84-114			

Origins Laboratory, Inc.



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 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B0501 - EPA 5030B (Water)**

**LCS (B9B0501-BS1)**

Prepared: 02/05/2019 Analyzed: 02/05/2019

Benzene	52.5	1.00	ug/L	50.0		105	73.3-129			
Toluene	55.4	1.00	"	50.0		111	76.2-123			
Ethylbenzene	54.1	1.00	"	50.0		108	73.6-130			
m,p-Xylene	109	2.00	"	100		109	76.1-126			
o-Xylene	54.1	1.00	"	50.0		108	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		95.3	84-121			
Surrogate: Toluene-d8	62		"	62.5		98.5	85-115			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	84-114			

Origins Laboratory, Inc.



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 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B9B0501 - EPA 5030B (Water)**

<b>Matrix Spike (B9B0501-MS1)</b>	<b>Source: Y902024-01</b>			<b>Prepared: 02/05/2019 Analyzed: 02/05/2019</b>						
Benzene	2040	1.00	ug/L	50.0	4740	NR	74-130			QM-4X
Toluene	864	1.00	"	50.0	1050	NR	73-131			QM-4X
Ethylbenzene	300	1.00	"	50.0	648	NR	76-132			QM-4X
m,p-Xylene	1100	2.00	"	100	3920	NR	69-139			QM-4X
o-Xylene	199	1.00	"	50.0	448	NR	74-131			QM-4X
Surrogate: 1,2-Dichloroethane-d4	26		"	62.5	41.0		84-121			S-04
Surrogate: Toluene-d8	76		"	62.5	122		85-115			S-04
Surrogate: 4-Bromofluorobenzene	63		"	62.5	101		84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Brian Humphrey  
 Project Number: [none]  
 Project: DCP Greeley Gas Plant

**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch B9B0501 - EPA 5030B (Water)**

<b>Matrix Spike Dup (B9B0501-MSD1)</b>	<b>Source: Y902024-01</b>			<b>Prepared: 02/05/2019 Analyzed: 02/05/2019</b>						
Benzene	2100	1.00	ug/L	50.0	4740	NR	74-130	3.24	20	QM-4X
Toluene	890	1.00	"	50.0	1050	NR	73-131	3.05	20	QM-4X
Ethylbenzene	291	1.00	"	50.0	648	NR	76-132	3.00	20	QM-4X
m,p-Xylene	1110	2.00	"	100	3920	NR	69-139	0.544	20	QM-4X
o-Xylene	193	1.00	"	50.0	448	NR	74-131	3.09	20	QM-4X
Surrogate: 1,2-Dichloroethane-d4	24		"	62.5		38.6	84-121			S-04
Surrogate: Toluene-d8	69		"	62.5		110	85-115			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	84-114			

Origins Laboratory, Inc.



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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Brian Humphrey  
Project Number: [none]  
Project: DCP Greeley Gas Plant

---

### Notes and Definitions

U Sample is Non-Detect.

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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---

Jen Pellegrini For Noelle Doyle Mathis, President

## **FIGURES**

## **APPENDIX A**

## **APPENDIX B**

## **APPENDIX C**