

**ANNUAL REPORT
CHESTERFIELD INLET LANDFARM PROJECT**

YEAR BEING REPORTED: 2013

The following information is compiled pursuant to the requirements of **Part B, Item 1** of Water Licence **1BR-CIL1217** issued to the **Government of Nunavut, Community and Government Services**.

- a) A summary of all waste disposal activities including:
- i. Quantity and quality of effluent discharged from the Landfarm; and
 - ii. Quantity and characterization of soils placed within the Landfarm for treatment.

Month Reported	Quantity of Effluent Discharged from the Landfarm (m³)	Quantity of Soils Placed Within the Landfarm (m³)
January	0	0
February	0	0
March	0	0
April	0	0
May	0	0
June	0	698
July	0	
August	0	0
September	0	0
October	0	0
November	0	0
December	0	0
ANNUAL TOTAL	0	698

698 m³ of contaminated soils were placed in the Landfarm between June 25 and July 15, 2013.

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There was no effluent discharged from the Landfarm in 2013, therefore there is no attached information pertaining to the quality of effluent as per Part J, Item 7.

Please see Appendix A for the summary of the characterization of soils placed in the Landfarm, assed as per the requirements of Part J, Item 4. Appendix B contains the Certificate of Analysis from Paracel Laboratories Ltd and drawing of the test pit locations.

- b) a list of unauthorized discharges and summary of follow-up action taken;

No unauthorized discharges occurred from the Landfarm in 2013.

- c) Any revisions to the Spill Contingency Plan, Abandonment and Restoration Plan, and Operation and Maintenance Plan as required by Part B, Item 7, submitted in the form of an Addendum;

The Spill Contingency Plan was updated in 2013. See Section e) for more information.

- d) A description of all progressive and or final reclamation work undertaken including photographic records or site conditions before, during and after completion of operations;

No reclamation work occurred in 2013.

- e) A summary of all information requested and results of the Monitoring Program, an analysis and interpretation of the results, and any follow-up measures that may be required;

The following were requested by the NWB on September 16, 2013 upon review of the Application for Amendment as outstanding from the original Licence:

- **Part E, Item 2: *The Licensee shall, within 6 Months of the issuance of the Licence, submit to the board for review an Addendum to the O&M Plan;***
- **Part E, Item 3: *The Licensee shall provide to the Board, within ninety (90) days of completion of the construction of all respective design drawings***

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and construction reports, including all as-built drawings, documentation of field decisions that deviate from original plans and any data used to support these decisions. These plans and drawings shall be stamped by and engineer.

- The status of the Landfarm that the construction/operation was approved under the Licence is unknown as no 2012 Annual Report was submitted.
- Part H, Item 2: *The Licensee shall, within six (6) months of the issuance of the Licence, submit to the Board for review, an Addendum to the Spill Contingency Plan;*
- Part J, Item 11: *The Licensee shall, within six (6) months following issuance of the Licence, submit to the Board a Quality Assurance/Quality Control (QA/QC) Plan for inclusion with the O&M Plan required under Part E, Item 2.*

Stantec, on behalf of GN-CGS, responded on October 1, 2013 to the NWB's request for additional information. This correspondence is attached in Appendix C. The Spill Contingency Plan was updated and received by the NWB on October 1, 2013.

The QA/QC Plan was not submitted in 2013.

There were no samples taken at Monitoring Program Station CIL-1 because there was no apparent seepage or effluent discharged from the Landfarm.

As per the correspondence in Appendix C, there are no groundwater monitoring wells installed because the site is located on bedrock. Therefore, there were no samples taken at Monitoring Program Stations CIL-2, CIL-3, or CIL-4.

- f) Any other details on Waste disposal requested by the Board by November 1 of the year being reported.

No other information was requested by the Board prior to November 1, 2013.

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**APPENDIX A – SUMMARY OF CHARACTERIZATION OF SOILS PLACED IN THE
LANDFARM**

Parameter	Unit	Sample ID												Contaminated Site Remediation Guidelines							
														Agricultural/Wildland		Residential/Parkland		Commercial		Industrial	
		LFS15	LFS20	SFS24	TFS5	TFS10	TFS14	TFS20	CSS1	CSS3	CSS4	CSS6	PLS2	Course	Fine	Course	Fine	Course	Fine	Course	Fine
Benzene	mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.002	<0.002	<0.002	<0.002	<0.20	0.03	0.0068	0.03	0.0068	0.03	0.0068	0.03	0.0068
Toluene	mg/kg	0.23	<0.05	0.51	<0.05	2.02	0.05	<0.05	<0.002	<0.002	<0.002	<0.002	45.6	0.37	0.08	0.37	0.08	0.37	0.08	0.37	0.08
Ethylbenzene	mg/kg	<0.05	<0.05	0.3	<0.05	5.76	0.06	0.09	<0.002	<0.002	<0.002	<0.002	70.3	0.082	0.018	0.082	0.018	0.082	0.018	0.082	0.018
Xylenes	mg/kg	0.19	0.06	0.41	0.08	38.1	0.53	0.46	<0.002	<0.002	<0.002	<0.002	196	11	2.4	11	2.4	11	2.4	11	2.4
F1 (C6-C10)	mg/kg	27	16	14	10	624	41	14	<7	<7	<7	<7	128	30	210	30	210	320	320	320	320
F2 (C10-C16)	mg/kg	710	313	661	172	135	39	238	<4	<4	<4	<4	889	150	150	150	150	260	260	260	260
F3 (C16-C34)	mg/kg	163	92	81	74	<8	37	111	<8	<8	<8	<8	220	300	1300	300	1300	1700	2500	1700	2500
F4 (C34-C50)	mg/kg	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	2800	5600	2800	5600	3300	6600	3300	6600

Course = soil having a median grain size of >75µm

Fine = soil having a medium grain size of <75µm

	Target guideline
	Exceeds parameter guideline

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CHESTERFIELD INLET LANDFARM PROJECT**

**APPENDIX B – CERTIFICATE OF ANALYSIS FROM PARACEL LABORATORIES
LTD AND DRAWING OF THE TEST PIT LOCATIONS**

Certificate of Analysis

Concentric Associates International Inc. (London)

700 Richmond St. Suite 307
London, ON N6A 5C7
Attn: Andrea Johnson

Phone: (519) 452-7700
Fax: (519) 319-6246

Client PO:

Report Date: 2-Jul-2013

Project:

Order Date: 2-Jul-2013

Custody:

Order #: 1327021

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1327021-01	LFS15
1327021-02	LFS20
1327021-03	LFS24

Approved By:



Mark Foto, M.Sc. For Dale Robertson, BSc
Laboratory Director

Certificate of AnalysisClient: **Concentric Associates International Inc. (London)**

Report Date: 02-Jul-2013

Client PO:

Project Description:

Order Date: 2-Jul-2013

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	2-Jul-13	2-Jul-13
PHC F1	CWS Tier 1 - P&T GC-FID	2-Jul-13	2-Jul-13
PHC F2 - F4	CWS Tier 1 - GC-FID, extraction	2-Jul-13	2-Jul-13
Solids, %	Gravimetric, calculation	2-Jul-13	2-Jul-13

Certificate of Analysis

Report Date: 02-Jul-2013

Order Date: 2-Jul-2013

Client: **Concentric Associates International Inc. (London)**

Client PO:

Project Description:

Client ID:	LFS15	LFS20	LFS24	-
Sample Date:	28-Jun-13	28-Jun-13	28-Jun-13	-
Sample ID:	1327021-01	1327021-02	1327021-03	-
MDL/Units	Soil	Soil	Soil	-

Physical Characteristics

% Solids	0.1 % by Wt.	92.5	95.0	93.7	-
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Volatiles

Benzene	0.02 ug/g dry	<0.02 [1]	<0.02 [1]	<0.02 [1]	-
Ethylbenzene	0.05 ug/g dry	<0.05 [1]	<0.05 [1]	0.30 [1]	-
Toluene	0.05 ug/g dry	0.23 [1]	<0.05 [1]	0.51 [1]	-
m,p-Xylenes	0.05 ug/g dry	0.06 [1]	<0.05 [1]	0.52 [1]	-
o-Xylene	0.05 ug/g dry	0.13 [1]	0.06 [1]	0.41 [1]	-
Xylenes, total	0.05 ug/g dry	0.19 [1]	0.09 [1]	0.94 [1]	-
Toluene-d8	Surrogate	119% [1]	127% [1]	109% [1]	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g dry	27	16	14	-
F2 PHCs (C10-C16)	4 ug/g dry	710	313	661	-
F3 PHCs (C16-C34)	8 ug/g dry	163	92	181	-
F4 PHCs (C34-C50)	6 ug/g dry	<6	<6	<6	-

Certificate of Analysis

Report Date: 02-Jul-2013

Client: **Concentric Associates International Inc. (London)**

Order Date: 2-Jul-2013

Client PO:

Project Description:

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Volatiles									
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	3.86		ug/g		121	50-140			

Certificate of Analysis

Client: **Concentric Associates International Inc. (London)**

Report Date: 02-Jul-2013

Client PO:

Project Description:

Order Date: 2-Jul-2013

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g wet	ND				40	
Physical Characteristics									
% Solids	95.2	0.1	% by Wt.	92.5			2.8	25	
Volatiles									
Benzene	ND	0.02	ug/g wet	ND				50	
Ethylbenzene	ND	0.05	ug/g wet	ND				50	
Toluene	ND	0.05	ug/g wet	ND				50	
m,p-Xylenes	ND	0.05	ug/g wet	ND				50	
o-Xylene	ND	0.05	ug/g wet	ND				50	
Surrogate: Toluene-d8	2.18		ug/g wet	ND	116	50-140			

Certificate of Analysis

Client: **Concentric Associates International Inc. (London)**

Report Date: 02-Jul-2013

Client PO:

Project Description:

Order Date: 2-Jul-2013

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	184	7	ug/g	ND	92.1	80-120			
F2 PHCs (C10-C16)	78	4	ug/g	ND	86.3	80-120			
F3 PHCs (C16-C34)	157	8	ug/g	ND	84.3	80-120			
F4 PHCs (C34-C50)	101	6	ug/g	ND	81.4	80-120			
Volatiles									
Benzene	4.20	0.02	ug/g	ND	105	60-130			
Ethylbenzene	4.33	0.05	ug/g	ND	108	60-130			
Toluene	4.37	0.05	ug/g	ND	109	60-130			
m,p-Xylenes	8.53	0.05	ug/g	ND	107	60-130			
o-Xylene	4.48	0.05	ug/g	ND	112	60-130			
Surrogate: Toluene-d8	3.09		ug/g		96.6	50-140			

Certificate of AnalysisClient: **Concentric Associates International Inc. (London)**

Report Date: 02-Jul-2013

Client PO:

Project Description:

Order Date: 2-Jul-2013

Qualifier Notes:***Sample Qualifiers :***

- 1 : Not able to complete VOC-low level analysis due to elevated hydrocarbon background. VOC-high level analysis completed in its place.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

Certificate of Analysis

Concentric Associates International Inc. (London)

700 Richmond St. Suite 307
London, ON N6A 5C7
Attn: Andrea Johnson

Phone: (519) 452-7700
Fax: (519) 319-6246

Client PO:

Report Date: 8-Jul-2013

Project:

Order Date: 2-Jul-2013

Custody:

Order #: 1327022

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1327022-01	TFS5
1327022-02	TFS10
1327022-03	TFS14
1327022-04	TFS20
1327022-05	QA/QC#1
1327022-06	CSS1
1327022-07	CSS3
1327022-08	CSS4
1327022-09	CSS6
1327022-10	PLS2

Approved By:



Mark Foto, M.Sc. For Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Client: **Concentric Associates International Inc. (London)**

Report Date: 08-Jul-2013

Client PO:

Project Description:

Order Date: 2-Jul-2013

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 8260 - P&T GC-MS	3-Jul-13	6-Jul-13
BTEX by P&T GC-MS, low level	EPA 8260 - P&T GC-MS, low level	3-Jul-13	8-Jul-13
PHC F1	CWS Tier 1 - P&T GC-FID	3-Jul-13	6-Jul-13
PHC F2 - F4	CWS Tier 1 - GC-FID, extraction	3-Jul-13	3-Jul-13
Solids, %	Gravimetric, calculation	4-Jul-13	4-Jul-13

P: 1-800-749-1947
E: PARACEL@PARACELLABS.COM

WWW.PARACELLABS.COM

OTTAWA
300-2319 St. Laurent Blvd.
Ottawa, ON K1G 4J8

MISSISSAUGA
6845 Kitimat Rd. Unit #27
Mississauga, ON L5N 6J3

NIAGARA FALLS
5415 Morning Glory Crt.
Niagara Falls, ON L2J 0A3

SARNIA
123 Christina St. N.
Sarnia, ON N7T 5T7

Certificate of Analysis

Report Date: 08-Jul-2013

Order Date: 2-Jul-2013

Client: **Concentric Associates International Inc. (London)**

Client PO:

Project Description:

Client ID:	TFS5	TFS10	TFS14	TFS20
Sample Date:	28-Jun-13	28-Jun-13	28-Jun-13	28-Jun-13
Sample ID:	1327022-01	1327022-02	1327022-03	1327022-04
MDL/Units	Soil	Soil	Soil	Soil

Physical Characteristics

% Solids	0.1 % by Wt.	94.8	92.7	94.1	95.2
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Volatiles

Benzene	0.02 ug/g dry	<0.02 [1]	<0.02 [1]	<0.02 [1]	<0.02 [1]
Ethylbenzene	0.05 ug/g dry	<0.05 [1]	5.76 [1]	0.06 [1]	0.09 [1]
Toluene	0.05 ug/g dry	<0.05 [1]	2.02 [1]	0.05 [1]	<0.05 [1]
m,p-Xylenes	0.05 ug/g dry	0.05 [1]	24.2 [1]	0.35 [1]	0.32 [1]
o-Xylene	0.05 ug/g dry	<0.05 [1]	13.9 [1]	0.18 [1]	0.15 [1]
Xylenes, total	0.05 ug/g dry	0.08 [1]	38.1 [1]	0.53 [1]	0.46 [1]
Toluene-d8	Surrogate	110% [1]	98.3% [1]	109% [1]	107% [1]

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g dry	10 [1]	624 [1]	41 [1]	14 [1]
F2 PHCs (C10-C16)	4 ug/g dry	172	135	39	238
F3 PHCs (C16-C34)	8 ug/g dry	74	<8	37	111
F4 PHCs (C34-C50)	6 ug/g dry	<6	<6	<6	<6

Certificate of Analysis

Report Date: 08-Jul-2013

Order Date: 2-Jul-2013

Client: **Concentric Associates International Inc. (London)**

Client PO:

Project Description:

	Client ID:	QA/QC#1	CSS1	CSS3	CSS4
	Sample Date:	28-Jun-13	29-Jun-13	29-Jun-13	29-Jun-13
	Sample ID:	1327022-05	1327022-06	1327022-07	1327022-08
	MDL/Units	Soil	Soil	Soil	Soil

Physical Characteristics

% Solids	0.1 % by Wt.	95.1	95.0	96.9	93.4
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Volatiles

Benzene	0.02 ug/g dry	<0.02 [1]	-	-	-
Ethylbenzene	0.05 ug/g dry	<0.05 [1]	-	-	-
Toluene	0.05 ug/g dry	<0.05 [1]	-	-	-
m,p-Xylenes	0.05 ug/g dry	<0.05 [1]	-	-	-
o-Xylene	0.05 ug/g dry	<0.05 [1]	-	-	-
Xylenes, total	0.05 ug/g dry	0.07 [1]	-	-	-
Toluene-d8	Surrogate	105% [1]	-	-	-
Benzene	0.002 ug/g dry	-	<0.002	<0.002	<0.002
Ethylbenzene	0.002 ug/g dry	-	<0.002	<0.002	<0.002
Toluene	0.002 ug/g dry	-	<0.002	<0.002	<0.002
m,p-Xylenes	0.002 ug/g dry	-	<0.002	<0.002	<0.002
o-Xylene	0.002 ug/g dry	-	<0.002	<0.002	<0.002
Xylenes, total	0.002 ug/g dry	-	<0.002	<0.002	<0.002
Toluene-d8	Surrogate	-	102%	91.5%	90.8%

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g dry	9 [1]	<7	<7	<7
F2 PHCs (C10-C16)	4 ug/g dry	120	<4	<4	<4
F3 PHCs (C16-C34)	8 ug/g dry	75	<8	<8	<8
F4 PHCs (C34-C50)	6 ug/g dry	<6	<6	<6	<6

Certificate of Analysis

Report Date: 08-Jul-2013

Order Date: 2-Jul-2013

Client: **Concentric Associates International Inc. (London)**

Client PO:

Project Description:

Client ID:	CSS6	PLS2	-	-
Sample Date:	29-Jun-13	28-Jun-13	-	-
Sample ID:	1327022-09	1327022-10	-	-
MDL/Units	Soil	Soil	-	-

Physical Characteristics

% Solids	0.1 % by Wt.	95.7	95.5	-	-
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Volatiles

Benzene	0.02 ug/g dry	-	<0.20 [2]	-	-
Ethylbenzene	0.05 ug/g dry	-	70.3 [2]	-	-
Toluene	0.05 ug/g dry	-	45.6 [2]	-	-
m,p-Xylenes	0.05 ug/g dry	-	125 [2]	-	-
o-Xylene	0.05 ug/g dry	-	71.5 [2]	-	-
Xylenes, total	0.05 ug/g dry	-	196 [2]	-	-
Toluene-d8	Surrogate	-	108% [2]	-	-
Benzene	0.002 ug/g dry	<0.002	-	-	-
Ethylbenzene	0.002 ug/g dry	<0.002	-	-	-
Toluene	0.002 ug/g dry	<0.002	-	-	-
m,p-Xylenes	0.002 ug/g dry	<0.002	-	-	-
o-Xylene	0.002 ug/g dry	<0.002	-	-	-
Xylenes, total	0.002 ug/g dry	<0.002	-	-	-
Toluene-d8	Surrogate	101%	-	-	-

Hydrocarbons

F1 PHCs (C6-C10)	7 ug/g dry	<7	128 [2]	-	-
F2 PHCs (C10-C16)	4 ug/g dry	<4	889	-	-
F3 PHCs (C16-C34)	8 ug/g dry	<8	220	-	-
F4 PHCs (C34-C50)	6 ug/g dry	<6	<6	-	-

Certificate of Analysis

Client: **Concentric Associates International Inc. (London)**

Report Date: 08-Jul-2013

Client PO:

Project Description:

Order Date: 2-Jul-2013

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g						
F2 PHCs (C10-C16)	ND	4	ug/g						
F3 PHCs (C16-C34)	ND	8	ug/g						
F4 PHCs (C34-C50)	ND	6	ug/g						
Volatiles									
Benzene	ND	0.02	ug/g						
Ethylbenzene	ND	0.05	ug/g						
Toluene	ND	0.05	ug/g						
m,p-Xylenes	ND	0.05	ug/g						
o-Xylene	ND	0.05	ug/g						
Xylenes, total	ND	0.05	ug/g						
Surrogate: Toluene-d8	3.80		ug/g		119	50-140			
Benzene	ND	0.002	ug/g						
Ethylbenzene	ND	0.002	ug/g						
Toluene	ND	0.002	ug/g						
m,p-Xylenes	ND	0.002	ug/g						
o-Xylene	ND	0.002	ug/g						
Xylenes, total	ND	0.002	ug/g						
Surrogate: Toluene-d8	0.135		ug/g		99.4	76-118			

Certificate of Analysis

Client: **Concentric Associates International Inc. (London)**

Report Date: 08-Jul-2013

Client PO:

Project Description:

Order Date: 2-Jul-2013

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	7	ug/g dry	ND				40	
F2 PHCs (C10-C16)	ND	4	ug/g dry	ND				30	
F3 PHCs (C16-C34)	ND	8	ug/g dry	45			0.0	30	
F4 PHCs (C34-C50)	ND	6	ug/g dry	ND				30	
Physical Characteristics									
% Solids	74.2	0.1	% by Wt.	74.1			0.1	25	
Volatiles									
Benzene	ND	0.02	ug/g dry	ND				50	
Ethylbenzene	ND	0.05	ug/g dry	ND				50	
Toluene	ND	0.05	ug/g dry	ND				50	
m,p-Xylenes	ND	0.05	ug/g dry	ND				50	
o-Xylene	ND	0.05	ug/g dry	ND				50	
Surrogate: Toluene-d8	2.93		ug/g dry	ND	116	50-140			

Certificate of Analysis

Report Date: 08-Jul-2013

Client: **Concentric Associates International Inc. (London)**

Order Date: 2-Jul-2013

Client PO:

Project Description:

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	99	7	ug/g	ND	99.0	80-120			
F2 PHCs (C10-C16)	111	4	ug/g	ND	87.3	60-140			
F3 PHCs (C16-C34)	260	8	ug/g	45	82.1	60-140			
F4 PHCs (C34-C50)	176	6	ug/g	ND	101	60-140			
Volatiles									
Benzene	0.694	0.02	ug/g	ND	74.3	60-130			
Ethylbenzene	2.38	0.05	ug/g	ND	107	60-130			
Toluene	12.2	0.05	ug/g	ND	113	60-130			
m,p-Xylenes	8.31	0.05	ug/g	ND	123	60-130			
o-Xylene	3.57	0.05	ug/g	ND	132	60-130			
Surrogate: Toluene-d8	3.47		ug/g		108	50-140			
Benzene	0.0659	0.002	ug/g	ND	96.9	55-141			
Ethylbenzene	0.0663	0.002	ug/g	ND	97.5	61-139			
Toluene	0.0582	0.002	ug/g	ND	85.6	54-136			
m,p-Xylenes	0.137	0.002	ug/g	ND	101	61-139			
o-Xylene	0.0699	0.002	ug/g	ND	103	60-142			

Certificate of Analysis

Client: **Concentric Associates International Inc. (London)**

Client PO:

Project Description:

Report Date: 08-Jul-2013

Order Date: 2-Jul-2013

Qualifier Notes:

Sample Qualifiers :

- 1 : Not able to complete VOC-low level analysis due to elevated hydrocarbon background. VOC-high level analysis completed in its place.
- 2 : Not able to complete VOC-low level analysis due to high target analyte. VOC-high level analysis completed in its place.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

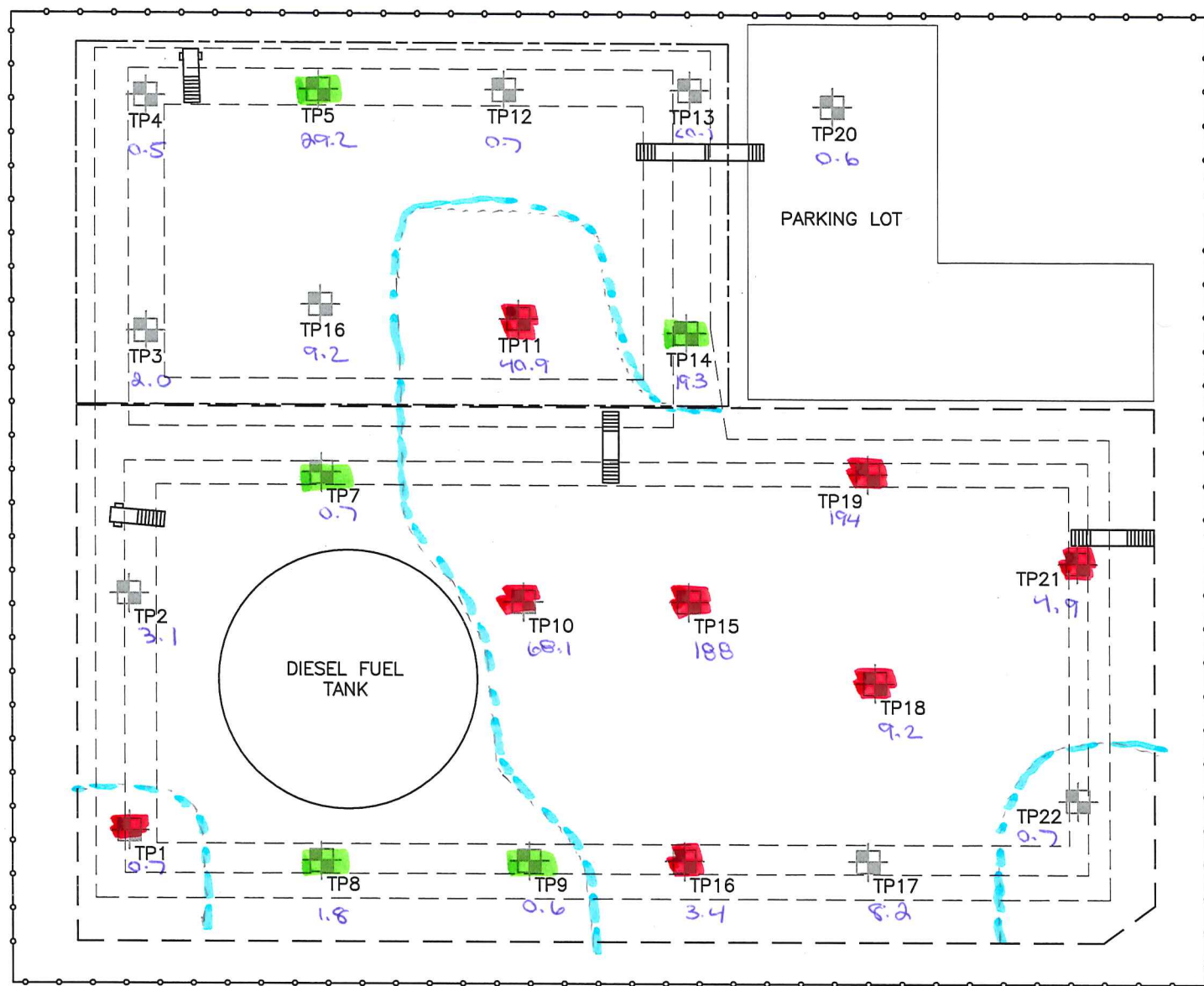
Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.

Soil results are reported on a dry weight basis when the units are denoted with 'dry'.
Where %Solids is reported, moisture loss includes the loss of volatile hydrocarbons.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.



LEGEND:

- SITE BOUNDARY FENCE
- - - DIESEL CELL
- - - GASOLINE CELL
- - - GASOLINE CELL
- TP# TEST PIT

0.7 combustible vapor concentration (ppm)
 Sample meets CCME industrial coarse grained standards
 Sample exceeds CCME industrial coarse grained standards
 proposed area of impact

**ANNUAL REPORT
CHESTERFIELD INLET LANDFARM PROJECT**

APPENDIX C – CORRESPONDANCE BETWEEN NWB AND STANTEC

Lusty, Megan

From: Ansari, Mohammed
Sent: August-29-14 3:55 PM
To: Lusty, Megan
Subject: FW: 130916 1BR-CIL1217 Request of Additional Information
Attachments: SK01 site plan.pdf; 144901145 NWB WL amend - Summary English-Inuktitut.pdf; 144901145 NWB WL amend - Status Report.pdf; 144901145 NWB WL amend - Summary English.pdf

FYI

Thanks

Mohammed Ansari, PMP, LEED GA
Senior Project Officer
Community & Government Services
Kivalliq Regional PMO, Government of Nunavut
P.O. Box 490, Projects/O&M Building, Rankin Inlet, Nunavut X0C 0G0
T: (867) 645-8181; F: (867) 645-8196
mansari@gov.nu.ca

From: Johnson, Andrew [mailto:Andrew.Johnson@stantec.com]
Sent: October 1, 2013 3:17 PM
To: Megan
Cc: Foster, Arlen; Phyllis Beaulieu; Karen Kharatyan; Ansari, Mohammed
Subject: RE: 130916 1BR-CIL1217 Request of Additional Information

Megan,
Please see our response to your request for additional information as follows:

Part E, item 2

- There are no dust control measure in place or required
- No groundwater monitoring wells have been installed. The site is located on bedrock and no groundwater is anticipated to be found within.
- Laboratory QA/QC plan to be provided by GN

Part E, item 3

- See attached stamped record drawing

Annual Report

- no 2012 report was prepared, as the site was not yet commissioned.
- the 2013 report will include both the original and expanded landfarm. This will be provided by the GN.

Part H, item 2

- AANDC's request to update the spill contact info has been completed.

Part J, item 11

- As noted above, the GN will provide a laboratory QA/QC plan

Executive Summaries. English, Inuktitut

- See attached Executive Summary

Compliance Assessment/Status Report

- See attached status report

Engineered Drawings (stamped)

- This has been included on the attached record drawing

Let me know if you require anything further.

Thanks,

Andrew Johnson

Associate, Civil Engineer

Stantec

400 - 1620 Dickson Avenue Kelowna BC V1Y 9Y2

Phone: (250) 470-4473

Cell: (250) 469-2087

Andrew.Johnson@stantec.com



Design with community in mind

stantec.com



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Please consider the environment before printing this email.

From: Megan [<mailto:megan.porter@nunavutwaterboard.org>]

Sent: Monday, September 16, 2013 10:40 AM

To: Johnson, Andrew

Cc: Foster, Arlen; Phyllis Beaulieu; Karen Kharatyan; Merrithew, Leslie

Subject: 130916 1BR-CIL1217 Request of Additional Information

Hi,

The Board Staff reviewed your submitted application for Amendment and noted that the following information wasn't submitted to the board as it was required by the original Licence 1BR-CIL1217

- Part E, Item 2: *The Licensee shall, within 6 Months of the issuance of the licence, Submit to the board for review an addendum to the O and M Plan;*
- Part E, Item 3: *The Licensee shall provide to the board, within ninety(90) days of completion of the construction of all respective design drawings and construction reports, including all as-built drawings, documentation of field decisions that deviate from original plans and any data used to support these decisions. These plans and drawings shall be stamped by and engineer.*
- The status of the Landfarm that the construction/operation was approved under the licence is unknown as no 2012 Annual Report was submitted
- Part H, Item 2: *The Licensee shall, within six (6) months of the issuance of the licence, submit to the Board for review, an addendum to the Spill Contingency Plan;*
- Part J. Item 11: *The Licensee shall, within six(6) months following issuance of the licence, submit to the Board a Quality assurance/quality Control (QA/QC) Plan for inclusion with the O&M plan required under Part E, Item 2*

- Executive Summaries. English, Inuktitut
- Compliance Assessment/Status Report
- Engineered Drawings (stamped)

Thanks,

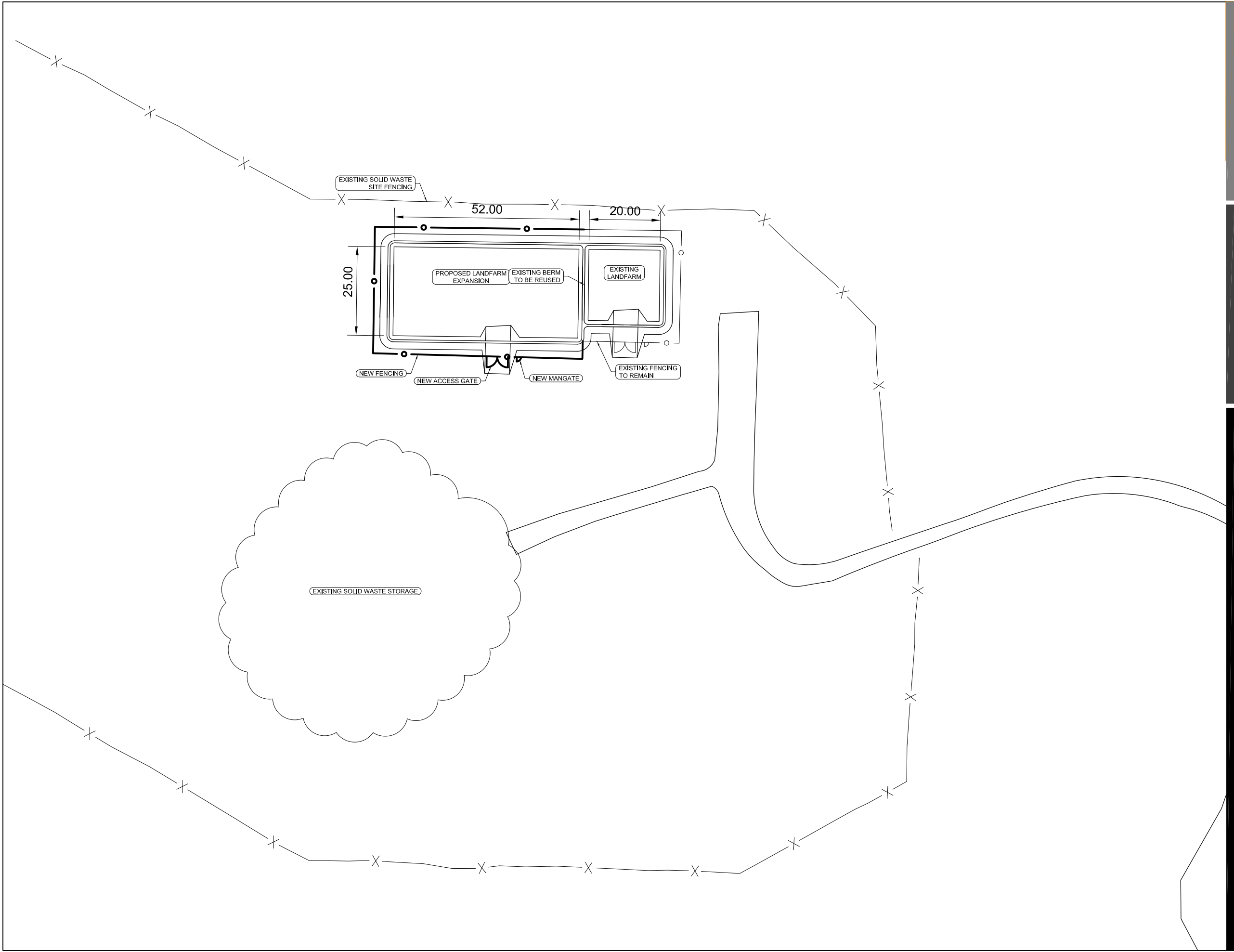


Licence Administrator Assistant- Administratrice des permis
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Titigaqavua 119
Uqhuqtuuq, NU, X0B 1

 Merci de penser à l'environnement avant d'imprimer ce courriel / Thank you for thinking of the environment before printing this email

C:\Users\afjohnson\Desktop\SK01.dwg
2013/10/01 1:55 AM By: Johnson, Andrew



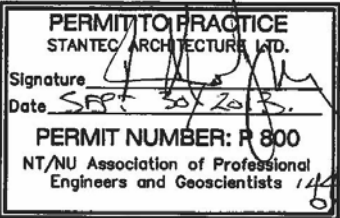
Stantec
4910 - 53 Street PO Box 1777
Yellowknife, NT, Canada
X1A 2P4
Tel. 867.920.2882
Fax. 867.920.4319
www.stantec.com

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Consultants

Permit-Seal



Notes

CONSTRUCTION OF LANDFARM EXPANSION
TO FOLLOW DESIGN REQUIREMENTS FROM
EXISTING CONTRACT DOCUMENTS

X			
Revision	By	Appd.	YY.MM.DD

1	Record Drawing		13.10.01
X	Issued for Review		13.07.25
Issued	By	Appd.	YY.MM.DD

File Name: 144901145	EO	AJ	13.07.25
	Dwn.	Chkd.	Dsgn.

Client/Project

FUEL STORAGE FACILITY UPGRADES

Chesterfield Inlet, NU

Title

Landfarm Expansion

Project No.	Scale
144901145	1:500

Drawing No.	Sheet	Revision
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SK01 1 of 1 0



Stantec Architecture Ltd.
4910 - 53 Street PO Box 1777
Yellowknife NT X1A 2P4
Tel: (867) 920-2882
Fax: (867) 920-4319

Stantec

October 1, 2013
File: 144901145

Nunavut Water Board

P.O. Box 119
Gjoa Haven, NU
X0B 1J0

Attention: Phyllis Beaulieu, Manager of Licensing

Dear Phyllis:

**Reference: Chesterfield Inlet Fuel Facility – Landfarm Status Report
NWB Licence No. 1BR-CIL1217**

The Chesterfield Inlet Bulk Fuel Facility is being upgraded and includes the construction of a new landfarm. The fuel facility is nearing completion and the landfarm construction has completed. The existing hydrocarbon contaminated soils from the fuel facility were removed and placed in the landfarm.

Based on our site observations, the contractor has constructed the landfarm as per the design and the water licence.

If you require any further information or have questions, please do not hesitate to contact me.

Respectfully,

STANTEC ARCHITECTURE LTD.

Andrew Johnson, P.Eng
Associate, Civil Engineer



Stantec Architecture Ltd.
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4910 - 53 Street PO Box ᐱᐅᐸᑦᑲᑦᑯᑦ 1777
Yellowknife NT ᐱᓕᑦᑲᑦᑯᑦ X1A 2P4
Tel ᐱᓕᑦᑲᑦᑯᑦ: (867) 920-2882
Fax ᐱᓕᑦᑲᑦᑯᑦ: (867) 920-4319

መስጠት ይቻላል። ለምሳሌ፡ ለጥቅም ላይ የዋለው የጥበቃ ስልጣን ለሌሎች ሊሰጥ ይችላል። ለምሳሌ፡ ለጥቅም ላይ የዋለው የጥበቃ ስልጣን ለሌሎች ሊሰጥ ይችላል።

በበኛጋጌ,

ፖርቱጋልኛ ካሊንድር ምስጢር ህይወት ምስጢር ካሊንድር

Andrew Johnson

ᐱᓄᓂ ᖃᓴᓴᓐ, Andrew Johnson,
በባህር ዳይሬክተርና የፋይናንስ ኃላፊ
P.Eng Associate, Civil Engineer



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Stantec

October 1, 2013
File: 144901145

Nunavut Water Board

P.O. Box 119
Gjoa Haven, NU
X0B 1J

Attention: Phyllis Beaulieu, Manager of Licensing

Dear Phyllis:

Reference: Chesterfield Inlet Fuel Facility – Landfarm Water Licence Amendment Application Summary

The Chesterfield Inlet Bulk Fuel Facility is being upgraded and existing hydrocarbon contaminated soils were removed from the site and placed in the landfarm. The landfarm was part of the original scope of work, as well as the original water licence.

The quantity of material requiring removal exceeded the original estimate and subsequently, the available storage in the landfarm. An expansion of the landfarm is required to properly remediate this material. The landfarm expansion will be located adjacent to the existing landfarm. It will be accessed from the same road. The site was selected by the Government of Nunavut in consultation with the Hamlet of Chesterfield Inlet.

The landfarm expansion will follow the same design and operational standards as the existing landfarm.

This is a small project with limited scope and scale that covers approximately 2,500 sq. m. It is expected that 450 cu.m. of contaminated soil will be placed in the landfarm for remediation. It has positive impacts in terms of human health and environmental protection.

Construction of the landfarm expansion is scheduled for fall 2013 and remediation should be complete in 5 years.

We trust that the attached documents meet your requirements at this time and request that the water licence amendment be issued accordingly. If you require any further information or have questions, please do not hesitate to contact me.

Respectfully,

STANTEC ARCHITECTURE LTD.

Andrew Johnson, P.Eng
Associate, Civil Engineer