



August 14, 2019

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Greeley, Colorado 80634

Via E-Mail: jgoddard@expedition-water.com

Subject: Soil Sample Report – EWS #4
Expedition Water Solutions
31631 County Road 398
Keenesburg, Colorado 80643
CGRS Project #: 1-12456-16204ab

Mr. Goddard,

CGRS is pleased to submit this report summarizing the results of soil and groundwater sampling activities conducted at the Expedition Water Solutions (EWS) EWS #4 Facility (site), located in Keenesburg, Colorado, following a release of produced water and firefighting fluids associated with a lightning strike and subsequent fire that took place on June 21, 2019. Site activities were performed by CGRS between June 25, 2019 and July 18, 2019. The site location and regional topography is shown on the Topographic Map. A general layout the facility and surrounding swale can be found on the Site Conditions Map.

Field Activities

On June 25, 2019, CGRS mobilized to the site to collect groundwater samples from the groundwater monitoring wells located on site. CGRS visually assessed the affected area to delineate the extent of impacted soil. Soil staining and saturated soil were evident from the release of fluids from the compromised storage tanks; debris were also present from the fire and initial explosion. Liquids were actively being removed from the secondary containment structure via truck-mounted vacuum.

On July 1, 2019, CGRS mobilized to the site to collect preliminary soil samples, facilitate excavation efforts, and to assess the extent of impacts using a photo-ionization detector (PID) and visual documentation of field conditions. Areas of soil excavation around the tank battery and in the swale surrounding the facility were evident upon visual inspection. The retention pond had not yet been excavated due to standing water as a result of recent precipitation events. Slight staining was noted in some areas, particularly in the culverts which had not yet been excavated. Soil samples were collected from areas most likely to have been impacted. In conjunction with soil sample collection, soil samples were screened using a PID.

On July 18, 2019, CGRS mobilized to the Site to collect confirmation soil samples following the removal, by excavation, of potentially impacted soil. At this time, stained soil had been removed from the areas affected by the release, including the stormwater retention pond.

Soil and Groundwater Sampling

Soil and groundwater sampling activities were conducted in accordance with COGCC Rule 910 to determine the nature and extent of any impacts and to confirm compliance with the concentrations listed in COGCC Table 910-1.

On June 25, 2019, CGRS collected water quality samples from four groundwater monitoring wells (MW-1, MW-2, MW-3, and MW-4). In-situ field parameters consisting of temperature, specific conductance, dissolved oxygen (DO), pH, and oxidation-reduction potential (ORP) were measured and documented after sampling each monitoring well. Water samples were submitted to Origins Laboratory in Denver, Colorado, for analysis of benzene, toluene, ethylbenzene and total xylenes (BTEX), total dissolved solids (TDS), chloride, and sulfate.

On July 1, 2019, CGRS collected 43 discrete soil samples in the excavation area at depths between 0.5 and 2.0 feet below ground surface. In conjunction with soil sample collection, soil samples were screened using a PID. The soil sample exhibiting the highest PID reading (S-8a, 29.1 ppm) was retained for analysis of BTEX, total petroleum hydrocarbons (TPH (TVPH+TEPH)), poly-aromatic hydrocarbons (PAH), electrical conductivity (EC), pH, and sodium adsorption ratio (SAR) to establish initial contamination levels correlated to the elevated PID reading. Background soil conditions were established by collecting a sample from comparable, nearby non-impacted native soil (BG-1@0.5ft) at 6 inches below ground surface (BGS) and having the sample analyzed for pH, EC, and SAR. Samples were submitted to Origins Laboratory for analysis.

On July 18, 2019, CGRS collected 15 discrete soil samples at a depth of 0.5 feet below ground surface using a hand auger. In conjunction with soil sample collection, soil samples were screened using a PID. Fifteen confirmation soil samples were retained for analysis of BTEX, TPH, PAH, EC, pH, and SAR. Four of the samples were also analyzed for metals. One additional background soil sample was taken from comparable, nearby non-impacted native soil (SS-29@0.5ft) at 6 inches BGS to establish background conditions of metals, as was recommended by Mr. Robert Chesson of COGCC during a phone call with CGRS on July 8, 2019. The samples were submitted to Origins Laboratory for analysis.

All samples were collected by applying standard environmental sampling procedures, using calibrated equipment operated according to manufacturer specifications, and by personnel trained and familiar with the equipment. All samples submitted to Origins Laboratory were kept on ice or under refrigeration until submittal. Chain of Custody (COC) documentation are included in Attachment A and a summary of the PID readings is provided in Attachment B. Groundwater monitoring well locations can be found on the Site Conditions Map, and soil sample locations can be found on the Soil Sample Location Map.

Results

Review of the analytical results for the groundwater samples collected on June 25, 2019, does not indicate exceedances of concentrations listed in COGCC Table 910-1. Water quality analytical results and Chain of Custody documentation are included in Attachment A, summarized on Table 1, and depicted in the Groundwater Sample Location Map.

Review of the analytical results for the preliminary soil sample retained for analysis on July 1, 2019, does not indicate exceedances of concentrations listed in COGCC Table 910-1. In all samples collected on July 18, 2019, BTEX analytes have been reported below laboratory method detection limits (MDLs). Additionally, EC, pH, TPH and PAH are within the acceptable ranges shown in COGCC Table 910-1.



Review of the analytical results for the confirmation soil samples retained on July 18, 2019, indicates exceedances of SAR and pH concentrations listed in COGCC Table 910-1 in three of the samples. Exceedances of arsenic concentrations listed in COGCC Table 910-1 were indicated in the four samples submitted for analysis of metals, as well as the background sample that was submitted for metals analysis. In all samples collected on July 18, 2019, BTEX analytes have been reported below laboratory MDLs. Additionally, EC, pH, TPH and PAH are within the acceptable ranges shown in COGCC Table 910-1.

Soil sample analytical results and Chain of Custody documentation from the July 1 and July 18, 2019, sampling events are included in Attachment A and summarized in Table 2. Soil Sample locations can be found on the Soil Sample Location Map.

Conclusions

The laboratory analytical results for three samples collected from the affected area were in exceedance of SAR and pH allowable concentrations listed in COGCC Table 910-1. It is expected that concentrations of SAR and pH will undergo natural attenuation due to the location of the impacted soil within the stormwater swale. CGRS recommends re-sampling the soil to be analyzed for SAR and pH in six to 12 months. Should you have any questions or require any additional information, please feel free to contact me at dkinnaird@cgrs.com.

Sincerely,
CGRS, Inc.

Drezden Kinnaird
Project Manager

Reviewed by:

Glen Vallance
Associate Hydrologist

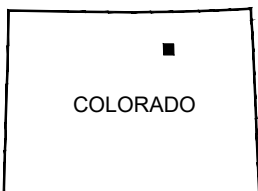
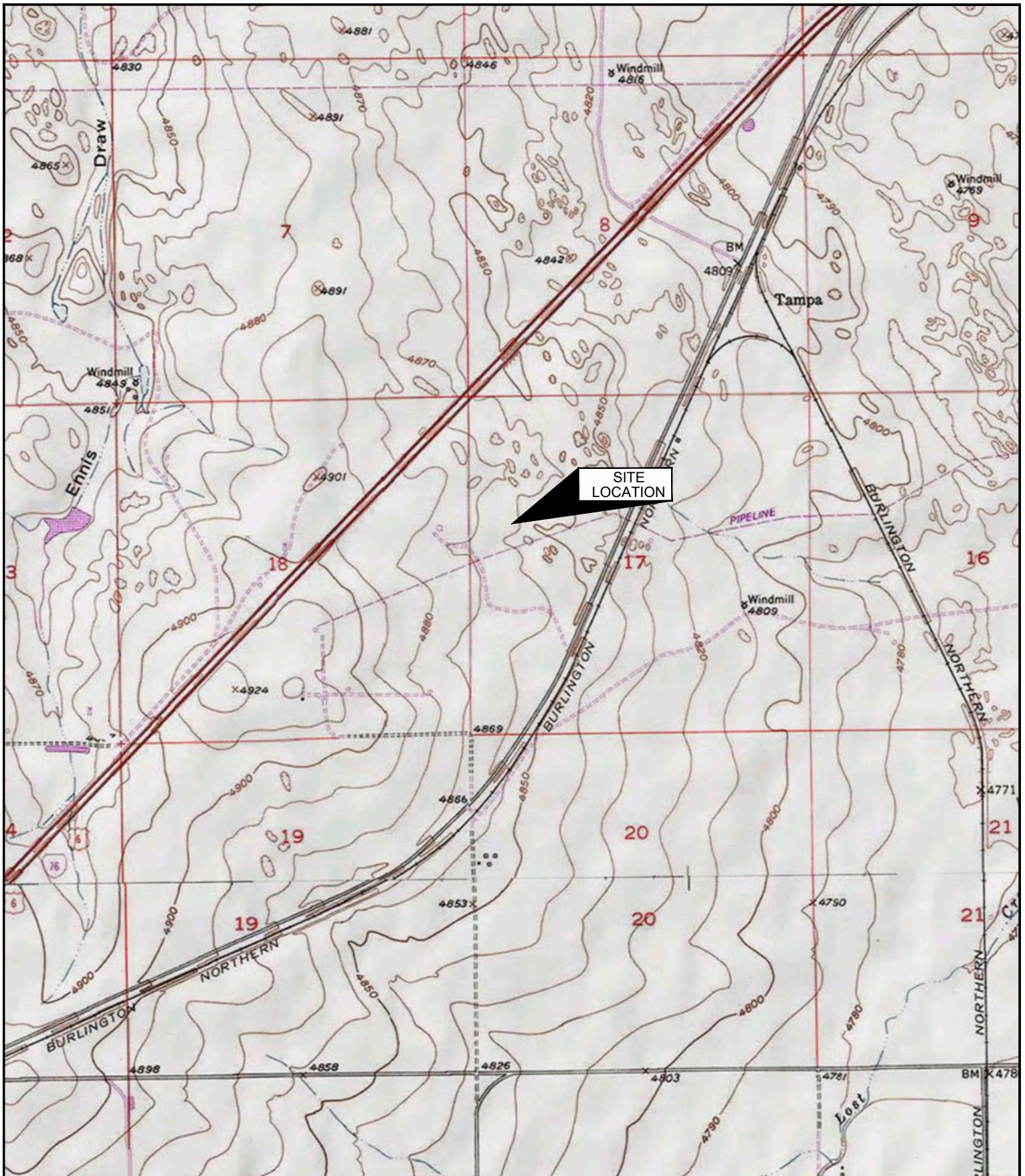
Enclosures:

- Topographic Map
- Site Conditions Map
- Groundwater Sample Location Map
- Groundwater Elevation Map
- Soil Sample Location Map
- Table 1 – Groundwater Sample Data
- Table 2 – Soil Sample Data
- Table 3 – Soil Screening Data
- Attachment A – Laboratory Analytical Reports & Chain-of-Custody Documentation



Figures

Topographic Map
Site Conditions Map
Groundwater Sample Location Map
Groundwater Elevation Map
Soil Sample Location Map



■ QUADRANGLE LOCATION



NORTH

0 1000 2000

SCALE IN FEET

SITE LOCATION MAP
EXPEDITION WATER SOLUTIONS
EWS #4
31631 COUNTY ROAD 398
KEENESBURG COLORADO, 80643

PROJECT:

1-12456-16204aa

DATE:

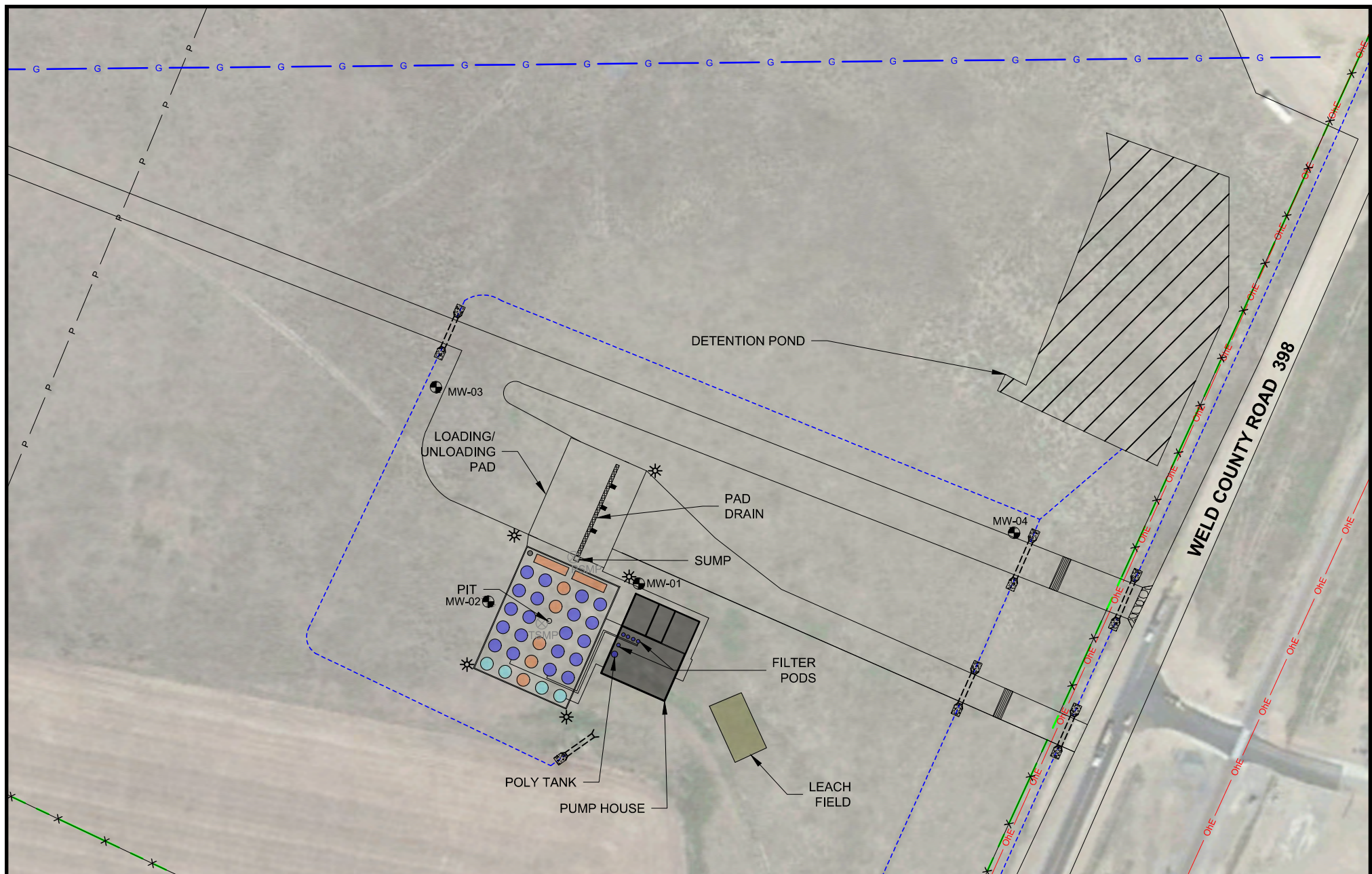
8/6/2018

DRAFT:

CLB

REVIEW:





LEGEND

	MW-01	MONITORING WELL
	TSMP	TANK SUMP MONITORING POINT
	PSMP	PAD SUMP MONITORING POINT
		OIL TANK
		PRODUCED WATER TANK
		CLEAN WATER TANK
		DIESEL TANK
		LIGHT
		CULVERT
		FENCE
		OVERHEAD ELECTRIC LINE
		DRAINAGE DITCH
		APPROXIMATE PROPERTY BOUNDARY
		OVERLAND PASS PIPELINE SUBSURFACE NATURAL GAS LIQUIDS
		ASSOCIATED NATURAL GAS INC. SUBSURFACE GAS PIPELINE
		CATTLE GUARD
		RIPRAP
		VEHICLE TRACKING CONTROL PAD

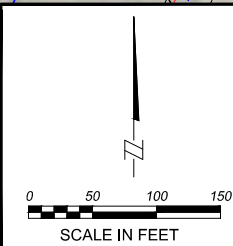
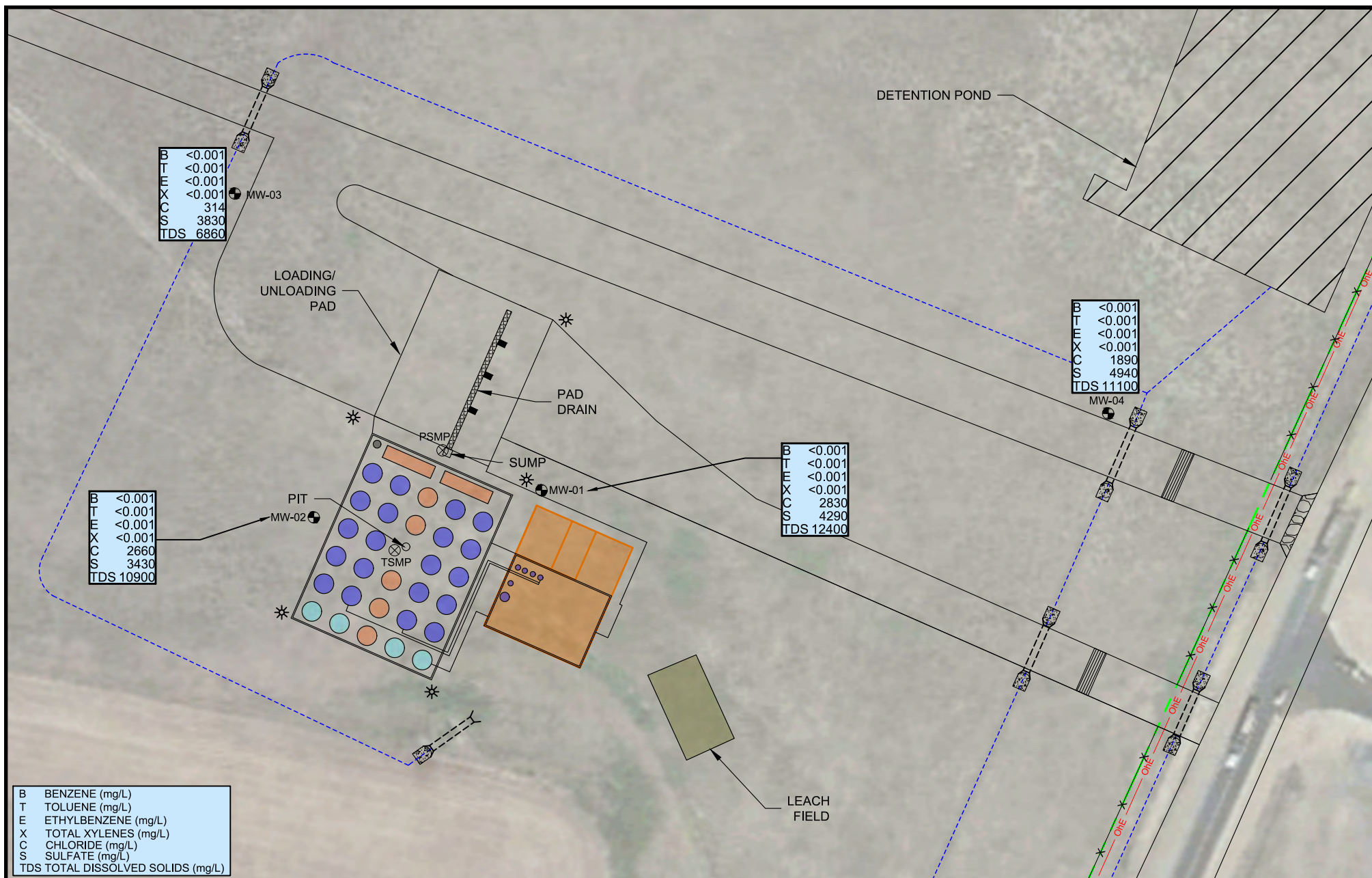


FIGURE 2
SITE CONDITIONS MAP
EXPEDITION WATER SOLUTIONS
EWS #4
31631 COUNTY ROAD 398
KEENESBURG COLORADO, 80643

PROJECT:
1-12456-16204aa
DATE:
2/16/2018

DRAFT:
DRS
REVIEW:





B	BENZENE (mg/L)
T	TOLUENE (mg/L)
E	ETHYLBENZENE (mg/L)
X	TOTAL XYLENES (mg/L)
C	CHLORIDE (mg/L)
S	SULFATE (mg/L)
TDS	TOTAL DISSOLVED SOLIDS (mg/L)

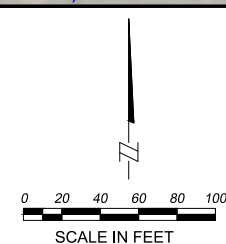
LEGEND

- MW-01 MONITORING WELL
- TSMP TANK SUMP MONITORING POINT
- PSMP PAD SUMP MONITORING POINT
- OIL TANK
- PRODUCED WATER TANK
- CLEAN WATER TANK
- DIESEL TANK

- LIGHT
- CULVERT FENCE
- OVERHEAD ELECTRIC LINE
- DRAINAGE DITCH
- APPROXIMATE PROPERTY BOUNDARY

- CATTLE GUARD
- RIPRAP
- VEHICLE TRACKING CONTROL PAD

NOTE: SAMPLE DATA PERTAINING TO SUMP MONITORING POINTS ARE NOT A REPRESENTATION OF GROUNDWATER CHARACTERISTICS.



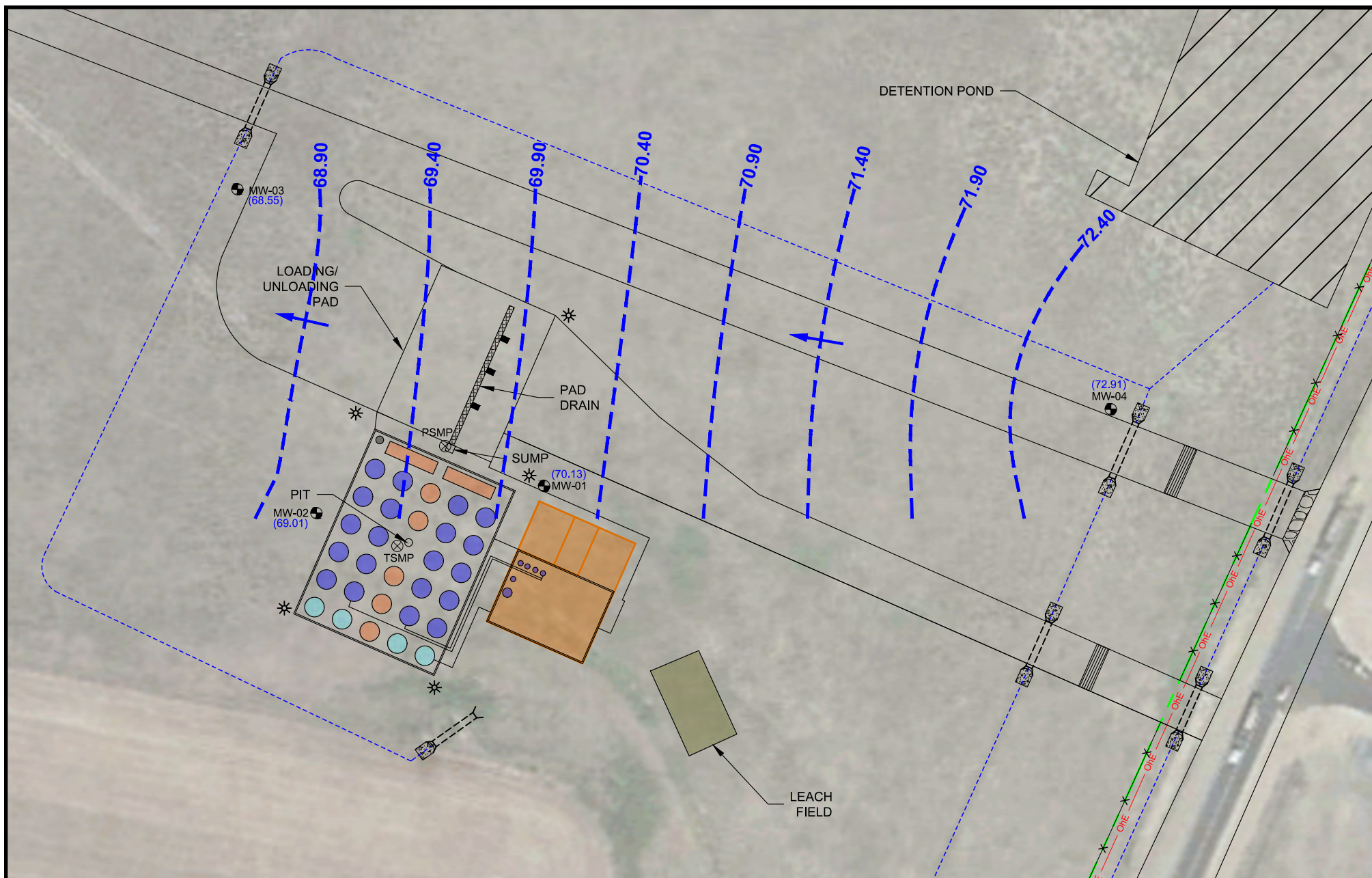
GROUNDWATER SAMPLE LOCATION MAP
June 25, 2019

EXPEDITION WATER SOLUTIONS
EWS #4
31631 COUNTY ROAD 398
KEENESBURG COLORADO, 80643

PROJECT:
1-12456-16204aa
DATE:
7/4/2019

DRAFT:
CLB
REVIEW:



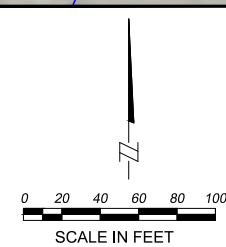


LEGEND

- MW-01 MONITORING WELL
- TSMP TANK SUMP MONITORING POINT
- PSMP PAD SUMP MONITORING POINT
- OIL TANK
- PRODUCED WATER TANK
- CLEAN WATER TANK
- DIESEL TANK

- LIGHT
- CULVERT
- FENCE
- OHE OVERHEAD ELECTRIC LINE
- DRAINAGE DITCH
- APPROXIMATE PROPERTY BOUNDARY
- INFERRED GROUNDWATER CONTOUR
- GROUNDWATER ELEVATION (FEET)
- INFERRED FLOW DIRECTION

- CATTLE GUARD
- RIPRAP
- VEHICLE TRACKING CONTROL PAD



GROUNDWATER ELEVATION MAP
June 25, 2019
EXPEDITION WATER SOLUTIONS
EWS #4
31631 COUNTY ROAD 398
KEENESBURG COLORADO, 80643








PROJECT:
1-12456-16204aa
DATE:
7/4/2019

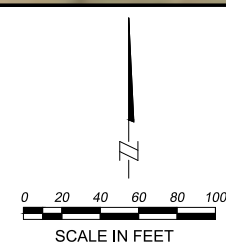
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LEGEND

-  MW-01 MONITORING WELL
-  TSMP TANK SUMP MONITORING POINT
-  PSMP PAD SUMP MONITORING POINT
-  SS-1 SOIL SCREENING LOCATIONS
-  SS-29 BACKGROUND SAMPLE LOCATION
-  SS-8 SAMPLES SUBMITTED FOR ANALYSIS (BTEX, TPH, INORGANICS, PAH, AND METALS)
-  SS-1 SAMPLES SUBMITTED FOR ANALYSIS (BTEX, TPH, INORGANICS, AND PAH)



SOIL SAMPLE LOCATION MAP June 25, 2019 EXPEDITION WATER SOLUTIONS EWS #4 31631 COUNTY ROAD 398 KEENESBURG COLORADO, 80643	
PROJECT: 1-12456-16204ab	DRAFT: CLB
DATE: 8/13/2019	REVIEW:
	

Soil Sample Location Summary

Expedition Water Solutions - EWS #4
31631 County Road 398, Keenesburg, Colorado 80643

Sample ID	Depth (ft.)	Original PID Reading (ppm) 7/1/2019	Sample ID: 7/18/2019	Sample Depth:	PID Reading (ppm) 7/18/2019	Latitude	Longitude
S-1a	0.5	1.0	*SS-01	0.5	0.6	40.136750	-104.465271
S-1b	2	1.0					
S-2a	0.5	0.0				40.136876	-104.465600
S-2b	1.5	0.0					
S-3a	0.5	0.0				40.136949	-104.465831
S-3b	1.5	0.0					
S-4a	0.5	0.5				40.137057	-104.466854
S-4b	1.5	0.0					
S-5a	0.5	0.0	*SS-05	0.5	1.5	40.137142	-104.466284
S-5b	1.5	0.0					
S-6a	0.5	0.0				40.137262	-104.466511
S-6b	1.5	0.0					
S-7a	0.5	0.0				40.137378	-104.466703
S-7b	1.5	0.0					
*S-8a	0.5	29.1	* ^M SS-08	0.5	3.1	40.137437	-104.466915
S-8b	1.5	4.4					
S-9a	0.5	0.3				40.137475	-104.467095
S-9b	1.5	0.0					
S-10a	0.5	0.0	*SS-10	0.5	11.6	40.137406	-104.467282
S-10b	1.5	0.0					
S-11a	0.5	0.0				40.137257	-104.467259
S-11b	1.5	0.0					
S-12a	0.5	0.6				40.137076	-104.467344
S-12b	1.5	0.0					
S-13a	0.5	0.0				40.136897	-104.467428
S-13b	1.5	0.0					
S-14a	0.5	0.4				40.136738	-104.467389
S-14b	1.5	0.2					
S-15a	0.5	0.4	* ^M SS-15	0.5	2.3	40.136582	-104.467456
S-15b	1.5	0.2					
S-16a	0.5	0.1				40.136451	-104.467492
S-16b	1.5	0.0					
S-17a	0.5	6.1				40.136245	-104.467558
S-17b	1.5	0.9					
S-18a	0.5	0.0	*SS-18	0.5	3.3	40.136128	-104.467494
S-18b	1.5	1.7					
S-19a	0.5	0.9				40.136059	-104.467261
S-19b	1.5	0.0					
S-20a	0.5	0.1				40.135974	-104.467083
S-20b	1.5	0.0					
S-21a	0.5	0.0	* ^M SS-21	0.5	2.9	40.135916	-104.466833
S-21b	1.5	0.2					
			*SS-22	0.5	1.4	40.136086	-104.466952
			*SS-23	0.5	0.5	40.137143	-104.464711
			*SS-24	0.5	0.6	40.137101	-104.464284
			*SS-25	0.5	5.5	40.137025	-104.464556
			* ^M SS-26	0.5	0.9	40.136807	-104.464668
			*SS-27	0.5	0.8	40.136573	-104.464617
			*SS-28	0.5	1.2	40.136659	-104.464994

Notes:

* = Sample submitted for analysis (BTEX, TPH, PAH, EC, pH, SAR)

M = Sample submitted for analysis (metals)

S = soil sampling/screening point



Tables

Groundwater Elevation and Analytical Data

Soil Sample Analytical Data

Soil Screening Data

Table 1
Groundwater Elevation and Analytical Data
 Groundwater Monitoring Report
 Expedition Water Solutions - EWS #4
 31631 County Road 398, Keenesburg, Colorado 80643

Sample ID	Sample Date	Reference Elevation (ft)	Depth To Water (ft)	Groundwater Elevation (ft)	Benzene (mg/L)	Toluene (mg/L)	Ethyl-Benzene (mg/L)	Xylenes (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)	Temperature (°C)	Specific Conductance (µS/cm)	Dissolved Oxygen (mg/L)	pH	ORP (mV)
COGCC MAC		-	-	-	0.005	1	0.7	10	1.25 x BG	1.25 x BG	1.25 x BG	-	-	-	-	-
MDL		-	-	-	0.001	0.001	0.001	0.001	1	0.5	5	-	-	-	-	-
TSMP	04/24/19		DRY													
TSMP	06/25/19			DES												

Notes:

A blank data box indicates that the analysis or measurement was not completed during the specified monitoring event
 Organic data in bold text indicate concentrations at or in excess of COGCC MACs

Acronyms used in Table 1 are drawn from this list as needed

DRY = No liquid discovered at the specific sampling point

COGCC = Colorado Oil and Gas Conservation Commission

MAC = COGCC Maximum Allowable Concentration; as indicated, or 1.25 times background concentration levels

MDL = Laboratory Method Detection Limit

ORP = Oxidation Reduction Potential

PSMP = Pad sub-Sump Monitoring Point: monitors the sub sump secondary containment liner below the concrete unloading pad

TSMP = Tank sub-Sump Monitoring Point: monitors the sub sump secondary containment liner below the tank farm secondary containment

TDS = Total Dissolved Solids

DES = Destroyed

Table 2

Soil Sample Analytical Data

Expedition Water Solutions - EWS #4
31631 County Road 398, Keenesburg, Colorado 80643

Sample ID	Figure 2 Identification	Sample Type	Depth (ft.)	Date	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl-Benzene (mg/Kg)	Xylenes (mg/Kg)	TVPH (mg/Kg)	TEPH (mg/Kg)	pH	EC (mmhos/cm)	SAR (ratio)
					BTEX				TPH		Inorganics		
BC-1 @ 0.5 ft	BC-1	Soil	0.5	07/01/19	N/A	N/A	N/A	N/A	N/A	N/A	8.32	0.0172	0.81
S-8a	S-8a	Soil	0.5	07/01/19	ND	ND	ND	ND	ND	177	8.02	0.133	7.05
SS-1@.5	SS-1@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	7.25	0.0556	0.85
SS-5@.5'	SS-5@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	8.86	0.164	6.79
SS-8@.5'	SS-8@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	8.02	0.201	4.26
SS-10@.5'	SS-10@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	0.962	76.4	7.75	0.308	8.62
SS-15@.5'	SS-15@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	0.280	ND	8.10	0.0560	1.10
SS-18@.5'	SS-18@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	8.17	0.396	4.36
SS-21@.5'	SS-21@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	9.35	0.0814	11.86
SS-22@.5'	SS-22@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	8.96	0.0876	2.69
SS-23@.5'	SS-23@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	6.77	0.0485	2.35
SS-24@.5'	SS-24@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	8.74	0.0487	3.39
SS-25@.5'	SS-25@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	7.28	0.560	26.87
SS-26@.5'	SS-26@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	6.80	0.221	2.90
SS-27@.5'	SS-27@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	7.61	0.202	25.79
SS-28@.5'	SS-28@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	7.71	0.0134	0.55

Sample ID	Figure 2 Identification	Sample Type	Depth (ft.)	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)	Hexavalent Chromium (mg/kg)	Trivalent Chromium (mg/kg)	Mercury (mg/kg)
					Metals												
SS-8@.5'	SS-8@.5'	Soil	0.5	07/18/2019	2.74	41.4	ND	5.02	3.92	5.00	4.04	ND	ND	19.9	0.203	4.82	ND
SS-15@.5'	SS-15@.5'	Soil	0.5	07/18/2019	2.95	53.0	ND	7.90	5.54	6.45	6.03	ND	ND	26.5	0.135	7.76	ND
SS-21@.5'	SS-21@.5'	Soil	0.5	07/18/2019	1.41	29.6	ND	3.01	2.44	3.90	2.25	ND	ND	13.1	0.183	2.82	ND
SS-26@.5'	SS-26@.5'	Soil	0.5	07/18/2019	2.09	19.9	ND	4.41	2.55	3.75	2.45	ND	ND	14.2	0.140	4.27	ND
SS-29@.5'	SS-29@.5'	Soil	0.5	07/18/2019	1.58	22.2	ND	3.33	2.77	5.86	2.13	ND	ND	13.9	0.168	3.17	0.00473

Sample ID	Figure 2 Identification	Sample Type	Depth (ft.)	Date	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo[a]anthracene (mg/kg)	Benzo[b]fluoranthene (mg/kg)	Benzo[k]fluoranthene (mg/kg)	Benzo[a]pyrene (mg/kg)	Chrysene (mg/kg)	Dibenz[a,h]anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3,4-dibiphenyl (mg/kg)	Naphthalene (mg/kg)	Pyrene (mg/kg)
					Polycyclic Aromatic Hydrocarbons (PAHs)												
S-8a	S-8a	Soil	0.5	07/01/2019	ND	ND	ND	ND	ND	ND	ND	ND	0.0649	ND	ND	ND	ND
SS-1@.5	SS-1@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	0.00483	ND	ND	0.00362	ND	ND	ND
SS-5@.5'	SS-5@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	0.0035	ND	ND	ND	ND	ND	ND
SS-8@.5'	SS-8@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SS-10@.5'	SS-10@.5'	Soil	0.5	07/18/2019	ND	ND	ND	0.00217	ND	ND	0.0101	0.00217	0.00181	0.00217	0.00181	ND	0.00253
SS-15@.5'	SS-15@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.00176	ND
SS-18@.5'	SS-18@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	0.00544	ND	ND	ND	ND	ND	ND
SS-21@.5'	SS-21@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SS-22@.5'	SS-22@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SS-23@.5'	SS-23@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SS-24@.5'	SS-24@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SS-25@.5'	SS-25@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SS-26@.5'	SS-26@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SS-27@.5'	SS-27@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
SS-28@.5'	SS-28@.5'	Soil	0.5	07/18/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

TVPH = Total Volatile Petroleum Hydrocarbons
TEPH = Total Extractable Petroleum Hydrocarbons
EC = Electrical Conductivity
SAR = Sodium Adsorption Ratio

COGCC = Colorado Oil and Gas Conservation Commission
Concentrations exceeding COGCC allowable concentrations expressed in bold type face

Table 3

Soil Screening Data

Expedition Water Solutions - EWS #4
31631 County Road 398, Keenesburg, Colorado 80643

Sample ID	Depth (ft.)	Photo-ionization Detector Reading (ppm)	Date	Latitude	Longitude
S-1a	0.5	1.0	7/1/2019	40.136750	-104.465271
S-1b	2	1.0	7/1/2019		
S-2a	0.5	0.0	7/1/2019	40.136876	-104.465600
S-2b	1.5	0.0	7/1/2019		
S-3a	0.5	0.0	7/1/2019	40.136949	-104.465831
S-3b	1.5	0.0	7/1/2019		
S-4a	0.5	0.5	7/1/2019	40.137057	-104.466854
S-4b	1.5	0.0	7/1/2019		
S-5a	0.5	0.0	7/1/2019	40.137142	-104.466284
S-5b	1.5	0.0	7/1/2019		
S-6a	0.5	0.0	7/1/2019	40.137262	-104.466511
S-6b	1.5	0.0	7/1/2019		
S-7a	0.5	0.0	7/1/2019	40.137378	-104.466703
S-7b	1.5	0.0	7/1/2019		
*S-8a	0.5	29.1	7/1/2019	40.137437	-104.466915
S-8b	1.5	4.4	7/1/2019		
S-9a	0.5	0.3	7/1/2019	40.137475	-104.467095
S-9b	1.5	0.0	7/1/2019		
S-10a	0.5	0.0	7/1/2019	40.137406	-104.467282
S-10b	1.5	0.0	7/1/2019		
S-11a	0.5	0.0	7/1/2019	40.137257	-104.467259
S-11b	1.5	0.0	7/1/2019		
S-12a	0.5	0.6	7/1/2019	40.137076	-104.467344
S-12b	1.5	0.0	7/1/2019		
S-13a	0.5	0.0	7/1/2019	40.136897	-104.467428
S-13b	1.5	0.0	7/1/2019		
S-14a	0.5	0.4	7/1/2019	40.136738	-104.467389
S-14b	1.5	0.2	7/1/2019		
S-15a	0.5	0.4	7/1/2019	40.136582	-104.467456
S-15b	1.5	0.2	7/1/2019		
S-16a	0.5	0.1	7/1/2019	40.136451	-104.467492
S-16b	1.5	0.0	7/1/2019		
S-17a	0.5	6.1	7/1/2019	40.136245	-104.467558
S-17b	1.5	0.9	7/1/2019		
S-18a	0.5	0.0	7/1/2019	40.136128	-104.467494
S-18b	1.5	1.7	7/1/2019		
S-19a	0.5	0.9	7/1/2019	40.136059	-104.467261
S-19b	1.5	0.0	7/1/2019		
S-20a	0.5	0.1	7/1/2019	40.135974	-104.467083
S-20b	1.5	0.0	7/1/2019		
S-21a	0.5	0.0	7/1/2019	40.135916	-104.466833
S-21b	1.5	0.2	7/1/2019		

Notes:

* = Sample submitted for analysis (BTEX, TPH, PAH, EC, pH, SAR)
S = soil sampling/screening point



Attachment A

Laboratory Reports and Chain of Custody Documentation

July 01, 2019

CGRS, Inc

Drezden Kinnaird

1301 Academy Court

Fort Collins CO 80524

Project Name - EWS #4**Project Number - 16204aa**

Attached are your analytical results for EWS #4 received by Origins Laboratory, Inc. June 26, 2019. This project is associated with Origins project number Y906451-01.

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



CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	Y906451-01	Water	June 25, 2019 12:10	06/26/2019 08:30
MW-2	Y906451-02	Water	June 25, 2019 12:35	06/26/2019 08:30
MW-3	Y906451-03	Water	June 25, 2019 11:45	06/26/2019 08:30
MW-4	Y906451-04	Water	June 25, 2019 11:10	06/26/2019 08:30

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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

1540451

page 1 of 1

Client: CGRS
Address: 1301 Academy Ct, Fort Collins
Telephone Number: 970-631-1876
Email Address: dkinnaird@cgrs.com, ewilson@cgrs.com

Project Manager: Drezden Kinnaird
Project Name: EWS #4
Project Number: 16204aa
Samples Collected By: dkinnaird@cgrs.com, ewilson@cgrs.com

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix				Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #	Other				
MW-1	6/25/19	12:10	5	X				X					X	1	BTEX, TDS, Chloride, Sulfate
MW-2	↓	12:35	5	X				X					X	2	
MW-3	↓	11:45	5	X				X					X	3	
MW-4	↓	11:10	5	X				X					X	4	
PSMP			5	X				X					X	5	
TSMP			5	X				X					X	6	
														7	
														8	
														9	
														10	
Relinquished By: <i>Stephen White</i>	Date: 6/26/19	Time: 0830						Received By: <i>PC</i>				Date: 6-26-19	Time: 830	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input checked="" type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>	
Relinquished By:	Date:	Time:						Received By:				Date:	Time:		

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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y 906451

Client: CGRS
Client Project ID: EWS #4

Checklist Completed by: JS

Shipped Via: Pick Up

Date/time completed: 6/26/19

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

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

Cooler Number/Temperature: 1 12.8 °C / °C / °C / °C (Describe)

Thermometer ID: 7003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (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 ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾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) JS

Date/Time Reviewed 6/27/19

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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

MW-1

6/25/2019 12:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC

Y906451-01 (Water)

Anions by EPA 300.0

Chloride	2830	100	mg/L	500	1891264	LXA2	06/25/2019	07/01/2019	
Sulfate	4290	200	"	"	"	LXA2	"	"	

BTEX by EPA 8260D

Benzene	ND	0.00100	mg/L	1	B9F2703	JTD	06/27/2019	06/27/2019	Ua
Toluene	ND	0.00100	"	"	"	JTD	"	"	Ua
Ethylbenzene	ND	0.00100	"	"	"	JTD	"	"	Ua
Xylenes, total	ND	0.00100	"	"	"	JTD	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	96.1 %	70-130			"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	95.5 %	70-130			"	"	"	

TDS by EPA 160.1

Total Dissolved Solids	12400	14.3	mg/L	1	1891714	KLP1	06/25/2019	06/28/2019	
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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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

MW-2

6/25/2019 12:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC

Y906451-02 (Water)

Anions by EPA 300.0

Chloride	2660	100	mg/L	500	1891264	LXA2	06/25/2019	07/01/2019	
Sulfate	3430	200	"	"	"	LXA2	"	"	

BTEX by EPA 8260D

Benzene	ND	0.00100	mg/L	1	B9F2703	JTD	06/27/2019	06/27/2019	Ua
Toluene	ND	0.00100	"	"	"	JTD	"	"	Ua
Ethylbenzene	ND	0.00100	"	"	"	JTD	"	"	Ua
Xylenes, total	ND	0.00100	"	"	"	JTD	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	97.3 %	70-130			"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.3 %	70-130			"	"	"	

TDS by EPA 160.1

Total Dissolved Solids	10900	14.3	mg/L	1	1891714	KLP1	06/25/2019	06/28/2019	
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

MW-3

6/25/2019 11:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC

Y906451-03 (Water)

Anions by EPA 300.0

Chloride	314	20.0	mg/L	100	1891264	LXA2	06/25/2019	06/28/2019	
Sulfate	3830	200	"	500	"	LXA2	"	07/01/2019	

BTEX by EPA 8260D

Benzene	ND	0.00100	mg/L	1	B9F2703	JTD	06/27/2019	06/27/2019	Ua
Toluene	ND	0.00100	"	"	"	JTD	"	"	Ua
Ethylbenzene	ND	0.00100	"	"	"	JTD	"	"	Ua
Xylenes, total	ND	0.00100	"	"	"	JTD	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	96.5 %	70-130			"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.0 %	70-130			"	"	"	

TDS by EPA 160.1

Total Dissolved Solids	6860	14.3	mg/L	1	1891714	KLP1	06/25/2019	06/28/2019	
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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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

MW-4

6/25/2019 11:10:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC

Y906451-04 (Water)

Anions by EPA 300.0

Chloride	1890	100	mg/L	500	1891264	LXA2	06/25/2019	07/01/2019	
Sulfate	4940	200	"	"	"	LXA2	"	"	

BTEX by EPA 8260D

Benzene	ND	0.00100	mg/L	1	B9F2703	JTD	06/27/2019	06/27/2019	Ua
Toluene	ND	0.00100	"	"	"	JTD	"	"	Ua
Ethylbenzene	ND	0.00100	"	"	"	JTD	"	"	Ua
Xylenes, total	ND	0.00100	"	"	"	JTD	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	97.9 %	70-130			"	"	"	
Surrogate: Toluene-d8	99.6 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	96.0 %	70-130			"	"	"	

TDS by EPA 160.1

Total Dissolved Solids	11100	14.3	mg/L	1	1891714	KLP1	06/25/2019	06/28/2019	
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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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

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

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

Batch B9F2703 - EPA 5030B (Water)

Blank (B9F2703-BLK1)

Prepared: 06/27/2019 Analyzed: 06/27/2019

Benzene	ND	0.00100	mg/L							Ua
Toluene	ND	0.00100	"							Ua
Ethylbenzene	ND	0.00100	"							Ua
Xylenes, total	ND	0.00100	"							Ua
Surrogate: 1,2-Dichloroethane-d4	0.060		"	0.0625		96.2	70-130			
Surrogate: Toluene-d8	0.063		"	0.0625		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.060		"	0.0625		95.3	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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

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

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

Batch B9F2703 - EPA 5030B (Water)

LCS (B9F2703-BS1)

Prepared: 06/27/2019 Analyzed: 06/27/2019

Benzene	0.0520	0.00100	mg/L	0.0500		104	70-130			
Toluene	0.0577	0.00100	"	0.0500		115	70-130			
Ethylbenzene	0.0553	0.00100	"	0.0500		111	70-130			
m,p-Xylene	0.110	0.00200	"	0.100		110	70-130			
o-Xylene	0.0530	0.00100	"	0.0500		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.057		"	0.0625		91.7	70-130			
Surrogate: Toluene-d8	0.064		"	0.0625		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.061		"	0.0625		97.3	70-130			

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9F2703 - EPA 5030B (Water)

Matrix Spike (B9F2703-MS1)		Source: Y906451-01			Prepared: 06/27/2019 Analyzed: 06/27/2019					
Benzene	0.0461	0.00100	mg/L	0.0500	ND	92.1	70-130			
Toluene	0.0518	0.00100	"	0.0500	ND	104	70-130			
Ethylbenzene	0.0494	0.00100	"	0.0500	ND	98.9	70-130			
m,p-Xylene	0.0990	0.00200	"	0.100	0.000270	98.7	70-130			
o-Xylene	0.0489	0.00100	"	0.0500	ND	97.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.058		"	0.0625		92.6	70-130			
Surrogate: Toluene-d8	0.063		"	0.0625		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.061		"	0.0625		97.1	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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

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

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

Batch B9F2703 - EPA 5030B (Water)

Matrix Spike Dup (B9F2703-MSD1)		Source: Y906451-01			Prepared: 06/27/2019 Analyzed: 06/27/2019					
Benzene	0.0463	0.00100	mg/L	0.0500	ND	92.6	70-130	0.520	20	
Toluene	0.0509	0.00100	"	0.0500	ND	102	70-130	1.79	20	
Ethylbenzene	0.0487	0.00100	"	0.0500	ND	97.4	70-130	1.47	20	
m,p-Xylene	0.0986	0.00200	"	0.100	0.000270	98.3	70-130	0.385	20	
o-Xylene	0.0485	0.00100	"	0.0500	ND	97.0	70-130	0.781	20	
Surrogate: 1,2-Dichloroethane-d4	0.059		"	0.0625		93.7	70-130			
Surrogate: Toluene-d8	0.063		"	0.0625		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.061		"	0.0625		97.2	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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

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

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

Anions by EPA 300.0 - Quality Control
GEL Laboratories, LLC

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

Batch 1891264 -

BLANK (1204319095-BLK)

Prepared: Analyzed: 06/28/2019

Chloride	ND	0.200	mg/L				-			U
Sulfate	ND	0.400	"				-			U

LCS (1204319096-BKS)

Prepared: Analyzed: 06/28/2019

Chloride	4.72	0.200	mg/L	5.00		94.5	90-110			
Sulfate	9.58	0.400	"	10.0		95.8	90-110			

DUP (1204319097 D)

Source: 481033002

Prepared: Analyzed: 06/28/2019

Chloride	8.44	0.200	mg/L		8.48		0-20	0.442	20	
Sulfate	4.95	0.400	"		5.04		0-20	1.68	20	

PS (1204319098 S)

Source: 481033002

Prepared: Analyzed: 06/28/2019

Sulfate	14.9	0.400	mg/L	10.0		98.6	90-110			
Chloride	14.1	0.200	"	5.00		113	90-110			

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Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

TDS by EPA 160.1 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1891714 -										
BLANK (1204320263-BLK)					Prepared: Analyzed: 06/28/2019					
Total Dissolved Solids	ND	14.3	mg/L				-			U
LCS (1204320264-BKS)					Prepared: Analyzed: 06/28/2019					
Total Dissolved Solids	289	14.3	mg/L	300		96.2	95-105			
DUP (1204320265 D)					Prepared: Analyzed: 06/28/2019					
		Source: 482792001								
Total Dissolved Solids	310	14.3	mg/L		309		0-5	0.462	5	

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Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Notes and Definitions

Ua Sample is Non-Detect.

U Result not detected above the detection limit

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

July 09, 2019

CGRS, Inc

Drezden Kinnaird

1301 Academy Court

Fort Collins CO 80524

Project Name - EWS #4**Project Number - 16204aa**

Attached are your analytical results for EWS #4 received by Origins Laboratory, Inc. July 02, 2019. This project is associated with Origins project number Y907060-01.

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



CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BG-1@0.5'	Y907060-01	Soil	July 1, 2019 12:30	07/02/2019 09:05
S-8a	Y907060-02	Soil	July 1, 2019 10:30	07/02/2019 09:05

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

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page 1 of 1

ORIGINS
LABORATORY, INC

Client: CGRS
Address: 1301 Academy Ct.
Fort Collins, CO
Telephone Number: 970-261-6357
Email Address: dkinnaird@cgrs.com

Project Manager: Drezden Kinnaird
Project Name: EWS #4
Project Number: 16204aa
Samples Collected By: John Akley

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix				Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #	Other			
B5-1 @ 0.5'	7/1/19	10:30	3	X										TAT changed to 1
S-8a	7/1/19	10:30	3	X										72 hrs per the 2
														email from 3
														Drezden on 7/2/19 4
														905
														6
														7
														8
														9
														10
Relinquished By: John Akley	Date: 7/1/19	Time: 16:00												Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>
Relinquished By:	Date:	Time:												

Temp Received: 0.6 Date Results Needed

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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y907060

Client: CGRS

Client Project ID: EWS #4

Checklist Completed by: JP

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

Date/time completed: 7/2/19

Airbill #: NA

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

Cooler Number/Temperature: 1 / 0.6 °C / °C / °C

Thermometer ID: T005

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	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)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		X		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	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 ⁽¹⁾ ? (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 ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			X	
Additional Comments (if any):				

⁽¹⁾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) JP

Date/Time Reviewed 7/3/19

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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

BG-1@0.5'

7/1/2019 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc. Y907060-01 (Soil)

Metals (Saturated Paste Prep)

Calcium	1.86	me/L	1		'[none]'		07/05/2019	07/08/2019	
Magnesium	0.72	"	"		"		"	"	
Sodium	0.92	"	"		"		"	"	

pH in Soil by EPA 9045D

pH	8.32	pH Units	1		B9G0209	OLAB	07/02/2019	07/02/2019	
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SAR by 20B Saturated Paste

SAR	0.81		1		'[none]'		07/05/2019	07/08/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0172	0.00500	mmhos/cm	1	B9G0210	OLAB	07/02/2019	07/02/2019	
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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

S-8a

7/1/2019 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y907060-02 (Soil)

BTEX by EPA 8260D

Benzene	ND	0.050	mg/kg	25	B9G0207	KDK	07/02/2019	07/03/2019	Ua
Toluene	ND	0.050	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4
Surrogate: Toluene-d8
Surrogate: 4-Bromofluorobenzene

106 %
88.8 %
104 %

70-130
70-130
70-130

"
"
"

"
"
"

Metals (Saturated Paste Prep)

Calcium	2.60		me/L	1	'[none]'		07/05/2019	07/08/2019	
Magnesium	0.75		"	"	"		"	"	
Sodium	9.12		"	"	"		"	"	

PAH by 8270D SIM

1-Methylnaphthalene	0.325	0.0406	mg/kg dry	10	1893666	JMB3	07/08/2019	07/08/2019	
2-Methylnaphthalene	0.187	0.0406	"	"	"	JMB3	"	"	
Acenaphthene	ND	0.0406	"	"	"	JMB3	"	"	U
Acenaphthylene	ND	0.0406	"	"	"	JMB3	"	"	U
Anthracene	ND	0.0406	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.0406	"	"	"	JMB3	"	"	U

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

S-8a

7/1/2019 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC

Y907060-02 (Soil)

PAH by 8270D SIM

Benzo(a)pyrene	ND	0.0406	mg/kg dry	10	1893666	JMB3	07/08/2019	07/08/2019	U
Benzo(b)fluoranthene	ND	0.0406	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.0406	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.0406	"	"	"	JMB3	"	"	U
Chrysene	ND	0.0406	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	ND	0.0406	"	"	"	JMB3	"	"	U
Fluoranthene	ND	0.0406	"	"	"	JMB3	"	"	U
Fluorene	0.0649	0.0406	"	"	"	JMB3	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0406	"	"	"	JMB3	"	"	U
Naphthalene	0.0325	0.0406	"	"	"	JMB3	"	"	J
Phenanthrene	0.114	0.0406	"	"	"	JMB3	"	"	
Pyrene	ND	0.0406	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane	78 %	25-121			"	"	"
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pH in Soil by EPA 9045D

pH	8.02	pH Units	1	B9G0209	OLAB	07/02/2019	07/02/2019
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SAR by 20B Saturated Paste

SAR	7.05		1	'[none]'		07/05/2019	07/08/2019
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Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

S-8a**7/1/2019 10:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.
Y907060-02 (Soil)****Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.133	0.00500	mmhos/cm	1	B9G0210	OLAB	07/02/2019	07/02/2019	
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TPH-Carbon Chain by EPA 8015D

Gasoline (C6-C10)	ND	50.0	mg/kg	1	B9G0205	KDK	07/02/2019	07/03/2019	Ua
Diesel (C10-C28)	177	50.0	"	"	"	KDK	"	"	
Residual Range Organics (C28-C40)	ND	200	"	"	"	KDK	"	"	Ua

Surrogate: o-Terphenyl	73.7 %	50-150			"	"	"	
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Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9G0205 - EPA 3580										
Blank (B9G0205-BLK1)					Prepared: 07/02/2019 Analyzed: 07/02/2019					
Gasoline (C6-C10)	ND	50.0	mg/kg							Ua
Diesel (C10-C28)	ND	50.0	"							Ua
Residual Range Organics (C28-C40)	ND	200	"							Ua
Surrogate: o-Terphenyl	37.8		"	50.0		75.5	50-150			

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Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9G0205 - EPA 3580										
Blank (B9G0205-BLK2)					Prepared: 07/02/2019 Analyzed: 07/02/2019					
Gasoline (C6-C10)	ND	50.0	mg/kg							Ua
Diesel (C10-C28)	ND	50.0	"							Ua
Residual Range Organics (C28-C40)	ND	200	"							Ua
Surrogate: o-Terphenyl	41.5		"	50.0		83.1	50-150			

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Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Extractable Petroleum Hydrocarbons by 8015D - 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 B9G0205 - EPA 3580

LCS (B9G0205-BS1)

Prepared: 07/02/2019 Analyzed: 07/02/2019

Gasoline (C6-C10)	799	50.0	mg/kg	1000		79.9	70-130			
Diesel (C10-C28)	834	50.0	"	1000		83.4	70-130			
Residual Range Organics (C28-C40)	773	200	"	1000		77.3	70-130			
Surrogate: o-Terphenyl	41.2		"	50.0		82.4	50-150			

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Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Extractable Petroleum Hydrocarbons by 8015D - 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 B9G0205 - EPA 3580

LCS (B9G0205-BS2)

Prepared: 07/02/2019 Analyzed: 07/02/2019

Gasoline (C6-C10)	914	50.0	mg/kg	1000		91.4	70-130			
Diesel (C10-C28)	943	50.0	"	1000		94.3	70-130			
Residual Range Organics (C28-C40)	885	200	"	1000		88.5	70-130			
Surrogate: o-Terphenyl	47.3		"	50.0		94.5	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Extractable Petroleum Hydrocarbons by 8015D - 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 B9G0205 - EPA 3580

Matrix Spike (B9G0205-MS1)		Source: Y907016-01			Prepared: 07/02/2019 Analyzed: 07/02/2019					
Gasoline (C6-C10)	842	50.0	mg/kg	1000	22.0	82.0	70-130			
Diesel (C10-C28)	878	50.0	"	1000	ND	87.8	70-130			
Residual Range Organics (C28-C40)	802	200	"	1000	ND	80.2	70-130			
Surrogate: o-Terphenyl	41.4		"	50.0		82.9	50-150			

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Extractable Petroleum Hydrocarbons by 8015D - 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 B9G0205 - EPA 3580

Matrix Spike (B9G0205-MS2)		Source: Y907063-01			Prepared: 07/02/2019 Analyzed: 07/02/2019					
Gasoline (C6-C10)	902	50.0	mg/kg	1000	26.8	87.5	70-130			
Diesel (C10-C28)	981	50.0	"	1000	ND	98.1	70-130			
Residual Range Organics (C28-C40)	907	200	"	1000	ND	90.7	70-130			
Surrogate: o-Terphenyl	46.8		"	50.0		93.6	50-150			

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Extractable Petroleum Hydrocarbons by 8015D - 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 B9G0205 - EPA 3580

Matrix Spike Dup (B9G0205-MSD1)		Source: Y907016-01			Prepared: 07/02/2019 Analyzed: 07/02/2019					
Gasoline (C6-C10)	887	50.0	mg/kg	1000	22.0	86.5	70-130	5.16	35	
Diesel (C10-C28)	902	50.0	"	1000	ND	90.2	70-130	2.75	35	
Residual Range Organics (C28-C40)	847	200	"	1000	ND	84.7	70-130	5.46	35	
Surrogate: o-Terphenyl	43.2		"	50.0		86.4	50-150			

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Extractable Petroleum Hydrocarbons by 8015D - 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 B9G0205 - EPA 3580

Matrix Spike Dup (B9G0205-MSD2)		Source: Y907063-01			Prepared: 07/02/2019 Analyzed: 07/02/2019					
Gasoline (C6-C10)	910	50.0	mg/kg	1000	26.8	88.3	70-130	0.829	35	
Diesel (C10-C28)	985	50.0	"	1000	ND	98.5	70-130	0.380	35	
Residual Range Organics (C28-C40)	965	200	"	1000	ND	96.5	70-130	6.17	35	
Surrogate: o-Terphenyl	47.0		"	50.0		93.9	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Extractable Petroleum Hydrocarbons by 8015D - 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 B9G0207 - EPA 5030 (soil)

Blank (B9G0207-BLK1)

Prepared: 07/02/2019 Analyzed: 07/02/2019

Benzene	ND	0.002	mg/kg							Ua
Toluene	ND	0.002	"							Ua
Ethylbenzene	ND	0.002	"							Ua
Xylenes, total	ND	0.002	"							Ua
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125	113		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	92.9		70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125	102		70-130			

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9G0207 - EPA 5030 (soil)

LCS (B9G0207-BS1)

Prepared: 07/02/2019 Analyzed: 07/02/2019

Benzene	0.105	0.002	mg/kg	0.100		105	70-130			
Toluene	0.092	0.002	"	0.100		92.0	70-130			
Ethylbenzene	0.089	0.002	"	0.100		89.2	70-130			
m,p-Xylene	0.184	0.004	"	0.200		91.9	70-130			
o-Xylene	0.096	0.002	"	0.100		95.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		109	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.6	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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9G0207 - EPA 5030 (soil)

Matrix Spike (B9G0207-MS1)		Source: Y907010-01			Prepared: 07/02/2019 Analyzed: 07/02/2019					
Benzene	0.098	0.002	mg/kg	0.100	ND	97.6	70-130			
Toluene	0.081	0.002	"	0.100	ND	81.4	70-130			
Ethylbenzene	0.079	0.002	"	0.100	ND	79.1	70-130			
m,p-Xylene	0.167	0.004	"	0.200	ND	83.5	70-130			
o-Xylene	0.092	0.002	"	0.100	ND	92.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125		119	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		91.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		108	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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9G0207 - EPA 5030 (soil)

Matrix Spike Dup (B9G0207-MSD1)		Source: Y907010-01			Prepared: 07/02/2019 Analyzed: 07/02/2019					
Benzene	0.094	0.002	mg/kg	0.100	ND	94.4	70-130	3.33	20	
Toluene	0.080	0.002	"	0.100	ND	80.0	70-130	1.71	20	
Ethylbenzene	0.079	0.002	"	0.100	ND	79.4	70-130	0.404	20	
m,p-Xylene	0.167	0.004	"	0.200	ND	83.5	70-130	0.00	20	
o-Xylene	0.089	0.002	"	0.100	ND	89.3	70-130	3.07	20	
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125		122	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		91.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		108	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.

Jen Pellegrini For Noelle Doyle Mathis, President

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Volatile Organic Compounds by GC/MS SW846 8260D - 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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Classical Chemistry Parameters - 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 B9G0209 - NO PREP

Duplicate (B9G0209-DUP1)

Source: Y907065-01

Prepared: 07/02/2019 Analyzed: 07/02/2019

pH	8.56		pH Units	8.69		1.51	25
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Batch B9G0210 - NO PREP

Blank (B9G0210-BLK1)

Prepared: 07/02/2019 Analyzed: 07/02/2019

Specific Conductance (EC)	0.00200	0.00500	mmhos/cm
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Duplicate (B9G0210-DUP1)

Source: Y907065-01

Prepared: 07/02/2019 Analyzed: 07/02/2019

Specific Conductance (EC)	0.505	0.00505	mmhos/cm	0.519		2.87	25
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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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

PAH by 8270D SIM - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1893666 - SW846 3541

BLANK (1204324853-BLK)

Prepared: 07/08/2019 Analyzed: 07/08/2019

Fluoranthene	ND	0.00333	mg/kg				-			U
Pyrene	ND	0.00333	"				-			U
Phenanthrene	ND	0.00333	"				-			U
Naphthalene	ND	0.00333	"				-			U
Fluorene	ND	0.00333	"				-			U
Dibenzo(a,h)anthracene	ND	0.00333	"				-			U
Chrysene	ND	0.00333	"				-			U
Benzo(k)fluoranthene	ND	0.00333	"				-			U
1-Methylnaphthalene	ND	0.00333	"				-			U
Indeno(1,2,3-cd)pyrene	ND	0.00333	"				-			U
2-Methylnaphthalene	ND	0.00333	"				-			U
Benzo(ghi)perylene	ND	0.00333	"				-			U
Acenaphthene	ND	0.00333	"				-			U
Acenaphthylene	ND	0.00333	"				-			U
Anthracene	ND	0.00333	"				-			U
Benzo(a)anthracene	ND	0.00333	"				-			U
Benzo(a)pyrene	ND	0.00333	"				-			U
Benzo(b)fluoranthene	ND	0.00333	"				-			U

Surrogate: 5-alpha-Androstane

0.131

"

0.167

78

25-121

LCS (1204324854-BKS)

Prepared: 07/08/2019 Analyzed: 07/08/2019

Benzo(k)fluoranthene	0.263	0.00333	mg/kg	0.333	79	39-119
Benzo(a)anthracene	0.271	0.00333	"	0.333	81	51-118
Naphthalene	0.240	0.00333	"	0.333	72	52-106
Indeno(1,2,3-cd)pyrene	0.260	0.00333	"	0.333	78	40-132
Fluorene	0.265	0.00333	"	0.333	79	42-113
Fluoranthene	0.257	0.00333	"	0.333	77	43-116

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

PAH by 8270D SIM - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1893666 - SW846 3541

LCS (1204324854-BKS)

Prepared: 07/08/2019 Analyzed: 07/08/2019

Dibenzo(a,h)anthracene	0.268	0.00333	mg/kg	0.333		80	40-137			
Chrysene	0.246	0.00333	"	0.333		74	53-108			
Pyrene	0.251	0.00333	"	0.333		75	42-114			
Phenanthrene	0.244	0.00333	"	0.333		73	53-106			
Benzo(a)pyrene	0.263	0.00333	"	0.333		79	42-123			
Anthracene	0.280	0.00333	"	0.333		84	49-113			
Acenaphthylene	0.273	0.00333	"	0.333		82	42-114			
Acenaphthene	0.245	0.00333	"	0.333		74	48-107			
2-Methylnaphthalene	0.255	0.00333	"	0.333		76	50-109			
1-Methylnaphthalene	0.248	0.00333	"	0.333		74	50-109			
Benzo(b)fluoranthene	0.266	0.00333	"	0.333		80	42-119			
Benzo(ghi)perylene	0.229	0.00333	"	0.333		69	35-121			

Surrogate: 5-alpha-Androstane

0.137

"

0.167

82

25-121

LCSD (1204325502-BKSD)

Prepared: 07/08/2019 Analyzed: 07/08/2019

Phenanthrene	0.258	0.00333	mg/kg	0.333		77	53-106	5	30	
Chrysene	0.259	0.00333	"	0.333		78	53-108	5	30	
Dibenzo(a,h)anthracene	0.258	0.00333	"	0.333		77	40-137	4	30	
Fluoranthene	0.270	0.00333	"	0.333		81	43-116	5	30	
Fluorene	0.277	0.00333	"	0.333		83	42-113	5	30	
Benzo(k)fluoranthene	0.293	0.00333	"	0.333		88	39-119	11	30	
Naphthalene	0.246	0.00333	"	0.333		74	52-106	3	30	
Acenaphthylene	0.285	0.00333	"	0.333		86	42-114	5	30	
Indeno(1,2,3-cd)pyrene	0.250	0.00333	"	0.333		75	40-132	4	30	
Benzo(ghi)perylene	0.219	0.00333	"	0.333		66	35-121	5	30	
Benzo(b)fluoranthene	0.296	0.00333	"	0.333		89	42-119	11	30	
Benzo(a)pyrene	0.281	0.00333	"	0.333		84	42-123	7	30	

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

PAH by 8270D SIM - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1893666 - SW846 3541										
LCSD (1204325502-BKSD)					Prepared: 07/08/2019 Analyzed: 07/08/2019					
Anthracene	0.294	0.00333	mg/kg	0.333		88	49-113	5	30	
Acenaphthene	0.256	0.00333	"	0.333		77	48-107	4	30	
2-Methylnaphthalene	0.263	0.00333	"	0.333		79	50-109	3	30	
1-Methylnaphthalene	0.253	0.00333	"	0.333		76	50-109	2	30	
Pyrene	0.288	0.00333	"	0.333		87	42-114	14	30	
Benzo(a)anthracene	0.285	0.00333	"	0.333		86	51-118	5	30	
Surrogate: 5-alpha-Androstane	0.146		"	0.166		88	25-121			

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.

CGRS, Inc

1301 Academy Court

Fort Collins CO 80524

Drezden Kinnaird

Project Number: 16204aa

Project: EWS #4

Notes and Definitions

Ua Sample is Non-Detect.

U Result not detected above the detection limit

J Greater than the detection limit but less than the reporting limit

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

July 25, 2019

CGRS, Inc

Drezden Kinnaird

1301 Academy Court

Fort Collins CO 80524

Project Name - EWS #4**Project Number - 16204aa**

Attached are your analytical results for EWS #4 received by Origins Laboratory, Inc. July 18, 2019. This project is associated with Origins project number Y907267-01.

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



CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-1@0.5	Y907267-01	Soil	July 18, 2019 9:45	07/18/2019 11:33
SS-5@0.5'	Y907267-02	Soil	July 18, 2019 9:45	07/18/2019 11:33
SS-8@0.5'	Y907267-03	Soil	July 18, 2019 9:15	07/18/2019 11:33
SS-10@0.5'	Y907267-04	Soil	July 18, 2019 9:15	07/18/2019 11:33
SS-15@0.5'	Y907267-05	Soil	July 18, 2019 9:30	07/18/2019 11:33
SS-18@0.5'	Y907267-06	Soil	July 18, 2019 9:30	07/18/2019 11:33
SS-21@0.5'	Y907267-07	Soil	July 18, 2019 9:00	07/18/2019 11:33
SS-22@0.5'	Y907267-08	Soil	July 18, 2019 9:00	07/18/2019 11:33
SS-23@0.5'	Y907267-09	Soil	July 18, 2019 10:00	07/18/2019 11:33
SS-24@0.5'	Y907267-10	Soil	July 18, 2019 10:00	07/18/2019 11:33
SS-25@0.5'	Y907267-11	Soil	July 18, 2019 10:15	07/18/2019 11:33
SS-26@0.5'	Y907267-12	Soil	July 18, 2019 10:15	07/18/2019 11:33
SS-27@0.5'	Y907267-13	Soil	July 18, 2019 10:30	07/18/2019 11:33
SS-28@0.5'	Y907267-14	Soil	July 18, 2019 10:30	07/18/2019 11:33

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.

CGRS, Inc

1301 Academy Court

Fort Collins CO 80524

Drezden Kinnaird

Project Number: 16204aa

Project: EWS #4

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-29@0.5'	Y907267-15	Soil	July 18, 2019 10:00	07/18/2019 11:33

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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

www.originslaboratory.com

Y907267

page 1 of 2

ORIGINS
LABORATORY, INC

Client: CGRS
Address: 1301 Academy Ct, Fort Collins
Telephone Number: 970-213-7488
Email Address: Chris.Lattes@CGRS.COM

Project Manager: Drezden Kinnaird
Project Name: EWS #4
Project Number: 16204aa
Samples Collected By: Chris Lattes

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative	Matrix	Analysis	Sample Instructions
SS-1 @ 0.5'	7/18/19	9:45	3	Unpreserved	Soil	BTEX, TPH, TEPA, EC, PH, SAR, PAH	1
SS-5 @ 0.5'		9:45	3	Unpreserved	Soil	BTEX, TPH, TEPA, EC, PH, SAR, PAH	2
SS-8 @ 0.5'		9:15	3	Unpreserved	Soil	BTEX, TPH, TEPA, EC, PH, SAR, PAH	3
SS-10 @ 0.5'		9:15	3	Unpreserved	Soil	BTEX, TPH, TEPA, EC, PH, SAR, PAH	4
SS-15 @ 0.5'		9:30	3	Unpreserved	Soil	BTEX, TPH, TEPA, EC, PH, SAR, PAH	5
SS-18 @ 0.5'		9:30	3	Unpreserved	Soil	BTEX, TPH, TEPA, EC, PH, SAR, PAH	6
SS-21 @ 0.5'		9:00	3	Unpreserved	Soil	BTEX, TPH, TEPA, EC, PH, SAR, PAH	7
SS-22 @ 0.5'		9:00	3	Unpreserved	Soil	BTEX, TPH, TEPA, EC, PH, SAR, PAH	8
SS-23 @ 0.5'		10:00	3	Unpreserved	Soil	BTEX, TPH, TEPA, EC, PH, SAR, PAH	9
SS-24 @ 0.5'		10:00	3	Unpreserved	Soil	BTEX, TPH, TEPA, EC, PH, SAR, PAH	10
Relinquished By: <i>Chris Lattes</i>	Date: 7/18/19	Time: 1133	Received By: <i>[Signature]</i>	Date: 7-18-19	Time: 1133	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard <input type="checkbox"/>	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:		

Date Results Needed

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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

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page 12 of 2

16204aa

ORIGINS
LABORATORY, INC

Client: CGRS
Address: 1301 Academy Ct, Fort Collins
Telephone Number: 970-213-7488
Email Address: Chris.Lattes@CGRS.COM

Project Manager: Drezden Kinnaird
Project Name: EWS #4
Project Number: 16204aa
Samples Collected By: Chris Lattes

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Canister #			Other
SS-25 @ 0.5'	7/18/19	10:15	3							X		BTEX TVPH TEPA EC PAH SAR PAH	1
SS-26 @ 0.5'	7/18/19	10:15	3							X		BTEX TVPH TEPA EC PAH SAR PAH	2
SS-27 @ 0.5'	7/18/19	10:20	3							X		BTEX TVPH TEPA EC PAH SAR PAH	3
SS-28 @ 0.5'	7/18/19	10:30	3							X		BTEX TVPH TEPA EC PAH SAR PAH	4
SS-29 @ 0.5'	7/18/19	10:00	1							X		BTEX TVPH TEPA EC PAH SAR PAH	5
													6
													7
													8
													9
													10

Handwritten notes: Table 9.10 Metals, Table 9.10 Metals, Table 9.10 Metals

Relinquished By: Chris Lattes Date: 7/18/19 Time: 11:33
Received By: [Signature] Date: 7-18-19 Time: 11:33

Turnaround Time: Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☒ Standard

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

Date Results Needed

3/1

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.

CGRS, Inc

1301 Academy Court

Fort Collins CO 80524

Drezden Kinnaird

Project Number: 16204aa

Project: EWS #4

Origins Laboratory

F-012207-01-R1

Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: Y907267

Client: CGRS

Client Project ID: EWS #4

Checklist Completed by: JG

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

Date/time completed: 7/18/19

Airbill #: NA

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

Cooler Number/Temperature: 1 3.9 °C / _____ °C / _____ °C / _____ °C (Describe)

Thermometer ID: TOUB

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water — is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (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 ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ 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) JG

Date/Time Reviewed 7/18/19

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.

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-1@0.5

7/18/2019 9:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-01 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/18/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	110 %	70-130			"	"	"
Surrogate: Toluene-d8	99.4 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	99.2 %	70-130			"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/18/2019	Ua
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Surrogate: o-Terphenyl	70.1 %	50-150			"	"	"
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Metals (Saturated Paste Prep)

Calcium	3.49	me/L	1	[none]		07/19/2019	07/24/2019
Magnesium	1.78	"	"	"		"	"
Sodium	1.38	"	"	"		"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00402	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-1@0.5

7/18/2019 9:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-01 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00402	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
Anthracene	ND	0.00402	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00402	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00402	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00402	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	0.00282	0.00402	"	"	"	JMB3	"	"	J
Benzo(k)fluoranthene	ND	0.00402	"	"	"	JMB3	"	"	U
Chrysene	ND	0.00402	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	0.00483	0.00402	"	"	"	JMB3	"	"	
Fluoranthene	ND	0.00402	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00402	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	0.00362	0.00402	"	"	"	JMB3	"	"	J
Naphthalene	ND	0.00402	"	"	"	JMB3	"	"	U
Phenanthrene	ND	0.00402	"	"	"	JMB3	"	"	U
Pyrene	ND	0.00402	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane	55 %	25-121	"	"	"
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pH in Soil by EPA 9045D

pH	7.25	pH Units	1	B9G1807	OLAB	07/18/2019	07/18/2019
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-1@0.5

7/18/2019 9:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-01 (Soil)

SAR by 20B Saturated Paste

SAR	0.85			1	[none]		07/19/2019	07/24/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0556	0.00500	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019	
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-5@0.5'

7/18/2019 9:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-02 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/18/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	113 %	70-130	"	"	"
Surrogate: Toluene-d8	99.8 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	99.1 %	70-130	"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019	Ua
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Surrogate: o-Terphenyl	65.7 %	50-150	"	"	"
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Metals (Saturated Paste Prep)

Calcium	1.10	me/L	1	[none]	07/19/2019	07/24/2019
Magnesium	0.76	"	"	"	"	"
Sodium	6.55	"	"	"	"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00388	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-5@0.5'

7/18/2019 9:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-02 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00388	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
Anthracene	ND	0.00388	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00388	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00388	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00388	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.00388	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00388	"	"	"	JMB3	"	"	U
Chrysene	ND	0.00388	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	0.0035	0.00388	"	"	"	JMB3	"	"	J
Fluoranthene	ND	0.00388	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00388	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00388	"	"	"	JMB3	"	"	U
Naphthalene	ND	0.00388	"	"	"	JMB3	"	"	U
Phenanthrene	ND	0.00388	"	"	"	JMB3	"	"	U
Pyrene	ND	0.00388	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane 51 % 25-121 " " "

pH in Soil by EPA 9045D

pH 8.86 pH Units 1 B9G1807 OLAB 07/18/2019 07/18/2019

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-5@0.5'

7/18/2019 9:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-02 (Soil)

SAR by 20B Saturated Paste

SAR	6.79			1	[none]		07/19/2019	07/24/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.164	0.00500	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019	
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-8@0.5'

7/18/2019 9:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-03 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/18/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	111 %	70-130	"	"	"
Surrogate: Toluene-d8	100 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	99.2 %	70-130	"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019	Ua
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Surrogate: o-Terphenyl	74.2 %	50-150	"	"	"
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Metals (Saturated Paste Prep)

Calcium	9.79	me/L	1	[none]	07/19/2019	07/24/2019
Magnesium	2.83	"	"	"	"	"
Sodium	10.71	"	"	"	"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00368	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-8@0.5'

7/18/2019 9:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-03 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00368	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
Anthracene	ND	0.00368	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00368	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00368	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00368	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.00368	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00368	"	"	"	JMB3	"	"	U
Chrysene	ND	0.00368	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	ND	0.00368	"	"	"	JMB3	"	"	U
Fluoranthene	ND	0.00368	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00368	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00368	"	"	"	JMB3	"	"	U
Naphthalene	ND	0.00368	"	"	"	JMB3	"	"	U
Phenanthrene	ND	0.00368	"	"	"	JMB3	"	"	U
Pyrene	ND	0.00368	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane 56 % 25-121 " " "

pH in Soil by EPA 9045D

pH 8.02 pH Units 1 B9G1807 OLAB 07/18/2019 07/18/2019

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-8@0.5'

7/18/2019 9:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-03 (Soil)

SAR by 20B Saturated Paste

SAR	4.26		1	[none]		07/19/2019	07/24/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.201	0.00501	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019	
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Total Metals by 6010C

Arsenic	2.74	3.33	mg/kg dry	1	1898718	TXT1	07/23/2019	07/24/2019	J
Barium	41.4	0.554	"	"	"	TXT1	"	"	
Cadmium	ND	0.554	"	"	"	TXT1	"	"	U
Chromium	5.02	1.11	"	"	"	TXT1	"	"	
Copper	3.92	2.22	"	"	"	TXT1	"	"	
Lead	5.00	2.22	"	"	"	TXT1	"	"	
Nickel	4.04	0.554	"	"	"	TXT1	"	"	
Selenium	ND	3.33	"	"	"	TXT1	"	"	U
Silver	ND	0.554	"	"	"	TXT1	"	"	U
Zinc	19.9	2.22	"	"	"	TXT1	"	"	

Total Metals by 7196A

Hexavalent Chromium	0.203	0.289	mg/kg dry	1	1898299	VH1	"	07/24/2019	J
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Total Metals by 7196A/6010

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-8@0.5'

7/18/2019 9:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-03 (Soil)

Total Metals by 7196A/6010

Trivalent Chromium	4.82	1.11	mg/kg	1	1899096	VH1	07/18/2019	07/24/2019	
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Total Metals by 7471A

Mercury	ND	0.0135	mg/kg dry	1	1898498	MTM1	07/22/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-10@0.5'

7/18/2019 9:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-04 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/19/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	0.962	0.200	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"
Surrogate: Toluene-d8	104 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	76.4	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019
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Surrogate: o-Terphenyl	78.8 %	50-150			"	"	"
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Metals (Saturated Paste Prep)

Calcium	15.05		me/L	1	[none]		07/19/2019	07/24/2019
Magnesium	3.79		"	"	"		"	"
Sodium	26.45		"	"	"		"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00361	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-10@0.5'

7/18/2019 9:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-04 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00361	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
Anthracene	ND	0.00361	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00361	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00361	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	0.00217	0.00361	"	"	"	JMB3	"	"	J
Benzo(ghi)perylene	ND	0.00361	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00361	"	"	"	JMB3	"	"	U
Chrysene	0.0101	0.00361	"	"	"	JMB3	"	"	
Dibenzo(a,h)anthracene	0.00217	0.00361	"	"	"	JMB3	"	"	J
Fluoranthene	0.00181	0.00361	"	"	"	JMB3	"	"	J
Fluorene	0.00217	0.00361	"	"	"	JMB3	"	"	J
Indeno(1,2,3-cd)pyrene	0.00181	0.00361	"	"	"	JMB3	"	"	J
Naphthalene	ND	0.00361	"	"	"	JMB3	"	"	U
Phenanthrene	0.0065	0.00361	"	"	"	JMB3	"	"	
Pyrene	0.00253	0.00361	"	"	"	JMB3	"	"	J

Surrogate: 5-alpha-Androstane 68 % 25-121 " " "

pH in Soil by EPA 9045D

pH 7.75 pH Units 1 B9G1807 OLAB 07/18/2019 07/18/2019

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-10@0.5'

7/18/2019 9:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-04 (Soil)

SAR by 20B Saturated Paste

SAR	8.62			1	[none]		07/19/2019	07/24/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.308	0.00501	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019	
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-15@0.5'

7/18/2019 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-05 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/19/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	0.280	0.200	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	108 %	70-130			"	"	"
Surrogate: Toluene-d8	102 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	98.3 %	70-130			"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019	Ua
Surrogate: o-Terphenyl	76.8 %	50-150			"	"	"		

Metals (Saturated Paste Prep)

Calcium	4.12	me/L	1	[none]		07/19/2019	07/24/2019
Magnesium	1.31	"	"	"		"	"
Sodium	1.81	"	"	"		"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00353	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-15@0.5'

7/18/2019 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-05 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00353	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
Anthracene	ND	0.00353	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00353	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00353	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00353	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.00353	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00353	"	"	"	JMB3	"	"	U
Chrysene	ND	0.00353	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	ND	0.00353	"	"	"	JMB3	"	"	U
Fluoranthene	ND	0.00353	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00353	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00353	"	"	"	JMB3	"	"	U
Naphthalene	0.00176	0.00353	"	"	"	JMB3	"	"	J
Phenanthrene	ND	0.00353	"	"	"	JMB3	"	"	U
Pyrene	ND	0.00353	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane 69 % 25-121 " " "

pH in Soil by EPA 9045D

pH 8.10 pH Units 1 B9G1807 OLAB 07/18/2019 07/18/2019

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-15@0.5'

7/18/2019 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc. Y907267-05 (Soil)

SAR by 20B Saturated Paste

SAR	1.10		1	[none]		07/19/2019	07/24/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0560	0.00500	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019	
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Total Metals by 6010C

Arsenic	2.95	3.12	mg/kg dry	1	1898718	TXT1	07/23/2019	07/24/2019	J
Barium	53.0	0.520	"	"	"	TXT1	"	"	
Cadmium	ND	0.520	"	"	"	TXT1	"	"	U
Chromium	7.90	1.04	"	"	"	TXT1	"	"	
Copper	5.54	2.08	"	"	"	TXT1	"	"	
Lead	6.45	2.08	"	"	"	TXT1	"	"	
Nickel	6.03	0.520	"	"	"	TXT1	"	"	
Selenium	ND	3.12	"	"	"	TXT1	"	"	U
Silver	ND	0.520	"	"	"	TXT1	"	"	U
Zinc	26.5	2.08	"	"	"	TXT1	"	"	

Total Metals by 7196A

Hexavalent Chromium	0.135	0.287	mg/kg dry	1	1898299	VH1	"	07/24/2019	J
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Total Metals by 7196A/6010

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-15@0.5'

7/18/2019 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-05 (Soil)

Total Metals by 7196A/6010

Trivalent Chromium	7.76	1.04	mg/kg	1	1899096	VH1	07/18/2019	07/24/2019	
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Total Metals by 7471A

Mercury	ND	0.0109	mg/kg dry	1	1898498	MTM1	07/22/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-18@0.5'

7/18/2019 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-06 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/19/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	106 %	70-130	"	"	"
Surrogate: Toluene-d8	100 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	99.2 %	70-130	"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019	Ua
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Surrogate: o-Terphenyl	73.6 %	50-150	"	"	"
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Metals (Saturated Paste Prep)

Calcium	10.86	me/L	1	[none]	07/19/2019	07/24/2019
Magnesium	3.40	"	"	"	"	"
Sodium	11.65	"	"	"	"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00363	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-18@0.5'

7/18/2019 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-06 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00363	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
Anthracene	ND	0.00363	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00363	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00363	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00363	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.00363	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00363	"	"	"	JMB3	"	"	U
Chrysene	0.00544	0.00363	"	"	"	JMB3	"	"	
Dibenzo(a,h)anthracene	ND	0.00363	"	"	"	JMB3	"	"	U
Fluoranthene	ND	0.00363	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00363	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00363	"	"	"	JMB3	"	"	U
Naphthalene	ND	0.00363	"	"	"	JMB3	"	"	U
Phenanthrene	0.00181	0.00363	"	"	"	JMB3	"	"	J
Pyrene	ND	0.00363	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane	63 %	25-121	"	"	"
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pH in Soil by EPA 9045D

pH	8.17	pH Units	1	B9G1807	OLAB	07/18/2019	07/18/2019
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-18@0.5'

7/18/2019 9:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-06 (Soil)

SAR by 20B Saturated Paste

SAR	4.36			1	[none]		07/19/2019	07/24/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.396	0.00506	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019	
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-21@0.5'

7/18/2019 9:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-07 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/19/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	107 %	70-130	"	"	"
Surrogate: Toluene-d8	101 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	99.6 %	70-130	"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019	Ua
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Surrogate: o-Terphenyl	78.1 %	50-150	"	"	"
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Metals (Saturated Paste Prep)

Calcium	1.15	me/L	1	[none]	07/19/2019	07/24/2019
Magnesium	0.38	"	"	"	"	"
Sodium	10.37	"	"	"	"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00364	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-21@0.5'

7/18/2019 9:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-07 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00364	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
Anthracene	ND	0.00364	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00364	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00364	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00364	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.00364	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00364	"	"	"	JMB3	"	"	U
Chrysene	ND	0.00364	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	ND	0.00364	"	"	"	JMB3	"	"	U
Fluoranthene	ND	0.00364	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00364	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00364	"	"	"	JMB3	"	"	U
Naphthalene	ND	0.00364	"	"	"	JMB3	"	"	U
Phenanthrene	ND	0.00364	"	"	"	JMB3	"	"	U
Pyrene	ND	0.00364	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane 52 % 25-121 " " "

pH in Soil by EPA 9045D

pH 9.35 pH Units 1 B9G1807 OLAB 07/18/2019 07/18/2019

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-21@0.5'

7/18/2019 9:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-07 (Soil)

SAR by 20B Saturated Paste

SAR	11.86		1	[none]		07/19/2019	07/24/2019
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0814	0.00501	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019
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Total Metals by 6010C

Arsenic	1.41	3.21	mg/kg dry	1	1898718	TXT1	07/23/2019	07/24/2019	J
Barium	29.6	0.535	"	"	"	TXT1	"	"	
Cadmium	ND	0.535	"	"	"	TXT1	"	"	U
Chromium	3.01	1.07	"	"	"	TXT1	"	"	
Copper	2.44	2.14	"	"	"	TXT1	"	"	
Lead	3.90	2.14	"	"	"	TXT1	"	"	
Nickel	2.25	0.535	"	"	"	TXT1	"	"	
Selenium	ND	3.21	"	"	"	TXT1	"	"	U
Silver	ND	0.535	"	"	"	TXT1	"	"	U
Zinc	13.1	2.14	"	"	"	TXT1	"	"	

Total Metals by 7196A

Hexavalent Chromium	0.183	0.313	mg/kg dry	1	1898299	VH1	"	07/24/2019	J
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Total Metals by 7196A/6010

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-21@0.5'

7/18/2019 9:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-07 (Soil)

Total Metals by 7196A/6010

Trivalent Chromium	2.82	1.07	mg/kg	1	1899096	VH1	07/18/2019	07/24/2019	
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Total Metals by 7471A

Mercury	ND	0.0118	mg/kg dry	1	1898498	MTM1	07/22/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-22@0.5'

7/18/2019 9:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-08 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/19/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	112 %	70-130	"	"	"
Surrogate: Toluene-d8	99.7 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	99.0 %	70-130	"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019	Ua
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Surrogate: o-Terphenyl	78.5 %	50-150	"	"	"
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Metals (Saturated Paste Prep)

Calcium	8.14	me/L	1	[none]	07/19/2019	07/24/2019
Magnesium	4.25	"	"	"	"	"
Sodium	6.70	"	"	"	"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00369	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-22@0.5'

7/18/2019 9:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-08 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00369	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
Anthracene	ND	0.00369	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00369	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00369	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00369	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.00369	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00369	"	"	"	JMB3	"	"	U
Chrysene	ND	0.00369	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	ND	0.00369	"	"	"	JMB3	"	"	U
Fluoranthene	ND	0.00369	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00369	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00369	"	"	"	JMB3	"	"	U
Naphthalene	ND	0.00369	"	"	"	JMB3	"	"	U
Phenanthrene	ND	0.00369	"	"	"	JMB3	"	"	U
Pyrene	ND	0.00369	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane 58 % 25-121 " " "

pH in Soil by EPA 9045D

pH 8.96 pH Units 1 B9G1807 OLAB 07/18/2019 07/18/2019

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-22@0.5'

7/18/2019 9:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-08 (Soil)

SAR by 20B Saturated Paste

SAR	2.69		1	[none]	07/19/2019	07/24/2019
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0876	0.00500	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-23@0.5'

7/18/2019 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-09 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/19/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130	"	"	"
Surrogate: Toluene-d8	103 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	99.5 %	70-130	"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019	Ua
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Surrogate: o-Terphenyl	74.0 %	50-150	"	"	"
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Metals (Saturated Paste Prep)

Calcium	3.67	me/L	1	[none]	07/19/2019	07/24/2019
Magnesium	1.56	"	"	"	"	"
Sodium	3.80	"	"	"	"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00383	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-23@0.5'

7/18/2019 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-09 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00383	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
Anthracene	ND	0.00383	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00383	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00383	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00383	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.00383	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00383	"	"	"	JMB3	"	"	U
Chrysene	ND	0.00383	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	ND	0.00383	"	"	"	JMB3	"	"	U
Fluoranthene	ND	0.00383	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00383	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00383	"	"	"	JMB3	"	"	U
Naphthalene	ND	0.00383	"	"	"	JMB3	"	"	U
Phenanthrene	ND	0.00383	"	"	"	JMB3	"	"	U
Pyrene	ND	0.00383	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane 51 % 25-121 " " "

pH in Soil by EPA 9045D

pH 6.77 pH Units 1 B9G1807 OLAB 07/18/2019 07/18/2019

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-23@0.5'

7/18/2019 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-09 (Soil)

SAR by 20B Saturated Paste

SAR	2.35			1	[none]		07/19/2019	07/24/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0485	0.00502	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019	
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-24@0.5'

7/18/2019 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-10 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/19/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130	"	"	"
Surrogate: Toluene-d8	102 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	100 %	70-130	"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019	Ua
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Surrogate: o-Terphenyl	78.8 %	50-150	"	"	"
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Metals (Saturated Paste Prep)

Calcium	2.77	me/L	1	[none]	07/19/2019	07/24/2019
Magnesium	11.86	"	"	"	"	"
Sodium	9.16	"	"	"	"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00367	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-24@0.5'

7/18/2019 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-10 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00367	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
Anthracene	ND	0.00367	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00367	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00367	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00367	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.00367	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00367	"	"	"	JMB3	"	"	U
Chrysene	ND	0.00367	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	ND	0.00367	"	"	"	JMB3	"	"	U
Fluoranthene	ND	0.00367	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00367	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00367	"	"	"	JMB3	"	"	U
Naphthalene	ND	0.00367	"	"	"	JMB3	"	"	U
Phenanthrene	ND	0.00367	"	"	"	JMB3	"	"	U
Pyrene	ND	0.00367	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane 68 % 25-121 " " "

pH in Soil by EPA 9045D

pH 8.74 pH Units 1 B9G1807 OLAB 07/18/2019 07/18/2019

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-24@0.5'

7/18/2019 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-10 (Soil)

SAR by 20B Saturated Paste

SAR	3.39			1	[none]		07/19/2019	07/24/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0487	0.00500	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019	
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-25@0.5'

7/18/2019 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-11 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/19/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	108 %	70-130	"	"	"
Surrogate: Toluene-d8	99.6 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	70-130	"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019	Ua
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Surrogate: o-Terphenyl	76.5 %	50-150	"	"	"
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Metals (Saturated Paste Prep)

Calcium	14.25	me/L	1	[none]	07/19/2019	07/24/2019
Magnesium	5.26	"	"	"	"	"
Sodium	83.92	"	"	"	"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00368	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-25@0.5'

7/18/2019 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-11 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00368	mg/kg dry	1	1898661	JMB3	07/23/2019	07/23/2019	U
Anthracene	ND	0.00368	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00368	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00368	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00368	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.00368	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00368	"	"	"	JMB3	"	"	U
Chrysene	ND	0.00368	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	ND	0.00368	"	"	"	JMB3	"	"	U
Fluoranthene	ND	0.00368	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00368	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00368	"	"	"	JMB3	"	"	U
Naphthalene	ND	0.00368	"	"	"	JMB3	"	"	U
Phenanthrene	ND	0.00368	"	"	"	JMB3	"	"	U
Pyrene	ND	0.00368	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane 63 % 25-121 " " "

pH in Soil by EPA 9045D

pH 7.28 pH Units 1 B9G1807 OLAB 07/18/2019 07/18/2019

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-25@0.5'

7/18/2019 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-11 (Soil)

SAR by 20B Saturated Paste

SAR	26.87			1	[none]		07/19/2019	07/24/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.560	0.00506	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019	
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-26@0.5'

7/18/2019 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-12 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/19/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	107 %	70-130	"	"	"
Surrogate: Toluene-d8	102 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	98.9 %	70-130	"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019	Ua
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Surrogate: o-Terphenyl	82.1 %	50-150	"	"	"
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Metals (Saturated Paste Prep)

Calcium	15.59	me/L	1	[none]	07/19/2019	07/24/2019
Magnesium	6.77	"	"	"	"	"
Sodium	9.69	"	"	"	"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00355	mg/kg dry	1	1898661	JMB3	07/23/2019	07/24/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-26@0.5'

7/18/2019 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-12 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00355	mg/kg dry	1	1898661	JMB3	07/23/2019	07/24/2019	U
Anthracene	ND	0.00355	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00355	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00355	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00355	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.00355	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00355	"	"	"	JMB3	"	"	U
Chrysene	ND	0.00355	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	ND	0.00355	"	"	"	JMB3	"	"	U
Fluoranthene	ND	0.00355	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00355	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00355	"	"	"	JMB3	"	"	U
Naphthalene	ND	0.00355	"	"	"	JMB3	"	"	U
Phenanthrene	ND	0.00355	"	"	"	JMB3	"	"	U
Pyrene	ND	0.00355	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane 67 % 25-121 " " "

pH in Soil by EPA 9045D

pH 6.80 pH Units 1 B9G1807 OLAB 07/18/2019 07/18/2019

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-26@0.5'

7/18/2019 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-12 (Soil)

SAR by 20B Saturated Paste

SAR	2.90			1	[none]		07/19/2019	07/24/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.221	0.00500	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019	
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Total Metals by 6010C

Arsenic	2.09	3.05	mg/kg dry	1	1898718	TXT1	07/23/2019	07/24/2019	J
Barium	19.9	0.508	"	"	"	TXT1	"	"	
Cadmium	ND	0.508	"	"	"	TXT1	"	"	U
Chromium	4.41	1.02	"	"	"	TXT1	"	"	
Copper	2.55	2.03	"	"	"	TXT1	"	"	
Lead	3.75	2.03	"	"	"	TXT1	"	"	
Nickel	2.45	0.508	"	"	"	TXT1	"	"	
Selenium	ND	3.05	"	"	"	TXT1	"	"	U
Silver	ND	0.508	"	"	"	TXT1	"	"	U
Zinc	14.2	2.03	"	"	"	TXT1	"	"	

Total Metals by 7196A

Hexavalent Chromium	0.140	0.298	mg/kg dry	1	1898299	VH1	"	07/24/2019	J
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Total Metals by 7196A/6010

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-26@0.5'

7/18/2019 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-12 (Soil)

Total Metals by 7196A/6010

Trivalent Chromium	4.27	1.02	mg/kg	1	1899096	VH1	07/18/2019	07/24/2019	
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Total Metals by 7471A

Mercury	ND	0.0115	mg/kg dry	1	1898498	MTM1	07/22/2019	07/23/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-27@0.5'

7/18/2019 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-13 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/19/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	107 %	70-130	"	"	"
Surrogate: Toluene-d8	101 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	99.5 %	70-130	"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019	Ua
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Surrogate: o-Terphenyl	74.0 %	50-150	"	"	"
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Metals (Saturated Paste Prep)

Calcium	1.64	me/L	1	[none]	07/19/2019	07/24/2019
Magnesium	0.47	"	"	"	"	"
Sodium	26.49	"	"	"	"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00347	mg/kg dry	1	1898661	JMB3	07/23/2019	07/24/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-27@0.5'

7/18/2019 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-13 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00347	mg/kg dry	1	1898661	JMB3	07/23/2019	07/24/2019	U
Anthracene	ND	0.00347	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00347	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00347	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00347	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.00347	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00347	"	"	"	JMB3	"	"	U
Chrysene	ND	0.00347	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	ND	0.00347	"	"	"	JMB3	"	"	U
Fluoranthene	ND	0.00347	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00347	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00347	"	"	"	JMB3	"	"	U
Naphthalene	ND	0.00347	"	"	"	JMB3	"	"	U
Phenanthrene	ND	0.00347	"	"	"	JMB3	"	"	U
Pyrene	ND	0.00347	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane 69 % 25-121 " " "

pH in Soil by EPA 9045D

pH 7.61 pH Units 1 B9G1807 OLAB 07/18/2019 07/18/2019

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-27@0.5'

7/18/2019 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-13 (Soil)

SAR by 20B Saturated Paste

SAR	25.79			1	[none]		07/19/2019	07/24/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.202	0.00500	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019	
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-28@0.5'

7/18/2019 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907267-14 (Soil)

BTEX/TVPH by EPA 8260D

Benzene	ND	0.00200	mg/kg	1	B9G1805	KDK	07/18/2019	07/19/2019	Ua
Toluene	ND	0.00200	"	"	"	KDK	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	KDK	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	KDK	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	KDK	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	111 %	70-130	"	"	"
Surrogate: Toluene-d8	99.2 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	98.8 %	70-130	"	"	"

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9G1806	KDK	07/18/2019	07/19/2019	Ua
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Surrogate: o-Terphenyl	77.9 %	50-150	"	"	"
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Metals (Saturated Paste Prep)

Calcium	1.86	me/L	1	[none]	07/19/2019	07/24/2019
Magnesium	0.83	"	"	"	"	"
Sodium	0.64	"	"	"	"	"

PAH by 8270D SIM

Acenaphthene	ND	0.00355	mg/kg dry	1	1898661	JMB3	07/23/2019	07/24/2019	U
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-28@0.5'

7/18/2019 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y907267-14 (Soil)

PAH by 8270D SIM

Acenaphthylene	ND	0.00355	mg/kg dry	1	1898661	JMB3	07/23/2019	07/24/2019	U
Anthracene	ND	0.00355	"	"	"	JMB3	"	"	U
Benzo(a)anthracene	ND	0.00355	"	"	"	JMB3	"	"	U
Benzo(a)pyrene	ND	0.00355	"	"	"	JMB3	"	"	U
Benzo(b)fluoranthene	ND	0.00355	"	"	"	JMB3	"	"	U
Benzo(ghi)perylene	ND	0.00355	"	"	"	JMB3	"	"	U
Benzo(k)fluoranthene	ND	0.00355	"	"	"	JMB3	"	"	U
Chrysene	ND	0.00355	"	"	"	JMB3	"	"	U
Dibenzo(a,h)anthracene	ND	0.00355	"	"	"	JMB3	"	"	U
Fluoranthene	ND	0.00355	"	"	"	JMB3	"	"	U
Fluorene	ND	0.00355	"	"	"	JMB3	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00355	"	"	"	JMB3	"	"	U
Naphthalene	ND	0.00355	"	"	"	JMB3	"	"	U
Phenanthrene	ND	0.00355	"	"	"	JMB3	"	"	U
Pyrene	ND	0.00355	"	"	"	JMB3	"	"	U

Surrogate: 5-alpha-Androstane 63 % 25-121 " " "

pH in Soil by EPA 9045D

pH 7.71 pH Units 1 B9G1807 OLAB 07/18/2019 07/18/2019

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-28@0.5'

7/18/2019 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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AAL, Inc.
Y907267-14 (Soil)

SAR by 20B Saturated Paste

SAR	0.55			1	[none]		07/19/2019	07/24/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0134	0.00504	mmhos/cm	1	B9G1808	OLAB	07/18/2019	07/18/2019	
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

SS-29@0.5'

7/18/2019 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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GEL Laboratories, LLC

Y907267-15 (Soil)

Total Metals by 6010C

Arsenic	1.58	3.04	mg/kg dry	1	1898718	TXT1	07/23/2019	07/24/2019	J
Barium	22.2	0.507	"	"	"	TXT1	"	"	
Cadmium	ND	0.507	"	"	"	TXT1	"	"	U
Chromium	3.33	1.01	"	"	"	TXT1	"	"	
Copper	2.77	2.03	"	"	"	TXT1	"	"	
Lead	5.86	2.03	"	"	"	TXT1	"	"	
Nickel	2.13	0.507	"	"	"	TXT1	"	"	
Selenium	ND	3.04	"	"	"	TXT1	"	"	U
Silver	ND	0.507	"	"	"	TXT1	"	"	U
Zinc	13.9	2.03	"	"	"	TXT1	"	"	

Total Metals by 7196A

Hexavalent Chromium	0.168	0.358	mg/kg dry	1	1898299	VH1	"	07/24/2019	J
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Total Metals by 7196A/6010

Trivalent Chromium	3.17	1.01	mg/kg	1	1899096	VH1	07/18/2019	07/24/2019	
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Total Metals by 7471A

Mercury	0.00473	0.0121	mg/kg dry	1	1898498	MTM1	07/22/2019	07/23/2019	J
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Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9G1805 - EPA 5030 (soil)										
Blank (B9G1805-BLK1)					Prepared: 07/18/2019 Analyzed: 07/18/2019					
Benzene	ND	0.00200	mg/kg							Ua
Toluene	ND	0.00200	"							Ua
Ethylbenzene	ND	0.00200	"							Ua
Xylenes, total	ND	0.00200	"							Ua
Gasoline Range Hydrocarbons	ND	0.200	"							Ua
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		109	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.7	70-130			

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9G1805 - EPA 5030 (soil)

LCS (B9G1805-BS1)

Prepared: 07/18/2019 Analyzed: 07/18/2019

Benzene	0.0992	0.00200	mg/kg	0.100		99.2	70-130			
Toluene	0.0993	0.00200	"	0.100		99.3	70-130			
Ethylbenzene	0.0995	0.00200	"	0.100		99.5	70-130			
m,p-Xylene	0.213	0.00400	"	0.200		107	70-130			
o-Xylene	0.0980	0.00200	"	0.100		98.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.7	70-130			

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9G1805 - EPA 5030 (soil)

Matrix Spike (B9G1805-MS1)		Source: Y907267-01			Prepared: 07/18/2019 Analyzed: 07/18/2019					
Benzene	0.0988	0.00200	mg/kg	0.100	ND	98.8	70-130			
Toluene	0.0965	0.00200	"	0.100	ND	96.5	70-130			
Ethylbenzene	0.0955	0.00200	"	0.100	ND	95.5	70-130			
m,p-Xylene	0.205	0.00400	"	0.200	ND	103	70-130			
o-Xylene	0.0954	0.00200	"	0.100	0.000400	95.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.5	70-130			

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9G1805 - EPA 5030 (soil)

Matrix Spike Dup (B9G1805-MSD1)		Source: Y907267-01			Prepared: 07/18/2019 Analyzed: 07/18/2019					
Benzene	0.0960	0.00200	mg/kg	0.100	ND	96.0	70-130	2.86	20	
Toluene	0.0957	0.00200	"	0.100	ND	95.7	70-130	0.770	20	
Ethylbenzene	0.0929	0.00200	"	0.100	ND	92.9	70-130	2.78	20	
m,p-Xylene	0.200	0.00400	"	0.200	ND	100	70-130	2.73	20	
o-Xylene	0.0929	0.00200	"	0.100	0.000400	92.5	70-130	2.68	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.6	70-130			

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Volatile Organic Compounds by GC/MS SW846 8260D - 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 B9G1806 - EPA 3580

Blank (B9G1806-BLK1)

Prepared: 07/18/2019 Analyzed: 07/18/2019

Diesel (C10-C28)	ND	50.0	mg/kg							Ua
Surrogate: o-Terphenyl	38		"	50.0		76.4	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Extractable Petroleum Hydrocarbons by 8015D - 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 B9G1806 - EPA 3580

LCS (B9G1806-BS1)

Prepared: 07/18/2019 Analyzed: 07/18/2019

Diesel (C10-C28)	1020	50.0	mg/kg	1000		102	70-130			
Surrogate: o-Terphenyl	50		"	50.0		101	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Extractable Petroleum Hydrocarbons by 8015D - 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 B9G1806 - EPA 3580

Matrix Spike (B9G1806-MS1)		Source: Y907267-01			Prepared: 07/18/2019 Analyzed: 07/18/2019					
Diesel (C10-C28)	881	50.0	mg/kg	1000	ND	88.1	70-130			
Surrogate: o-Terphenyl	45		"	50.0		89.1	50-150			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Extractable Petroleum Hydrocarbons by 8015D - 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 B9G1806 - EPA 3580

Matrix Spike Dup (B9G1806-MSD1)		Source: Y907267-01			Prepared: 07/18/2019 Analyzed: 07/18/2019					
Diesel (C10-C28)	826	50.0	mg/kg	1000	ND	82.6	70-130	6.46	35	
Surrogate: o-Terphenyl	41		"	50.0		81.6	50-150			

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Extractable Petroleum Hydrocarbons by 8015D - 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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Classical Chemistry Parameters - 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 B9G1807 - NO PREP

Duplicate (B9G1807-DUP1)		Source: Y907267-01			Prepared: 07/18/2019 Analyzed: 07/18/2019					
pH	7.09		pH Units		7.25			2.23	25	

Batch B9G1808 - NO PREP

Blank (B9G1808-BLK1)		Prepared: 07/18/2019 Analyzed: 07/18/2019								
Specific Conductance (EC)	0.00400	0.00500	mmhos/cm							
Duplicate (B9G1808-DUP1)		Source: Y907267-01			Prepared: 07/18/2019 Analyzed: 07/18/2019					
Specific Conductance (EC)	0.0500	0.00506	mmhos/cm		0.0556			10.6	25	

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

PAH by 8270D SIM - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1898661 - SW846 3541

BLANK (1204336763-BLK)

Prepared: 07/23/2019 Analyzed: 07/23/2019

Fluorene	ND	0.00333	mg/kg				-			U
Pyrene	ND	0.00333	"				-			U
Phenanthrene	ND	0.00333	"				-			U
Indeno(1,2,3-cd)pyrene	ND	0.00333	"				-			U
Fluoranthene	ND	0.00333	"				-			U
Dibenzo(a,h)anthracene	ND	0.00333	"				-			U
Chrysene	ND	0.00333	"				-			U
Benzo(k)fluoranthene	ND	0.00333	"				-			U
Benzo(b)fluoranthene	ND	0.00333	"				-			U
Benzo(a)pyrene	ND	0.00333	"				-			U
Benzo(a)anthracene	ND	0.00333	"				-			U
Anthracene	ND	0.00333	"				-			U
Acenaphthylene	ND	0.00333	"				-			U
Acenaphthene	ND	0.00333	"				-			U
Naphthalene	ND	0.00333	"				-			U
Benzo(ghi)perylene	ND	0.00333	"				-			U

Surrogate: 5-alpha-Androstane

0.115

" 0.166

69

25-121

LCS (1204336764-BKS)

Prepared: 07/23/2019 Analyzed: 07/23/2019

Fluoranthene	0.201	0.00333	mg/kg	0.333	60	43-116
Dibenzo(a,h)anthracene	0.286	0.00333	"	0.333	86	40-137
Fluorene	0.255	0.00333	"	0.333	77	42-113
Benzo(k)fluoranthene	0.242	0.00333	"	0.333	73	39-119
Naphthalene	0.250	0.00333	"	0.333	75	52-106
Acenaphthylene	0.254	0.00333	"	0.333	76	42-114
Indeno(1,2,3-cd)pyrene	0.284	0.00333	"	0.333	85	40-132
Benzo(ghi)perylene	0.244	0.00333	"	0.333	73	35-121

Origins Laboratory, Inc.



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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

PAH by 8270D SIM - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1898661 - SW846 3541

LCS (1204336764-BKS)

Prepared: 07/23/2019 Analyzed: 07/23/2019

Benzo(b)fluoranthene	0.257	0.00333	mg/kg	0.333		77	42-119
Benzo(a)pyrene	0.264	0.00333	"	0.333		79	42-123
Anthracene	0.264	0.00333	"	0.333		79	49-113
Acenaphthene	0.247	0.00333	"	0.333		74	48-107
Phenanthrene	0.241	0.00333	"	0.333		72	53-106
Benzo(a)anthracene	0.273	0.00333	"	0.333		82	51-118
Pyrene	0.302	0.00333	"	0.333		91	42-114
Chrysene	0.265	0.00333	"	0.333		80	53-108

Surrogate: 5-alpha-Androstane

0.117

"

0.166

70

25-121

MS (1204336765 S)

Source: Y907267-01

Prepared: 07/23/2019 Analyzed: 07/23/2019

Dibenzo(a,h)anthracene	0.299	0.00403	mg/kg dry	0.403	0.00483	73	16-139
Pyrene	0.331	0.00403	"	0.403	<0.00133	82	19-139
Phenanthrene	0.257	0.00403	"	0.403	<0.00133	64	27-124
Naphthalene	0.265	0.00403	"	0.403	<0.00133	66	29-122
Indeno(1,2,3-cd)pyrene	0.297	0.00403	"	0.403	0.00362	73	14-132
Fluoranthene	0.210	0.00403	"	0.403	<0.00133	52	21-122
Chrysene	0.274	0.00403	"	0.403	<0.00133	68	31-119
Benzo(k)fluoranthene	0.258	0.00403	"	0.403	<0.00133	64	26-130
Acenaphthylene	0.268	0.00403	"	0.403	<0.00133	67	27-122
Fluorene	0.269	0.00403	"	0.403	<0.00133	67	26-123
Acenaphthene	0.262	0.00403	"	0.403	<0.00133	65	29-118
Benzo(ghi)perylene	0.255	0.00403	"	0.403	0.00282	63	16-124
Anthracene	0.283	0.00403	"	0.403	<0.00133	70	29-127
Benzo(a)anthracene	0.295	0.00403	"	0.403	<0.00133	73	31-124
Benzo(a)pyrene	0.275	0.00403	"	0.403	<0.00133	68	24-129
Benzo(b)fluoranthene	0.273	0.00403	"	0.403	<0.00133	68	22-130

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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

PAH by 8270D SIM - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1898661 - SW846 3541										
MS (1204336765 S)		Source: Y907267-01			Prepared: 07/23/2019 Analyzed: 07/23/2019					
Surrogate: 5-alpha-Androstane	0.091		mg/kg dry	0.201	0.111	45	25-121			
MSD (1204336766 SD)		Source: Y907267-01			Prepared: 07/23/2019 Analyzed: 07/23/2019					
Benzo(k)fluoranthene	0.309	0.00405	mg/kg dry	0.405	<0.00134	76	26-130	18	30	
Naphthalene	0.316	0.00405	"	0.405	<0.00134	78	29-122	17	30	
Indeno(1,2,3-cd)pyrene	0.333	0.00405	"	0.405	0.00362	81	14-132	12	30	
Fluorene	0.315	0.00405	"	0.405	<0.00134	78	26-123	15	30	
Fluoranthene	0.242	0.00405	"	0.405	<0.00134	60	21-122	14	30	
Dibenzo(a,h)anthracene	0.334	0.00405	"	0.405	0.00483	81	16-139	11	30	
Chrysene	0.321	0.00405	"	0.405	<0.00134	79	31-119	16	30	
Phenanthrene	0.302	0.00405	"	0.405	<0.00134	74	27-124	16	30	
Pyrene	0.361	0.00405	"	0.405	<0.00134	89	19-139	9	30	
Benzo(ghi)perylene	0.280	0.00405	"	0.405	0.00282	68	16-124	9	30	
Acenaphthene	0.308	0.00405	"	0.405	<0.00134	76	29-118	16	30	
Acenaphthylene	0.309	0.00405	"	0.405	<0.00134	76	27-122	14	30	
Benzo(b)fluoranthene	0.313	0.00405	"	0.405	<0.00134	77	22-130	14	30	
Benzo(a)anthracene	0.336	0.00405	"	0.405	<0.00134	83	31-124	13	30	
Benzo(a)pyrene	0.320	0.00405	"	0.405	<0.00134	79	24-129	15	30	
Anthracene	0.331	0.00405	"	0.405	<0.00134	82	29-127	15	30	
Surrogate: 5-alpha-Androstane	0.132		"	0.202	0.111	65	25-121			

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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Total Metals by 6010C - Quality Control GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1898718 - SW846 3050B

BLANK (1204336941-BLK)

Prepared: 07/23/2019 Analyzed: 07/24/2019

Silver	ND	0.491	mg/kg				-			U
Selenium	ND	2.95	"				-			U
Nickel	ND	0.491	"				-			U
Lead	ND	1.96	"				-			U
Copper	ND	1.96	"				-			U
Chromium	ND	0.982	"				-			U
Cadmium	ND	0.491	"				-			U
Barium	ND	0.491	"				-			U
Arsenic	ND	2.95	"				-			U
Zinc	0.520	1.96	"				-			J

LCS (1204336942-BKS)

Prepared: 07/23/2019 Analyzed: 07/24/2019

Arsenic	42.1	2.79	mg/kg	46.5	90.6	80-120
Chromium	43.4	0.929	"	46.5	93.5	80-120
Copper	44.5	1.86	"	46.5	95.8	80-120
Lead	43.9	1.86	"	46.5	94.6	80-120
Nickel	43.3	0.465	"	46.5	93.2	80-120
Selenium	41.8	2.79	"	46.5	90	80-120
Silver	8.92	0.465	"	9.29	96	80-120
Zinc	43.0	1.86	"	46.5	92.6	80-120
Barium	44.4	0.465	"	46.5	95.5	80-120
Cadmium	43.6	0.465	"	46.5	93.9	80-120

DUP (1204336943 D)

Source: Y907267-03

Prepared: 07/23/2019 Analyzed: 07/24/2019

Copper	5.74	2.12	mg/kg dry	3.92	0-20	37.6	20	
Zinc	27.9	2.12	"	19.9	0-20	33.5	20	
Silver	ND	0.529	"	<0.106	0-20	NR	20	U

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1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Total Metals by 6010C - Quality Control GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1898718 - SW846 3050B

DUP (1204336943 D)			Source: Y907267-03			Prepared: 07/23/2019 Analyzed: 07/24/2019				
Selenium	ND	3.18	mg/kg dry		<0.529		0-20	54.5	20	U
Lead	6.69	2.12	"		5.00		0-20	28.9	20	
Chromium	6.86	1.06	"		5.02		0-20	30.9	20	
Cadmium	ND	0.529	"		<0.106		0-20	NR	20	U
Barium	57.8	0.529	"		41.4		0-20	33.2	20	
Arsenic	6.44	3.18	"		2.74		0-20	80.8	20	
Nickel	6.66	0.529	"		4.04		0-20	49	20	
MS (1204336944 S)			Source: Y907267-03			Prepared: 07/23/2019 Analyzed: 07/24/2019				
Zinc	65.0	2.19	mg/kg dry	54.7	19.9	82.5	75-125			
Silver	9.68	0.547	"	10.9	<0.109	88.5	75-125			
Selenium	45.6	3.28	"	54.7	<0.547	83.1	75-125			
Nickel	50.1	0.547	"	54.7	4.04	84.3	75-125			
Lead	51.2	2.19	"	54.7	5.00	84.6	75-125			
Copper	54.1	2.19	"	54.7	3.92	91.8	75-125			
Chromium	52.0	1.09	"	54.7	5.02	85.8	75-125			
Cadmium	46.3	0.547	"	54.7	<0.109	84.7	75-125			
Arsenic	47.4	3.28	"	54.7	2.74	81.7	75-125			
Barium	88.0	0.547	"	54.7	41.4	85.3	75-125			

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Project Number: 16204aa
Project: EWS #4

Total Metals by 7196A - Quality Control GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1898299 - SW846 3060A										
BLANK (1204335895-BLK)					Prepared: 07/23/2019 Analyzed: 07/24/2019					
Hexavalent Chromium	0.144	0.246	mg/kg				-			J
LCS (1204335896-BKS)					Prepared: 07/23/2019 Analyzed: 07/24/2019					
Hexavalent Chromium	3.55	0.360	mg/kg	3.60		98.6	80-120			
ILCS (1204335897-ILCS)					Prepared: 07/23/2019 Analyzed: 07/24/2019					
Hexavalent Chromium	4.92	0.292	mg/kg	5.85		84.1	80-120			
DUP (1204335898 D)					Source: 484816001 Prepared: 07/23/2019 Analyzed: 07/24/2019					
Hexavalent Chromium	0.974	0.322	mg/kg		0.936		0-50	3.92	50	
MS (1204335900 S)					Source: 484816001 Prepared: 07/23/2019 Analyzed: 07/24/2019					
Hexavalent Chromium	3.85	0.316	mg/kg	3.16	0.936	92.2	75-125			

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Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Total Metals by 7471A - Quality Control GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1898498 - SW846 7471A Prep										
BLANK (1204336422-BLK)					Prepared: 07/22/2019 Analyzed: 07/23/2019					
Mercury	ND	0.0111	mg/kg				-			U
LCS (1204336423-BKS)					Prepared: 07/22/2019 Analyzed: 07/23/2019					
Mercury	0.107	0.0114	mg/kg	0.114		94	80-120			
DUP (1204336424 D)					Prepared: 07/22/2019 Analyzed: 07/23/2019					
Mercury	0.011	0.0101	mg/kg		0.0131		0-20	17.4	20	
MS (1204336425 S)					Prepared: 07/22/2019 Analyzed: 07/23/2019					
Mercury	0.134	0.0113	mg/kg	0.113	0.0131	107	80-120			

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CGRS, Inc
1301 Academy Court
Fort Collins CO 80524

Drezden Kinnaird
Project Number: 16204aa
Project: EWS #4

Notes and Definitions

Ua Sample is Non-Detect.

U Result not detected above the detection limit

J Greater than the detection limit but less than the reporting limit

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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