



**St. Lawrence Testing  
& Inspection Co. Ltd.**

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February 28, 2017

Mr. M. Patel  
2441736 Ontario Inc.  
c/o Maylan Group  
372 Bertha St.  
Hawkesbury, ON  
K6A 2A8

**RE: Property at Block 8, Plan R-20-7852, Part of Lot 20, Concession 4  
(Rideau Front), Nepean Ward, City of Ottawa, Ontario  
Phase 2 Environmental Assessment  
Report No. 17C033**

Dear Mr. Patel:

In accordance with verbal instructions received from Mr. Francois Dion, this report is submitted, outlining the results of a Phase 2 Environmental Site Assessment carried out for a vacant parcel of land located Block 8, Plan R-20-7852, Part of Lot 20, Concession 4 (Rideau Front), Nepean Ward, City of Ottawa, Ontario.

#### **A) INTRODUCTION AND EXECUTIVE SUMMARY**

A Phase 2 Environmental Assessment (Phase 2) was carried out by St. Lawrence Testing & Inspection Co. Ltd. (St. Lawrence Testing) at a vacant parcel of land located Block 8 in Plan R-20-7852 being part of Lot 20 in Concession 4 (Rideau Front), Nepean Ward within the City of Ottawa (hereafter referred to as the "Site" or "Site property").

This Phase 2 was carried out to determine if the metal concentration in the soil found on the Site property met O. Reg. 153/04 Table 3 soil standards for a commercial property with coarse soil and non-potable groundwater. A recent Phase 1 Environmental Assessment for the Site prepared by St. Lawrence Testing for the Maylan Group in January 2017 (report #17C009) discovered that in 2006, Kollard Associates found that the soil on the adjoining properties to the west contained a high barium concentration (660 µg/g) that exceeded the Table 3 residential soil standard of 390 µg/g. The report prepared by Kollard Associates focused on the entire vacant property between O'Keefe Court and Fallowfield Road with no specific details mentioned for the Site at Block 8.

On February 9, 2016, St. Lawrence Testing was on-site to conduct a geotechnical subsurface investigation for the Site property. It was agreed that the Phase 2 work would be performed at the same time since the drill crew and sampling equipment would be present. Four (4) boreholes (BH 1 to BH 4) were drilled to a depth of approximately 12 ft. below ground surface (bgs) within the property boundaries. Soil samples were collected at 2 ft. depths from each borehole using a split spoon sampler.

No unusual findings were noted for the soils within BH 1 and BH 2. However, fill material was discovered within the BH 3 and BH 4. As such, four (4) soil samples (S1 to S4) from this fill material were submitted to Maxxam Analytics in Mississauga, Ontario for metal concentration analyses.

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We received the test results on February 14, 2017. We compared the test results to O. Reg. 153/04, Table 3 soil standards for a commercial property with coarse soil and non-potable groundwater. Upon review, the metal concentrations in each sample (S1 to S4) were found to meet the Table 3 soil standards, both for commercial and residential.

It is the opinion of St. Lawrence Testing that the high concentration of barium previously discovered by Kollard Associates on the adjoining properties to the west, is not found on the Site property (Block 8 on Plan R-20-7852 being part of Lot 20, Concession 4 (Rideau Front), Nepean Ward, City of Ottawa) because Kollard were using residential standards which would be correct for an initial assessment pending further development. The subject site would clearly be a commercial site and thus the Table 3 commercial standards would apply. Having said that it seems obvious that the soil samples taken by Kollard were on a different part of the entire parcel bounded by O'Keefe, Fallowfield and Strandherd Dr. since all samples S1 to S4 taken by our firm meet Table 3 residential standards.

The metal concentration in the soil samples collected from the fill material found in BH 3 and BH 4 all meet the current O. Reg. 153/04, Table 3 soil standards for a commercial and residential property with coarse soil and non-potable groundwater. No further environmental work is necessary.

## **B) DESCRIPTION OF FIELD WORK**

Prior to any Site drilling, the boundaries of the Site property were staked out and locates were done for underground services. The field work for the

boreholes was carried out using a bombardier mounted CME 55 auger drill from Eastern Ontario Diamond Drilling of Hawkesbury, Ontario. Supervision was by the undersigned Geotechnical and Environmental Engineer.

The Phase 2 work coincided with the geotechnical subsurface investigation being carried out by St. Lawrence Testing. Four (4) boreholes (BH 1 to BH 4) were drilled to a depth of approximately 12 ft. bgs within the property boundaries where access could be made by the drill rig. Soil samples were collected every 2 ft. bgs using a split spoon. Each sample was identified and evaluated on site for any discolouration or unusual odours that may have indicated possible contamination.

BH 1 was located approximately 100 ft. east of the southeast corner stake in the adjoining East property. It was drilled to a depth of 12 ft. bgs. No discolouration or unusual odours were found in the soil.

BH 2 was located approximately 5 ft. east of the northeast corner stake. It was drilled to a depth of 14 ft. bgs. No discolouration or unusual odours were found in the soil.

BH 3 was located opposite to BH 2 and approximately 100 ft. south of the northwest stake and 5 ft. west of a line stake for the west property line. It was drilled to a depth of 12 ft. bgs. Fill material was found to a depth of approximately 6.5 ft. bgs. No unusual odours or discolouration were noted in this material.

BH 4 was located approximately 70 ft. east of the southwest corner stake. It was drilled to a depth of 12 ft. bgs. Fill material was found to a depth of 8 ft. bgs. No unusual odours or discolouration were noted in this material.

A sketch of the borehole locations is attached to this report.

All soil samples were returned to the St. Lawrence Testing laboratory for further evaluation. Upon review of our field notes, the borehole locations and sampling depths, 4 samples (S1 to S4) were selected from the fill material discovered in BH 3 and BH 4. Soil samples S1 and S2 were collected from BH 3 at depths of 2.5 ft. to 4.5 ft. and 5 ft. to 7 ft., respectively. Soil samples S3 and S4 were collected from BH 4 at depths of 2.5 ft. to 4.5 ft. and 5 ft. to 7 ft., respectively. All samples were submitted to Maxxam Analytics in Mississauga, Ontario for metal analysis.

### **C) DISCUSSION OF TEST RESULTS**

We received the test results on February 14, 2017. We compared the test results with the soil standards listed in O. Reg. 153/04, Table 3 for a commercial property with coarse soil and non-potable groundwater. Upon review, the barium concentration along with the additional metals identified in the 4 soil samples (S1 to S4) all met the Table 3 soil standards. This is both commercial and residential standards.

A copy of the test results is attached to this report.

#### **D) LIMITATIONS**

The environmental investigation was carried out to address the intent of applicable provincial guidelines. Achieving the objectives stated in the report has required us to arrive at conclusions based upon the best information presently known to us. No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information; it can only reduce the possibility to an acceptable concentration. Professional judgment was exercised in gathering and analyzing the information obtained and in the formulation of the conclusions. Like all professional persons rendering advice we do not act as absolute insurers of the conclusions we reach, but we commit ourselves to care and competence in reaching those conclusions.

Our undertaking is to perform our work within the limits prescribed by our clients, with the usual thoroughness and competence of the engineering profession. It is intended that the outcome of this investigation assists in reducing the client's risks associated with environmental impairment; our work should not be considered "risk mitigation". No other warranty expressed or implied, is included or intended in this report.

The information presented in this report is based on a limited investigation designed to provide information to support an overall assessment of the current environmental conditions on the subject property. The conclusions and recommendations presented in this report reflect existing site conditions within the scope of our investigation.

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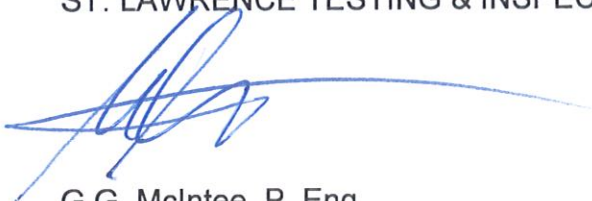
This report was prepared for the exclusive use of the Maylan Group and 2441736 Ontario Inc. as per the agreement and terms of reference between the Maylan Group and 2441736 Ontario Inc. and St. Lawrence Testing & Inspection Co. Ltd. Any use and interpretation of this report by any other party is entirely at their own risk.

**E) OPINION**

Subject to the Limitations in the previous section, and based on our Site inspection along with the analytical results from samples obtained from the Site property, it is the opinion of St. Lawrence Testing that the high concentration of barium previously discovered by Kollard Associates on the adjoining properties to the west, is not found on the Site property. The metal concentration in the soil samples (S1 to S4) collected from the noted fill material found in BH 3 and BH 4 all met the current O. Reg. 153/04, Table 3 soil standards for a residential and commercial property with coarse soil and non-potable groundwater. No further environmental work is necessary.

Respectfully submitted

ST. LAWRENCE TESTING & INSPECTION CO. LTD.



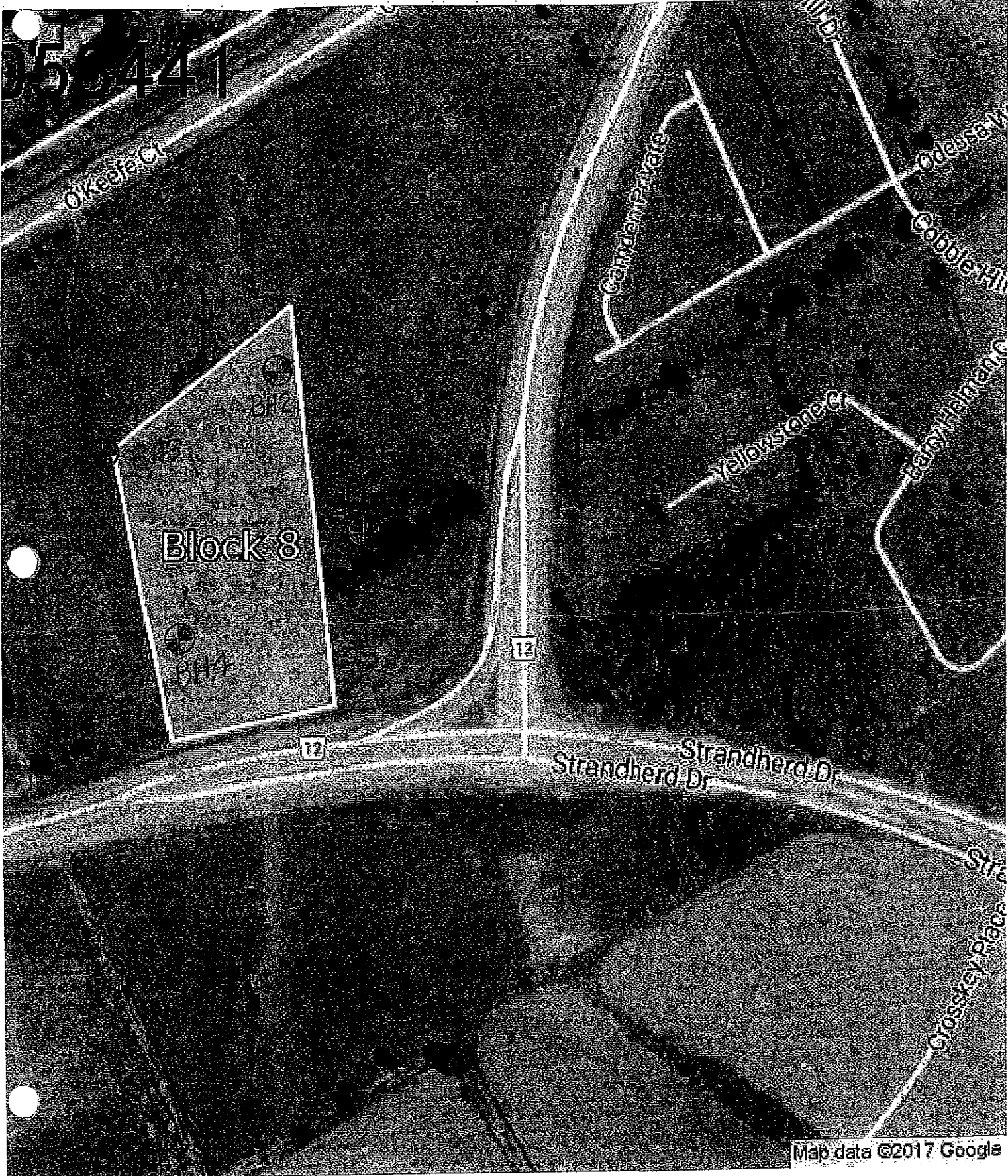
G.G. McIntee, P. Eng.

GGM:sr



Attachments

050441





Your Project #: MAYLAN BARRHAVAN  
Site Location: FALLOWFIELD ROAD, OTTAWA, ON  
Your C.O.C. #: na

**Attention: Gib McIntee**

St Lawrence Testing & Inspection Co Ltd

814 Second St W  
PO Box 997  
Cornwall, ON  
K6H 5V1

Report Date: 2017/02/14  
Report #: R4359032  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B730155**

**Received: 2017/02/14, 08:57**

Sample Matrix: Soil  
# Samples Received: 4

Analyses	Quantity	Date	Date	Laboratory Method	Reference
		Extracted	Analyzed		
Hot Water Extractable Boron	4	2017/02/14	2017/02/14	CAM SOP-00408	R153 Ana. Prot. 2011
Hexavalent Chromium in Soil by IC (1)	4	2017/02/14	2017/02/14	CAM SOP-00436	EPA 3060/7199 m
Strong Acid Leachable Metals by ICPMS	4	2017/02/14	2017/02/14	CAM SOP-00447	EPA 6020B m
Moisture	4	N/A	2017/02/14	CAM SOP-00445	Carter 2nd ed 51.2 m

**Remarks:**

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods. Results relate to samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

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

(1) Soils are reported on a dry weight basis unless otherwise specified.

Your Project #: MAYLAN BARRHAVAN  
Site Location: FALLOWFIELD ROAD, OTTAWA, ON  
Your C.O.C. #: na

**Attention:Gib McIntee**

St Lawrence Testing & Inspection Co Ltd

814 Second St W  
PO Box 997  
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**Report Date: 2017/02/14**  
Report #: R4359032  
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**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B730155**

**Received: 2017/02/14, 08:57**

Encryption Key



Grace Zhao  
Project Manager  
14 Feb 2017 17:26:02

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

Jolanta Goralczyk, Project Manager

Email: JGoralczyk@maxxam.ca

Phone# (905)817-5751

=====

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.

**O.REG 153 METALS PACKAGE (SOIL)**

Maxxam ID		DXF594	DXF595	DXF595	DXF596	DXF597	DXF597		
Sampling Date		2017/02/13	2017/02/13	2017/02/13	2017/02/13	2017/02/13	2017/02/13		
COC Number		na	na	na	na	na	na		
	UNITS	MB S1	MB S2	MB S2 Lab-Dup	MBS3	MB S4	MB S4 Lab-Dup	RDL	QC Batch
<b>Inorganics</b>									
Moisture	%	19	19	19	14	21		1.0	4862519
Chromium (VI)	ug/g	ND	ND		ND	ND	ND	0.2	4862559
<b>Metals</b>									
Hot Water Ext. Boron (B)	ug/g	0.31	0.36		0.89	0.75	0.77	0.050	4862923
Acid Extractable Antimony (Sb)	ug/g	ND	ND		ND	ND		0.20	4862926
Acid Extractable Arsenic (As)	ug/g	1.6	2.8		1.7	3.9		1.0	4862926
Acid Extractable Barium (Ba)	ug/g	120	83		110	93		0.50	4862926
Acid Extractable Beryllium (Be)	ug/g	0.44	0.46		0.37	0.44		0.20	4862926
Acid Extractable Boron (B)	ug/g	6.1	ND		5.5	5.6		5.0	4862926
Acid Extractable Cadmium (Cd)	ug/g	ND	0.20		0.13	0.20		0.10	4862926
Acid Extractable Chromium (Cr)	ug/g	22	15		20	15		1.0	4862926
Acid Extractable Cobalt (Co)	ug/g	7.8	5.2		6.0	4.7		0.10	4862926
Acid Extractable Copper (Cu)	ug/g	16	9.8		14	13		0.50	4862926
Acid Extractable Lead (Pb)	ug/g	14	10		12	17		1.0	4862926
Acid Extractable Molybdenum (Mo)	ug/g	0.85	0.85		0.66	0.85		0.50	4862926
Acid Extractable Nickel (Ni)	ug/g	15	9.5		12	9.0		0.50	4862926
Acid Extractable Selenium (Se)	ug/g	ND	ND		ND	ND		0.50	4862926
Acid Extractable Silver (Ag)	ug/g	ND	ND		ND	ND		0.20	4862926
Acid Extractable Thallium (Tl)	ug/g	0.18	0.14		0.14	0.13		0.050	4862926
Acid Extractable Uranium (U)	ug/g	0.61	0.49		0.67	0.54		0.050	4862926
Acid Extractable Vanadium (V)	ug/g	31	23		30	22		5.0	4862926
Acid Extractable Zinc (Zn)	ug/g	42	25		34	35		5.0	4862926
Acid Extractable Mercury (Hg)	ug/g	ND	ND		ND	0.070		0.050	4862926
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate ND = Not detected									

**TEST SUMMARY**

**Maxxam ID:** DXF594  
**Sample ID:** MB S1  
**Matrix:** Soil

**Collected:** 2017/02/13  
**Shipped:**  
**Received:** 2017/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	4862923	2017/02/14	2017/02/14	Jolly John
Hexavalent Chromium in Soil by IC	IC/SPEC	4862559	2017/02/14	2017/02/14	Sally Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	4862926	2017/02/14	2017/02/14	Daniel Teclu
Moisture	BAL	4862519	N/A	2017/02/14	Chun Yan

**Maxxam ID:** DXF595  
**Sample ID:** MB S2  
**Matrix:** Soil

**Collected:** 2017/02/13  
**Shipped:**  
**Received:** 2017/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	4862923	2017/02/14	2017/02/14	Jolly John
Hexavalent Chromium in Soil by IC	IC/SPEC	4862559	2017/02/14	2017/02/14	Sally Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	4862926	2017/02/14	2017/02/14	Daniel Teclu
Moisture	BAL	4862519	N/A	2017/02/14	Chun Yan

**Maxxam ID:** DXF595 Dup  
**Sample ID:** MB S2  
**Matrix:** Soil

**Collected:** 2017/02/13  
**Shipped:**  
**Received:** 2017/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	4862519	N/A	2017/02/14	Chun Yan

**Maxxam ID:** DXF596  
**Sample ID:** MB S3  
**Matrix:** Soil

**Collected:** 2017/02/13  
**Shipped:**  
**Received:** 2017/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	4862923	2017/02/14	2017/02/14	Jolly John
Hexavalent Chromium in Soil by IC	IC/SPEC	4862559	2017/02/14	2017/02/14	Sally Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	4862926	2017/02/14	2017/02/14	Daniel Teclu
Moisture	BAL	4862519	N/A	2017/02/14	Chun Yan

**Maxxam ID:** DXF597  
**Sample ID:** MB S4  
**Matrix:** Soil

**Collected:** 2017/02/13  
**Shipped:**  
**Received:** 2017/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	4862923	2017/02/14	2017/02/14	Jolly John
Hexavalent Chromium in Soil by IC	IC/SPEC	4862559	2017/02/14	2017/02/14	Sally Coughlin
Strong Acid Leachable Metals by ICPMS	ICP/MS	4862926	2017/02/14	2017/02/14	Daniel Teclu
Moisture	BAL	4862519	N/A	2017/02/14	Chun Yan

**TEST SUMMARY**

Maxxam ID: DXF597 Dup  
Sample ID: MB S4  
Matrix: Soil

Collected: 2017/02/13  
Shipped: 2017/02/14  
Received: 2017/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Hot Water Extractable Boron	ICP	4862923	2017/02/14	2017/02/14	Jolly John
Hexavalent Chromium in Soil by IC	IC/SPEC	4862559	2017/02/14	2017/02/14	Sally Coughlin

**GENERAL COMMENTS**

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	3.3°C
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Results relate only to the items tested.

**QUALITY ASSURANCE REPORT**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
4862519	GYA	RPD [DXF595-01]	Moisture	2017/02/14	0.54		%	20
4862559	SAC	Matrix Spike [DXF597-01]	Chromium (VI)	2017/02/14		0 (1)	%	75 - 125
4862559	SAC	Spiked Blank	Chromium (VI)	2017/02/14		80	%	80 - 120
4862559	SAC	Method Blank	Chromium (VI)	2017/02/14	ND, RDL=0.2		ug/g	
4862559	SAC	RPD [DXF597-01]	Chromium (VI)	2017/02/14	NC		%	35
4862923	JOH	Matrix Spike [DXF597-01]	Hot Water Ext. Boron (B)	2017/02/14		NC	%	75 - 125
4862923	JOH	Spiked Blank	Hot Water Ext. Boron (B)	2017/02/14		100	%	75 - 125
4862923	JOH	Method Blank	Hot Water Ext. Boron (B)	2017/02/14	ND, RDL=0.050		ug/g	
4862923	JOH	RPD [DXF597-01]	Hot Water Ext. Boron (B)	2017/02/14	2.0		%	40
4862926	DT1	Matrix Spike	Acid Extractable Antimony (Sb)	2017/02/14		97	%	75 - 125
			Acid Extractable Arsenic (As)	2017/02/14		101	%	75 - 125
			Acid Extractable Barium (Ba)	2017/02/14		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2017/02/14		101	%	75 - 125
			Acid Extractable Boron (B)	2017/02/14		97	%	75 - 125
			Acid Extractable Cadmium (Cd)	2017/02/14		98	%	75 - 125
			Acid Extractable Chromium (Cr)	2017/02/14		NC	%	75 - 125
			Acid Extractable Cobalt (Co)	2017/02/14		104	%	75 - 125
			Acid Extractable Copper (Cu)	2017/02/14		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2017/02/14		105	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2017/02/14		105	%	75 - 125
			Acid Extractable Nickel (Ni)	2017/02/14		106	%	75 - 125
			Acid Extractable Selenium (Se)	2017/02/14		103	%	75 - 125
			Acid Extractable Silver (Ag)	2017/02/14		102	%	75 - 125
			Acid Extractable Thallium (Tl)	2017/02/14		102	%	75 - 125
			Acid Extractable Uranium (U)	2017/02/14		103	%	75 - 125
			Acid Extractable Vanadium (V)	2017/02/14		NC	%	75 - 125
			Acid Extractable Zinc (Zn)	2017/02/14		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2017/02/14		101	%	75 - 125
4862926	DT1	Spiked Blank	Acid Extractable Antimony (Sb)	2017/02/14		97	%	80 - 120
			Acid Extractable Arsenic (As)	2017/02/14		99	%	80 - 120
			Acid Extractable Barium (Ba)	2017/02/14		97	%	80 - 120
			Acid Extractable Beryllium (Be)	2017/02/14		97	%	80 - 120
			Acid Extractable Boron (B)	2017/02/14		96	%	80 - 120
			Acid Extractable Cadmium (Cd)	2017/02/14		97	%	80 - 120
			Acid Extractable Chromium (Cr)	2017/02/14		102	%	80 - 120
			Acid Extractable Cobalt (Co)	2017/02/14		99	%	80 - 120
			Acid Extractable Copper (Cu)	2017/02/14		99	%	80 - 120
			Acid Extractable Lead (Pb)	2017/02/14		102	%	80 - 120
			Acid Extractable Molybdenum (Mo)	2017/02/14		102	%	80 - 120
			Acid Extractable Nickel (Ni)	2017/02/14		100	%	80 - 120
			Acid Extractable Selenium (Se)	2017/02/14		99	%	80 - 120
			Acid Extractable Silver (Ag)	2017/02/14		101	%	80 - 120
			Acid Extractable Thallium (Tl)	2017/02/14		99	%	80 - 120
			Acid Extractable Uranium (U)	2017/02/14		100	%	80 - 120
			Acid Extractable Vanadium (V)	2017/02/14		99	%	80 - 120
			Acid Extractable Zinc (Zn)	2017/02/14		96	%	80 - 120
			Acid Extractable Mercury (Hg)	2017/02/14		102	%	80 - 120
4862926	DT1	Method Blank	Acid Extractable Antimony (Sb)	2017/02/14	ND, RDL=0.20		ug/g	
			Acid Extractable Arsenic (As)	2017/02/14	ND, RDL=1.0		ug/g	

**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Acid Extractable Barium (Ba)	2017/02/14	ND, RDL=0.50		ug/g	
			Acid Extractable Beryllium (Be)	2017/02/14	ND, RDL=0.20		ug/g	
			Acid Extractable Boron (B)	2017/02/14	ND, RDL=5.0		ug/g	
			Acid Extractable Cadmium (Cd)	2017/02/14	ND, RDL=0.10		ug/g	
			Acid Extractable Chromium (Cr)	2017/02/14	ND, RDL=1.0		ug/g	
			Acid Extractable Cobalt (Co)	2017/02/14	ND, RDL=0.10		ug/g	
			Acid Extractable Copper (Cu)	2017/02/14	ND, RDL=0.50		ug/g	
			Acid Extractable Lead (Pb)	2017/02/14	ND, RDL=1.0		ug/g	
			Acid Extractable Molybdenum (Mo)	2017/02/14	ND, RDL=0.50		ug/g	
			Acid Extractable Nickel (Ni)	2017/02/14	ND, RDL=0.50		ug/g	
			Acid Extractable Selenium (Se)	2017/02/14	ND, RDL=0.50		ug/g	
			Acid Extractable Silver (Ag)	2017/02/14	ND, RDL=0.20		ug/g	
			Acid Extractable Thallium (Tl)	2017/02/14	ND, RDL=0.050		ug/g	
			Acid Extractable Uranium (U)	2017/02/14	ND, RDL=0.050		ug/g	
			Acid Extractable Vanadium (V)	2017/02/14	ND, RDL=5.0		ug/g	
			Acid Extractable Zinc (Zn)	2017/02/14	ND, RDL=5.0		ug/g	
			Acid Extractable Mercury (Hg)	2017/02/14	ND, RDL=0.050		ug/g	
4862926	DT1	RPD	Acid Extractable Antimony (Sb)	2017/02/14	NC		%	30
			Acid Extractable Arsenic (As)	2017/02/14	NC		%	30
			Acid Extractable Barium (Ba)	2017/02/14	4.6		%	30
			Acid Extractable Beryllium (Be)	2017/02/14	NC		%	30
			Acid Extractable Boron (B)	2017/02/14	NC		%	30
			Acid Extractable Cadmium (Cd)	2017/02/14	NC		%	30
			Acid Extractable Chromium (Cr)	2017/02/14	5.9		%	30
			Acid Extractable Cobalt (Co)	2017/02/14	1.7		%	30
			Acid Extractable Copper (Cu)	2017/02/14	3.3		%	30
			Acid Extractable Lead (Pb)	2017/02/14	4.9		%	30
			Acid Extractable Molybdenum (Mo)	2017/02/14	NC		%	30
			Acid Extractable Nickel (Ni)	2017/02/14	1.9		%	30
			Acid Extractable Selenium (Se)	2017/02/14	NC		%	30
			Acid Extractable Silver (Ag)	2017/02/14	NC		%	30
			Acid Extractable Thallium (Tl)	2017/02/14	NC		%	30
			Acid Extractable Uranium (U)	2017/02/14	5.6		%	30
			Acid Extractable Vanadium (V)	2017/02/14	NC		%	30



**QUALITY ASSURANCE REPORT(CONT'D)**

QA/QC			Date				
Batch	Init	QC Type	Parameter	Analyzed	Value	Recovery	UNITS QC Limits
			Acid Extractable Zinc (Zn)	2017/02/14	4.5		% 30
			Acid Extractable Mercury (Hg)	2017/02/14	NC		% 30

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.

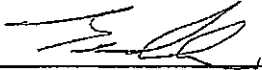
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

**VALIDATION SIGNATURE PAGE**

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



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Brad Newman, Scientific Specialist



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Cristina Carriere, Scientific Services

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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.