

Jim Pattison Developments Ltd.

**GEOTECHNICAL INVESTIGATION
KAMLOOPS ON THE LAKE DEVELOPMENT PARCEL (F)
KAMLOOPS, BRITISH COLUMBIA**

8800305

September 8, 2006

EBA Engineering Consultants Ltd.
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FIGURES

Figure 1 Site Plan with Borehole Locations

APPENDICES

- Appendix A Borehole Logs
- Appendix B Laboratory Testing Results
- Appendix C EBA's Geotechnical Report - General Conditions

- Site soil and groundwater characteristics
- Site Suitability for intended development
- Recommendations for foundation design
- Recommendations for slab-on-grade construction
- Suitability of the on-site material for re-use
- Any special requirements for construction

4.0 FIELD INVESTIGATION

The field investigation consisted of a total eleven (11) test pits excavated to depths of between 2.0 metres (m) to 4.5 m.

The investigation was carried out on August 22, 2006, using a backhoe supplied by the client. Mr. M. Cevat Catana, E.I.T., a Geotechnical Engineer from EBA's Kelowna office, supervised the test pit investigation.

The approximate locations of the test pits are presented on Figure 1.

Continuous written logs were maintained in the field, including a visual description of the classification, consistency, moisture content, color and thickness of all soil layers encountered. Disturbed samples were collected for laboratory testing to obtain soil parameters and confirm the visual descriptions made in the field. Detailed logs, including the results of the index testing, are shown as TP-1 to TP-11, in Appendix A.

5.0 LABORATORY TESTING PROGRAM

Laboratory testing was undertaken to obtain design parameters and confirm the visual descriptions. Testing included:

- Four grain size sieve analyses
- One hydrometer analysis
- One moisture content determination

6.0 SOIL CONDITIONS

The soil profile at our test pit locations consisted of:

- Topsoil approximately 0.5 m in thickness containing gravel;
- Fill (TP-1, 3, 4 and 5) 0.5 to 1 m in thickness. The fill consisted of gravely sand, some cobbles and trace silt for TP-1 and 4. In TP-3 and 5, the fill was mainly cobbles, with some sand and silt.

- The topsoil (or fill) is underlain by silty sand, sandy silt and silt layers, stiff to very stiff in density with some clay and fine to coarse-grained Sand, Gravel and cobbles.
- The soils were noted to be dry to damp for all the test pits that have been dug.

No groundwater seepage was encountered during the investigation.

For a more detailed description of the soils encountered during our investigation refer to the test pit logs, in Appendix A and laboratory results in Appendix B.

It should be noted that geological conditions are innately variable and are seldom spatially uniform. At the time of the report, information on stratigraphy at the project was available at three test pits. In order to develop recommendations from this information, it is necessary to make some assumptions concerning soil and groundwater conditions other than at the test pit locations. Adequate monitoring should be provided during construction to check that these assumptions are reasonable.

7.0 DISCUSSION AND RECOMMENDATIONS

7.1 GENERAL

Based on our understanding of the project and the soil conditions on site, we are of the opinion that, from a geotechnical perspective, the proposed soil on site is suitable for the design and construction of the project. The following provides a discussion of the geotechnical issues involved with the construction of this project.

7.2 SITE PREPARATION

Within the proposed building areas, site preparation for the foundation and slab-on-grade floors should include the excavation and removal of all topsoil and loose material to expose the underlying natural deposits of sandy silt, silty sand, or silt layers.

Once the subgrade surface is exposed, it should be inspected by a geotechnical engineer to confirm the bearing pressure of the exposed soil.

7.3 SPREAD AND STRIP FOOTINGS

Based on the soil conditions and the site preparation requirements in section 7.2, we provide the following bearing capacities for strip and spread footing.

- **Strip footings** founded on native sandy silt or silty sand soil as described above may be designed based on an allowable bearing pressure of up to **180 kPa**.
- **Spread footings** founded on native sandy silt or silty sand soil as described above may be designed based on an allowable bearing pressure of up to **180 kPa**.



Spread and strip footings should have minimum dimension of 0.6 m and 0.45 m, respectively. A minimum of 0.9 m soil cover should be provided above the bottom of all exterior footings to ensure adequate frost protection.

Based on the BC Building Code Table 4.1.9.C. a foundation factor F of 1.5 should be taken.

7.4 FOUNDATION SETTLEMENT

It is anticipated that total settlement of the floor slab and foundation will be less than 25 mm and differential settlement will be less than 13 mm across a horizontal distance of 15 m.

7.5 SLAB-ON-GRADE

Under the floor slab areas, site preparation should include the excavation and removal of all loose material to expose the underlying natural deposits of sandy silt, silty sand or silt.

It is recommended that the final 100 mm below the slab-on-grade floor consist of compacted 20 mm minus crushed gravel, compacted to a minimum of 100% of SPMDD, within 2% of optimum moisture content. A vapour barrier should be placed immediately below the slab.

7.6 REUSE OF ON-SITE MATERIALS

Any topsoil or other organic soil on this site is considered unsuitable for use as structural fill for the building. Topsoil should only be used as landscape fill.

The on-site sand and sand and gravel soils may be reused as a replacement for structural fill provided that the required compaction (100% SPMDD) can be achieved. For sand containing a high silt content, placement, moisture conditioning and compaction of the fine-grained material could be very difficult.

The suitability of any on-site or imported material proposed for use as structural fill should be confirmed by a geotechnical engineer prior to its use on site.

7.7 TRENCH EXCAVATION

All excavations greater than 1.5 m deep should be sloped or shored for worker protection

Temporary trenches for underground utilities excavated within the loose to compact sand, silty sand, and sand and gravel should be excavated at a slope no steeper than 1.5(H):1(V) to a maximum depth of 3 m. A flatter slope of 2(H):1(V) should be used if groundwater is encountered. If loose cobbles or boulders are encountered, they should be removed from the sides of the excavation.

contractor, experienced in foundation and earthworks construction. An adequate level of monitoring is considered to be:

- For shallow foundations observation of all bearing surfaces prior to concrete placement
- For earthworks full-time monitoring and compaction testing

Suitably qualified persons, independent of the contractor, should carry out all such monitoring. It should be noted that failure to provide an adequate level of foundation monitoring might be in contravention of the Building Code.

One of the purposes of providing an adequate level of monitoring is to check that recommendations based on data obtained at the test pits, are relevant to other areas of the site.

Site subgrades following stripping, structural fill placement and compaction, bearing surfaces, foundation installation, and subgrade and base course preparation for slabs-on-grade and pavement areas should be inspected by qualified geotechnical personnel during construction. EBA will provide these services, if requested.

9.0 LIMITATIONS

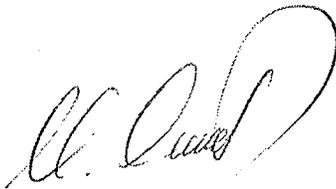
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Use of this report is subject to the EBA's Geotechnical Report - General Conditions, included as Appendix C. The reader's attention is specifically drawn to these conditions, as it is essential that they be followed for the proper use and interpretation of this report.

10.0 CLOSURE

We trust this report meets your present requirements. Should you require any additional information please feel free to contact the undersigned at your convenience.

Yours truly,
EBA Engineering Consultants Ltd.



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/kj



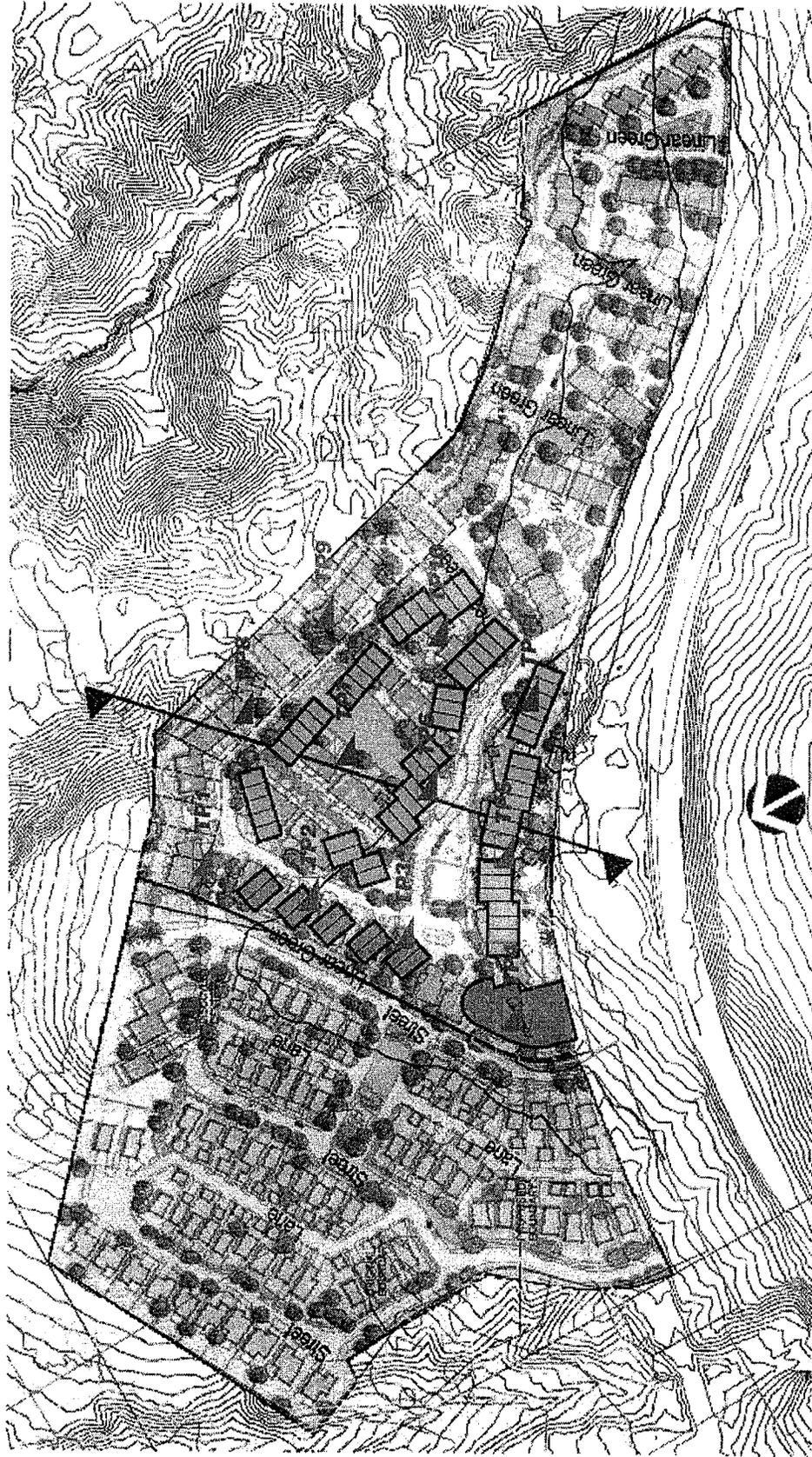
Sept 8, 2006

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FIGURES





LEGEND

-  TEST PIT LOCATION
-  BOREHOLE LOCATION

SCALE 1:2000



EBA Engineering Consultants Ltd. 		PROJECT	Kamloops on the Lake Development Parcel (F) Ashcroft, Kamloops, BC	
CLIENT Jim Pattison Development Ltd.		TITLE	Site Plan Showing Testhole Locations	
DATE	August 22, 2006	DWN.	CC	CHKD.
			GM	FILE NO.
				0808-8800305
				FIGURE 1

8800305
September 8, 2006



APPENDIX

APPENDIX A BOREHOLE LOGS



Kamloops on the Lake	Jim Pattison Developments Ltd.	TESTPIT NO: TP-1
Highway 1		PROJECT NO: 8800305
Kamloops, BC		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	NOTES & COMMENTS	Depth (ft)
0	TOPSOIL AND ROOTLETS						0
	GRAVELLY SAND, trace silt and cobbles, compact to dense, dry light brown						
	-Occasional rootlets						
1							5
2							10
	-Dry to damp, hard to dig, silt percent increases		1	SM			
3							15
	-Dense to very dense, brown.						
4							
	END OF TEST PIT @ 4.5 m.						16

EBA Engineering Consultants Ltd.	LOGGED BY: CC	COMPLETION DEPTH: 4.5m
	REVIEWED BY: GM	COMPLETE:
	DRAWING NO: TP-1	Page 1 of 1

Kamloops on the Lake	Jim Pattison Developments Ltd.	TESTPIT NO: TP-2
Highway 1		PROJECT NO: 8800305
Kamloops, BC		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	NOTES & COMMENTS	Depth (ft)
0	TOPSOIL AND ROOTLETS						0
	SILTY SAND, dense to very dense, dry, light brown.						
1							
		<input checked="" type="checkbox"/>	2	MLS			5
2							
3	SILT, some clay, stiff to very stiff, dry to damp, grayish brown						10
4							
	END OF TEST PIT @ 4.2 m.						15
5							16

	LOGGED BY: CC	COMPLETION DEPTH: 4.2m
	REVIEWED BY: GM	COMPLETE:
	DRAWING NO: TP-2	Page 1 of 1

Kamloops on the Lake
 Highway 1
 Kamloops, BC

Jim Pattison Developments Ltd.

TESTPIT NO: TP-4
 PROJECT NO: 8800305

SAMPLE TYPE DISTURBED NO RECOVERY SPT A-CASING SHELBY TUBE CORE
 BACKFILL TYPE BENTONITE PEA GRAVEL SLOUGH GROUT DRILL CUTTINGS SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	USC	SOIL SYMBOL	NOTES & COMMENTS	Depth (ft)
0	SANDY GRAVEL, occasional silt and sand layers, compact, dry to damp, gray.						0
1	SILT, some clay, dry, stratified, stiff to very stiff.	<input checked="" type="checkbox"/>	3	GWS			5
2							10
3	END OF TEST PIT @ 3.2 m.						15
4							20
5							25
							30
							35
							40
							45
							50
							55
							60
							65
							70
							75
							80
							85
							90
							95
							100
							105
							110
							115
							120
							125
							130
							135
							140
							145
							150
							155
							160

EBA Engineering Consultants Ltd. LOGGED BY: CC COMPLETION DEPTH: 3.2m
 REVIEWED BY: GM COMPLETE:
 DRAWING NO: TP-4 Page 1 of 1

Kamloops on the Lake		Jim Pattison Developments Ltd.		TESTPIT NO: TP-5			
Highway 1				PROJECT NO: 8800305			
Kamloops, BC							
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	TOPSOIL AND ROOTLETS			0
	COBBLES, with sand. gray.			
1	SILTY SAND, dry to damp, compact, light brown grayish.			5
2				
3				10
	END OF TEST PIT @ 3.1 m.			
4				
5				15
				16

 EBA Engineering Consultants Ltd.	LOGGED BY: CC	COMPLETION DEPTH: 3.1m
	REVIEWED BY: GM	COMPLETE:
	DRAWING NO: TP-5	Page 1 of 1

Kamloops on the Lake		Jim Pattison Developments Ltd.		TESTPIT NO: TP-6			
Highway 1				PROJECT NO: 8800305			
Kamloops, BC							
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	TOPSOIL AND ROOTLETS.			0
	SILT, some clay, some sand stiff to very stiff, dry, stratified, light brown.			
1				
2				
3				
	END OF TEST PIT @ 3.2 m.			
4				
5				
				10
				15
				16

 EBA Engineering Consultants Ltd.	LOGGED BY: CC	COMPLETION DEPTH: 3.2m
	REVIEWED BY: GM	COMPLETE:
	DRAWING NO: TP-6	Page 1 of 1

Kamloops on the Lake	Jim Pattison Developments Ltd.	TESTPIT NO: TP-7
Highway 1		PROJECT NO: 8800305
Kamloops, BC		

SAMPLE TYPE	<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE	<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	TOPSOIL AND ROOTLETS SANDY SILT, stiff, damp, light brown grayish.			0
1				
2	-Trace cobbles.			
3				
4	END OF TEST PIT @ 3.5 m.			
5				
				16

EBA Engineering Consultants Ltd.	LOGGED BY: CC	COMPLETION DEPTH: 3.5m
	REVIEWED BY: GM	COMPLETE:
	DRAWING NO: TP-7	Page 1 of 1

Kamloops on the Lake		Jim Pattison Developments Ltd.		TESTPIT NO: TP-8			
Highway 1				PROJECT NO: 8800305			
Kamloops, BC							
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND

Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)
0	TOPSOIL AND ROOTLETS SILT, some gravel and sand, stiff to very stiff, dry, light brown.			0
1				
2	-Trace Cobbles.			5
3	-Cobble content increases.			
4	-Hard to dig. END OF TEST PIT @ 3.6 m.			
5				
5				16

 EBA Engineering Consultants Ltd.	LOGGED BY: CC	COMPLETION DEPTH: 3.6m
	REVIEWED BY: GM	COMPLETE:
	DRAWING NO: TP-8	Page 1 of 1

Kamloops on the Lake		Jim Pattison Developments Ltd.		TESTPIT NO: TP-11			
Highway 1				PROJECT NO: 8800305			
Kamloops, BC							
SAMPLE TYPE		<input checked="" type="checkbox"/> DISTURBED	<input type="checkbox"/> NO RECOVERY	<input checked="" type="checkbox"/> SPT	<input type="checkbox"/> A-CASING	<input type="checkbox"/> SHELBY TUBE	<input type="checkbox"/> CORE
BACKFILL TYPE		<input checked="" type="checkbox"/> BENTONITE	<input type="checkbox"/> PEA GRAVEL	<input type="checkbox"/> SLOUGH	<input type="checkbox"/> GROUT	<input type="checkbox"/> DRILL CUTTINGS	<input type="checkbox"/> SAND
Depth (m)	SOIL DESCRIPTION			SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)	
0	TOPSOIL AND ROOTLETS.					0	
1	SILT, cobbley, trace gravel, stiff, dry, light brown.					5	
2	END OF TEST PIT @ 2.0 m.					10	
3						15	
4						15	
5						16	



EBA Engineering Consultants Ltd.

LOGGED BY: CC	COMPLETION DEPTH: 2m
REVIEWED BY: GM	COMPLETE:
DRAWING NO: TP-11	Page 1 of 1

Kamloops on the Lake		Jim Pattison Developments Ltd.		TESTPIT NO: TP-10	
Highway 1				PROJECT NO: 8800305	
Kamloops, BC					
SAMPLE TYPE <input checked="" type="checkbox"/> DISTURBED <input type="checkbox"/> NO RECOVERY <input checked="" type="checkbox"/> SPT <input type="checkbox"/> A-CASING <input type="checkbox"/> SHELBY TUBE <input type="checkbox"/> CORE					
BACKFILL TYPE <input checked="" type="checkbox"/> BENTONITE <input type="checkbox"/> PEA GRAVEL <input type="checkbox"/> SLOUGH <input type="checkbox"/> GROUT <input type="checkbox"/> DRILL CUTTINGS <input type="checkbox"/> SAND					
Depth (m)	SOIL DESCRIPTION	SAMPLE TYPE	NOTES & COMMENTS	Depth (ft)	
0	TOPSOIL AND ROOTLETS.			0	
	SILT, some sand, stiff, dry, light brown.				
1					
2	END OF TEST PIT @ 2.0 m.				
3					
4					
5					
				15	
				16	
 EBA Engineering Consultants Ltd.		LOGGED BY: CC REVIEWED BY: GM DRAWING NO: TP-10		COMPLETION DEPTH: 2m COMPLETE: Page 1 of 1	

APPENDIX

APPENDIX B LABORATORY TESTING RESULTS

EBA Engineering

GRAIN SIZE DISTRIBUTION

Project: Kamloops On the Lake Development (Parcel F)

Project Number: 0808-8800305

Date Tested: August 24, 2006

Borehole Number: TP - 1 Lab# 1690

Depth: 9 feet

Soil Description: Silty sand, some gravel.

Cu: n/a

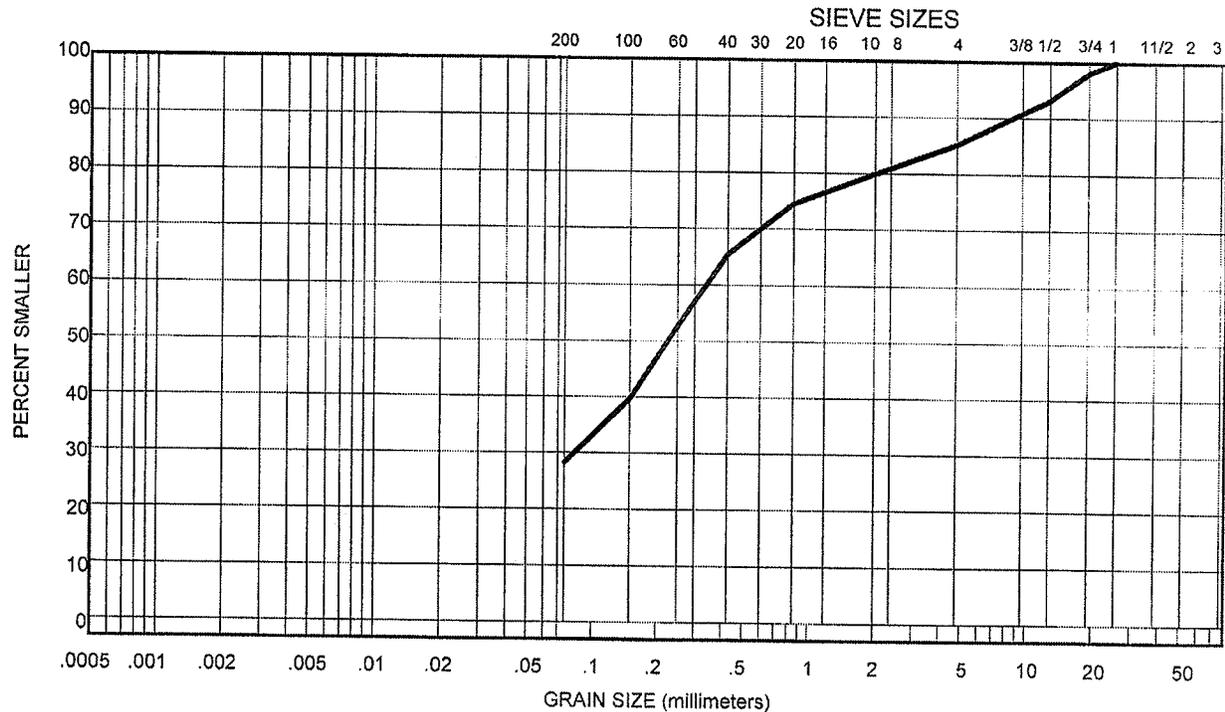
Cc: n/a

Natural Moisture Content: 2.1%

Remarks: Sand (57%) Silt (28%) Gravel (15%)

SIEVE	PERCENTAGE PASSING
50.000	#N/A
37.500	#N/A
25.000	100
19.000	98
12.500	93
9.500	91
4.750	85
2.000	80
0.850	75
0.425	65
0.250	53
0.150	40
0.075	28

CLAY	SILT	SAND			GRAVEL	
		FINE	MEDIUM	COARSE	FINE	COARSE



Reviewed By: [Signature]

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The testing services reported herein have been performed by an EBA technician to recognized industry standards, unless otherwise noted. No other warranty is made. These data do not include or represent any interpretation or opinion of specification compliance or material suitability. Should engineering interoperation be required, EBA will provide it upon written request.



EBA Engineering

GRAIN SIZE DISTRIBUTION

Project: Kamloops On the Lake Development (Parcel F)

Project Number: 0808-8800305

Date Tested: August 24, 2006

Borehole Number: TP - 2 Lab# 1691

Depth: 5 feet

Soil Description: Sandy silt, trace gravel.

Cu: n/a

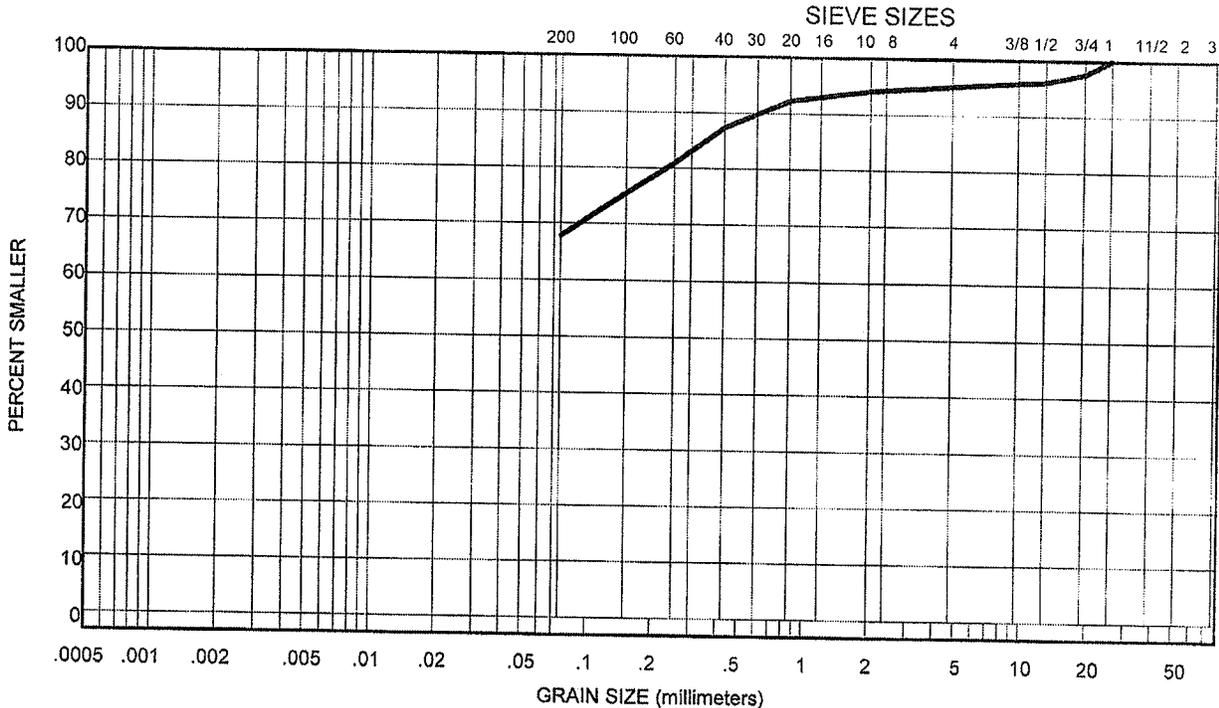
Cc: n/a

Natural Moisture Content: 7.2%

Remarks: Silt (68%) Sand (27%) Gravel (5%)

SIEVE	PERCENTAGE PASSING
50.000	#N/A
37.500	#N/A
25.000	100
19.000	98
12.500	96
9.500	96
4.750	95
2.000	94
0.850	92
0.425	87
0.250	81
0.150	75
0.075	68

CLAY	SILT	SAND			GRAVEL	
		FINE	MEDIUM	COARSE	FINE	COARSE



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EBA Engineering

GRAIN SIZE DISTRIBUTION

Project: Kamloops On the Lake Development (Parcel F)

Project Number: 0808-8800305

Date Tested: August 24, 2006

Borehole Number: TP - 4 Lab# 1692

Depth: 4 feet

Soil Description: Gravel and sand, trace silt.

Cu: 44

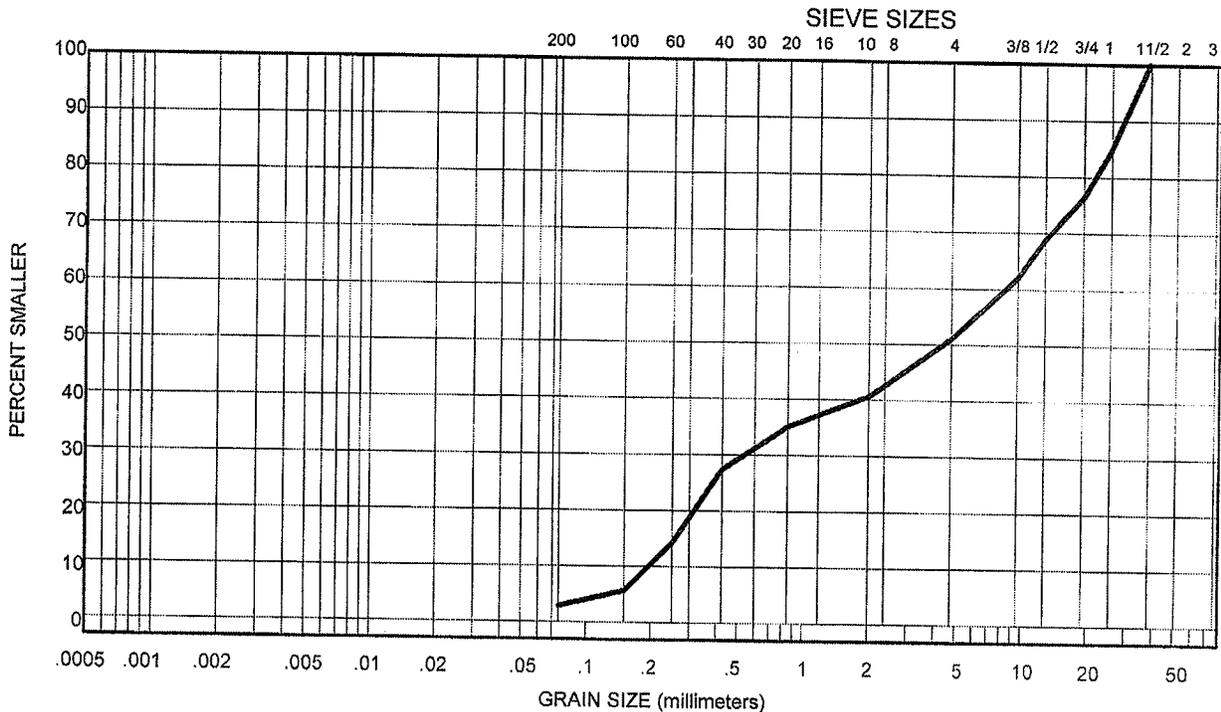
Cc: 0.2

Natural Moisture Content: 1.1%

Remarks: Gravel (49%) Sand (48%) Silt (3%)

SIEVE	PERCENTAGE PASSING
50.000	#N/A
37.500	100
25.000	85
19.000	76
12.500	69
9.500	62
4.750	51
2.000	41
0.850	35
0.425	27
0.250	14
0.150	6
0.075	3

CLAY	SILT	SAND			GRAVEL	
		FINE	MEDIUM	COARSE	FINE	COARSE



Reviewed By: [Signature]

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EBA Engineering

GRAIN SIZE DISTRIBUTION

Project: Kamloops On the Lake Development (Parcel F)

Project Number: 0808-8800305

Date Tested: August 24, 2006

Borehole Number: TP - 9 Lab# 1693

Depth: 5 feet

Soil Description: Silt, some sand, trace gravel.

Cu: n/a

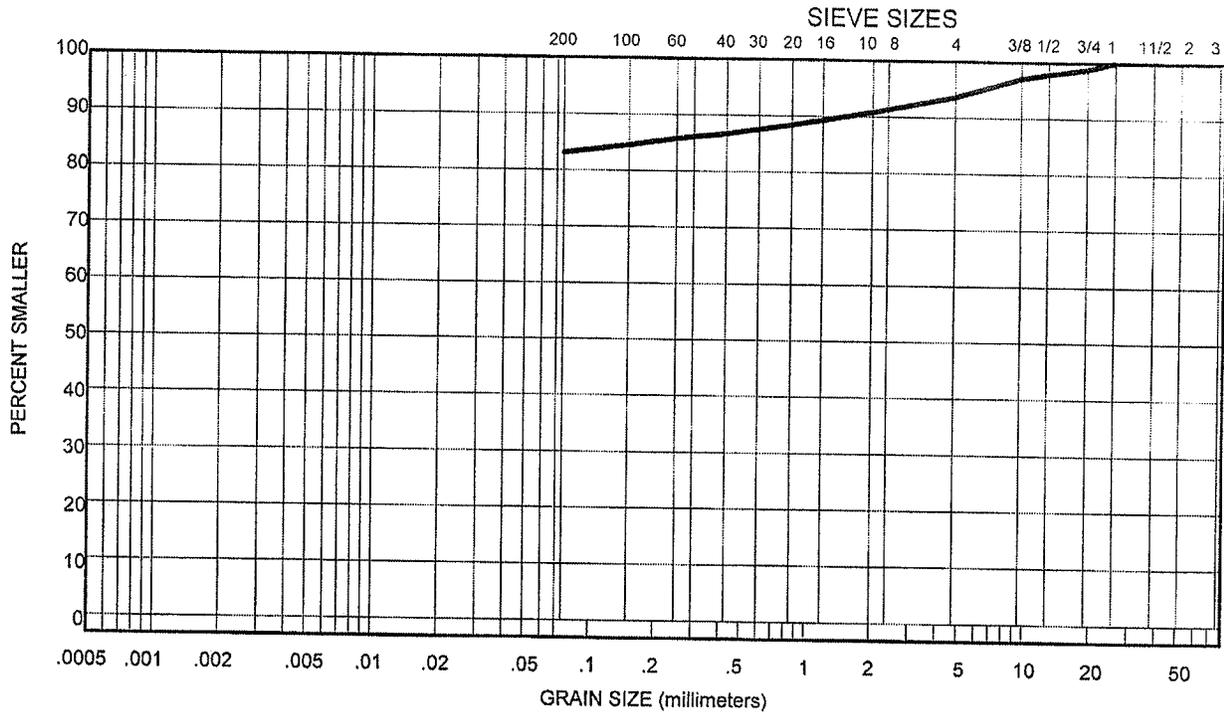
Cc: n/a

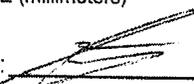
Natural Moisture Content: 12.1%

Remarks: Silt (83%) Sand (11%) Gravel (6%)

SIEVE	PERCENTAGE PASSING
50.000	#N/A
37.500	#N/A
25.000	100
19.000	99
12.500	98
9.500	97
4.750	94
2.000	91
0.850	88
0.425	87
0.250	86
0.150	85
0.075	83

CLAY	SILT	SAND			GRAVEL	
		FINE	MEDIUM	COARSE	FINE	COARSE



Reviewed By: 

Data presented hereon is for the sole use of the stipulated client. EBA is not responsible, nor can be held liable, for use made of this report by any other party, with or without the knowledge of EBA.

The testing services reported herein have been performed by an EBA technician to recognized industry standards, unless otherwise noted. No other warranty is made. These data do not include or represent any interpretation or opinion of specification compliance or material suitability. Should engineering interoperation be required, EBA will provide it upon written request.

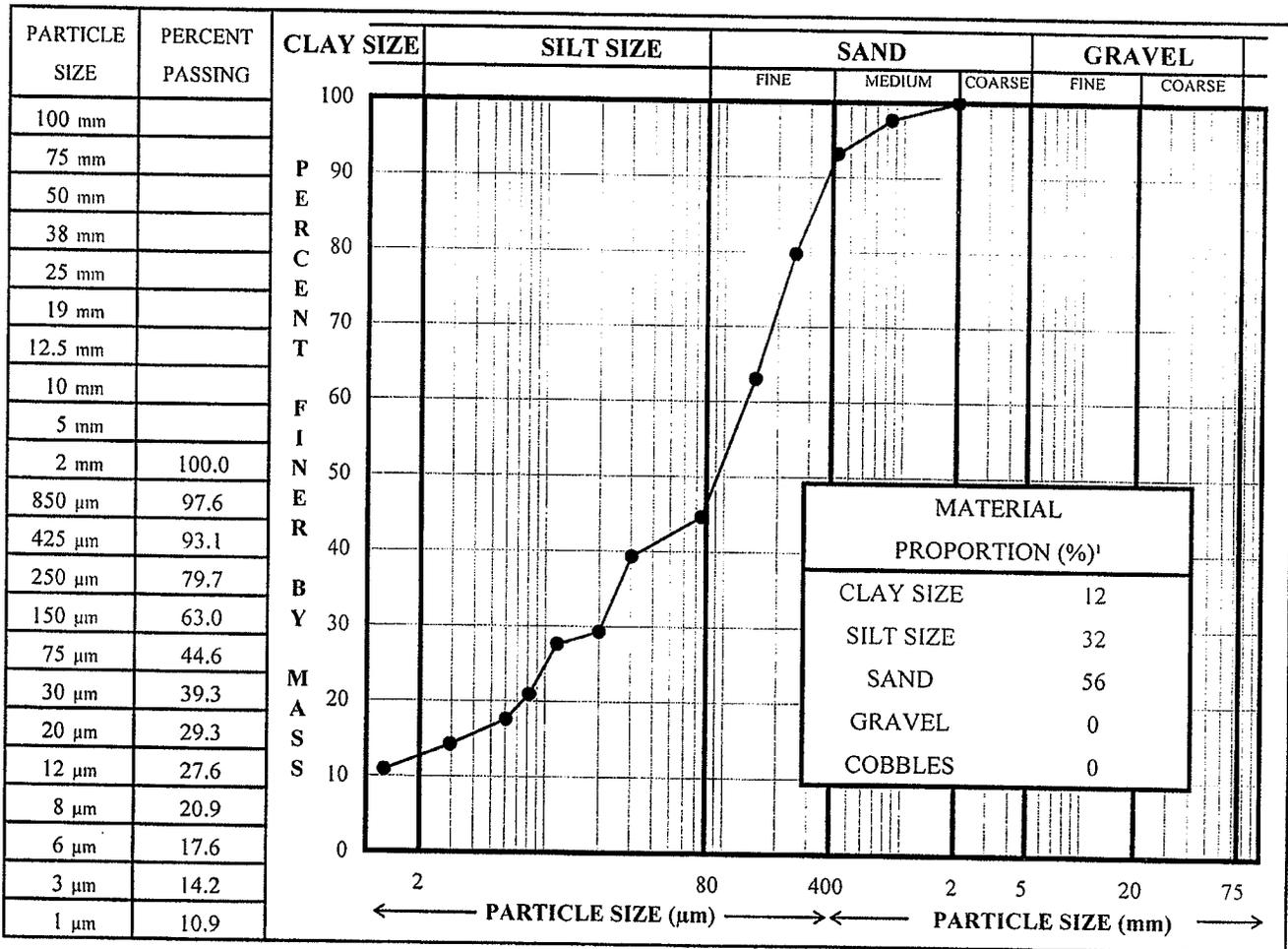


EBA Engineering Consultants Ltd.

PARTICLE SIZE ANALYSIS

(Test Method ASTM D422)

PROJECT: **Kamloops On the Lake Development (Parcel F)**
 CLIENT: **Jim Pattison Developments Ltd.**
 PROJECT NO.: **0808-8800305**
 LOCATION: **TP-6**
 SAMPLE NO.: **1694**
 DEPTH: **5 feet**
 DESCRIPTION: **Silty sand, some clay.**



Note 1: Classified by the Modified Unified Soil Classification System

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102 - 3677 Highway 97N
 Kelowna, B.C. V1X 5C3
 Telephone (250) 765-9646
 Fax (250) 765-3893
 Email caroenvironmental@shaw.ca

CERTIFICATE OF ANALYSIS

August 31, 2006

EBA Environmental Ltd.
 #150 - 1715 Dickson Avenue
 KELOWNA, BC
 V1Y 9G6

Attention: Cevat Catana

Project: Kamloops Development - 8800305

Sampled:
 Received: August 25/06

Sample Type: Soils, results expressed on dry weight basis

<u>Sample ID:</u>	<u>Soluble Sulphates, mg/kg</u>
TP-9 @ 5'	2090
TP-1 @ 9'	32
TP-5 @ 5'	<10

Certified by:
 CARO Environmental Services

A handwritten signature in black ink, appearing to read "Jennifer Shanko".

Jennifer Shanko, ASCT
 Lab Manager

FAX 862-2941

THE INFORMATION CONTAINED IN
 THIS REPORT IS THE CONFIDENTIAL
 PROPERTY OF THE CLIENT. ANY
 LIABILITY ATTACHED THERETO IS
 LIMITED TO THE FEE CHARGED.

APPENDIX

APPENDIX C EBA'S GEOTECHNICAL REPORT - GENERAL CONDITIONS

GEOTECHNICAL REPORT – GENERAL CONDITIONS

This report incorporates and is subject to these "General Conditions".

1.0 USE OF REPORT AND OWNERSHIP

This geotechnical report pertains to a specific site, a specific development and a specific scope of work. It is not applicable to any other sites nor should it be relied upon for types of development other than that to which it refers. Any variation from the site or development would necessitate a supplementary geotechnical assessment.

This report and the recommendations contained in it are intended for the sole use of EBA's client. EBA does not accept any responsibility for the accuracy of any of the data, the analyses or the recommendations contained or referenced in the report when the report is used or relied upon by any party other than EBA's client unless otherwise authorized in writing by EBA. Any unauthorized use of the report is at the sole risk of the user.

This report is subject to copyright and shall not be reproduced either wholly or in part without the prior, written permission of EBA. Additional copies of the report, if required, may be obtained upon request.

2.0 NATURE AND EXACTNESS OF SOIL AND ROCK DESCRIPTIONS

Classification and identification of soils and rocks are based upon commonly accepted systems and methods employed in professional geotechnical practice. This report contains descriptions of the systems and methods used. Where deviations from the system or method prevail, they are specifically mentioned.

Classification and identification of geological units are judgmental in nature as to both type and condition. EBA does not warrant conditions represented herein as exact, but infers accuracy only to the extent that is common in practice.

Where subsurface conditions encountered during development are different from those described in this report, qualified geotechnical personnel should revisit the site and review recommendations in light of the actual conditions encountered.

3.0 LOGS OF TESTHOLES

The testhole logs are a compilation of conditions and classification of soils and rocks as obtained from field observations and laboratory testing of selected samples. Soil and rock zones have been interpreted. Change from one geological zone to the other, indicated on the logs as a distinct line, can be, in fact, transitional. The extent of transition is interpretive. Any circumstance which requires precise definition of soil or rock zone transition elevations may require further investigation and review.

4.0 STRATIGRAPHIC AND GEOLOGICAL INFORMATION

The stratigraphic and geological information indicated on drawings contained in this report are inferred from logs of test holes and/or soil/rock exposures. Stratigraphy is known only at the locations of the test hole or exposure. Actual geology and stratigraphy between test holes and/or exposures may vary from that shown on these drawings. Natural variations in geological conditions are inherent and are a function of the historic environment. EBA does not represent the conditions illustrated as exact but recognizes that variations will exist. Where knowledge of more precise locations of geological units is necessary, additional investigation and review may be necessary.

5.0 SURFACE WATER AND GROUNDWATER CONDITIONS

Surface and groundwater conditions mentioned in this report are those observed at the times recorded in the report. These conditions vary with geological detail between observation sites; annual, seasonal and special meteorologic conditions; and with development activity. Interpretation of water conditions from observations and records is judgmental and constitutes an evaluation of circumstances as influenced by geology, meteorology and development activity. Deviations from these observations may occur during the course of development activities.

6.0 PROTECTION OF EXPOSED GROUND

Excavation and construction operations expose geological materials to climatic elements (freeze/thaw, wet/dry) and/or mechanical disturbance which can cause severe deterioration. Unless otherwise specifically indicated in this report, the walls and floors of excavations must be protected from the elements, particularly moisture, desiccation, frost action and construction traffic.

7.0 SUPPORT OF ADJACENT GROUND AND STRUCTURES

Unless otherwise specifically advised, support of ground and structures adjacent to the anticipated construction and preservation of adjacent ground and structures from the adverse impact of construction activity is required.

8.0 INFLUENCE OF CONSTRUCTION ACTIVITY

There is a direct correlation between construction activity and structural performance of adjacent buildings and other installations. The influence of all anticipated construction activities should be considered by the contractor, owner, architect and prime engineer in consultation with a geotechnical engineer when the final design and construction techniques are known.

9.0 OBSERVATIONS DURING CONSTRUCTION

Because of the nature of geological deposits, the judgmental nature of geotechnical engineering, as well as the potential of adverse circumstances arising from construction activity, observations during site preparation, excavation and construction should be carried out by a geotechnical engineer. These observations may then serve as the basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein.

10.0 DRAINAGE SYSTEMS

Where temporary or permanent drainage systems are installed within or around a structure, the systems which will be installed must protect the structure from loss of ground due to internal erosion and must be designed so as to assure continued performance of the drains. Specific design detail of such systems should be developed or reviewed by the geotechnical engineer. Unless otherwise specified, it is a condition of this report that effective temporary and permanent drainage systems are required and that they must be considered in relation to project purpose and function.

11.0 BEARING CAPACITY

Design bearing capacities, loads and allowable stresses quoted in this report relate to a specific soil or rock type and condition. Construction activity and environmental circumstances can materially change the condition of soil or rock. The elevation at which a soil or rock type occurs is variable. It is a requirement of this report that structural elements be founded in and/or upon geological materials of the type and in the condition assumed. Sufficient observations should be made by qualified geotechnical personnel during construction to assure that the soil and/or rock conditions assumed in this report in fact exist at the site.

12.0 SAMPLES

EBA will retain all soil and rock samples for 30 days after this report is issued. Further storage or transfer of samples can be made at the client's expense upon written request, otherwise samples will be discarded.

13.0 STANDARD OF CARE

Services performed by EBA for this report have been conducted in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practising under similar conditions in the jurisdiction in which the services are provided. Engineering judgement has been applied in developing the conclusions and/or recommendations provided in this report. No warranty or guarantee, express or implied, is made concerning the test results, comments, recommendations, or any other portion of this report.

14.0 ENVIRONMENTAL AND REGULATORY ISSUES

Unless stipulated in the report, EBA has not been retained to investigate, address or consider and has not investigated, addressed or considered any environmental or regulatory issues associated with development on the subject site.

15.0 ALTERNATE REPORT FORMAT

Where EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed EBA's instruments of professional service), the Client agrees that only the signed and sealed hard copy versions shall be considered final and legally binding. The hard copy versions submitted by EBA shall be the original documents for record and working purposes, and, in the event of a dispute or discrepancies, the hard copy versions shall govern over the electronic versions. Furthermore, the Client agrees and waives all future right of dispute that the original hard copy signed version archived by EBA shall be deemed to be the overall original for the Project.

The Client agrees that both electronic file and hard copy versions of EBA's instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except EBA. The Client warrants that EBA's instruments of professional service will be used only and exactly as submitted by EBA.

The Client recognizes and agrees that electronic files submitted by EBA have been prepared and submitted using specific software and hardware systems. EBA makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.