



CMU North Injection, CMU B #52

REMEDIATION WORK PLAN

API No. 30-025-01480

1RP-4773

Release Date: July 27th, 2017

Unit Letter G, Section 19, Township 17 South, Range 33 East

APPROVED

By Olivia Yu at 7:42 am, Sep 01, 2017

August 4, 2017

Prepared by:

Michael Burton, C&M Services

P.O Box 3470

Hobbs, NM 88240

Phone: (575)499-5306

Marineburton@gmail.com

NMOCD approves of the delineation for 1RP-4773. For remediation, laboratory analyses (BTEX, TPH extended, chlorides) of sidewall and bottom samples are required for each of the 3 proposed excavation areas. Provide a scaled map with 1) the locations of the confirmation samples at ≤ 50 ft. intervals and 2) each excavation area marked.

Olivia Yu
Environmental Specialist
NM Oil Conservation District-Division 2
1625 N. French
Hobbs, NM 88240

RE: Linn Energy, CMU North Injection, CMU #52– Remediation Work Plan
UL/G, Section 19, T17S, R33E
API No. 30-025-01480

Ms. Yu,

Linn Energy (Linn) has retained C&M Service, to address environmental issues for the site detailed herein.

The site is located southeast of Maljamar, NM, in Lea County. The leak site resulted from a failure in a four inch fiberglass line. The impacted area is in the pasture west and south of the CMU B #52. Approximately 30 bbls of produced water was released, with none recovered. A site map is attached. A C-141 was drafted to the NMOCD on August 1, 2017.

Site Assessment and Delineation

On July 27, 2017 C&M personnel responded to the release site and dug up the line so a crew could fix it. C&M then scraped up the affected area to minimize the environmental impact

On July 28, 2017 C&M personnel returned to the site and sampled the spill area. C&M sampled 18 points of the spill area. The samples were tested for chloride levels as well as BTEX. The BTEX samples were performed using a Mini Rae Photoionization Detector (PID). Clean samples were attained on all of the 18 samples plus 10' and sent to a lab for confirmation. Those samples, along with the field sampling results, are attached.

C&M has conducted a groundwater study of the area and has determined that according to the New Mexico Office of the State Engineer the average depth to

groundwater for this area is 100 foot below ground surface. Therefore, no eminent danger of groundwater impact or threat to life is anticipated.

Conclusion

After careful review C&M, on behalf of Linn Energy, would like to propose the following: Excavate in the areas of SP #16, and SP #18 to 2' BGS. Excavate in the areas of SP #2, SP #3, SP #11 and SP #13 to 3' BGS. Excavate in the areas of SP # 1. SP #4-6, SP #7-9, SP #10, SP#12, SP#14-#15, and SP#17 to 4' BGS and install a .20 mil liner as a barrier before backfill. Sidewall samples will be taken to ensure horizontal migration of chlorides has been eliminated, these samples will be taken to a lab for confirmation. Native topsoil will then be brought in for backfill, and all contaminated materials will be hauled to an approved NM State Disposal. Once backfilled, the area will be seeded with an approved BLM and or SLO mixture.

SLO Site Requirements

The site will be seeded with BLM Mix #2 or BLM LPC once site activities have been completed, ensuring lovegrass is not included within the seed mixture. The seed mixture will be planted within a one acre broadcast, with no primary or secondary noxious weeds within the seed mixture. The seed will be planted using a mechanical seeder to ensure proper depth of planting. The seed mixture will be spread equally and evenly over the disturbed area. If a mechanical seeder is not possible, the seed will be broadcast over the disturbed area by hand. Site evaluation of the disturbed area of the Linn location will be monitored for noxious weeds with final documentation submitted to SLO for closure. Should noxious weeds appear during monitoring activities, the weeds will be removed and properly disposed of at an approved facility.

Following the approval of the above plan, C&M will submit all proper closure documentation to the NMOCD, SLO and BLM in accordance to the State and Federal Guidelines set forth.

Please feel free to contact me with any questions concerning this remediation plan request.

Sincerely,



Michael Burton
Environmental Superintendent
C&M Service.
P.O Box 3470
Hobbs, NM 88241
Mobile: (575)499-5306
Email: marineburton@gmail.com

Attachments: Initial Form C-141
Site/Sample Map
Sample Data
Groundwater Data
GPS coordinates per sample point

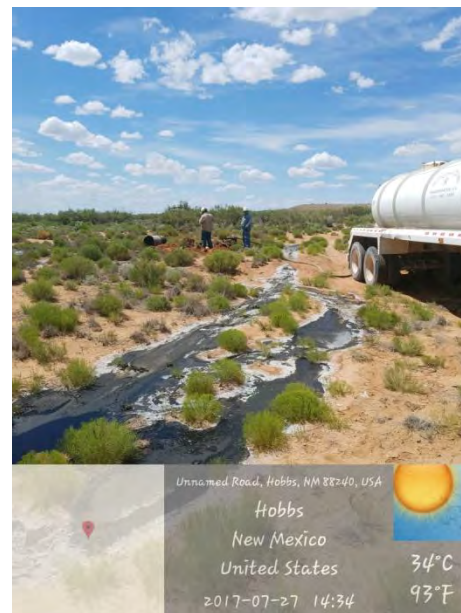


CMU North Injection, CMU B #052

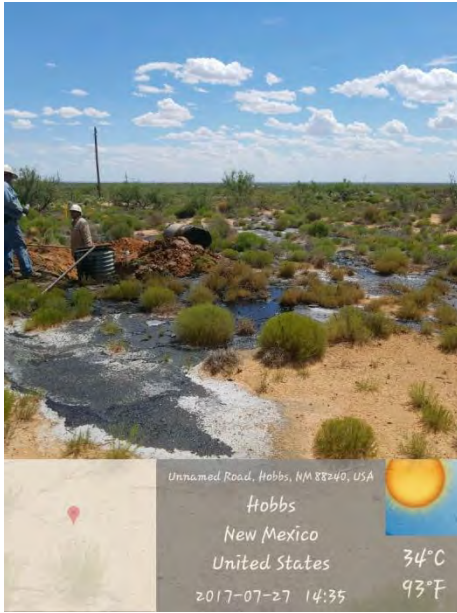
PHOTO PAGE



CMU #52 well sign



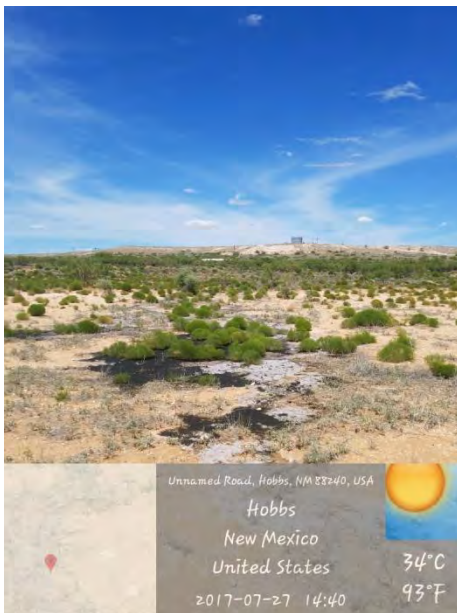
Spill facing north



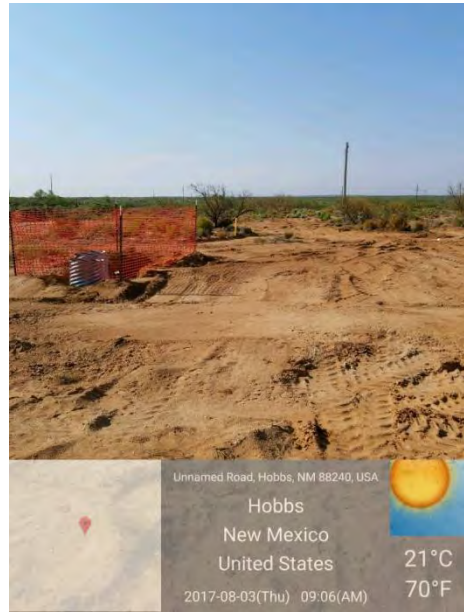
Spill facing South



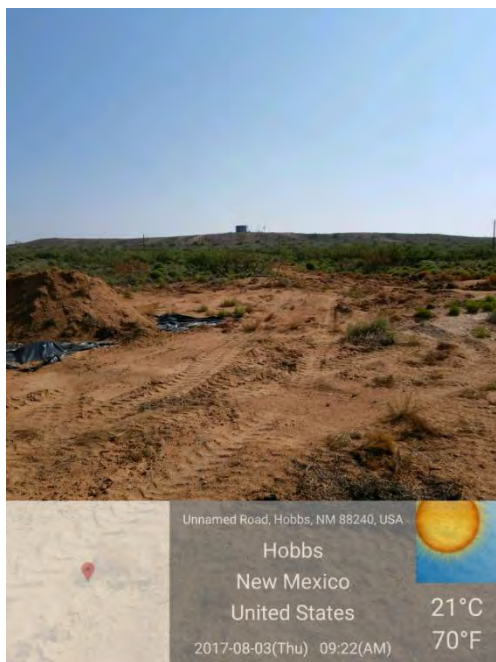
Spill facing northeast



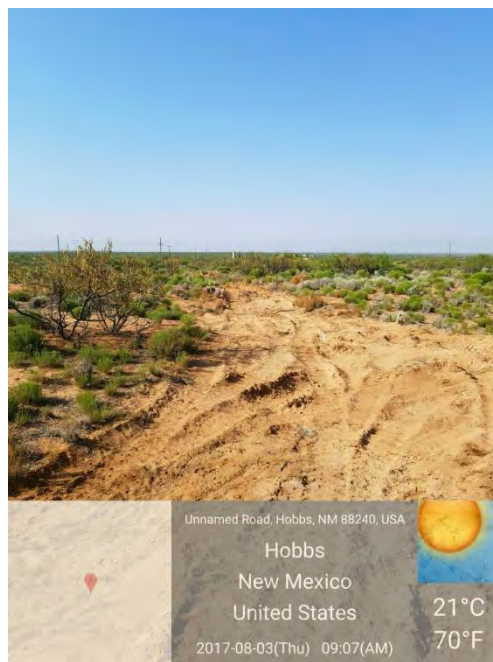
End of spill facing Northeast



Release point after scrape



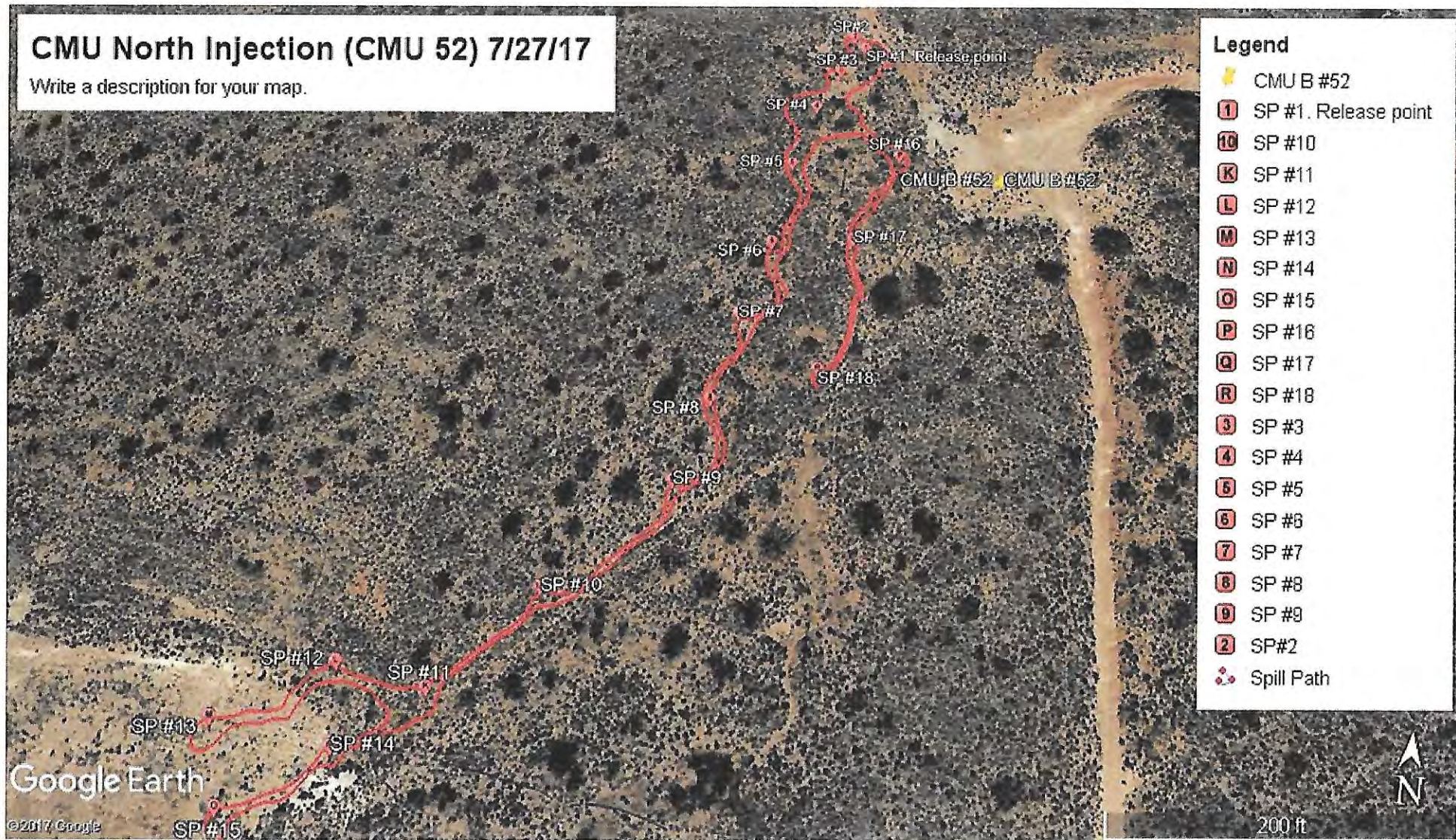
End of spill after scrape



After scrape facing north

CMU North Injection (CMU 52) 7/27/17

Write a description for your map.



C&M Services

Company Name: Linn Energy
 Location Name: CMU N INJ CMU #52

SP Date: 8/1/2017
 Rel Date: 7/27/2017

SP1	CHL	PID	SP2	CHL	PID	SP3	CHL	PID	SP4	CHL	PID	SP5	CHL	PID
Surface	10,975	1.6	Surface	11,283	0.8	Surface	11,096	1.2	Surface	9,505	1.8	Surface	9,720	1
1'	4,782	0.2	1'	8,937	0.9	1'	7,557	0.7	1'	6,933	1.2	1'	9,357	3.2
2'	5,619	0.4	2'	881	1.2	2'	777	0.6	2'	6,633	0.8	2'	10,020	0.7
3'	9,537	0	3'	355	9	3'	384	1.6	3'	4,898	0.3	3'	1,897	0
4'	9,266	0	4'	265	0	4'	255	0	4'	1,079	0	4'	1,793	0
5'	4,352	0	8'	312	0	8'	312	0	5'	456	0	5'	654	0
6'	1,345	0	13'	300	0	13'	300	0	6'	301	0	7'	287	0
7'	548	0							7'	421	0	8'	300	0
8'	307	0							12'	300	0	13'	300	0
9'	300	0							17'	326	0	18'	300	0
13'	250	0												
18'	250	0												
Lab 8'	ND	TPH 0	Lab 3'	ND	TPH 0	Lab 3'	610	TPH 0	Lab 3'	ND	TPH 0	Lab 7'	ND	TPH 0
Lab 9'	ND	TPH 0	Lab 4'	ND	TPH 0	Lab 4'	ND	TPH 0	Lab 4'	ND	TPH 0	Lab 8'	ND	TPH 0
Lab 18'	ND	TPH 0	Lab 13'	ND	TPH 0	Lab 13'	ND	TPH 0	Lab 17'	ND	TPH 0	Lab 18'	ND	TPH 0

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples

C&M Services

SP6	CHL	PID	SP7	CHL	PID	SP8	CHL	PID	SP9	CHL	PID	SP10	CHL	PID
Surface	9,443	1.3	Surface	9,449	3.2	Surface	9,896	0.7	Surface	9,397	0.6	Surface	9,293	0.6
1'	7,469	0.2	1'	7,976	0.6	1'	9,381	0.4	1'	7,571	0.5	1'	8,313	0.6
2'	10,384	0.4	2'	5,373	0.6	2'	9,454	0.4	2'	8,763	0.6	2'	11,662	0.5
3'	10,366	0.3	3'	5,998	0.7	3'	10,272	0.8	3'	10,028	0.4	3'	2,532	0.5
4'	7,280	0	4'	5,736	0	4'	10,120	0	4'	4,282	0	4'	2,979	0.6
5'	1,532	0	5'	2,035	0	5'	4,635	0	5'	1,235	0	5'	1,111	0
6'	888	0	7'	956	0	6'	2,845	0	6'	510	0	6'	505	0
7'	412	0	9'	400	0	8'	653	0	7'	426	0	7'	333	0
8'	366	0	12'	269	0	10'	333	0	9'	321	0	8'	400	0
12'	400	0	16'	311	0	14'	311	0	12'	356	0	13'	366	0
17'	325	0							14'	411	0	18'	268	0
									16'	385	0			
Lab 7'	ND	TPH 0	Lab 9'	ND	TPH 0	Lab 8'	ND	TPH 0	Lab 7'	ND	TPH 0	Lab 7'	ND	TPH 0
Lab 8'	ND	TPH 0	Lab 12'	ND	TPH 0	Lab 10'	ND	TPH 0	Lab 9'	ND	TPH 0	Lab 8'	ND	TPH 0
Lab 17'	ND	TPH 0	Lab 16'	ND	TPH 0	Lab 14'	ND	TPH 0	Lab 16'	ND	TPH 0	Lab 18'	ND	TPH 0

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples

[illegible]

C&M Services

SP16	CHL	PID
Surface	11,464	3.2
1'	405	0
2'	325	0
3'	267	0
8'	255	0
13'	365	0
Lab 2'	ND	TPH 0
Lab 3'	ND	TPH 0
Lab 13'	ND	TPH 0

SP17	CHL	PID
Surface	9,026	2.3
1'	1,444	1.2
2'	2,530	0
3'	7,205	0
4'	7,527	0
5'	2,124	0
7'	945	0
9'	400	0
12'	386	0
14'	400	0
17'	395	0
Lab 9'	ND	TPH 0
Lab 10'	ND	TPH 0
Lab 17'	ND	TPH 0

SP18	CHL	PID
Surface	9,136	1.2
1'	5,567	0.6
2'	329	0.2
3'	300	0
4'	240	0
9'	365	0
14'	412	0
Lab 3'	570	TPH 0
Lab 4'	ND	TPH 0
Lab 14'	ND	TPH 0

[illegible][illegible]

	Lab Confirmation Sample
	Field Sampling
	Needs Delineation and confirmation samples

Linn Energy
CMU North Injection, CMU B #52
Sample point GPS

Background 32.822181, -103.700495

SP #1 release point 32.82209, -103.70055

SP #2 32.82212, -103.70058

SP #3 32.82203, -103.70063

SP #4 32.82193, -103.70073

SP #5 32.82176, -103.70071

SP #6 32.82156, -103.70074

SP #7 32.82139, -103.70080

SP #8 32.82120, -103.70084

SP #9 32.82103, -103.70090

SP #10 32.82081, -103.70114

SP #11 32.82062, -103.70133

SP #12 32.82065, -103.70152

SP #13 32.82054, -103.70174

SP #14 32.82051, -103.70149

SP #15 32.82040, -103.70168

SP #16 32.82180, -103.70045

SP #17 32.82158, -103.70055

SP #18 32.82128, -103.70061

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: Background

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 7:00:00 PM

Lab ID: 1708356-001

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/8/2017 10:03:11 AM
Surr: DNOP	91.9	70-130		%Rec	1	8/8/2017 10:03:11 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/8/2017 11:13:12 AM
Surr: BFB	87.0	54-150		%Rec	1	8/8/2017 11:13:12 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	8/8/2017 11:13:12 AM
Toluene	ND	0.047		mg/Kg	1	8/8/2017 11:13:12 AM
Ethylbenzene	ND	0.047		mg/Kg	1	8/8/2017 11:13:12 AM
Xylenes, Total	ND	0.093		mg/Kg	1	8/8/2017 11:13:12 AM
Surr: 4-Bromofluorobenzene	100	66.6-132		%Rec	1	8/8/2017 11:13:12 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 12:06:41 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP1 @ 8'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:05:00 PM

Lab ID: 1708356-002

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/8/2017 11:27:46 AM
Surr: DNOP	90.4	70-130		%Rec	1	8/8/2017 11:27:46 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/8/2017 12:24:29 PM
Surr: BFB	86.7	54-150		%Rec	1	8/8/2017 12:24:29 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/8/2017 12:24:29 PM
Toluene	ND	0.049		mg/Kg	1	8/8/2017 12:24:29 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/8/2017 12:24:29 PM
Xylenes, Total	ND	0.099		mg/Kg	1	8/8/2017 12:24:29 PM
Surr: 4-Bromofluorobenzene	99.5	66.6-132		%Rec	1	8/8/2017 12:24:29 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 12:43:53 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP1 @ 9'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:05:00 PM

Lab ID: 1708356-003

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/8/2017 11:55:50 AM
Surr: DNOP	90.5	70-130		%Rec	1	8/8/2017 11:55:50 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/8/2017 1:35:37 PM
Surr: BFB	88.4	54-150		%Rec	1	8/8/2017 1:35:37 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/8/2017 1:35:37 PM
Toluene	ND	0.049		mg/Kg	1	8/8/2017 1:35:37 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/8/2017 1:35:37 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/8/2017 1:35:37 PM
Surr: 4-Bromofluorobenzene	102	66.6-132		%Rec	1	8/8/2017 1:35:37 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 1:21:07 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP1 @ 18'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:05:00 PM

Lab ID: 1708356-004

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/8/2017 12:23:50 PM
Surr: DNOP	92.2	70-130		%Rec	1	8/8/2017 12:23:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/8/2017 1:59:18 PM
Surr: BFB	88.7	54-150		%Rec	1	8/8/2017 1:59:18 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	8/8/2017 1:59:18 PM
Toluene	ND	0.047		mg/Kg	1	8/8/2017 1:59:18 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/8/2017 1:59:18 PM
Xylenes, Total	ND	0.094		mg/Kg	1	8/8/2017 1:59:18 PM
Surr: 4-Bromofluorobenzene	102	66.6-132		%Rec	1	8/8/2017 1:59:18 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 1:33:32 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP2 @ 3'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:00:00 PM

Lab ID: 1708356-005

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/8/2017 12:52:10 PM
Surr: DNOP	91.9	70-130		%Rec	1	8/8/2017 12:52:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 2:23:03 PM
Surr: BFB	88.9	54-150		%Rec	1	8/8/2017 2:23:03 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 2:23:03 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 2:23:03 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 2:23:03 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/8/2017 2:23:03 PM
Surr: 4-Bromofluorobenzene	102	66.6-132		%Rec	1	8/8/2017 2:23:03 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 1:45:56 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 5 of 0
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP2 @ 4'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:00:00 PM

Lab ID: 1708356-006

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/8/2017 1:20:40 PM
Surr: DNOP	90.2	70-130		%Rec	1	8/8/2017 1:20:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/8/2017 2:46:51 PM
Surr: BFB	89.0	54-150		%Rec	1	8/8/2017 2:46:51 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 2:46:51 PM
Toluene	ND	0.049		mg/Kg	1	8/8/2017 2:46:51 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/8/2017 2:46:51 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/8/2017 2:46:51 PM
Surr: 4-Bromofluorobenzene	101	66.6-132		%Rec	1	8/8/2017 2:46:51 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 1:58:21 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 6 of 0
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP2 @ 13'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:10:00 PM

Lab ID: 1708356-007

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/8/2017 1:49:14 PM
Surr: DNOP	88.4	70-130		%Rec	1	8/8/2017 1:49:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/8/2017 3:10:37 PM
Surr: BFB	88.0	54-150		%Rec	1	8/8/2017 3:10:37 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 3:10:37 PM
Toluene	ND	0.047		mg/Kg	1	8/8/2017 3:10:37 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/8/2017 3:10:37 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/8/2017 3:10:37 PM
Surr: 4-Bromofluorobenzene	101	66.6-132		%Rec	1	8/8/2017 3:10:37 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 2:10:45 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 7 of 0
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP3 @ 3'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:01:00 PM

Lab ID: 1708356-008

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/8/2017 2:17:45 PM
Surr: DNOP	90.7	70-130		%Rec	1	8/8/2017 2:17:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/8/2017 3:34:28 PM
Surr: BFB	89.1	54-150		%Rec	1	8/8/2017 3:34:28 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 3:34:28 PM
Toluene	ND	0.049		mg/Kg	1	8/8/2017 3:34:28 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/8/2017 3:34:28 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/8/2017 3:34:28 PM
Surr: 4-Bromofluorobenzene	102	66.6-132		%Rec	1	8/8/2017 3:34:28 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	610	30		mg/Kg	20	8/8/2017 2:23:10 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP3 @ 4'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:01:00 PM

Lab ID: 1708356-009

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/8/2017 2:46:16 PM
Surr: DNOP	89.6	70-130		%Rec	1	8/8/2017 2:46:16 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/8/2017 3:58:16 PM
Surr: BFB	87.8	54-150		%Rec	1	8/8/2017 3:58:16 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	8/8/2017 3:58:16 PM
Toluene	ND	0.046		mg/Kg	1	8/8/2017 3:58:16 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/8/2017 3:58:16 PM
Xylenes, Total	ND	0.092		mg/Kg	1	8/8/2017 3:58:16 PM
Surr: 4-Bromofluorobenzene	98.4	66.6-132		%Rec	1	8/8/2017 3:58:16 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 2:35:34 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP3 @ 13'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:10:00 PM

Lab ID: 1708356-010

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/8/2017 3:14:37 PM
Surr: DNOP	87.9	70-130		%Rec	1	8/8/2017 3:14:37 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/8/2017 4:22:01 PM
Surr: BFB	88.8	54-150		%Rec	1	8/8/2017 4:22:01 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 4:22:01 PM
Toluene	ND	0.047		mg/Kg	1	8/8/2017 4:22:01 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/8/2017 4:22:01 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/8/2017 4:22:01 PM
Surr: 4-Bromofluorobenzene	101	66.6-132		%Rec	1	8/8/2017 4:22:01 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 2:47:58 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP4 @ 3'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:10:00 PM

Lab ID: 1708356-011

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	8/8/2017 4:11:25 PM
Surr: DNOP	93.0	70-130		%Rec	1	8/8/2017 4:11:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/8/2017 7:55:34 PM
Surr: BFB	88.4	54-150		%Rec	1	8/8/2017 7:55:34 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 7:55:34 PM
Toluene	ND	0.049		mg/Kg	1	8/8/2017 7:55:34 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/8/2017 7:55:34 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/8/2017 7:55:34 PM
Surr: 4-Bromofluorobenzene	101	66.6-132		%Rec	1	8/8/2017 7:55:34 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 3:00:23 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP4 @ 4'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:10:00 PM

Lab ID: 1708356-012

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/8/2017 4:39:49 PM
Surr: DNOP	87.2	70-130		%Rec	1	8/8/2017 4:39:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/8/2017 8:19:12 PM
Surr: BFB	88.8	54-150		%Rec	1	8/8/2017 8:19:12 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/8/2017 8:19:12 PM
Toluene	ND	0.049		mg/Kg	1	8/8/2017 8:19:12 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/8/2017 8:19:12 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/8/2017 8:19:12 PM
Surr: 4-Bromofluorobenzene	101	66.6-132		%Rec	1	8/8/2017 8:19:12 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 3:12:48 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP4 @ 17'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:13:00 PM

Lab ID: 1708356-013

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/8/2017 5:08:21 PM
Surr: DNOP	85.5	70-130		%Rec	1	8/8/2017 5:08:21 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 8:42:47 PM
Surr: BFB	87.6	54-150		%Rec	1	8/8/2017 8:42:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 8:42:47 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 8:42:47 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 8:42:47 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/8/2017 8:42:47 PM
Surr: 4-Bromofluorobenzene	99.8	66.6-132		%Rec	1	8/8/2017 8:42:47 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 3:50:02 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP5 @ 7'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:13:00 PM

Lab ID: 1708356-014

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	8/8/2017 5:37:11 PM
Surr: DNOP	84.9	70-130		%Rec	1	8/8/2017 5:37:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/8/2017 9:06:20 PM
Surr: BFB	89.2	54-150		%Rec	1	8/8/2017 9:06:20 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 9:06:20 PM
Toluene	ND	0.049		mg/Kg	1	8/8/2017 9:06:20 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/8/2017 9:06:20 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/8/2017 9:06:20 PM
Surr: 4-Bromofluorobenzene	99.5	66.6-132		%Rec	1	8/8/2017 9:06:20 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 4:02:26 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP5 @ 8'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:13:00 PM

Lab ID: 1708356-015

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/8/2017 6:06:14 PM
Surr: DNOP	87.7	70-130		%Rec	1	8/8/2017 6:06:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/8/2017 9:29:58 PM
Surr: BFB	87.8	54-150		%Rec	1	8/8/2017 9:29:58 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	8/8/2017 9:29:58 PM
Toluene	ND	0.047		mg/Kg	1	8/8/2017 9:29:58 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/8/2017 9:29:58 PM
Xylenes, Total	ND	0.094		mg/Kg	1	8/8/2017 9:29:58 PM
Surr: 4-Bromofluorobenzene	99.5	66.6-132		%Rec	1	8/8/2017 9:29:58 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 4:14:50 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP5 @ 18'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017

Lab ID: 1708356-016

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	8/8/2017 6:34:50 PM
Surr: DNOP	85.9	70-130		%Rec	1	8/8/2017 6:34:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/8/2017 9:53:41 PM
Surr: BFB	88.4	54-150		%Rec	1	8/8/2017 9:53:41 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 9:53:41 PM
Toluene	ND	0.047		mg/Kg	1	8/8/2017 9:53:41 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/8/2017 9:53:41 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/8/2017 9:53:41 PM
Surr: 4-Bromofluorobenzene	101	66.6-132		%Rec	1	8/8/2017 9:53:41 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 4:27:15 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP6 @ 7'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017

Lab ID: 1708356-017

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/8/2017 7:03:37 PM
Surr: DNOP	90.2	70-130		%Rec	1	8/8/2017 7:03:37 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 10:17:19 PM
Surr: BFB	88.2	54-150		%Rec	1	8/8/2017 10:17:19 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 10:17:19 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 10:17:19 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 10:17:19 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/8/2017 10:17:19 PM
Surr: 4-Bromofluorobenzene	99.9	66.6-132		%Rec	1	8/8/2017 10:17:19 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 4:39:39 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP6 @ 8'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:15:00 PM

Lab ID: 1708356-018

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	8/8/2017 7:32:26 PM
Surr: DNOP	89.5	70-130		%Rec	1	8/8/2017 7:32:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/8/2017 10:40:52 PM
Surr: BFB	86.3	54-150		%Rec	1	8/8/2017 10:40:52 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/8/2017 10:40:52 PM
Toluene	ND	0.049		mg/Kg	1	8/8/2017 10:40:52 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/8/2017 10:40:52 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/8/2017 10:40:52 PM
Surr: 4-Bromofluorobenzene	97.2	66.6-132		%Rec	1	8/8/2017 10:40:52 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 4:52:04 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP6 @ 17'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:15:00 PM

Lab ID: 1708356-019

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/8/2017 8:00:42 PM
Surr: DNOP	93.6	70-130		%Rec	1	8/8/2017 8:00:42 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 11:04:26 PM
Surr: BFB	88.4	54-150		%Rec	1	8/8/2017 11:04:26 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 11:04:26 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 11:04:26 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 11:04:26 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/8/2017 11:04:26 PM
Surr: 4-Bromofluorobenzene	101	66.6-132		%Rec	1	8/8/2017 11:04:26 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 5:29:18 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP7 @ 9'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:15:00 PM

Lab ID: 1708356-020

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/8/2017 12:35:39 PM
Surr: DNOP	90.7	70-130		%Rec	1	8/8/2017 12:35:39 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 11:28:04 PM
Surr: BFB	88.9	54-150		%Rec	1	8/8/2017 11:28:04 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 11:28:04 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 11:28:04 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 11:28:04 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/8/2017 11:28:04 PM
Surr: 4-Bromofluorobenzene	100	66.6-132		%Rec	1	8/8/2017 11:28:04 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 6:31:22 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP7 @ 12'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:15:00 PM

Lab ID: 1708356-021

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	8/8/2017 1:50:38 PM
Surr: DNOP	93.0	70-130		%Rec	1	8/8/2017 1:50:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/9/2017 1:02:23 AM
Surr: BFB	88.6	54-150		%Rec	1	8/9/2017 1:02:23 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/9/2017 1:02:23 AM
Toluene	ND	0.048		mg/Kg	1	8/9/2017 1:02:23 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/9/2017 1:02:23 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/9/2017 1:02:23 AM
Surr: 4-Bromofluorobenzene	101	66.6-132		%Rec	1	8/9/2017 1:02:23 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 7:08:36 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP7 @ 16

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:15:00 PM

Lab ID: 1708356-022

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/8/2017 2:15:44 PM
Surr: DNOP	88.1	70-130		%Rec	1	8/8/2017 2:15:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/9/2017 1:25:58 AM
Surr: BFB	89.1	54-150		%Rec	1	8/9/2017 1:25:58 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/9/2017 1:25:58 AM
Toluene	ND	0.049		mg/Kg	1	8/9/2017 1:25:58 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/9/2017 1:25:58 AM
Xylenes, Total	ND	0.098		mg/Kg	1	8/9/2017 1:25:58 AM
Surr: 4-Bromofluorobenzene	100	66.6-132		%Rec	1	8/9/2017 1:25:58 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 7:21:00 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP8 @ 8'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:15:00 PM

Lab ID: 1708356-023

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/8/2017 2:40:40 PM
Surr: DNOP	85.0	70-130		%Rec	1	8/8/2017 2:40:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/9/2017 1:49:37 AM
Surr: BFB	87.9	54-150		%Rec	1	8/9/2017 1:49:37 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	8/9/2017 1:49:37 AM
Toluene	ND	0.046		mg/Kg	1	8/9/2017 1:49:37 AM
Ethylbenzene	ND	0.046		mg/Kg	1	8/9/2017 1:49:37 AM
Xylenes, Total	ND	0.092		mg/Kg	1	8/9/2017 1:49:37 AM
Surr: 4-Bromofluorobenzene	100	66.6-132		%Rec	1	8/9/2017 1:49:37 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 7:33:25 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP8 @ 10'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:15:00 PM

Lab ID: 1708356-024

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/8/2017 3:05:43 PM
Surr: DNOP	87.0	70-130		%Rec	1	8/8/2017 3:05:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/9/2017 2:13:12 AM
Surr: BFB	87.8	54-150		%Rec	1	8/9/2017 2:13:12 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/9/2017 2:13:12 AM
Toluene	ND	0.047		mg/Kg	1	8/9/2017 2:13:12 AM
Ethylbenzene	ND	0.047		mg/Kg	1	8/9/2017 2:13:12 AM
Xylenes, Total	ND	0.094		mg/Kg	1	8/9/2017 2:13:12 AM
Surr: 4-Bromofluorobenzene	99.1	66.6-132		%Rec	1	8/9/2017 2:13:12 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 7:45:50 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP8 @ 14'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:15:00 PM

Lab ID: 1708356-025

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/8/2017 3:30:29 PM
Surr: DNOP	93.4	70-130		%Rec	1	8/8/2017 3:30:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/9/2017 2:36:45 AM
Surr: BFB	87.9	54-150		%Rec	1	8/9/2017 2:36:45 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/9/2017 2:36:45 AM
Toluene	ND	0.048		mg/Kg	1	8/9/2017 2:36:45 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/9/2017 2:36:45 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/9/2017 2:36:45 AM
Surr: 4-Bromofluorobenzene	98.8	66.6-132		%Rec	1	8/9/2017 2:36:45 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 7:58:15 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP9 @ 7'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:20:00 PM

Lab ID: 1708356-026

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/8/2017 4:52:20 PM
Surr: DNOP	85.7	70-130		%Rec	1	8/8/2017 4:52:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/9/2017 3:00:18 AM
Surr: BFB	88.0	54-150		%Rec	1	8/9/2017 3:00:18 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	8/9/2017 3:00:18 AM
Toluene	ND	0.047		mg/Kg	1	8/9/2017 3:00:18 AM
Ethylbenzene	ND	0.047		mg/Kg	1	8/9/2017 3:00:18 AM
Xylenes, Total	ND	0.094		mg/Kg	1	8/9/2017 3:00:18 AM
Surr: 4-Bromofluorobenzene	99.6	66.6-132		%Rec	1	8/9/2017 3:00:18 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 8:35:28 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP9 @ 9'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:20:00 PM

Lab ID: 1708356-027

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	8/8/2017 5:17:26 PM
Surr: DNOP	85.6	70-130		%Rec	1	8/8/2017 5:17:26 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/9/2017 3:23:49 AM
Surr: BFB	86.6	54-150		%Rec	1	8/9/2017 3:23:49 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	8/9/2017 3:23:49 AM
Toluene	ND	0.050		mg/Kg	1	8/9/2017 3:23:49 AM
Ethylbenzene	ND	0.050		mg/Kg	1	8/9/2017 3:23:49 AM
Xylenes, Total	ND	0.10		mg/Kg	1	8/9/2017 3:23:49 AM
Surr: 4-Bromofluorobenzene	98.4	66.6-132		%Rec	1	8/9/2017 3:23:49 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 8:47:53 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP9 @ 16'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:00:00 PM

Lab ID: 1708356-028

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	8/8/2017 5:42:35 PM
Surr: DNOP	80.6	70-130		%Rec	1	8/8/2017 5:42:35 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/9/2017 3:47:16 AM
Surr: BFB	87.8	54-150		%Rec	1	8/9/2017 3:47:16 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/9/2017 3:47:16 AM
Toluene	ND	0.049		mg/Kg	1	8/9/2017 3:47:16 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/9/2017 3:47:16 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/9/2017 3:47:16 AM
Surr: 4-Bromofluorobenzene	97.9	66.6-132		%Rec	1	8/9/2017 3:47:16 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 9:00:18 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP10 @ 7'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:00:00 PM

Lab ID: 1708356-029

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/8/2017 6:07:51 PM
Surr: DNOP	83.4	70-130		%Rec	1	8/8/2017 6:07:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/9/2017 4:11:03 AM
Surr: BFB	87.7	54-150		%Rec	1	8/9/2017 4:11:03 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/9/2017 4:11:03 AM
Toluene	ND	0.047		mg/Kg	1	8/9/2017 4:11:03 AM
Ethylbenzene	ND	0.047		mg/Kg	1	8/9/2017 4:11:03 AM
Xylenes, Total	ND	0.094		mg/Kg	1	8/9/2017 4:11:03 AM
Surr: 4-Bromofluorobenzene	98.6	66.6-132		%Rec	1	8/9/2017 4:11:03 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 9:12:42 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP10 @ 8'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:00:00 PM

Lab ID: 1708356-030

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/8/2017 6:33:01 PM
Surr: DNOP	89.3	70-130		%Rec	1	8/8/2017 6:33:01 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/9/2017 4:34:46 AM
Surr: BFB	88.4	54-150		%Rec	1	8/9/2017 4:34:46 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/9/2017 4:34:46 AM
Toluene	ND	0.048		mg/Kg	1	8/9/2017 4:34:46 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/9/2017 4:34:46 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/9/2017 4:34:46 AM
Surr: 4-Bromofluorobenzene	98.2	66.6-132		%Rec	1	8/9/2017 4:34:46 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 9:25:07 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1708356**

Date Reported:

CLIENT: CM Services

Client Sample ID: SP10 @ 18'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:00:00 PM

Lab ID: 1708356-031

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/8/2017 6:58:11 PM
Surr: DNOP	82.0	70-130		%Rec	1	8/8/2017 6:58:11 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/9/2017 3:31:06 AM
Surr: BFB	91.9	54-150		%Rec	1	8/9/2017 3:31:06 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	8/9/2017 3:31:06 AM
Toluene	ND	0.046		mg/Kg	1	8/9/2017 3:31:06 AM
Ethylbenzene	ND	0.046		mg/Kg	1	8/9/2017 3:31:06 AM
Xylenes, Total	ND	0.093		mg/Kg	1	8/9/2017 3:31:06 AM
Surr: 4-Bromofluorobenzene	113	66.6-132		%Rec	1	8/9/2017 3:31:06 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 9:37:32 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP11 @ 4'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:00:00 PM

Lab ID: 1708356-032

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/8/2017 7:23:12 PM
Surr: DNOP	90.4	70-130		%Rec	1	8/8/2017 7:23:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/9/2017 3:55:04 AM
Surr: BFB	91.3	54-150		%Rec	1	8/9/2017 3:55:04 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/9/2017 3:55:04 AM
Toluene	ND	0.048		mg/Kg	1	8/9/2017 3:55:04 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/9/2017 3:55:04 AM
Xylenes, Total	ND	0.096		mg/Kg	1	8/9/2017 3:55:04 AM
Surr: 4-Bromofluorobenzene	114	66.6-132		%Rec	1	8/9/2017 3:55:04 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 9:49:56 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP11 @ 5'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:00:00 PM

Lab ID: 1708356-033

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/8/2017 7:48:23 PM
Surr: DNOP	89.8	70-130		%Rec	1	8/8/2017 7:48:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/9/2017 4:19:04 AM
Surr: BFB	91.8	54-150		%Rec	1	8/9/2017 4:19:04 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/9/2017 4:19:04 AM
Toluene	ND	0.048		mg/Kg	1	8/9/2017 4:19:04 AM
Ethylbenzene	ND	0.048		mg/Kg	1	8/9/2017 4:19:04 AM
Xylenes, Total	ND	0.095		mg/Kg	1	8/9/2017 4:19:04 AM
Surr: 4-Bromofluorobenzene	114	66.6-132		%Rec	1	8/9/2017 4:19:04 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 10:02:20 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP11 @ 15'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:10:00 PM

Lab ID: 1708356-034

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/8/2017 8:13:23 PM
Surr: DNOP	84.5	70-130		%Rec	1	8/8/2017 8:13:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/9/2017 4:43:05 AM
Surr: BFB	88.7	54-150		%Rec	1	8/9/2017 4:43:05 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	8/9/2017 4:43:05 AM
Toluene	ND	0.046		mg/Kg	1	8/9/2017 4:43:05 AM
Ethylbenzene	ND	0.046		mg/Kg	1	8/9/2017 4:43:05 AM
Xylenes, Total	ND	0.092		mg/Kg	1	8/9/2017 4:43:05 AM
Surr: 4-Bromofluorobenzene	111	66.6-132		%Rec	1	8/9/2017 4:43:05 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 10:14:44 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP12 @ 10'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:10:00 PM

Lab ID: 1708356-035

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	8/8/2017 8:38:27 PM
Surr: DNOP	82.8	70-130		%Rec	1	8/8/2017 8:38:27 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/9/2017 5:07:04 AM
Surr: BFB	105	54-150		%Rec	1	8/9/2017 5:07:04 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/9/2017 5:07:04 AM
Toluene	ND	0.049		mg/Kg	1	8/9/2017 5:07:04 AM
Ethylbenzene	ND	0.049		mg/Kg	1	8/9/2017 5:07:04 AM
Xylenes, Total	ND	0.097		mg/Kg	1	8/9/2017 5:07:04 AM
Surr: 4-Bromofluorobenzene	132	66.6-132		%Rec	1	8/9/2017 5:07:04 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 10:27:09 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP12 @ 12'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:10:00 PM

Lab ID: 1708356-036

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/8/2017 9:03:23 PM
Surr: DNOP	89.0	70-130		%Rec	1	8/8/2017 9:03:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/9/2017 5:31:03 AM
Surr: BFB	87.8	54-150		%Rec	1	8/9/2017 5:31:03 AM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/9/2017 5:31:03 AM
Toluene	ND	0.047		mg/Kg	1	8/9/2017 5:31:03 AM
Ethylbenzene	ND	0.047		mg/Kg	1	8/9/2017 5:31:03 AM
Xylenes, Total	ND	0.095		mg/Kg	1	8/9/2017 5:31:03 AM
Surr: 4-Bromofluorobenzene	110	66.6-132		%Rec	1	8/9/2017 5:31:03 AM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 11:04:23 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1708356**

Date Reported:

CLIENT: CM Services

Client Sample ID: SP12 @ 14'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:15:00 PM

Lab ID: 1708356-037

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/9/2017 11:55:21 AM
Surr: DNOP	86.4	70-130		%Rec	1	8/9/2017 11:55:21 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: AG
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/9/2017 3:29:05 PM
Surr: BFB	89.2	54-150		%Rec	1	8/9/2017 3:29:05 PM
EPA METHOD 8021B: VOLATILES						Analyst: AG
Benzene	ND	0.023		mg/Kg	1	8/9/2017 3:29:05 PM
Toluene	ND	0.046		mg/Kg	1	8/9/2017 3:29:05 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/9/2017 3:29:05 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/9/2017 3:29:05 PM
Surr: 4-Bromofluorobenzene	119	66.6-132		%Rec	1	8/9/2017 3:29:05 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/8/2017 11:16:47 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP13 @ 2'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 7:10:00 PM

Lab ID: 1708356-038

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/9/2017 12:20:10 PM
Surr: DNOP	80.8	70-130		%Rec	1	8/9/2017 12:20:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: AG
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/9/2017 3:53:12 PM
Surr: BFB	88.7	54-150		%Rec	1	8/9/2017 3:53:12 PM
EPA METHOD 8021B: VOLATILES						Analyst: AG
Benzene	ND	0.024		mg/Kg	1	8/9/2017 3:53:12 PM
Toluene	ND	0.047		mg/Kg	1	8/9/2017 3:53:12 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/9/2017 3:53:12 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/9/2017 3:53:12 PM
Surr: 4-Bromofluorobenzene	117	66.6-132		%Rec	1	8/9/2017 3:53:12 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	650	30		mg/Kg	20	8/8/2017 11:29:11 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP13 @ 3'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 7:10:00 PM

Lab ID: 1708356-039

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/9/2017 12:45:04 PM
Surr: DNOP	80.2	70-130		%Rec	1	8/9/2017 12:45:04 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: AG
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/9/2017 4:17:13 PM
Surr: BFB	90.0	54-150		%Rec	1	8/9/2017 4:17:13 PM
EPA METHOD 8021B: VOLATILES						Analyst: AG
Benzene	ND	0.023		mg/Kg	1	8/9/2017 4:17:13 PM
Toluene	ND	0.046		mg/Kg	1	8/9/2017 4:17:13 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/9/2017 4:17:13 PM
Xylenes, Total	ND	0.092		mg/Kg	1	8/9/2017 4:17:13 PM
Surr: 4-Bromofluorobenzene	119	66.6-132		%Rec	1	8/9/2017 4:17:13 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 2:57:00 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP13 @ 14'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 7:10:00 PM

Lab ID: 1708356-040

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/9/2017 1:10:06 PM
Surr: DNOP	85.9	70-130		%Rec	1	8/9/2017 1:10:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: AG
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/9/2017 4:41:15 PM
Surr: BFB	86.7	54-150		%Rec	1	8/9/2017 4:41:15 PM
EPA METHOD 8021B: VOLATILES						Analyst: AG
Benzene	ND	0.024		mg/Kg	1	8/9/2017 4:41:15 PM
Toluene	ND	0.047		mg/Kg	1	8/9/2017 4:41:15 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/9/2017 4:41:15 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/9/2017 4:41:15 PM
Surr: 4-Bromofluorobenzene	115	66.6-132		%Rec	1	8/9/2017 4:41:15 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 3:59:04 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP14 @ 4'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:10:00 PM

Lab ID: 1708356-041

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	130	9.9		mg/Kg	1	8/9/2017 2:00:16 PM
Surr: DNOP	88.9	70-130		%Rec	1	8/9/2017 2:00:16 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 2:43:18 PM
Surr: BFB	95.9	54-150		%Rec	1	8/8/2017 2:43:18 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 2:43:18 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 2:43:18 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 2:43:18 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/8/2017 2:43:18 PM
Surr: 4-Bromofluorobenzene	117	66.6-132		%Rec	1	8/8/2017 2:43:18 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	460	30		mg/Kg	20	8/10/2017 4:36:18 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP14 @ 5'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:00:00 PM

Lab ID: 1708356-042

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	8/9/2017 3:15:45 PM
Surr: DNOP	87.2	70-130		%Rec	1	8/9/2017 3:15:45 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 3:55:30 PM
Surr: BFB	94.3	54-150		%Rec	1	8/8/2017 3:55:30 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 3:55:30 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 3:55:30 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 3:55:30 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/8/2017 3:55:30 PM
Surr: 4-Bromofluorobenzene	117	66.6-132		%Rec	1	8/8/2017 3:55:30 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	330	30		mg/Kg	20	8/10/2017 4:48:43 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP14 @ 15'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:10:00 PM

Lab ID: 1708356-043

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/9/2017 3:40:57 PM
Surr: DNOP	92.7	70-130		%Rec	1	8/9/2017 3:40:57 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/8/2017 5:07:50 PM
Surr: BFB	91.2	54-150		%Rec	1	8/8/2017 5:07:50 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	8/8/2017 5:07:50 PM
Toluene	ND	0.046		mg/Kg	1	8/8/2017 5:07:50 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/8/2017 5:07:50 PM
Xylenes, Total	ND	0.092		mg/Kg	1	8/8/2017 5:07:50 PM
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	1	8/8/2017 5:07:50 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 5:01:08 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP15 @ 4'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:00:00 PM

Lab ID: 1708356-044

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	8/9/2017 4:05:53 PM
Surr: DNOP	86.9	70-130		%Rec	1	8/9/2017 4:05:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/8/2017 5:31:56 PM
Surr: BFB	91.2	54-150		%Rec	1	8/8/2017 5:31:56 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 5:31:56 PM
Toluene	ND	0.049		mg/Kg	1	8/8/2017 5:31:56 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/8/2017 5:31:56 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/8/2017 5:31:56 PM
Surr: 4-Bromofluorobenzene	111	66.6-132		%Rec	1	8/8/2017 5:31:56 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 5:13:33 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP15 @ 5'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:00:00 PM

Lab ID: 1708356-045

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/9/2017 4:31:00 PM
Surr: DNOP	87.2	70-130		%Rec	1	8/9/2017 4:31:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 5:56:01 PM
Surr: BFB	91.8	54-150		%Rec	1	8/8/2017 5:56:01 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 5:56:01 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 5:56:01 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 5:56:01 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/8/2017 5:56:01 PM
Surr: 4-Bromofluorobenzene	111	66.6-132		%Rec	1	8/8/2017 5:56:01 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 5:25:58 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP15 @ 15'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:00:00 PM

Lab ID: 1708356-046

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	8/9/2017 2:54:29 PM
Surr: DNOP	92.7	70-130		%Rec	1	8/9/2017 2:54:29 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/8/2017 6:20:06 PM
Surr: BFB	92.2	54-150		%Rec	1	8/8/2017 6:20:06 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	8/8/2017 6:20:06 PM
Toluene	ND	0.046		mg/Kg	1	8/8/2017 6:20:06 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/8/2017 6:20:06 PM
Xylenes, Total	ND	0.093		mg/Kg	1	8/8/2017 6:20:06 PM
Surr: 4-Bromofluorobenzene	111	66.6-132		%Rec	1	8/8/2017 6:20:06 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	36	30		mg/Kg	20	8/10/2017 5:38:23 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP16 @ 2'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:10:00 PM

Lab ID: 1708356-047

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/9/2017 2:32:14 PM
Surr: DNOP	96.0	70-130		%Rec	1	8/9/2017 2:32:14 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/8/2017 8:44:13 PM
Surr: BFB	92.0	54-150		%Rec	1	8/8/2017 8:44:13 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	8/8/2017 8:44:13 PM
Toluene	ND	0.046		mg/Kg	1	8/8/2017 8:44:13 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/8/2017 8:44:13 PM
Xylenes, Total	ND	0.092		mg/Kg	1	8/8/2017 8:44:13 PM
Surr: 4-Bromofluorobenzene	114	66.6-132		%Rec	1	8/8/2017 8:44:13 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 5:50:48 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP16 @ 3'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:10:00 PM

Lab ID: 1708356-048

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/9/2017 2:10:06 PM
Surr: DNOP	93.1	70-130		%Rec	1	8/9/2017 2:10:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 9:08:10 PM
Surr: BFB	90.2	54-150		%Rec	1	8/8/2017 9:08:10 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 9:08:10 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 9:08:10 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 9:08:10 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/8/2017 9:08:10 PM
Surr: 4-Bromofluorobenzene	110	66.6-132		%Rec	1	8/8/2017 9:08:10 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 6:28:02 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP16 @ 13'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:10:00 PM

Lab ID: 1708356-049

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/9/2017 1:47:49 PM
Surr: DNOP	93.3	70-130		%Rec	1	8/9/2017 1:47:49 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 9:32:06 PM
Surr: BFB	92.9	54-150		%Rec	1	8/8/2017 9:32:06 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 9:32:06 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 9:32:06 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 9:32:06 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/8/2017 9:32:06 PM
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	1	8/8/2017 9:32:06 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 6:40:27 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP17 @ 9'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:10:00 PM

Lab ID: 1708356-050

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/9/2017 1:25:43 PM
Surr: DNOP	94.6	70-130		%Rec	1	8/9/2017 1:25:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 9:56:00 PM
Surr: BFB	93.7	54-150		%Rec	1	8/8/2017 9:56:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 9:56:00 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 9:56:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 9:56:00 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/8/2017 9:56:00 PM
Surr: 4-Bromofluorobenzene	116	66.6-132		%Rec	1	8/8/2017 9:56:00 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 6:52:52 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP17 @ 10'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:10:00 PM

Lab ID: 1708356-051

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/10/2017 11:36:04 AM
Surr: DNOP	94.6	70-130		%Rec	1	8/10/2017 11:36:04 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 10:19:53 PM
Surr: BFB	91.3	54-150		%Rec	1	8/8/2017 10:19:53 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 10:19:53 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 10:19:53 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 10:19:53 PM
Xylenes, Total	ND	0.096		mg/Kg	1	8/8/2017 10:19:53 PM
Surr: 4-Bromofluorobenzene	113	66.6-132		%Rec	1	8/8/2017 10:19:53 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 7:05:17 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP17 @ 17'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:10:00 PM

Lab ID: 1708356-052

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	8/10/2017 12:44:56 PM
Surr: DNOP	98.5	70-130		%Rec	1	8/10/2017 12:44:56 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/8/2017 10:43:47 PM
Surr: BFB	91.1	54-150		%Rec	1	8/8/2017 10:43:47 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 10:43:47 PM
Toluene	ND	0.047		mg/Kg	1	8/8/2017 10:43:47 PM
Ethylbenzene	ND	0.047		mg/Kg	1	8/8/2017 10:43:47 PM
Xylenes, Total	ND	0.095		mg/Kg	1	8/8/2017 10:43:47 PM
Surr: 4-Bromofluorobenzene	113	66.6-132		%Rec	1	8/8/2017 10:43:47 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 7:17:41 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP18 @ 3'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 5:11:00 PM

Lab ID: 1708356-053

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/10/2017 1:07:12 PM
Surr: DNOP	91.5	70-130		%Rec	1	8/10/2017 1:07:12 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/8/2017 11:07:44 PM
Surr: BFB	93.2	54-150		%Rec	1	8/8/2017 11:07:44 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 11:07:44 PM
Toluene	ND	0.049		mg/Kg	1	8/8/2017 11:07:44 PM
Ethylbenzene	ND	0.049		mg/Kg	1	8/8/2017 11:07:44 PM
Xylenes, Total	ND	0.098		mg/Kg	1	8/8/2017 11:07:44 PM
Surr: 4-Bromofluorobenzene	115	66.6-132		%Rec	1	8/8/2017 11:07:44 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	570	30		mg/Kg	20	8/10/2017 7:30:06 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP18 @ 4'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:10:00 PM

Lab ID: 1708356-054

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/10/2017 1:29:17 PM
Surr: DNOP	87.5	70-130		%Rec	1	8/10/2017 1:29:17 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/8/2017 11:31:39 PM
Surr: BFB	91.7	54-150		%Rec	1	8/8/2017 11:31:39 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	8/8/2017 11:31:39 PM
Toluene	ND	0.048		mg/Kg	1	8/8/2017 11:31:39 PM
Ethylbenzene	ND	0.048		mg/Kg	1	8/8/2017 11:31:39 PM
Xylenes, Total	ND	0.097		mg/Kg	1	8/8/2017 11:31:39 PM
Surr: 4-Bromofluorobenzene	113	66.6-132		%Rec	1	8/8/2017 11:31:39 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 7:42:31 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1708356

Date Reported:

CLIENT: CM Services

Client Sample ID: SP18 @ 14'

Project: CMU N INJ CMU 52

Collection Date: 8/1/2017 6:10:00 PM

Lab ID: 1708356-055

Matrix: SOIL

Received Date: 8/5/2017 12:00:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/10/2017 1:51:28 PM
Surr: DNOP	91.4	70-130		%Rec	1	8/10/2017 1:51:28 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/8/2017 11:55:32 PM
Surr: BFB	93.3	54-150		%Rec	1	8/8/2017 11:55:32 PM
EPA METHOD 8021B: VOLATILES						Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	8/8/2017 11:55:32 PM
Toluene	ND	0.046		mg/Kg	1	8/8/2017 11:55:32 PM
Ethylbenzene	ND	0.046		mg/Kg	1	8/8/2017 11:55:32 PM
Xylenes, Total	ND	0.092		mg/Kg	1	8/8/2017 11:55:32 PM
Surr: 4-Bromofluorobenzene	117	66.6-132		%Rec	1	8/8/2017 11:55:32 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	ND	30		mg/Kg	20	8/10/2017 7:54:55 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced.

O=orphaned,

C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
RA 11936 POD1			LE	1	4	1	19	17S	33E	621246	3632321	92		
RA 11937 POD1			LE	1	4	1	19	17S	33E	621244	3632281	95		
RA 11957 POD1			LE	3	4	1	19	17S	33E	621177	3632200	55		

Average Depth to Water: -

Minimum Depth: -

Maximum Depth: -

Record Count: 3

PLSS Search:

Section(s): 19

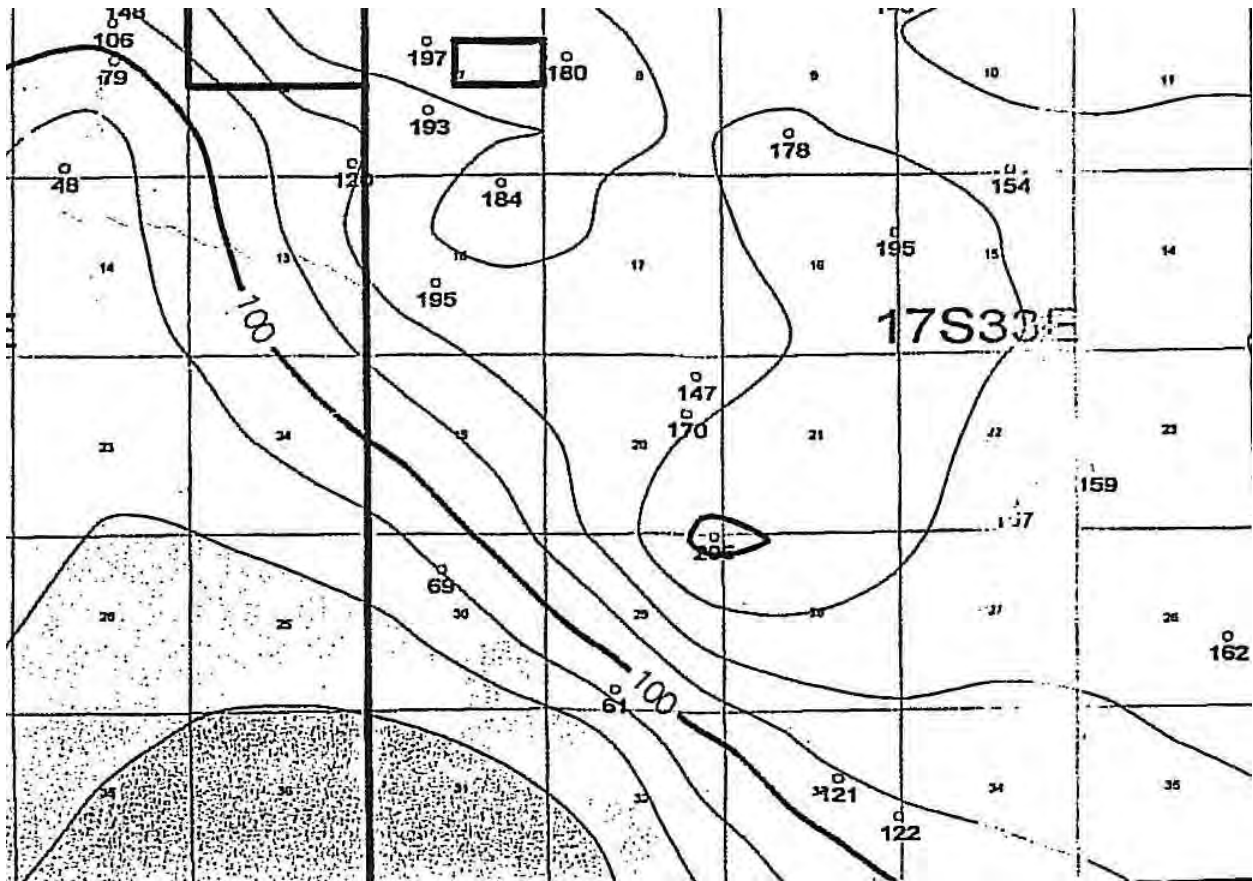
Township: 17S

Range: 33E

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

8/7/17 11:53 AM

WATER COLUMN/ AVERAGE DEPTH
TO WATER



ChevronTexaco

Lea Co. Depth To Ground Water Water Wells Facilities

Wayne Johnson		2/9/2005
	Scale 1:85691.46	

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company LINN Operating, Inc.	Contact Aaron Hickert
Address 2130 W Bender Blvd Hobbs, NM 88240	Telephone No. 432-363-9496
Facility Name CMU #052 (nearest well site)	Facility Type Injection line

Surface Owner State	Mineral Owner State	API No. 30-025-01480
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LOCATION OF RELEASE

Unit Letter G	Section 19	Township 17 S	Range 33 E	Feet from the 1980	North/South Line N	Feet from the 1980	East/West Line E	County Lea
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Latitude **32.822** Longitude **-103.7003**

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 30 Bbl	Volume Recovered 0
Source of Release Injection line	Date and Hour of Occurrence 7/27/2017, 11:30am	Date and Hour of Discovery 7/27/2017, 11:30am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NMOCD - Maxi Brown, phone call	
By Whom? Rick Rickman	Date and Hour 7/27/2017, 2pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED

By Olivia Yu at 10:49 am, Aug 01, 2017



Describe Cause of Problem and Remedial Action Taken.*

Received a low pressure alarm and shutdown at approx. 11:30 AM on injection pump at the CMU North location. I started to look for leak and found an injection trunk line leak near the CMU 52 well site around noon.

Describe Area Affected and Cleanup Action Taken.*

Initial clean-up started (picked up as much affected soil as possible) and delineation started. Samples pulled for vertical delineation. Will write remediation plan when we get samples back.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Aaron Hickert	Approved by Environmental Specialist: 	
Title: Sr. EH&S Representative	Approval Date: 8/1/2017	Expiration Date:
E-mail Address: ahickert@linnenergy.com	Conditions of Approval: see attached directive	Attached <input checked="" type="checkbox"/>
Date: 7/3/2017 Phone: 432-363-9496		

* Attach Additional Sheets If Necessary

1RP-4773

nOY1721339685

pOY1721340114

Operator/Responsible Party,

The OCD has received the form C-141 you provided on 7/31/2017 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 1RP-4773 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 1 office in Hobbs on or before 9/1/2017. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold

OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us