Special Meeting Minutes May 23, 2016 – 7:00 PM Oxford Town Hall

Members Present: Chair George Mitchell, Robert Farnum, Jim Nicolari, Jim Westgate, Alcyne Lyon

Members Absent: Barry Schiff Alternates Present: none

Alternates Absent: David McKane, Dawn Zdru Board Liaisons Present: Dawn Higginson

Consultants Present: Bryan Nesteriak, Town Engineer; Michael Tribe and Patricia Monteres, Peter Gisolfi

Associates

Selectman Present: Kathy Johnson Recording Secretary: George Mitchell

Meeting Called to Order at 7:00 PM at Oxford Town Hall by G. Mitchell, followed by roll call.

Audience of Citizens I: none

Acceptance of Minutes: Motion to approve minutes April 7, 2016 monthly meeting made by R. Farnum; seconded by J. Nicolari. All aye; motion approved.

Motion to approve minutes April 25, 2016 special meeting made by R. Farnum; seconded by J. Nicolari. All aye; motion approved.

Correspondence: (3 invoices); Gisolfi Architects (2) and B&B Engineering (1)

Library Director Report: none

Engineering Update: Bryan Nesteriak reported that the Civil Engineering team has completed the formal Geotechnical report on our building site. The report will be published this week and is attached to these minutes for reference. Overall, the site is cleared for construction. Some rock has been discovered in one small area where the building will be. Blasting will most likely not be required, and hammer drilling may work to clear the rock from the area. Additionally, the storm water quality draining system has been redesigned to reduce the size, allowing the parking area to be made smaller and saving cost.

Bryan also described the first steps of the construction project time line:

1) Limited Tree Removal – 1 week

2) Grubbing and Stump removal – 1 week

Architectural Update: Michael Tribe provided the results from the construction estimator on three construction methods.

- 1) Conventional Construction was the highest cost approach.
- 2) Wood Laminated Beams Was the second highest cost due to the water and moisture barriers needed. The Wood Beam approach estimate is \$4.5m.
- 3) Steel Pre-Fabricated structure and roof was quoted at \$3.5m. This approach uses a steel structure with a panelized metal roof system. The walls and floors would be made using conventional methods.

Several add/deletes options were discussed at a very high level: Interior Door material \$26K, Lighting downgrade \$59.7k, Entryway separate HVAC unit \$89K, Some reductions in landscaping \$50k, Signage changes and elimination of the sound system \$18k. After a lengthy discussion the committee agreed to focus Gisolfi on the steel pre-fabricated option, and to prepare to have a detailed cost review on this option at our next meeting.

Motion: was made to have Gisolfi's focus their design and analysis on the Nucor steel frame/roof solution for discussion and value engineering review at our June 6th meeting by R. Farnum and seconded by J. Nicolari. All aye; motion passed.

Budget:

Invoices:

1) Gisolfi for services performed in March 2016 = \$13,096.00

Motion to approve made by: A. Lyon, seconded by Jim Nicolari, All aye; motion passed

2) Gisolfi for services performed in April 2016 = 30,926.13

Motion to approve made by: A. Lyon, seconded by Jim Nicolari, All aye; motion passed

3) B&B Engineering for the Geotechnical report = \$5,485

Motion to approve made by: A. Lyon, seconded by Jim Nicolari, All aye; motion passed

Budget Review: none

Old Business: none

New Business: none

Audience of Citizens II: none

A. Lyon motioned to adjourn at 8:00pm; R. Farnum seconded. All Aye.

Respectfully submitted,

George Mitchell, Acting Recording Secretary Minutes Subject to Approval

TOWN OF GXFORD, CT



May 24, 2016

Town of Oxford 486 Oxford Road Oxford, Connecticut 06478

Attn:

George Mitchell

Chairman

Oxford Public Library Building Committee

Re:

Oxford Public Library

Great Oak Road Oxford, Connecticut

Dear Mr. Mitchell:

In accordance with our proposal dated February 2, 2016 we have completed our geotechnical evaluation for the proposed Oxford Public Library in Oxford, Connecticut. The attached report, "Geotechnical Engineering Report, Oxford Public Library, Oxford, Connecticut", summarizes our findings.

Should you have any question, please do not hesitate to contact us:

Sincerely,

Thomas J. Slekis, P.E. Senior Project Engineer

Bryan Nesteriak, P.E., L.S.

Principal

cc: Michael Tribe, PGA

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GEOTECHNICAL ENGINEERING REPORT

for

Oxford Public Library Great Oak Road Oxford, Connecticut

May 24, 2016

Prepared for:
Town of Oxford
Oxford, Connecticut

Prepared by:



39 New Haven Road Seymour, Connecticut 06483 Phone: (203) 881-8145 Fax: (203) 888-0436 www.bbengrs.com

1.0 Introduction

1.1 General

This report presents the results of a geotechnical evaluation conducted for the proposed Oxford Public Library in Oxford, Connecticut. The site is located on the east side of Great Oak Road, north of Lily Park and east across Great Oak Road from Great Oak School.

1.2 Proposed Development

The proposed construction consists of a one-story library building with a partial basement that will be located on the south end of the building. The first floor elevation is proposed to be +518.0 feet with the basement elevation at +508.0 feet. A proposed parking area is proposed on the west side of the library and will have an approximate elevation of +517.0 feet. These elevations are based on the NAVD 1988 datum.

1.3 Scope of Study

This study analyzes subsurface information to determine the physical properties and characteristics of subsurface materials and evaluates this information for the purpose of establishing geotechnical design criteria. Specifically, conclusions and recommendations are presented regarding the following:

- 1. Foundation type.
- 2. Slabs-on-grade.
- Lateral earth pressure for design of walls below grade, including backfill, compaction and subsurface drainage.
- 4. Earthwork.
- 5. Seismic coefficient and potential for soil liquefaction.
- Other subsurface conditions which may affect design or construction of the proposed structures.

This report has been prepared for the exclusive use of the Town of Oxford, for specific application to the proposed development of the Oxford Public Library property on Great Oak Road in Oxford, Connecticut, in accordance with generally accepted geotechnical engineering practices in this area. In the event that the nature, design or location of the proposed construction changes, the conclusions and recommendations in this report may no longer be valid.



2.0 Geotechnical Investigation

2.1 Test Borings

Nine test borings, which includes one offset, were taken for this study. Test borings B-1 through B-8 were taken by Hardiman Company & Associates on April 28, 2016. These borings were monitored by B & B Engineering personnel. The locations of the explorations are shown on the attached Drawing 1. Logs are provided in Appendix A.

The test borings were advanced using a 2-1/4 inch I.D. hollow stem auger. Samples were taken with a 1-3/8 inch I.D. split spoon sampler driven (normally) 24 inches into the ground with a 140 lb. automatic drop hammer falling 30 inches. Blows per 6 inches on the sampler were recorded. The foregoing constitutes a standard penetration test from which relative density and other soil characteristics can be estimated.

During test borings B-1 through B-6, split spoon samples were taken. During borings B-7, B-7A and B-8, only an auger was used to probe for the top of bedrock elevation.

Surface elevations and locations of the borings were obtained by a surveyor. Surface elevations of the borings are listed on the logs.

2.2 Water Level Readings

No water was observed in any of the borings performed for this report. It should be noted that future water level readings may vary due to seasonal fluctuations, and changes due to construction.

2.3 Laboratory Testing

If it is determined that excavated material is to be reused for on-site controlled fill purposes, the material will need to be stockpiled and laboratory testing will need to be performed to determine the suitability of reuse.

3.0 Site and Subsurface Conditions

3.1 Site

The center of the site is the high point, and is at an existing approximate elevation of +525.5 ft. The site slopes outwards from there, with a steep grade to the east and south. The low point is at approximate elevation +490.0 ft. in the southeast corner.

The site itself has not been developed and is currently wooded. Great Oak Road is a minor local road that connects Governors Hill Road to Hogs Back Road and is access to two of the local public schools, as well as the Oxford Town Garage.



3.2 Subsurface Conditions

The test borings provide a generalized subsurface profile that consists, in descending order, of topsoil; loam; naturally deposited sand; glacial till and decomposed or fractured rock.

The naturally deposited soils beneath the topsoil and loam consist of medium dense to very dense sand with varying amounts of gravel and silt.

Bedrock in this area consists of schist and gneiss. The borings indicate that the top several feet of bedrock may have weathered to a decomposed state.

4.0 Evaluation

4.1 Foundations

The existing topsoil and loam are unsuitable for support of the proposed building and slabs-on-grade. These materials should be removed and replaced with controlled fill. Controlled fill is defined herein as a well graded sand and gravel mixture which is placed and compacted in thin lifts, with each lift tested to verify that densities of at least 95% of the maximum density obtained by test, ASTM D 1557, are attained.

Spread footings bearing on medium dense, naturally deposited soil, controlled fill or bedrock may be proportioned on the basis of an allowable bearing pressure of 6000 psf. All footings bearing on soil must be embedded at least 3.5 feet below grade for frost considerations. All footing subgrades should be viewed by a geotechnical engineer prior to casting.

4.2 Bedrock Removal

Some bedrock may need to be removed in the central area of the building where the basement is to be located. If bedrock is encountered it is likely that it can be removed by hoe-ramming, as an alternative to blasting. If blasting is chosen, it must be conducted in a controlled manner in regards to pre- and post-blast surveys, notification of neighbors, seismic monitoring, permissible peak particle velocities and reporting of complaints.

4.3 Floor Slabs and Permanent Ground Water Control

Suitable subgrades for slabs-on-grade include naturally deposited granular soil and controlled fill. A vapor barrier and a minimum of 6 inches of base course should be placed beneath all interior slabs-on-grade.

4.4 Lateral Earth Pressures on Foundation Walls

All backfill placed behind foundation walls must consist of free-draining granular materials. The on-site granular soils which will be excavated during construction contain silt and are generally unsuitable for this use. If free-draining granular materials are excavated they should be stockpiled separately.



Restrained foundation walls should be designed on the basis of lateral pressures equivalent to a fluid pressure of 55 psf per foot of depth plus a uniform pressure equal to one half of any surcharge. Walls which are free to rotate after placement of backfill may be designed on the basis of an equivalent fluid pressure of 35 psf per foot of depth plus a uniform pressure equal to one third of any surcharge. These values of lateral earth pressure are based on a free draining backfill being used and footing drains installed.

4.5 Seismic Considerations

The underlying granular soils and bedrock are sufficiently dense to remain stable during the Connecticut Building Code design earthquake. The naturally deposited granular soils are sufficiently stable to characterize with seismic Site Class B.

5.0 Summary

Based upon our review of available subsurface information and our understanding of the proposed construction, we offer the following conclusions and recommendations:

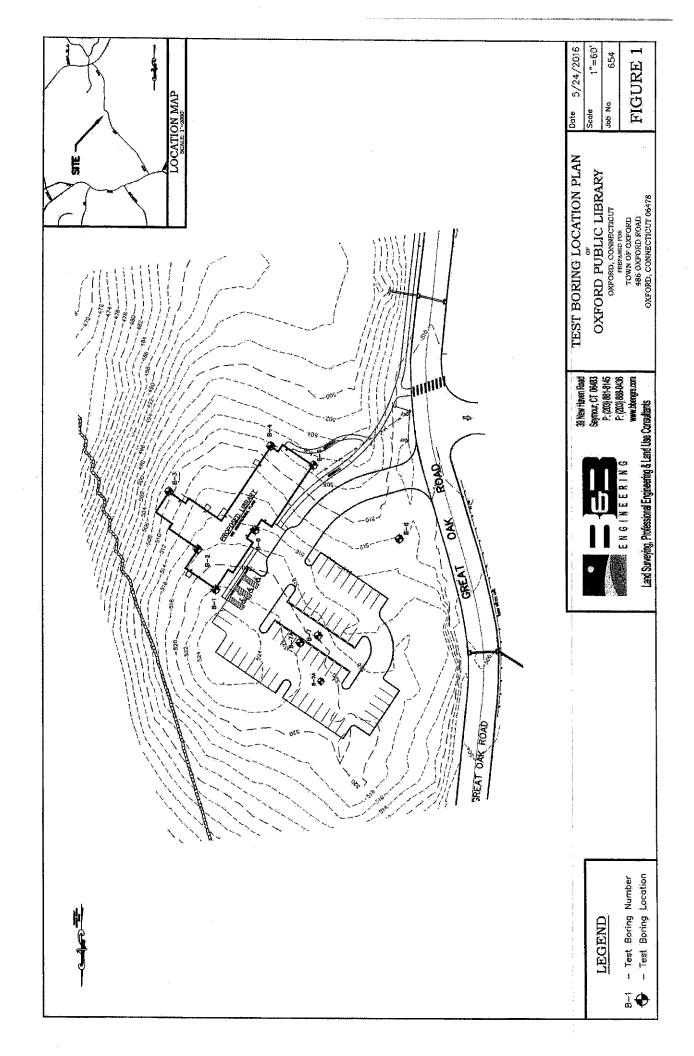
- The existing topsoil and loam are unsuitable for support of the proposed buildings and slabson-grade. The unsuitable materials can be removed and replaced with controlled fill. Excavated materials should be monitored with the cleaner materials stockpiled separately if it is determined that they will be used for controlled fill purposes.
- 2. Support the structure on spread footings bearing on naturally deposited granular soil or controlled fill. Proportion footings on the basis of an allowable bearing pressure of 6000 psf. All footing subgrades should be viewed by a geotechnical engineer prior to casting. All footings exposed to frost must be embedded a minimum of 3.5 feet.
- Acceptable subgrades for slabs-on-grade will consist of naturally deposited granular soil or controlled fill. Place a vapor barrier and 6 inch base course beneath all interior slabs-on-grade.
- 4. Design braced foundation walls on the basis of lateral soil pressures equivalent to a fluid pressure of 55 psf per foot of depth plus a uniform pressure equal to one half of any surcharge. Retaining walls which are free to rotate after placement of backfill may be designed on the basis of an equivalent fluid pressure of 35 psf per foot of depth plus a uniform pressure equal to one third of any surcharge. These values of lateral earth pressure are based on a free draining backfill being used and footing drains installed.
- 5. IBC Site Class B should be used to determine the minimum earthquake force for design.
- The on-site soils were found to be not susceptible to liquefaction during the Building Code earthquake.
- 7. Provide B & B Engineering with an opportunity to review final plans and specifications prior to bidding to determine that our geotechnical recommendations have been properly



interpreted and implemented.

8. Engage a geotechnical engineer to provide field monitoring services for the foundation and earthwork phases of construction and to make on site design modifications in the event unexpected conditions are encountered.





APPENDIX A Test Boring Logs

B&B ENGINEERING BORING NO. B-1 **TEST BORING REPORT 39 NEW HAVEN ROAD SEYMOUR, CONNECTICUT 06483** GROUNDWATER READINGS **PROJECT** Oxford Library FILE NO. 654 DATE TIME SHEET NO. 1 Oxford, Connecticut LOCATION None Observed 4/28/2016 0815 CLIENT Town of Oxford LOCATION SEE PLAN CONTRACTOR Hardiman Company & Associates Inc. **ELEVATION 522.0**° DRIVE CORE DATUM NAVD88 DRILLING EQUIPMENT & PROCEDURES CASING ITEM SAMPLER BARREL 4/28/16 DATE TO 4/28/16 RIG TYPE Geoprobe 7822DT TYPE HSA SS 0800 FINISH 0815 START BIT TYPE 2-1/4 1-3/8 INSIDE DIAMETER (IN) Anthony Scalfe DRILLER DRILL HEAD HAMMER WEIGHT (LB) 140 B&B REP Thomas Siekis, P.E. HAMMER TYPE Automatic DH103 30 HAMMER FALL CASING SAMPLER SAMPLE ELEV./ DEPTH (FT) SAMPLE PTH **BLOWS** BLOWS TYPE STRATUM DESCRIPTION: DEPTH VISUAL DESCRIPTION AND REMARKS PER NO. & (FT) 6 IN REC. Top 2" - Dark brown, fine to medium Sand, some Silt, little Vegetation. TOPSOIL SS1 4" 0 0-2 0.5 Bottom 2" - Brown, fine to medium Sand, some Silt, trace fine Gravel. 1 LOAM 2 SILTY SAND 2'-2.8' Top 4" - Brown, fine to coarse SAND, some Silt, trace fine Gravel: 2.0' S\$2 8 Bottom 2" - Gray, weathered ROCK. 100/4" WEATHERED ROCK 3.5' End Of Boring Auger Refusal 5 10 15 20 25

B&B ENGINEERING 39 NEW HAVEN ROAD SEYMOUR, CONNECTICUT 06483							TEST BO	RING R	EP	ORT	BORING NO. B-2			
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B&B ENGINEERING TEST BORING REPORT BORING NO. B-3 **39 NEW HAVEN ROAD SEYMOUR, CONNECTICUT 06483 GROUNDWATER READINGS PROJECT** Oxford Library FILE NO. 654 Oxford, Connecticut DATE TIME DEPTH LOCATION SHEET NO. 4/28/2016 0950 None Observed CLIENT Town of Oxford SEE PLAN LOCATION CONTRACTOR Hardiman Company & Associates Inc. **ELEVATION 509.9** DRIVE DATUM NAVD88 CASING DRILLING EQUIPMENT & PROCEDURES ITEM SAMPLER BARREL TO 4/28/16 4/28/16 DATE RIG TYPE Geoprobe 7822DT TYPE HSA SS START 0900 FINISH 0950 BIT TYPE INSIDE DIAMETER (IN) 2-1/4 1-3/8 DRILLER Anthony Scalfe DRILL HEAD HAMMER WEIGHT (LB) 140 Thomas Slekis, P.E. **B&B REP** HAMMER TYPE Automatic DH103 HAMMER FALL 30 SAMPLER CASING SAMPLE ELEV./ SAMPLE E P **BLOWS** BLOWS TYPE STRATUM DESCRIPTION DEPTH VISUAL DESCRIPTION AND REMARKS PER PER NO: & (FT) (FT) REC. H S\$1 10" 0 Top 6" - Dark brown, fine to medium SAND, some Silt, trace fine Gravel, trace TOPSOIL Root, trace Vegetation. (Topsoil) 0.5 2 Bottom 4" - Light brown, fine to medium SAND, some Silt, little fine Gravel. (Loam) LOAM 2.0' 2'-2.5' 100/6" SS2 Very dense, brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. TILL 5 553 5'-5.4' Top 3" - Brown, fine to coarse SAND, some fine to coarse Gravel, little Silt. 100/5" Bottom 2" - Gray, brown, fractured ROCK. FRACTURED ROCK 5.3 End Of Boring 6.0 Auger Refusal 10 15 20 25

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B&B ENGINEERING TEST BORING REPORT BORING NO. B-6 **39 NEW HAVEN ROAD SEYMOUR, CONNECTICUT 06483 GROUNDWATER READINGS PROJECT** Oxford Library FILE NO. 654 DATE TIME DEPTH LOCATION Oxford, Connecticut SHEET NO. 4/28/2016 1315 None Observed CLIENT Town of Oxford LOCATION SEE PLAN CONTRACTOR Hardiman Company & Associates Inc. **ELEVATION 516.6'** DRIVE CORE NAVD88 DATUM CASING **DRILLING EQUIPMENT & PROCEDURES** ITEM SAMPLER BARREL DATE 4/28/16 TO 4/28/16 RIG TYPE Geoprobe 7822DT TYPE **HSA** 35 FINISH 1315 START 1145 BIT TYPE INSIDE DIAMETER (IN) 2-1/4 1-3/8 DRILLER Anthony Scalfe DRILL HEAD HAMMER WEIGHT (LB) 140 B&B REP Thomas Slekis, P.E. HAMMER TYPE Automatic DH103 HAMMER FALL 30 SAMPLE CASING SAMPLER ELEV./ DEPTH SAMPLE **BLOWS BLOWS** TYPE STRATUM DESCRIPTION DEPTH VISUAL DESCRIPTION AND REMARKS PER PER NO. & (FT) (FT) 6 IN REC. H 0 551 Top 4" - Dark brown, fine to medium SAND, some Silt, trace fine Gravel, trace TOPSOIL Root, trace Vegetation. (Topsoil) 0.5* 1 LOAM Middle 3" - Brown, orange, fine to medium SAND, some Silt, little fine Gravel. Bottom 1" - Brown, fine to coarse SAND, some fine to coarse Gravel, trace Silt. 2 1.5 Top 8" - Brown, fine to coarse SAND, some fine to coarse Gravel, trace Sit. SAND 3 SS2 2'-4' Bottom 8" - Gray, fine to coarse SAND, and fine to coarse Gravel, trace Silt. (Till) 16" 3.0* 11 TILL :5 SS3 5'-5.8' Very dense, gray, brown, fine to coarse SAND, and fine to coarse Gravel, trace Silt-24 100/3" 6.5 End Of Boring Auger Refusal 10 15 20 25

	39	&B ENGI NEW HA IR, CONN	VEN RO	AD		TEST BC	RING REI	BORING NO. B-7		
PRO	PROJECT Oxford Library					GROUNDWATER READINGS			FILE NO.	654
1	LOCATION Oxford, Connecticut					DATE	TIME			
CLI	CLIENT Town of Oxford					4/28/2016	1335	None Observed	LOCATION	SEE PLAN
CO	CONTRACTOR Hardiman Company & Associates Inc.			*			ELEVATION			
\vdash	ITEM	······································	CASING	DRIVE	CORE	DOMESTA	G EQUIPMENT & PRO	CEDURES	DATUM	NAVD88
<u>. </u>		·		SAMPLER	BARREL			WEDO! WO	DATE	4/28/16 TO 4/28/16
TY	*		HSA	55			robe 7822DT		START	1330 FINISH 1335
1 '	SIDE DIAME		2-1/4	1-3/8		BIT TYPE DRILL HEAD			DRILLER	Anthony Scalfe
	MMER WEIG MMER FALL			140 30		HAMMER TYPE Auto	matic DH103		B&B REP	Thomas Slekis, P.E.
D	CASING	SAMPLER	SAMPLE		1. E. 1					
P T H	BLOWS PER FT	BLOWS PER 6 IN	TYPE NO. & REC.	SAMPLE DEPTH (FT)		VISUAL DESC	RIPTION AND REMARK	S	ELEV./ DEPTH (FT)	STRATUM DESCRIPTION
0				<u> </u>	Augering t	to probe for bedrock. Auge	refusal at 3.0' on assu	med bedrock.		
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B&B ENGINEERING 39 NEW HAVEN ROAD SEYMOUR, CONNECTICUT 06483						TEST BO	RING REI	BORING N	O. B-7A	
PRO	PROJECT Oxford Library					G	ROUNDWATER READI	FILE NO.	654	
LOC	LOCATION Oxford, Connecticut					DATE	TIME	DEPTH	SHEET NO.	
	ENT	Town of O				4/28/2016	1340	None Observed		SEE PLAN
CON	CONTRACTOR Hardiman Company & Associates Inc.				<u>C.</u>	<u> </u>			ELEVATION	
	ITEM		CASING	DRIVE SAMPLER	CORE BARREL	DRILLIN	G EQUIPMENT & PRO	CEDURES	DATUM	NAVD88
TYF	or		HSA	SAMPLER	DARKEL		probe 7822DT	= -	DATE	4/28/16 TO 4/28/16
	IDE DIAME	TER (IN)	2-1/4	11-3/8		BIT TYPE			START	1335 FINISH 1340
	MMER WEIG			140		DRILL HEAD			DRILLER B&B REP	Anthony Scalfe Thomas Slekis, P.E.
	MMER FALL	(IN)	-F .	30		HAMMER TYPE Auto	matic DH103		DOLD KEP	THUTTES SIENS, F.E.
DEPTH	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE TYPE NO. & REC.	SAMPLE DEPTH (FT)		Visual desc	RIPTION AND REMARK	s	ELEV./ DEPTH (FT)	STRATUM DESCRIPTION
0					Augering to	o probe for bedrock. Auge	r refusal at 5.0' on assu	med bedrock.		
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		&B ENGI NEW HA IR, CONN	VEN RO	AD			TEST BO	PRING REF	PORT	BORING NO. B-8			
PROJECT Oxford Library							GROUNDWATER READINGS				.654		
ro	LOCATION Oxford, Connecticut						DATE	TIME	FILE NO.				
	IENT	Town of O				_ []	4/28/2016	1400	None Observed	11	N SEE PLAN		
CO	NTRACTOR	<u>Hardiman (</u>	Company &	Associates I	nc.	_ [ON 513.0'		
	ITEM	ļ:	CASING	DRIVE SAMPLER	CORE BARRE	E	DRILLIN	G EQUIPMENT & PRO	CEDURES	DATUM	NAVD88		
TY	PE		HSA	SS	CANA	<u> </u>	RIG TYPE Geor	probe 7822DT	1-	DATE	4/28/16 TO 4/28/16		
1	SIDE DIAME	TER (IN)	2-1/4	1-3/8			BIT TYPE			START	1350 FINISH 1400		
	MMER WEIG		-	140			DRILL HEAD			DRILLER B&B REP	Anthony Scaife Thomas Slekis, P.E.		
H/A	MMER FALL	[30		1	HAMMER TYPE Auto	matic DH103	<u> </u>	1			
EPTH	CASING BLOWS PER FT	SAMPLER BLOWS PER 6 IN	SAMPLE TYPE NO. & REC.	SAMPLE DEPTH (FT)			VISUAL DESC	RIPTION AND REMARKS	5	ELEV / DEPTH (FT)	STRATUM DESCRIPTION		
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