

Nelson A6/A7  
Subsurface Site Assessment

July 7, 2015

Prepared for:

Whiting Petroleum Corporation

Prepared by:

Talon/LPE  
1811 East Mulberry St  
Fort Collins, CO 80524



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# 1 Introduction

Talon/LPE (Talon) was contracted by Whiting Petroleum Corporation (Whiting) to conduct site investigation assessment activities associated with a release identified at the Nelson A6/A7 tank battery site (Site) in Weld County, Colorado. The Site is located approximately 2 miles east, 3 miles north and 0.35 miles southeast of the intersection of County Road 110 and County Road 119 (**Attachment 1**). The Site is located at the center of the northwest quarter of the southeast quarter of Section 20, Township 10 North, Range 58 West, 6th Principal Meridian at 40°49'38"N, 103°53'43"W and is identified by the State of Colorado Oil and Gas Conservation Commission (COGCC) as Spill/Release Point Facility ID 438672.

The following document is a chronological assessment of site investigation activities from multiple consultants associated with a flowline release. Activities included collection of excavation floor and sidewall confirmation samples, shredding stockpiled soil, on-site soil borings and preparation of this summary report.

## 2 Objective

The primary objective of this investigation is to determine the nature and extent of soil and/or groundwater impacts resulting from a recent flowline release. The release date is determined to be unknown; however, it was first discovered and reported in July 2014. Additionally, this report is to document the remedial activities which have occurred to remove and treat hydrocarbon impacted soils.

## 3 Site Characteristics

### 3.1 Geography

The site is located in the Pawnee Grasslands in Weld County, which is the northeastern part of Colorado. The Grasslands are part of the Colorado Eastern Plains and are relatively flat with the exception of the Pawnee Creek which drains into the South Platte River.

### 3.2 Geologic Summary

Surficial geology surrounding the area consists of Tertiary age fluvial deposits of the lower Ogallala Formation. More specifically, these deposits are Miocene in age and are composed of gray to brown and semi-consolidated, ashy sands and silt beds with volcanic ash beds. Deposited material hardened into sandstone and siltstone which are grouped into three formations: White River, Arikaree, and Ogallala.

### 3.3 Groundwater

Groundwater was not encountered during excavation or soil boring activities which reached a maximum depth of 35 feet below ground surface (ft bgs). Based on the area topography and regional surface water drainages, the expected groundwater flow is south-southeast. According to the Colorado Division of Water Resources Website, there are no water wells within 1,000 foot radius of the Site.

## 4 Previous Investigation Performed by Other Consultants

### 4.1 Olsson Associates

On July 31, 2014, Form 19 associated with Spill/Release ID #438404 was submitted to COGCC to report a flowline leak immediately adjacent to the Nelson A7 well pad. It was discovered utilizing a forward looking infrared (FLIR) camera. No free liquids were observed. It was reported on the Form 19 that impacted soils greater than COGCC Table 910-1 were excavated and backfilled with native clean soil and the line was repaired. It was estimated that between approximately 0.5 to 3 barrels (bbls) were lost.

While the flowline was being replaced, historical staining was observed inside the tank battery on the flowline at Nelson A7. On August 19, 2014, initial excavation and soil sampling activities were conducted to determine the

extent of the release. Olsson Associates (Olsson) collected five soil samples from the impacted area to the northeast area of the tank battery (Figure 2 in **Attachment 1**). The collected samples were analyzed for Total Petroleum Hydrocarbons (TPH) via Gasoline Range Organics (GRO) and Diesel Range Organics (DRO) method SW8015 and for benzene, ethylbenzene, toluene, and total xylenes (BTEX) via method SW8260 at Origins Laboratory, Inc. (Origins) of Denver, Colorado. All analytical results were below COGCC Table 910-1 concentration levels (Table 1 in **Attachment 2**).

It was estimated that 7 bbls of crude oil had been released. Impacted soils near the tank battery were excavated and transported offsite for disposal at a commercial landfill (Waste Management's North Weld County Landfill in Ault, Colorado). It was reported that haul trucks were used to transport and dispose of the soils. The excavation was filled with clean backfill and gravel and re-graded to match pre-existing conditions. Based upon analytical results and the volume of soil excavated, it was determined that this release meets the reporting requirements for the COGCC. Therefore, on August 24, 2014, another Form 19 was submitted as Spill/Release # 438672.

## **4.2 Whiting**

On March 18, 2015, Whiting personnel collected six soil samples for additional confirmation purposes as Olsson collected soil confirmation samples at shallow intervals only. Whiting utilized a hydro-vac to expose the new flowline and excavated the areas that were not previously sampled by Olsson. Figure 3 in **Attachment 1** shows the locations and analytical results of the soil samples collected by Whiting. Additionally, one soil sample was collected from the stockpile. The collected soil samples were analyzed for TPH via GRO and DRO method SW8015 and BTEX via method SW8260 at ALS Environmental (ALS) of Fort Collins, Colorado. A copy of the laboratory report and chain of custody documentation is included in **Attachment 4**.

Soil sample CS10 at 7 ft bgs, collected from the northeastern side of the tank battery location (Figure 3 in **Attachment 1**), exhibited a TPH concentration of 500 mg/kg, which is at the threshold of COGCC Table 910-1 concentration levels. Soil sample CS12 at 9 ft bgs, collected from the eastern edge of the tank battery location, exhibited benzene (12 mg/kg), toluene (170 mg/kg), total xylenes (270 mg/kg) and TPH (7,500 mg/kg) concentrations above COGCC Table 910-1 concentration levels.

On March 23, 2015, Talon performed soil shredding of 83 cubic yards of hydrocarbon impacted soil at the Site which were stockpiled from the excavation activities performed by Whiting. Additionally, a 5% hydrogen peroxide solution was utilized to chemically oxidize the hydrocarbons. Following the remedial activities, Talon collected a confirmation soil sample on March 25, 2015 to confirm all hydrocarbons had been remediated from the shredded stockpile. The collected sample was analyzed for TPH via GRO and DRO method SW8015 at ALS. All analytical results from the confirmation soil sample were below COGCC Table 910-1 concentration levels.

## **5 Current Field Investigation**

At the request of Whiting, Talon performed this field investigation to further determine if impacts remained at the Site. Between April 14 and 16, 2015, Talon conducted soil boring activities. Seven borings, as shown on Figure 4 in **Attachment 1**, were drilled to a depth of 25 to 35 ft bgs to define vertical and horizontal extent of impacts.

During field drilling activities, soil samples were field screened for volatile organic compounds (VOCs) using a photoionization detector (PID) to determine any areas of impacts. Boring logs detailing observed lithology and PID values are included in **Attachment 3**. Based on the PID values, soil samples were collected from the borings from depths ranging between 0-5 ft bgs and 30-35 ft bgs. A total of 21 soil samples were analyzed for TPH via GRO and DRO method SW8015 and BTEX via method SW8260 at ALS. A copy of the laboratory report and chain of custody documentation is included in **Attachment 4**.

### **5.1 Discussion of Results**

Table 1 in **Attachment 2** summarizes the laboratory analytical results. Soil sample SB-1 at 0-5 ft bgs exhibited benzene concentrations (0.25 mg/kg) and TPH (3,490 mg/kg) above the COGCC Table 910-1 concentration levels. All other analytical results were below COGCC Table 910-1 concentration levels.

Groundwater was not encountered during Site activities; therefore, groundwater samples were not collected.

## 6 Remedial Activities

Whiting performed soil excavation activities near soil samples CS10 and CS12 to remove the hydrocarbon impacted soils. On June 4, 2015, Talon personnel collected confirmation soil samples. Soil samples FS-1 at 8 ft bgs and F-2 at 6 ft bgs were collected from the floor of the excavated areas. The collected samples were analyzed for TPH via GRO and DRO method SW8015 and BTEX via method SW8260 at ALS. A copy of the laboratory report and chain of custody documentation is included in **Attachment 4**. The excavated soils were stockpiled onsite until mechanical soil shredding and chemical oxidation could be completed.

Analytical results of the confirmation soil samples indicated that soil sample FS-1 at 8 ft bgs had a benzene concentration of 0.42 mg/kg, which is above the COGCC Table 910-1 concentration level. All remaining analytical results were below laboratory reporting limits or COGCC Table 910-1 concentration levels.

On June 25, 2015, Talon oversaw M&E Trucking, LLC (M&E) perform excavation to remove impacted soil near FS-1. The excavation reached the limit of its extent at 13 ft bgs. Soil sample FS-3 at 13 ft bgs was collected from the floor of the excavation and was analyzed for TPH via GRO and DRO method SW8015 and BTEX via method SW8260 at ALS. A copy of the laboratory report and chain of custody documentation is included in **Attachment 4**. The excavated soils were stockpiled onsite until mechanical soil shredding and chemical oxidation could be completed.

Analytical results for soil sample FS-3 for TPH were below laboratory reporting limits. The remaining analytical results were below COGCC Table 910-1 concentration levels. These results indicate that the excavation activities provided complete removal of impacted soils.

On June 27, 2015, Talon personnel performed soil shredding of approximately 131 cubic yards of impacted soil. On July 1, 2015, Talon collected two confirmation soil samples from the shredded stockpile to ensure that the hydrocarbon impacted soils had been remediated to the maximum practical extent. The collected samples were analyzed for TPH via GRO and DRO method SW8015 and BTEX via method SW8260 at ALS. A copy of the laboratory report and chain of custody documentation is included in **Attachment 4**. All analytical results from the shredded stockpile confirmation samples were below COGCC Table 910-1 concentration levels.

## 7 Conclusions & Recommendations

The objective of this report was to document the nature and extent of the historical impacts from the Nelson A6/A7 tank battery location as well as the remedial activities that have occurred.

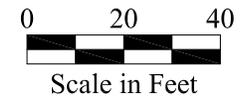
Whiting collected six soil samples in areas that were not previously sampled by Olsson. Soil sample CS10 at 7 ft bgs, collected from the northeastern side of the tank battery location, exhibited a TPH concentration of 500 mg/kg, which is at the threshold of COGCC Table 910-1 concentration levels. Soil sample CS12 at 9 ft bgs, collected from the eastern edge of the tank battery location, exhibited benzene (12 mg/kg), toluene (170 mg/kg), total xylenes (270 mg/kg) and TPH (7,500 mg/kg) concentrations above COGCC Table 910-1 concentration levels.

Talon installed seven borings to assess any remaining soil or groundwater impacts from this release. Soil sample SB-1 at 0-5 ft bgs exhibited benzene concentrations (0.25 mg/kg) and TPH (3,490 mg/kg) above the COGCC Table 910-1 concentration levels. This soil boring is located at the eastern edge of the tank battery location.

Remedial activities that have occurred include excavation, soil shredding, and confirmation soil sampling. Analytical results from the most recent excavation indicate that all impacted soils have been removed and stockpiled onsite. Talon has performed soil shredding on the stockpile and collected confirmation soil samples to verify the shredding remediated the soils to below COGCC standards. All analytical results from the confirmation soil samples were below COGCC standards, indicating the soil has been remediated.

All areas with elevated analytical results have been excavated and either disposed offsite or treated onsite via mechanical shredding.

**Attachment 1**  
**Figures**

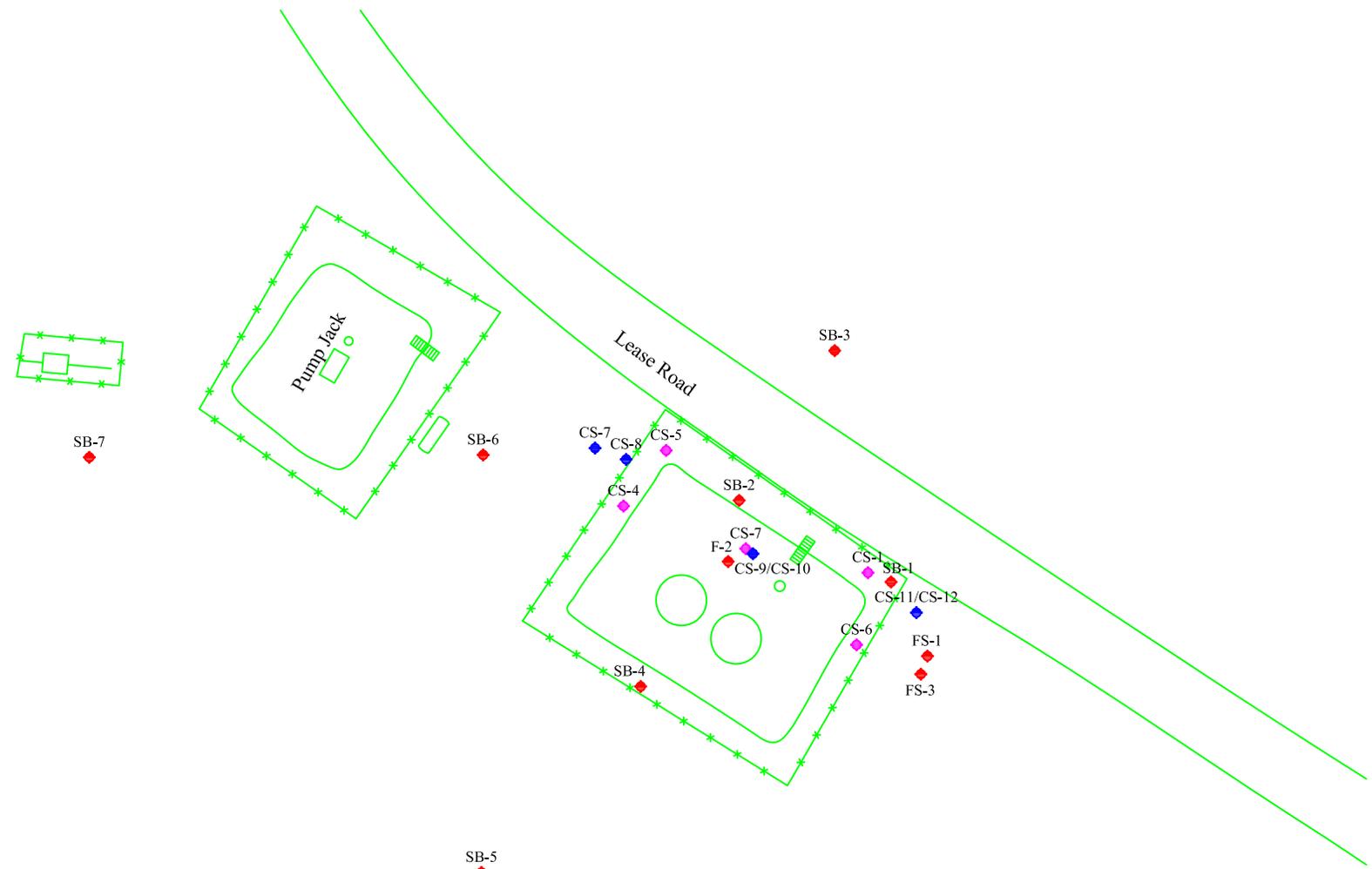


**Legend**

- ◆ - Talon/LPE Sample Location
- ◆ - Whiting Sample Location
- ◆ - Olsson Sample Location

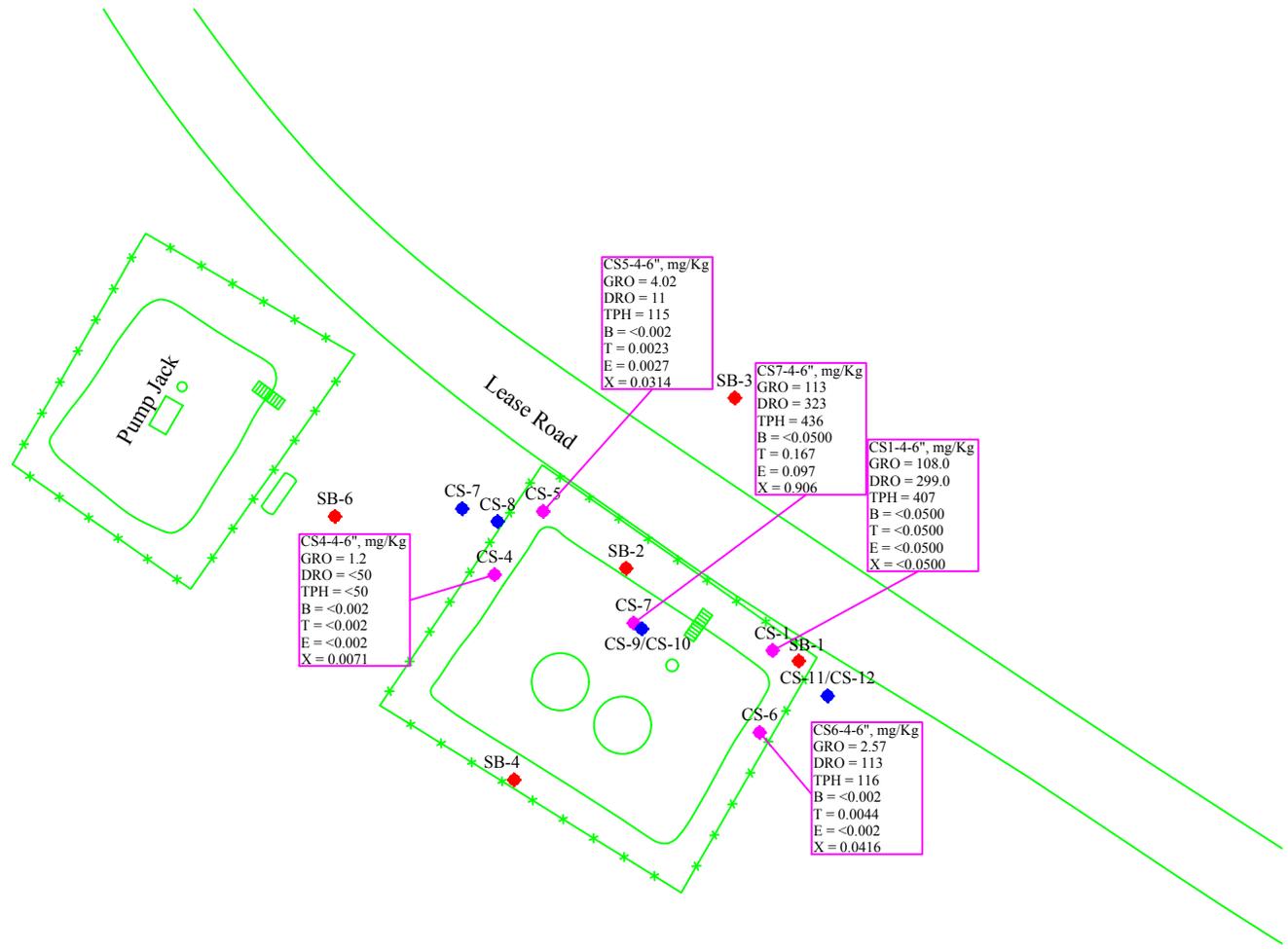
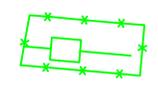
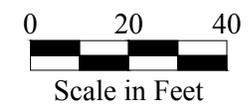
COGCC Levels

- TPH = 500
- B = 0.17
- T = 85
- E = 100
- X = 175



Date: 07/01/2015  
Scale: 1" = 40'  
Drawn By: TJS

Nelson A-6 A-7  
Whiting Oil & Gas Corporation  
Weld County, Colorado  
Figure 1 - Site Plan



CS4-4-6", mg/Kg  
GRO = 1.2  
DRO = <50  
TPH = <50  
B = <0.002  
T = <0.002  
E = <0.002  
X = 0.0071

CS5-4-6", mg/Kg  
GRO = 4.02  
DRO = 11  
TPH = 115  
B = <0.002  
T = 0.0023  
E = 0.0027  
X = 0.0314

CS7-4-6", mg/Kg  
GRO = 113  
DRO = 323  
TPH = 436  
B = <0.0500  
T = 0.167  
E = 0.097  
X = 0.906

CS1-4-6", mg/Kg  
GRO = 108.0  
DRO = 299.0  
TPH = 407  
B = <0.0500  
T = <0.0500  
E = <0.0500  
X = <0.0500

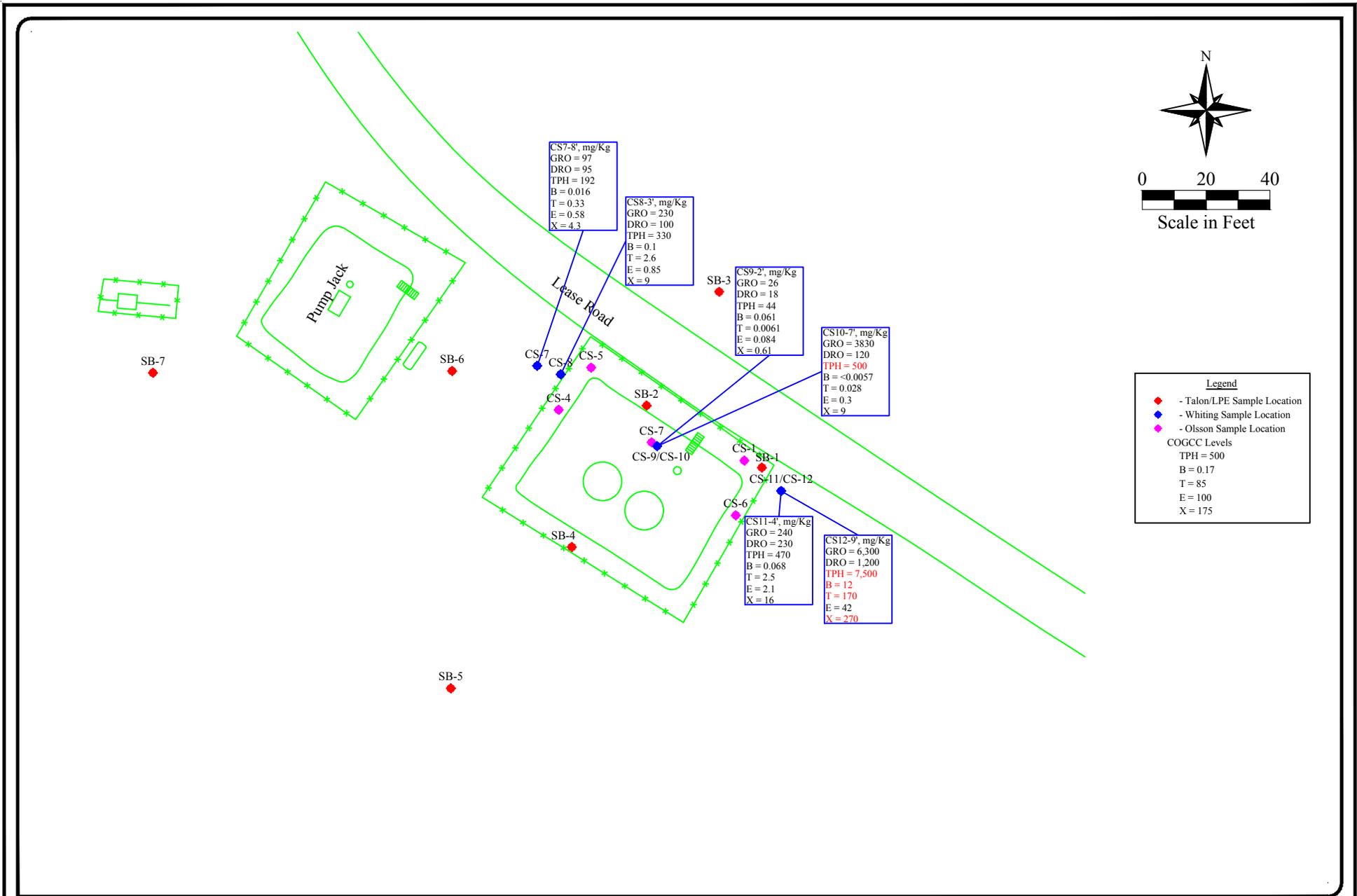
CS6-4-6", mg/Kg  
GRO = 2.57  
DRO = 113  
TPH = 116  
B = <0.002  
T = 0.0044  
E = <0.002  
X = 0.0416

Legend	
◆ (Red)	- Talon/LPE Sample Location
◆ (Blue)	- Whiting Sample Location
◆ (Purple)	- Olsson Sample Location
COGCC Levels	
TPH = 500	
B = 0.17	
T = 85	
E = 100	
X = 175	



Date: 06/11/2015  
Scale: 1" = 40'  
Drawn By: TJS

Nelson A-6 A-7  
Whiting Oil & Gas Corporation  
Weld County, Colorado  
Figure 2 - Soil Concentration Map - Olsson Associates (04/14-16/2015)



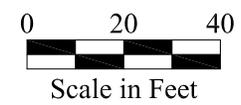
Date: 06/11/2015

Scale: 1" = 40'

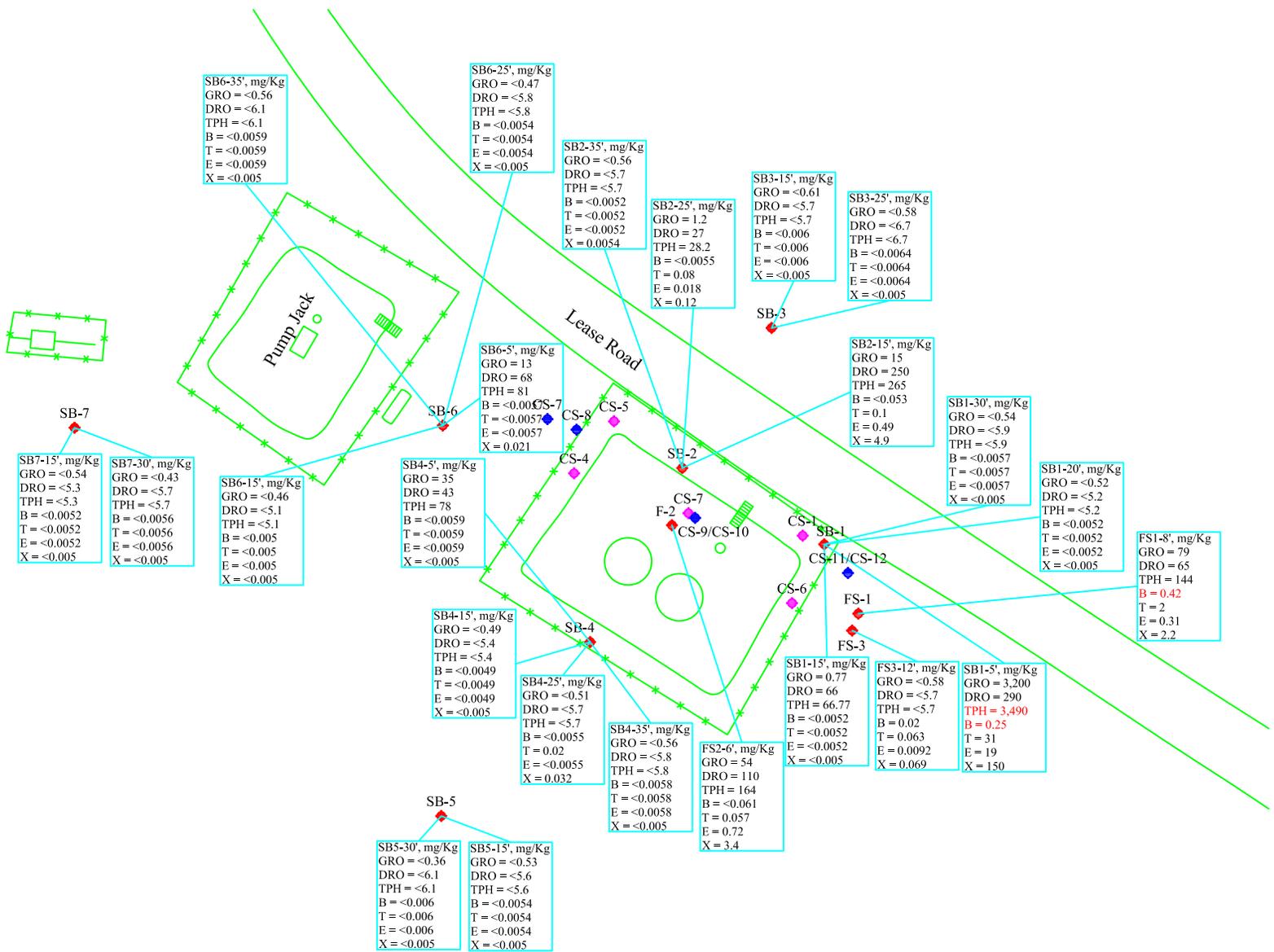
Drawn By: TJS

Nelson A-6 A-7  
Whiting Oil & Gas Corporation  
Weld County, Colorado

Figure 3 - Soil Concentration Map - Whiting Petroleum Corp. (04/14-16/2015)

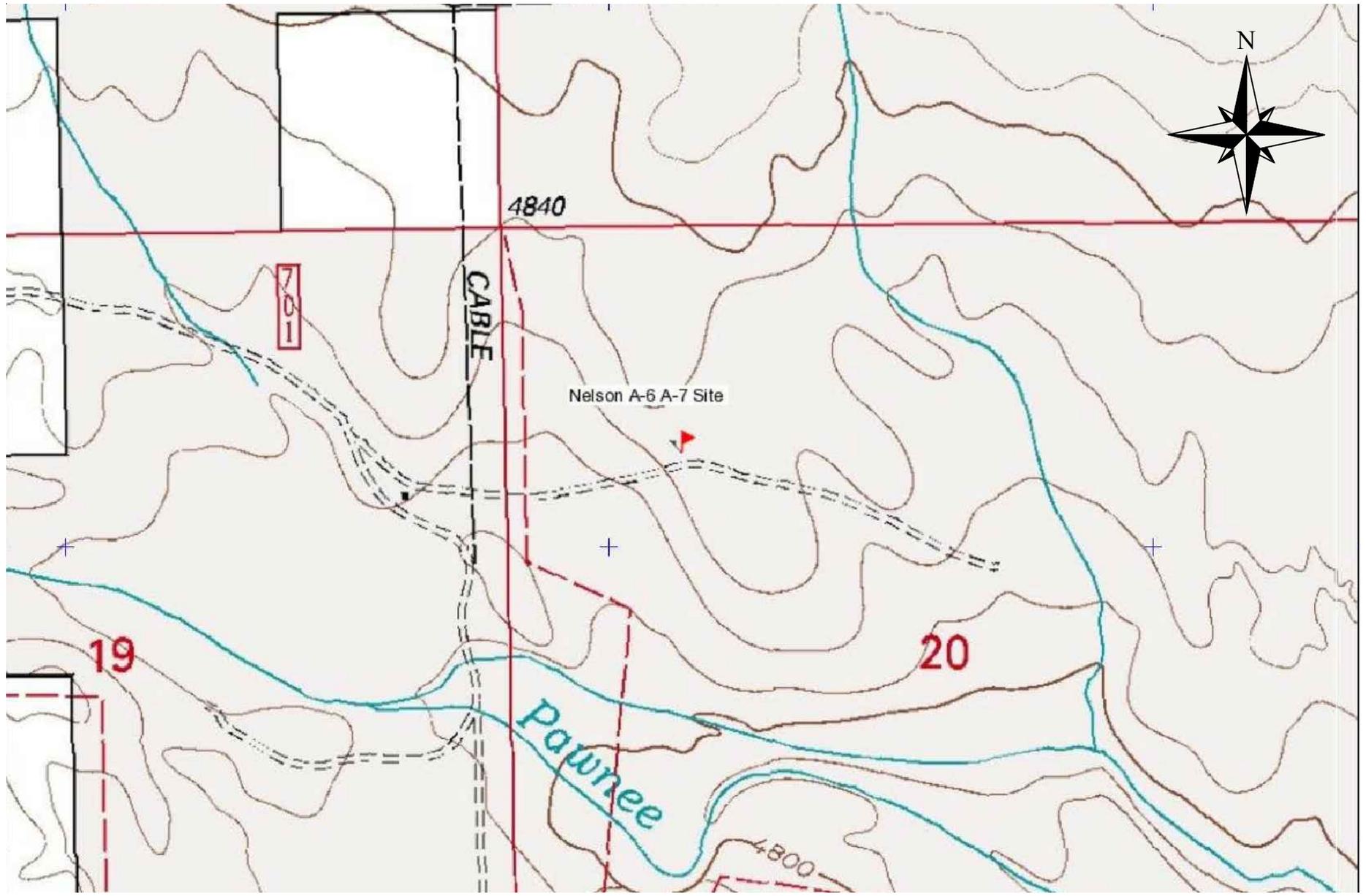


Legend	
◆ (Red Diamond)	- Talon/LPE Sample Location
◆ (Blue Diamond)	- Whiting Sample Location
◆ (Purple Diamond)	- Olsson Sample Location
COGCC Levels	
	TPH = 500
	B = 0.17
	T = 85
	E = 100
	X = 175



Date: 07/01/2015  
 Scale: 1" = 40'  
 Drawn By: TJS

Nelson A-6 A-7  
 Whiting Oil & Gas Corporation  
 Weld County, Colorado  
 Figure 4 - Soil Concentration Map - Talon/LPE (04/14 & 06-04/2015)



Date: 06/11/2015  
Scale: 1" = 10,000'  
Drawn By: TJS

Nelson A-6 A-7  
Whiting Oil & Gas Corporation  
Weld County, Colorado  
Figure 5 - Topographic Map

**Attachment 2**  
**Analytical Table**



Table 1 - Soil Analytical Data

Whiting Oil and Gas Corporation  
Nelson A6 A7  
Weld County, Colorado

Sample ID	Comment	Lab ID	Date Sampled	Concentration (mg/kg)						
				Benzene	Toluene	Ethyl-Benzene	Xylenes	GRO	DRO	TPH
COGCC Table 910-1 Concentration Levels				0.17	85	100	175	NA	NA	500
Samples Collected by Olsson Associates										
CS-1 - 4-6"	Confirmation Sample northeast of tank battery area following observed staining	X408183-01	8/19/2014	<0.0500	<0.0500	<0.0500	<0.0500	108.0	299.0	407
CS-4 - 4-6"		X408183-02	8/19/2014	<0.002	<0.002	<0.002	0.0071	1.2	<50	<50
CS-5 - 4-6"		X408183-03	8/19/2014	<0.002	0.0023	0.0027	0.0314	4.02	111	115
CS-6 - 4-6"		X408183-04	8/19/2014	<0.002	0.0044	<0.002	0.0416	2.57	113	116
CS-7 - 4-6"		X408183-05	8/19/2014	<0.0500	0.167	0.097	0.906	113	323	436
Samples Collected by Whiting Petroleum Corporation										
CS7-8'	Confirmation Sample northeast	1503463-1	3/18/2015	0.016	0.33	0.58	4.3	97	95	192
CS8-3'	Confirmation Sample northeast	1503463-2	3/18/2015	0.1	2.6	0.85	9	230	100	330
CS9-2'	Confirmation Sample northeast	1503463-3	3/18/2015	0.061	0.0061	0.084	0.61	26	18	44
CS10-7'	Confirmation Sample northeast	1503463-4	3/18/2015	<0.0057	0.028	0.3	9	380	120	500
CS11-4'	Confirmation Sample northeast	1503463-5	3/18/2015	0.068	2.5	2.1	16	240	230	470
CS12-9'	Confirmation Sample northeast	1503463-6	3/18/2015	12	170	42	270	6300	1200	7500
SP-1	Stockpile	1503463-7	3/18/2015	0.064	0.42	0.1	1.4	48	10	58
Samples Collected by Talon/LPE										
SB-1 - 0-5'	Investigative Soil Boring	1504425-1	04/14/15	0.25	31	19	150	3200	290	3490
SB-1 - 10-15'	Investigative Soil Boring	1504425-2	04/14/15	<0.0052	<0.0052	<0.0052	<0.005	0.77	66	66.77
SB-1 - 15-20'	Investigative Soil Boring	1504425-3	04/14/15	<0.0052	<0.0052	<0.0052	<0.005	<0.52	<5.2	<5.2
SB-1 - 25-30'	Investigative Soil Boring	1504425-4	04/14/15	<0.0057	<0.0057	<0.0057	<0.005	<0.54	<5.9	<5.9
SB-2 - 10-15'	Investigative Soil Boring	1504425-5	04/15/15	<0.053	0.1	0.49	4.9	15	250	265
SB-2 - 20-25'	Investigative Soil Boring	1504425-6	04/15/15	<0.0055	0.08	0.018	0.12	1.2	27	28.2
SB-2 - 30-35'	Investigative Soil Boring	1504425-7	04/15/15	<0.0052	<0.0052	<0.0052	0.0054	<0.56	<5.7	<5.7
SB-3 - 10-15'	Investigative Soil Boring	1504425-8	04/15/15	<0.006	<0.006	<0.006	<0.005	<0.61	<5.7	<5.7
SB-3 - 20-25'	Investigative Soil Boring	1504425-9	04/15/15	<0.0064	<0.0064	<0.0064	<0.005	<0.58	<6.7	<6.7
SB-4 - 0-5'	Investigative Soil Boring	1504425-10	04/15/15	<0.0059	<0.0059	<0.0059	<0.005	35	43	78
SB-4 - 10-15'	Investigative Soil Boring	1504425-11	04/15/15	<0.0049	<0.0049	<0.0049	<0.005	<0.49	<5.4	<5.4
SB-4 - 20-25'	Investigative Soil Boring	1504425-12	04/15/15	<0.0055	0.02	<0.0055	0.032	<0.51	<5.7	<5.7
SB-4 - 30-35'	Investigative Soil Boring	1504425-13	04/15/15	<0.0058	<0.0058	<0.0058	<0.005	<0.56	<5.8	<5.8
SB-5 - 10-15'	Investigative Soil Boring	1504425-14	04/15/15	<0.0054	<0.0054	<0.0054	<0.005	<0.53	<5.6	<5.6
SB-5 - 25-30'	Investigative Soil Boring	1504425-15	04/15/15	<0.006	<0.006	<0.006	<0.005	<0.36	<6.1	<6.1
SB-6 - 10-15'	Investigative Soil Boring	1504425-16	04/16/15	<0.0057	<0.0057	<0.0057	0.021	13	68	81
SB-6 - 10-15'	Investigative Soil Boring	1504425-17	04/16/15	<0.005	<0.005	<0.005	<0.005	<0.46	<5.1	<5.1
SB-6 - 20-25'	Investigative Soil Boring	1504425-18	04/16/15	<0.0054	<0.0054	<0.0054	<0.005	<0.47	<5.8	<5.8
SB-6 - 30-35'	Investigative Soil Boring	1504425-19	04/16/15	<0.0059	<0.0059	<0.0059	<0.005	<0.56	<6.1	<6.1
SB-7 - 10-15'	Investigative Soil Boring	1504425-20	04/16/15	<0.0052	<0.0052	<0.0052	<0.005	<0.54	<5.3	<5.3
SB-7 - 25-30'	Investigative Soil Boring	1504425-21	04/16/15	<0.0056	<0.0056	<0.0056	<0.005	<0.43	<5.7	<5.7
FS-1 - 8'	Excavation floor	1506113-1	06/04/15	0.42	2	0.31	2.2	79	65	144



**Table 1 - Soil Analytical Data**

**Whiting Oil and Gas Corporation  
Nelson A6 A7  
Weld County, Colorado**

Sample ID	Comment	Lab ID	Date Sampled	Concentration (mg/kg)						
				Benzene	Toluene	Ethyl-Benzene	Xylenes	GRO	DRO	TPH
<b>COGCC Table 910-1 Concentration Levels</b>				<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>NA</b>	<b>NA</b>	<b>500</b>
F-2 - 6'	Excavation floor	1506113-2	06/04/15	<0.061	0.057	0.72	3.4	54	110	164
FS-3 - 12'	Excavation floor	1506466-1	06/24/15	0.02	0.063	0.0092	0.069	<0.58	<5.7	<5.7
Stockpile-A	Post-shredding confirmation	1507015-1	07/01/15	<0.005	<0.005	<0.005	<0.005	0.46	60	60.46
Stockpile-B	Post-shredding confirmation	1507015-2	07/01/15	<0.0047	<0.0047	<0.0047	<0.005	0.4	61	61.4

mg/kg - milligrams per kilogram

< - Analytical result is less than the reporting limit

COGCC - Colorado Oil and Gas Conservation Commission

GRO - Gasoline Range Organics

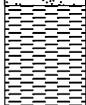
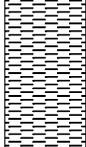
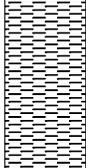
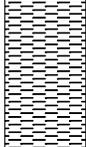
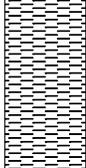
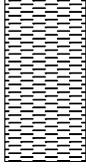
DRO - Diesel Range Organics

TPH - Total Petroleum Hydrocarbons (Combined GRO/DRO)

**Attachment 3**  
**Boring Logs**

# SOIL BORING / MONITORING WELL LOG

PROJECT: <u>Nelson A-6/A-7</u>	DRILLING COMPANY: <u>Talon/LPE</u>
PROJECT NUMBER: <u>701530.024.01</u>	DRILLER: <u>Ronnie Rodriguez</u>
CLIENT: <u>Whiting Oil &amp; Gas Corporation</u>	DRILLING METHOD: <u>Hollow Stem Auger</u>
BORING / WELL NUMBER: <u>SB-1</u>	BORE HOLE DIAMETER: <u>7 7/8"</u>
TOTAL DEPTH: <u>30</u>	SCREEN: Diam. _____ Length _____ Slot Size _____
SURFACE ELEVATION: _____	CASING: Diam. _____ Length _____ Type _____
GEOLOGIST: <u>Tim Wilhelm</u>	DATE DRILLED: <u>April 14, 2015</u>

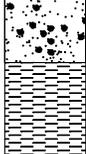
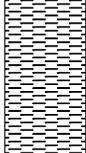
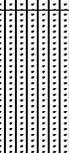
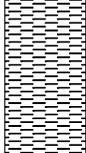
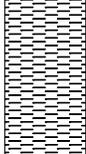
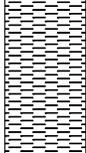
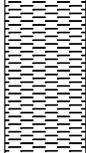
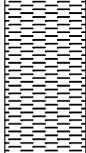
Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0							90% Fine Grained Sand, Poorly Graded, No Moisture, Strong Odor, No Plasticity, 10YR 7/1 Light Grey	0
6			1,645			5'	90% Fine Grained, Sand, Poorly Graded, No Moisture, Moderate Odor, No Plasticity, 10YR 7/3 Very Pale Brown	6
12			1,217			10'	90% Fine Grained Sand, Poorly Graded, No Moisture, Moderate Odor, No Plasticity, GLEY1 7/1 Light Greenish Grey	12
18			1,450					18
24			133.7			20'	80% Fine Grained Sand & Silt, Poorly Graded Clay, No Moisture, No Odor, 5Y 8/3 Pale Yellow	24
30			32.5			25'	80% Fine Grained Sand & Silt, Poorly Graded Clay, Rock Fragments, No Moisture, No Odor, 5Y 7/3 Pale Yellow	30
30			11.4			30'	Bottom of Hole	30
36								36

REMARKS: THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT



# SOIL BORING / MONITORING WELL LOG

PROJECT: <u>Nelson A-6/A-7</u>	DRILLING COMPANY: <u>Talon/LPE</u>
PROJECT NUMBER: <u>701530.024.01</u>	DRILLER: <u>Ronnie Rodriguez</u>
CLIENT: <u>Whiting Oil &amp; Gas Corporation</u>	DRILLING METHOD: <u>Hollow Stem Auger</u>
BORING / WELL NUMBER: <u>SB-2</u>	BORE HOLE DIAMETER: <u>7 7/8"</u>
TOTAL DEPTH: <u>35</u>	SCREEN: Diam. _____ Length _____ Slot Size _____
SURFACE ELEVATION: _____	CASING: Diam. _____ Length _____ Type _____
GEOLOGIST: <u>Tim Wilhelm</u>	DATE DRILLED: <u>April 15, 2015</u>

Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0							70% Fine Grained Sand & Silt, Rock Fragments, No Moisture, Slight Odor, Clay, Odor is that of Old, 10YR 4/3 Brown	0
6			1.1			5'	90% Fine Grained Sand & Sit, Poorly Graded, Slight Moisture, Old Odor, No Plasticity, GLEY 5/1 Greenish Grey	6
12			1,549			10'	95% Fine Grained Sand, Poorly Graded, No Moisture, Strong Odor, NO Plasticity, GLEY 6/1 Greenish Grey	12
18			1,681			15'	95% Fine Grained Sand, Poorly Graded, No Moisture, Strong Odor, No Plasticity, 10YR 7/2 Light Grey	18
24			975			20'	90% Fine Grained Sand & Silt, Poorly Graded, No Moisture, Odor, No Plasticity, 2.5Y 6/4 Light Yellowish Brown	24
30			1,541			25'	80% Fine Grained Sand & Silt, Poorly Graded, No Moisture, Slight Odor, No Plasticity, 2.5Y 6/3 Light Yellowish Brown/ Also has Strands of 5YR 4/3 Reddish Brown	30
36			178.4			30'	80% Fine Grained Sand & Silt, Poorly Graded, No Moisture, No Plasticity, GLEY 6/1 Greenish Grey w/5YR 4/3 Reddish Brown	30
			37.5			35'	Bottom of Hole	36

REMARKS: THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT



# SOIL BORING / MONITORING WELL LOG

PROJECT: <u>Nelson A-6/A-7</u>	DRILLING COMPANY: <u>Talon/LPE</u>
PROJECT NUMBER: <u>701530.024.01</u>	DRILLER: <u>Ronnie Rodriguez</u>
CLIENT: <u>Whiting Oil &amp; Gas Corporation</u>	DRILLING METHOD: <u>Hollow Stem Auger</u>
BORING / WELL NUMBER: <u>SB-3</u>	BORE HOLE DIAMETER: <u>7 7/8"</u>
TOTAL DEPTH: <u>25</u>	SCREEN: Diam. _____ Length _____ Slot Size _____
SURFACE ELEVATION: _____	CASING: Diam. _____ Length _____ Type _____
GEOLOGIST: <u>Tim Wilhelm</u>	DATE DRILLED: <u>April 15, 2015</u>

Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0							90% Fine Grained Sand, No Moisture, No Odor, No Plasticity, Soft, 10YR 6/2 Light Brownish Grey	0
6			17.5			5'	90% Fine Grained Sand, No Moisture, No Odor, Soft, 10YR 6/3 Pale Brown	6
12			35.3			10'	90% Fine Grained Sand, No Moisture, Slight Odor, No Plasticity, Soft, 10YR 7/1 Light Grey	12
18			218.7			15'	90% Fine Grained Sand, No MOisture, No Odor, No Plasticity, Soft, 10YR 5/4 Yellowish Brown	18
24			13.1			20'	90% Fine Grained Sand, No Moisture, No Odor, Soft, 10YR 5/4 Yellowish Brown	24
30			5.3			25'	Bottom of Hole	30
36								36

REMARKS: THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT



## SOIL BORING / MONITORING WELL LOG

PROJECT: <u>Nelson A-6/A-7</u>	DRILLING COMPANY: <u>Talon/LPE</u>
PROJECT NUMBER: <u>701530.024.01</u>	DRILLER: <u>Ronnie Rodriguez</u>
CLIENT: <u>Whiting Oil &amp; Gas Corporation</u>	DRILLING METHOD: <u>Hollow Stem Auger</u>
BORING / WELL NUMBER: <u>SB-4</u>	BORE HOLE DIAMETER: <u>7 7/8"</u>
TOTAL DEPTH: <u>35</u>	SCREEN: Diam. _____ Length _____ Slot Size _____
SURFACE ELEVATION: _____	CASING: Diam. _____ Length _____ Type _____
GEOLOGIST: <u>Tim Wilhelm</u>	DATE DRILLED: <u>April 15, 2015</u>

PAGE 1 of 1

Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0							90% Fine Grained Sand, Slight Moisture, Strong Odor, No Plasticity, Soft, 10YR 5/1 Gray	0
6			1,386			5'	90% Fine Grained Sand, Moisture, Strong Odor, No Plasticity, Soft, 5YR 5/3 Reddish Brown	6
12			110.5			10'	90% Fine Grained Sand, Moisture, No Odor, No Plasticity, Soft, 2.5Y 6/4 Light Yellowish Brown	12
18			21.8			15'	90% Fine Grained Sand, No Moisture, Slight Odor - Old, No Plasticity, 2.5Y 5/3 Light Olive Brown	18
24			13.5			20'	90% Fine Grained Sand & Silt, No Moisture, Odor, No Plasticity, Soft, 2.5Y 6/2 Light Brownish Grey	24
30			555.6			25'	90% Fine Grained Sand & Silt, No Moisture, No Odor, Soft, 2.5Y 5/3 Light Olive Grey	30
36			18.1			30'	90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 2.5Y 6/3 Pale Olive	30
36			0.5			35'	Bottom of Hole	36

REMARKS: THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT



# SOIL BORING / MONITORING WELL LOG

PROJECT: <u>Nelson A-6/A-7</u>	DRILLING COMPANY: <u>Talon/LPE</u>
PROJECT NUMBER: <u>701530.024.01</u>	DRILLER: <u>Ronnie Rodriguez</u>
CLIENT: <u>Whiting Oil &amp; Gas Corporation</u>	DRILLING METHOD: <u>Hollow Stem Auger</u>
BORING / WELL NUMBER: <u>SB-5</u>	BORE HOLE DIAMETER: <u>7 7/8"</u>
TOTAL DEPTH: <u>30</u>	SCREEN: Diam. _____ Length _____ Slot Size _____
SURFACE ELEVATION: _____	CASING: Diam. _____ Length _____ Type _____
GEOLOGIST: <u>Tim Wilhelm</u>	DATE DRILLED: <u>April 15, 2015</u>

Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0							90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 10YR 6/6 Brownish Yellow	0
6			1.3			5'	85% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 2.5Y 6/3 Light Yellowish Brown	6
12			1.0			10'	90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 2.5Y 5/4 Light Olive Brown	12
18			13.1			15'	90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 2.5Y 6/4 Light Yellowish Brown	18
24			4.1			20'	85% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 5Y 6/2 Light Olive Grey	24
30			32.3			25'	85% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 2.5Y 6/3 Light Yellowish Brown	30
36			1.3			30'	Bottom of Hole	36

REMARKS: THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT



# SOIL BORING / MONITORING WELL LOG

PROJECT: <u>Nelson A-6/A-7</u>	DRILLING COMPANY: <u>Talon/LPE</u>
PROJECT NUMBER: <u>701530.024.01</u>	DRILLER: <u>Ronnie Rodriguez</u>
CLIENT: <u>Whiting Oil &amp; Gas Corporation</u>	DRILLING METHOD: <u>Hollow Stem Auger</u>
BORING / WELL NUMBER: <u>SB-6</u>	BORE HOLE DIAMETER: <u>7 7/8"</u>
TOTAL DEPTH: <u>35</u>	SCREEN: Diam. _____ Length _____ Slot Size _____
SURFACE ELEVATION: _____	CASING: Diam. _____ Length _____ Type _____
GEOLOGIST: <u>Tim Wilhelm</u>	DATE DRILLED: <u>April 16, 2015</u>

Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0								0
						5'	90% Fine Grained Sand & Silt, Poorly Graded, No Moisture, No Plasticity, 2.5Y 6/3 Light Yellowish Brown	
6			524.1				90% Fine Grained Sand & Silt, Poorly Graded, No Moisture, Strong Odor, No Plasticity, 10YR 5/6 Yellowish Brown	6
						10'	80% Fine Grained Sand, Rock Fragments, No Moisture, Odor, No Plasticity, 5Y 6/2 Light Olive Grey	
12			1,950				80% Fine Grained Sand, Rock Fragments, No Moisture, Odor, No Plasticity, 5Y 6/2 Light Olive Grey	12
						15'	90% Fine Grained Sand, Poorly Graded, No Moisture, Strong Odor - Old, No Plasticity, 5Y 5/4 Olive	
18			49.5				90% Fine Grained Sand, Poorly Graded, No Moisture, Strong Odor - Old, No Plasticity, 5Y 5/4 Olive	18
						20'	85% Fine Grained Sand & Silt, Poorly Graded, Odor, No Moisture, No Plasticity, GLEY1 5/1 Greenish Gray	
24			41				85% Fine Grained Sand & Silt, Poorly Graded, Odor, No Moisture, No Plasticity, GLEY1 5/1 Greenish Gray	24
						25'	85% Fine Grained Sand, Poorly Graded, No Odor, No Moisture, No Plasticity, 5Y 6/2 Light Olive Green	
30			495				85% Fine Grained Sand, Poorly Graded, No Odor, No Moisture, No Plasticity, 5Y 6/2 Light Olive Green	30
						30'	85% Fine Grained Sand & Silt, Poorly Graded, No Odor, No Moisture, No Plasticity, 5Y 5/4 Olive	
36			18.5				85% Fine Grained Sand & Silt, Poorly Graded, No Odor, No Moisture, No Plasticity, 5Y 5/4 Olive	30
						35'	Bottom of Hole	
			5.3				Bottom of Hole	36

REMARKS: THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT



# SOIL BORING / MONITORING WELL LOG

PROJECT: <u>Nelson A-6/A-7</u>	DRILLING COMPANY: <u>Talon/LPE</u>
PROJECT NUMBER: <u>701530.024.01</u>	DRILLER: <u>Ronnie Rodriguez</u>
CLIENT: <u>Whiting Oil &amp; Gas Corporation</u>	DRILLING METHOD: <u>Hollow Stem Auger</u>
BORING / WELL NUMBER: <u>SB-7</u>	BORE HOLE DIAMETER: <u>7 7/8"</u>
TOTAL DEPTH: <u>30</u>	SCREEN: Diam. _____ Length _____ Slot Size _____
SURFACE ELEVATION: _____	CASING: Diam. _____ Length _____ Type _____
GEOLOGIST: <u>Tim Wilhelm</u>	DATE DRILLED: <u>April 16, 2015</u>

Depth (FT.)	Soil Symbol	Well Construction	PID Readings	Samples	Sample Interval	Description Interval	Description of Stratum	Depth (FT.)
0							80% Fine Grained Sand, No Odor, No Moisture, No Plasticity, Soft, 2.5Y 6/3 Light Yellowish Brown	0
6			0.8		5'		90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 5Y 6/3 Pale Yellow	6
12			1.1		10'		80% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 5Y 5/3 Olive	12
18			0.6		15'		90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 5Y 6/3 Pale Yellow	18
24			1.0		20'		90% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 5Y 4/4 Olive	24
30			1.1		25'		85% Fine Grained Sand & Silt, No Moisture, No Odor, No Plasticity, Soft, 5Y 6/2 Light Olive Gray	30
36			1.2		30'		Bottom of Hole	36

REMARKS: THIS BORING LOG AND WELL DIAGRAM SHOULD NOT BE USED SEPARATE FROM THE ORIGINAL REPORT



# KEY TO SYMBOLS

Symbol Description

## Strata symbols



Silty sand



Clayey sand

## Monitor Well Details



Concrete Filler



Plugged soil boring.

**Attachment 4**  
**Analytical Reports**



August 21, 2014

Olsson Associates

James Hix

4690 Table Mountain Drive

Golden CO 80403

Project Name - Nelson - Whiting Antelope Field Spill      Project Number - 014 -

Attached are your analytical results for Nelson - Whiting Antelope Field Spill received by Origins Laboratory, Inc. August 20, 2014. This project is associated with Origins project number X408183-01.

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

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

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

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

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

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



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

Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

James Hix  
Project Number: 014 -  
Project: Nelson - Whiting Antelope Field Spill

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CS-1	X408183-01	Soil	August 19, 2014 8:30	08/20/2014 12:00
CS-4	X408183-02	Soil	August 19, 2014 8:42	08/20/2014 12:00
CS-5	X408183-03	Soil	August 19, 2014 8:47	08/20/2014 12:00
CS-6	X408183-04	Soil	August 19, 2014 8:53	08/20/2014 12:00
CS-7	X408183-05	Soil	August 19, 2014 8:59	08/20/2014 12:00

J. Hix ok'ed that GRO be reported by 8260. ndm

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.*



Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

James Hix  
 Project Number: 014 -  
 Project: Nelson - Whiting Antelope Field Spill

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X408183

Client: Olsson  
 Client Project ID: Nelson - Whiting Antelope Field Spill

Checklist Completed by: Joseph Smith  
 Date/time completed: 8/20/14 1200

Shipped Via: H/D  
 (UPS, FedEx, Hand Delivered, Pick up, etc.)  
 Airbill #: NA

Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_ (Describe)  
 Cooler Number/Temperature: \_\_\_\_\_ / 1.2 °C \_\_\_\_\_ °C \_\_\_\_\_ °C \_\_\_\_\_ °C  
 Thermometer ID: 1002

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

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

Reviewed by (Project Manager)

08-21-14 1246  
 Date/Time Reviewed

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.

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

James Hix  
 Project Number: 014 -  
 Project: Nelson - Whiting Antelope Field Spill

CS-1

8/19/2014 8:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X408183-01 (Soil)

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

Diesel (C10-C28)	299	50.0	mg/kg	1	4H20012	08/20/2014	08/21/2014
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<i>Surrogate: o-Terphenyl</i>	93.9 %	59-131			"	"	"
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	108	5.00	mg/kg	25	4H20011	08/20/2014	08/21/2014
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Benzene	ND	0.0500	"	"	"	"	"
---------	----	--------	---	---	---	---	---

Toluene	ND	0.0500	"	"	"	"	"
---------	----	--------	---	---	---	---	---

Ethylbenzene	ND	0.0500	"	"	"	"	"
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Xylenes, total	ND	0.0500	"	"	"	"	"
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<i>Surrogate: 1,2-Dichloroethane-d4</i>	114 %	70-130			"	"	"
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<i>Surrogate: Toluene-d8</i>	119 %	70-130			"	"	"
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<i>Surrogate: 4-Bromofluorobenzene</i>	106 %	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.*

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

James Hix  
 Project Number: 014 -  
 Project: Nelson - Whiting Antelope Field Spill

CS-4  
 8/19/2014 8:42:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X408183-02 (Soil)

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

Diesel (C10-C28)	ND	50.0	mg/kg	1	4H20012	08/20/2014	08/21/2014
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<i>Surrogate: o-Terphenyl</i>	92.0 %	59-131			"	"	"
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	1.20	0.200	mg/kg	1	4H20011	08/20/2014	08/21/2014
Benzene	ND	0.0020	"	"	"	"	"
Toluene	ND	0.0020	"	"	"	"	"
Ethylbenzene	ND	0.0020	"	"	"	"	"
Xylenes, total	0.0071	0.0020	"	"	"	"	"

<i>Surrogate: 1,2-Dichloroethane-d4</i>	99.0 %	70-130			"	"	08/21/2014
<i>Surrogate: Toluene-d8</i>	108 %	70-130			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	105 %	70-130			"	"	"

Origins Laboratory, Inc.



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

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

James Hix  
 Project Number: 014 -  
 Project: Nelson - Whiting Antelope Field Spill

CS-5

8/19/2014 8:47:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X408183-03 (Soil)

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

Diesel (C10-C28)	111	50.0	mg/kg	1	4H20012	08/20/2014	08/21/2014
------------------	-----	------	-------	---	---------	------------	------------

Surrogate: o-Terphenyl	88.5 %	59-131			"	"	"
------------------------	--------	--------	--	--	---	---	---

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	4.02	0.200	mg/kg	1	4H20011	08/20/2014	08/21/2014
Benzene	ND	0.0020	"	"	"	"	"
Toluene	0.0023	0.0020	"	"	"	"	"
Ethylbenzene	0.0027	0.0020	"	"	"	"	"
Xylenes, total	0.0314	0.0020	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	98.9 %	70-130			"	"	08/21/2014
Surrogate: Toluene-d8	103 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	101 %	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.*

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

James Hix  
 Project Number: 014 -  
 Project: Nelson - Whiting Antelope Field Spill

CS-6  
 8/19/2014 8:53:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X408183-04 (Soil)

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

Diesel (C10-C28)	113	50.0	mg/kg	1	4H20012	08/20/2014	08/21/2014
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<i>Surrogate: o-Terphenyl</i>	89.4 %	59-131			"	"	"
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	2.57	0.200	mg/kg	1	4H20011	08/20/2014	08/21/2014
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Benzene	ND	0.0020	"	"	"	"	"
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Toluene	0.0044	0.0020	"	"	"	"	"
---------	--------	--------	---	---	---	---	---

Ethylbenzene	ND	0.0020	"	"	"	"	"
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Xylenes, total	0.0416	0.0020	"	"	"	"	"
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<i>Surrogate: 1,2-Dichloroethane-d4</i>	105 %	70-130			"	"	"
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<i>Surrogate: Toluene-d8</i>	110 %	70-130			"	"	"
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<i>Surrogate: 4-Bromofluorobenzene</i>	106 %	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.*

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

James Hix  
 Project Number: 014 -  
 Project: Nelson - Whiting Antelope Field Spill

**CS-7**

8/19/2014 8:59:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 X408183-05 (Soil)

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

Diesel (C10-C28)	323	50.0	mg/kg	1	4H20012	08/20/2014	08/21/2014
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<i>Surrogate: o-Terphenyl</i>	90.0 %	59-131			"	"	"
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	113	5.00	mg/kg	25	4H20011	08/20/2014	08/21/2014
Benzene	ND	0.0500	"	"	"	"	"
Toluene	0.167	0.0500	"	"	"	"	"
Ethylbenzene	0.0970	0.0500	"	"	"	"	"
Xylenes, total	0.906	0.0500	"	"	"	"	"

<i>Surrogate: 1,2-Dichloroethane-d4</i>	110 %	70-130			"	"	"
<i>Surrogate: Toluene-d8</i>	115 %	70-130			"	"	"
<i>Surrogate: 4-Bromofluorobenzene</i>	101 %	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.*

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

James Hix  
 Project Number: 014 -  
 Project: Nelson - Whiting Antelope Field Spill

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 4H20011 - EPA 5030 (soil)</b>										
<b>Blank (4H20011-BLK1)</b>										
Prepared: 08/20/2014 Analyzed: 08/20/2014										
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0020	"							
Ethylbenzene	ND	0.0020	"							
Xylenes, total	ND	0.0020	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>66.0</i>		<i>ug/kg</i>	<i>62.5</i>		<i>106</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>64.9</i>		<i>"</i>	<i>62.5</i>		<i>104</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>63.0</i>		<i>"</i>	<i>62.5</i>		<i>101</i>	<i>70-130</i>			

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.*

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

James Hix  
 Project Number: 014 -  
 Project: Nelson - Whiting Antelope Field Spill

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4H20011 - EPA 5030 (soil)

LCS (4H20011-BS1)

Prepared: 08/20/2014 Analyzed: 08/20/2014

Benzene	0.0928	0.0020	mg/kg	0.100		92.8	77.1-124			
Toluene	0.0933	0.0020	"	0.100		93.3	74.5-128			
Ethylbenzene	0.0824	0.0020	"	0.100		82.4	66.4-127			
m,p-Xylene	0.167	0.0040	"	0.200		83.3	76.6-124			
o-Xylene	0.0823	0.0020	"	0.100		82.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	67.0		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	65.7		"	62.5		105	70-130			
Surrogate: 4-Bromofluorobenzene	64.3		"	62.5		103	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.*

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

James Hix  
 Project Number: 014 -  
 Project: Nelson - Whiting Antelope Field Spill

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

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

Batch 4H20011 - EPA 5030 (soil)

LCS Dup (4H20011-BSD1)				Prepared: 08/20/2014 Analyzed: 08/20/2014						
Benzene	0.107	0.0020	mg/kg	0.100	107	77.1-124	14.5	20		
Toluene	0.109	0.0020	"	0.100	109	74.5-128	15.2	20		
Ethylbenzene	0.0944	0.0020	"	0.100	94.4	66.4-127	13.6	20		
m,p-Xylene	0.186	0.0040	"	0.200	93.1	76.6-124	11.1	20		
o-Xylene	0.0948	0.0020	"	0.100	94.8	76.6-124	14.1	20		
Surrogate: 1,2-Dichloroethane-d4	65.4		ug/kg	62.5	105	70-130				
Surrogate: Toluene-d8	65.8		"	62.5	105	70-130				
Surrogate: 4-Bromofluorobenzene	64.5		"	62.5	103	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.*

Noelle Doyle Mathis, President

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

James Hix  
 Project Number: 014 -  
 Project: Nelson - Whiting Antelope Field Spill

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

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

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

Batch 4H20012 - EPA 3580

<b>Blank (4H20012-BLK1)</b>					Prepared: 08/20/2014 Analyzed: 08/20/2014					
Diesel (C10-C28)	ND	50.0	mg/kg							
Surrogate: o-Terphenyl	43		g	50.0		85.1	59-131			
<b>LCS (4H20012-BS1)</b>					Prepared: 08/20/2014 Analyzed: 08/20/2014					
Diesel (C10-C28)	947	50.0	mg/kg	1000		94.7	64-121			
Surrogate: o-Terphenyl	44		g	50.0		88.8	59-131			
<b>LCS Dup (4H20012-BSD1)</b>					Prepared: 08/20/2014 Analyzed: 08/20/2014					
Diesel (C10-C28)	914	50.0	mg/kg	1000		91.4	64-121	3.53	20	
Surrogate: o-Terphenyl	43		g	50.0		86.0	59-131			

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.*

Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

James Hix  
Project Number: 014 -  
Project: Nelson - Whiting Antelope Field Spill

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**Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



*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.*

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Noelle Doyle Mathis, President

Monday, May 04, 2015

Colby Sterling  
Talon LPE  
921 N Bivins  
Amarillo, TX 79107

Re: ALS Workorder: 1504425  
Project Name: Nelson A6 A7  
Project Number: 701530.024.01

Dear Mr. Sterling:

Twenty one soil samples were received from Talon LPE, on 4/22/2015. The samples were scheduled for the following analyses:

GC/MS Volatiles

Total Extractable Petroleum Hydrocarbons (Diesel)

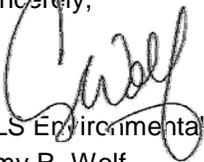
Total Volatile Petroleum Hydrocarbons (Gasoline)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,



ALS Environmental  
Amy R. Wolf  
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New Jersey (NJ)	CO003
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280



## 1504425

### GC/MS Volatiles:

The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

All surrogate recoveries were within acceptance criteria with the following exception:

Surrogate	Sample	Direction
Toluene-d8	-1	High

Analysis of the sample at a 500x dilution showed all surrogate recoveries passing. This suggests that the outliers were due to matrix effects. No further action was taken.

All remaining acceptance criteria were met.

### GRO:

The samples were analyzed following the current revision of SOP 425 generally based on SW-846 Methods 8000C and 8015D. TVPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C6 to C10.

All surrogate recoveries were within acceptable limits with the following exception:

Surrogate	Sample	Direction
2,3,4-Trifluorotoluene	1504425-10	High

Inspection of the chromatogram indicated co-elution of the surrogate peak with a target component peak, biasing the surrogate result high. No further action was taken.

All remaining acceptance criteria were met.

### DRO:

The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

**OrderNum:** 1504425

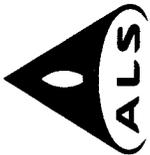
**Client Name:** Talon LPE

**Client Project Name:** Nelson A6 A7

**Client Project Number:** 701530.024.01

**Client PO Number:**

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
SB1 0'-5'	1504425-1		SOIL	14-Apr-15	16:31
SB1 10'-15'	1504425-2		SOIL	14-Apr-15	16:54
SB1 15'-20'	1504425-3		SOIL	14-Apr-15	17:00
SB1 25'-30'	1504425-4		SOIL	14-Apr-15	17:30
SB2 10'-15'	1504425-5		SOIL	15-Apr-15	9:35
SB2 20'-25'	1504425-6		SOIL	15-Apr-15	9:59
SB2 30'-35'	1504425-7		SOIL	15-Apr-15	10:20
SB3 10'-15'	1504425-8		SOIL	15-Apr-15	11:20
SB3 20'-25'	1504425-9		SOIL	15-Apr-15	11:42
SB4 0'-5'	1504425-10		SOIL	15-Apr-15	13:07
SB4 10'-15'	1504425-11		SOIL	15-Apr-15	13:38
SB4 20'-25'	1504425-12		SOIL	15-Apr-15	13:47
SB4 30'-35'	1504425-13		SOIL	15-Apr-15	14:02
SB5 10'-15'	1504425-14		SOIL	15-Apr-15	15:18
SB5 25'-30'	1504425-15		SOIL	15-Apr-15	15:35
SB6 5'-10'	1504425-16		SOIL	16-Apr-15	9:09
SB6 10'-15'	1504425-17		SOIL	16-Apr-15	9:20
SB6 20'-25'	1504425-18		SOIL	16-Apr-15	9:40
SB6 30'-35'	1504425-19		SOIL	16-Apr-15	10:00
SB7 10'-15'	1504425-20		SOIL	16-Apr-15	10:40
SB7 25'-30'	1504425-21		SOIL	16-Apr-15	11:15



ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524  
TF: (970) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 2028

WORKORDER # 1504425

PROJECT NAME: Nelson A6A7  
 PROJECT No.: 701530.024.01  
 COMPANY NAME: Taylor LPE  
 SEND REPORT TO: Colby Sterling  
 ADDRESS: 921 N Bivins  
 CITY/STATE/ZIP: Amarillo TX 79107  
 PHONE: \_\_\_\_\_  
 FAX: \_\_\_\_\_  
 E-MAIL: Csterling@taylorlpe.com

SAMPLER: Tim Wilhelm  
 SITE ID: \_\_\_\_\_  
 EDD FORMAT: \_\_\_\_\_  
 PURCHASE ORDER: \_\_\_\_\_  
 BILL TO COMPANY: Whitehill  
 INVOICE ATTN TO: Kyle Wayzinger  
 ADDRESS: \_\_\_\_\_  
 CITY/STATE/ZIP: \_\_\_\_\_  
 PHONE: \_\_\_\_\_  
 FAX: \_\_\_\_\_  
 E-MAIL: \_\_\_\_\_

DATE: 4/20/15  
 TURNAROUND: BTRX, GAC, DRC

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
①	SBI 0'-5'	S	4/14/15	16:31	2	ICE	X X X
②	SBI 10'-15'	S	}	16:54	}	}	}
③	SBI 15'-20'	S		17:00			
④	SBI 25'-30'	S	}	17:30	}	}	}

\*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

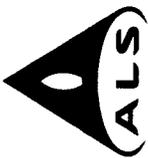
For metals or anions, please detail analytes below.

Comments: \_\_\_\_\_ of 45

QC PACKAGE (check below)  
 LEVEL II (Standard QC)  
 LEVEL III (Std QC + forms)  
 LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

RELINQUISHED BY	SIGNATURE	PRINTED NAME	DATE	TIME
RECEIVED BY	<i>Tim Wilhelm</i>	Tim Wilhelm	4/21/15	8:53
RELINQUISHED BY	<i>Erin Peterson</i>	Erin Peterson	4/22/15	0950
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				



**ALS Laboratory Group**

225 Commerce Drive, Fort Collins, Colorado 80524  
 TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

**Chain-of-Custody**

Form 20278

PROJECT NAME	Nelson A6 A7	SAMPLER	Tim W. [Signature]	DATE	4/20/15	WORKORDER #	1504425
PROJECT No.	701530-02401	SITE ID		TURNAROUND		PAGE	
COMPANY NAME	Talen I PE	EDD FORMAT				DISPOSAL	
SEND REPORT TO	Colby Sterling	PURCHASE ORDER				By Lab or	of
ADDRESS	921 N Bivins	BILL TO COMPANY	Wh. Tag			Return to Client	
CITY / STATE / ZIP	Amalillo TX 79107	INVOICE ATTN TO	Kyle Waggoner				
PHONE		ADDRESS					
FAX		CITY / STATE / ZIP					
E-MAIL	Csterling@TalenIpe.com	PHONE					
		FAX					
		E-MAIL					

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
5	SB210-15'	S	4/15/15	9:35	2	JCF	
6	SB2 20'-25'	SS	SS	9:59	5		
7	SB2 30'-35'	SS	SS	10:20	5		

\*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

of 45

QC PACKAGE (check below)	
LEVEL II (Standard OC)	
LEVEL III (Std OC + forms)	
LEVEL IV (Std OC + forms + raw data)	

RELINQUISHED BY	SIGNATURE	PRINTED NAME	DATE	TIME
RECEIVED BY	[Signature]	Tim W. [Signature]	4/21/15	8:53
RELINQUISHED BY	[Signature]	Erin Peterson	4/21/15	09:50
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035









# ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524  
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

# Chain-of-Custody

Form 2028

PROJECT NAME	Nelson A6 A7		SAMPLER	Tim Willet	
PROJECT No.	701530, 024, 01		SITE ID		
COMPANY NAME	Telco LPE		EDD FORMAT		
SEND REPORT TO	Colby Sterlings		PURCHASE ORDER		
ADDRESS	921 N Bivins		BILL TO COMPANY	Whitlax	
CITY/STATE/ZIP	Hamarillo TX 79409		INVOICE ATTN TO	Kyle Waggoner	
PHONE			ADDRESS		
FAX			CITY/STATE/ZIP		
E-MAIL	csterlings@telcolpe.com		PHONE		
			FAX		
			E-MAIL		

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
16	SB6 5'-10'	S	9/10/15	9:09	2	ZCF	
17	SB6 10'-15'	S	9/10/15	9:20	5		
18	SB6 20'-25'	S	9/10/15	9:40	5		
19	SB6 30'-35'	S	10/10/15	10:00	5		

WORKORDER #	1504425	
PAGE	4/20/15	
DISPOSAL	By Lab or Return to Client	
DATE	4/20/15	
TURNAROUND	BTEX DRC 6 HO	

\*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

of 45

RELINQUISHED BY	SIGNATURE	PRINTED NAME	DATE	TIME
RECEIVED BY	Tim Willet	Tim Willet	4/21/15	8:55
RELINQUISHED BY	Erin Peterson	Erin Peterson	4/22/15	0950
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

QC PACKAGE (check below)	1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035
LEVEL II (Standard QC)	
LEVEL III (Std QC + forms)	
LEVEL IV (Std QC + forms + raw data)	

Preservative Key:





ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Talon  
Project Manager: ARW

Workorder No: 1504425  
Initials: ECP Date: 4/22/15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	<input checked="" type="radio"/> YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	<input checked="" type="radio"/> N/A	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<input checked="" type="radio"/> N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	<input checked="" type="radio"/> N/A	YES	NO
15. Do any water samples contain sediment? Amount of sediment: ___ dusting ___ moderate ___ heavy	Amount	<input checked="" type="radio"/> N/A	YES NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <input checked="" type="radio"/> #4	RAD ONLY	<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>3.2°</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>11</u>			
Background µR/hr reading: <u>11</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? <input checked="" type="radio"/> YES <input type="radio"/> NO / <input type="radio"/> NA (if no, see Form 008.)			

DOT Survey Acceptance Information

**Additional Information:** PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

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If applicable, was the client contacted? YES / NO /  NA Contact: C. W. [Signature] Date/Time: 4/24/15

Project Manager Signature / Date: [Signature] 4/24/15

1504425

**FedEx** Package  
Express US Airbill

FedEx  
Tracking  
Number

8062 8382 5019

1 From Date 4/2/11

Sender's Name ~~John Wilheim~~ Phone 906 467 0607

Company Tilton LPI

Address 921 W Bivias

City AMARILLO State TX ZIP 79107

Dept./Floor/Suite/Room

2 Your Internal Billing Reference

3 To Recipient's Name

Company

Address

City State ZIP

Dept./Floor/Suite/Room

Address

City State ZIP

8062 8382 5019

0118205875



8062 8382 5019

MUR1

Print  
to the  
0215

4 Express Package Service \*To most locations. NOTE: Service order for overnight please select carefully.

Next Business Day  
FedEx First Overnight  
FedEx Priority Overnight  
FedEx Standard Overnight  
FedEx Express Saver

5 Packaging \*Declared value limit \$500.  
FedEx Envelope\* FedEx Pak\* FedEx BOX FedEx Tube Other

6 Special Handling and Delivery Signature Options  
SATURDAY Delivery  
No Signature Required  
Direct Signature  
Indirect Signature

Does this shipment contain hazardous materials?  
Yes No  
Dry Ice  
Cargo Aircraft Only

7 Payment Bill to:  
Sender  
Recipient  
Third Party  
Credit Card  
Cash/Check

Total Packages Total Weight  
Credit Card Auth.  
Your liability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB1 0'-5'  
**Legal Location:**  
**Collection Date:** 4/14/2015 16:31

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-1  
**Matrix:** SOIL  
**Percent Moisture:** 24.8

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	<b>290</b>	4,5,8,M	<b>6.4</b>	<b>MG/KG</b>	1	4/23/2015 17:38
Surr: O-TERPHENYL	85		53-116	%REC	1	4/23/2015 17:38
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
<b>GASOLINE RANGE ORGANICS</b>	<b>3200</b>	GZ	<b>130</b>	<b>MG/KG</b>	1000	4/24/2015 09:46
Surr: 2,3,4-TRIFLUOROTOLUENE	123		76-126	%REC	1000	4/24/2015 09:46
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
<b>BENZENE</b>	<b>0.25</b>		<b>0.048</b>	<b>MG/KG</b>	1	4/28/2015 14:31
<b>TOLUENE</b>	<b>31</b>		<b>3</b>	<b>MG/KG</b>	500	4/28/2015 19:47
<b>ETHYLBENZENE</b>	<b>19</b>		<b>3</b>	<b>MG/KG</b>	500	4/28/2015 19:47
<b>M+P-XYLENE</b>	<b>110</b>		<b>3</b>	<b>MG/KG</b>	500	4/28/2015 19:47
<b>O-XYLENE</b>	<b>40</b>		<b>3</b>	<b>MG/KG</b>	500	4/28/2015 19:47
<b>TOTAL XYLENES</b>	<b>150</b>		<b>0.005</b>	<b>MG/KG</b>	1	4/28/2015 14:31
Surr: DIBROMOFLUOROMETHANE	98		61-134	%REC	1	4/28/2015 14:31
Surr: DIBROMOFLUOROMETHANE	100		61-134	%REC	500	4/28/2015 19:47
Surr: TOLUENE-D8	110		57-135	%REC	500	4/28/2015 19:47
Surr: TOLUENE-D8	255	*	57-135	%REC	1	4/28/2015 14:31
Surr: 4-BROMOFLUOROBENZENE	97		52-151	%REC	500	4/28/2015 19:47
Surr: 4-BROMOFLUOROBENZENE	108		52-151	%REC	1	4/28/2015 14:31

Client: Talon LPE  
 Project: 701530.024.01 Nelson A6 A7  
 Sample ID: SB1 10'-15'  
 Legal Location:  
 Collection Date: 4/14/2015 16:54

Date: 04-May-15  
 Work Order: 1504425  
 Lab ID: 1504425-2  
 Matrix: SOIL  
 Percent Moisture: 6.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	66	5,8,M	5.2	MG/KG	1	4/23/2015 18:16
Surr: O-TERPHENYL	96		53-116	%REC	1	4/23/2015 18:16
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	0.77	H	0.53	MG/KG	1	4/23/2015 11:31
Surr: 2,3,4-TRIFLUOROTOLUENE	99		76-126	%REC	1	4/23/2015 11:31
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.0052	MG/KG	1	4/28/2015 19:23
TOLUENE	ND		0.0052	MG/KG	1	4/28/2015 19:23
ETHYLBENZENE	ND		0.0052	MG/KG	1	4/28/2015 19:23
M+P-XYLENE	ND		0.0052	MG/KG	1	4/28/2015 19:23
O-XYLENE	ND		0.0052	MG/KG	1	4/28/2015 19:23
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 19:23
Surr: DIBROMOFLUOROMETHANE	102		61-134	%REC	1	4/28/2015 19:23
Surr: TOLUENE-D8	97		57-135	%REC	1	4/28/2015 19:23
Surr: 4-BROMOFLUOROBENZENE	99		52-151	%REC	1	4/28/2015 19:23

Client: Talon LPE  
 Project: 701530.024.01 Nelson A6 A7  
 Sample ID: SB1 15'-20'  
 Legal Location:  
 Collection Date: 4/14/2015 17:00

Date: 04-May-15  
 Work Order: 1504425  
 Lab ID: 1504425-3  
 Matrix: SOIL  
 Percent Moisture: 6.6

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
Diesel Range Organics	ND		<b>SW8015M</b>	5.2 MG/KG	1	Prep Date: 4/23/2015 PrepBy: JFN 4/23/2015 18:52
Surr: O-TERPHENYL	93			53-116 %REC	1	4/23/2015 18:52
<b>Gasoline Range Organics</b>						
GASOLINE RANGE ORGANICS	ND		<b>SW8015</b>	0.52 MG/KG	1	Prep Date: 4/23/2015 PrepBy: JFN 4/23/2015 11:51
Surr: 2,3,4-TRIFLUOROTOLUENE	99			76-126 %REC	1	4/23/2015 11:51
<b>GC/MS Volatiles</b>						
BENZENE	ND		<b>SW8260</b>	0.0052 MG/KG	1	Prep Date: 4/28/2015 PrepBy: TWK 4/28/2015 18:37
TOLUENE	ND			0.0052 MG/KG	1	4/28/2015 18:37
ETHYLBENZENE	ND			0.0052 MG/KG	1	4/28/2015 18:37
M+P-XYLENE	ND			0.0052 MG/KG	1	4/28/2015 18:37
O-XYLENE	ND			0.0052 MG/KG	1	4/28/2015 18:37
TOTAL XYLENES	ND			0.005 MG/KG	1	4/28/2015 18:37
Surr: DIBROMOFLUOROMETHANE	100			61-134 %REC	1	4/28/2015 18:37
Surr: TOLUENE-D8	97			57-135 %REC	1	4/28/2015 18:37
Surr: 4-BROMOFLUOROBENZENE	99			52-151 %REC	1	4/28/2015 18:37

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB1 25'-30'  
**Legal Location:**  
**Collection Date:** 4/14/2015 17:30

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-4  
**Matrix:** SOIL  
**Percent Moisture:** 16.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
Diesel Range Organics	ND		<b>SW8015M</b>	5.9 MG/KG	1	Prep Date: <b>4/23/2015</b> PrepBy: <b>JFN</b> 4/23/2015 20:04
Surr: O-TERPHENYL	97			53-116 %REC	1	4/23/2015 20:04
<b>Gasoline Range Organics</b>						
GASOLINE RANGE ORGANICS	ND		<b>SW8015</b>	0.54 MG/KG	1	Prep Date: <b>4/23/2015</b> PrepBy: <b>JFN</b> 4/23/2015 12:13
Surr: 2,3,4-TRIFLUOROTOLUENE	105			76-126 %REC	1	4/23/2015 12:13
<b>GC/MS Volatiles</b>						
BENZENE	ND		<b>SW8260</b>	0.0057 MG/KG	1	Prep Date: <b>4/28/2015</b> PrepBy: <b>TWK</b> 4/28/2015 19:00
TOLUENE	ND			0.0057 MG/KG	1	4/28/2015 19:00
ETHYLBENZENE	ND			0.0057 MG/KG	1	4/28/2015 19:00
M+P-XYLENE	ND			0.0057 MG/KG	1	4/28/2015 19:00
O-XYLENE	ND			0.0057 MG/KG	1	4/28/2015 19:00
TOTAL XYLENES	ND			0.005 MG/KG	1	4/28/2015 19:00
Surr: DIBROMOFLUOROMETHANE	102			61-134 %REC	1	4/28/2015 19:00
Surr: TOLUENE-D8	97			57-135 %REC	1	4/28/2015 19:00
Surr: 4-BROMOFLUOROBENZENE	98			52-151 %REC	1	4/28/2015 19:00

Client: Talon LPE  
 Project: 701530.024.01 Nelson A6 A7  
 Sample ID: SB2 10'-15'  
 Legal Location:  
 Collection Date: 4/15/2015 09:35

Date: 04-May-15  
 Work Order: 1504425  
 Lab ID: 1504425-5  
 Matrix: SOIL  
 Percent Moisture: 7.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	<b>250</b>	5,8,M	<b>5.4</b>	<b>MG/KG</b>	1	4/23/2015 20:39
Surr: O-TERPHENYL	97		53-116	%REC	1	4/23/2015 20:39
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
<b>GASOLINE RANGE ORGANICS</b>	<b>15</b>	H	<b>1.1</b>	<b>MG/KG</b>	1	4/23/2015 12:33
Surr: 2,3,4-TRIFLUOROTOLUENE	110		76-126	%REC	1	4/23/2015 12:33
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.053	MG/KG	1	4/28/2015 15:45
TOLUENE	<b>0.1</b>		<b>0.053</b>	<b>MG/KG</b>	1	4/28/2015 15:45
ETHYLBENZENE	<b>0.49</b>		<b>0.053</b>	<b>MG/KG</b>	1	4/28/2015 15:45
M+P-XYLENE	<b>3.4</b>		<b>0.053</b>	<b>MG/KG</b>	1	4/28/2015 15:45
O-XYLENE	<b>1.5</b>		<b>0.053</b>	<b>MG/KG</b>	1	4/28/2015 15:45
<b>TOTAL XYLENES</b>	<b>4.9</b>		<b>0.005</b>	<b>MG/KG</b>	1	4/28/2015 15:45
Surr: DIBROMOFLUOROMETHANE	100		61-134	%REC	1	4/28/2015 15:45
Surr: TOLUENE-D8	131		57-135	%REC	1	4/28/2015 15:45
Surr: 4-BROMOFLUOROBENZENE	104		52-151	%REC	1	4/28/2015 15:45

Client: Talon LPE  
 Project: 701530.024.01 Nelson A6 A7  
 Sample ID: SB2 20'-25'  
 Legal Location:  
 Collection Date: 4/15/2015 09:59

Date: 04-May-15  
 Work Order: 1504425  
 Lab ID: 1504425-6  
 Matrix: SOIL  
 Percent Moisture: 15.9

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	27	4,5,8,M	5.8	MG/KG	1	4/23/2015 21:15
Surr: O-TERPHENYL	97		53-116	%REC	1	4/23/2015 21:15
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	1.2	GZ	0.58	MG/KG	1	4/24/2015 10:06
Surr: 2,3,4-TRIFLUOROTOLUENE	104		76-126	%REC	1	4/24/2015 10:06
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.0055	MG/KG	1	4/28/2015 22:53
TOLUENE	0.08		0.0055	MG/KG	1	4/28/2015 22:53
ETHYLBENZENE	0.018		0.0055	MG/KG	1	4/28/2015 22:53
M+P-XYLENE	0.074		0.0055	MG/KG	1	4/28/2015 22:53
O-XYLENE	0.048		0.0055	MG/KG	1	4/28/2015 22:53
TOTAL XYLENES	0.12		0.005	MG/KG	1	4/28/2015 22:53
Surr: DIBROMOFLUOROMETHANE	100		61-134	%REC	1	4/28/2015 22:53
Surr: TOLUENE-D8	97		57-135	%REC	1	4/28/2015 22:53
Surr: 4-BROMOFLUOROBENZENE	97		52-151	%REC	1	4/28/2015 22:53

Client: Talon LPE  
 Project: 701530.024.01 Nelson A6 A7  
 Sample ID: SB2 30'-35'  
 Legal Location:  
 Collection Date: 4/15/2015 10:20

Date: 04-May-15  
 Work Order: 1504425  
 Lab ID: 1504425-7  
 Matrix: SOIL  
 Percent Moisture: 15.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
Diesel Range Organics	ND		<b>SW8015M</b>	5.7 MG/KG	1	Prep Date: 4/23/2015 PrepBy: JFN 4/23/2015 21:50
Surr: O-TERPHENYL	96			53-116 %REC	1	4/23/2015 21:50
<b>Gasoline Range Organics</b>						
GASOLINE RANGE ORGANICS	ND		<b>SW8015</b>	0.56 MG/KG	1	Prep Date: 4/23/2015 PrepBy: JFN 4/23/2015 14:15
Surr: 2,3,4-TRIFLUOROTOLUENE	104			76-126 %REC	1	4/23/2015 14:15
<b>GC/MS Volatiles</b>						
BENZENE	ND		<b>SW8260</b>	0.0052 MG/KG	1	Prep Date: 4/28/2015 PrepBy: TWK 4/28/2015 09:53
TOLUENE	ND			0.0052 MG/KG	1	4/28/2015 09:53
ETHYLBENZENE	ND			0.0052 MG/KG	1	4/28/2015 09:53
M+P-XYLENE	ND			0.0052 MG/KG	1	4/28/2015 09:53
<b>O-XYLENE</b>	<b>0.0054</b>			<b>0.0052 MG/KG</b>	1	4/28/2015 09:53
<b>TOTAL XYLENES</b>	<b>0.0054</b>			<b>0.005 MG/KG</b>	1	4/28/2015 09:53
Surr: DIBROMOFLUOROMETHANE	100			61-134 %REC	1	4/28/2015 09:53
Surr: TOLUENE-D8	98			57-135 %REC	1	4/28/2015 09:53
Surr: 4-BROMOFLUOROBENZENE	100			52-151 %REC	1	4/28/2015 09:53

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB3 10'-15'  
**Legal Location:**  
**Collection Date:** 4/15/2015 11:20

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-8  
**Matrix:** SOIL  
**Percent Moisture:** 20.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	ND		5.7	MG/KG	1	4/24/2015 10:52
Surr: O-TERPHENYL	94		53-116	%REC	1	4/24/2015 10:52
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	ND		0.61	MG/KG	1	4/24/2015 10:28
Surr: 2,3,4-TRIFLUOROTOLUENE	100		76-126	%REC	1	4/24/2015 10:28
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.006	MG/KG	1	4/28/2015 22:07
TOLUENE	ND		0.006	MG/KG	1	4/28/2015 22:07
ETHYLBENZENE	ND		0.006	MG/KG	1	4/28/2015 22:07
M+P-XYLENE	ND		0.006	MG/KG	1	4/28/2015 22:07
O-XYLENE	ND		0.006	MG/KG	1	4/28/2015 22:07
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 22:07
Surr: DIBROMOFLUOROMETHANE	100		61-134	%REC	1	4/28/2015 22:07
Surr: TOLUENE-D8	95		57-135	%REC	1	4/28/2015 22:07
Surr: 4-BROMOFLUOROBENZENE	96		52-151	%REC	1	4/28/2015 22:07

Client: Talon LPE  
 Project: 701530.024.01 Nelson A6 A7  
 Sample ID: SB3 20'-25'  
 Legal Location:  
 Collection Date: 4/15/2015 11:42

Date: 04-May-15  
 Work Order: 1504425  
 Lab ID: 1504425-9  
 Matrix: SOIL  
 Percent Moisture: 26.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	ND		6.7	MG/KG	1	4/24/2015 11:27
Surr: O-TERPHENYL	93		53-116	%REC	1	4/24/2015 11:27
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	ND		0.58	MG/KG	1	4/24/2015 10:48
Surr: 2,3,4-TRIFLUOROTOLUENE	98		76-126	%REC	1	4/24/2015 10:48
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.0064	MG/KG	1	4/28/2015 10:16
TOLUENE	ND		0.0064	MG/KG	1	4/28/2015 10:16
ETHYLBENZENE	ND		0.0064	MG/KG	1	4/28/2015 10:16
M+P-XYLENE	ND		0.0064	MG/KG	1	4/28/2015 10:16
O-XYLENE	ND		0.0064	MG/KG	1	4/28/2015 10:16
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 10:16
Surr: DIBROMOFLUOROMETHANE	99		61-134	%REC	1	4/28/2015 10:16
Surr: TOLUENE-D8	98		57-135	%REC	1	4/28/2015 10:16
Surr: 4-BROMOFLUOROBENZENE	98		52-151	%REC	1	4/28/2015 10:16

Client: Talon LPE  
 Project: 701530.024.01 Nelson A6 A7  
 Sample ID: SB4 0'-5'  
 Legal Location:  
 Collection Date: 4/15/2015 13:07

Date: 04-May-15  
 Work Order: 1504425  
 Lab ID: 1504425-10  
 Matrix: SOIL  
 Percent Moisture: 17.9

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	43	4,5,8,M	5.9	MG/KG	1	4/24/2015 12:03
Surr: O-TERPHENYL	97		53-116	%REC	1	4/24/2015 12:03
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	35	GZ	0.59	MG/KG	1	4/23/2015 15:18
Surr: 2,3,4-TRIFLUOROTOLUENE	144	*	76-126	%REC	1	4/23/2015 15:18
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/29/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.0059	MG/KG	1	4/29/2015 10:31
TOLUENE	ND		0.0059	MG/KG	1	4/29/2015 10:31
ETHYLBENZENE	ND		0.0059	MG/KG	1	4/29/2015 10:31
M+P-XYLENE	ND		0.0059	MG/KG	1	4/29/2015 10:31
O-XYLENE	ND		0.0059	MG/KG	1	4/29/2015 10:31
TOTAL XYLENES	ND		0.005	MG/KG	1	4/29/2015 10:31
Surr: DIBROMOFLUOROMETHANE	97		61-134	%REC	1	4/29/2015 10:31
Surr: TOLUENE-D8	109		57-135	%REC	1	4/29/2015 10:31
Surr: 4-BROMOFLUOROBENZENE	97		52-151	%REC	1	4/29/2015 10:31

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB4 10'-15'  
**Legal Location:**  
**Collection Date:** 4/15/2015 13:38

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-11  
**Matrix:** SOIL  
**Percent Moisture:** 7.9

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	ND		5.4	MG/KG	1	4/24/2015 12:39
Surr: O-TERPHENYL	95		53-116	%REC	1	4/24/2015 12:39
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	ND		0.49	MG/KG	1	4/24/2015 11:08
Surr: 2,3,4-TRIFLUOROTOLUENE	98		76-126	%REC	1	4/24/2015 11:08
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.0049	MG/KG	1	4/28/2015 10:39
TOLUENE	ND		0.0049	MG/KG	1	4/28/2015 10:39
ETHYLBENZENE	ND		0.0049	MG/KG	1	4/28/2015 10:39
M+P-XYLENE	ND		0.0049	MG/KG	1	4/28/2015 10:39
O-XYLENE	ND		0.0049	MG/KG	1	4/28/2015 10:39
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 10:39
Surr: DIBROMOFLUOROMETHANE	99		61-134	%REC	1	4/28/2015 10:39
Surr: TOLUENE-D8	97		57-135	%REC	1	4/28/2015 10:39
Surr: 4-BROMOFLUOROBENZENE	96		52-151	%REC	1	4/28/2015 10:39

Client: Talon LPE  
 Project: 701530.024.01 Nelson A6 A7  
 Sample ID: SB4 20'-25'  
 Legal Location:  
 Collection Date: 4/15/2015 13:47

Date: 04-May-15  
 Work Order: 1504425  
 Lab ID: 1504425-12  
 Matrix: SOIL  
 Percent Moisture: 13.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
Diesel Range Organics	ND		<b>SW8015M</b>	5.7 MG/KG	1	Prep Date: 4/23/2015 PrepBy: JFN 4/24/2015 13:15
Surr: O-TERPHENYL	96			53-116 %REC	1	4/24/2015 13:15
<b>Gasoline Range Organics</b>						
GASOLINE RANGE ORGANICS	ND		<b>SW8015</b>	0.51 MG/KG	1	Prep Date: 4/24/2015 PrepBy: JFN 4/24/2015 12:11
Surr: 2,3,4-TRIFLUOROTOLUENE	102			76-126 %REC	1	4/24/2015 12:11
<b>GC/MS Volatiles</b>						
BENZENE	ND		<b>SW8260</b>	0.0055 MG/KG	1	Prep Date: 4/28/2015 PrepBy: TWK 4/28/2015 11:02
<b>TOLUENE</b>	<b>0.02</b>			<b>0.0055 MG/KG</b>	1	4/28/2015 11:02
ETHYLBENZENE	ND			0.0055 MG/KG	1	4/28/2015 11:02
<b>M+P-XYLENE</b>	<b>0.012</b>			<b>0.0055 MG/KG</b>	1	4/28/2015 11:02
<b>O-XYLENE</b>	<b>0.021</b>			<b>0.0055 MG/KG</b>	1	4/28/2015 11:02
<b>TOTAL XYLENES</b>	<b>0.032</b>			<b>0.005 MG/KG</b>	1	4/28/2015 11:02
Surr: DIBROMOFLUOROMETHANE	101			61-134 %REC	1	4/28/2015 11:02
Surr: TOLUENE-D8	98			57-135 %REC	1	4/28/2015 11:02
Surr: 4-BROMOFLUOROBENZENE	96			52-151 %REC	1	4/28/2015 11:02

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB4 30'-35'  
**Legal Location:**  
**Collection Date:** 4/15/2015 14:02

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-13  
**Matrix:** SOIL  
**Percent Moisture:** 17.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	ND		5.8	MG/KG	1	4/24/2015 13:50
Surr: O-TERPHENYL	97		53-116	%REC	1	4/24/2015 13:50
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	ND		0.56	MG/KG	1	4/24/2015 12:32
Surr: 2,3,4-TRIFLUOROTOLUENE	101		76-126	%REC	1	4/24/2015 12:32
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.0058	MG/KG	1	4/28/2015 11:24
TOLUENE	ND		0.0058	MG/KG	1	4/28/2015 11:24
ETHYLBENZENE	ND		0.0058	MG/KG	1	4/28/2015 11:24
M+P-XYLENE	ND		0.0058	MG/KG	1	4/28/2015 11:24
O-XYLENE	ND		0.0058	MG/KG	1	4/28/2015 11:24
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 11:24
Surr: DIBROMOFLUOROMETHANE	101		61-134	%REC	1	4/28/2015 11:24
Surr: TOLUENE-D8	97		57-135	%REC	1	4/28/2015 11:24
Surr: 4-BROMOFLUOROBENZENE	100		52-151	%REC	1	4/28/2015 11:24

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB5 10'-15'  
**Legal Location:**  
**Collection Date:** 4/15/2015 15:18

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-14  
**Matrix:** SOIL  
**Percent Moisture:** 11.6

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	ND		5.6	MG/KG	1	4/24/2015 14:26
Surr: O-TERPHENYL	96		53-116	%REC	1	4/24/2015 14:26
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	ND		0.53	MG/KG	1	4/24/2015 12:53
Surr: 2,3,4-TRIFLUOROTOLUENE	95		76-126	%REC	1	4/24/2015 12:53
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.0054	MG/KG	1	4/28/2015 11:47
TOLUENE	ND		0.0054	MG/KG	1	4/28/2015 11:47
ETHYLBENZENE	ND		0.0054	MG/KG	1	4/28/2015 11:47
M+P-XYLENE	ND		0.0054	MG/KG	1	4/28/2015 11:47
O-XYLENE	ND		0.0054	MG/KG	1	4/28/2015 11:47
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 11:47
Surr: DIBROMOFLUOROMETHANE	100		61-134	%REC	1	4/28/2015 11:47
Surr: TOLUENE-D8	97		57-135	%REC	1	4/28/2015 11:47
Surr: 4-BROMOFLUOROBENZENE	98		52-151	%REC	1	4/28/2015 11:47

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB5 25'-30'  
**Legal Location:**  
**Collection Date:** 4/15/2015 15:35

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-15  
**Matrix:** SOIL  
**Percent Moisture:** 19.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	ND		6.1	MG/KG	1	4/24/2015 15:01
Surr: O-TERPHENYL	98		53-116	%REC	1	4/24/2015 15:01
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	ND		0.36	MG/KG	1	4/24/2015 13:14
Surr: 2,3,4-TRIFLUOROTOLUENE	99		76-126	%REC	1	4/24/2015 13:14
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.006	MG/KG	1	4/28/2015 12:10
TOLUENE	ND		0.006	MG/KG	1	4/28/2015 12:10
ETHYLBENZENE	ND		0.006	MG/KG	1	4/28/2015 12:10
M+P-XYLENE	ND		0.006	MG/KG	1	4/28/2015 12:10
O-XYLENE	ND		0.006	MG/KG	1	4/28/2015 12:10
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 12:10
Surr: DIBROMOFLUOROMETHANE	101		61-134	%REC	1	4/28/2015 12:10
Surr: TOLUENE-D8	98		57-135	%REC	1	4/28/2015 12:10
Surr: 4-BROMOFLUOROBENZENE	98		52-151	%REC	1	4/28/2015 12:10

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB6 5'-10'  
**Legal Location:**  
**Collection Date:** 4/16/2015 09:09

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-16  
**Matrix:** SOIL  
**Percent Moisture:** 16.2

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
<b>Diesel Range Organics</b>	<b>68</b>	4,5,8,M	<b>5.9</b>	<b>MG/KG</b>	1	4/24/2015 15:37
<i>Surr: O-TERPHENYL</i>	96		53-116	%REC	1	4/24/2015 15:37
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
<b>GASOLINE RANGE ORGANICS</b>	<b>13</b>	GZ	<b>1.1</b>	<b>MG/KG</b>	1	4/24/2015 13:35
<i>Surr: 2,3,4-TRIFLUOROTOLUENE</i>	109		76-126	%REC	1	4/24/2015 13:35
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.0057	MG/KG	1	4/28/2015 22:30
TOLUENE	ND		0.0057	MG/KG	1	4/28/2015 22:30
ETHYLBENZENE	ND		0.0057	MG/KG	1	4/28/2015 22:30
<b>M+P-XYLENE</b>	<b>0.021</b>		<b>0.0057</b>	<b>MG/KG</b>	1	4/28/2015 22:30
O-XYLENE	ND		0.0057	MG/KG	1	4/28/2015 22:30
<b>TOTAL XYLENES</b>	<b>0.021</b>		<b>0.005</b>	<b>MG/KG</b>	1	4/28/2015 22:30
<i>Surr: DIBROMOFLUOROMETHANE</i>	104		61-134	%REC	1	4/28/2015 22:30
<i>Surr: TOLUENE-D8</i>	101		57-135	%REC	1	4/28/2015 22:30
<i>Surr: 4-BROMOFLUOROBENZENE</i>	98		52-151	%REC	1	4/28/2015 22:30

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB6 10'-15'  
**Legal Location:**  
**Collection Date:** 4/16/2015 09:20

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-17  
**Matrix:** SOIL  
**Percent Moisture:** 5.5

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	ND		5.1	MG/KG	1	4/24/2015 16:13
Surr: O-TERPHENYL	93		53-116	%REC	1	4/24/2015 16:13
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	ND		0.46	MG/KG	1	4/24/2015 13:55
Surr: 2,3,4-TRIFLUOROTOLUENE	94		76-126	%REC	1	4/24/2015 13:55
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.005	MG/KG	1	4/28/2015 12:33
TOLUENE	ND		0.005	MG/KG	1	4/28/2015 12:33
ETHYLBENZENE	ND		0.005	MG/KG	1	4/28/2015 12:33
M+P-XYLENE	ND		0.005	MG/KG	1	4/28/2015 12:33
O-XYLENE	ND		0.005	MG/KG	1	4/28/2015 12:33
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 12:33
Surr: DIBROMOFLUOROMETHANE	99		61-134	%REC	1	4/28/2015 12:33
Surr: TOLUENE-D8	100		57-135	%REC	1	4/28/2015 12:33
Surr: 4-BROMOFLUOROBENZENE	102		52-151	%REC	1	4/28/2015 12:33

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB6 20'-25'  
**Legal Location:**  
**Collection Date:** 4/16/2015 09:40

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-18  
**Matrix:** SOIL  
**Percent Moisture:** 15.7

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	ND		5.8	MG/KG	1	4/24/2015 16:49
Surr: O-TERPHENYL	97		53-116	%REC	1	4/24/2015 16:49
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	ND		0.47	MG/KG	1	4/24/2015 14:16
Surr: 2,3,4-TRIFLUOROTOLUENE	92		76-126	%REC	1	4/24/2015 14:16
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.0054	MG/KG	1	4/28/2015 12:57
TOLUENE	ND		0.0054	MG/KG	1	4/28/2015 12:57
ETHYLBENZENE	ND		0.0054	MG/KG	1	4/28/2015 12:57
M+P-XYLENE	ND		0.0054	MG/KG	1	4/28/2015 12:57
O-XYLENE	ND		0.0054	MG/KG	1	4/28/2015 12:57
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 12:57
Surr: DIBROMOFLUOROMETHANE	99		61-134	%REC	1	4/28/2015 12:57
Surr: TOLUENE-D8	98		57-135	%REC	1	4/28/2015 12:57
Surr: 4-BROMOFLUOROBENZENE	97		52-151	%REC	1	4/28/2015 12:57

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB6 30'-35'  
**Legal Location:**  
**Collection Date:** 4/16/2015 10:00

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-19  
**Matrix:** SOIL  
**Percent Moisture:** 19.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	ND		6.1	MG/KG	1	4/24/2015 17:24
Surr: O-TERPHENYL	98		53-116	%REC	1	4/24/2015 17:24
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	ND		0.56	MG/KG	1	4/24/2015 14:37
Surr: 2,3,4-TRIFLUOROTOLUENE	94		76-126	%REC	1	4/24/2015 14:37
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.0059	MG/KG	1	4/28/2015 13:20
TOLUENE	ND		0.0059	MG/KG	1	4/28/2015 13:20
ETHYLBENZENE	ND		0.0059	MG/KG	1	4/28/2015 13:20
M+P-XYLENE	ND		0.0059	MG/KG	1	4/28/2015 13:20
O-XYLENE	ND		0.0059	MG/KG	1	4/28/2015 13:20
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 13:20
Surr: DIBROMOFLUOROMETHANE	100		61-134	%REC	1	4/28/2015 13:20
Surr: TOLUENE-D8	97		57-135	%REC	1	4/28/2015 13:20
Surr: 4-BROMOFLUOROBENZENE	97		52-151	%REC	1	4/28/2015 13:20

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB7 10'-15'  
**Legal Location:**  
**Collection Date:** 4/16/2015 10:40

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-20  
**Matrix:** SOIL  
**Percent Moisture:** 12.2

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
Diesel Range Organics	ND		<b>SW8015M</b>		Prep Date: <b>4/23/2015</b>	PrepBy: <b>JFN</b>
Surr: O-TERPHENYL	94		5.3	MG/KG	1	4/24/2015 18:00
			53-116	%REC	1	4/24/2015 18:00
<b>Gasoline Range Organics</b>						
GASOLINE RANGE ORGANICS	ND		<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
Surr: 2,3,4-TRIFLUOROTOLUENE	92		0.54	MG/KG	1	4/24/2015 15:19
			76-126	%REC	1	4/24/2015 15:19
<b>GC/MS Volatiles</b>						
BENZENE	ND		<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
TOLUENE	ND		0.0052	MG/KG	1	4/28/2015 13:43
ETHYLBENZENE	ND		0.0052	MG/KG	1	4/28/2015 13:43
M+P-XYLENE	ND		0.0052	MG/KG	1	4/28/2015 13:43
O-XYLENE	ND		0.0052	MG/KG	1	4/28/2015 13:43
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 13:43
Surr: DIBROMOFLUOROMETHANE	101		61-134	%REC	1	4/28/2015 13:43
Surr: TOLUENE-D8	96		57-135	%REC	1	4/28/2015 13:43
Surr: 4-BROMOFLUOROBENZENE	98		52-151	%REC	1	4/28/2015 13:43

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB7 25'-30'  
**Legal Location:**  
**Collection Date:** 4/16/2015 11:15

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-21  
**Matrix:** SOIL  
**Percent Moisture:** 15.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>4/25/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	ND		5.7	MG/KG	1	4/26/2015 17:11
Surr: O-TERPHENYL	92		53-116	%REC	1	4/26/2015 17:11
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>4/24/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	ND		0.43	MG/KG	1	4/24/2015 15:40
Surr: 2,3,4-TRIFLUOROTOLUENE	95		76-126	%REC	1	4/24/2015 15:40
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>4/28/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.0056	MG/KG	1	4/28/2015 14:07
TOLUENE	ND		0.0056	MG/KG	1	4/28/2015 14:07
ETHYLBENZENE	ND		0.0056	MG/KG	1	4/28/2015 14:07
M+P-XYLENE	ND		0.0056	MG/KG	1	4/28/2015 14:07
O-XYLENE	ND		0.0056	MG/KG	1	4/28/2015 14:07
TOTAL XYLENES	ND		0.005	MG/KG	1	4/28/2015 14:07
Surr: DIBROMOFLUOROMETHANE	99		61-134	%REC	1	4/28/2015 14:07
Surr: TOLUENE-D8	97		57-135	%REC	1	4/28/2015 14:07
Surr: 4-BROMOFLUOROBENZENE	97		52-151	%REC	1	4/28/2015 14:07

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6 A7  
**Sample ID:** SB7 25'-30'  
**Legal Location:**  
**Collection Date:** 4/16/2015 11:15

**Date:** 04-May-15  
**Work Order:** 1504425  
**Lab ID:** 1504425-21  
**Matrix:** SOIL  
**Percent Moisture:** 15.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
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### Explanation of Qualifiers

#### Radiochemistry:

U or ND - Result is less than the sample specific MDC.  
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.  
Y2 - Chemical Yield outside default limits.  
W - DER is greater than Warning Limit of 1.42  
\* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.  
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.  
G - Sample density differs by more than 15% of LCS density.  
D - DER is greater than Control Limit  
M - Requested MDC not met.  
LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.  
L - LCS Recovery below lower control limit.  
H - LCS Recovery above upper control limit.  
P - LCS, Matrix Spike Recovery within control limits.  
N - Matrix Spike Recovery outside control limits  
NC - Not Calculated for duplicate results less than 5 times MDC  
B - Analyte concentration greater than MDC.  
B3 - Analyte concentration greater than MDC but less than Requested MDC.

#### Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).  
U or ND - Indicates that the compound was analyzed for but not detected.  
E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.  
M - Duplicate injection precision was not met.  
N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.  
Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.  
\* - Duplicate analysis (relative percent difference) not within control limits.  
S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

#### Organics:

U or ND - Indicates that the compound was analyzed for but not detected.  
B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.  
E - Analyte concentration exceeds the upper level of the calibration range.  
J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).  
A - A tentatively identified compound is a suspected aldol-condensation product.  
X - The analyte was diluted below an accurate quantitation level.  
\* - The spike recovery is equal to or outside the control criteria used.  
+ - The relative percent difference (RPD) equals or exceeds the control criteria.  
G - A pattern resembling gasoline was detected in this sample.  
D - A pattern resembling diesel was detected in this sample.  
M - A pattern resembling motor oil was detected in this sample.  
C - A pattern resembling crude oil was detected in this sample.  
4 - A pattern resembling JP-4 was detected in this sample.  
5 - A pattern resembling JP-5 was detected in this sample.  
H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.  
L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.  
Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:  
- gasoline  
- JP-8  
- diesel  
- mineral spirits  
- motor oil  
- Stoddard solvent  
- bunker C

Client: Talon LPE  
 Work Order: 1504425  
 Project: 701530.024.01 Nelson A6 A7

**QC BATCH REPORT**

Batch ID: **HC150423-61-1** Instrument ID **FUELS-1** Method: **SW8015**

LCS		Sample ID: <b>HC150423-61</b>			Units: <b>MG/KG</b>			Analysis Date: <b>4/23/2015 09:25</b>			
Client ID:		Run ID: <b>HC150423-6A</b>			Prep Date: <b>4/23/2015</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.36	0.5	2.5		94	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.553		0.5		111	76-126					

LCSD		Sample ID: <b>HC150423-61</b>			Units: <b>MG/KG</b>			Analysis Date: <b>4/23/2015 16:00</b>			
Client ID:		Run ID: <b>HC150423-6A</b>			Prep Date: <b>4/23/2015</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.56	0.5	2.5		103	79-118		2.36	8	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.535		0.5		107	76-126			3		

MB		Sample ID: <b>HC150423-61</b>			Units: <b>MG/KG</b>			Analysis Date: <b>4/23/2015 09:45</b>			
Client ID:		Run ID: <b>HC150423-6A</b>			Prep Date: <b>4/23/2015</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.501		0.5		100	76-126					

The following samples were analyzed in this batch:

1504425-2	1504425-3	1504425-4
1504425-5	1504425-7	1504425-10

Client: Talon LPE  
 Work Order: 1504425  
 Project: 701530.024.01 Nelson A6 A7

# QC BATCH REPORT

Batch ID: **HC150423-100-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS		Sample ID: <b>HC150423-100</b>			Units: <b>MG/KG</b>		Analysis Date: <b>4/23/2015 17:03</b>				
Client ID:		Run ID: <b>HC150423-8AAA</b>			Prep Date: <b>4/23/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	126	5	125		101	76-124				20	
Surr: O-TERPHENYL	5.37		6.25		86	53-116					

MB		Sample ID: <b>HC150423-100</b>			Units: <b>MG/KG</b>		Analysis Date: <b>4/23/2015 15:52</b>				
Client ID:		Run ID: <b>HC150423-8AAA</b>			Prep Date: <b>4/23/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	5.47		6.25		88	53-116					

MS		Sample ID: <b>1504425-3</b>			Units: <b>MG/KG</b>		Analysis Date: <b>4/23/2015 19:28</b>				
Client ID: <b>SB1 15'-20'</b>		Run ID: <b>HC150423-8AAA</b>			Prep Date: <b>4/23/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	128	5.24	131	5.2	98	76-124				20	
Surr: O-TERPHENYL	6.02		6.56		92	53-116					

The following samples were analyzed in this batch:

1504425-1	1504425-2	1504425-3
1504425-4	1504425-5	1504425-6
1504425-7		

Client: Talon LPE  
 Work Order: 1504425  
 Project: 701530.024.01 Nelson A6 A7

# QC BATCH REPORT

Batch ID: **HC150424-61-1** Instrument ID **FUELS-1** Method: **SW8015**

LCS		Sample ID: <b>HC150424-61</b>			Units: <b>MG/KG</b>			Analysis Date: <b>4/24/2015 08:43</b>			
Client ID:		Run ID: <b>HC150424-6A</b>			Prep Date: <b>4/24/2015</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.37	0.5	2.5		95	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.55		0.5		110	76-126					

LCSD		Sample ID: <b>HC150424-61</b>			Units: <b>MG/KG</b>			Analysis Date: <b>4/24/2015 14:58</b>			
Client ID:		Run ID: <b>HC150424-6A</b>			Prep Date: <b>4/24/2015</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.28	0.5	2.5		91	79-118		2.37	4	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.54		0.5		108	76-126			2		

MB		Sample ID: <b>HC150424-61</b>			Units: <b>MG/KG</b>			Analysis Date: <b>4/24/2015 09:04</b>			
Client ID:		Run ID: <b>HC150424-6A</b>			Prep Date: <b>4/24/2015</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.51		0.5		102	76-126					

MB		Sample ID: <b>HC150424-61M</b>			Units: <b>MG/KG</b>			Analysis Date: <b>4/24/2015 09:25</b>			
Client ID:		Run ID: <b>HC150424-6A</b>			Prep Date: <b>4/24/2015</b>			DF: <b>50</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	5									
Surr: 2,3,4-TRIFLUOROTOLUENE	5.47		5		109	76-126					

MS		Sample ID: <b>1504425-11</b>			Units: <b>MG/KG</b>			Analysis Date: <b>4/24/2015 11:29</b>			
Client ID: <b>SB4 10'-15'</b>		Run ID: <b>HC150424-6A</b>			Prep Date: <b>4/24/2015</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1.99	0.489	2.44	0.49	81	79-118				40	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.516		0.489		105	76-126					

Client: Talon LPE  
 Work Order: 1504425  
 Project: 701530.024.01 Nelson A6 A7

# QC BATCH REPORT

Batch ID: **HC150424-61-1** Instrument ID **FUELS-1** Method: **SW8015**

MSD Sample ID: **1504425-11** Units: **MG/KG** Analysis Date: **4/24/2015 11:50**  
 Client ID: **SB4 10'-15'** Run ID: **HC150424-6A** Prep Date: **4/24/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1.87	0.464	2.32	0.49	81	79-118		1.99	6	40	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.479		0.464		103	76-126			7		

The following samples were analyzed in this batch:

1504425-1	1504425-6	1504425-8
1504425-9	1504425-11	1504425-12
1504425-13	1504425-14	1504425-15
1504425-16	1504425-17	1504425-18
1504425-19	1504425-20	1504425-21

Client: Talon LPE  
 Work Order: 1504425  
 Project: 701530.024.01 Nelson A6 A7

# QC BATCH REPORT

Batch ID: **HC150426-100-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS		Sample ID: <b>HC150426-100</b>			Units: <b>MG/KG</b>		Analysis Date: <b>4/26/2015 15:25</b>				
Client ID:		Run ID: <b>HC150426-8A</b>			Prep Date: <b>4/25/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	126	5	125		101	76-124				20	
Surr: O-TERPHENYL	9.4		12.5		75	53-116					

MB		Sample ID: <b>HC150426-100</b>			Units: <b>MG/KG</b>		Analysis Date: <b>4/26/2015 14:13</b>				
Client ID:		Run ID: <b>HC150426-8A</b>			Prep Date: <b>4/25/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	10.2		12.5		81	53-116					

The following samples were analyzed in this batch:

1504425-21

Client: Talon LPE  
 Work Order: 1504425  
 Project: 701530.024.01 Nelson A6 A7

# QC BATCH REPORT

Batch ID: VL150428-4-1 Instrument ID: HPV1 Method: SW8260

LCS		Sample ID: VL150428-4			Units: MG/KG		Analysis Date: 4/28/2015 08:45				
Client ID:		Run ID: VL150428-4A			Prep Date: 4/28/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0379	0.005	0.04		95	73-126				30	
TOLUENE	0.0363	0.005	0.04		91	71-127				30	
ETHYLBENZENE	0.0358	0.005	0.04		90	74-127				30	
M+P-XYLENE	0.0708	0.005	0.08		88	79-126				30	
O-XYLENE	0.0353	0.005	0.04		88	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.0512		0.05		102	61-134					
Surr: TOLUENE-D8	0.0491		0.05		98	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0489		0.05		98	52-151					

LCSD		Sample ID: VL150428-4			Units: MG/KG		Analysis Date: 4/28/2015 09:07				
Client ID:		Run ID: VL150428-4A			Prep Date: 4/28/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0402	0.005	0.04		100	73-126		0.0379	6	30	
TOLUENE	0.04	0.005	0.04		100	71-127		0.0363	10	30	
ETHYLBENZENE	0.04	0.005	0.04		100	74-127		0.0358	11	30	
M+P-XYLENE	0.0787	0.005	0.08		98	79-126		0.0708	11	30	
O-XYLENE	0.0401	0.005	0.04		100	77-125		0.0353	13	30	
Surr: DIBROMOFLUOROMETHANE	0.0508		0.05		102	61-134			1		
Surr: TOLUENE-D8	0.0496		0.05		99	57-135			1		
Surr: 4-BROMOFLUOROBENZENE	0.0477		0.05		95	52-151			2		

MB		Sample ID: VL150428-4			Units: MG/KG		Analysis Date: 4/28/2015 09:30				
Client ID:		Run ID: VL150428-4A			Prep Date: 4/28/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0496		0.05		99	61-134					
Surr: TOLUENE-D8	0.0509		0.05		102	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0496		0.05		99	52-151					

**Client:** Talon LPE  
**Work Order:** 1504425  
**Project:** 701530.024.01 Nelson A6 A7

## QC BATCH REPORT

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The following samples were analyzed in this batch:

1504425-1	1504425-5	1504425-7
1504425-9	1504425-11	1504425-12
1504425-13	1504425-14	1504425-15
1504425-17	1504425-18	1504425-19
1504425-20	1504425-21	

Client: Talon LPE  
 Work Order: 1504425  
 Project: 701530.024.01 Nelson A6 A7

# QC BATCH REPORT

Batch ID: VL150428-7-1 Instrument ID: HPV1 Method: SW8260

LCS		Sample ID: VL150428-7			Units: MG/KG		Analysis Date: 4/28/2015 16:40				
Client ID:		Run ID: VL150428-7A			Prep Date: 4/28/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0387	0.005	0.04		97	73-126				30	
TOLUENE	0.0367	0.005	0.04		92	71-127				30	
ETHYLBENZENE	0.0365	0.005	0.04		91	74-127				30	
M+P-XYLENE	0.0711	0.005	0.08		89	79-126				30	
O-XYLENE	0.0358	0.005	0.04		89	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.052		0.05		104	61-134					
Surr: TOLUENE-D8	0.0487		0.05		97	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0486		0.05		97	52-151					

LCSD		Sample ID: VL150428-7			Units: MG/KG		Analysis Date: 4/28/2015 17:04				
Client ID:		Run ID: VL150428-7A			Prep Date: 4/28/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0389	0.005	0.04		97	73-126		0.0387	1	30	
TOLUENE	0.0371	0.005	0.04		93	71-127		0.0367	1	30	
ETHYLBENZENE	0.0368	0.005	0.04		92	74-127		0.0365	1	30	
M+P-XYLENE	0.0718	0.005	0.08		90	79-126		0.0711	1	30	
O-XYLENE	0.036	0.005	0.04		90	77-125		0.0358	1	30	
Surr: DIBROMOFLUOROMETHANE	0.0528		0.05		106	61-134			2		
Surr: TOLUENE-D8	0.0489		0.05		98	57-135			0		
Surr: 4-BROMOFLUOROBENZENE	0.0497		0.05		99	52-151			2		

MB		Sample ID: VL150428-7			Units: MG/KG		Analysis Date: 4/28/2015 17:28				
Client ID:		Run ID: VL150428-7A			Prep Date: 4/28/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0487		0.05		97	61-134					
Surr: TOLUENE-D8	0.0491		0.05		98	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0491		0.05		98	52-151					

Client: Talon LPE  
 Work Order: 1504425  
 Project: 701530.024.01 Nelson A6 A7

# QC BATCH REPORT

Batch ID: VL150428-7-1 Instrument ID HPV1 Method: SW8260

MB Sample ID: VL150428-7M Units: MG/KG Analysis Date: 4/28/2015 17:51  
 Client ID: Run ID: VL150428-7A Prep Date: 4/28/2015 DF: 50

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.25									
TOLUENE	ND	0.25									
ETHYLBENZENE	ND	0.25									
M+P-XYLENE	ND	0.25									
O-XYLENE	ND	0.25									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	2.42		2.5		97	61-134					
Surr: TOLUENE-D8	2.53		2.5		101	57-135					
Surr: 4-BROMOFLUOROBENZENE	2.51		2.5		100	52-151					

The following samples were analyzed in this batch:

1504425-1	1504425-2	1504425-3
1504425-4	1504425-6	1504425-8
1504425-16		

Client: Talon LPE  
 Work Order: 1504425  
 Project: 701530.024.01 Nelson A6 A7

# QC BATCH REPORT

Batch ID: VL150429-4-1 Instrument ID: HPV1 Method: SW8260

LCS		Sample ID: VL150429-4			Units: MG/KG		Analysis Date: 4/29/2015 06:58				
Client ID:		Run ID: VL150429-4A			Prep Date: 4/29/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.041	0.005	0.04		102	73-126				30	
TOLUENE	0.0409	0.005	0.04		102	71-127				30	
ETHYLBENZENE	0.0405	0.005	0.04		101	74-127				30	
M+P-XYLENE	0.0797	0.005	0.08		100	79-126				30	
O-XYLENE	0.039	0.005	0.04		98	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.0495		0.05		99	61-134					
Surr: TOLUENE-D8	0.0493		0.05		99	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.049		0.05		98	52-151					

LCSD		Sample ID: VL150429-4			Units: MG/KG		Analysis Date: 4/29/2015 07:21				
Client ID:		Run ID: VL150429-4A			Prep Date: 4/29/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0404	0.005	0.04		101	73-126		0.041	1	30	
TOLUENE	0.0401	0.005	0.04		100	71-127		0.0409	2	30	
ETHYLBENZENE	0.0398	0.005	0.04		99	74-127		0.0405	2	30	
M+P-XYLENE	0.0788	0.005	0.08		98	79-126		0.0797	1	30	
O-XYLENE	0.0391	0.005	0.04		98	77-125		0.039	0	30	
Surr: DIBROMOFLUOROMETHANE	0.0494		0.05		99	61-134				0	
Surr: TOLUENE-D8	0.0494		0.05		99	57-135				0	
Surr: 4-BROMOFLUOROBENZENE	0.049		0.05		98	52-151				0	

MB		Sample ID: VL150429-4			Units: MG/KG		Analysis Date: 4/29/2015 07:45				
Client ID:		Run ID: VL150429-4A			Prep Date: 4/29/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0478		0.05		96	61-134					
Surr: TOLUENE-D8	0.0501		0.05		100	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0498		0.05		100	52-151					

The following samples were analyzed in this batch:

Friday, June 12, 2015

Colby Sterling  
Talon LPE  
921 N Bivins  
Amarillo, TX 79107

Re: ALS Workorder: 1506113  
Project Name: Nelson A6/A7  
Project Number: 701530.024.01

Dear Mr. Sterling:

Two soil samples were received from Talon LPE, on 6/5/2015. The samples were scheduled for the following analyses:

GC/MS Volatiles

Total Extractable Petroleum Hydrocarbons (Diesel)

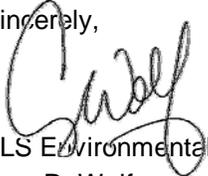
Total Volatile Petroleum Hydrocarbons (Gasoline)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,



ALS Environmental  
Amy R. Wolf  
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New Jersey (NJ)	CO003
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280



## 1506113

### **GC/MS Volatiles:**

The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

All acceptance criteria were met.

### **GRO:**

The samples were analyzed following the current revision of SOP 425 generally based on SW-846 Methods 8000C and 8015D. TVPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C6 to C10.

Samples -1 and -2 had elevated surrogate recoveries (above the upper control limit). Inspection of the chromatograms for both samples indicates col-elution of the surrogate with target component peaks, giving a high bias to the surrogate recovery. No further action was taken.

All remaining acceptance criteria were met.

### **DRO:**

The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1506113

**Client Name:** Talon LPE

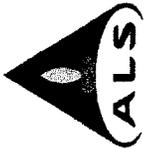
**Client Project Name:** Nelson A6/A7

**Client Project Number:** 701530.024.01

**Client PO Number:**

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
FS-1 @ 8'	1506113-1		SOIL	04-Jun-15	11:20
F-2 @ 6'	1506113-2		SOIL	04-Jun-15	11:10



# ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524  
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

# Chain-of-Custody

Form 202/8

PROJECT NAME Nelson Ag/AT		SAMPLER TJ Gericci		DATE 6-5-15		PAGE 1 of 1	
PROJECT NO. 70530.024.01		SITE ID		TURNAROUND		By Lab or Return to Client	
COMPANY NAME T-Jen/LE		EDD FORMAT		DISPOSAL			
SEND REPORT TO Colby Steeling		PURCHASE ORDER		RECEIVED BY			
ADDRESS 1811 E. Mulberry St		BILL TO COMPANY Whiting		RECEIVED BY			
CITY/STATE/ZIP Ft Collins, CO 80524		INVOICE ATTN TO Kyle Wassenaar		RECEIVED BY			
PHONE 970-818-5330		ADDRESS		RECEIVED BY			
FAX		CITY/STATE/ZIP		RECEIVED BY			
E-MAIL csterling@tjtenper.com		PHONE		RECEIVED BY			
		FAX		RECEIVED BY			
		E-MAIL kyle.wassenaar@whiting.com		RECEIVED BY			
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC
①	FS-1 @ 8'	Soil	6-4-15	1120	1	NA	NA X X
②	F-2 @ 6'	Soil	6-4-15	1116	1	NA	NA X X

\*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)	
LEVEL II (Standard OC)	
LEVEL III (Std OC + forms)	
LEVEL IV (Std OC + forms + raw data)	

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHCO4 7-Other 8-4 degrees C 9-5035

RELINQUISHED BY	SIGNATURE	PRINTED NAME	DATE	TIME
RECEIVED BY	<i>[Signature]</i>	TJ Gericci	6-5-15	1215
RELINQUISHED BY	<i>[Signature]</i>	EPeterson	6/5/15	215
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				



ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: TALON

Workorder No: 1506113

Project Manager: ARW

Initials: SDM Date: 06-05-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	<input checked="" type="radio"/> DROP OFF	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	<input checked="" type="radio"/> N/A	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<input checked="" type="radio"/> N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	<input checked="" type="radio"/> N/A	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ___ dusting ___ moderate ___ heavy	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 <input checked="" type="radio"/> #4		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>1.4</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>NA</u>			
Background µR/hr reading: <u>12</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / <input checked="" type="radio"/> NA (If no, see Form 008.)			

**Additional Information:** PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

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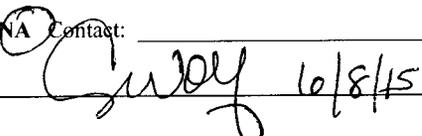
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If applicable, was the client contacted? YES / NO /  NA Contact: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Manager Signature / Date:  6/8/15

Client: Talon LPE  
 Project: 701530.024.01 Nelson A6/A7  
 Sample ID: FS-1 @ 8'  
 Legal Location:  
 Collection Date: 6/4/2015 11:20

Date: 12-Jun-15  
 Work Order: 1506113  
 Lab ID: 1506113-1  
 Matrix: SOIL  
 Percent Moisture: 20.8

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
Diesel Range Organics	65	ZL	6.1	MG/KG	1	6/10/2015 15:02
Surr: O-TERPHENYL	95		53-116	%REC	1	6/10/2015 15:02
<b>Gasoline Range Organics</b>						
GASOLINE RANGE ORGANICS	79	GZ	1.1	MG/KG	1	6/8/2015 17:02
Surr: 2,3,4-TRIFLUOROTOLUENE	141	*	76-126	%REC	1	6/8/2015 17:02
<b>GC/MS Volatiles</b>						
BENZENE	0.42		0.048	MG/KG	1	6/8/2015 15:16
TOLUENE	2		0.26	MG/KG	50	6/9/2015 16:38
ETHYLBENZENE	0.31		0.048	MG/KG	1	6/8/2015 15:16
M+P-XYLENE	1.6		0.048	MG/KG	1	6/8/2015 15:16
O-XYLENE	0.62		0.048	MG/KG	1	6/8/2015 15:16
TOTAL XYLENES	2.2		0.005	MG/KG	1	6/8/2015 15:16
Surr: DIBROMOFLUOROMETHANE	98		61-134	%REC	1	6/8/2015 15:16
Surr: DIBROMOFLUOROMETHANE	96		61-134	%REC	50	6/9/2015 16:38
Surr: TOLUENE-D8	94		57-135	%REC	50	6/9/2015 16:38
Surr: TOLUENE-D8	93		57-135	%REC	1	6/8/2015 15:16
Surr: 4-BROMOFLUOROBENZENE	97		52-151	%REC	50	6/9/2015 16:38
Surr: 4-BROMOFLUOROBENZENE	95		52-151	%REC	1	6/8/2015 15:16

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6/A7  
**Sample ID:** F-2 @ 6'  
**Legal Location:**  
**Collection Date:** 6/4/2015 11:10

**Date:** 12-Jun-15  
**Work Order:** 1506113  
**Lab ID:** 1506113-2  
**Matrix:** SOIL  
**Percent Moisture:** 17.8

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>6/9/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	<b>110</b>	ZL	<b>6</b>	<b>MG/KG</b>	1	6/10/2015 16:35
Surr: O-TERPHENYL	88		53-116	%REC	1	6/10/2015 16:35
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>6/8/2015</b>	PrepBy: <b>JFN</b>
GASOLINE RANGE ORGANICS	<b>54</b>	GZ	<b>0.96</b>	<b>MG/KG</b>	1	6/8/2015 18:06
Surr: 2,3,4-TRIFLUOROTOLUENE	136	*	76-126	%REC	1	6/8/2015 18:06
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>6/8/2015</b>	PrepBy: <b>TWK</b>
BENZENE	ND		0.061	MG/KG	1	6/8/2015 16:34
TOLUENE	<b>0.057</b>		<b>0.049</b>	<b>MG/KG</b>	1	6/8/2015 15:44
ETHYLBENZENE	<b>0.72</b>		<b>0.049</b>	<b>MG/KG</b>	1	6/8/2015 15:44
M+P-XYLENE	<b>2.9</b>		<b>0.061</b>	<b>MG/KG</b>	1	6/8/2015 16:34
O-XYLENE	<b>0.71</b>		<b>0.049</b>	<b>MG/KG</b>	1	6/8/2015 15:44
TOTAL XYLENES	<b>3.4</b>		<b>0.005</b>	<b>MG/KG</b>	1	6/8/2015 16:34
Surr: DIBROMOFLUOROMETHANE	103		61-134	%REC	1	6/8/2015 15:44
Surr: DIBROMOFLUOROMETHANE	99		61-134	%REC	1	6/8/2015 16:34
Surr: TOLUENE-D8	94		57-135	%REC	1	6/8/2015 16:34
Surr: TOLUENE-D8	91		57-135	%REC	1	6/8/2015 15:44
Surr: 4-BROMOFLUOROBENZENE	93		52-151	%REC	1	6/8/2015 16:34
Surr: 4-BROMOFLUOROBENZENE	96		52-151	%REC	1	6/8/2015 15:44

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6/A7  
**Sample ID:** F-2 @ 6'  
**Legal Location:**  
**Collection Date:** 6/4/2015 11:10

**Date:** 12-Jun-15  
**Work Order:** 1506113  
**Lab ID:** 1506113-2  
**Matrix:** SOIL  
**Percent Moisture:** 17.8

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
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### Explanation of Qualifiers

#### Radiochemistry:

U or ND - Result is less than the sample specific MDC.  
Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.  
Y2 - Chemical Yield outside default limits.  
W - DER is greater than Warning Limit of 1.42  
\* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.  
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.  
G - Sample density differs by more than 15% of LCS density.  
D - DER is greater than Control Limit  
M - Requested MDC not met.  
LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.  
L - LCS Recovery below lower control limit.  
H - LCS Recovery above upper control limit.  
P - LCS, Matrix Spike Recovery within control limits.  
N - Matrix Spike Recovery outside control limits  
NC - Not Calculated for duplicate results less than 5 times MDC  
B - Analyte concentration greater than MDC.  
B3 - Analyte concentration greater than MDC but less than Requested MDC.

#### Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).  
U or ND - Indicates that the compound was analyzed for but not detected.  
E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.  
M - Duplicate injection precision was not met.  
N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.  
Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.  
\* - Duplicate analysis (relative percent difference) not within control limits.  
S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

#### Organics:

U or ND - Indicates that the compound was analyzed for but not detected.  
B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.  
E - Analyte concentration exceeds the upper level of the calibration range.  
J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).  
A - A tentatively identified compound is a suspected aldol-condensation product.  
X - The analyte was diluted below an accurate quantitation level.  
\* - The spike recovery is equal to or outside the control criteria used.  
+ - The relative percent difference (RPD) equals or exceeds the control criteria.  
G - A pattern resembling gasoline was detected in this sample.  
D - A pattern resembling diesel was detected in this sample.  
M - A pattern resembling motor oil was detected in this sample.  
C - A pattern resembling crude oil was detected in this sample.  
4 - A pattern resembling JP-4 was detected in this sample.  
5 - A pattern resembling JP-5 was detected in this sample.  
H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.  
L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.  
Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:  
- gasoline  
- JP-8  
- diesel  
- mineral spirits  
- motor oil  
- Stoddard solvent  
- bunker C

Client: Talon LPE  
 Work Order: 1506113  
 Project: 701530.024.01 Nelson A6/A7

**QC BATCH REPORT**

Batch ID: **HC150608-61-1** Instrument ID **FUELS-1** Method: **SW8015**

**LCS** Sample ID: **HC150608-61** Units: **MG/KG** Analysis Date: **6/8/2015 09:26**  
 Client ID: Run ID: **HC150608-6A** Prep Date: **6/8/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.37	0.5	2.5		95	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.503		0.5		101	76-126					

**LCSD** Sample ID: **HC150608-61** Units: **MG/KG** Analysis Date: **6/8/2015 15:41**  
 Client ID: Run ID: **HC150608-6A** Prep Date: **6/8/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.45	0.5	2.5		98	79-118		2.37	3	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.519		0.5		104	76-126			3		

**MB** Sample ID: **HC150608-61** Units: **MG/KG** Analysis Date: **6/8/2015 09:47**  
 Client ID: Run ID: **HC150608-6A** Prep Date: **6/8/2015** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.449		0.5		90	76-126					

The following samples were analyzed in this batch: 1506113-1      1506113-2

Client: Talon LPE  
 Work Order: 1506113  
 Project: 701530.024.01 Nelson A6/A7

# QC BATCH REPORT

Batch ID: **HC150609-101-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS		Sample ID: <b>HC150609-101</b>			Units: <b>MG/KG</b>		Analysis Date: <b>6/10/2015 10:55</b>				
Client ID:		Run ID: <b>HC150610-7A</b>			Prep Date: <b>6/9/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	126	5	125		100	76-124				20	
Surr: O-TERPHENYL	9.79		12.5		78	53-116					

MB		Sample ID: <b>HC150609-101</b>			Units: <b>MG/KG</b>		Analysis Date: <b>6/10/2015 10:25</b>				
Client ID:		Run ID: <b>HC150610-7A</b>			Prep Date: <b>6/9/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	10.3		12.5		82	53-116					

MS		Sample ID: <b>1506113-1</b>			Units: <b>MG/KG</b>		Analysis Date: <b>6/10/2015 15:33</b>				
Client ID: <b>FS-1 @ 8'</b>		Run ID: <b>HC150610-7A</b>			Prep Date: <b>6/9/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	193	6.11	153		84	76-124				20	
Surr: O-TERPHENYL	14		15.3		92	53-116					

MSD		Sample ID: <b>1506113-1</b>			Units: <b>MG/KG</b>		Analysis Date: <b>6/10/2015 16:04</b>				
Client ID: <b>FS-1 @ 8'</b>		Run ID: <b>HC150610-7A</b>			Prep Date: <b>6/9/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	184	6.07	152		78	76-124			193	5	20
Surr: O-TERPHENYL	14.1		15.2		93	53-116				1	

The following samples were analyzed in this batch: 1506113-1 1506113-2

Client: Talon LPE  
 Work Order: 1506113  
 Project: 701530.024.01 Nelson A6/A7

# QC BATCH REPORT

Batch ID: VL150608-2-1 Instrument ID: HPV1 Method: SW8260

LCS		Sample ID: VL150608-2			Units: MG/KG		Analysis Date: 6/8/2015 11:34				
Client ID:		Run ID: VL150608-2A			Prep Date: 6/8/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0373	0.005	0.04		93	73-126				30	
TOLUENE	0.035	0.005	0.04		87	71-127				30	
ETHYLBENZENE	0.0349	0.005	0.04		87	74-127				30	
M+P-XYLENE	0.072	0.005	0.08		90	79-126				30	
O-XYLENE	0.036	0.005	0.04		90	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.0494		0.05		99	61-134					
Surr: TOLUENE-D8	0.046		0.05		92	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0508		0.05		102	52-151					

LCSD		Sample ID: VL150608-2			Units: MG/KG		Analysis Date: 6/8/2015 11:59				
Client ID:		Run ID: VL150608-2A			Prep Date: 6/8/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0391	0.005	0.04		98	73-126		0.0373	5	30	
TOLUENE	0.0377	0.005	0.04		94	71-127		0.035	7	30	
ETHYLBENZENE	0.037	0.005	0.04		93	74-127		0.0349	6	30	
M+P-XYLENE	0.0761	0.005	0.08		95	79-126		0.072	6	30	
O-XYLENE	0.038	0.005	0.04		95	77-125		0.036	5	30	
Surr: DIBROMOFLUOROMETHANE	0.0491		0.05		98	61-134			1		
Surr: TOLUENE-D8	0.0472		0.05		94	57-135			3		
Surr: 4-BROMOFLUOROBENZENE	0.0497		0.05		99	52-151			2		

MB		Sample ID: VL150608-2			Units: MG/KG		Analysis Date: 6/8/2015 12:27				
Client ID:		Run ID: VL150608-2A			Prep Date: 6/8/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0501		0.05		100	61-134					
Surr: TOLUENE-D8	0.0466		0.05		93	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0487		0.05		97	52-151					

The following samples were analyzed in this batch: 1506113-1 1506113-2

Client: Talon LPE  
 Work Order: 1506113  
 Project: 701530.024.01 Nelson A6/A7

# QC BATCH REPORT

Batch ID: VL150609-2-2 Instrument ID: HPV1 Method: SW8260

LCS		Sample ID: VL150609-2			Units: MG/KG		Analysis Date: 6/9/2015 09:59				
Client ID:		Run ID: VL150609-2A			Prep Date: 6/9/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0418	0.005	0.04		105	73-126				30	
TOLUENE	0.0395	0.005	0.04		99	71-127				30	
ETHYLBENZENE	0.0383	0.005	0.04		96	74-127				30	
M+P-XYLENE	0.079	0.005	0.08		99	79-126				30	
O-XYLENE	0.0394	0.005	0.04		98	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.0488		0.05		98	61-134					
Surr: TOLUENE-D8	0.048		0.05		96	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0497		0.05		99	52-151					

LCSD		Sample ID: VL150609-2			Units: MG/KG		Analysis Date: 6/9/2015 10:22				
Client ID:		Run ID: VL150609-2A			Prep Date: 6/9/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0411	0.005	0.04		103	73-126		0.0418	2	30	
TOLUENE	0.0394	0.005	0.04		98	71-127		0.0395	0	30	
ETHYLBENZENE	0.0378	0.005	0.04		95	74-127		0.0383	1	30	
M+P-XYLENE	0.0784	0.005	0.08		98	79-126		0.079	1	30	
O-XYLENE	0.0387	0.005	0.04		97	77-125		0.0394	2	30	
Surr: DIBROMOFLUOROMETHANE	0.0502		0.05		100	61-134			3		
Surr: TOLUENE-D8	0.047		0.05		94	57-135			2		
Surr: 4-BROMOFLUOROBENZENE	0.049		0.05		98	52-151			1		

MB		Sample ID: VL150609-2			Units: MG/KG		Analysis Date: 6/9/2015 12:27				
Client ID:		Run ID: VL150609-2A			Prep Date: 6/9/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0494		0.05		99	61-134					
Surr: TOLUENE-D8	0.0466		0.05		93	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0484		0.05		97	52-151					

Client: Talon LPE  
 Work Order: 1506113  
 Project: 701530.024.01 Nelson A6/A7

# QC BATCH REPORT

Batch ID: **VL150609-2-2** Instrument ID **HPV1** Method: **SW8260**

**MB** Sample ID: **VL150609-2M** Units: **MG/KG** Analysis Date: **6/9/2015 12:53**  
 Client ID: Run ID: **VL150609-2A** Prep Date: **6/9/2015** DF: **50**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.25									
TOLUENE	ND	0.25									
ETHYLBENZENE	ND	0.25									
M+P-XYLENE	ND	0.25									
O-XYLENE	ND	0.25									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	2.45		2.5		98	61-134					
Surr: TOLUENE-D8	2.38		2.5		95	57-135					
Surr: 4-BROMOFLUOROBENZENE	2.44		2.5		98	52-151					

The following samples were analyzed in this batch:

1506113-1

Friday, June 26, 2015

Colby Sterling  
Talon LPE  
921 N Bivins  
Amarillo, TX 79107

Re: ALS Workorder: 1506466  
Project Name: Nelson A6/A7  
Project Number: 701530.024.01

Dear Mr. Sterling:

One soil sample was received from Talon LPE, on 6/24/2015. The sample was scheduled for the following analyses:

GC/MS Volatiles

Total Extractable Petroleum Hydrocarbons (Diesel)

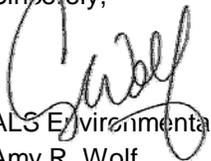
Total Volatile Petroleum Hydrocarbons (Gasoline)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,



ALS Environmental  
Amy R. Wolf  
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New Jersey (NJ)	CO003
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280



## 1506466

### **GC/MS Volatiles:**

The sample was analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

All acceptance criteria were met.

### **GRO:**

The sample was analyzed following the current revision of SOP 425 generally based on SW-846 Methods 8000C and 8015D. TVPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C6 to C10.

All acceptance criteria were met.

### **DRO:**

The sample was analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1506466

**Client Name:** Talon LPE

**Client Project Name:** Nelson A6/A7

**Client Project Number:** 701530.024.01

**Client PO Number:**

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
FS-3@12'	1506466-1		SOIL	24-Jun-15	9:30





**ALS Environmental - Fort Collins**  
**CONDITION OF SAMPLE UPON RECEIPT FORM**

Client: Talon

Workorder No: 1506466

Project Manager: AW

Initials: CDT Date: 6-24-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	<input checked="" type="radio"/> DROP OFF	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	<input checked="" type="radio"/> N/A	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<input checked="" type="radio"/> N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	<input checked="" type="radio"/> N/A	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ___ dusting ___ moderate ___ heavy	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: <input checked="" type="radio"/> #2 #4 RAD ONLY		YES	<input checked="" type="radio"/> NO
Cooler #: <u>1</u>			
Temperature (°C): <u>6.2</u> <input checked="" type="radio"/>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>NA</u>			
Background µR/hr reading: <u>NA</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / <input checked="" type="radio"/> NA (If no, see Form 008.)			

**Additional Information:** PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

Delivered same day as collected.

If applicable, was the client contacted? YES / NO /  NA Contact: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Manager Signature / Date: Suzoff 6/24/15

Client: Talon LPE  
 Project: 701530.024.01 Nelson A6/A7  
 Sample ID: FS-3@12'  
 Legal Location:  
 Collection Date: 6/24/2015 09:30

Date: 26-Jun-15  
 Work Order: 1506466  
 Lab ID: 1506466-1  
 Matrix: SOIL  
 Percent Moisture: 13.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
Diesel Range Organics	ND		<b>SW8015M</b>	5.7 MG/KG	1	6/25/2015 18:32
Surr: O-TERPHENYL	98			53-116 %REC	1	6/25/2015 18:32
<b>Gasoline Range Organics</b>						
GASOLINE RANGE ORGANICS	ND		<b>SW8015</b>	0.58 MG/KG	1	6/25/2015 10:09
Surr: 2,3,4-TRIFLUOROTOLUENE	103			76-126 %REC	1	6/25/2015 10:09
<b>GC/MS Volatiles</b>						
<b>BENZENE</b>	<b>0.02</b>		<b>SW8260</b>	<b>0.0051 MG/KG</b>	1	6/24/2015 22:02
<b>TOLUENE</b>	<b>0.063</b>			<b>0.0051 MG/KG</b>	1	6/24/2015 22:02
<b>ETHYLBENZENE</b>	<b>0.0092</b>			<b>0.0051 MG/KG</b>	1	6/24/2015 22:02
<b>M+P-XYLENE</b>	<b>0.046</b>			<b>0.0051 MG/KG</b>	1	6/24/2015 22:02
<b>O-XYLENE</b>	<b>0.023</b>			<b>0.0051 MG/KG</b>	1	6/24/2015 22:02
<b>TOTAL XYLENES</b>	<b>0.069</b>			<b>0.005 MG/KG</b>	1	6/24/2015 22:02
Surr: DIBROMOFLUOROMETHANE	94			61-134 %REC	1	6/24/2015 22:02
Surr: TOLUENE-D8	102			57-135 %REC	1	6/24/2015 22:02
Surr: 4-BROMOFLUOROBENZENE	94			52-151 %REC	1	6/24/2015 22:02

**Client:** Talon LPE  
**Project:** 701530.024.01 Nelson A6/A7  
**Sample ID:** FS-3@12'  
**Legal Location:**  
**Collection Date:** 6/24/2015 09:30

**Date:** 26-Jun-15  
**Work Order:** 1506466  
**Lab ID:** 1506466-1  
**Matrix:** SOIL  
**Percent Moisture:** 13.0

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
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**Explanation of Qualifiers**

**Radiochemistry:**

- U or ND - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- W - DER is greater than Warning Limit of 1.42
- \* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
- # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
- G - Sample density differs by more than 15% of LCS density.
- D - DER is greater than Control Limit
- M - Requested MDC not met.
- LT - Result is less than requested MDC but greater than achieved MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- L - LCS Recovery below lower control limit.
- H - LCS Recovery above upper control limit.
- P - LCS, Matrix Spike Recovery within control limits.
- N - Matrix Spike Recovery outside control limits
- NC - Not Calculated for duplicate results less than 5 times MDC
- B - Analyte concentration greater than MDC.
- B3 - Analyte concentration greater than MDC but less than Requested MDC.

**Inorganics:**

- B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
- U or ND - Indicates that the compound was analyzed for but not detected.
- E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
- M - Duplicate injection precision was not met.
- N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
- Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
- \* - Duplicate analysis (relative percent difference) not within control limits.
- S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

**Organics:**

- U or ND - Indicates that the compound was analyzed for but not detected.
- B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
- E - Analyte concentration exceeds the upper level of the calibration range.
- J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
- A - A tentatively identified compound is a suspected aldol-condensation product.
- X - The analyte was diluted below an accurate quantitation level.
- \* - The spike recovery is equal to or outside the control criteria used.
- + - The relative percent difference (RPD) equals or exceeds the control criteria.
- G - A pattern resembling gasoline was detected in this sample.
- D - A pattern resembling diesel was detected in this sample.
- M - A pattern resembling motor oil was detected in this sample.
- C - A pattern resembling crude oil was detected in this sample.
- 4 - A pattern resembling JP-4 was detected in this sample.
- 5 - A pattern resembling JP-5 was detected in this sample.
- H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
  - gasoline
  - JP-8
  - diesel
  - mineral spirits
  - motor oil
  - Stoddard solvent
  - bunker C

Client: Talon LPE  
 Work Order: 1506466  
 Project: 701530.024.01 Nelson A6/A7

**QC BATCH REPORT**

Batch ID: **HC150625-61-1** Instrument ID: **FUELS-1** Method: **SW8015**

LCS		Sample ID: <b>HC150625-61</b>			Units: <b>MG/KG</b>		Analysis Date: <b>6/25/2015 09:26</b>				
Client ID:		Run ID: <b>HC150625-6A</b>					Prep Date: <b>6/25/2015</b>		DF: <b>1</b>		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.12	0.5	2.5		85	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.495		0.5		99	76-126					

LCSD		Sample ID: <b>HC150625-61</b>			Units: <b>MG/KG</b>		Analysis Date: <b>6/25/2015 15:02</b>				
Client ID:		Run ID: <b>HC150625-6A</b>					Prep Date: <b>6/25/2015</b>		DF: <b>1</b>		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.26	0.5	2.5		90	79-118		2.12	6	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.533		0.5		107	76-126			7		

MB		Sample ID: <b>HC150625-61</b>			Units: <b>MG/KG</b>		Analysis Date: <b>6/25/2015 09:48</b>				
Client ID:		Run ID: <b>HC150625-6A</b>					Prep Date: <b>6/25/2015</b>		DF: <b>1</b>		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.43		0.5		86	76-126					

MS		Sample ID: <b>1506466-1</b>			Units: <b>MG/KG</b>		Analysis Date: <b>6/25/2015 10:30</b>				
Client ID: <b>FS-3@12'</b>		Run ID: <b>HC150625-6A</b>					Prep Date: <b>6/25/2015</b>		DF: <b>1</b>		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	4.63	0.537	5.37	0.58	82	79-118				40	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.598		0.537		111	76-126					

MSD		Sample ID: <b>1506466-1</b>			Units: <b>MG/KG</b>		Analysis Date: <b>6/25/2015 10:51</b>				
Client ID: <b>FS-3@12'</b>		Run ID: <b>HC150625-6A</b>					Prep Date: <b>6/25/2015</b>		DF: <b>1</b>		
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	5.45	0.528	5.28	0.58	99	79-118		4.63	16	40	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.608		0.528		115	76-126			2		

The following samples were analyzed in this batch:

Client: Talon LPE  
 Work Order: 1506466  
 Project: 701530.024.01 Nelson A6/A7

# QC BATCH REPORT

Batch ID: **HC150625-111-1** Instrument ID: **FUELS-1** Method: **SW8015M**

LCS		Sample ID: <b>HC150625-111</b>			Units: <b>MG/KG</b>		Analysis Date: <b>6/25/2015 17:57</b>				
Client ID:		Run ID: <b>HC150625-8A</b>			Prep Date: <b>6/25/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	134	5	125		108	76-124				20	
Surr: O-TERPHENYL	5.31		6.25		85	53-116					

MB		Sample ID: <b>HC150625-111</b>			Units: <b>MG/KG</b>		Analysis Date: <b>6/25/2015 17:21</b>				
Client ID:		Run ID: <b>HC150625-8A</b>			Prep Date: <b>6/25/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	5.61		6.25		90	53-116					

The following samples were analyzed in this batch:

1506466-1

Client: Talon LPE  
 Work Order: 1506466  
 Project: 701530.024.01 Nelson A6/A7

# QC BATCH REPORT

Batch ID: VL150624-2-2 Instrument ID: HPV1 Method: SW8260

LCS		Sample ID: VL150624-2			Units: MG/KG		Analysis Date: 6/24/2015 11:23				
Client ID:		Run ID: VL150624-2A			Prep Date: 6/24/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0369	0.005	0.04		92	73-126				30	
TOLUENE	0.0414	0.005	0.04		103	71-127				30	
ETHYLBENZENE	0.0407	0.005	0.04		102	74-127				30	
M+P-XYLENE	0.0844	0.005	0.08		106	79-126				30	
O-XYLENE	0.0426	0.005	0.04		106	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.048		0.05		96	61-134					
Surr: TOLUENE-D8	0.0505		0.05		101	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0478		0.05		96	52-151					

LCSD		Sample ID: VL150624-2			Units: MG/KG		Analysis Date: 6/24/2015 11:45				
Client ID:		Run ID: VL150624-2A			Prep Date: 6/24/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0305	0.005	0.04		76	73-126		0.0369	19	30	
TOLUENE	0.0346	0.005	0.04		86	71-127		0.0414	18	30	
ETHYLBENZENE	0.0339	0.005	0.04		85	74-127		0.0407	18	30	
M+P-XYLENE	0.0694	0.005	0.08		87	79-126		0.0844	20	30	
O-XYLENE	0.0349	0.005	0.04		87	77-125		0.0426	20	30	
Surr: DIBROMOFLUOROMETHANE	0.0481		0.05		96	61-134			0		
Surr: TOLUENE-D8	0.0501		0.05		100	57-135			1		
Surr: 4-BROMOFLUOROBENZENE	0.0468		0.05		94	52-151			2		

MB		Sample ID: VL150624-2			Units: MG/KG		Analysis Date: 6/24/2015 12:08				
Client ID:		Run ID: VL150624-2A			Prep Date: 6/24/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0454		0.05		91	61-134					
Surr: TOLUENE-D8	0.0511		0.05		102	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0468		0.05		94	52-151					

The following samples were analyzed in this batch:

Monday, July 06, 2015

Colby Sterling  
Talon LPE  
921 N Bivins  
Amarillo, TX 79107

Re: ALS Workorder: 1507015  
Project Name: Nelson A6/A7  
Project Number: 701530.026.02

Dear Mr. Sterling:

Two soil samples were received from Talon LPE, on 7/1/2015. The samples were scheduled for the following analyses:

GC/MS Volatiles

Total Extractable Petroleum Hydrocarbons (Diesel)

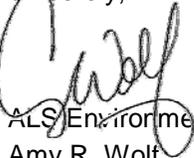
Total Volatile Petroleum Hydrocarbons (Gasoline)

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,



ALS Environmental  
Amy R. Wolf  
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280



## 1507015

### GC/MS Volatiles:

The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C.

All matrix spike and matrix spike duplicate recoveries and RPDs were within acceptance criteria with the following exceptions:

Spiked Compound	QC Sample	Direction
Benzene	MS/MSD	Low
Ethylbenzene	MS/MSD	Low
M+P-Xylene	MS	Low
O-Xylene	MS	Low

The recoveries of these compounds in the laboratory control sample and laboratory control sample duplicate were within control limits, which suggest the outliers in the matrix spikes may have been due to matrix effects. No further action was taken.

All remaining acceptance criteria were met.

### GRO:

The samples were analyzed following the current revision of SOP 425 generally based on SW-846 Methods 8000C and 8015D. TVPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C6 to C10.

All matrix spike and matrix spike duplicate recoveries and RPDs were within the acceptance criteria with the following exceptions:

Spiked Compound	QC Sample	Direction
Gasoline range organics	MS/MSD	Low

The recoveries for gasoline range organics in the laboratory control sample and laboratory control sample duplicate were within control limits, which suggest the outlier in the matrix spikes may have been due to matrix effects. No further action was taken. Laboratory control sample and laboratory control sample duplicate results have been included.

All remaining acceptance criteria were met.



**DRO:**

The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All acceptance criteria were met.

# ALS Environmental -- FC

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1507015

**Client Name:** Talon LPE

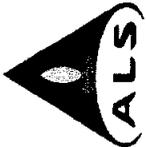
**Client Project Name:** Nelson A6/A7

**Client Project Number:** 701530.026.02

**Client PO Number:**

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Stockpile-A	1507015-1		SOIL	01-Jul-15	13:00
Stockpile-B	1507015-2		SOIL	01-Jul-15	13:05



**ALS Laboratory Group**

225 Commerce Drive, Fort Collins, Colorado 80524  
 TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

**Chain-of-Custody**

Form 2078

PROJECT NAME		701530.026.e.2		SAMPLER		T.F. Geise		DATE		7-1-15		WORKORDER #		1507015	
PROJECT No.		Nelson A61A7		SITE ID				TURNAROUND		2 1/2 hr JAT		PAGE		1 of 1	
COMPANY NAME		Talen/PLK		EDD FORMAT				DISPOSAL				By Lab or		Return to Client	
SEND REPORT TO		Calby Stecker		PURCHASE ORDER				BILL TO COMPANY		Whiting					
ADDRESS		1811 E. Anthony St		INVOICE ATTN TO		Kyle Ferguson		ADDRESS							
CITY/STATE/ZIP		Fort Collins CO 80524		CITY/STATE/ZIP				PHONE							
PHONE		970-818-5330		PHONE				FAX							
E-MAIL		CStecker@talenco.com		E-MAIL											
Lab ID		Field ID		Matrix		Sample Date		Sample Time		# Bottles		Pres.		QC	
①		Stockpile - A		Soil		7-1-15		1300		1		-		-	
②		Stockpile - B		Soil		7-1-15		1305		1		-		-	

\*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

**Comments:**

QC PACKAGE (check below)	
LEVEL II (Standard OC)	
LEVEL III (Std OC + forms)	
LEVEL IV (Std OC + forms + raw data)	

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

RELINQUISHED BY	SIGNATURE	PRINTED NAME	DATE	TIME
RECEIVED BY	<i>C. Trimble</i>	TRIMBLE	7-1-15	1640
RELINQUISHED BY		C. Trimble	7-1-15	1640
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				



**ALS Environmental - Fort Collins  
CONDITION OF SAMPLE UPON RECEIPT FORM**

Client: Talon

Workorder No: 1507015

Project Manager: JE

Initials: COT Date: 7-1-15

1. Does this project require any special handling in addition to standard ALS procedures?		YES	<input checked="" type="radio"/> NO
2. Are custody seals on shipping containers intact?	<input checked="" type="radio"/> NONE	YES	NO
3. Are Custody seals on sample containers intact?	<input checked="" type="radio"/> NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		<input checked="" type="radio"/> YES	NO
5. Are the COC and bottle labels complete and legible?		<input checked="" type="radio"/> YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		<input checked="" type="radio"/> YES	NO
7. Were airbills / shipping documents present and/or removable?	<input checked="" type="radio"/> DROP OFF	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	<input checked="" type="radio"/> N/A	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	<input checked="" type="radio"/> N/A	YES	NO
10. Is there sufficient sample for the requested analyses?		<input checked="" type="radio"/> YES	NO
11. Were all samples placed in the proper containers for the requested analyses?		<input checked="" type="radio"/> YES	NO
12. Are all samples within holding times for the requested analyses?		<input checked="" type="radio"/> YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		<input checked="" type="radio"/> YES	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: ___ < green pea ___ > green pea	<input checked="" type="radio"/> N/A	YES	NO
15. Do any water samples contain sediment? Amount Amount of sediment: ___ dusting ___ moderate ___ heavy	<input checked="" type="radio"/> N/A	YES	NO
16. Were the samples shipped on ice?		<input checked="" type="radio"/> YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: <input checked="" type="radio"/> #2 #4 RAD ONLY		<input checked="" type="radio"/> YES	NO
Cooler #: <u>1</u>			
Temperature (°C): <u>0.6</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>NA</u>			
Background µR/hr reading: <u>NA</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / <input checked="" type="radio"/> NA (If no, see Form 008.)			

**Additional Information:** PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

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If applicable, was the client contacted? YES / NO /  NA Contact: Cowley Date/Time: 7/2/15

**Project Manager Signature / Date:** \_\_\_\_\_

**Client:** Talon LPE  
**Project:** 701530.026.02 Nelson A6/A7  
**Sample ID:** Stockpile-A  
**Legal Location:**  
**Collection Date:** 7/1/2015 13:00

**Date:** 06-Jul-15  
**Work Order:** 1507015  
**Lab ID:** 1507015-1  
**Matrix:** SOIL  
**Percent Moisture:** 4.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>7/2/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	<b>60</b>	DM	<b>5.1</b>	<b>MG/KG</b>	1	7/2/2015 14:31
Surr: O-TERPHENYL	90		49-114	%REC	1	7/2/2015 14:31
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>7/2/2015</b>	PrepBy: <b>JFN</b>
<b>GASOLINE RANGE ORGANICS</b>	<b>0.46</b>	Z	<b>0.43</b>	<b>MG/KG</b>	1	7/2/2015 11:37
Surr: 2,3,4-TRIFLUOROTOLUENE	101		76-126	%REC	1	7/2/2015 11:37
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>7/2/2015</b>	PrepBy: <b>SDW</b>
BENZENE	ND		0.005	MG/KG	1	7/2/2015 14:38
TOLUENE	ND		0.005	MG/KG	1	7/2/2015 14:38
ETHYLBENZENE	ND		0.005	MG/KG	1	7/2/2015 14:38
M+P-XYLENE	ND		0.005	MG/KG	1	7/2/2015 14:38
O-XYLENE	ND		0.005	MG/KG	1	7/2/2015 14:38
TOTAL XYLENES	ND		0.005	MG/KG	1	7/2/2015 14:38
Surr: DIBROMOFLUOROMETHANE	99		61-134	%REC	1	7/2/2015 14:38
Surr: TOLUENE-D8	98		57-135	%REC	1	7/2/2015 14:38
Surr: 4-BROMOFLUOROBENZENE	94		52-151	%REC	1	7/2/2015 14:38

**Client:** Talon LPE  
**Project:** 701530.026.02 Nelson A6/A7  
**Sample ID:** Stockpile-B  
**Legal Location:**  
**Collection Date:** 7/1/2015 13:05

**Date:** 06-Jul-15  
**Work Order:** 1507015  
**Lab ID:** 1507015-2  
**Matrix:** SOIL  
**Percent Moisture:** 4.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>Diesel Range Organics</b>						
			<b>SW8015M</b>		Prep Date: <b>7/2/2015</b>	PrepBy: <b>JFN</b>
Diesel Range Organics	<b>61</b>	DM	<b>5.1</b>	<b>MG/KG</b>	1	7/2/2015 15:02
Surr: O-TERPHENYL	91		49-114	%REC	1	7/2/2015 15:02
<b>Gasoline Range Organics</b>						
			<b>SW8015</b>		Prep Date: <b>7/2/2015</b>	PrepBy: <b>JFN</b>
<b>GASOLINE RANGE ORGANICS</b>	<b>0.4</b>	Z	<b>0.37</b>	<b>MG/KG</b>	1	7/2/2015 11:58
Surr: 2,3,4-TRIFLUOROTOLUENE	98		76-126	%REC	1	7/2/2015 11:58
<b>GC/MS Volatiles</b>						
			<b>SW8260</b>		Prep Date: <b>7/2/2015</b>	PrepBy: <b>SDW</b>
BENZENE	ND		0.0047	MG/KG	1	7/2/2015 15:02
TOLUENE	ND		0.0047	MG/KG	1	7/2/2015 15:02
ETHYLBENZENE	ND		0.0047	MG/KG	1	7/2/2015 15:02
M+P-XYLENE	ND		0.0047	MG/KG	1	7/2/2015 15:02
O-XYLENE	ND		0.0047	MG/KG	1	7/2/2015 15:02
TOTAL XYLENES	ND		0.005	MG/KG	1	7/2/2015 15:02
Surr: DIBROMOFLUOROMETHANE	99		61-134	%REC	1	7/2/2015 15:02
Surr: TOLUENE-D8	98		57-135	%REC	1	7/2/2015 15:02
Surr: 4-BROMOFLUOROBENZENE	95		52-151	%REC	1	7/2/2015 15:02

**Client:** Talon LPE  
**Project:** 701530.026.02 Nelson A6/A7  
**Sample ID:** Stockpile-B  
**Legal Location:**  
**Collection Date:** 7/1/2015 13:05

**Date:** 06-Jul-15  
**Work Order:** 1507015  
**Lab ID:** 1507015-2  
**Matrix:** SOIL  
**Percent Moisture:** 4.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
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**Explanation of Qualifiers**

**Radiochemistry:**

- U or ND - Result is less than the sample specific MDC.
- Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.
- Y2 - Chemical Yield outside default limits.
- W - DER is greater than Warning Limit of 1.42
- \* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
- # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.
- G - Sample density differs by more than 15% of LCS density.
- D - DER is greater than Control Limit
- M - Requested MDC not met.
- LT - Result is less than requested MDC but greater than achieved MDC.
- M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.
- L - LCS Recovery below lower control limit.
- H - LCS Recovery above upper control limit.
- P - LCS, Matrix Spike Recovery within control limits.
- N - Matrix Spike Recovery outside control limits
- NC - Not Calculated for duplicate results less than 5 times MDC
- B - Analyte concentration greater than MDC.
- B3 - Analyte concentration greater than MDC but less than Requested MDC.

**Inorganics:**

- B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).
- U or ND - Indicates that the compound was analyzed for but not detected.
- E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.
- M - Duplicate injection precision was not met.
- N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.
- Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.
- \* - Duplicate analysis (relative percent difference) not within control limits.
- S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

**Organics:**

- U or ND - Indicates that the compound was analyzed for but not detected.
- B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
- E - Analyte concentration exceeds the upper level of the calibration range.
- J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
- A - A tentatively identified compound is a suspected aldol-condensation product.
- X - The analyte was diluted below an accurate quantitation level.
- \* - The spike recovery is equal to or outside the control criteria used.
- + - The relative percent difference (RPD) equals or exceeds the control criteria.
- G - A pattern resembling gasoline was detected in this sample.
- D - A pattern resembling diesel was detected in this sample.
- M - A pattern resembling motor oil was detected in this sample.
- C - A pattern resembling crude oil was detected in this sample.
- 4 - A pattern resembling JP-4 was detected in this sample.
- 5 - A pattern resembling JP-5 was detected in this sample.
- H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
  - gasoline
  - JP-8
  - diesel
  - mineral spirits
  - motor oil
  - Stoddard solvent
  - bunker C

Client: Talon LPE

**QC BATCH REPORT**

Work Order: 1507015

Project: 701530.026.02 Nelson A6/A7

Batch ID: **HC150702-61-1**

Instrument ID **FUELS-1**

Method: **SW8015**

LCS		Sample ID: <b>HC150702-61</b>			Units: <b>MG/KG</b>			Analysis Date: <b>7/2/2015 10:33</b>			
Client ID:		Run ID: <b>HC150702-6A</b>			Prep Date: <b>7/2/2015</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.32	0.5	2.5		93	79-118				20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.547		0.5		109	76-126					

LCSD		Sample ID: <b>HC150702-61</b>			Units: <b>MG/KG</b>			Analysis Date: <b>7/2/2015 17:34</b>			
Client ID:		Run ID: <b>HC150702-6A</b>			Prep Date: <b>7/2/2015</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	2.55	0.5	2.5		102	79-118		2.32	9	20	
Surr: 2,3,4-TRIFLUOROTOLUENE	0.585		0.5		117	76-126			7		

MB		Sample ID: <b>HC150702-61</b>			Units: <b>MG/KG</b>			Analysis Date: <b>7/2/2015 10:55</b>			
Client ID:		Run ID: <b>HC150702-6A</b>			Prep Date: <b>7/2/2015</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	0.5									
Surr: 2,3,4-TRIFLUOROTOLUENE	0.521		0.5		104	76-126					

MB		Sample ID: <b>HC150702-61M</b>			Units: <b>MG/KG</b>			Analysis Date: <b>7/2/2015 16:49</b>			
Client ID:		Run ID: <b>HC150702-6A</b>			Prep Date: <b>7/2/2015</b>			DF: <b>50</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	ND	5									
Surr: 2,3,4-TRIFLUOROTOLUENE	5.51		5		110	76-126					

MS		Sample ID: <b>1507015-2</b>			Units: <b>MG/KG</b>			Analysis Date: <b>7/2/2015 12:20</b>			
Client ID: <b>Stockpile-B</b>		Run ID: <b>HC150702-6A</b>			Prep Date: <b>7/2/2015</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1.64	0.385	1.92	0.4	65	79-118				40	*
Surr: 2,3,4-TRIFLUOROTOLUENE	0.388		0.385		101	76-126					

**Client:** Talon LPE  
**Work Order:** 1507015  
**Project:** 701530.026.02 Nelson A6/A7

# QC BATCH REPORT

Batch ID: **HC150702-61-1**      Instrument ID **FUELS-1**      Method: **SW8015**

**MSD**      Sample ID: **1507015-2**      Units: **MG/KG**      Analysis Date: **7/2/2015 12:41**  
 Client ID: **Stockpile-B**      Run ID: **HC150702-6A**      Prep Date: **7/2/2015**      DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	1.55	0.363	1.82	0.4	63	79-118		1.64	6	40	*
Surr: 2,3,4-TRIFLUOROTOLUENE	0.377		0.363		104	76-126			3		

The following samples were analyzed in this batch:

1507015-1	1507015-2
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Client: Talon LPE  
 Work Order: 1507015  
 Project: 701530.026.02 Nelson A6/A7

# QC BATCH REPORT

Batch ID: **HC150702-100-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS		Sample ID: <b>HC150702-100</b>			Units: <b>MG/KG</b>		Analysis Date: <b>7/2/2015 15:32</b>				
Client ID:		Run ID: <b>HC150702-7A</b>			Prep Date: <b>7/2/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	67.4	5	62.5		108	76-124				20	
Surr: O-TERPHENYL	5.27		6.25		84	49-114					

MB		Sample ID: <b>HC150702-100</b>			Units: <b>MG/KG</b>		Analysis Date: <b>7/2/2015 14:00</b>				
Client ID:		Run ID: <b>HC150702-7A</b>			Prep Date: <b>7/2/2015</b>		DF: <b>1</b>				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
Diesel Range Organics	ND	5									
Surr: O-TERPHENYL	5.26		6.25		84	49-114					

The following samples were analyzed in this batch:

1507015-1	1507015-2
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Client: Talon LPE  
 Work Order: 1507015  
 Project: 701530.026.02 Nelson A6/A7

# QC BATCH REPORT

Batch ID: VL150702-2-1 Instrument ID: HPV1 Method: SW8260

LCS		Sample ID: VL150702-2			Units: MG/KG		Analysis Date: 7/2/2015 13:08				
Client ID:		Run ID: VL150702-2A			Prep Date: 7/2/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0402	0.005	0.04		100	73-126				30	
TOLUENE	0.046	0.005	0.04		115	71-127				30	
ETHYLBENZENE	0.0452	0.005	0.04		113	74-127				30	
M+P-XYLENE	0.0916	0.005	0.08		115	79-126				30	
O-XYLENE	0.0454	0.005	0.04		113	77-125				30	
Surr: DIBROMOFLUOROMETHANE	0.0484		0.05		97	61-134					
Surr: TOLUENE-D8	0.0516		0.05		103	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0482		0.05		96	52-151					

LCSD		Sample ID: VL150702-2			Units: MG/KG		Analysis Date: 7/2/2015 13:30				
Client ID:		Run ID: VL150702-2A			Prep Date: 7/2/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0366	0.005	0.04		91	73-126		0.0402	9	30	
TOLUENE	0.0398	0.005	0.04		99	71-127		0.046	15	30	
ETHYLBENZENE	0.0393	0.005	0.04		98	74-127		0.0452	14	30	
M+P-XYLENE	0.0811	0.005	0.08		101	79-126		0.0916	12	30	
O-XYLENE	0.0408	0.005	0.04		102	77-125		0.0454	11	30	
Surr: DIBROMOFLUOROMETHANE	0.0484		0.05		97	61-134			0		
Surr: TOLUENE-D8	0.0495		0.05		99	57-135			4		
Surr: 4-BROMOFLUOROBENZENE	0.0466		0.05		93	52-151			3		

MB		Sample ID: VL150702-2			Units: MG/KG		Analysis Date: 7/2/2015 13:52				
Client ID:		Run ID: VL150702-2A			Prep Date: 7/2/2015		DF: 1				
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	ND	0.005									
TOLUENE	ND	0.005									
ETHYLBENZENE	ND	0.005									
M+P-XYLENE	ND	0.005									
O-XYLENE	ND	0.005									
TOTAL XYLENES	ND	0.005									
Surr: DIBROMOFLUOROMETHANE	0.0464		0.05		93	61-134					
Surr: TOLUENE-D8	0.0498		0.05		100	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0482		0.05		96	52-151					

Client: Talon LPE  
 Work Order: 1507015  
 Project: 701530.026.02 Nelson A6/A7

# QC BATCH REPORT

Batch ID: VL150702-2-1 Instrument ID: HPV1 Method: SW8260

MS		Sample ID: 1507015-2			Units: MG/KG			Analysis Date: 7/2/2015 15:27			
Client ID: Stockpile-B		Run ID: VL150702-2A			Prep Date: 7/2/2015			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0278	0.00488	0.039	0.0047	71	73-126				30	*
TOLUENE	0.0303	0.00488	0.039	0.0047	78	71-127				30	
ETHYLBENZENE	0.0281	0.00488	0.039	0.0047	72	74-127				30	*
M+P-XYLENE	0.06	0.00488	0.0781	0.0047	77	79-126				30	*
O-XYLENE	0.0291	0.00488	0.039	0.0047	75	77-125				30	*
Surr: DIBROMOFLUOROMETHANE	0.0475		0.0488		97	61-134					
Surr: TOLUENE-D8	0.048		0.0488		98	57-135					
Surr: 4-BROMOFLUOROBENZENE	0.0469		0.0488		96	52-151					

MSD		Sample ID: 1507015-2			Units: MG/KG			Analysis Date: 7/2/2015 15:50			
Client ID: Stockpile-B		Run ID: VL150702-2A			Prep Date: 7/2/2015			DF: 1			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
BENZENE	0.0252	0.0046	0.0368	0.0047	69	73-126		0.0278	10	30	*
TOLUENE	0.0323	0.0046	0.0368	0.0047	88	71-127		0.0303	6	30	
ETHYLBENZENE	0.0258	0.0046	0.0368	0.0047	70	74-127		0.0281	9	30	*
M+P-XYLENE	0.062	0.0046	0.0735	0.0047	84	79-126		0.06	3	30	
O-XYLENE	0.0298	0.0046	0.0368	0.0047	81	77-125		0.0291	2	30	
Surr: DIBROMOFLUOROMETHANE	0.0452		0.046		98	61-134			5		
Surr: TOLUENE-D8	0.045		0.046		98	57-135			7		
Surr: 4-BROMOFLUOROBENZENE	0.0445		0.046		97	52-151			5		

The following samples were analyzed in this batch: 1507015-1      1507015-2