



# Terraprobe

Consulting Geotechnical and Environmental Engineering  
Construction Materials Engineering, Inspection and Testing

**Fax Transmittal**  
Barrie

Geotechnical  
Investigation,  
Engineering, &  
Design

File Number: 3-08-4081

January 5, 2009

Pavement  
Evaluation &  
Design

Addressee: Georgian Gate Ltd.  
Attention: **Mr. Bryan Nykoliation**

Fax: 730-1059

Environmental  
Assessment &  
Remediation  
Management  
Services

Addressee: C.C. Tatham & Associates Ltd.  
Attention: **Mr. Larry Hogarth**

Fax: 444-2327

Hydrogeology

---

Subject: **Corrosivity Analysis Report  
Proposed Residential Subdivision  
Le Scandinave Spa Lands  
Town of the Blue Mountains, Ontario**

---

Dam Safety &  
Assessment

Further to the completion of our Preliminary Geotechnical Investigation report for the above site, we have just received the final chemistry report for corrosivity analysis from the laboratory. The lab was apologetic and assured us that there would be no charge for this testing which was not reported in a timely manner.

Building  
Systems &  
Sciences

Chemical testing on two (2) soil samples from 1.5 to 2.0m depths at Boreholes 2 and 4 was conducted with respect to corrosivity parameters as requested (see attached Chemistry Results).

Construction  
Materials  
Engineering  
Inspection &  
Testing

Appendix A of ANSI/AWWA C105 indicates that protection against corrosion should be used where their point system exceeds ten points. Using their calculations, the soil samples collected at this site show a point value of about 4.5 to 5.5. Therefore, we would not expect corrosivity to be an issue/concern at this site.

Earthworks,  
Design,  
Inspection &  
Compaction  
Testing

We trust that this information is sufficient for your present requirements. If you should have any questions, or if we can be of further assistance, please do not hesitate to contact the undersigned.

CSA Certified  
Concrete  
Testing

Sincerely,  
**Terraprobe Limited**

CCIL Certified  
Aggregates &  
Asphalt Testing

Blair E. Goss, P.Eng.  
Associate

CWB Certified  
Welding &  
Structural Steel  
Inspection

  
Kirk R. Johnson, P.Geo., P.Eng.  
Associate

Attached: Chemical Results

[www.terraprobe.ca](http://www.terraprobe.ca)

Greater Toronto  
10 Bram Court  
Brampton, Ont. L6W 3R6  
Tel: (905) 796-2650  
Fax: 905) 796-2250  
brampton@  
terraprobe.ca

■ Central Ontario  
220 Bayview Drive, #25  
Barrie, Ont. L4N 4Y8  
Tel: (705) 739-8355  
Fax: (705) 739-8369  
barrie @  
terraprobe.ca

Hamilton-Niagara  
903 Barton Street  
Stoney Creek, Ont. L8E 5P5  
Tel: (905) 643-7560  
Fax: (905) 643-7559  
stoneycreek @  
terraprobe.ca

Northern Ontario  
1012 Kelly Lake Road, #1  
Sudbury, Ont. P3E 5P4  
Tel: (705) 670-0460  
Fax: (705) 670-0558  
sudbury@  
terraprobe.ca

Your Project #: 3-08-4081 LE SCANDINAVE SPA  
Your C.O.C. #: EO174208

**Attention: Blair Goss**  
Terraprobe Limited  
220 Bayview Dr  
Unit 25  
Barrie, ON  
L4N 4Y8

**Report Date: 2009/01/02**

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: A878405**  
**Received: 2008/07/18, 09:15**

Sample Matrix: Soil  
# Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Chloride (20:1 extract)	2	N/A	2008/07/24	CAM SOP-00463	
Conductivity	2	N/A	2008/07/24	CAM SOP-00414	APHA 2510
MOISTURE	2	N/A	2008/07/22	CAM SOP-00445	McKeague 2nd ed 1978
pH CaCl2 EXTRACT	2	N/A	2008/07/24	CAM SOP-00413	SM 4500 H
Resistivity in Soil	2	2008/07/21	2008/07/24		
Sulphate (20:1 Extract)	2	N/A	2008/07/25	CAM SOP-00464	EPA 375.4
Redox Potential (mV)	2	2008/07/23	2008/07/28		

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

(1) This test was performed by Maxxam Sladeview Petrochemical

**Encryption Key**

  
Andrew White  
02 Jan 2009 09:26:36 -05:00

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

ANDREW WHITE, Project Manager  
Email: Andrew.White@maxxamanalytics.com  
Phone# (905) 817-5700

=====  
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. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 1

Page 1 of 5

Maxxam Job #: A878405  
 Report Date: 2009/01/02

Terraprobe Limited  
 Client Project #: 3-08-4081 LE SCANDINAVE SPA

**RESULTS OF ANALYSES OF SOIL**

Maxxam ID		Z97061	Z97062	Z97062		
Sampling Date		2008/07/14	2008/07/14	2008/07/14		
COC Number		EO174208	EO174208	EO174208		
	<b>Units</b>	<b>BH2, SA3</b>	<b>BH4, SA3</b>	<b>BH4, SA3 Lab-Dup</b>	<b>RDL</b>	<b>QC Batch</b>

<b>Calculated Parameters</b>						
Resistivity	ohm-cm	10000	7300			1566483
<b>Inorganics</b>						
Soluble (20:1) Chloride (Cl)	ug/g	77	76		20	1570552
Conductivity	umho/cm	98	138	138	2	1569218
Moisture	%	10	7.5		0.2	1567727
Available (CaCl2) pH	pH	7.87	7.88			1569209
Soluble (20:1) Sulphate (SO4)	ug/g	26	55		20	1569205
<b>Subcontracted Analysis</b>						
Redox Potential	mV	+306	+311		5	1568736

RDL = Reportable Detection Limit  
 QC Batch = Quality Control Batch

Maxxam Job #: A878405  
Report Date: 2009/01/02

Terraprobe Limited  
Client Project #: 3-08-4081 LE SCANDINAVE SPA

Package 1	24.0°C
-----------	--------

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

**GENERAL COMMENTS**

Results relate only to the items tested.

Terraprobe Limited  
 Attention: Blair Goss  
 Client Project #: 3-08-4081 LE SCANDINAVE SPA  
 P.O. #:  
 Project name:

Quality Assurance Report  
 Maxxam Job Number: MA878405

QA/QC Batch	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1567727 AYU	RPD	Moisture	2008/07/22	6.3		%	50
1568736 DN	QC STANDARD	Redox Potential	2008/07/28		+241	%	N/A
	Method Blank	Redox Potential	2008/07/28	+189, RDL=5		mV	
1569205 DRM	MATRIX SPIKE	Soluble (20:1) Sulphate (SO4)	2008/07/25		104	%	75 - 125
	Spiked Blank	Soluble (20:1) Sulphate (SO4)	2008/07/25		101	%	80 - 120
	Method Blank	Soluble (20:1) Sulphate (SO4)	2008/07/25	ND, RDL=20		ug/g	
	RPD	Soluble (20:1) Sulphate (SO4)	2008/07/25	NC		%	35
1569218 DMA	QC STANDARD	Conductivity	2008/07/24		103	%	90 - 110
	Method Blank	Conductivity	2008/07/24	ND, RDL=2		umho/cm	
	RPD [Z97062-01]	Conductivity	2008/07/24	0.3		%	35
1570552 DRM	MATRIX SPIKE	Soluble (20:1) Chloride (Cl)	2008/07/26		105	%	75 - 125
	Spiked Blank	Soluble (20:1) Chloride (Cl)	2008/07/26		102	%	80 - 120
	Method Blank	Soluble (20:1) Chloride (Cl)	2008/07/26	ND, RDL=20		ug/g	
	RPD	Soluble (20:1) Chloride (Cl)	2008/07/26	NC		%	35

ND = Not detected  
 N/A = Not Applicable  
 NC = Non-calculable  
 RPD = Relative Percent Difference  
 QC Standard = Quality Control Standard  
 SPIKE = Fortified sample



Your Project #: MA878405  
Site: 3-08-4081 LE SCANDINAVE SPA  
Your C.O.C. #: 08207873

**Attention: SUB CONTRACTOR**  
MAXXAM ANALYTICS INC.  
CAMPOBELLO  
6740 CAMPOBELLO ROAD  
MISSISSAUGA, ON  
CANADA L5N 2L8

**Report Date: 2008/07/28**

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: A836968**  
**Received: 2008/07/24, 09:30**

Sample Matrix: Soil  
# Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Moisture	2	N/A	2008/07/25	BRN SOP-00321 R3.0	Ont MOE -E 3139
Sulfide (AVS) (soil)	2	2008/07/28	2008/07/28	BRN SOP-00229 R1.0	Based EPA821-R91-100

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

Encryption Key

  
Rob MacArthur  
28 Jul 2008 17:59:50 -07:00

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

KIMBERLEY WEBBER, BBY Customer Service  
Email: kim.webber@maxxamanalytics.com  
Phone# (604) 444-4808 Ext:259

=====  
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. SCC and CAEAL have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 1

Burnaby: 8577 Commerce Court V5A 4N5 Telephone(604) 444-4808 Fax(604) 444-4511

Maxxam Job #: A836968  
Report Date: 2008/07/28

MAXXAM ANALYTICS INC.  
Client Project #: MA878405  
Site Reference: 3-08-4081 LE SCANDINAVE SPA

**RESULTS OF CHEMICAL ANALYSES OF SOIL**

Maxxam ID		K82713	K82714		
Sampling Date		2008/07/14	2008/07/14		
COC Number		08207873	08207873		
	<b>Units</b>	<b>BH2,SA3</b> <b>(Z97061-01R)</b>	<b>BH4,SA3</b> <b>(Z97062-01R)</b>	<b>RDL</b>	<b>QC Batch</b>

<b>MISCELLANEOUS</b>					
Sulphide	ug/g	1.0	1.1	0.2	2467340
<b>Physical Properties</b>					
Moisture	%	13	7.4	0.3	2457212
RDL = Reportable Detection Limit					

Maxxam Job #: A836968  
Report Date: 2008/07/28

MAXXAM ANALYTICS INC.  
Client Project #: MA878405  
Site Reference: 3-08-4081 LE SCANDINAVE SPA

**General Comments**

Results relate only to the items tested.

MAXXAM ANALYTICS INC.  
Attention: SUB CONTRACTOR  
Client Project #: MA878405  
P.O. #:  
Site Reference: 3-08-4081 LE SCANDINAVE SPA

Quality Assurance Report  
Maxxam Job Number: VA836968

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2457212 RL2	BLANK	Moisture	2008/07/25	<0.3		%	
	RPD	Moisture	2008/07/25	3.0		%	20
2467340 LW1	SPIKE	Sulphide	2008/07/28		115	%	75 - 125
	BLANK	Sulphide	2008/07/28	0.2, RDL=0.2		ug/g	

RPD = Relative Percent Difference

Burnaby: 8577 Commerce Court V5A 4N5 Telephone(604) 444-4808 Fax(604) 444-4511

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



---

DAVE HUANG, BBY Scientific Specialist

---

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. SCC and CAEAL have approved this reporting process and electronic report format.