

# ABSAROKA ENERGY AND ENVIRONMENTAL SOLUTIONS, LLC.

112 High Street  
Buffalo, WY 82834

[www.absarokasolutions.com](http://www.absarokasolutions.com)

O: (855) 684.5891

C: (307) 299.5950

Ben.Shoup@AbsarokaSolutions.com

Our ref:

CIT.CO.0518



June 10, 2021

Colorado Oil and Gas Conservation Commission  
Mr. Jason Kosola, P.G.  
Environmental Protection Specialist – Southeast Colorado

## Summary of Sampling Event: Mount Pearl Unit 13-25

Dear Mr. Kosola,

Absaroka Energy and Environmental Solutions, LLC. (Absaroka) conducted soil sampling at the Mount Pearl Unit 13-25 well head on May 20, 2021. These efforts were in conjunction with a site investigation plan that was uploaded to the Colorado Oil and Gas Conservation Commission (COGCC) via Form 27 (document number 402665674, remediation project number 17942) on April 20, 2021.

The field investigation and soil sampling activities were conducted by Mr. Max Moran with Absaroka. Soil samples were collected following the generally accepted industry standard operating procedure (SOP) for soil sampling. New PPE was donned prior to each sample being collected and all sampling equipment was decontaminated prior to each sample collection. Soil sample locations were photo documented and recorded using a GPS device. Samples were screened using a soil electrical conductivity meter and photo ionization detector. Samples were then placed into laboratory provided containers and immediately placed on ice. The soil samples were then delivered to Summit Scientific, under strict chain of custody (COC) protocol.

There are six (6) attachments included with this letter. These attachments include a project location map, sample location map, a table describing the soil samples collected, a table summarizing soil sample results, the soil sample analytical results, and a photolog.

The sample results indicate that the location is below COGCC Table 915-1 minimum contaminant levels (MCL) for most of the listed analytical constituents. All samples contained arsenic concentrations above the COGCC MCL of 0.68 mg/kg. The background sample, MPU\_BG\_01, contained an arsenic concentration of 2.82 mg/kg. MPU\_SS\_01, MPU\_SS\_02, and MPU\_SS\_03 contained arsenic concentrations of 2.95, 2.25 and 2.17 mg/kg.

Citation is requesting closure of this remediation project at this time. Soil sample results indicate the location is within organic MCLs outlined in the COGCC Table 915-1. The 2.95, 2.25 and 2.17 mg/kg arsenic concentrations of MPU\_SS\_01, MPU\_SS\_02, and MPU\_SS\_03 are results of elevated



background arsenic concentrations. Increased concentrations of arsenic are known to occur naturally in native soils in this region. Due to the established elevated background concentration identified in MPU\_BG\_01, Absaroka requests relief from the Table 915-1 arsenic concentration limit of 0.68 mg/kg.

If you have any questions or require any additional information, please contact me at your convenience.

Sincerely,

Ben Shoup, P.G.

Principal Consultant

**Attachments (6):**

- Project Location Map
- Sample Location Map
- Table 1: Description and Summary of Soil Samples Collected
- Table 2: Summary of Soil Sample Results
- Analytical Results
- Photolog

cc: Bob Redweik, Citation



## Project Location Map

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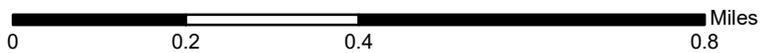


**Map Key**

 Project Location

**MPU 13-25  
Project Location**

*Cheyenne County, State of Colorado*



Coordinate System: WGS 1984 UTM Zone 13N



Date: 4/20/2021

Scale: 1:14,000

112 High Street  
Buffalo, Wyoming 82834  
855.684.5891

[www.absarokasolutions.com](http://www.absarokasolutions.com)

CIT.CO.0518.01



## Sample Location Map

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MPU Background ●

● MPU SS 1

● MPU SS 3

● MPU SS 2



**Table 1: Description and Summary of Soil Samples Collected**

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Sample ID	Latitude	Longitude	Sample Depth (In.)	EC Screening (mS/cm)	PID Screening (PPM VOCs)	Comment
MPU_SS_01	38.88650	-102.73889	0-6	0.38	0.6	Soil sample collected on pad.
MPU_SS_02	38.88612	-102.73851	0-6	0.28	0.6	Soil sample collected on pad.
MPU_SS_03	38.88625	-102.73875	0-6	0.13	0.4	Soil sample collected on pad.
MPU_BG_01	38.88650	-102.73890	0-6	0.41	1.0	Background soil sample northwest of pad.

# ABSAROKA ENERGY AND ENVIRONMENTAL SOLUTIONS, LLC.

**Table 2: Summary of Soil Sample Results**

Table 915-1			Mount Pearl Unit 13-25			
CONCENTRATION LEVELS			Sample ID			
Contaminant of Concern	Concentrations	Units	MPU_BG_01	MPU_SS_01	MPU_SS_02	MPU_SS_03
<b>Organic Compounds in Soil</b>						
TPH (GRO)	500	mg/kg	N/A	ND	ND	ND
TPH (DRO)			N/A	ND	ND	ND
TPH (ORO)			N/A	ND	ND	ND
Benzene	1.2	mg/kg	N/A	ND	ND	ND
Toluene	490	mg/kg	N/A	ND	ND	ND
Ethylbenzene	5.8	mg/kg	N/A	ND	ND	ND
Xylenes (total)	58	mg/kg	N/A	ND	ND	ND
1,2,4-Trimethylbenzene	30	mg/kg	N/A	ND	ND	ND
1,3,5-Trimethylbenzene	27	mg/kg	N/A	ND	ND	ND
Acenaphthene	360	mg/kg	N/A	ND	ND	ND
Anthracene	1800	mg/kg	N/A	ND	ND	ND
Benz(A)anthracene	1.1	mg/kg	N/A	ND	ND	ND
Benzo(B)fluoranthene	1.1	mg/kg	N/A	ND	ND	ND
Benzo(K)fluoranthene	11	mg/kg	N/A	ND	ND	ND
Benzo(A)pyrene	0.11	mg/kg	N/A	ND	ND	ND
Chrysene	110	mg/kg	N/A	ND	ND	ND
Dibenzo(A,H)anthracene	0.11	mg/kg	N/A	ND	ND	ND
Fluoranthene	240	mg/kg	N/A	ND	ND	ND
Fluorene	240	mg/kg	N/A	ND	ND	ND
Indeno(1,2,3,C,D)pyrene	1.1	mg/kg	N/A	ND	ND	ND
1-Methylnaphthalene	18	mg/kg	N/A	ND	ND	ND
2-Methylnaphthalene	24	mg/kg	N/A	ND	ND	ND
Napthalene	2	mg/kg	N/A	ND	ND	ND
Pyrene	180	mg/kg	N/A	ND	ND	ND
<b>Inorganics and Metals in Soils</b>						
Electrical Conductivity (EC)	<4.0	mmohs/cm	0.113	0.307	0.144	0.0731
Sodium Adsorption Ratio (SAR)	<6.0	NA	0.256	0.385	0.143	0.732
pH	6.0-8.3	NA	7.69	7.94	7.84	7.97
Arsenic	0.68	mg/kg	2.82	2.95	2.25	2.17
Barium (total)	15,000	mg/kg	90.9	89.5	80.2	64.0
Boron (Hot Water Soluble)	2	mg/L	0.175	0.306	0.239	0.252
Cadmium	71	mg/kg	ND	ND	ND	ND
Chromium (VI)	0.3	mg/kg	ND	ND	ND	ND
Copper	3,100	mg/kg	8.90	6.79	7.65	5.01
Lead	400	mg/kg	11.6	8.73	27.8	9.82
Nickel	1,500	mg/kg	9.26	7.48	6.38	4.43
Selenium	390	mg/kg	1.13	1.03	0.918	0.675
Silver	390	mg/kg	0.0367	0.0251	0.0256	ND
Zinc	2300	mg/kg	38.8	24.6	128	20.8



## Analytical Results

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# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 07, 2021

Ben Shoup  
Absaroka Solutions  
112 High Street  
Buffalo, WY 82834

RE: Mount Pearl Unit 13-25

Work Order #2105386

Enclosed are the results of analyses for samples received by Summit Scientific on 05/24/21 17:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M" and a long, sweeping underline.

Muri Premer For Paul Shrewsbury  
President



Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518

Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MPU_SS_01	2105386-01	Soil	05/20/21 10:14	05/24/21 17:30
MPU_SS_02	2105386-02	Soil	05/20/21 10:22	05/24/21 17:30
MPU_SS_03	2105386-03	Soil	05/20/21 10:26	05/24/21 17:30
MPU_BG_01	2105386-04	Soil	05/20/21 10:10	05/24/21 17:30

Summit Scientific

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

2105386

# Summit Scientific

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310 ♦ 303-374-5933 (f)

Client: Absaroka Energy & Environmental Solutions

Project Manager: Ben Shoup

Address: 112 High St.

E-Mail: ben.shoup@absarakasolutions.com

City/State/Zip: Buffalo, WY 82834

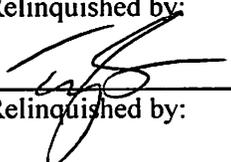
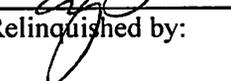
Phone: 307-299-5950

Project Name: Mount Pearl Unit 13-25

Sampler Name: Moran/Scherden

Project Number: CIT.CO.0518

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	Full 915 Suite	EC	SAR	pH	Boron*	Metals			
1	MPU_SS_01	5/20/21	1014	3			X			X				X							
2	MPU_SS_02	5/20/21	1022	3			X			X				X							
3	MPU_SS_03	5/20/21	1026	3			X			X				X							
4	MPU_BG_01	5/20/21	1010	3			X			X				X	X	X	X	X			
5																					
6																					
7																					
8																					
9																					
10																					

Relinquished by: 	Date/Time: 5/20/21 1600	Received by: 	Date/Time: 5/24/21 1730	<b>Turn Around Time</b> (Check) Same Day <input type="checkbox"/> 72 hours <input type="checkbox"/> 24 hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> <b>Sample Integrity:</b> Temperature Upon Receipt: <u>4</u> Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Notes:</b> *HWS - Hot Water Soluble
Relinquished by: 	Date/Time:	Received by:	Date/Time:		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

**Sample Receipt Checklist**

S2 Work Order: 2105386

Client: Absaroka Client Project ID: Mount Pearl Unit 13-25

Shipped Via:  H.D./P.U.  FedEx/UPS/USPS/Other \_\_\_\_\_ Airbill #: \_\_\_\_\_

Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

Temp (°C)	4
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Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)?</sup> NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			On ice.
Were all samples received intact <sup>(1)?</sup>	✓			
Was adequate sample volume provided <sup>(1)?</sup>	✓			
If custody seals are present, are they intact <sup>(1)?</sup>			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)?</sup>	✓			
Does the COC agree with the number and type of sample bottles received <sup>(1)?</sup>	✓			
Do the sample IDs on the bottle labels match the COC <sup>(1)?</sup>	✓			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)?</sup>	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are samples preserved that require preservation (excluding cooling) <sup>(1)?</sup> Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)?</sup> Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

JB  
Custodian Printed Name or Initials

Josh Br  
Signature of Custodian

5/24/21  
Date/Time



Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**MPU\_SS\_01**  
**2105386-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BEE0477	05/25/21	05/28/21	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		97.2 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BEE0478	05/25/21	05/28/21	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		79.2 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**MPU\_SS\_01**  
**2105386-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEF0118	06/04/21	06/06/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		49.2 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.306</b>	0.0100	mg/L	1	BEF0008	06/01/21	06/02/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**MPU\_SS\_01**  
**2105386-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.95	0.248	mg/kg dry	1	BEF0078	06/03/21	06/04/21	EPA 6020B	
Barium	89.5	0.495	"	"	"	"	"	"	
Cadmium	ND	0.248	"	"	"	"	"	"	
Copper	6.79	0.495	"	"	"	"	"	"	
Lead	8.73	0.248	"	"	"	"	"	"	
Nickel	7.48	0.495	"	"	"	"	"	"	
Selenium	1.03	0.322	"	"	"	"	"	"	
Silver	0.0251	0.0248	"	"	"	"	"	"	
Zinc	24.6	0.495	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEE0525	05/27/21	05/28/21	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	46.9	0.0619	mg/L dry	1	BEE0500	05/26/21	05/28/21	EPA 6020B	
Magnesium	7.13	0.0619	"	"	"	"	"	"	
Sodium	10.7	0.0619	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.385	0.00100	units	1	BEF0012	06/01/21	06/02/21	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Absaroka Solutions  
 112 High Street  
 Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
 Project Manager: Ben Shoup

**Reported:**  
 06/07/21 16:01

**MPU\_SS\_01**  
**2105386-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>80.8</b>	%	1	BEF0013	06/01/21	06/01/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.307</b>	0.0100	mmhos/cm	1	BEE0512	05/27/21	05/27/21	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **05/20/21 10:14**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.94</b>		pH Units	1	BEE0513	05/27/21	05/27/21	EPA 9045D	

Summit Scientific

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**MPU\_SS\_02**  
**2105386-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEE0477	05/25/21	05/28/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEE0478	05/25/21	05/28/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		86.0 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**MPU\_SS\_02**  
**2105386-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEF0118	06/04/21	06/06/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		45.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		47.4 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.239</b>	0.0100	mg/L	1	BEF0008	06/01/21	06/02/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**MPU\_SS\_02**  
**2105386-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.25	0.217	mg/kg dry	1	BEF0078	06/03/21	06/04/21	EPA 6020B	
Barium	80.2	0.434	"	"	"	"	"	"	
Cadmium	ND	0.217	"	"	"	"	"	"	
Copper	7.65	0.434	"	"	"	"	"	"	
Lead	27.8	0.217	"	"	"	"	"	"	
Nickel	6.38	0.434	"	"	"	"	"	"	
Selenium	0.918	0.282	"	"	"	"	"	"	
Silver	0.0256	0.0217	"	"	"	"	"	"	
Zinc	128	0.434	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEE0525	05/27/21	05/28/21	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	20.9	0.0543	mg/L dry	1	BEE0500	05/26/21	05/28/21	EPA 6020B	
Magnesium	3.08	0.0543	"	"	"	"	"	"	
Sodium	2.65	0.0543	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.143	0.00100	units	1	BEF0012	06/01/21	06/02/21	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
 Project Manager: Ben Shoup

**Reported:**  
 06/07/21 16:01

**MPU\_SS\_02**  
**2105386-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

<b>% Solids</b>	<b>92.1</b>	%	1	BEF0013	06/01/21	06/01/21	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.144</b>	0.0100	mmhos/cm	1	BEE0512	05/27/21	05/27/21	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **05/20/21 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.84</b>		pH Units	1	BEE0513	05/27/21	05/27/21	EPA 9045D	

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Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**MPU\_SS\_03**  
**2105386-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEE0477	05/25/21	05/28/21	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEE0478	05/25/21	05/28/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		78.0 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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**Reported:**  
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**MPU\_SS\_03**  
**2105386-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEF0118	06/04/21	06/06/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		44.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.8 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.252</b>	0.0100	mg/L	1	BEF0008	06/01/21	06/02/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

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06/07/21 16:01

**MPU\_SS\_03**  
**2105386-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.17	0.246	mg/kg dry	1	BEF0078	06/03/21	06/04/21	EPA 6020B
Barium	64.0	0.493	"	"	"	"	"	"
Cadmium	ND	0.246	"	"	"	"	"	"
Copper	5.01	0.493	"	"	"	"	"	"
Lead	9.82	0.246	"	"	"	"	"	"
Nickel	4.43	0.493	"	"	"	"	"	"
Selenium	0.675	0.320	"	"	"	"	"	"
Silver	ND	0.0246	"	"	"	"	"	"
Zinc	20.8	0.493	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEE0525	05/27/21	05/28/21	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	6.28	0.0616	mg/L dry	1	BEE0500	05/26/21	05/28/21	EPA 6020B	
Magnesium	1.44	0.0616	"	"	"	"	"	"	
Sodium	7.82	0.0616	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.732	0.00100	units	1	BEF0012	06/01/21	06/02/21	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**MPU\_SS\_03**  
**2105386-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.2		%	1	BEF0013	06/01/21	06/01/21	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0731	0.0100	mmhos/cm	1	BEE0512	05/27/21	05/27/21	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **05/20/21 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.97		pH Units	1	BEE0513	05/27/21	05/27/21	EPA 9045D	

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Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**MPU\_BG\_01**  
**2105386-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **05/20/21 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Boron</b>	<b>0.175</b>	0.0100		mg/L	1	BEF0008	06/01/21	06/02/21	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **05/20/21 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Arsenic</b>	<b>2.82</b>	0.256		mg/kg dry	1	BEF0078	06/03/21	06/04/21	EPA 6020B	
<b>Barium</b>	<b>90.9</b>	0.513		"	"	"	"	"	"	
<b>Cadmium</b>	<b>ND</b>	0.256		"	"	"	"	"	"	
<b>Copper</b>	<b>8.90</b>	0.513		"	"	"	"	"	"	
<b>Lead</b>	<b>11.6</b>	0.256		"	"	"	"	"	"	
<b>Nickel</b>	<b>9.26</b>	0.513		"	"	"	"	"	"	
<b>Selenium</b>	<b>1.13</b>	0.333		"	"	"	"	"	"	
<b>Silver</b>	<b>0.0367</b>	0.0256		"	"	"	"	"	"	
<b>Zinc</b>	<b>38.8</b>	0.513		"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **05/20/21 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BEE0525	05/27/21	05/28/21	EPA 7196A	

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction**

Date Sampled: **05/20/21 10:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Calcium</b>	<b>16.0</b>	0.0641		mg/L dry	1	BEE0500	05/26/21	05/28/21	EPA 6020B	
<b>Magnesium</b>	<b>2.86</b>	0.0641		"	"	"	"	"	"	
<b>Sodium</b>	<b>4.23</b>	0.0641		"	"	"	"	"	"	

**Calculated Analysis**

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Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**MPU\_BG\_01**  
**2105386-04 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **05/20/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	<b>0.256</b>	0.00100	units	1	BEF0012	06/01/21	06/02/21	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **05/20/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>78.0</b>		%	1	BEF0013	06/01/21	06/01/21	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **05/20/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.113</b>	0.0100	mmhos/cm	1	BEE0512	05/27/21	05/27/21	EPA 120.1	

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction**

Date Sampled: **05/20/21 10:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>7.69</b>		pH Units	1	BEE0513	05/27/21	05/27/21	EPA 9045D	

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**Reported:**  
06/07/21 16:01

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch BEE0477 - EPA 5030 Soil MS

##### Blank (BEE0477-BLK1)

Prepared: 05/25/21 Analyzed: 05/28/21

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0428		"	0.0400		107	23-173			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.0	21-167			

##### LCS (BEE0477-BS1)

Prepared: 05/25/21 Analyzed: 05/28/21

Benzene	0.128	0.0020	mg/kg	0.100		128	70-130			
Toluene	0.121	0.0050	"	0.100		121	70-130			
Ethylbenzene	0.116	0.0050	"	0.100		116	70-130			
m,p-Xylene	0.228	0.010	"	0.200		114	70-130			
o-Xylene	0.109	0.0050	"	0.100		109	70-130			
1,2,4-Trimethylbenzene	0.112	0.0050	"	0.100		112	70-130			
1,3,5-Trimethylbenzene	0.117	0.0050	"	0.100		117	70-130			
Naphthalene	0.0932	0.0038	"	0.100		93.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.8	21-167			

##### Matrix Spike (BEE0477-MS1)

Source: 2105355-01

Prepared: 05/25/21 Analyzed: 05/28/21

Benzene	0.121	0.0020	mg/kg	0.100	ND	121	70-130			
Toluene	0.130	0.0050	"	0.100	ND	130	70-130			
Ethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130			
m,p-Xylene	0.210	0.010	"	0.200	0.00390	103	70-130			
o-Xylene	0.104	0.0050	"	0.100	ND	104	70-130			
1,2,4-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130			
1,3,5-Trimethylbenzene	0.112	0.0050	"	0.100	ND	112	70-130			
Naphthalene	0.109	0.0038	"	0.100	ND	109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0454		"	0.0400		113	23-173			
Surrogate: Toluene-d8	0.0426		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.5	21-167			

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Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch BEE0477 - EPA 5030 Soil MS**

Matrix Spike Dup (BEE0477-MSD1)	Source: 2105355-01			Prepared: 05/25/21 Analyzed: 05/28/21						
Benzene	0.125	0.0020	mg/kg	0.100	ND	125	70-130	3.48	30	
Toluene	0.121	0.0050	"	0.100	ND	121	70-130	6.62	30	
Ethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	1.52	30	
m,p-Xylene	0.205	0.010	"	0.200	0.00390	101	70-130	2.14	30	
o-Xylene	0.104	0.0050	"	0.100	ND	104	70-130	0.808	30	
1,2,4-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	3.51	30	
1,3,5-Trimethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130	4.60	30	
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130	4.69	30	
Surrogate: 1,2-Dichloroethane-d4	0.0453		"	0.0400		113	23-173			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	21-167			

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BEE0478 - EPA 3550A**

**Blank (BEE0478-BLK1)**

Prepared: 05/25/21 Analyzed: 05/28/21

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								

**LCS (BEE0478-BS1)**

Prepared: 05/25/21 Analyzed: 05/28/21

C10-C28 (DRO)	574	50	mg/kg	500	115	70-130					
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**Matrix Spike (BEE0478-MS1)**

Source: 2105355-01

Prepared: 05/25/21 Analyzed: 05/28/21

C10-C28 (DRO)	636	50	mg/kg	500	12.6	125	70-130				
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**Matrix Spike Dup (BEE0478-MSD1)**

Source: 2105355-01

Prepared: 05/25/21 Analyzed: 05/28/21

C10-C28 (DRO)	361	50	mg/kg	500	12.6	69.7	70-130	55.1	20		QM-07
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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**PAH by EPA Method 8270D SIM - Quality Control**

**Summit Scientific**

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

**Batch BEF0118 - EPA 5030 Soil MS**

**Blank (BEF0118-BLK1)**

Prepared: 06/04/21 Analyzed: 06/06/21

Acenaphthene	ND	0.00500	mg/kg								
Anthracene	ND	0.00500	"								
Benzo (a) anthracene	ND	0.00500	"								
Benzo (a) pyrene	ND	0.00500	"								
Benzo (b) fluoranthene	ND	0.00500	"								
Benzo (k) fluoranthene	ND	0.00500	"								
Chrysene	ND	0.00500	"								
Dibenz (a,h) anthracene	ND	0.00500	"								
Fluoranthene	ND	0.00500	"								
Fluorene	ND	0.00500	"								
Indeno (1,2,3-cd) pyrene	ND	0.00500	"								
Pyrene	ND	0.00500	"								
1-Methylnaphthalene	ND	0.00500	"								
2-Methylnaphthalene	ND	0.00500	"								
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0188</i>		<i>"</i>	<i>0.0333</i>		<i>56.4</i>		<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0196</i>		<i>"</i>	<i>0.0333</i>		<i>58.9</i>		<i>40-150</i>			

**LCS (BEF0118-BS1)**

Prepared: 06/04/21 Analyzed: 06/06/21

Acenaphthene	0.0304	0.00500	mg/kg	0.0333	91.1	31-137
Anthracene	0.0304	0.00500	"	0.0333	91.3	30-120
Benzo (a) anthracene	0.0302	0.00500	"	0.0333	90.6	30-120
Benzo (a) pyrene	0.0297	0.00500	"	0.0333	89.0	30-120
Benzo (b) fluoranthene	0.0307	0.00500	"	0.0333	92.0	30-120
Benzo (k) fluoranthene	0.0307	0.00500	"	0.0333	92.0	30-120
Chrysene	0.0304	0.00500	"	0.0333	91.2	30-120
Dibenz (a,h) anthracene	0.0288	0.00500	"	0.0333	86.4	30-120
Fluoranthene	0.0376	0.00500	"	0.0333	113	30-120
Fluorene	0.0296	0.00500	"	0.0333	88.9	30-120
Indeno (1,2,3-cd) pyrene	0.0285	0.00500	"	0.0333	85.4	30-120
Pyrene	0.0323	0.00500	"	0.0333	97.0	35-142
1-Methylnaphthalene	0.0283	0.00500	"	0.0333	84.8	35-142
2-Methylnaphthalene	0.0316	0.00500	"	0.0333	94.7	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0166</i>		<i>"</i>	<i>0.0333</i>	<i>49.7</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0174</i>		<i>"</i>	<i>0.0333</i>	<i>52.2</i>	<i>40-150</i>

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**PAH by EPA Method 8270D SIM - Quality Control**

**Summit Scientific**

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

**Batch BEF0118 - EPA 5030 Soil MS**

<b>Matrix Spike (BEF0118-MS1)</b>	<b>Source: 2105160-01</b>			Prepared: 06/04/21		Analyzed: 06/06/21				
Acenaphthene	0.0319	0.00500	mg/kg	0.0333	ND	95.7	31-137			
Anthracene	0.0318	0.00500	"	0.0333	ND	95.3	30-120			
Benzo (a) anthracene	0.0324	0.00500	"	0.0333	ND	97.1	30-120			
Benzo (a) pyrene	0.0317	0.00500	"	0.0333	ND	95.1	30-120			
Benzo (b) fluoranthene	0.0313	0.00500	"	0.0333	ND	93.9	30-120			
Benzo (k) fluoranthene	0.0311	0.00500	"	0.0333	ND	93.3	30-120			
Chrysene	0.0320	0.00500	"	0.0333	ND	95.9	30-120			
Dibenz (a,h) anthracene	0.0305	0.00500	"	0.0333	ND	91.6	30-120			
Fluoranthene	0.0203	0.00500	"	0.0333	ND	61.0	30-120			
Fluorene	0.0317	0.00500	"	0.0333	ND	95.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0306	0.00500	"	0.0333	ND	91.8	30-120			
Pyrene	0.0333	0.00500	"	0.0333	ND	100	35-142			
1-Methylnaphthalene	0.0306	0.00500	"	0.0333	ND	91.8	15-130			
2-Methylnaphthalene	0.0338	0.00500	"	0.0333	ND	102	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0198</i>		<i>"</i>	<i>0.0333</i>		<i>59.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0152</i>		<i>"</i>	<i>0.0333</i>		<i>45.5</i>	<i>40-150</i>			

<b>Matrix Spike Dup (BEF0118-MSD1)</b>	<b>Source: 2105160-01</b>			Prepared: 06/04/21		Analyzed: 06/06/21				
Acenaphthene	0.0316	0.00500	mg/kg	0.0333	ND	94.7	31-137	0.981	30	
Anthracene	0.0320	0.00500	"	0.0333	ND	96.0	30-120	0.799	30	
Benzo (a) anthracene	0.0329	0.00500	"	0.0333	ND	98.6	30-120	1.56	30	
Benzo (a) pyrene	0.0316	0.00500	"	0.0333	ND	94.7	30-120	0.336	30	
Benzo (b) fluoranthene	0.0318	0.00500	"	0.0333	ND	95.3	30-120	1.41	30	
Benzo (k) fluoranthene	0.0316	0.00500	"	0.0333	ND	94.8	30-120	1.62	30	
Chrysene	0.0326	0.00500	"	0.0333	ND	97.7	30-120	1.85	30	
Dibenz (a,h) anthracene	0.0300	0.00500	"	0.0333	ND	89.9	30-120	1.93	30	
Fluoranthene	0.0241	0.00500	"	0.0333	ND	72.3	30-120	16.9	30	
Fluorene	0.0318	0.00500	"	0.0333	ND	95.4	30-120	0.213	30	
Indeno (1,2,3-cd) pyrene	0.0301	0.00500	"	0.0333	ND	90.4	30-120	1.61	30	
Pyrene	0.0348	0.00500	"	0.0333	ND	104	35-142	4.36	30	
1-Methylnaphthalene	0.0325	0.00500	"	0.0333	ND	97.4	15-130	5.89	50	
2-Methylnaphthalene	0.0322	0.00500	"	0.0333	ND	96.6	15-130	4.95	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0163</i>		<i>"</i>	<i>0.0333</i>		<i>48.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0163</i>		<i>"</i>	<i>0.0333</i>		<i>48.8</i>	<i>40-150</i>			

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control**  
**Summit Scientific**

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

**Batch BEF0008 - EPA 3050B**

**Blank (BEF0008-BLK1)**

Prepared: 06/01/21 Analyzed: 06/02/21

Boron ND 0.0100 mg/L

**LCS (BEF0008-BS1)**

Prepared: 06/01/21 Analyzed: 06/02/21

Boron 5.41 0.0100 mg/L 5.00 108 80-120

**Duplicate (BEF0008-DUP1)**

**Source: 2105385-02**

Prepared: 06/01/21 Analyzed: 06/02/21

Boron 0.647 0.0100 mg/L 0.695 7.19 20

**Matrix Spike (BEF0008-MS1)**

**Source: 2105385-02**

Prepared: 06/01/21 Analyzed: 06/02/21

Boron 6.18 0.0100 mg/L 5.00 0.695 110 75-125

**Matrix Spike Dup (BEF0008-MSD1)**

**Source: 2105385-02**

Prepared: 06/01/21 Analyzed: 06/02/21

Boron 6.45 0.0100 mg/L 5.00 0.695 115 75-125 4.15 25

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BEF0078 - EPA 3050B**

**Blank (BEF0078-BLK1)**

Prepared: 06/03/21 Analyzed: 06/04/21

Arsenic	ND	0.200	mg/kg wet						
Barium	ND	0.400	"						
Cadmium	ND	0.200	"						
Copper	ND	0.400	"						
Lead	ND	0.200	"						
Nickel	ND	0.400	"						
Selenium	ND	0.260	"						
Silver	ND	0.0200	"						
Zinc	ND	0.400	"						

**LCS (BEF0078-BS1)**

Prepared: 06/03/21 Analyzed: 06/04/21

Arsenic	44.7	0.200	mg/kg wet	40.0		112	80-120
Barium	40.8	0.400	"	40.0		102	80-120
Cadmium	2.03	0.200	"	2.00		102	80-120
Copper	40.6	0.400	"	40.0		101	80-120
Lead	19.5	0.200	"	20.0		97.4	80-120
Nickel	41.1	0.400	"	40.0		103	80-120
Selenium	4.31	0.260	"	4.00		108	80-120
Silver	2.01	0.0200	"	2.00		101	80-120
Zinc	41.2	0.400	"	40.0		103	80-120

**Duplicate (BEF0078-DUP1)**

Source: 2105284-09

Prepared: 06/03/21 Analyzed: 06/04/21

Arsenic	0.357	0.210	mg/kg dry	0.347		2.68	20
Barium	35.7	0.421	"	39.0		8.87	20
Cadmium	0.0366	0.210	"	0.0428		15.6	20
Copper	3.20	0.421	"	3.22		0.385	20
Lead	3.79	0.210	"	3.94		4.00	20
Nickel	3.01	0.421	"	3.57		17.2	20
Selenium	0.924	0.273	"	1.07		14.8	20
Silver	0.0230	0.0210	"	0.0232		0.882	20
Zinc	13.6	0.421	"	14.7		7.60	20

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112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BEF0078 - EPA 3050B**

**Matrix Spike (BEF0078-MS1)**

Source: 2105284-09

Prepared: 06/03/21 Analyzed: 06/04/21

Arsenic	49.6	0.210	mg/kg dry	42.1	0.347	117	75-125			
Barium	75.6	0.421	"	42.1	39.0	87.1	75-125			
Cadmium	2.19	0.210	"	2.10	0.0428	102	75-125			
Copper	44.9	0.421	"	42.1	3.22	99.0	75-125			
Lead	22.0	0.210	"	21.0	3.94	85.8	75-125			
Nickel	45.9	0.421	"	42.1	3.57	101	75-125			
Selenium	4.87	0.273	"	4.21	1.07	90.3	75-125			
Silver	2.11	0.0210	"	2.10	0.0232	99.1	75-125			
Zinc	56.7	0.421	"	42.1	14.7	100	75-125			

**Matrix Spike Dup (BEF0078-MSD1)**

Source: 2105284-09

Prepared: 06/03/21 Analyzed: 06/04/21

Arsenic	49.9	0.210	mg/kg dry	42.1	0.347	118	75-125	0.644	25
Barium	77.8	0.421	"	42.1	39.0	92.3	75-125	2.85	25
Cadmium	2.21	0.210	"	2.10	0.0428	103	75-125	1.32	25
Copper	45.6	0.421	"	42.1	3.22	101	75-125	1.68	25
Lead	22.2	0.210	"	21.0	3.94	87.0	75-125	1.12	25
Nickel	46.8	0.421	"	42.1	3.57	103	75-125	2.02	25
Selenium	5.09	0.273	"	4.21	1.07	95.6	75-125	4.45	25
Silver	2.14	0.0210	"	2.10	0.0232	100	75-125	1.33	25
Zinc	59.2	0.421	"	42.1	14.7	106	75-125	4.29	25

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112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BEE0525 - 3060A Mod**

**Blank (BEE0525-BLK1)**

Prepared: 05/27/21 Analyzed: 05/28/21

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BEE0525-BS1)**

Prepared: 05/27/21 Analyzed: 05/28/21

Chromium, Hexavalent 25.4 0.30 mg/kg wet 25.0 101 80-120

**Duplicate (BEE0525-DUP1)**

**Source: 2104415-01**

Prepared: 05/27/21 Analyzed: 05/28/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BEE0525-MS1)**

**Source: 2104415-01**

Prepared: 05/27/21 Analyzed: 05/28/21

Chromium, Hexavalent 28.7 0.30 mg/kg dry 28.8 ND 99.6 75-125

**Matrix Spike Dup (BEE0525-MSD1)**

**Source: 2104415-01**

Prepared: 05/27/21 Analyzed: 05/28/21

Chromium, Hexavalent 28.8 0.30 mg/kg dry 28.8 ND 100 75-125 0.401 20

Summit Scientific

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control**

**Summit Scientific**

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

**Batch BEE0500 - General Preparation**

**Blank (BEE0500-BLK1)**

Prepared: 05/26/21 Analyzed: 05/27/21

Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

**LCS (BEE0500-BS1)**

Prepared: 05/26/21 Analyzed: 05/27/21

Calcium	4.88	0.0500	mg/L wet	5.00	97.6	70-130				
Magnesium	5.43	0.0500	"	5.00	109	70-130				
Sodium	4.94	0.0500	"	5.00	98.8	70-130				

Summit Scientific

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Absaroka Solutions  
 112 High Street  
 Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
 Project Manager: Ben Shoup

**Reported:**  
 06/07/21 16:01

**Physical Parameters by APHA/ASTM/EPA Methods - Quality Control**

**Summit Scientific**

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

**Batch BEF0013 - General Preparation**

**Duplicate (BEF0013-DUP1)**

**Source: 2105384-04**

Prepared & Analyzed: 06/01/21

% Solids	93.4		%		90.8			2.82	20	
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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control**

**Summit Scientific**

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

**Batch BEE0512 - General Preparation**

**Blank (BEE0512-BLK1)**

Prepared & Analyzed: 05/27/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BEE0512-BS1)**

Prepared & Analyzed: 05/27/21

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 90-110

**Duplicate (BEE0512-DUP1)**

Source: 2105370-01

Prepared & Analyzed: 05/27/21

Specific Conductance (EC) 7.92 0.0100 mmhos/cm 7.92 0.0253 20

Summit Scientific

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Absaroka Solutions  
 112 High Street  
 Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518  
 Project Manager: Ben Shoup

**Reported:**  
 06/07/21 16:01

**Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control**

**Summit Scientific**

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

**Batch BEE0513 - General Preparation**

**LCS (BEE0513-BS1)**

Prepared & Analyzed: 05/27/21

pH	9.27	pH Units	9.21	101	95-105
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**Duplicate (BEE0513-DUP1)**

Source: 2105370-01

Prepared & Analyzed: 05/27/21

pH	7.89	pH Units	7.88	0.127	20
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Summit Scientific

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Absaroka Solutions  
112 High Street  
Buffalo WY, 82834

Project: Mount Pearl Unit 13-25

Project Number: CIT.CO.0518

Project Manager: Ben Shoup

**Reported:**  
06/07/21 16:01

### Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



## Photolog

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# Photographic Log

## Mount Pearl Unit #13-25

### Site Soil Sampling

(May 20, 2021)

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# OVERVIEW



Photo No 1:

**Description:** Location sign for Mount Pearl Unit #13-25.



Photo No 2:

**Description:** Site location facing northeast.



Photo No 3:

**Description:** Site location facing northwest.



Photo No 4:

**Description:** Site location facing west.



Photo No 5:

**Description:** Site location facing southwest.



Photo No 6:

**Description:** Site location facing southeast.

## SOIL SAMPLING



Photo No 9:

**Description:**  
Sampling location of  
MPU\_SS\_01.



Photo No 10:

**Description:**  
Sampling location of  
MPU\_SS\_02.



Photo No 11:

**Description:**  
Sampling location of  
MPU\_SS\_03.



Photo No 12:

**Description:**  
Sampling location of  
MPU\_BG\_01.