

**Draft Supplemental Site
Investigation
Sheffield Farm, Upper
Dyke Village, Nova Scotia**

PWGSC Standing Offer
Agreement (E0225-133442)



Prepared for:
**Public Works and Government
Services Canada on behalf of
Agriculture and Agri-Food Canada**
DFRP# 02738
RPIS# MC 00503

Prepared by:
**Stantec Consulting Ltd.
40 Highfield Park Drive, Suite 102
Dartmouth, NS B3A 0A3**

October 1, 2013

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**DRAFT SUPPLEMENTAL SITE INVESTIGATION
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Executive Summary

In August 2013, Stantec Consulting Ltd. conducted a Supplemental Site Investigation at Sheffield Farm, Saxon Street, Centreville, Nova Scotia, for Public Works and Government Services Canada, on behalf of Agriculture and Agri-Food Canada.

The purpose of the Supplemental Site Investigation was to delineate metals impacts associated with the subject property identified in previous work by MGI Ltd. (2004) and SNC Lavalin Ltd. (2010). The findings of the Supplemental Site Investigation are presented in Table 1.

Table 1 Summary Table of Findings Potential/Actual Areas of Concern

Potential Source Description	Contaminants of Concern	Media of Concern	Results of Supplemental Site Investigation
Metals in the soil in the vicinity of the Former Farmhouse and Former Garage Building.	Metals: Arsenic Copper Lead Zinc	Soil	Several metals concentrations (arsenic, copper, lead and tin) in one or more soil samples exceeded CCME agricultural guidelines. The horizontal extent of metals impacted soil was confirmed, as was the vertical extent, with the exception of the area to the southwest of the Former Garage Building.

The statements made in this Executive Summary are subject to the same limitations included in Section 5.0 (Closure), and are to be read in conjunction with the remainder of this report

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Introduction
October, 1, 2013

1.0 Introduction

Stantec Consulting Ltd. (Stantec) was commissioned by Mr. Cory Alexander, of Public Works and Government Services Canada (PWGSC), on behalf of Agriculture and Agri-Food Canada (AAFC) to complete a Supplemental Site Investigation on Sheffield Farm, located at 326 Saxon Street, Centreville, Nova Scotia (Figure 1).

1.1 OBJECTIVES

This work had the following general objectives:

- review existing and supplied environmental assessment reports;
- complete a Supplemental Site Investigation at the Site to confirm vertical and horizontal presence of metal impacted soil in the vicinity of the Former Farmhouse and Former Garage Building; and
- prepare a report with the results of the Supplemental Site Investigation.

1.2 ASSESSMENT STANDARDS

1.2.1 Soil

The Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines (SQGs) for the Protection of Environmental and Human Health (accessed online September 2013) are the applicable federal soil guidelines for on-site metals impacts.

The CCME generic SQGs were established for four primary land uses: agricultural, residential, commercial, and industrial. The generic CCME guidelines are conservative benchmarks for screening purposes. If soil concentrations are less than these guidelines then the potential for human health effects is negligible. However, if soil concentrations exceed these guidelines it does not necessarily mean that unacceptable risks exist. The generic guidelines do not take into account regional or site-specific information (*i.e.*, background soil conditions) and may not be appropriate for every site or region of the country.

1.3 BACKGROUND

1.3.1 Site Description

The Sheffield Research Farm is a seventy-two (72) hectare property located on 326 Saxon Street, in Centreville, Nova Scotia (see Figure 1, Appendix A). It is owned by AAFC, a federal agency. The Sheffield Research Farm is located approximately six kilometres (km) north of the AAFC Atlantic Food and Horticulture Research Centre, in a rural farming area. The Sheffield Research Farm property is agriculture land supporting research programs related to field crops, berry crops and orchards. The Site consists of numerous test plots, research laboratories, and administrative offices. The land use for the subject site area is considered agricultural.

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The Provincial Property Identifier Number (PID No.) is 55046973. According to the Directory of Federal Real Property (DFRP), the property is Crown owned and the custodian is Agriculture and Agri-Food Canada (AAFC). The DFRP property identification number is 2738. Selected photographs of the Site obtained during the field program are shown in Appendix B.

1.3.2 Water Supply/Groundwater Usage

There are no municipal services at the Sheffield Research Farm. Water is supplied from an on-site drilled well and sanitary waste is directed to an on-site septic tank and disposal field.

1.3.3 Previous Environmental Studies

A listing of the chronological history of environmental investigations completed at the Supplemental Site Investigation assessment area is as follows:

- A soil sampling program was completed at the assessment area in 2004 (MGI, Feb. 2004), in the vicinity of the Former Farmhouse and associated Former Garage Building. Based on the results of this assessment, approximately 475 m² of metals impacted soil (mainly lead) was located in the vicinity of the former farmhouse and former garage buildings. The findings of this report identified that the horizontal and vertical extents of metal impacts in soil were not fully delineated.
- A Phase III Environmental Site Assessment (ESA) was completed at the assessment area in 2010 (SNC Lavalin, 2010), at the Former Farmhouse and associated Former Garage Building. Based on the results of the Phase III ESA, metals impacts (arsenic, copper, lead and zinc) in soil were delineated vertically and horizontally and the overall estimated metals contaminated soil volume was reported as approximately 475 m³ (950 metric tonnes). This report recommended the complete remediation of impacted metals in soil in compliance with the applicable CCME SQGs.
- Following the Phase III ESA, a Remedial Action Plan (RAP) was prepared for the Former Farmhouse and associated Former Garage Building in 2010 (SNC Lavalin, 2010). This report recommended Best Management Practices for the Site including landscaping impacted areas to minimize dermal contact and remediation of soils exceeding site-specific target limits.

The July 2013 Terms of Reference (TOR) prepared by PWGSC and sent to Stantec noted that during the initial soil sampling program in 2004, the Former Farmhouse and Former Garage Building were still in place. The structures were removed prior to the completion of the Phase III ESA and it was unknown whether any soil disturbance or regrading of the surficial soils had taken place in the vicinity of the structures, as a result of the decommissioning activities. It was understood that if the structure foundations were removed, it was likely that previously sampled soils, and associated metals concentrations within those soils, were disturbed and may have been deposited to depths below surface grade greater than they previously existed. The TOR noted that the Supplemental Site Investigation would involve a re-evaluation of soil in the local vicinity (<10 m) of the Former Farmhouse and Former Garage Building with particular interest on the soil locations where deeper metal impacts were identified.

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1.4 SCOPE OF WORK

Table 2 outlines the Supplemental Site Investigation sampling program which was developed based on the above mentioned information. It was assumed that conditions on the Site have not changed since the 2010 site assessment was completed. Test holes were dug by excavator.

Table 2 Sheffield Farm, Upper Dyke Village - Work Plan

Issue of Concern	Contaminants of Concern	Media of Concern	Number of Sample Locations	Field Work
Metals in the soil in the vicinity of the Former Farmhouse and Former Garage Building.	Metals: Arsenic Copper Lead Zinc	Soil	13	Completed 13 Test Holes to a maximum depth of 0.6 mbg with soil sampling from 0.0-0.3 mbg and 0.3-0.6 mbg
			3	Completed three Test Holes to a maximum depth of 0.3 mbg with soil sampling from 0.0-0.3 mbg
			1	Completed one Test Hole to a maximum depth of 1.2 mbg with soil sampling from 0.0-0.3 mbg and 0.9-1.2 mbg
			2	Completed two Test Holes to a maximum depth of 0.9 mbg with soil sampling from 0.0-0.3 mbg, 0.3-0.6mbg and 0.6-0.9 mbg
			4	Completed four Test Holes to a maximum depth of 2.5 mbg for field observation of backfill material in the area of the Former Farmhouse and Former Garage Building.

Notes:

- 1 mbg = metres below grade.
2. For the purposes of QA/QC, 5 blind duplicate samples were analyzed for metals from the 43 soil samples submitted to the laboratory for metals analysis.
3. Soil samples were submitted to the Maxxam Analytics (Maxxam) laboratory in Bedford, NS for metals analysis. Maxxam is a Standards Council of Canada (SCC) accredited laboratory.

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Methodology
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2.0 Methodology

2.1 TEST HOLE DIGGING PROGRAM

A test hole soil investigation was conducted to assess surface and subsurface soil for metals impacts at the Site. Nineteen test holes were dug for the collection of soil samples ranging in depth from 0.0 – 0.3 mbg to 0.9 – 1.2 mbg. An additional four test holes were advanced to 2.5 mbg for field observation of backfill material in the area of the Former Farmhouse and Former Garage Building. Test holes were dug on August 22-23, 2013 by Eavis Construction of Sackville, Nova Scotia, under the supervision of Stantec field personnel. Test holes were advanced and backfilled (after sampling) using an excavator, and locations dug during the 2013 Supplemental Site Investigation are presented on Drawing No. 121412659-1, in Appendix A.

During the test hole digging program, a septic system PVC line was struck and broken. This line strike occurred at approximately 9:30 am on August 23, 2013, while Test Hole 209 was being dug. According to the site drawing provided by Public Works and Government Services Canada (PWGSC), this location should not have been between the septic tank and the disposal bed; however, field observations indicate there to be errors on the previous drawings. Also, Underground Consulting Services and Nova Scotia Power had previously cleared this location for test hole digging when they were on site at 9:45 am, August 22, 2013. No septic material was released due to the broken pipe. A new section of PVC piping was installed where the broken line had been and the area was reestablished to conditions similar to before digging the test hole.

2.2 SAMPLE HANDLING

All samples were placed in laboratory supplied clean glass jars. The jars were placed in a cooler with ice packs for transport back to the Stantec office. To minimize the potential for cross-contamination, all sampling equipment was thoroughly rinsed after each sampling event or sample. Samples not submitted for laboratory analysis were archived for potential future analysis. Soil conditions encountered in the test holes were logged at the time of sampling and are presented on Test Hole Records, in Appendix C.

2.3 FIELD AND LABORATORY PROGRAM

The field and laboratory program is summarized in Table 3. Samples were submitted to the Maxxam Analytics laboratory in Bedford, Nova Scotia. Maxxam is a Standards Council of Canada (SCC)-accredited laboratory for sampling methods utilized for metals analysis, and has in-house QA/QC programs to govern sample analysis, including replicates. Laboratory certificates of analysis are presented in Appendix E.

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Methodology
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Table 3 Field and Laboratory Program

Analytes	Matrix	Sample Locations	Samples Submitted	Sample IDs	QA/QC Samples		
					Original	Field Dup	Lab Dup
Available Metals	Soil	19	42 including 5 field duplicates	TH201-1, TH201-2	TH202-2	DUP 4	
				TH202-1, TH202-2			
				TH203-1 to TH203-3	TH204-4	DUP 1	
				TH204-1, TH204-4	TH205-2	DUP 5	
				TH205-1 to TH205-3			
				TH206-1, TH206-2			
				TH207-1, TH207-2			
				TH208-1 to TH208-3	TH208-3		Lab Dup
				TH209-1, TH209-2			
				TH210-1, TH210-2	TH210-2	DUP 3	
				TH211-1	TH211-1		Lab Dup
				TH212-1, TH212-2			
				TH213-1 to TH213-3			
				TH214-1, TH214-2	TH214-2		Lab Dup
				TH215-1			
				TH216-1, TH216-2			
				TH217-1, TH217-2, TH217-3	TH217-1 TH217-2	DUP 2	Lab Dup
				TH218-1 to TH218-3			
				TH219-1 to TH219-3			

Sample locations are shown on Drawing No. 121412659-1, in Appendix A.

2.4 QUALITY ASSURANCE/QUALITY CONTROL SAMPLING PROGRAM

The QA/QC sampling was conducted on approximately 10% of parameters that were analysed. QA/QC was addressed by collecting field duplicates. The results of this testing were used to evaluate the reliability of the sampling.

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Results of Field Investigation
October, 1, 2013

3.0 Results of Field Investigation

3.1 STRATIGRAPHY

The shallow soil samples were collected from various depths between 0.0 to 1.2 mbg from 19 test holes, and an additional four observation test holes were advanced to 2.5 mbg. The overburden around the Former Farmhouse and Former Garage Building generally consisted of an organic surface layer with brown or whitish silty sand with some/trace clay, gravel or cobbles with some areas containing demolition debris from the former buildings. Bedrock was not encountered during the 2013 Supplemental Site Investigation test hole digging program.

3.2 PRELIMINARY SITE EXPOSURE SCENARIO ASSESSMENT

Based on the current use of the Site, the Agricultural CCME SQGs for the Protection of Environmental and Human Health are appropriate.

3.3 LABORATORY ANALYSIS RESULTS FOR SOIL

3.4 METALS IN SOIL

Laboratory analytical results for metals in soil are presented in Table D-1, Appendix D. Soil metal concentrations exceeded the CCME Agricultural SQGs for one or more metals in 15 of the 42 soil samples submitted (including one of the field duplicates).

3.5 QUALITY ASSURANCE / QUALITY CONTROL DISCUSSION

QA/QC sampling consisted of the collection and analysis of approximately 10% of the samples for quality control. This program permits the evaluation of the representativeness of the samples. The laboratory has also submitted their own duplicate samples to ensure their own quality control.

Table 4 - Metals Concentrations in Soil

Soil Metal Samples	
• 42 submitted including 5 field duplicates	
• 15 (including one field duplicate) exceeded CCME Agricultural SQGs	
CCME Exceedances	
• 3 for As	• 2 for Cu
• 12 for Pb	• 2 for Sn
Concentration Ranges (mg/kg)	
• [As] 13 - 15	• [Cu] 88 – 190
• [Pb] 72 - 370	• [Sn] 5.1 – 6.5

Table 5 Summary of QA/QC Sampling

Duplicate Type	Analysis	Range of %RPD	Number of Analytes within $\pm 100\%$ RPD	Acceptable Duplicate Correlation
Field Duplicates	Metals (soil)	0.0% to 133.3%	2 of 135	Yes
Laboratory Duplicates	Metals (soil)	2.7% to 30.5%	0 of 108	Yes

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The guidelines for determining if a blind duplicate pair has an acceptable RPD are based on the Maxxam National Environmental QA/QC Interpretation Guide. The calculated RPD should be less than 100% for soil for individual metals parameters.

In general, the duplicate results agree closely with their corresponding samples and confirm the representativeness of the sampling procedures.

All individual parameters in the duplicates were classified the same (either above or below guidelines). The overall laboratory and field data quality is considered acceptable.

3.6 CONTAMINANT DISTRIBUTION

3.6.1 Metals in Soil

The magnitude of soil metals impacts exceeding CCME Agricultural SQGs is presented on Drawing No. 121412659-2, in Appendix A, as well as in Table 6.

Table 6 Magnitude of Impact - Metals in Soil (Based on CCME Agricultural SQGs)

Parameter	CCME Agricultural SQGs (mg/kg)	# of Samples Exceeding Criteria	Exceedance Factor	Trends
As	12	3	Up to 1.3 x	Soil arsenic concentrations exceeded the CCME Agricultural SQG in three samples (TH216-1, TH216-2 and TH217-2). At all other locations arsenic was not detected or was equal to or less than 12 mg/kg.
Pb	70	12	Up to 5.3 x	Soil lead concentrations exceeded the CCME Agricultural SQGs in twelve samples (TH201-1, TH203-1, TH206-2, TH210-1, TH210-2, TH211-1, TH213-1, TH214-1, TH214-2, TH215-1, TH216-2 and TH217-2). Generally, the highest concentrations of lead were reported in TH206-2, TH211-1 and TH214-1 which are located in the footprint of the Former Farmhouse and south of the Former Farmhouse.
Cu	63	2 including 1 field duplicate	Up to 3.0 x	There were two exceedances of copper at sample location TH217 (field duplicate of TH217-1, and TH217-2). Copper exceedances were not observed at any additional locations and are believed to be localized near the west side of the Former Garage Building footprint.
Sn	5	2	Up to 1.3 x	There were two exceedances of tin, one at the northern border of the Former Farmhouse location (TH203-1) and one at the northern border of the Former Garage Building location (TH213-3). Tin impacts were not observed at any additional locations and are believed to be localized.

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Results of Field Investigation
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Table 7 summarises the extent of confirmed contamination associated with metals exceeding CCME SQGs in soil and identifies if additional on or off site delineation is recommended.

Table 7 Extent of Contamination - Metals in Soil (Exceeding CCME Agricultural SQGs)

Issue	Comment	Recommendation
Horizontal Extent of Contamination	Approximately 1,450 m ² of metal (arsenic, copper, lead and tin) impacted soil above CCME Agricultural SQGs is present on-site.	Remediate and/or risk manage exist metals impacts.
Off site impacts	Based on the sampling completed no off-site impacts are expected.	None
Vertical Extent of Contamination	Vertical delineation of metals impacts in soils was achieved in most areas of the Site with the exception of between 0.3 and 1.2 mbg, southwest of the Former Garage Building.	Further vertical delineation is recommended prior to remediation. Assumed depth of impacts as 1 mbg based on site conditions. Area of impacts in sub-soil is estimated based on the surface soil impacts.
Summary	Approximate volume of metal contaminated soil is 900 m ³ (assumed 0.30 m depth in most areas and 1.0 m in depth near the Former Garage Building).	None

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Conclusions
September 30, 2013

4.0 Conclusions

Based on the information gathered and on observations made during this investigation, the Supplemental Site Investigation has indicated the following conclusions related to metals impacts at the subject property:

- Metals impacts in soil are present on-site at concentrations above CCME Agricultural SQGs near the area of the Former Farmhouse and Former Garage Building.
- Volume of metals impacted soil on-site is estimated at approximately 900 m³; however, metals impacts in sub-surface soil (0.3-1.2 mbg) are not fully delineated southwest of the Former Garage Building.

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Closure
September 30, 2013

5.0 Closure

This report has been prepared for the sole benefit of Public Works and Government Services Canada. The report may not be relied upon by any other person or entity without the express written consent of Stantec Consulting Ltd., and Public Works and Government Services Canada.

Any use which a third party makes of this report and any reliance on decisions made based on it, are the responsibility of such third parties. Stantec Consulting Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions or actions made based on this report.

Some of the information presented in this report was provided through existing documents and interviews. Although attempts were made, whenever possible, to obtain a minimum of two confirmatory sources of information, Stantec Consulting Ltd. in certain instances has been required to assume that the information provided is accurate.

The conclusions and recommendations presented represent the best judgement of the assessor based on current environmental standards and on the observed site conditions. Due to the nature of the investigation and the limited data available, the assessor cannot warrant against undiscovered environmental liabilities.

The conclusions are based on results from specific testing and/or sampling locations, and can only be extrapolated to an undefined limited area around these locations. The extent of the limited area depends on the soil and groundwater conditions, as well as the history of the site reflecting natural, construction and other activities. In addition, analysis has been carried out for a limited number of chemical parameters, and it should not be inferred that other chemical species are not present.

Should additional information become available, Stantec Consulting Ltd. requests that this information be brought to our attention so that we may re-assess the conclusions presented herein. This report was prepared by James Lamond, B.Eng., P.Eng., and reviewed by Don Carey M.Sc., FGS, P.Eng.

The professional qualifications of Site Assessors, and the Senior Reviewer are provided in Appendix E.

Yours truly,

STANTEC CONSULTING LTD.

DRAFT

James Lamond B.Eng., P.Eng.
Project Intermediate Support

DRAFT

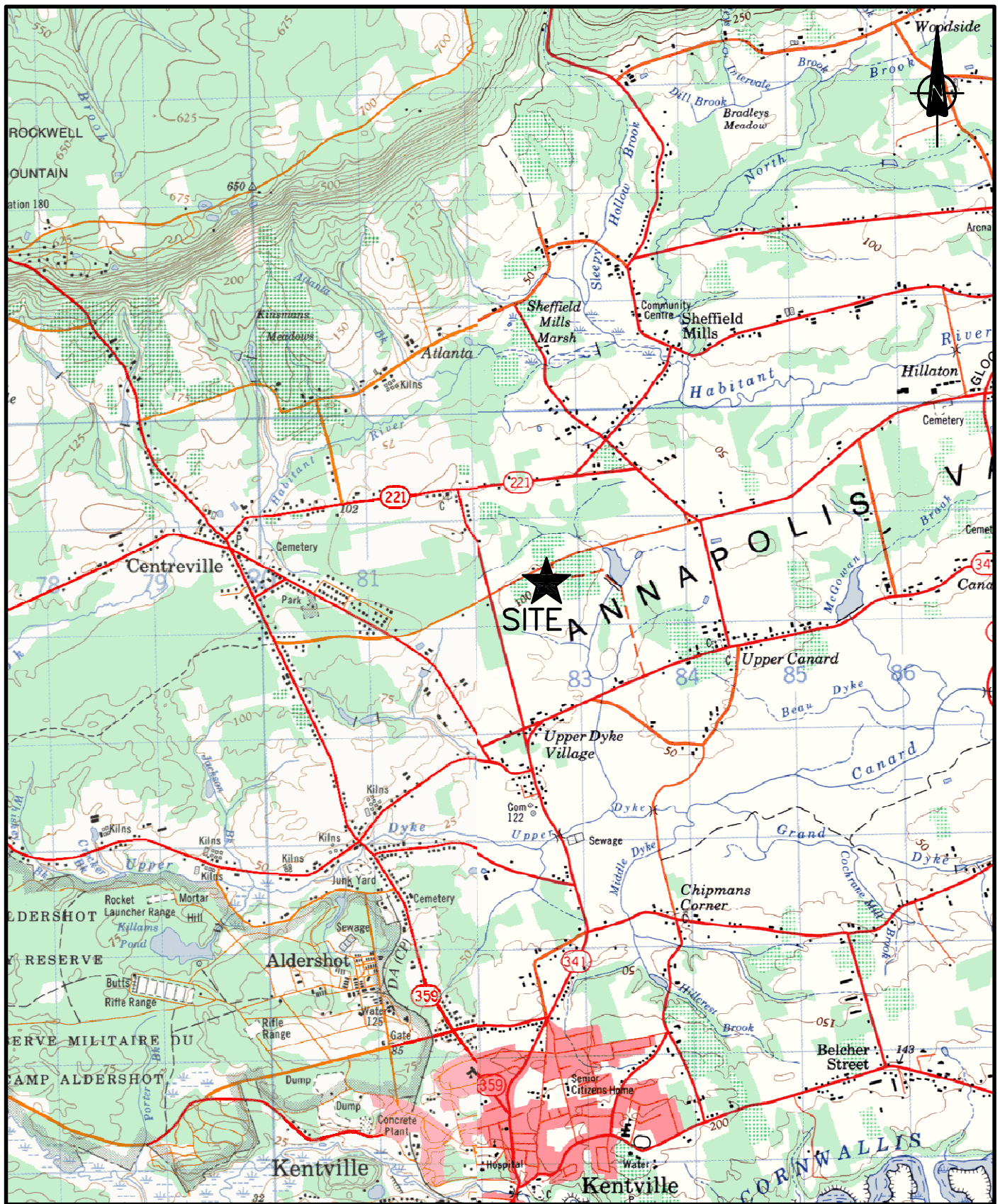
Don Carey, M.Sc., P.Eng.
Senior Reviewer

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APPENDIX A

Figure and Drawings



GENERAL SITE LOCATION AND TOPOGRAPHY

SCALE 1:50,000



Stantec

T:\1214XXX\121412659 SHEFFIELD FARM\121412659-1.dwg 2013/09/30 - 1:05pm psoo

LEGEND:

- PP POWER POLE
- MONITOR WELL LOCATION (SNC LAVALIN, 2009)
- HISTORICAL MONITOR WELL LOCATION (2007)
- (UTL) UNABLE TO LOCATE
- TEST HOLE LOCATION (MGI 2003)
- TEST HOLE LOCATION (SLEI 2009)
- BOREHOLE LOCATION (SLEI 2009)
- 2013 TEST HOLE WITH SOIL SAMPLES
COLLECTED FROM 0.0-0.3mbg AND 0.3-0.6mbg
- 2013 TEST HOLE WITH SOIL SAMPLES
COLLECTED FROM 0.0-0.3mbg
- 2013 TEST HOLE WITH SOIL SAMPLES
COLLECTED FROM 0.0-0.3mbg AND 0.9-1.2mbg
- 2013 TEST HOLE WITH SOIL SAMPLES
COLLECTED FROM 0.0-0.3mbg AND 0.3-0.6mbg AND 0.6-0.9mbg
- 2013 TEST HOLE TO 2.5mbg (NO SAMPLES)

REFERENCE:

CRA FIGURE No. 2, FILE No. 070896
GN-DA002 DATED MARCH 31, 2011 AND
SNC DRAWING No. 4, PROJECT No.
020143-0033 DATED NOV. 20, 2009.

SCALE :

1:500

DATE :

2013/07/16

DRAWN BY :

P.J.SOO

APPROVED BY :

PUBLIC WORKS & GOVERNMENT SERVICES CANADA

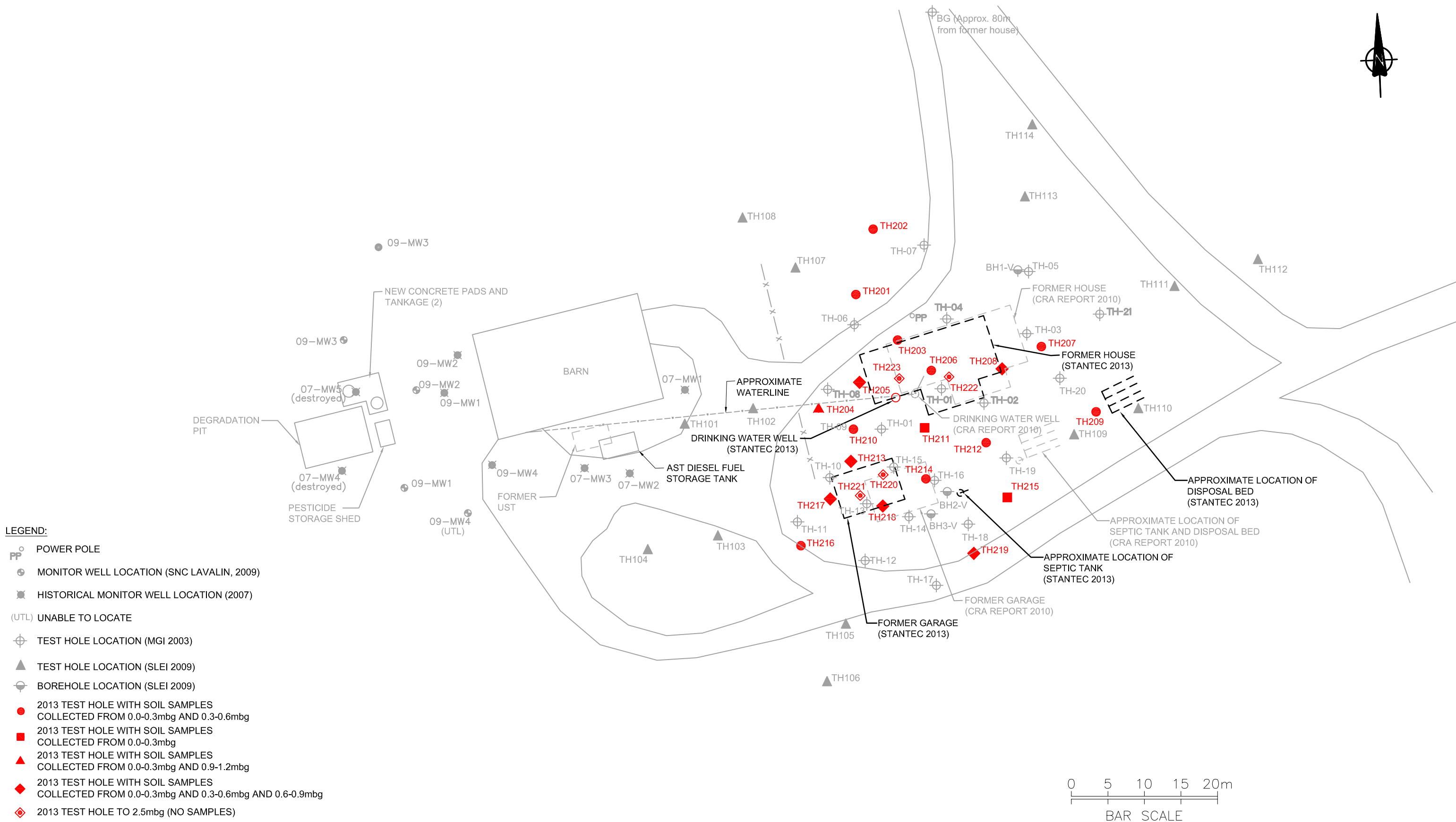
SUPPLEMENTAL SITE
ASSESSMENT

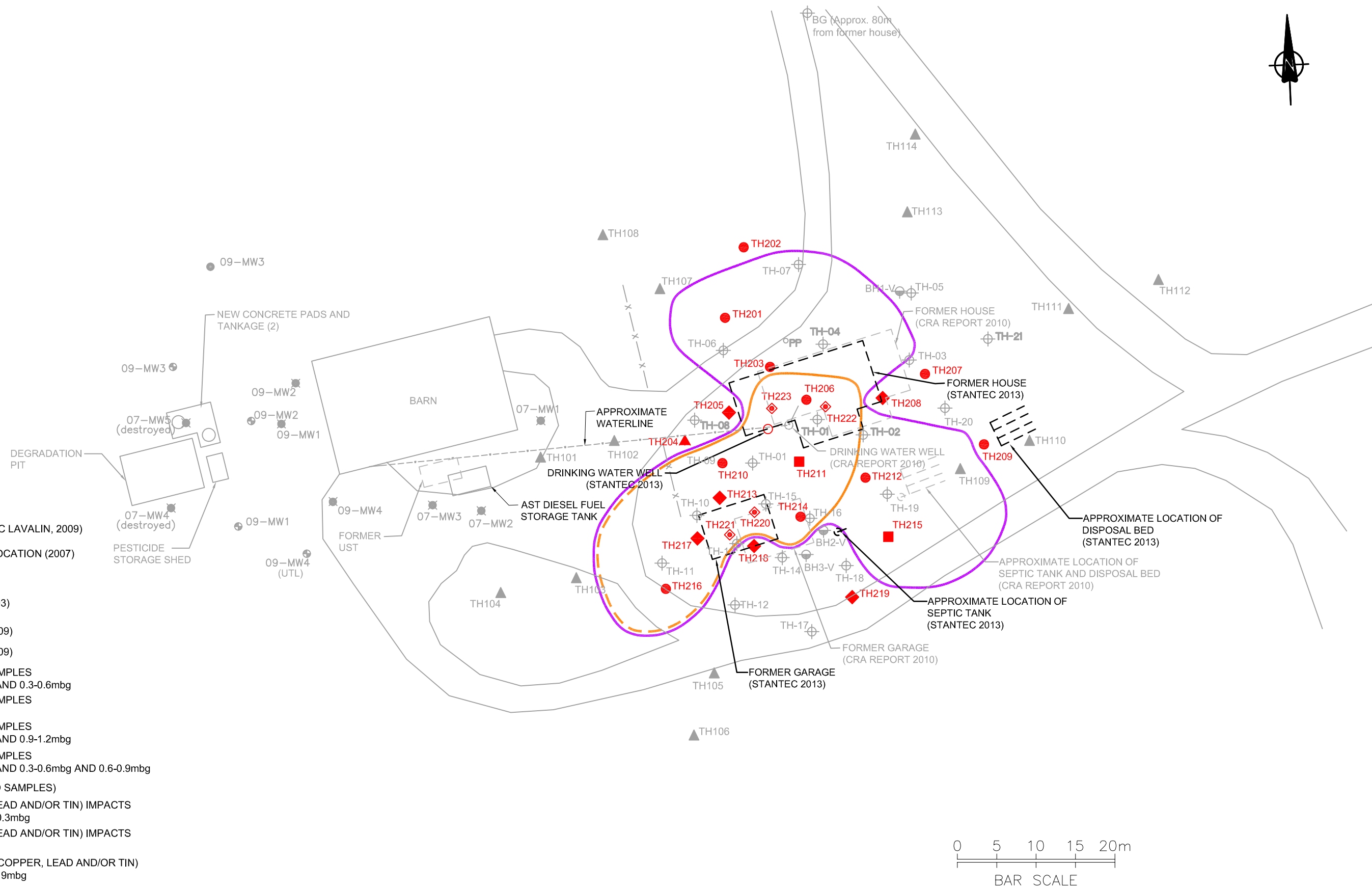
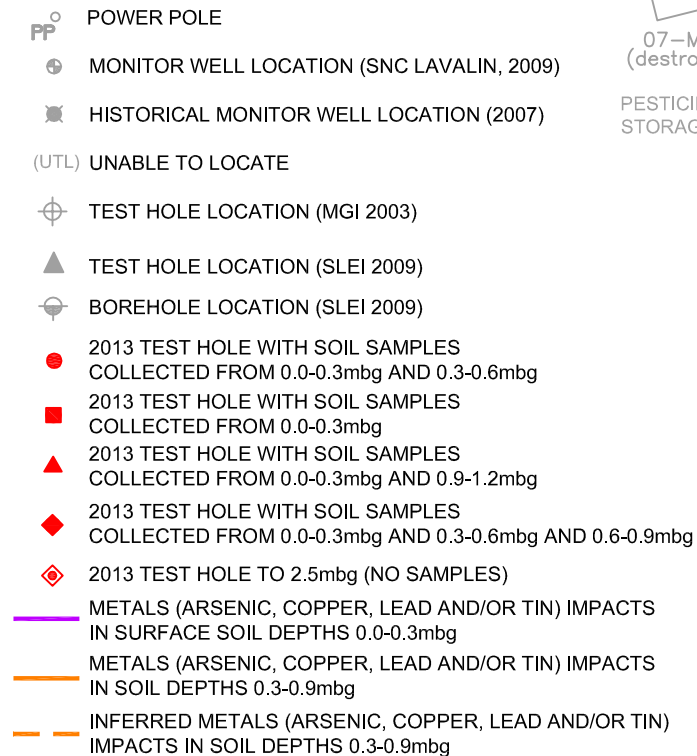
SHEFFIELD FARM, UPPER DYKE VILLAGE, NS

2013 SOIL
SAMPLING LOCATIONS

DRAWING NO.

121412659-1





REFERENCE:
CRA FIGURE No. 2, FILE No. 070896
GN-DA002 DATED MARCH 31, 2011 AND
SNC DRAWING No. 4, PROJECT No.
020143-0033 DATED NOV. 20, 2009.

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DRAWN BY :	P.J.SOO
APPROVED BY :	

PUBLIC WORKS & GOVERNMENT SERVICES CANADA
SUPPLEMENTAL SITE
ASSESSMENT
SHEFFIELD FARM, UPPER DYKE VILLAGE, NS

LIMITS OF METALS IMPACTS IN SOIL	
DRAWING NO.	121412659-2

APPENDIX B

Site Photographs



Photo 1 – General sampling area facing northeast



Photo 2 – General area of sampling, facing west



**Photo 3 – General sampling area
facing southwest**



Photo 4 – Septic line replacement at TH209



Photo 5 – TH211 with Barn in background



Photo 6 – Demolition debris found near the Former Farmhouse and Former Garage Building

APPENDIX C

Test Hole Records



TEST PIT RECORD

TH201

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH201

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE		OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER			
0		GRADE							
		ORGANICS							
		Brown silty SAND			GS	1	MET		
					GS	2	MET		
		End of Testhole							
1									
2									
3									
4									

App'd _____ Sep 18 2013 11:26:51



TEST PIT RECORD

TH202

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH202

 DATES: DUG 2013/08/23 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		Brown silty SAND - trace white silty sand			GS	1		MET		
		Brown silty SAND			GS	2		MET DUP-4		
		End of Testhole								
1										
2										
3										
4										

App'd _____ Sep 18 2013 11:27:48



TEST PIT RECORD

TH203

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH203

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		FILL: Brown and white silty sand - some cobbles from 0.1-0.25mbg - clay brick debris			GS	1		MET		
		Brown and white silty SAND - trace cobbles and boulders			GS	2		MET		
		Brown silty SAND - some clay - trace gravel			GS	3		MET		
1		End of Testhole								
2										
3										
4										
App'd _____ Sep 18 2013 11:28:0										



TEST PIT RECORD

TH204

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH204

 DATES: DUG 2013/08/22

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		Brown silty SAND with gravel - trace cobbles			GS	1		MET		
		Brown sandy SILT - some clay			GS	2				
					GS	3				
1					GS	4		MET DUP-1		
		End of Testhole								
2										
3										
4										

App'd _____ Sep 18 2013 11:28:9



TEST PIT RECORD

TH205

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH205

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		GRAVEL			GS	1		MET		
		Brown silty SAND - trace clay			GS	2		MET DUP-5		
					GS	3		MET		
1		End of Testhole								
2										
3										
4										

App'd _____ Sep 18 2013 11:28:21



TEST PIT RECORD

TH206

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH206

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		FILL: Brown to dark brown silty sand - trace gravel			GS	1		MET		
		FILL: Brown silty sand - some boulders and concrete debris			GS	2		MET		
		End of Testhole								
1										
2										
3										
4										
App'd _____ Sep 18 2013 11:28:30										



TEST PIT RECORD

TH207

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH207

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE		OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER			
0		GRADE							
		ORGANICS							
		Brown silty SAND - trace white silty sand			GS	1	MET		
					GS	2	MET		
		End of Testhole							
1									
2									
3									
4									

App'd _____ Sep 18 2013 11:28:39



TEST PIT RECORD

TH208

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH208

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		Brown silty SAND interlayered with white and dark brown silty sand			GS	1		MET		
					GS	2		MET		
		Brown silty SAND			GS	3		MET		
1		End of Testhole								
2										
3										
4										
App'd _____ Sep 18 2013 11:28:48										



TEST PIT RECORD

TH209

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH209

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE		OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER			
0		GRADE							
		ORGANICS							
		Brown silty SAND - PVC septic pipe at 0.5 mbg			GS	1	MET		
					GS	2	MET		
1		End of Borehole							
2									
3									
4									

App'd _____ Sep 18 2013 11:28:57



TEST PIT RECORD

TH210

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH210

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (% LEL)			
0		GRADE								
		ORGANICS								
		Grey GRAVEL with sand			GS	1		MET		
		Brown silty SAND			GS	2		MET DUP-3		
		End of Testhole								
1										
2										
3		Brown sandy SILT								
4										

App'd _____ Sep 18 2013 11:29:6



TEST PIT RECORD

TH211

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH211

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		Brown silty SAND - trace gravel			GS	1		MET		
		End of Testhole								
1										
2										
3										
4										
App'd _____ Sep 18 2013 11:29:16										



TEST PIT RECORD

TH212

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH212

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		Brown silty SAND - trace gravel			GS	1		MET		
		Brown silty SAND - trace gravel - trace white silty sand			GS	2		MET		
		End of Testhole								
1										
2										
3										
4										

App'd _____ Sep 18 2013 11:29:24



TEST PIT RECORD

TH213

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH213

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		Brown silty SAND - trace gravel			GS	1		MET		
		Brown silty SAND			GS	2		MET		
					GS	3		MET		
1		End of Testhole								
2										
3										
4										
App'd _____ Sep 18 2013 11:29:32										



TEST PIT RECORD

TH214

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH214

 DATES: DUG 2013/08/22

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		Brown silty sand			GS	1		MET		
		Brown silty SAND - trace white silty sand			GS	2		MET		
		End of Testhole								
1										
2										
3										
4										

App'd _____ Sep 18 2013 11:29:47



TEST PIT RECORD

TH215

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH215

 DATES: DUG 2013/08/23 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		Brown silty SAND			GS	1		MET		
		End of Testhole								
1										
2										
3										
4										

App'd _____ Sep 18 2013 11:29:56



TEST PIT RECORD

TH216

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

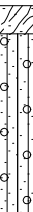
 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH216

 DATES: DUG 2013/08/22 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE		OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER			
0		GRADE							
		ORGANICS							
		Loose coarse brown SAND with silt and gravel			GS	1	MET		
					GS	2	MET		
		End of Testhole							
1									
2									
3									
4									

App'd _____ Sep 18 2013 11:30:6



TEST PIT RECORD

TH217

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH217

 DATES: DUG 2013/08/22

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		Brown silty SAND - some gravel and cobbles			GS	1		MET DUP-2		
					GS	2		MET		
					GS	3		MET		
1		End of Testhole								
2										
3										
4										

App'd _____ Sep 18 2013 11:30:15



TEST PIT RECORD

TH218

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH218

 DATES: DUG 2013/08/22

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		FILL: Brown silty sand - trace concrete debris - white silty sand			GS	1		MET		
					GS	2		MET		
		Brown silty SAND			GS	3		MET		
1		End of Testhole								
2										
3										
4										
App'd _____ Sep 18 2013 11:30:24										



TEST PIT RECORD

TH219

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH219

 DATES: DUG 2013/08/22

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		Loose brown SAND and SILT - trace gravel			GS	1		MET		
					GS	2		MET		
		Loose brown sandy SILT			GS	3		MET		
1		End of Testhole								
2										
3										
4										
App'd _____ Sep 18 2013 11:30:35										



TEST PIT RECORD

TH220

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH220

 DATES: DUG 2013/08/23 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE ORGANICS Brown silty SAND								
1										
2										
3		End of Testhole								
4										



TEST PIT RECORD

TH221

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH221

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (%LEL)			
0		GRADE								
		ORGANICS								
		Brown sand with dark brown sandy SILT								
		White SAND			GS	1				
		Brown sandy SILT								
		Brown silty SAND								
1										
2										
3		End of Testhole								
4										

App'd _____ Sep 18 2013 11:30:53



TEST PIT RECORD

TH222

 CLIENT ENVIRONMENTAL SERVICES, PWGSC

 PROJECT No. 121412659

 LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

 TEST PIT No. TH222

 DATES: DUG 2013/08/23

 WATER LEVEL N/A

 DATUM ASSUMED

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLE			OTHER TESTS	HYDROCARBON ODOURS	REMARKS
					TYPE	NUMBER	VOC ppm (% LEL)			
0		GRADE ORGANICS FILL: Brown silty sand with cobbles - copper pipe, metal roofing, and clay brick debris								
1										
2		FILL: Brown silty sand with cobbles - styrofoam, plastic pipe, wood, fiberglass insulation, clay brick, air vent, and painted board debris		GS	1					
3		End of Testhole								
4										

App'd _____ Sep 18 2013 11:31:1



TEST PIT RECORD

TH223

CLIENT **ENVIRONMENTAL SERVICES, PWGSC**

PROJECT No. **121412659**

LOCATION SHEFFIELD FARMS, 326 SAXON STREET, CENTREVILLE, NS

TEST PIT No. TH223

DATE: DUG 2013/08/23 WATER LEVEL N/A

DATUM ASSUMED

[illegible]

APPENDIX D

Chemistry Tables

TABLE D-1

SOIL INORGANIC CHEMISTRY - METALS
Public Works Government Services Canada
Sheffield Farms, Centreville, Nova Scotia
Stantec Consulting Ltd. Project No. 121412659

Parameters	Units	RDL	CCME Agricultural SQGs	Sample ID										
				TH201-1	TH201-2	TH202-1	TH202-2	DUP 4	TH203-1	TH203-2	TH203-3	TH204-1	TH204-4	DUP 1
				Sample Depth (mbg):				0.0-0.3	0.3-0.6	0.0-0.3	0.3-0.6	0.3-0.6	0.0-0.3	0.3-0.6
Sample Date:				23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	22-Aug-13	22-Aug-13	22-Aug-13
Aluminum	mg/kg	10	-	5500	14000	11000	10000	11000	5700	8100	14000	6400	9800	8700
Antimony	mg/kg	2.0	20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic	mg/kg	2.0	12	4.3	3.0	2.4	2.2	2.3	<2.0	2.0	3.3	7.8	2.9	2.9
Barium	mg/kg	5.0	750	67	29	32	16	18	34	19	23	35	20	19
Beryllium	mg/kg	2.0	4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bismuth	mg/kg	2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Boron	mg/kg	50	2	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Cadmium	mg/kg	0.30	1.4	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	1.1	<0.3	<0.3	<0.3	<0.3
Chromium	mg/kg	2.0	64	5.6	12	8.0	5.8	7.0	5.9	7.2	12	8.6	11	10
Cobalt	mg/kg	1.0	40	2.3	5.2	3.1	2.5	2.6	2.0	2.8	5.8	5.9	4.7	4.3
Copper	mg/kg	2.0	63	8.2	9.9	7.3	4.0	5.0	4.9	4.6	7.1	14	6.5	6.1
Iron	mg/kg	50	-	7700	15000	11000	8500	9200	8200	10000	17000	15000	14000	13000
Lead	mg/kg	0.50	70	120	12	15	10	9.8	75	13	11	48	3.9	3.7
Lithium	mg/kg	2.0	-	7.0	17	12	8.4	10	5.7	9.2	19	15	15	14
Manganese	mg/kg	2.0	-	520	250	400	200	180	460	290	340	400	200	190
Mercury	mg/kg	0.10	6.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	2.0	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Nickel	mg/kg	2.0	50	4.3	11	6.8	5.5	7.3	3.7	6.2	12	11	11	9.7
Rubidium	mg/kg	2.0	-	7.8	15	10	7.9	9.8	7.7	9.0	16	5.3	14	13
Selenium	mg/kg	1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	mg/kg	0.50	20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	mg/kg	5.0	-	7.1	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7.8	<5.0	<5.0
Thallium	mg/kg	0.10	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.12	<0.1	<0.1	<0.1
Tin	mg/kg	2.0	5	<2.0	<2.0	<2.0	<2.0	<2.0	6.5	<2.0	<2.0	<2.0	<2.0	<2.0
Uranium	mg/kg	0.10	23	0.31	0.45	0.26	0.26	0.30	0.26	0.28	0.52	0.53	0.47	0.42
Vanadium	mg/kg	2.0	130	9.0	17	16	10	11	12	12	15	15	11	11
Zinc	mg/kg	5.0	200	78	30	33	18	24	76	160	49	36	20	19

- Notes:**
1. RDL = laboratory's reportable detection limit
 2. "<" RDL = parameter not detected above RDL
 3. mbg = metres below grade
 4. "-" = no guideline available
 5. (Lab Dup) = laboratory QA/QC duplicate
 6. DUP = field QA/QC duplicate
 7. CCME = Canadian Council of Ministers of the Environment Soil Quality Guidelines (SQGs) for the Protection of Environmental and Human Health (CCME Online, 2013)
 8. **Bold & Underlined** = parameter concentration exceeds the applicable guideline
 9. **Italics and Underlined** = parameter RDL exceeds the CCME (CCME Online 2013) Agricultural guidelines for soil

TABLE D-1

SOIL INORGANIC CHEMISTRY - METALS
Public Works Government Services Canada
Sheffield Farms, Centreville, Nova Scotia
Stantec Consulting Ltd. Project No. 121412659

Parameters	Units	RDL	CCME Agricultural SQGs	Sample ID													
				TH205-1	TH205-2	DUP 5	TH205-3	TH206-1	TH206-2	TH207-1	TH207-2	TH208-1	TH208-2	TH208-3			
				Sample Depth (mbg):				0.0-0.3	0.3-0.6	0.3-0.6	0.6-0.9	0.0-0.3	0.3-0.6	0.0-0.3	0.3-0.6	0.0-0.3	0.3-0.6
Sample Date:				23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	Lab Dup
Aluminum	mg/kg	10	-	5800	12000	11000	11000	7300	7400	10000	6500	8000	8300	5600	5200		
Antimony	mg/kg	2.0	20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Arsenic	mg/kg	2.0	12	<2.0	2.3	2.2	2.5	3.8	5.1	2.5	2.0	2.0	<2.0	<2.0	<2.0	<2.0	
Barium	mg/kg	5.0	750	14	21	17	32	26	47	15	8.5	17	14	12	11		
Beryllium	mg/kg	2.0	4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Bismuth	mg/kg	2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Boron	mg/kg	50	2	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	
Cadmium	mg/kg	0.30	1.4	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	
Chromium	mg/kg	2.0	64	5.0	11	8.8	11	6.5	8.9	8.0	5.6	6.3	7.3	5.6	5.4		
Cobalt	mg/kg	1.0	40	2.2	4.3	3.9	5.6	2.4	3.1	3.1	3.2	2.4	3.5	2.7	2.5		
Copper	mg/kg	2.0	63	4.2	6.7	5.9	9.0	6.1	17	4.6	2.7	3.3	3.4	2.6	2.6		
Iron	mg/kg	50	-	7400	13000	11000	15000	9100	10000	12000	7800	8700	9200	7000	6800		
Lead	mg/kg	0.50	70	47	8.1	3.3	6.5	68	230	8.4	2.8	26	8.4	2.8	2.3		
Lithium	mg/kg	2.0	-	6.5	16	13	15	8.2	9.6	11	8.3	8.8	10	8.5	8.0		
Manganese	mg/kg	2.0	-	190	230	180	300	340	330	160	180	180	160	140	130		
Mercury	mg/kg	0.10	6.6	<0.1	<0.1	<0.1	<0.1	0.11	0.17	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Molybdenum	mg/kg	2.0	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Nickel	mg/kg	2.0	50	3.6	11	9.9	12	4.7	6.3	6.8	7.0	4.9	7.1	5.5	5.2		
Rubidium	mg/kg	2.0	-	6.0	12	11	12	9.7	10	10	6.7	8.5	11	8.8	8.5		
Selenium	mg/kg	1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Silver	mg/kg	0.50	20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Strontium	mg/kg	5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	9.4	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
Thallium	mg/kg	0.10	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Tin	mg/kg	2.0	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Uranium	mg/kg	0.10	23	0.26	0.42	0.32	0.43	0.40	0.47	0.37	0.31	0.30	0.35	0.29	0.26		
Vanadium	mg/kg	2.0	130	8.9	14	11	14	10	12	12	7.2	9.4	8.7	6.3	5.9		
Zinc	mg/kg	5.0	200	22	24	19	22	41	86	22	10	35	21	35	33		

- Notes:**
1. RDL = laboratory's reportable detection limit
 2. "<" RDL = parameter not detected above RDL
 3. mbg = metres below grade
 4. "-" = no guideline available
 5. (Lab Dup) = laboratory QA/QC duplicate
 6. DUP = field QA/QC duplicate
 7. CCME = Canadian Council of Ministers of the Environment Soil Quality Guidelines (SQGs) for the Protection of Environmental and Human Health (CCME Online, 2013)
 8. **Bold & Underlined** = parameter concentration exceeds the applicable guideline
 9. ***Italics and Underlined*** = parameter RDL exceeds the CCME (CCME Online 2013) Agricultural guidelines for soil

TABLE D-1

SOIL INORGANIC CHEMISTRY - METALS
Public Works Government Services Canada
Sheffield Farms, Centreville, Nova Scotia
Stantec Consulting Ltd. Project No. 121412659

Parameters	Units	RDL	CCME Agricultural SQGs	Sample ID												
				TH209-1	TH209-2	TH210-1	TH210-2	DUP 3	TH211-1		TH212-1	TH212-2	TH213-1	TH213-2	TH213-3	
				Sample Depth (mbg):				0.0-0.3	0.3-0.6	0.0-0.3	0.3-0.6	0.3-0.6	0.0-0.3		0.0-0.3	0.3-0.6
Sample Date:				23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	Lab Dup	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13	23-Aug-13
Aluminum	mg/kg	10	-	6000	7000	3500	6800	10000	5800	5400	7600	8400	7600	8100	5100	
Antimony	mg/kg	2.0	20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Arsenic	mg/kg	2.0	12	3.3	2.4	2.6	4.2	3.1	4.7	4.3	2.8	<2.0	25	4.7	5.1	
Barium	mg/kg	5.0	750	21	15	21	40	30	41	37	18	13	33	18	13	
Beryllium	mg/kg	2.0	4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Bismuth	mg/kg	2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Boron	mg/kg	50	2	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	
Cadmium	mg/kg	0.30	1.4	<0.3	<0.3	<0.3	<0.3	<0.3	0.32	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	
Chromium	mg/kg	2.0	64	5.4	6.2	4.7	6.6	8.0	6.3	5.8	7.3	10	6.6	7.2	4.6	
Cobalt	mg/kg	1.0	40	2.2	2.4	2.3	2.9	3.5	2.5	2.3	3.1	2.6	2.7	3.1	2.1	
Copper	mg/kg	2.0	63	6.4	5.3	8.5	14	6.8	16	15	7.7	5.0	24	7.8	9.8	
Iron	mg/kg	50	-	7700	8300	7000	11000	11000	8400	7800	10000	14000	9500	11000	6400	
Lead	mg/kg	0.50	70	69	33	120	110	33	370	340	43	10	99	14	42	
Lithium	mg/kg	2.0	-	7.0	8.3	5.9	9.3	13	7.4	6.6	9.7	7.4	8.9	9.6	6.5	
Manganese	mg/kg	2.0	-	320	200	180	380	270	300	280	180	200	350	150	150	
Mercury	mg/kg	0.10	6.6	0.36	0.11	<0.1	0.15	0.11	0.84	0.75	<0.1	<0.1	0.17	<0.1	<0.1	
Molybdenum	mg/kg	2.0	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	
Nickel	mg/kg	2.0	50	4.4	4.9	4.7	6.1	8.0	4.8	4.5	6.3	4.4	5.6	6.8	4.4	
Rubidium	mg/kg	2.0	-	6.7	8.1	4.1	7.8	10	7.9	7.3	9.7	8.4	11	13	8.1	
Selenium	mg/kg	1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	
Silver	mg/kg	0.50	20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Strontium	mg/kg	5.0	-	<5.0	<5.0	<5.0	6.5	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	
Thallium	mg/kg	0.10	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Tin	mg/kg	2.0	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	5.1	
Uranium	mg/kg	0.10	23	0.36	0.31	0.29	0.29	0.28	0.34	0.29	0.40	0.35	0.26	0.34	0.22	
Vanadium	mg/kg	2.0	130	8.7	8.7	8.5	9.7	11	9.8	8.5	10	26	9.2	9.0	6.2	
Zinc	mg/kg	5.0	200	34	25	28	75	41	200	180	52	25	46	22	19	

- Notes:**
1. RDL = laboratory's reportable detection limit
 2. "<" RDL = parameter not detected above RDL
 3. mbg = metres below grade
 4. "-" = no guideline available
 5. (Lab Dup) = laboratory QA/QC duplicate
 6. DUP = field QA/QC duplicate
 7. CCME = Canadian Council of Ministers of the Environment Soil Quality Guidelines (SQGs) for the Protection of Environmental and Human Health (CCME Online, 2013)
 8. **Bold & Underlined** = parameter concentration exceeds the applicable guideline
 9. *Italics and Underlined* = parameter RDL exceeds the CCME (CCME Online 2013) Agricultural guidelines for soil

TABLE D-1

SOIL INORGANIC CHEMISTRY - METALS
Public Works Government Services Canada
Sheffield Farms, Centreville, Nova Scotia
Stantec Consulting Ltd. Project No. 121412659

Parameters	Units	RDL	CCME Agricultural SQGs	Sample ID													
				TH214-1	TH214-2		TH215-1	TH216-1	TH216-2	TH217-1	DUP 2	TH217-2		TH217-3			
				Sample Depth (mbg):			0.0-0.3	0.3-0.6		0.0-0.3	0.0-0.3	0.3-0.6	0.0-0.3	0.0-0.3	0.3-0.6		0.6-0.9
				Sample Date:			22-Aug-13	22-Aug-13	Lab Dup	23-Aug-13	22-Aug-13	22-Aug-13	22-Aug-13	22-Aug-13	22-Aug-13	22-Aug-13	Lab Dup
Aluminum	mg/kg	10	-	7000	8200	9200	8100	11000	4800	4400	5300	7100	6900	6000			
Antimony	mg/kg	2.0	20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0			
Arsenic	mg/kg	2.0	12	6.2	4.5	5.1	4.3	<u>13</u>	<u>14</u>	9.9	9.9	<u>15</u>	12	2.5			
Barium	mg/kg	5.0	750	57	29	32	27	39	25	17	22	21	25	11			
Beryllium	mg/kg	2.0	4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0			
Bismuth	mg/kg	2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0			
Boron	mg/kg	50	2	<u><50</u>	<u><50</u>	<u><50</u>	<u><50</u>	<u><50</u>	<u><50</u>	<u><50</u>	<u><50</u>	<u><50</u>	<u><50</u>	<u><50</u>			
Cadmium	mg/kg	0.30	1.4	0.30	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3			
Chromium	mg/kg	2.0	64	8.8	7.9	9.4	9.0	14	4.9	5.1	6.3	6.1	6.1	4.9			
Cobalt	mg/kg	1.0	40	2.6	3.2	3.6	3.1	8.0	2.5	2.4	3.3	2.7	2.6	2.0			
Copper	mg/kg	2.0	63	23	12	15	9.1	17	36	38	<u>190</u>	<u>88</u>	<u>75</u>	18			
Iron	mg/kg	50	-	10000	11000	12000	10000	20000	6900	7500	9300	9100	8700	7900			
Lead	mg/kg	0.50	70	<u>310</u>	<u>110</u>	<u>140</u>	<u>72</u>	30	<u>140</u>	50	32	<u>77</u>	56	14			
Lithium	mg/kg	2.0	-	8.3	10	12	10	23	6.6	7.0	8.8	8.9	7.9	6.8			
Manganese	mg/kg	2.0	-	400	250	280	280	350	210	160	230	370	340	130			
Mercury	mg/kg	0.10	6.6	0.28	0.14	0.16	<0.1	<0.1	<0.1	<0.1	<0.1	0.10	<0.1	<0.1			
Molybdenum	mg/kg	2.0	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0			
Nickel	mg/kg	2.0	50	5.6	6.9	7.8	6.3	15	4.8	5.5	7.7	5.0	4.8	3.8			
Rubidium	mg/kg	2.0	-	10	12	13	13	7.4	7.8	6.7	9.4	12	10	14			
Selenium	mg/kg	1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			
Silver	mg/kg	0.50	20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5			
Strontium	mg/kg	5.0	-	<5.0	<5.0	5.7	<5.0	6.6	<5.0	<5.0	<5.0	<5.0	8.0	<5.0			
Thallium	mg/kg	0.10	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1			
Tin	mg/kg	2.0	5	2.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0			
Uranium	mg/kg	0.10	23	0.38	0.40	0.39	0.66	0.73	0.28	0.32	0.44	0.26	0.25	0.22			
Vanadium	mg/kg	2.0	130	11	12	13	11	25	7.7	6.9	11	9.6	11	7.3			
Zinc	mg/kg	5.0	200	140	47	54	43	33	43	27	25	40	35	15			

- Notes:**
1. RDL = laboratory's reportable detection limit
 2. "<" RDL = parameter not detected above RDL
 3. mbg = metres below grade
 4. "-" = no guideline available
 5. (Lab Dup) = laboratory QA/QC duplicate
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 7. CCME = Canadian Council of Ministers of the Environment Soil Quality Guidelines (SQGs) for the Protection of Environmental and Human Health (CCME Online, 2013)
 8. **Bold & Underlined** = parameter concentration exceeds the applicable guideline
 9. *Italics and Underlined* = parameter RDL exceeds the CCME (CCME Online 2013) Agricultural guidelines for soil

TABLE D-1

SOIL INORGANIC CHEMISTRY - METALS
Public Works Government Services Canada
Sheffield Farms, Centreville, Nova Scotia
Stantec Consulting Ltd. Project No. 121412659

Parameters	Units	RDL	CCME Agricultural SQGs	Sample ID					
				TH218-1	TH218-2	TH218-3	TH219-1	TH219-2	TH219-3
				Sample Depth (mbg):			0.0-0.3	0.3-0.6	0.6-0.9
Sample Date:			22-Aug-13	22-Aug-13	22-Aug-13	22-Aug-13	22-Aug-13	22-Aug-13	22-Aug-13
Aluminum	mg/kg	10	-	9100	9700	6500	9000	9900	9000
Antimony	mg/kg	2.0	20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic	mg/kg	2.0	12	3.2	2.4	<2.0	3.5	5.4	3.3
Barium	mg/kg	5.0	750	20	19	9.1	18	20	21
Beryllium	mg/kg	2.0	4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Bismuth	mg/kg	2.0	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Boron	mg/kg	50	2	<50	<50	<50	<50	<50	<50
Cadmium	mg/kg	0.30	1.4	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium	mg/kg	2.0	64	6.4	6.7	6.4	9.7	9.7	10
Cobalt	mg/kg	1.0	40	2.5	2.5	3.1	4.2	4.3	4.7
Copper	mg/kg	2.0	63	6.2	5.1	3.3	8.6	13	8.9
Iron	mg/kg	50	-	11000	11000	8100	13000	13000	14000
Lead	mg/kg	0.50	70	56	38	2.9	7.3	18	7.7
Lithium	mg/kg	2.0	-	9.7	10	10	14	14	14
Manganese	mg/kg	2.0	-	240	190	130	180	220	240
Mercury	mg/kg	0.10	6.6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Molybdenum	mg/kg	2.0	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Nickel	mg/kg	2.0	50	5.1	6.1	7.0	10	9.9	10
Rubidium	mg/kg	2.0	-	9.8	9.3	9.9	11	11	11
Selenium	mg/kg	1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	mg/kg	0.50	20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	mg/kg	5.0	-	5.6	5.3	<5.0	<5.0	<5.0	<5.0
Thallium	mg/kg	0.10	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tin	mg/kg	2.0	5	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Uranium	mg/kg	0.10	23	0.28	0.31	0.21	0.39	0.43	0.45
Vanadium	mg/kg	2.0	130	11	11	7.3	13	14	14
Zinc	mg/kg	5.0	200	35	25	15	24	28	23

- Notes:**
1. RDL = laboratory's reportable detection limit
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 3. mbg = metres below grade
 4. "-" = no guideline available
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TABLE D-2 SOIL BLIND FIELD DUPLICATE RESULTS
Public Works Government Services Canada
Sheffield Farms, Centreville, Nova Scotia
Stantec Consulting Ltd. Project No. 121412659

Parameters	TH204-4	DUP 1	Difference	Average	RPD (%)	TH217-1	DUP 2	Difference	Average	RPD (%)	TH210-2	DUP 3	Difference	Average	RPD (%)	TH202-2	DUP 4	Difference	Average	RPD (%)	TH205-2	DUP 5	Difference	Average	RPD (%)
	0.9-1.2	0.9-1.2				0.0-0.3	0.0-0.3				0.3-0.6	0.3-0.6				0.3-0.6	0.3-0.6				0.3-0.6	0.3-0.6			
	22-Aug-13	22-Aug-13				-	22-Aug-13				22-Aug-13	-				23-Aug-13	23-Aug-13				-	23-Aug-13			
Aluminum	9800	8700	1100	9250	11.89	4400	5300	900	4850	18.56	6800	10000	3200	8400	38.10	10000	11000	1000	10500	9.52	12000	11000	1000	11500	8.70
Antimony	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC
Arsenic	2.9	2.9	0	2.9	0.00	9.9	9.9	0	9.9	0.00	4.2	3.1	1.1	3.65	30.14	2.2	2.3	0.1	2.25	4.44	2.3	2.2	0.1	2.25	4.44
Barium	20	19	1	19.5	5.13	17	22	5	19.5	25.64	40	30	10	35	28.57	16	18	2	17	11.76	21	17	4	19	21.05
Beryllium	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC
Bismuth	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC
Boron	<50	<50	NC	NC	NC	<50	<50	NC	NC	NC	<50	<50	NC	NC	NC	<50	<50	NC	NC	NC	<50	<50	NC	NC	NC
Cadmium	<0.3	<0.3	NC	NC	NC	<0.3	<0.3	NC	NC	NC	<0.3	<0.3	NC	NC	NC	<0.3	<0.3	NC	NC	NC	<0.3	<0.3	NC	NC	NC
Chromium	11	10	1	10.5	9.52	5.1	6.3	1.2	5.7	21.05	6.6	8.0	1.4	7.3	19.18	5.8	7.0	1.2	6.4	18.75	11	8.8	2.2	9.9	22.22
Cobalt	4.7	4.3	0.4	4.5	8.89	2.4	3.3	0.9	2.85	31.58	2.9	3.5	0.6	3.2	18.75	2.5	2.6	0.1	2.55	3.92	4.3	3.9	0.4	4.1	9.76
Copper	6.5	6.1	0.4	6.3	6.35	38	190	152	114	133.33	14	6.8	7.2	10.4	69.23	4.0	5.0	1	4.5	22.22	6.7	5.9	0.8	6.3	12.70
Iron	14000	13000	1000	13500	7.41	7500	9300	1800	8400	21.43	11000	11000	0	11000	0.00	8500	9200	700	8850	7.91	13000	11000	2000	12000	16.67
Lead	3.9	3.7	0.2	3.8	5.26	50	32	18	41	43.90	110	33	77	71.5	107.69	10	9.8	0.2	9.9	2.02	8.1	3.3	4.8	5.7	84.21
Lithium	15	14	1	14.5	6.90	7.0	8.8	1.8	7.9	22.78	9.3	13	3.7	11.15	33.18	8.4	10	1.6	9.2	17.39	16	13	3	14.5	20.69
Manganese	200	190	10	195	5.13	160	230	70	195	35.90	380	270	110	325	33.85	200	180	20	190	10.53	230	180	50	205	24.39
Mercury	<0.1	<0.1	NC	NC	NC	<0.1	<0.1	NC	NC	NC	0.15	0.11	0.04	0.13	30.77	<0.1	<0.1	NC	NC	NC	<0.1	<0.1	NC	NC	NC
Molybdenum	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC
Nickel	11	9.7	1.3	10.35	12.56	5.5	7.7	2.2	6.6	33.33	6.1	8.0	1.9	7.05	26.95	5.5	7.3	1.8	6.4	28.13	11	9.9	1.1	10.45	10.53
Rubidium	14	13	1	13.5	7.41	6.7	9.4	2.7	8.05	33.54	7.8	10	2.2	8.9	24.72	7.9	9.8	1.9	8.85	21.47	12	11	1	11.5	8.70
Selenium	<1.0	<1.0	NC	NC	NC	<1.0	<1.0	NC	NC	NC	<1.0	<1.0	NC	NC	NC	<1.0	<1.0	NC	NC	NC	<1.0	<1.0	NC	NC	NC
Silver	<0.5	<0.5	NC	NC	NC	<0.5	<0.5	NC	NC	NC	<0.5	<0.5	NC	NC	NC	<0.5	<0.5	NC	NC	NC	<0.5	<0.5	NC	NC	NC
Strontium	<5.0	<5.0	NC	NC	NC	<5.0	<5.0	NC	NC	NC	6.5	<5.0	NC	6.5	NC	<5.0	<5.0	NC	NC	NC	<5.0	<5.0	NC	NC	NC
Thallium	<0.1	<0.1	NC	NC	NC	<0.1	<0.1	NC	NC	NC	<0.1	<0.1	NC	NC	NC	<0.1	<0.1	NC	NC	NC	<0.1	<0.1	NC	NC	NC
Tin	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC	<2.0	<2.0	NC	NC	NC
Uranium	0.47	0.42	0.05	0.445	11.24	0.32	0.44	0.12	0.38	31.58	0.29	0.28	0.01	0.285	3.51	0.26	0.30	0.04	0.28	14.29	0.42	0.32	0.1	0.37	27.03
Vanadium	11	11	0	11	0.00	6.9	11	4.1	8.95	45.81	9.7	11	1.3	10.35	12.56	10	11	1	10.5	9.52	14	11	3	12.5	24.00
Zinc	20	19	1	19.5	5.13	27	25	2	26	7.69	75	41	34	58	58.62	18	24	6	21	28.57	24	19	5	21.5	23.26

Notes: NC = Not calculated
Bold & Underlined = exceeds the Maxxam National Environmental QA/QC Interpretation Guide RPD value for soil for individual metals parameters.

APPENDIX E

Laboratory Analysis Reports

Your P.O. #: 16300R-20
 Your Project #: 121412659
 Site Location: SHEFFIELD FARMS
 Your C.O.C. #: ES773313

Attention: DON CAREY
 Stantec Consulting Ltd
 Dartmouth - Standing Offer
 40 Highfield Park Drive
 Suite 102
 Dartmouth, NS
 B3A 0A3

Report Date: 2013/09/04

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3E1722
Received: 2013/08/26, 13:13

Sample Matrix: Soil
 # Samples Received: 48

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Metals Solids Acid Extr. ICPMS	44	2013/08/29	2013/08/30	ATL SOP 00058	Based on EPA6020A
Metals Solids Acid Extr. ICPMS	4	2013/09/04	2013/09/04	ATL SOP 00058	Based on EPA6020A

Remarks:

Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Marie (McNair) Muise, Project Manager
 Email: MMuise@maxxam.ca
 Phone# (902) 420-0203 Ext:253

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Page 1 of 22

Maxxam Job #: B3E1722
Report Date: 2013/09/04

Stantec Consulting Ltd
Client Project #: 121412659
Site Location: SHEFFIELD FARMS
Your P.O. #: 16300R-20
Sampler Initials: LM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		SU4963	SU4963	SU4964	SU4965	SU4966		
Sampling Date		2013/08/23	2013/08/23	2013/08/23	2013/08/23	2013/08/23		
COC Number		ES773313	ES773313	ES773313	ES773313	ES773313		
	Units	TH208-3	TH208-3 Lab-Dup	TH206-1	TH206-2	TH203-1	RDL	QC Batch

Metals								
Acid Extractable Aluminum (Al)	mg/kg	5600	5200	7300	7400	5700	10	3331568
Acid Extractable Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	2.0	3331568
Acid Extractable Arsenic (As)	mg/kg	ND	ND	3.8	5.1	ND	2.0	3331568
Acid Extractable Barium (Ba)	mg/kg	12	11	26	47	34	5.0	3331568
Acid Extractable Beryllium (Be)	mg/kg	ND	ND	ND	ND	ND	2.0	3331568
Acid Extractable Bismuth (Bi)	mg/kg	ND	ND	ND	ND	ND	2.0	3331568
Acid Extractable Boron (B)	mg/kg	ND	ND	ND	ND	ND	50	3331568
Acid Extractable Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	0.30	3331568
Acid Extractable Chromium (Cr)	mg/kg	5.6	5.4	6.5	8.9	5.9	2.0	3331568
Acid Extractable Cobalt (Co)	mg/kg	2.7	2.5	2.4	3.1	2.0	1.0	3331568
Acid Extractable Copper (Cu)	mg/kg	2.6	2.6	6.1	17	4.9	2.0	3331568
Acid Extractable Iron (Fe)	mg/kg	7000	6800	9100	10000	8200	50	3331568
Acid Extractable Lead (Pb)	mg/kg	2.8	2.3	68	230	75	0.50	3331568
Acid Extractable Lithium (Li)	mg/kg	8.5	8.0	8.2	9.6	5.7	2.0	3331568
Acid Extractable Manganese (Mn)	mg/kg	140	130	340	330	460	2.0	3331568
Acid Extractable Mercury (Hg)	mg/kg	ND	ND	0.11	0.17	ND	0.10	3331568
Acid Extractable Molybdenum (Mo)	mg/kg	ND	ND	ND	ND	ND	2.0	3331568
Acid Extractable Nickel (Ni)	mg/kg	5.5	5.2	4.7	6.3	3.7	2.0	3331568
Acid Extractable Rubidium (Rb)	mg/kg	8.8	8.5	9.7	10	7.7	2.0	3331568
Acid Extractable Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	1.0	3331568
Acid Extractable Silver (Ag)	mg/kg	ND	ND	ND	ND	ND	0.50	3331568
Acid Extractable Strontium (Sr)	mg/kg	ND	ND	ND	9.4	ND	5.0	3331568
Acid Extractable Thallium (Tl)	mg/kg	ND	ND	ND	ND	ND	0.10	3331568
Acid Extractable Tin (Sn)	mg/kg	ND	ND	ND	ND	6.5	2.0	3331568
Acid Extractable Uranium (U)	mg/kg	0.29	0.26	0.40	0.47	0.26	0.10	3331568
Acid Extractable Vanadium (V)	mg/kg	6.3	5.9	10	12	12	2.0	3331568
Acid Extractable Zinc (Zn)	mg/kg	35	33	41	86	76	5.0	3331568

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3E1722
Report Date: 2013/09/04

Stantec Consulting Ltd
Client Project #: 121412659
Site Location: SHEFFIELD FARMS
Your P.O. #: 16300R-20
Sampler Initials: LM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		SU4967		SU4968	SU4969	SU4970	SU4971		
Sampling Date		2013/08/23		2013/08/23	2013/08/23	2013/08/23	2013/08/23		
COC Number		ES773313		ES773313	ES773313	ES773313	ES773313		
	Units	TH203-2	QC Batch	TH203-3	TH201-1	TH201-2	TH202-1	RDL	QC Batch

Metals									
Acid Extractable Aluminum (Al)	mg/kg	8100	3331568	14000	5500	14000	11000	10	3331570
Acid Extractable Antimony (Sb)	mg/kg	ND	3331568	ND	ND	ND	ND	2.0	3331570
Acid Extractable Arsenic (As)	mg/kg	2.0	3331568	3.3	4.3	3.0	2.4	2.0	3331570
Acid Extractable Barium (Ba)	mg/kg	19	3331568	23	67	29	32	5.0	3331570
Acid Extractable Beryllium (Be)	mg/kg	ND	3331568	ND	ND	ND	ND	2.0	3331570
Acid Extractable Bismuth (Bi)	mg/kg	ND	3331568	ND	ND	ND	ND	2.0	3331570
Acid Extractable Boron (B)	mg/kg	ND	3331568	ND	ND	ND	ND	50	3331570
Acid Extractable Cadmium (Cd)	mg/kg	1.1	3331568	ND	ND	ND	ND	0.30	3331570
Acid Extractable Chromium (Cr)	mg/kg	7.2	3331568	12	5.6	12	8.0	2.0	3331570
Acid Extractable Cobalt (Co)	mg/kg	2.8	3331568	5.8	2.3	5.2	3.1	1.0	3331570
Acid Extractable Copper (Cu)	mg/kg	4.6	3331568	7.1	8.2	9.9	7.3	2.0	3331570
Acid Extractable Iron (Fe)	mg/kg	10000	3331568	17000	7700	15000	11000	50	3331570
Acid Extractable Lead (Pb)	mg/kg	13	3331568	11	120	12	15	0.50	3331570
Acid Extractable Lithium (Li)	mg/kg	9.2	3331568	19	7.0	17	12	2.0	3331570
Acid Extractable Manganese (Mn)	mg/kg	290	3331568	340	520	250	400	2.0	3331570
Acid Extractable Mercury (Hg)	mg/kg	ND	3331568	ND	ND	ND	ND	0.10	3331570
Acid Extractable Molybdenum (Mo)	mg/kg	ND	3331568	ND	ND	ND	ND	2.0	3331570
Acid Extractable Nickel (Ni)	mg/kg	6.2	3331568	12	4.3	11	6.8	2.0	3331570
Acid Extractable Rubidium (Rb)	mg/kg	9.0	3331568	16	7.8	15	10	2.0	3331570
Acid Extractable Selenium (Se)	mg/kg	ND	3331568	ND	ND	ND	ND	1.0	3331570
Acid Extractable Silver (Ag)	mg/kg	ND	3331568	ND	ND	ND	ND	0.50	3331570
Acid Extractable Strontium (Sr)	mg/kg	ND	3331568	ND	7.1	5.0	ND	5.0	3331570
Acid Extractable Thallium (Tl)	mg/kg	ND	3331568	0.12	ND	ND	ND	0.10	3331570
Acid Extractable Tin (Sn)	mg/kg	ND	3331568	ND	ND	ND	ND	2.0	3331570
Acid Extractable Uranium (U)	mg/kg	0.28	3331568	0.52	0.31	0.45	0.26	0.10	3331570
Acid Extractable Vanadium (V)	mg/kg	12	3331568	15	9.0	17	16	2.0	3331570
Acid Extractable Zinc (Zn)	mg/kg	160	3331568	49	78	30	33	5.0	3331570

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3E1722
Report Date: 2013/09/04

Stantec Consulting Ltd
Client Project #: 121412659
Site Location: SHEFFIELD FARMS
Your P.O. #: 16300R-20
Sampler Initials: LM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		SU4972		SU4973	SU4973	SU4974		
Sampling Date		2013/08/23		2013/08/23	2013/08/23	2013/08/23		
COC Number		ES773313		ES773313	ES773313	ES773313		
	Units	TH202-2	QC Batch	TH211-1	TH211-1 Lab-Dup	TH212-1	RDL	QC Batch

Metals								
Acid Extractable Aluminum (Al)	mg/kg	10000	3331570	5800	5400	7600	10	3331682
Acid Extractable Antimony (Sb)	mg/kg	ND	3331570	ND	ND	ND	2.0	3331682
Acid Extractable Arsenic (As)	mg/kg	2.2	3331570	4.7	4.3	2.8	2.0	3331682
Acid Extractable Barium (Ba)	mg/kg	16	3331570	41	37	18	5.0	3331682
Acid Extractable Beryllium (Be)	mg/kg	ND	3331570	ND	ND	ND	2.0	3331682
Acid Extractable Bismuth (Bi)	mg/kg	ND	3331570	ND	ND	ND	2.0	3331682
Acid Extractable Boron (B)	mg/kg	ND	3331570	ND	ND	ND	50	3331682
Acid Extractable Cadmium (Cd)	mg/kg	ND	3331570	0.32	ND	ND	0.30	3331682
Acid Extractable Chromium (Cr)	mg/kg	5.8	3331570	6.3	5.8	7.3	2.0	3331682
Acid Extractable Cobalt (Co)	mg/kg	2.5	3331570	2.5	2.3	3.1	1.0	3331682
Acid Extractable Copper (Cu)	mg/kg	4.0	3331570	16	15	7.7	2.0	3331682
Acid Extractable Iron (Fe)	mg/kg	8500	3331570	8400	7800	10000	50	3331682
Acid Extractable Lead (Pb)	mg/kg	10	3331570	370	340	43	0.50	3331682
Acid Extractable Lithium (Li)	mg/kg	8.4	3331570	7.4	6.6	9.7	2.0	3331682
Acid Extractable Manganese (Mn)	mg/kg	200	3331570	300	280	180	2.0	3331682
Acid Extractable Mercury (Hg)	mg/kg	ND	3331570	0.84	0.75	ND	0.10	3331682
Acid Extractable Molybdenum (Mo)	mg/kg	ND	3331570	ND	ND	ND	2.0	3331682
Acid Extractable Nickel (Ni)	mg/kg	5.5	3331570	4.8	4.5	6.3	2.0	3331682
Acid Extractable Rubidium (Rb)	mg/kg	7.9	3331570	7.9	7.3	9.7	2.0	3331682
Acid Extractable Selenium (Se)	mg/kg	ND	3331570	ND	ND	ND	1.0	3331682
Acid Extractable Silver (Ag)	mg/kg	ND	3331570	ND	ND	ND	0.50	3331682
Acid Extractable Strontium (Sr)	mg/kg	ND	3331570	ND	ND	ND	5.0	3331682
Acid Extractable Thallium (Tl)	mg/kg	ND	3331570	ND	ND	ND	0.10	3331682
Acid Extractable Tin (Sn)	mg/kg	ND	3331570	ND	ND	ND	2.0	3331682
Acid Extractable Uranium (U)	mg/kg	0.26	3331570	0.34	0.29	0.40	0.10	3331682
Acid Extractable Vanadium (V)	mg/kg	10	3331570	9.8	8.5	10	2.0	3331682
Acid Extractable Zinc (Zn)	mg/kg	18	3331570	200	180	52	5.0	3331682

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3E1722
Report Date: 2013/09/04

Stantec Consulting Ltd
Client Project #: 121412659
Site Location: SHEFFIELD FARMS
Your P.O. #: 16300R-20
Sampler Initials: LM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		SU4975	SU4976	SU4977	SU4978	SU4979		
Sampling Date		2013/08/23	2013/08/23	2013/08/23	2013/08/23	2013/08/23		
COC Number		ES773313	ES773313	ES773313	ES773313	ES773313		
	Units	TH212-2	TH215-1	TH209-1	TH209-2	TH207-1	RDL	QC Batch

Metals								
Acid Extractable Aluminum (Al)	mg/kg	8400	8100	6000	7000	10000	10	3331570
Acid Extractable Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Arsenic (As)	mg/kg	ND	4.3	3.3	2.4	2.5	2.0	3331570
Acid Extractable Barium (Ba)	mg/kg	13	27	21	15	15	5.0	3331570
Acid Extractable Beryllium (Be)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Bismuth (Bi)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Boron (B)	mg/kg	ND	ND	ND	ND	ND	50	3331570
Acid Extractable Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	0.30	3331570
Acid Extractable Chromium (Cr)	mg/kg	10	9.0	5.4	6.2	8.0	2.0	3331570
Acid Extractable Cobalt (Co)	mg/kg	2.6	3.1	2.2	2.4	3.1	1.0	3331570
Acid Extractable Copper (Cu)	mg/kg	5.0	9.1	6.4	5.3	4.6	2.0	3331570
Acid Extractable Iron (Fe)	mg/kg	14000	10000	7700	8300	12000	50	3331570
Acid Extractable Lead (Pb)	mg/kg	10	72	69	33	8.4	0.50	3331570
Acid Extractable Lithium (Li)	mg/kg	7.4	10	7.0	8.3	11	2.0	3331570
Acid Extractable Manganese (Mn)	mg/kg	200	280	320	200	160	2.0	3331570
Acid Extractable Mercury (Hg)	mg/kg	ND	ND	0.36	0.11	ND	0.10	3331570
Acid Extractable Molybdenum (Mo)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Nickel (Ni)	mg/kg	4.4	6.3	4.4	4.9	6.8	2.0	3331570
Acid Extractable Rubidium (Rb)	mg/kg	8.4	13	6.7	8.1	10	2.0	3331570
Acid Extractable Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	1.0	3331570
Acid Extractable Silver (Ag)	mg/kg	ND	ND	ND	ND	ND	0.50	3331570
Acid Extractable Strontium (Sr)	mg/kg	ND	ND	ND	ND	ND	5.0	3331570
Acid Extractable Thallium (Tl)	mg/kg	ND	ND	ND	ND	ND	0.10	3331570
Acid Extractable Tin (Sn)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Uranium (U)	mg/kg	0.35	0.66	0.36	0.31	0.37	0.10	3331570
Acid Extractable Vanadium (V)	mg/kg	26	11	8.7	8.7	12	2.0	3331570
Acid Extractable Zinc (Zn)	mg/kg	25	43	34	25	22	5.0	3331570

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3E1722
Report Date: 2013/09/04

Stantec Consulting Ltd
Client Project #: 121412659
Site Location: SHEFFIELD FARMS
Your P.O. #: 16300R-20
Sampler Initials: LM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		SU4980	SU4981	SU4982	SU4983	SU4984		
Sampling Date		2013/08/23	2013/08/23	2013/08/23	2013/08/22	2013/08/22		
COC Number		ES773313	ES773313	ES773313	ES773313	ES773313		
	Units	TH207-2	TH208-1	TH208-2	TH218-1	TH218-2	RDL	QC Batch

Metals								
Acid Extractable Aluminum (Al)	mg/kg	6500	8000	8300	9100	9700	10	3331570
Acid Extractable Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Arsenic (As)	mg/kg	2.0	2.0	ND	3.2	2.4	2.0	3331570
Acid Extractable Barium (Ba)	mg/kg	8.5	17	14	20	19	5.0	3331570
Acid Extractable Beryllium (Be)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Bismuth (Bi)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Boron (B)	mg/kg	ND	ND	ND	ND	ND	50	3331570
Acid Extractable Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	0.30	3331570
Acid Extractable Chromium (Cr)	mg/kg	5.6	6.3	7.3	6.4	6.7	2.0	3331570
Acid Extractable Cobalt (Co)	mg/kg	3.2	2.4	3.5	2.5	2.5	1.0	3331570
Acid Extractable Copper (Cu)	mg/kg	2.7	3.3	3.4	6.2	5.1	2.0	3331570
Acid Extractable Iron (Fe)	mg/kg	7800	8700	9200	11000	11000	50	3331570
Acid Extractable Lead (Pb)	mg/kg	2.8	26	8.4	56	38	0.50	3331570
Acid Extractable Lithium (Li)	mg/kg	8.3	8.8	10	9.7	10	2.0	3331570
Acid Extractable Manganese (Mn)	mg/kg	180	180	160	240	190	2.0	3331570
Acid Extractable Mercury (Hg)	mg/kg	ND	ND	ND	ND	ND	0.10	3331570
Acid Extractable Molybdenum (Mo)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Nickel (Ni)	mg/kg	7.0	4.9	7.1	5.1	6.1	2.0	3331570
Acid Extractable Rubidium (Rb)	mg/kg	6.7	8.5	11	9.8	9.3	2.0	3331570
Acid Extractable Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	1.0	3331570
Acid Extractable Silver (Ag)	mg/kg	ND	ND	ND	ND	ND	0.50	3331570
Acid Extractable Strontium (Sr)	mg/kg	ND	ND	ND	5.6	5.3	5.0	3331570
Acid Extractable Thallium (Tl)	mg/kg	ND	ND	ND	ND	ND	0.10	3331570
Acid Extractable Tin (Sn)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Uranium (U)	mg/kg	0.31	0.30	0.35	0.28	0.31	0.10	3331570
Acid Extractable Vanadium (V)	mg/kg	7.2	9.4	8.7	11	11	2.0	3331570
Acid Extractable Zinc (Zn)	mg/kg	10	35	21	35	25	5.0	3331570

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3E1722
Report Date: 2013/09/04

Stantec Consulting Ltd
Client Project #: 121412659
Site Location: SHEFFIELD FARMS
Your P.O. #: 16300R-20
Sampler Initials: LM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		SU4985	SU4986	SU4987	SU4987	SU4988		
Sampling Date		2013/08/22	2013/08/22	2013/08/22	2013/08/22	2013/08/23		
COC Number		ES773313	ES773313	ES773313	ES773313	ES773313		
	Units	TH218-3	TH214-1	TH214-2	TH214-2 Lab-Dup	TH210-1	RDL	QC Batch

Metals								
Acid Extractable Aluminum (Al)	mg/kg	6500	7000	8200	9200	3500	10	3331570
Acid Extractable Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Arsenic (As)	mg/kg	ND	6.2	4.5	5.1	2.6	2.0	3331570
Acid Extractable Barium (Ba)	mg/kg	9.1	57	29	32	21	5.0	3331570
Acid Extractable Beryllium (Be)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Bismuth (Bi)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Boron (B)	mg/kg	ND	ND	ND	ND	ND	50	3331570
Acid Extractable Cadmium (Cd)	mg/kg	ND	0.30	ND	ND	ND	0.30	3331570
Acid Extractable Chromium (Cr)	mg/kg	6.4	8.8	7.9	9.4	4.7	2.0	3331570
Acid Extractable Cobalt (Co)	mg/kg	3.1	2.6	3.2	3.6	2.3	1.0	3331570
Acid Extractable Copper (Cu)	mg/kg	3.3	23	12	15	8.5	2.0	3331570
Acid Extractable Iron (Fe)	mg/kg	8100	10000	11000	12000	7000	50	3331570
Acid Extractable Lead (Pb)	mg/kg	2.9	310	110	140	120	0.50	3331570
Acid Extractable Lithium (Li)	mg/kg	10	8.3	10	12	5.9	2.0	3331570
Acid Extractable Manganese (Mn)	mg/kg	130	400	250	280	180	2.0	3331570
Acid Extractable Mercury (Hg)	mg/kg	ND	0.28	0.14	0.16	ND	0.10	3331570
Acid Extractable Molybdenum (Mo)	mg/kg	ND	ND	ND	ND	ND	2.0	3331570
Acid Extractable Nickel (Ni)	mg/kg	7.0	5.6	6.9	7.8	4.7	2.0	3331570
Acid Extractable Rubidium (Rb)	mg/kg	9.9	10	12	13	4.1	2.0	3331570
Acid Extractable Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	1.0	3331570
Acid Extractable Silver (Ag)	mg/kg	ND	ND	ND	ND	ND	0.50	3331570
Acid Extractable Strontium (Sr)	mg/kg	ND	ND	ND	5.7	ND	5.0	3331570
Acid Extractable Thallium (Tl)	mg/kg	ND	ND	ND	ND	ND	0.10	3331570
Acid Extractable Tin (Sn)	mg/kg	ND	2.1	ND	ND	ND	2.0	3331570
Acid Extractable Uranium (U)	mg/kg	0.21	0.38	0.40	0.39	0.29	0.10	3331570
Acid Extractable Vanadium (V)	mg/kg	7.3	11	12	13	8.5	2.0	3331570
Acid Extractable Zinc (Zn)	mg/kg	15	140	47	54	28	5.0	3331570

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QC Batch = Quality Control Batch

Maxxam Job #: B3E1722
Report Date: 2013/09/04

Stantec Consulting Ltd
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Your P.O. #: 16300R-20
Sampler Initials: LM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		SU4989		SU4990	SU4991	SU4992	SU4993		
Sampling Date		2013/08/23		2013/08/23	2013/08/23	2013/08/23	2013/08/22		
COC Number		ES773313		ES773313	ES773313	ES773313	ES773313		
	Units	TH210-2	QC Batch	TH213-1	TH213-2	TH213-3	TH216-1	RDL	QC Batch

Metals									
Acid Extractable Aluminum (Al)	mg/kg	6800	3331570	7600	8100	5100	11000	10	3331682
Acid Extractable Antimony (Sb)	mg/kg	ND	3331570	ND	ND	ND	ND	2.0	3331682
Acid Extractable Arsenic (As)	mg/kg	4.2	3331570	25	4.7	5.1	13	2.0	3331682
Acid Extractable Barium (Ba)	mg/kg	40	3331570	33	18	13	39	5.0	3331682
Acid Extractable Beryllium (Be)	mg/kg	ND	3331570	ND	ND	ND	ND	2.0	3331682
Acid Extractable Bismuth (Bi)	mg/kg	ND	3331570	ND	ND	ND	ND	2.0	3331682
Acid Extractable Boron (B)	mg/kg	ND	3331570	ND	ND	ND	ND	50	3331682
Acid Extractable Cadmium (Cd)	mg/kg	ND	3331570	ND	ND	ND	ND	0.30	3331682
Acid Extractable Chromium (Cr)	mg/kg	6.6	3331570	6.6	7.2	4.6	14	2.0	3331682
Acid Extractable Cobalt (Co)	mg/kg	2.9	3331570	2.7	3.1	2.1	8.0	1.0	3331682
Acid Extractable Copper (Cu)	mg/kg	14	3331570	24	7.8	9.8	17	2.0	3331682
Acid Extractable Iron (Fe)	mg/kg	11000	3331570	9500	11000	6400	20000	50	3331682
Acid Extractable Lead (Pb)	mg/kg	110	3331570	99	14	42	30	0.50	3331682
Acid Extractable Lithium (Li)	mg/kg	9.3	3331570	8.9	9.6	6.5	23	2.0	3331682
Acid Extractable Manganese (Mn)	mg/kg	380	3331570	350	150	150	350	2.0	3331682
Acid Extractable Mercury (Hg)	mg/kg	0.15	3331570	0.17	ND	ND	ND	0.10	3331682
Acid Extractable Molybdenum (Mo)	mg/kg	ND	3331570	ND	ND	ND	ND	2.0	3331682
Acid Extractable Nickel (Ni)	mg/kg	6.1	3331570	5.6	6.8	4.4	15	2.0	3331682
Acid Extractable Rubidium (Rb)	mg/kg	7.8	3331570	11	13	8.1	7.4	2.0	3331682
Acid Extractable Selenium (Se)	mg/kg	ND	3331570	ND	ND	ND	ND	1.0	3331682
Acid Extractable Silver (Ag)	mg/kg	ND	3331570	ND	ND	ND	ND	0.50	3331682
Acid Extractable Strontium (Sr)	mg/kg	6.5	3331570	ND	ND	ND	6.6	5.0	3331682
Acid Extractable Thallium (Tl)	mg/kg	ND	3331570	ND	ND	ND	ND	0.10	3331682
Acid Extractable Tin (Sn)	mg/kg	ND	3331570	ND	ND	5.1	ND	2.0	3331682
Acid Extractable Uranium (U)	mg/kg	0.29	3331570	0.26	0.34	0.22	0.73	0.10	3331682
Acid Extractable Vanadium (V)	mg/kg	9.7	3331570	9.2	9.0	6.2	25	2.0	3331682
Acid Extractable Zinc (Zn)	mg/kg	75	3331570	46	22	19	33	5.0	3331682

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Maxxam Job #: B3E1722
Report Date: 2013/09/04

Stantec Consulting Ltd
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Site Location: SHEFFIELD FARMS
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Sampler Initials: LM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		SU4994	SU4995	SU4996	SU4997	SU4998		
Sampling Date		2013/08/22	2013/08/22	2013/08/22	2013/08/22	2013/08/22		
COC Number		ES773313	ES773313	ES773313	ES773313	ES773313		
	Units	TH216-2	TH219-1	TH219-2	TH219-3	TH204-1	RDL	QC Batch

Metals								
Acid Extractable Aluminum (Al)	mg/kg	4800	9000	9900	9000	6400	10	3331682
Acid Extractable Antimony (Sb)	mg/kg	ND	ND	ND	ND	ND	2.0	3331682
Acid Extractable Arsenic (As)	mg/kg	14	3.5	5.4	3.3	7.8	2.0	3331682
Acid Extractable Barium (Ba)	mg/kg	25	18	20	21	35	5.0	3331682
Acid Extractable Beryllium (Be)	mg/kg	ND	ND	ND	ND	ND	2.0	3331682
Acid Extractable Bismuth (Bi)	mg/kg	ND	ND	ND	ND	ND	2.0	3331682
Acid Extractable Boron (B)	mg/kg	ND	ND	ND	ND	ND	50	3331682
Acid Extractable Cadmium (Cd)	mg/kg	ND	ND	ND	ND	ND	0.30	3331682
Acid Extractable Chromium (Cr)	mg/kg	4.9	9.7	9.7	10	8.6	2.0	3331682
Acid Extractable Cobalt (Co)	mg/kg	2.5	4.2	4.3	4.7	5.9	1.0	3331682
Acid Extractable Copper (Cu)	mg/kg	36	8.6	13	8.9	14	2.0	3331682
Acid Extractable Iron (Fe)	mg/kg	6900	13000	13000	14000	15000	50	3331682
Acid Extractable Lead (Pb)	mg/kg	140	7.3	18	7.7	48	0.50	3331682
Acid Extractable Lithium (Li)	mg/kg	6.6	14	14	14	15	2.0	3331682
Acid Extractable Manganese (Mn)	mg/kg	210	180	220	240	400	2.0	3331682
Acid Extractable Mercury (Hg)	mg/kg	ND	ND	ND	ND	ND	0.10	3331682
Acid Extractable Molybdenum (Mo)	mg/kg	ND	ND	ND	ND	ND	2.0	3331682
Acid Extractable Nickel (Ni)	mg/kg	4.8	10	9.9	10	11	2.0	3331682
Acid Extractable Rubidium (Rb)	mg/kg	7.8	11	11	11	5.3	2.0	3331682
Acid Extractable Selenium (Se)	mg/kg	ND	ND	ND	ND	ND	1.0	3331682
Acid Extractable Silver (Ag)	mg/kg	ND	ND	ND	ND	ND	0.50	3331682
Acid Extractable Strontium (Sr)	mg/kg	ND	ND	ND	ND	7.8	5.0	3331682
Acid Extractable Thallium (Tl)	mg/kg	ND	ND	ND	ND	ND	0.10	3331682
Acid Extractable Tin (Sn)	mg/kg	ND	ND	ND	ND	ND	2.0	3331682
Acid Extractable Uranium (U)	mg/kg	0.28	0.39	0.43	0.45	0.53	0.10	3331682
Acid Extractable Vanadium (V)	mg/kg	7.7	13	14	14	15	2.0	3331682
Acid Extractable Zinc (Zn)	mg/kg	43	24	28	23	36	5.0	3331682

ND = Not detected
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QC Batch = Quality Control Batch

Maxxam Job #: B3E1722
Report Date: 2013/09/04

Stantec Consulting Ltd
Client Project #: 121412659
Site Location: SHEFFIELD FARMS
Your P.O. #: 16300R-20
Sampler Initials: LM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		SU4999	SU5000		SU5001	SU5001	SU5002		
Sampling Date		2013/08/22	2013/08/22		2013/08/22	2013/08/22	2013/08/22		
COC Number		ES773313	ES773313		ES773313	ES773313	ES773313		
	Units	TH204-4	TH217-1	QC Batch	TH217-2	TH217-2 Lab-Dup	TH217-3	RDL	QC Batch

Metals									
Acid Extractable Aluminum (Al)	mg/kg	9800	4400	3331682	7100	6900	6000	10	3331953
Acid Extractable Antimony (Sb)	mg/kg	ND	ND	3331682	ND	ND	ND	2.0	3331953
Acid Extractable Arsenic (As)	mg/kg	2.9	9.9	3331682	15	12	2.5	2.0	3331953
Acid Extractable Barium (Ba)	mg/kg	20	17	3331682	21	25	11	5.0	3331953
Acid Extractable Beryllium (Be)	mg/kg	ND	ND	3331682	ND	ND	ND	2.0	3331953
Acid Extractable Bismuth (Bi)	mg/kg	ND	ND	3331682	ND	ND	ND	2.0	3331953
Acid Extractable Boron (B)	mg/kg	ND	ND	3331682	ND	ND	ND	50	3331953
Acid Extractable Cadmium (Cd)	mg/kg	ND	ND	3331682	ND	ND	ND	0.30	3331953
Acid Extractable Chromium (Cr)	mg/kg	11	5.1	3331682	6.1	6.1	4.9	2.0	3331953
Acid Extractable Cobalt (Co)	mg/kg	4.7	2.4	3331682	2.7	2.6	2.0	1.0	3331953
Acid Extractable Copper (Cu)	mg/kg	6.5	38	3331682	88	75	18	2.0	3331953
Acid Extractable Iron (Fe)	mg/kg	14000	7500	3331682	9100	8700	7900	50	3331953
Acid Extractable Lead (Pb)	mg/kg	3.9	50	3331682	77	56	14	0.50	3331953
Acid Extractable Lithium (Li)	mg/kg	15	7.0	3331682	8.9	7.9	6.8	2.0	3331953
Acid Extractable Manganese (Mn)	mg/kg	200	160	3331682	370	340	130	2.0	3331953
Acid Extractable Mercury (Hg)	mg/kg	ND	ND	3331682	0.10	ND	ND	0.10	3331953
Acid Extractable Molybdenum (Mo)	mg/kg	ND	ND	3331682	ND	ND	ND	2.0	3331953
Acid Extractable Nickel (Ni)	mg/kg	11	5.5	3331682	5.0	4.8	3.8	2.0	3331953
Acid Extractable Rubidium (Rb)	mg/kg	14	6.7	3331682	12	10	14	2.0	3331953
Acid Extractable Selenium (Se)	mg/kg	ND	ND	3331682	ND	ND	ND	1.0	3331953
Acid Extractable Silver (Ag)	mg/kg	ND	ND	3331682	ND	ND	ND	0.50	3331953
Acid Extractable Strontium (Sr)	mg/kg	ND	ND	3331682	ND	8.0	ND	5.0	3331953
Acid Extractable Thallium (Tl)	mg/kg	ND	ND	3331682	ND	ND	ND	0.10	3331953
Acid Extractable Tin (Sn)	mg/kg	ND	ND	3331682	ND	ND	ND	2.0	3331953
Acid Extractable Uranium (U)	mg/kg	0.47	0.32	3331682	0.26	0.25	0.22	0.10	3331953
Acid Extractable Vanadium (V)	mg/kg	11	6.9	3331682	9.6	11	7.3	2.0	3331953
Acid Extractable Zinc (Zn)	mg/kg	20	27	3331682	40	35	15	5.0	3331953

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QC Batch = Quality Control Batch

Maxxam Job #: B3E1722
Report Date: 2013/09/04

Stantec Consulting Ltd
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Site Location: SHEFFIELD FARMS
Your P.O. #: 16300R-20
Sampler Initials: LM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		SU5003	SU5004		SU5005	SU5006	SU5007		
Sampling Date		2013/08/23	2013/08/23		2013/08/23	2013/08/22	2013/08/22		
COC Number		ES773313	ES773313		ES773313	ES773313	ES773313		
	Units	TH205-1	TH205-2	QC Batch	TH205-3	DUP 1	DUP 2	RDL	QC Batch

Metals									
Acid Extractable Aluminum (Al)	mg/kg	5800	12000	3331953	11000	8700	5300	10	3331682
Acid Extractable Antimony (Sb)	mg/kg	ND	ND	3331953	ND	ND	ND	2.0	3331682
Acid Extractable Arsenic (As)	mg/kg	ND	2.3	3331953	2.5	2.9	9.9	2.0	3331682
Acid Extractable Barium (Ba)	mg/kg	14	21	3331953	32	19	22	5.0	3331682
Acid Extractable Beryllium (Be)	mg/kg	ND	ND	3331953	ND	ND	ND	2.0	3331682
Acid Extractable Bismuth (Bi)	mg/kg	ND	ND	3331953	ND	ND	ND	2.0	3331682
Acid Extractable Boron (B)	mg/kg	ND	ND	3331953	ND	ND	ND	50	3331682
Acid Extractable Cadmium (Cd)	mg/kg	ND	ND	3331953	ND	ND	ND	0.30	3331682
Acid Extractable Chromium (Cr)	mg/kg	5.0	11	3331953	11	10	6.3	2.0	3331682
Acid Extractable Cobalt (Co)	mg/kg	2.2	4.3	3331953	5.6	4.3	3.3	1.0	3331682
Acid Extractable Copper (Cu)	mg/kg	4.2	6.7	3331953	9.0	6.1	190	2.0	3331682
Acid Extractable Iron (Fe)	mg/kg	7400	13000	3331953	15000	13000	9300	50	3331682
Acid Extractable Lead (Pb)	mg/kg	47	8.1	3331953	6.5	3.7	32	0.50	3331682
Acid Extractable Lithium (Li)	mg/kg	6.5	16	3331953	15	14	8.8	2.0	3331682
Acid Extractable Manganese (Mn)	mg/kg	190	230	3331953	300	190	230	2.0	3331682
Acid Extractable Mercury (Hg)	mg/kg	ND	ND	3331953	ND	ND	ND	0.10	3331682
Acid Extractable Molybdenum (Mo)	mg/kg	ND	ND	3331953	ND	ND	ND	2.0	3331682
Acid Extractable Nickel (Ni)	mg/kg	3.6	11	3331953	12	9.7	7.7	2.0	3331682
Acid Extractable Rubidium (Rb)	mg/kg	6.0	12	3331953	12	13	9.4	2.0	3331682
Acid Extractable Selenium (Se)	mg/kg	ND	ND	3331953	ND	ND	ND	1.0	3331682
Acid Extractable Silver (Ag)	mg/kg	ND	ND	3331953	ND	ND	ND	0.50	3331682
Acid Extractable Strontium (Sr)	mg/kg	ND	ND	3331953	ND	ND	ND	5.0	3331682
Acid Extractable Thallium (Tl)	mg/kg	ND	ND	3331953	ND	ND	ND	0.10	3331682
Acid Extractable Tin (Sn)	mg/kg	ND	ND	3331953	ND	ND	ND	2.0	3331682
Acid Extractable Uranium (U)	mg/kg	0.26	0.42	3331953	0.43	0.42	0.44	0.10	3331682
Acid Extractable Vanadium (V)	mg/kg	8.9	14	3331953	14	11	11	2.0	3331682
Acid Extractable Zinc (Zn)	mg/kg	22	24	3331953	22	19	25	5.0	3331682

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Maxxam Job #: B3E1722
Report Date: 2013/09/04

Stantec Consulting Ltd
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Your P.O. #: 16300R-20
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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		SU5008	SU5009	SU5010		
Sampling Date		2013/08/23	2013/08/23	2013/08/23		
COC Number		ES773313	ES773313	ES773313		
	Units	DUP 3	DUP 4	DUP 5	RDL	QC Batch

Metals						
Acid Extractable Aluminum (Al)	mg/kg	10000	11000	11000	10	3331682
Acid Extractable Antimony (Sb)	mg/kg	ND	ND	ND	2.0	3331682
Acid Extractable Arsenic (As)	mg/kg	3.1	2.3	2.2	2.0	3331682
Acid Extractable Barium (Ba)	mg/kg	30	18	17	5.0	3331682
Acid Extractable Beryllium (Be)	mg/kg	ND	ND	ND	2.0	3331682
Acid Extractable Bismuth (Bi)	mg/kg	ND	ND	ND	2.0	3331682
Acid Extractable Boron (B)	mg/kg	ND	ND	ND	50	3331682
Acid Extractable Cadmium (Cd)	mg/kg	ND	ND	ND	0.30	3331682
Acid Extractable Chromium (Cr)	mg/kg	8.0	7.0	8.8	2.0	3331682
Acid Extractable Cobalt (Co)	mg/kg	3.5	2.6	3.9	1.0	3331682
Acid Extractable Copper (Cu)	mg/kg	6.8	5.0	5.9	2.0	3331682
Acid Extractable Iron (Fe)	mg/kg	11000	9200	11000	50	3331682
Acid Extractable Lead (Pb)	mg/kg	33	9.8	3.3	0.50	3331682
Acid Extractable Lithium (Li)	mg/kg	13	10	13	2.0	3331682
Acid Extractable Manganese (Mn)	mg/kg	270	180	180	2.0	3331682
Acid Extractable Mercury (Hg)	mg/kg	0.11	ND	ND	0.10	3331682
Acid Extractable Molybdenum (Mo)	mg/kg	ND	ND	ND	2.0	3331682
Acid Extractable Nickel (Ni)	mg/kg	8.0	7.3	9.9	2.0	3331682
Acid Extractable Rubidium (Rb)	mg/kg	10	9.8	11	2.0	3331682
Acid Extractable Selenium (Se)	mg/kg	ND	ND	ND	1.0	3331682
Acid Extractable Silver (Ag)	mg/kg	ND	ND	ND	0.50	3331682
Acid Extractable Strontium (Sr)	mg/kg	ND	ND	ND	5.0	3331682
Acid Extractable Thallium (Tl)	mg/kg	ND	ND	ND	0.10	3331682
Acid Extractable Tin (Sn)	mg/kg	ND	ND	ND	2.0	3331682
Acid Extractable Uranium (U)	mg/kg	0.28	0.30	0.32	0.10	3331682
Acid Extractable Vanadium (V)	mg/kg	11	11	11	2.0	3331682
Acid Extractable Zinc (Zn)	mg/kg	41	24	19	5.0	3331682

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Maxxam Job #: B3E1722
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Stantec Consulting Ltd
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Site Location: SHEFFIELD FARMS
Your P.O. #: 16300R-20
Sampler Initials: LM

Package 1	4.3°C
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Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

Stantec Consulting Ltd
Attention: DON CAREY
Client Project #: 121412659
P.O. #: 16300R-20
Site Location: SHEFFIELD FARMS

Quality Assurance Report

Maxxam Job Number: DB3E1722

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3331568 DLB	Matrix Spike [SU4963-01]	Acid Extractable Antimony (Sb)	2013/08/30		92	%	75 - 125
		Acid Extractable Arsenic (As)	2013/08/30		93	%	75 - 125
		Acid Extractable Barium (Ba)	2013/08/30		100	%	75 - 125
		Acid Extractable Beryllium (Be)	2013/08/30		96	%	75 - 125
		Acid Extractable Bismuth (Bi)	2013/08/30		101	%	75 - 125
		Acid Extractable Boron (B)	2013/08/30		85	%	75 - 125
		Acid Extractable Cadmium (Cd)	2013/08/30		96	%	75 - 125
		Acid Extractable Chromium (Cr)	2013/08/30		99	%	75 - 125
		Acid Extractable Cobalt (Co)	2013/08/30		99	%	75 - 125
		Acid Extractable Copper (Cu)	2013/08/30		99	%	75 - 125
		Acid Extractable Lead (Pb)	2013/08/30		98	%	75 - 125
		Acid Extractable Lithium (Li)	2013/08/30		102	%	75 - 125
		Acid Extractable Manganese (Mn)	2013/08/30		NC	%	75 - 125
		Acid Extractable Mercury (Hg)	2013/08/30		96	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2013/08/30		102	%	75 - 125
		Acid Extractable Nickel (Ni)	2013/08/30		101	%	75 - 125
		Acid Extractable Rubidium (Rb)	2013/08/30		98	%	75 - 125
		Acid Extractable Selenium (Se)	2013/08/30		93	%	75 - 125
		Acid Extractable Silver (Ag)	2013/08/30		101	%	75 - 125
		Acid Extractable Strontium (Sr)	2013/08/30		102	%	75 - 125
		Acid Extractable Thallium (Tl)	2013/08/30		101	%	75 - 125
		Acid Extractable Tin (Sn)	2013/08/30		101	%	75 - 125
		Acid Extractable Uranium (U)	2013/08/30		97	%	75 - 125
		Acid Extractable Vanadium (V)	2013/08/30		98	%	75 - 125
		Acid Extractable Zinc (Zn)	2013/08/30		NC	%	75 - 125
	Spiked Blank	Acid Extractable Antimony (Sb)	2013/08/30		108	%	75 - 125
		Acid Extractable Arsenic (As)	2013/08/30		103	%	75 - 125
		Acid Extractable Barium (Ba)	2013/08/30		102	%	75 - 125
		Acid Extractable Beryllium (Be)	2013/08/30		101	%	75 - 125
		Acid Extractable Bismuth (Bi)	2013/08/30		105	%	75 - 125
		Acid Extractable Boron (B)	2013/08/30		102	%	75 - 125
		Acid Extractable Cadmium (Cd)	2013/08/30		100	%	75 - 125
		Acid Extractable Chromium (Cr)	2013/08/30		99	%	75 - 125
		Acid Extractable Cobalt (Co)	2013/08/30		102	%	75 - 125
		Acid Extractable Copper (Cu)	2013/08/30		102	%	75 - 125
		Acid Extractable Lead (Pb)	2013/08/30		101	%	75 - 125
		Acid Extractable Lithium (Li)	2013/08/30		102	%	75 - 125
		Acid Extractable Manganese (Mn)	2013/08/30		102	%	75 - 125
		Acid Extractable Mercury (Hg)	2013/08/30		105	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2013/08/30		101	%	75 - 125
		Acid Extractable Nickel (Ni)	2013/08/30		103	%	75 - 125
		Acid Extractable Rubidium (Rb)	2013/08/30		103	%	75 - 125
		Acid Extractable Selenium (Se)	2013/08/30		103	%	75 - 125
		Acid Extractable Silver (Ag)	2013/08/30		103	%	75 - 125
		Acid Extractable Strontium (Sr)	2013/08/30		102	%	75 - 125
		Acid Extractable Thallium (Tl)	2013/08/30		106	%	75 - 125
		Acid Extractable Tin (Sn)	2013/08/30		107	%	75 - 125
		Acid Extractable Uranium (U)	2013/08/30		101	%	75 - 125
		Acid Extractable Vanadium (V)	2013/08/30		103	%	75 - 125
		Acid Extractable Zinc (Zn)	2013/08/30		104	%	75 - 125
	Method Blank	Acid Extractable Aluminum (Al)	2013/08/30	ND, RDL=10		mg/kg	
		Acid Extractable Antimony (Sb)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Arsenic (As)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Barium (Ba)	2013/08/30	ND, RDL=5.0		mg/kg	

Stantec Consulting Ltd
Attention: DON CAREY
Client Project #: 121412659
P.O. #: 16300R-20
Site Location: SHEFFIELD FARMS

Quality Assurance Report (Continued)

Maxxam Job Number: DB3E1722

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3331568 DLB	Method Blank	Acid Extractable Beryllium (Be)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Bismuth (Bi)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Boron (B)	2013/08/30	ND, RDL=50		mg/kg	
		Acid Extractable Cadmium (Cd)	2013/08/30	ND, RDL=0.30		mg/kg	
		Acid Extractable Chromium (Cr)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Cobalt (Co)	2013/08/30	ND, RDL=1.0		mg/kg	
		Acid Extractable Copper (Cu)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Iron (Fe)	2013/08/30	ND, RDL=50		mg/kg	
		Acid Extractable Lead (Pb)	2013/08/30	ND, RDL=0.50		mg/kg	
		Acid Extractable Lithium (Li)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Manganese (Mn)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Mercury (Hg)	2013/08/30	ND, RDL=0.10		mg/kg	
		Acid Extractable Molybdenum (Mo)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Nickel (Ni)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Rubidium (Rb)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Selenium (Se)	2013/08/30	ND, RDL=1.0		mg/kg	
		Acid Extractable Silver (Ag)	2013/08/30	ND, RDL=0.50		mg/kg	
		Acid Extractable Strontium (Sr)	2013/08/30	ND, RDL=5.0		mg/kg	
		Acid Extractable Thallium (Tl)	2013/08/30	ND, RDL=0.10		mg/kg	
		Acid Extractable Tin (Sn)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Uranium (U)	2013/08/30	ND, RDL=0.10		mg/kg	
		Acid Extractable Vanadium (V)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Zinc (Zn)	2013/08/30	ND, RDL=5.0		mg/kg	
	RPD [SU4963-01]	Acid Extractable Aluminum (Al)	2013/08/30	7.1		%	35
		Acid Extractable Antimony (Sb)	2013/08/30	NC		%	35
		Acid Extractable Arsenic (As)	2013/08/30	NC		%	35
		Acid Extractable Barium (Ba)	2013/08/30	NC		%	35
		Acid Extractable Beryllium (Be)	2013/08/30	NC		%	35
		Acid Extractable Bismuth (Bi)	2013/08/30	NC		%	35
		Acid Extractable Boron (B)	2013/08/30	NC		%	35
		Acid Extractable Cadmium (Cd)	2013/08/30	NC		%	35
		Acid Extractable Chromium (Cr)	2013/08/30	NC		%	35
		Acid Extractable Cobalt (Co)	2013/08/30	NC		%	35
		Acid Extractable Copper (Cu)	2013/08/30	NC		%	35
		Acid Extractable Iron (Fe)	2013/08/30	2.7		%	35
		Acid Extractable Lead (Pb)	2013/08/30	NC		%	35
		Acid Extractable Lithium (Li)	2013/08/30	NC		%	35
		Acid Extractable Manganese (Mn)	2013/08/30	4.4		%	35
		Acid Extractable Mercury (Hg)	2013/08/30	NC		%	35
		Acid Extractable Molybdenum (Mo)	2013/08/30	NC		%	35
		Acid Extractable Nickel (Ni)	2013/08/30	NC		%	35
		Acid Extractable Rubidium (Rb)	2013/08/30	NC		%	35
		Acid Extractable Selenium (Se)	2013/08/30	NC		%	35
		Acid Extractable Silver (Ag)	2013/08/30	NC		%	35
		Acid Extractable Strontium (Sr)	2013/08/30	NC		%	35
		Acid Extractable Thallium (Tl)	2013/08/30	NC		%	35
		Acid Extractable Tin (Sn)	2013/08/30	NC		%	35
		Acid Extractable Uranium (U)	2013/08/30	NC		%	35
		Acid Extractable Vanadium (V)	2013/08/30	NC		%	35
		Acid Extractable Zinc (Zn)	2013/08/30	5.2		%	35
3331570 DLB	Matrix Spike [SU4987-01]	Acid Extractable Antimony (Sb)	2013/08/30		98	%	75 - 125
		Acid Extractable Arsenic (As)	2013/08/30		100	%	75 - 125
		Acid Extractable Barium (Ba)	2013/08/30		NC	%	75 - 125
		Acid Extractable Beryllium (Be)	2013/08/30		100	%	75 - 125

Stantec Consulting Ltd
Attention: DON CAREY
Client Project #: 121412659
P.O. #: 16300R-20
Site Location: SHEFFIELD FARMS

Quality Assurance Report (Continued)

Maxxam Job Number: DB3E1722

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3331570 DLB	Matrix Spike [SU4987-01]	Acid Extractable Bismuth (Bi)	2013/08/30		104	%	75 - 125
		Acid Extractable Boron (B)	2013/08/30		85	%	75 - 125
		Acid Extractable Cadmium (Cd)	2013/08/30		99	%	75 - 125
		Acid Extractable Chromium (Cr)	2013/08/30		101	%	75 - 125
		Acid Extractable Cobalt (Co)	2013/08/30		103	%	75 - 125
		Acid Extractable Copper (Cu)	2013/08/30		105	%	75 - 125
		Acid Extractable Lead (Pb)	2013/08/30		NC	%	75 - 125
		Acid Extractable Lithium (Li)	2013/08/30		109	%	75 - 125
		Acid Extractable Manganese (Mn)	2013/08/30		NC	%	75 - 125
		Acid Extractable Mercury (Hg)	2013/08/30		98	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2013/08/30		100	%	75 - 125
		Acid Extractable Nickel (Ni)	2013/08/30		105	%	75 - 125
		Acid Extractable Rubidium (Rb)	2013/08/30		98	%	75 - 125
		Acid Extractable Selenium (Se)	2013/08/30		98	%	75 - 125
		Acid Extractable Silver (Ag)	2013/08/30		102	%	75 - 125
		Acid Extractable Strontium (Sr)	2013/08/30		105	%	75 - 125
	Spiked Blank	Acid Extractable Thallium (Tl)	2013/08/30		104	%	75 - 125
		Acid Extractable Tin (Sn)	2013/08/30		117	%	75 - 125
		Acid Extractable Uranium (U)	2013/08/30		100	%	75 - 125
		Acid Extractable Vanadium (V)	2013/08/30		100	%	75 - 125
		Acid Extractable Zinc (Zn)	2013/08/30		NC	%	75 - 125
		Acid Extractable Antimony (Sb)	2013/08/30		109	%	75 - 125
		Acid Extractable Arsenic (As)	2013/08/30		103	%	75 - 125
		Acid Extractable Barium (Ba)	2013/08/30		103	%	75 - 125
		Acid Extractable Beryllium (Be)	2013/08/30		101	%	75 - 125
		Acid Extractable Bismuth (Bi)	2013/08/30		104	%	75 - 125
		Acid Extractable Boron (B)	2013/08/30		104	%	75 - 125
		Acid Extractable Cadmium (Cd)	2013/08/30		101	%	75 - 125
		Acid Extractable Chromium (Cr)	2013/08/30		100	%	75 - 125
		Acid Extractable Cobalt (Co)	2013/08/30		103	%	75 - 125
		Acid Extractable Copper (Cu)	2013/08/30		101	%	75 - 125
		Acid Extractable Lead (Pb)	2013/08/30		102	%	75 - 125
	Method Blank	Acid Extractable Lithium (Li)	2013/08/30		104	%	75 - 125
		Acid Extractable Manganese (Mn)	2013/08/30		104	%	75 - 125
		Acid Extractable Mercury (Hg)	2013/08/30		104	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2013/08/30		105	%	75 - 125
		Acid Extractable Nickel (Ni)	2013/08/30		102	%	75 - 125
		Acid Extractable Rubidium (Rb)	2013/08/30		106	%	75 - 125
		Acid Extractable Selenium (Se)	2013/08/30		103	%	75 - 125
		Acid Extractable Silver (Ag)	2013/08/30		102	%	75 - 125
		Acid Extractable Strontium (Sr)	2013/08/30		104	%	75 - 125
		Acid Extractable Thallium (Tl)	2013/08/30		106	%	75 - 125
		Acid Extractable Tin (Sn)	2013/08/30		104	%	75 - 125
		Acid Extractable Uranium (U)	2013/08/30		101	%	75 - 125
		Acid Extractable Vanadium (V)	2013/08/30		103	%	75 - 125
		Acid Extractable Zinc (Zn)	2013/08/30		103	%	75 - 125
		Acid Extractable Aluminum (Al)	2013/08/30	ND, RDL=10		mg/kg	
		Acid Extractable Antimony (Sb)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Arsenic (As)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Barium (Ba)	2013/08/30	ND, RDL=5.0		mg/kg	
		Acid Extractable Beryllium (Be)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Bismuth (Bi)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Boron (B)	2013/08/30	ND, RDL=50		mg/kg	
		Acid Extractable Cadmium (Cd)	2013/08/30	ND, RDL=0.30		mg/kg	

Stantec Consulting Ltd
Attention: DON CAREY
Client Project #: 121412659
P.O. #: 16300R-20
Site Location: SHEFFIELD FARMS

Quality Assurance Report (Continued)

Maxxam Job Number: DB3E1722

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3331570 DLB	Method Blank	Acid Extractable Chromium (Cr)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Cobalt (Co)	2013/08/30	ND, RDL=1.0		mg/kg	
		Acid Extractable Copper (Cu)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Iron (Fe)	2013/08/30	ND, RDL=50		mg/kg	
		Acid Extractable Lead (Pb)	2013/08/30	ND, RDL=0.50		mg/kg	
		Acid Extractable Lithium (Li)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Manganese (Mn)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Mercury (Hg)	2013/08/30	ND, RDL=0.10		mg/kg	
		Acid Extractable Molybdenum (Mo)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Nickel (Ni)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Rubidium (Rb)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Selenium (Se)	2013/08/30	ND, RDL=1.0		mg/kg	
		Acid Extractable Silver (Ag)	2013/08/30	ND, RDL=0.50		mg/kg	
		Acid Extractable Strontium (Sr)	2013/08/30	ND, RDL=5.0		mg/kg	
		Acid Extractable Thallium (Tl)	2013/08/30	ND, RDL=0.10		mg/kg	
		Acid Extractable Tin (Sn)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Uranium (U)	2013/08/30	ND, RDL=0.10		mg/kg	
		Acid Extractable Vanadium (V)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Zinc (Zn)	2013/08/30	ND, RDL=5.0		mg/kg	
	RPD [SU4987-01]	Acid Extractable Aluminum (Al)	2013/08/30	11.5		%	35
		Acid Extractable Antimony (Sb)	2013/08/30	NC		%	35
		Acid Extractable Arsenic (As)	2013/08/30	NC		%	35
		Acid Extractable Barium (Ba)	2013/08/30	12.3		%	35
		Acid Extractable Beryllium (Be)	2013/08/30	NC		%	35
		Acid Extractable Bismuth (Bi)	2013/08/30	NC		%	35
		Acid Extractable Boron (B)	2013/08/30	NC		%	35
		Acid Extractable Cadmium (Cd)	2013/08/30	NC		%	35
		Acid Extractable Chromium (Cr)	2013/08/30	NC		%	35
		Acid Extractable Cobalt (Co)	2013/08/30	NC		%	35
		Acid Extractable Copper (Cu)	2013/08/30	16.1		%	35
		Acid Extractable Iron (Fe)	2013/08/30	10.9		%	35
		Acid Extractable Lead (Pb)	2013/08/30	19.0		%	35
		Acid Extractable Lithium (Li)	2013/08/30	12.8		%	35
		Acid Extractable Manganese (Mn)	2013/08/30	12.5		%	35
		Acid Extractable Mercury (Hg)	2013/08/30	NC		%	35
		Acid Extractable Molybdenum (Mo)	2013/08/30	NC		%	35
		Acid Extractable Nickel (Ni)	2013/08/30	NC		%	35
		Acid Extractable Rubidium (Rb)	2013/08/30	12.2		%	35
		Acid Extractable Selenium (Se)	2013/08/30	NC		%	35
		Acid Extractable Silver (Ag)	2013/08/30	NC		%	35
		Acid Extractable Strontium (Sr)	2013/08/30	NC		%	35
		Acid Extractable Thallium (Tl)	2013/08/30	NC		%	35
		Acid Extractable Tin (Sn)	2013/08/30	NC		%	35
		Acid Extractable Uranium (U)	2013/08/30	NC		%	35
		Acid Extractable Vanadium (V)	2013/08/30	7.9		%	35
		Acid Extractable Zinc (Zn)	2013/08/30	13.8		%	35
3331682 DLB	Matrix Spike [SU4973-01]	Acid Extractable Antimony (Sb)	2013/08/30		95	%	75 - 125
		Acid Extractable Arsenic (As)	2013/08/30		97	%	75 - 125
		Acid Extractable Barium (Ba)	2013/08/30		NC	%	75 - 125
		Acid Extractable Beryllium (Be)	2013/08/30		98	%	75 - 125
		Acid Extractable Bismuth (Bi)	2013/08/30		101	%	75 - 125
		Acid Extractable Boron (B)	2013/08/30		91	%	75 - 125
		Acid Extractable Cadmium (Cd)	2013/08/30		96	%	75 - 125
		Acid Extractable Chromium (Cr)	2013/08/30		99	%	75 - 125

Stantec Consulting Ltd
Attention: DON CAREY
Client Project #: 121412659
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Site Location: SHEFFIELD FARMS

Quality Assurance Report (Continued)

Maxxam Job Number: DB3E1722

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3331682 DLB	Matrix Spike [SU4973-01]	Acid Extractable Cobalt (Co)	2013/08/30		98	%	75 - 125
		Acid Extractable Copper (Cu)	2013/08/30		94	%	75 - 125
		Acid Extractable Lead (Pb)	2013/08/30		NC	%	75 - 125
		Acid Extractable Lithium (Li)	2013/08/30		100	%	75 - 125
		Acid Extractable Manganese (Mn)	2013/08/30		NC	%	75 - 125
		Acid Extractable Mercury (Hg)	2013/08/30		94	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2013/08/30		103	%	75 - 125
		Acid Extractable Nickel (Ni)	2013/08/30		100	%	75 - 125
		Acid Extractable Rubidium (Rb)	2013/08/30		97	%	75 - 125
		Acid Extractable Selenium (Se)	2013/08/30		96	%	75 - 125
		Acid Extractable Silver (Ag)	2013/08/30		99	%	75 - 125
		Acid Extractable Strontium (Sr)	2013/08/30		100	%	75 - 125
		Acid Extractable Thallium (Tl)	2013/08/30		103	%	75 - 125
		Acid Extractable Tin (Sn)	2013/08/30		95	%	75 - 125
		Acid Extractable Uranium (U)	2013/08/30		97	%	75 - 125
	Spiked Blank	Acid Extractable Vanadium (V)	2013/08/30		98	%	75 - 125
		Acid Extractable Zinc (Zn)	2013/08/30		NC	%	75 - 125
		Acid Extractable Antimony (Sb)	2013/08/30		110	%	75 - 125
		Acid Extractable Arsenic (As)	2013/08/30		100	%	75 - 125
		Acid Extractable Barium (Ba)	2013/08/30		99	%	75 - 125
		Acid Extractable Beryllium (Be)	2013/08/30		96	%	75 - 125
		Acid Extractable Bismuth (Bi)	2013/08/30		103	%	75 - 125
		Acid Extractable Boron (B)	2013/08/30		99	%	75 - 125
		Acid Extractable Cadmium (Cd)	2013/08/30		97	%	75 - 125
		Acid Extractable Chromium (Cr)	2013/08/30		98	%	75 - 125
		Acid Extractable Cobalt (Co)	2013/08/30		98	%	75 - 125
		Acid Extractable Copper (Cu)	2013/08/30		98	%	75 - 125
		Acid Extractable Lead (Pb)	2013/08/30		99	%	75 - 125
		Acid Extractable Lithium (Li)	2013/08/30		99	%	75 - 125
		Acid Extractable Manganese (Mn)	2013/08/30		99	%	75 - 125
	Method Blank	Acid Extractable Mercury (Hg)	2013/08/30		101	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2013/08/30		102	%	75 - 125
		Acid Extractable Nickel (Ni)	2013/08/30		97	%	75 - 125
		Acid Extractable Rubidium (Rb)	2013/08/30		100	%	75 - 125
		Acid Extractable Selenium (Se)	2013/08/30		100	%	75 - 125
		Acid Extractable Silver (Ag)	2013/08/30		98	%	75 - 125
		Acid Extractable Strontium (Sr)	2013/08/30		101	%	75 - 125
		Acid Extractable Thallium (Tl)	2013/08/30		103	%	75 - 125
		Acid Extractable Tin (Sn)	2013/08/30		105	%	75 - 125
		Acid Extractable Uranium (U)	2013/08/30		98	%	75 - 125
		Acid Extractable Vanadium (V)	2013/08/30		100	%	75 - 125
		Acid Extractable Zinc (Zn)	2013/08/30		99	%	75 - 125
		Acid Extractable Aluminum (Al)	2013/08/30	ND, RDL=10		mg/kg	
		Acid Extractable Antimony (Sb)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Arsenic (As)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Barium (Ba)	2013/08/30	ND, RDL=5.0		mg/kg	
		Acid Extractable Beryllium (Be)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Bismuth (Bi)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Boron (B)	2013/08/30	ND, RDL=50		mg/kg	
		Acid Extractable Cadmium (Cd)	2013/08/30	ND, RDL=0.30		mg/kg	
		Acid Extractable Chromium (Cr)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Cobalt (Co)	2013/08/30	ND, RDL=1.0		mg/kg	
		Acid Extractable Copper (Cu)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Iron (Fe)	2013/08/30	ND, RDL=50		mg/kg	

Stantec Consulting Ltd
Attention: DON CAREY
Client Project #: 121412659
P.O. #: 16300R-20
Site Location: SHEFFIELD FARMS

Quality Assurance Report (Continued)

Maxxam Job Number: DB3E1722

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3331682 DLB	Method Blank	Acid Extractable Lead (Pb)	2013/08/30	ND, RDL=0.50		mg/kg	
		Acid Extractable Lithium (Li)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Manganese (Mn)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Mercury (Hg)	2013/08/30	ND, RDL=0.10		mg/kg	
		Acid Extractable Molybdenum (Mo)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Nickel (Ni)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Rubidium (Rb)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Selenium (Se)	2013/08/30	ND, RDL=1.0		mg/kg	
		Acid Extractable Silver (Ag)	2013/08/30	ND, RDL=0.50		mg/kg	
		Acid Extractable Strontium (Sr)	2013/08/30	ND, RDL=5.0		mg/kg	
		Acid Extractable Thallium (Tl)	2013/08/30	ND, RDL=0.10		mg/kg	
		Acid Extractable Tin (Sn)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Uranium (U)	2013/08/30	ND, RDL=0.10		mg/kg	
		Acid Extractable Vanadium (V)	2013/08/30	ND, RDL=2.0		mg/kg	
		Acid Extractable Zinc (Zn)	2013/08/30	ND, RDL=5.0		mg/kg	
	RPD [SU4973-01]	Acid Extractable Aluminum (Al)	2013/08/30	7.4		%	35
		Acid Extractable Antimony (Sb)	2013/08/30	NC		%	35
		Acid Extractable Arsenic (As)	2013/08/30	NC		%	35
		Acid Extractable Barium (Ba)	2013/08/30	10.5		%	35
		Acid Extractable Beryllium (Be)	2013/08/30	NC		%	35
		Acid Extractable Bismuth (Bi)	2013/08/30	NC		%	35
		Acid Extractable Boron (B)	2013/08/30	NC		%	35
		Acid Extractable Cadmium (Cd)	2013/08/30	NC		%	35
		Acid Extractable Chromium (Cr)	2013/08/30	NC		%	35
		Acid Extractable Cobalt (Co)	2013/08/30	NC		%	35
		Acid Extractable Copper (Cu)	2013/08/30	6.3		%	35
		Acid Extractable Iron (Fe)	2013/08/30	7.0		%	35
		Acid Extractable Lead (Pb)	2013/08/30	8.7		%	35
		Acid Extractable Lithium (Li)	2013/08/30	NC		%	35
		Acid Extractable Manganese (Mn)	2013/08/30	6.6		%	35
		Acid Extractable Mercury (Hg)	2013/08/30	11.5		%	35
		Acid Extractable Molybdenum (Mo)	2013/08/30	NC		%	35
		Acid Extractable Nickel (Ni)	2013/08/30	NC		%	35
		Acid Extractable Rubidium (Rb)	2013/08/30	NC		%	35
		Acid Extractable Selenium (Se)	2013/08/30	NC		%	35
		Acid Extractable Silver (Ag)	2013/08/30	NC		%	35
		Acid Extractable Strontium (Sr)	2013/08/30	NC		%	35
		Acid Extractable Thallium (Tl)	2013/08/30	NC		%	35
		Acid Extractable Tin (Sn)	2013/08/30	NC		%	35
		Acid Extractable Uranium (U)	2013/08/30	NC		%	35
		Acid Extractable Vanadium (V)	2013/08/30	NC		%	35
		Acid Extractable Zinc (Zn)	2013/08/30	8.8		%	35
3331953 DLB	Matrix Spike [SU5001-01]	Acid Extractable Antimony (Sb)	2013/09/04		104	%	75 - 125
		Acid Extractable Arsenic (As)	2013/09/04		96	%	75 - 125
		Acid Extractable Barium (Ba)	2013/09/04		101	%	75 - 125
		Acid Extractable Beryllium (Be)	2013/09/04		101	%	75 - 125
		Acid Extractable Bismuth (Bi)	2013/09/04		107	%	75 - 125
		Acid Extractable Boron (B)	2013/09/04		90	%	75 - 125
		Acid Extractable Cadmium (Cd)	2013/09/04		100	%	75 - 125
		Acid Extractable Chromium (Cr)	2013/09/04		103	%	75 - 125
		Acid Extractable Cobalt (Co)	2013/09/04		102	%	75 - 125
		Acid Extractable Copper (Cu)	2013/09/04		NC	%	75 - 125
		Acid Extractable Lead (Pb)	2013/09/04		NC	%	75 - 125
		Acid Extractable Lithium (Li)	2013/09/04		110	%	75 - 125

Stantec Consulting Ltd
Attention: DON CAREY
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Quality Assurance Report (Continued)

Maxxam Job Number: DB3E1722

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3331953 DLB	Matrix Spike [SU5001-01]	Acid Extractable Manganese (Mn)	2013/09/04		NC	%	75 - 125
		Acid Extractable Mercury (Hg)	2013/09/04		102	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2013/09/04		105	%	75 - 125
		Acid Extractable Nickel (Ni)	2013/09/04		105	%	75 - 125
		Acid Extractable Rubidium (Rb)	2013/09/04		99	%	75 - 125
		Acid Extractable Selenium (Se)	2013/09/04		99	%	75 - 125
		Acid Extractable Silver (Ag)	2013/09/04		103	%	75 - 125
		Acid Extractable Strontium (Sr)	2013/09/04		105	%	75 - 125
		Acid Extractable Thallium (Tl)	2013/09/04		107	%	75 - 125
		Acid Extractable Tin (Sn)	2013/09/04		105	%	75 - 125
	Spiked Blank	Acid Extractable Uranium (U)	2013/09/04		104	%	75 - 125
		Acid Extractable Vanadium (V)	2013/09/04		104	%	75 - 125
		Acid Extractable Zinc (Zn)	2013/09/04		NC	%	75 - 125
		Acid Extractable Antimony (Sb)	2013/09/04		117	%	75 - 125
		Acid Extractable Arsenic (As)	2013/09/04		105	%	75 - 125
		Acid Extractable Barium (Ba)	2013/09/04		104	%	75 - 125
		Acid Extractable Beryllium (Be)	2013/09/04		104	%	75 - 125
		Acid Extractable Bismuth (Bi)	2013/09/04		107	%	75 - 125
		Acid Extractable Boron (B)	2013/09/04		110	%	75 - 125
		Acid Extractable Cadmium (Cd)	2013/09/04		103	%	75 - 125
	Method Blank	Acid Extractable Chromium (Cr)	2013/09/04		103	%	75 - 125
		Acid Extractable Cobalt (Co)	2013/09/04		104	%	75 - 125
		Acid Extractable Copper (Cu)	2013/09/04		102	%	75 - 125
		Acid Extractable Lead (Pb)	2013/09/04		105	%	75 - 125
		Acid Extractable Lithium (Li)	2013/09/04		105	%	75 - 125
		Acid Extractable Manganese (Mn)	2013/09/04		105	%	75 - 125
		Acid Extractable Mercury (Hg)	2013/09/04		108	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2013/09/04		104	%	75 - 125
		Acid Extractable Nickel (Ni)	2013/09/04		104	%	75 - 125
		Acid Extractable Rubidium (Rb)	2013/09/04		105	%	75 - 125
		Acid Extractable Selenium (Se)	2013/09/04		101	%	75 - 125
		Acid Extractable Silver (Ag)	2013/09/04		102	%	75 - 125
		Acid Extractable Strontium (Sr)	2013/09/04		104	%	75 - 125
		Acid Extractable Thallium (Tl)	2013/09/04		108	%	75 - 125
		Acid Extractable Tin (Sn)	2013/09/04		112	%	75 - 125
		Acid Extractable Uranium (U)	2013/09/04		105	%	75 - 125
		Acid Extractable Vanadium (V)	2013/09/04		104	%	75 - 125
		Acid Extractable Zinc (Zn)	2013/09/04		107	%	75 - 125
		Acid Extractable Aluminum (Al)	2013/09/04	ND, RDL=10		mg/kg	
		Acid Extractable Antimony (Sb)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Arsenic (As)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Barium (Ba)	2013/09/04	ND, RDL=5.0		mg/kg	
		Acid Extractable Beryllium (Be)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Bismuth (Bi)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Boron (B)	2013/09/04	ND, RDL=50		mg/kg	
		Acid Extractable Cadmium (Cd)	2013/09/04	ND, RDL=0.30		mg/kg	
		Acid Extractable Chromium (Cr)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Cobalt (Co)	2013/09/04	ND, RDL=1.0		mg/kg	
		Acid Extractable Copper (Cu)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Iron (Fe)	2013/09/04	ND, RDL=50		mg/kg	
		Acid Extractable Lead (Pb)	2013/09/04	ND, RDL=0.50		mg/kg	
		Acid Extractable Lithium (Li)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Manganese (Mn)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Mercury (Hg)	2013/09/04	ND, RDL=0.10		mg/kg	

Stantec Consulting Ltd
Attention: DON CAREY
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Quality Assurance Report (Continued)

Maxxam Job Number: DB3E1722

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3331953 DLB	Method Blank	Acid Extractable Molybdenum (Mo)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Nickel (Ni)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Rubidium (Rb)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Selenium (Se)	2013/09/04	ND, RDL=1.0		mg/kg	
		Acid Extractable Silver (Ag)	2013/09/04	ND, RDL=0.50		mg/kg	
		Acid Extractable Strontium (Sr)	2013/09/04	ND, RDL=5.0		mg/kg	
		Acid Extractable Thallium (Tl)	2013/09/04	ND, RDL=0.10		mg/kg	
		Acid Extractable Tin (Sn)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Uranium (U)	2013/09/04	ND, RDL=0.10		mg/kg	
		Acid Extractable Vanadium (V)	2013/09/04	ND, RDL=2.0		mg/kg	
		Acid Extractable Zinc (Zn)	2013/09/04	ND, RDL=5.0		mg/kg	
	RPD [SU5001-01]	Acid Extractable Aluminum (Al)	2013/09/04	3.0		%	35
		Acid Extractable Antimony (Sb)	2013/09/04	NC		%	35
		Acid Extractable Arsenic (As)	2013/09/04	24.9		%	35
		Acid Extractable Barium (Ba)	2013/09/04	NC		%	35
		Acid Extractable Beryllium (Be)	2013/09/04	NC		%	35
		Acid Extractable Bismuth (Bi)	2013/09/04	NC		%	35
		Acid Extractable Boron (B)	2013/09/04	NC		%	35
		Acid Extractable Cadmium (Cd)	2013/09/04	NC		%	35
		Acid Extractable Chromium (Cr)	2013/09/04	NC		%	35
		Acid Extractable Cobalt (Co)	2013/09/04	NC		%	35
		Acid Extractable Copper (Cu)	2013/09/04	15.5		%	35
		Acid Extractable Iron (Fe)	2013/09/04	4.9		%	35
		Acid Extractable Lead (Pb)	2013/09/04	30.5		%	35
		Acid Extractable Lithium (Li)	2013/09/04	NC		%	35
		Acid Extractable Manganese (Mn)	2013/09/04	10.4		%	35
		Acid Extractable Mercury (Hg)	2013/09/04	NC		%	35
		Acid Extractable Molybdenum (Mo)	2013/09/04	NC		%	35
		Acid Extractable Nickel (Ni)	2013/09/04	NC		%	35
		Acid Extractable Rubidium (Rb)	2013/09/04	12.1		%	35
		Acid Extractable Selenium (Se)	2013/09/04	NC		%	35
		Acid Extractable Silver (Ag)	2013/09/04	NC		%	35
		Acid Extractable Strontium (Sr)	2013/09/04	NC		%	35
		Acid Extractable Thallium (Tl)	2013/09/04	NC		%	35
		Acid Extractable Tin (Sn)	2013/09/04	NC		%	35
		Acid Extractable Uranium (U)	2013/09/04	NC		%	35
		Acid Extractable Vanadium (V)	2013/09/04	NC		%	35
		Acid Extractable Zinc (Zn)	2013/09/04	12.5		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

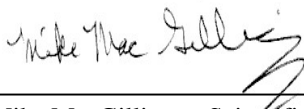
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

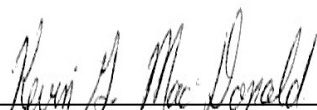
Validation Signature Page

Maxxam Job #: B3E1722

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Mike MacGillivray, Scientific Specialist (Inorganics)



Kevin MacDonald, Inorganics Supervisor

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.