

## ***Certificate of Analysis***

### **Nunatta Environmental Services Inc.**

P.O. Box 267  
Iqaluit, NU X0A 0H0  
Attn: Jason Taylor

Phone: (867) 979-1488  
Fax: (867) 979-1478

Client PO:  
Project: Landfarm  
Custody: 61137

Report Date: 7-Jun-2010  
Order Date: 1-Jun-2010

**Order #: 1023110**

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

<b>Paracel ID</b>	<b>Client ID</b>
1023110-01	Cell 4
1023110-02	1 Berm
1023110-03	post Pumped Water

Approved By:



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

Any use of these results implies your agreement that our total liability in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work

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**Analysis Summary Table**

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX	EPA 624 - P&T GC-MS	4-Jun-10	5-Jun-10
CCME PHC F1	CWS Tier 1 - P&T GC-FID	4-Jun-10	5-Jun-10
CCME PHC F2 - F4	CWS Tier 1 - GC-FID, extraction	2-Jun-10	3-Jun-10

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

**MISSISSAUGA**  
6645 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

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	<b>Client ID:</b>	Cell 4	1 Berm	post Pumped Water	-
	<b>Sample Date:</b>	31-May-10	31-May-10	31-May-10	-
	<b>Sample ID:</b>	1023110-01	1023110-02	1023110-03	-
	<b>MDL/Units</b>	Water	Water	Water	-

## Volatiles

Benzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylbenzene	0.5 ug/L	0.7	<0.5	<0.5	-
Toluene	0.5 ug/L	1.5	<0.5	<0.5	-
m,p-Xylenes	0.5 ug/L	2.1	<0.5	<0.5	-
o-Xylene	0.5 ug/L	1.4	<0.5	<0.5	-
Xylenes, total	1.0 ug/L	3.5	<1.0	<1.0	-
Toluene-d8	Surrogate	110%	105%	110%	-

## Hydrocarbons

F1 PHCs (C6-C10)	200 ug/L	<200	<200	<200	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	-
F1 + F2 PHCs	300 ug/L	<300	<300	<300	-
F3 + F4 PHCs	200 ug/L	<200	<200	<200	-

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### Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	ND	200	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
<b>Volatiles</b>									
Benzene	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	1.0	ug/L						
Surrogate: Toluene-d8	85.1		ug/L		106	76-118			

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## Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	ND	200	ug/L	ND				32	
<b>Volatiles</b>									
Benzene	ND	0.5	ug/L	ND				20	
Ethylbenzene	ND	0.5	ug/L	ND				35	
Toluene	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				34	
o-Xylene	ND	0.5	ug/L	ND				32	
Surrogate: Toluene-d8	85.4		ug/L	ND	107	76-118			

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### Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
<b>Hydrocarbons</b>									
F1 PHCs (C6-C10)	1840	200	ug/L	ND	92.2	68-117			
F2 PHCs (C10-C16)	1060	100	ug/L	ND	66.2	61-129			
F3 PHCs (C16-C34)	2920	100	ug/L	ND	73.0	61-129			
F4 PHCs (C34-C50)	1660	100	ug/L	ND	69.2	61-129			
<b>Volatiles</b>									
Benzene	27.6	0.5	ug/L	ND	69.1	55-141			
Ethylbenzene	45.6	0.5	ug/L	ND	114	61-139			
Toluene	32.0	0.5	ug/L	ND	80.1	54-136			
m,p-Xylenes	78.0	0.5	ug/L	ND	97.5	61-139			
o-Xylene	44.1	0.5	ug/L	ND	110	60-142			
Surrogate: Toluene-d8	88.1		ug/L		110	76-118			

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### Sample and QC Qualifiers Notes

None

### Sample Data Revisions

None

### Work Order Revisions/Comments:

None

### Other Report Notes:

n/a: not applicable

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

*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.

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

Company Name: <u>Munitha ENV. Services</u>	Project Ref: <u>Linn Farm</u>	Date Required: _____
Contact Name: <u>Jason Taylor</u>	PO# _____	Turn Around Time: <input type="checkbox"/> 1-day <input type="checkbox"/> 2-day <input type="checkbox"/> Regular
Address: <u>P.O. Box 267 Iqaluit NU X0A 0H0</u>	Quote # _____ <input type="checkbox"/> Not Quoted	Regulatory/Guideline Requirements
Tel: <u>(867) 979-1488</u> Cell: _____	Preservative to be added by Paracel? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Email: <u>munitha@northwestel.net</u>		

Matrix Types: S-Soil/Sed GW-Ground Water SW-Surface Water SS-Storm/Sanitary Sewer A-Air O-Other RDW-Regulated Drinking Water

Sample Information					Analysis Required													
Paracel Order #	Matrix	Air Volume	# Containers	Date Sampled dd/mm/yy	Fl-Flu	BT-Ext (normal)	Chromatography											Hazardous? (Y/N)
1023109-soil 1023110-water Sample Identification																		
1	cell 1 NG	S	1	31/09/10	X	X	X											N
2	cell 1 NW	S	1	31/09/10														N
3	cell 1 SE	S	1	31/09/10														N
4	cell 1 SW	S	1	31/09/10														N
5	cell 2 North	S	1	31/09/10														N
6	cell 2 South	S	1	31/09/10														N
7	cell 4	SW	1	31/09/10														N
8	1 Barn	SW	1	31/09/10														N
9	Post pumped water	SW	1	31/09/10	X	X	X											N
10																		

Comments: No VOC vials submitted  
4 day turn around

Relinquished By: _____ Date: _____ Time: _____	Received at Depot: _____ Date: _____ Time: _____	Received at Lab: <u>Kevin</u> Date: <u>June 1/10</u> Time: <u>11:40</u>	Verified By: <u>Kevin</u> Date: <u>June 1/10</u> Time: <u>17:31</u>
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Please refer to the back page for Locations and Sample Preservation, Container and Hold Time Requirements.

WHITE - Lab Copy PINK - Client Copy