



April 22, 2016

Mr. Kyle Waggoner
Whiting Oil and Gas Corporation
208 Racquette Drive
Fort Collins, Colorado 80524

**RE: Subsurface Site Assessment - Addendum
Nelson A6/A7
Weld County, Colorado
Project # 701530.024.03**

Mr. Waggoner:

On November 20, 2015, Talon/LPE submitted Subsurface Site Assessment Report for the Nelson A6/A7 Tank Battery Site (Site, Figure 1). This letter serves as an addendum to that report.

On December 17, 2015, Mr. Rick Allison of Colorado Oil and Gas Conservation Commission (COGCC) sent e-mail correspondence regarding additional clarification needed regarding Form 19 Supplemental Spill Report #400954368 in support of a closure request for the historical release at the Site. The correspondence requested additional assessment of the northwest sidewall of the most recent excavation area.

On April 6, 2016, Talon/LPE personnel collected a grab soil sample at the northwest sidewall location at 8 feet below ground surface (ft bgs). Soil sample SW-5@8' was analyzed for Total Petroleum Hydrocarbons (TPH) via Gasoline Range Organics (GRO) method EPA8260B and Diesel Range Organics (DRO) method 8015, and for Benzene, Toluene, Ethyl-benzene, and Xylenes (BTEX) via method EPA8260B at Summit Scientific in Golden, Colorado. All analytical results for this sample were below COGCC Table 910-1 concentration levels and laboratory reporting limits (Table 1 and Figure 2). A copy of the laboratory report and chain of custody documentation is attached.

Based upon the collected analytical data, Talon/LPE believes that the request for additional assessment of the northwest sidewall has been satisfied and no further corrective action is necessary. If you have any questions or comments, please do not hesitate to call me at (970) 818-5330.

Respectfully Submitted,

Jennifer Galles, P.G.
Project Manager
Talon/LPE



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 of	1503463-1	3/18/2015	0.016	0.33	0.58	4.3	97	95	192
CS8-3'	Confirmation Sample northeast of	1503463-2	3/18/2015	0.1	2.6	0.85	9	230	100	330
CS9-2'	Confirmation Sample northeast of	1503463-3	3/18/2015	0.061	0.0061	0.084	0.61	26	18	44
CS10-7'	Confirmation Sample northeast of	1503463-4	3/18/2015	<0.0057	0.028	0.3	9	380	120	500
CS11-4'	Confirmation Sample northeast of	1503463-5	3/18/2015	0.068	2.5	2.1	16	240	230	470
CS12-9'	Confirmation Sample northeast of	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
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



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
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
SW-1 @ 8'	Excavation Sidewall	1509119-1	09/03/15	<0.0058	<0.0058	<0.0058	<0.005	<0.56	<5.9	<5.9
SW-2 @ 8'	Excavation Sidewall	1509119-2	09/03/15	30	580	68	750	12000	2200	14200
SW-3 @ 8'	Excavation Sidewall	1509119-3	09/03/15	<0.049	<0.0064	0.72	3.5	25	76	101
SW-4 @ 8'	Excavation Sidewall	1509119-4	09/03/15	<0.0067	<0.0067	<0.0067	0.079	11	77	88
BH-01 @ 12'	Bottom of Hole (Excavation Floor)	1509473-1	09/29/15	<0.0051	<0.0051	<0.0051	<0.005	6.1	37	43.1
SW-3 @ 8'	North Sidewall	1509473-2	09/29/15	0.76	31	15	100	2000	1100	3100
SW-4 @ 8'	East Sidewall	1509473-3	09/29/15	<0.0054	<0.0054	<0.0054	<0.005	<0.5	<5.3	<5.3
SW-3A @ 8'	North Sidewall	15090039-01	10/06/15	<0.0020	<0.005	<0.005	<0.005	<0.5	<50	<50
SP-1	Excavation Stockpile	1511117-01	11/13/15	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SP-2	Excavation Stockpile	1511117-02	11/13/15	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SP-3	Excavation Stockpile	1511117-03	11/13/15	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50
SW-5 @ 8'	Northwest Sidewall	1604049-01	04/06/16	<0.0020	<0.0050	<0.0050	<0.0050	<0.50	<50	<50

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

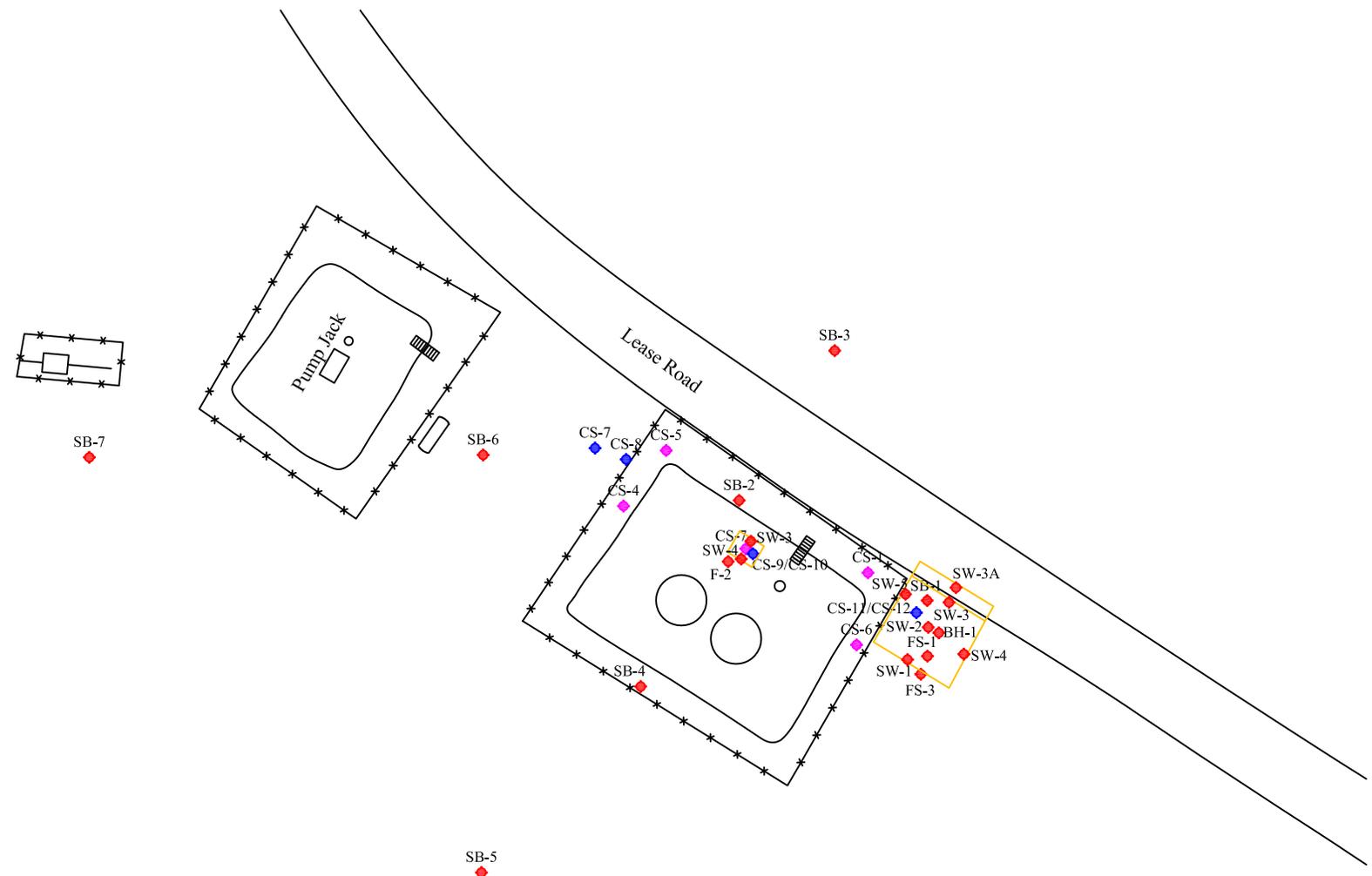
TPH - Total Petroleum Hydrocarbons (Combined GRO/DRO)



Scale in Feet

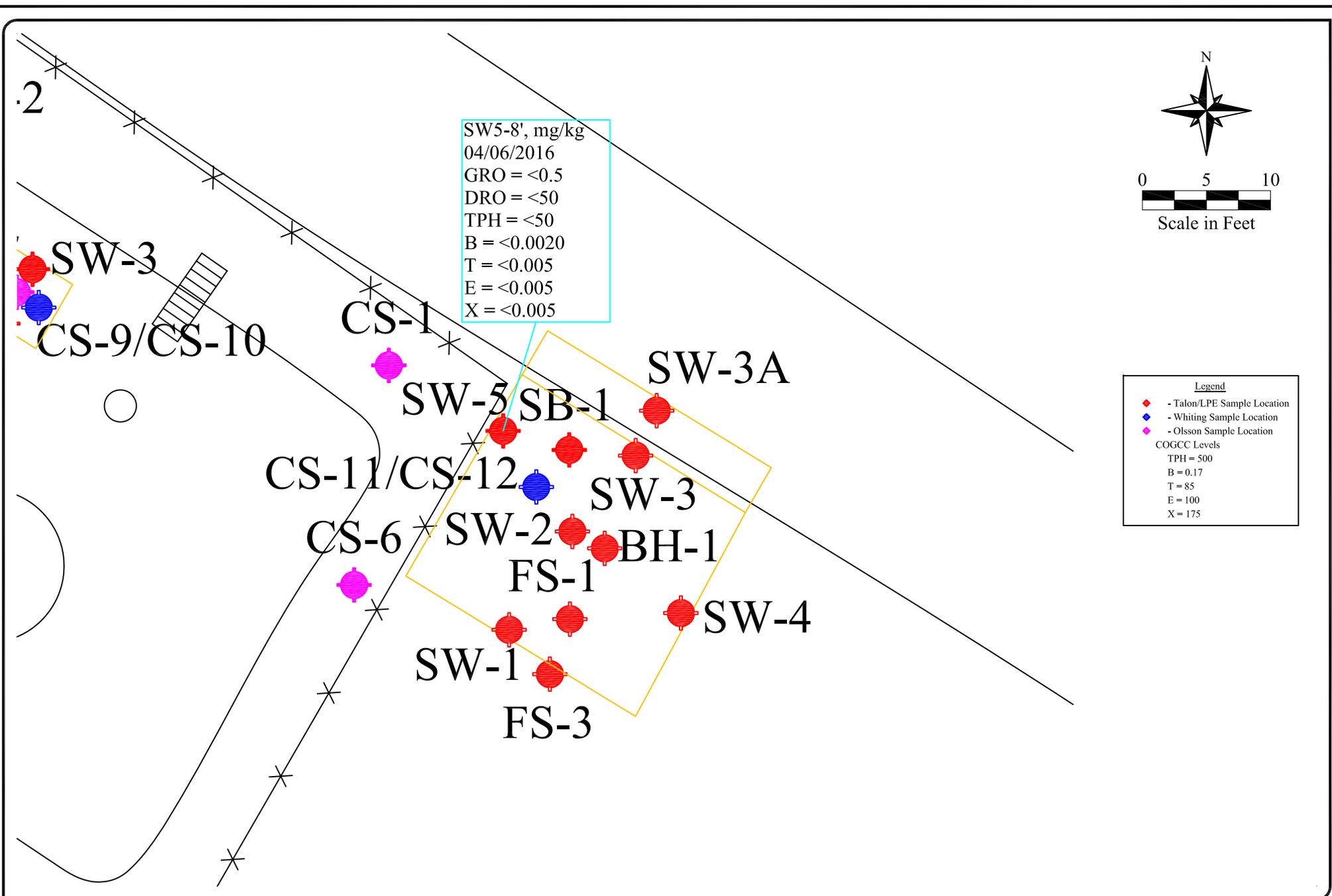
Legend

- ◆ - Talon/LPE Sample Location
 - ◆ - Whiting Sample Location
 - ◆ - Olsson Sample Location
- COGCC Levels
- TPH = 500
 - B = 0.17
 - T = 85
 - E = 100
 - X = 175



Date: 04/22/2015
Scale: 1" = 40'
Drawn By: SMM

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



Date: 04/22/2015

Scale: 1" = 10'

Drawn By: SMM

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

Figure 3 - Soil Concentration Map - Talon/LPE (04/06/2016)

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

April 09, 2016

Colby Sterling
Talon/LPE
1811 E Mulberry
Ft Collins, CO 80524
RE: Nelson A6/A7

Enclosed are the results of analyses for samples received by Summit Scientific on 04/06/16 16:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury
President



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson A6/A7
Project Number: 701530.024.03
Project Manager: Colby Sterling

Reported:
04/09/16 18:01

SW5@8'
1604049-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/06/16 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1604070	04/07/16	04/08/16	8015M	

Date Sampled: **04/06/16 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		100 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/06/16 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1604083	04/07/16	04/08/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/06/16 10:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		110 %	21-167		"	"	"	"	

Summit Scientific

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.



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson A6/A7
Project Number: 701530.024.03
Project Manager: Colby Sterling

Reported:
04/09/16 18:01

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1604070 - EPA 3550A

Blank (1604070-BLK1)

Prepared & Analyzed: 04/07/16

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	13.3		"	12.5		107	30-150				

LCS (1604070-BS1)

Prepared & Analyzed: 04/07/16

C10-C28 (DRO)	507	50	mg/kg	499		102	73-134				
<i>Surrogate: o-Terphenyl</i>	13.1		"	12.5		105	30-150				

Matrix Spike (1604070-MS1)

Source: 1604033-01

Prepared & Analyzed: 04/07/16

C10-C28 (DRO)	509	50	mg/kg	499	214	59.1	50-148				
<i>Surrogate: o-Terphenyl</i>	13.2		"	12.5		105	30-150				

Matrix Spike Dup (1604070-MSD1)

Source: 1604033-01

Prepared: 04/07/16 Analyzed: 04/08/16

C10-C28 (DRO)	507	50	mg/kg	499	214	58.6	50-148	0.503		13	
<i>Surrogate: o-Terphenyl</i>	12.7		"	12.5		101	30-150				

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson A6/A7
Project Number: 701530.024.03
Project Manager: Colby Sterling

Reported:
04/09/16 18:01

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1604083 - EPA 5030 Soil MS

Blank (1604083-BLK1)

Prepared & Analyzed: 04/07/16

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0411</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.6</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0426</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>			

LCS (1604083-BS1)

Prepared & Analyzed: 04/07/16

Benzene	0.104	0.0020	mg/kg	0.100		104	58-130			
Toluene	0.113	0.0050	"	0.100		113	61-134			
Ethylbenzene	0.126	0.0050	"	0.0992		127	74-139			
m,p-Xylene	0.241	0.010	"	0.200		121	73-137			
o-Xylene	0.116	0.0050	"	0.0980		118	73-141			
Xylenes (total)	0.357	0.0050	"				30-150			
Gasoline Range Hydrocarbons	2.11	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0410</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>21-167</i>			

Matrix Spike (1604083-MS1)

Source: 1604052-01

Prepared & Analyzed: 04/07/16

Benzene	0.101	0.0020	mg/kg	0.0963	ND	105	30-131			
Toluene	0.111	0.0050	"	0.0963	ND	116	30-134			
Ethylbenzene	0.125	0.0050	"	0.0956	ND	130	22-153			
m,p-Xylene	0.237	0.010	"	0.192	ND	123	10-159			
o-Xylene	0.115	0.0050	"	0.0944	ND	121	31-151			
Xylenes (total)	0.352	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	2.15	0.50	"		ND		30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0391</i>		<i>"</i>	<i>0.0385</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0382</i>		<i>"</i>	<i>0.0385</i>		<i>99.2</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0387</i>		<i>"</i>	<i>0.0385</i>		<i>100</i>	<i>21-167</i>			

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson A6/A7
Project Number: 701530.024.03
Project Manager: Colby Sterling

Reported:
04/09/16 18:01

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1604083 - EPA 5030 Soil MS

Matrix Spike Dup (1604083-MSD1)	Source: 1604052-01			Prepared & Analyzed: 04/07/16						
Benzene	0.101	0.0020	mg/kg	0.0951	ND	106	30-131	0.486	34	
Toluene	0.111	0.0050	"	0.0951	ND	117	30-134	0.359	30	
Ethylbenzene	0.121	0.0050	"	0.0943	ND	129	22-153	2.72	24	
m,p-Xylene	0.232	0.010	"	0.190	ND	122	10-159	2.18	68	
o-Xylene	0.111	0.0050	"	0.0932	ND	119	31-151	3.15	38	
Xylenes (total)	0.343	0.0050	"		ND		30-150	2.50	20	
Gasoline Range Hydrocarbons	2.11	0.50	"		ND		30-150	2.03	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0375</i>		<i>"</i>	<i>0.0380</i>		<i>98.7</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0384</i>		<i>"</i>	<i>0.0380</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0378</i>		<i>"</i>	<i>0.0380</i>		<i>99.3</i>	<i>21-167</i>			

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Nelson A6/A7
Project Number: 701530.024.03
Project Manager: Colby Sterling

Reported:
04/09/16 18:01

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

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