Technical Memorandum

To: Stephanie Labbe
PAR Electrical Contractors

From: Balin Strickler
Quanta Subsurface
4308 N Barker Road
Spokane Valley, WA 99027

Date: November 10, 2016

Re: Northern Pass – Underground Trench Geotechnical Study
Trench Technical Memorandum, 16004-101

Introduction

In accordance with our proposal dated March 18, 2016 and your authorization, we have completed a geotechnical drilling and a laboratory testing program for the Northern Pass Transmission line project in New Hampshire. The work was authorized in phases and completed under Par Electrical Contractors (PAR) job number of 29-6-1683 and 29-6-1684. The Northern Pass Transmission line project consists of the construction both overhead and underground new transmission lines over much of New Hampshire. The underground portions of this alignment traverses approximately 60 miles of the proposed alignment. As part of the underground design, thermal resistivity properties of the subsurface materials must be evaluated at the anticipated bottom of trench elevation. Previous evaluations performed by others resulting in thermal resistivity data at approximately 1 mile intervals.

In order to complete the underground design, Quanta Subsurface (QS) was contracted to perform a geotechnical field exploration and laboratory testing program at approximately 1,000 foot intervals to compliment the work that has been previously completed. The purpose of QS's geotechnical exploration and laboratory testing services for this phase of the project was to further characterize the subsurface materials at specific locations and to collect samples for thermal resistivity testing at specific depths.

Figure 1 provides a map of the proposed route through New Hampshire. The area investigated included the middle section of underground construction as shown. The area of underground construction at the northern end of the project was not included in this investigation.

Scope of Work

The scope of work for this project generally includes:

- Review of the readily available aerial photographs and published geologic literature, including maps and reports pertaining to the project vicinity.
- Mark out the boring locations and notification of the local utility locating service prior to drilling.
- Drilling, logging, and sampling 206 borings to depths of approximately 15 feet below the existing ground surface. The boring logs and core photos are presented in Appendix A.
- Perform laboratory tests on selected samples obtained from the borings to evaluate thermal resistivity. The results of the thermal resistivity testing are presented in Appendix B.
- Perform laboratory tests on selected bulk samples to evaluate dry density and moisture content when bulk samples were required in the upper five feet of the borehole. The results of the material property testing are presented in Appendix C.
- Preparation of this memorandum presenting our findings of geotechnical investigation for this phase of the project.

Geotechnical Exploration and Laboratory Testing

QS's geotechnical field exploration program was conducted to evaluate the existing subsurface conditions and to collect samples to evaluate the thermal resistivity properties of the subsurface materials at selected depths. Our evaluation included the drilling and logging of the subsurface materials as well as the collection of samples for laboratory testing. The exploration program was performed between May and September of 2016. SW Cole Exploration of Londonderry, New Hampshire advanced 206 borings using either hollow stem or solid flight augers along the proposed underground alignment to depths approximately 15 feet below the existing ground surface and performed Standard Penetration Tests (SPT), in accordance with ASTM D1586, at 5-foot intervals. An auto-hammer was used for the SPT sampling. 10 of the 206 borings were terminated above 15 feet (between 2 and 8 feet bgs) due to either utility conflicts or suspected hydrocarbon or solvent odors. When rock was encountered the boreholes were advanced using wet rotary wash methods with either a roller bit or double tube coring methods.

Permits were required from the New Hampshire Department of Transportation for all of the borings. Shoreland permits were required for select borings. One-call utility locates were utilized for the entire project and a private utility locator was employed by SW Cole Exploration in areas of heightened concern. Traffic control and police details were subcontracted by SW Cole Exploration to provide support during the drilling program.

The drilling program was conducted under the supervision of QS representatives. The subsurface materials encountered at each boring location were visually classified by QS personnel in the field in general accordance with the USCS soil classification system and the QS rock core logging procedure, generally in accordance with International Society of Rock Mechanics procedures. Soil samples were collected using 6 inch stainless steel sleeves, capped and then bagged for storage to protect from moisture loss and material disturbance.

Bulk samples were collected when the SPT sample did not recover sufficient material within the stainless steel sleeves. Rock core was logged, boxed, and photographed in the field.

The thermal resistivity samples were collected from our field activities typically at the 5-foot depth, although occasionally a sample near 10 feet bgs was selected. The samples were packaged and shipped to the GeoTherm USA (GeoTherm) laboratory located in Livermore, California. Stainless steel sleeves (when available) were prioritized for testing. When only bulk samples were available, sufficient material was sampled and submitted for dry density testing by SW Cole Engineering, Inc. Occasionally rock core samples were selected for testing. Samples where then delivered to GeoTherm for thermal resistivity testing. The samples were packaged and shipped in such a manner as to minimize any moisture loss or disturbance resulting from transport. Remaining samples are stored in a storage unit located in Lincoln, NH. Thermal resistivity samples were unable to be collected from BH-74, BH-125, and BH-128 due to the presence of hydrocarbon odors. Insufficient volume of sample was collected from BH-214 and BH-259 due to the presence of coarse gravels and poor sample recovery from the split spoon and bulk sampling activities. The results for BH-185 are pending.

Table 1 provides a summary of the boreholes, locations, depths (borehole, bedrock, and groundwater) and the thermal resistivity sample info and results. The table includes previous work completed by others at the request of PAR.

Geological Unit Descriptions

The following section describes the regional and local geology of the project area. The units described are included on the borehole logs as the likely genesis of the subsurface material.

Regional Geology

The surficial geology of the White Mountains in New Hampshire is derived from the erosional and depositional processes of the continental and mountain glaciers of the Wisconsin Glacial Episode during the late Pleistocene Epoch. The dominant glacial soils that are found in this region are glacial till, glaciofluvial and glacio-lacustrine deposits. Younger post glacial deposits formed from the numerous rivers, streams and lakes that dominate the landscape. These include alluvium and stream terrace deposits.

Bedrock in the White Mountains are comprised of folded and faulted Paleozoic sedimentary and volcanic rocks that have been regionally metamorphosed and intruded by large and small bodies of plutonic rocks. The grade of metamorphism ranges from the chlorite zone at one extreme to the sillimanite zone at the other (Billings, 1980). The majority of the rocks mapped in this region consist of granite, quartz diorite, schist, granofels/gneiss, and localized zones of felsic pegmatites.

Site Geology and Unit Descriptions

The following surficial soil units were encountered during the trench portion of the underground investigation.

Organic Soil/Wetland Deposits

An approximate 2 foot to 6 foot layer of organic soil was encountered in several borings that were drilled away from the edge of the roadway. This unit consists of very loose to loose, dark brown to brown, Silty Sand and Sandy Silt with varying amounts of organics. Organic soils were also found underlying the fill in areas within the vicinity of existing wetlands.

Artificial Fill

Artificial fill has been placed within the existing roadways and is present in the majority of the borings advanced for this investigation. The approximate thickness of the fill ranged from 2 feet to upwards of 10 feet. This unit consists of loose to medium dense, brown to reddish brown, fine to medium grained, Silty Sand, Poorly Graded Sand with Silt, and Sandy Silt with varying amounts of gravel.

Alluvium

Alluvium is present at numerous locations along the alignment. It is primarily found proximal to existing rivers and streams as flood plain deposits. The thickness of the alluvium is variable with transitions to underlying units being gradual. Typically, this unit consists of very loose to dense, pale brown to olive gray to light brown, fine grained or fine to medium grained, Poorly Graded Sand with Silt, Silty Sand or Poorly Graded Sand with varying amounts of gravel.

Stream Terrace Deposits

The stream terrace deposits are mapped in the vicinity of existing streams and rivers on terraces cut into glacial deposits in the valleys. The approximate thickness of these units ranged from 3 feet to 20 feet. Typically, this unit consists of medium dense to very dense, moderate brown to olive brown to yellowish brown, Silty Sand with Gravel, Poorly Graded Sand with Silt and Gravel, Silty Gravel with Sand, or Poorly Graded Gravel with Sand. Cobbles and boulders were also present in varying amounts.

Glaciolacustrine Deposits

The glaciolacustrine deposits are generally described as sand, gravel, silt and clay that were laid down during deglaciation of the region. Material from these sediments was derived mostly from within ice sheet and transported by meltwater and deposited as deltas into ponded water bodies (Koteff, 2009). The approximate thickness of these units was less than 50 feet. Typically, this unit consists of soft to stiff, loose to medium dense, gray to light olive gray, Sandy Silt and Silty Sand with varying amounts of clay and thin to varved bedding planes present.

Glaciofluvial Deposits

The glaciofluvial deposits are described as sands and gravels with minor amounts of silt and clay that were deposited within high energy meltwater channels draining into the valleys. The approximate thickness of these units was less than 50 feet. Typically, this unit consist of

medium dense to very dense, light brown to grayish brown, Poorly Graded Sand with Gravel and Silt, Poorly Graded Gravel with Sand, or Silty Gravel with Sand with varying amounts of cobbles and boulders.

Till

The glacial till is described as light to dark gray, nonsorted to poorly sorted mixture of clay, silt sand, gravel, cobbles and boulders. Varying proportions of silt and sand form the matrix along with a variety of irregular shapes rock fragments. Most of the till deposits are found in the upland portions of the region and thicknesses can range from 20 feet to more than 100 feet (Hildreth, 2014). Typically, this unit consists of medium dense to very dense, gray to dark gray, Silty Sand with Gravel, Sandy Silt with Gravel, Silty Gravel with Sand, or Clayey Sand with Gravel with varying amounts of boulders.

Bedrock

The majority of the rocks mapped in this region consist of granite, quartz diorite, schist, granofels/gneiss, and localized zones of felsic pegmatites. All of these rock types were encountered within the project alignment. The weathering profile was typically fresh to slightly weathered, with occasional zones of highly weathered material at the contact with overburden soils. The rock strength ranges from medium strong to very strong and is largely dependent on weathering profiles. Numerous felsic dikes and sills were observed within many of the metamorphic units along with localized pegmatite zones.

References

Billings, Marland P., 1980, “The Geology of New Hampshire Part II Bedrock Geology”.

Hildreth, Carol T., 2014, Surficial geologic map of the Woodstock 7.5 minute quadrangle, New Hampshire: New Geologic Survey, scale 1:24,000.

Koteff, Carl, 2009, Surficial geologic map of the Webster 7.5 minute quadrangle, New Hampshire: New Hampshire Geologic Survey, scale 1:24,000.

Closure

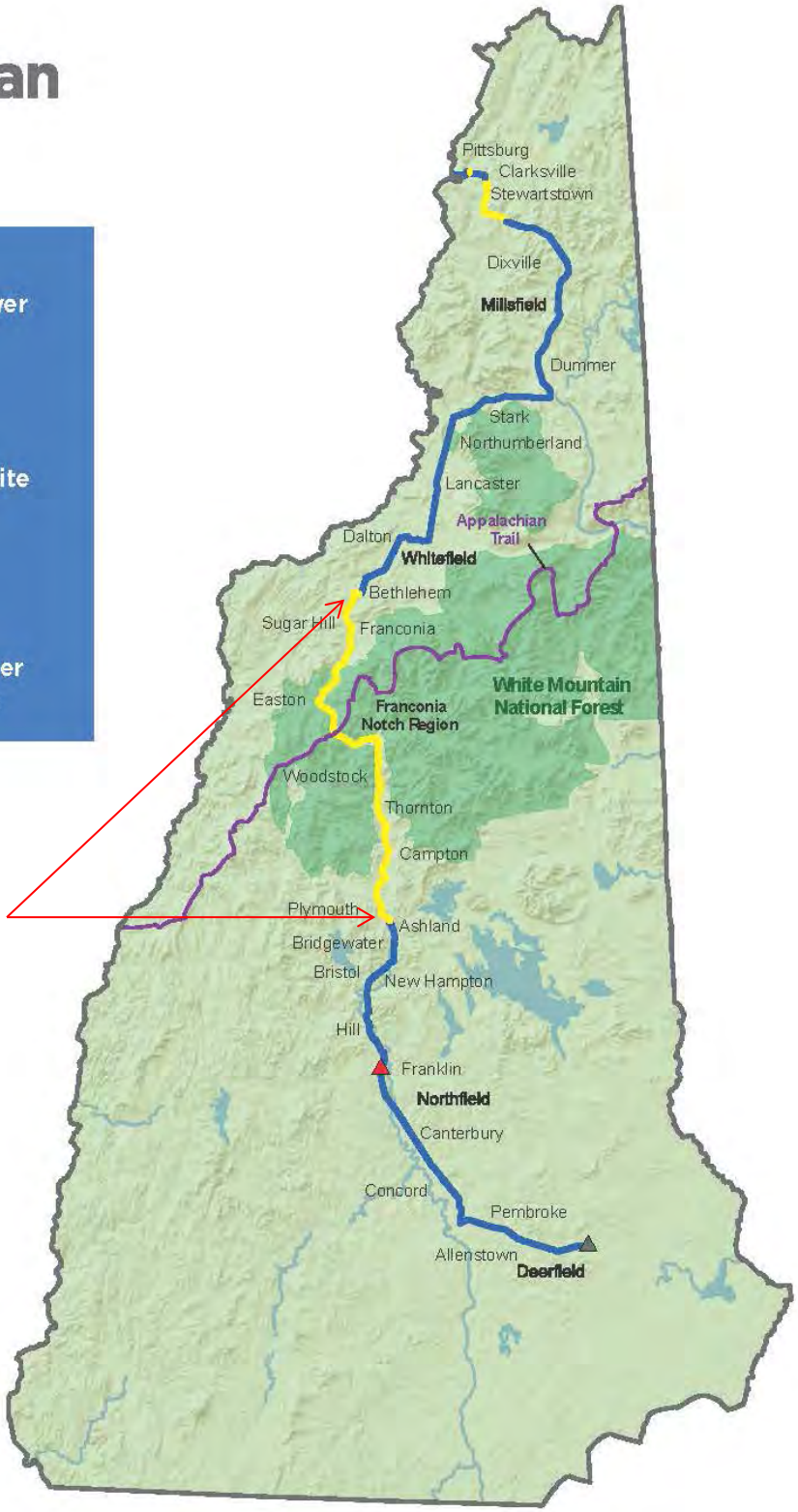
We appreciate the opportunity to assist PAR with this geotechnical investigation. If you have any questions, please contact Balin Strickler at 509.789.7747 or bstrickler@quantasubsurface.com.

Attachments
Figure 1 – Alignment Overview Map
Table 1 – Trench Thermal Resistivity Results

Appendices
Appendix A – Exploratory Test Boring Logs
Appendix B – Thermal Resistivity Test Results
Appendix C – Dry Density Test Results

forward nhplan

- Delivery of 1,090 MW of clean, reliable hydropower to New Hampshire
- Increased underground route to 60 miles
- No view impacts in the White Mountain National Forest, Appalachian Trail and Franconia Notch areas
- Use of advanced cable technology with fewer, lower and streamlined structures



Section Investigated

Proposed Overhead Route (132 miles)
Proposed Underground Route (60 miles)
Total miles: 192 miles
Proposed Converter Terminal
Existing Substation to be Upgraded

THE NORTHERN PASS

Figure 1

Site Location Map

Reference: http://www.northernpass.us/route-info.htm

Project: 16004 Date: Oct 2016

Norther Pass Transmission Line Project
Trench Thermal Resitivity Study
Nov-16

BOREHOLE DATA									THERMAL RESISTIVITY DATA									Notes
Alignment Name	Geotech Company	Borehole ID	Date Drilled	Borehole Coordinates		Borehole Depth (ft)	Depth to Rock (ft)	Depth to Groudwater (ft)	GeoTherm Report Date	Sample ID	Sample Type	Sample Depth (ft)	Material Type	Lab Determined Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (pcf)	
				Latitude	Longitude									Wet	Dry			
ROT3	H&A	HA-1	8/22/2012			51.5	32	34										
ROT3	H&A	HA-1	8/23/2012			51.5	32	34										
ROT3	H&A	HA-6	12/2/2013	45.022091	-71.463952	41	35	7.9	12/31/2013	HA-6	S3	9.5'-11'	SOIL (GP)	38	114	10	124	
ROT3	H&A	HA-6	12/2/2013	45.022091	-71.463952	41	35	7.9	12/31/2013	HA-6	S5	19.5'-21'	SOIL (GP)	41	119	11	123	
ROT3	H&A	HA-6	12/2/2013	45.022091	-71.463952	41	35	7.9	12/31/2013	HA-6	S7	29.5'-29.7'	SOIL (SP)	43	126	12	122	
ROT3	H&A	HA-6 C-1	12/2/2013	45.022091	-71.463952	41			12/31/2013	HA-6 C-1		40'-40.5'	ROCK	38	79	0.5	177	
ROT3	H&A	HA-7 (OW)	11/22/2013	45.021738	-71.465329	40	28	3.1	12/19/2013	HA-7 (OW)	S3	9'-11'	SOIL (SM)	37	104	10	127	
ROT3	H&A	HA-7 (OW)	11/22/2013	45.021738	-71.465329	40	28	3.1	12/19/2013	HA-7 (OW)	S5	19'-20.5'	SOIL (ML)	41	110	11	123	
ROT3	H&A	HA-7 (OW)	11/22/2013	45.021738	-71.465329	40	28	3.1	12/19/2013	HA-7 (OW)	C1	29.3'-29.7'	ROCK	33	64	0.6	171	
ROT3	H&A	HA-7 (OW)	11/22/2013	45.021738	-71.465329	40	28	3.1	12/19/2013	HA-7 (OW)	C4	38'-38.5'	ROCK	32	58	0.5	178	
NRTH	H&A	A	10/29/2013	45.010198	-71.421637	17.6	2.3	12.2	11/26/2013	A	Bulk	3’-4’	SOIL (SP-SM)	55	203	9	112	
NRTH	H&A	B	10/30/2013	45.00704	-71.419618	14.5	5.5	4.1	11/26/2013	B	Core	3’-5’	ROCK	63	231	8	114	
NRTH	H&A	B CoreC-1	10/30/2013	45.00704	-71.419618	14.5		Not Observed	12/9/2013	B CoreC-1	Core	8’-8.5	ROCK	36	89	2	162	
NRTH	H&A	C	10/29/2013	45.002585	-71.418045	22.3	16	4.1	11/26/2013	C	Bulk	3’-5’	SOIL	45	161	14	114	
NRTH	H&A	C	10/29/2013	45.002585	-71.418045	22.3	16	4.1	11/26/2013	C	Bulk	7’-9’	SOIL	47	166	14	113	
NRTH	H&A	D	10/28/2013	44.995343	-71.414956	20.5	13	5.3	11/26/2013	D	Bulk	4’-6’	SOIL	51	182	14	114	
NRTH	H&A	D	10/28/2013	44.995343	-71.414956	20.5	13	5.3	11/26/2013	D	Bulk	8’-10’	SOIL	55	199	14	115	
NRTH	H&A	E	10/25/2013	44.992581	-71.414653	15	6	5.3	11/26/2013	E	Bulk	5’-7’	SOIL	56	239	22	101	
NRTH	H&A	E	10/25/2013	44.992581	-71.414653	15	6	5.3	11/26/2013	E	Bulk	7’-9’	SOIL	57	228	12	107	
NRTH	H&A	F	10/24/2013	44.989168	-71.41614	20.5		3.1	11/26/2013	F	Bulk	3’-5’	SOIL	44	142	14	115	
NRTH	H&A	F	10/24/2013	44.989168	-71.41614	20.5		3.1	11/26/2013	F	Bulk	7’-9’	SOIL	50	160	17	109	
NRTH	H&A	G	10/24/2013	44.984025	-71.417035	21	14.5	10.8	11/26/2013	G	Bulk	3’-5’	SOIL	47	177	13	115	
NRTH	H&A	G	10/24/2013	44.984025	-71.417035	21	14.5	10.8	11/26/2013	G	Core	7’-9’	ROCK	53	185	15	112	
NRTH	H&A	H	11/14/2013	44.979458	-71.415877	20.5	10.8	3.6	12/9/2013	H	Core	7’-9’	ROCK	52	174	13	117	
NRTH	H&A	I	10/23/2013	44.972261	-71.420033	17	11	2.3	11/26/2013	I	Bulk	3’-5’	SOIL	46	152	15	112	
NRTH	H&A	I	10/23/2013	44.972261	-71.420033	17	11	2.3	11/26/2013	I	Core	7’-9’	ROCK	54	195	17	112	
NRTH	H&A	J	10/22/2013	44.970692	-71.421771	20	6	4.8	12/19/2013	J	Bulk	3-5	SOIL	54	219	16	112	
NRTH	H&A	K	10/21/2013	44.964685	-71.424357	23	18	8.9	11/26/2013	K	Bulk	3’-5’	SOIL	63	251	22	97	
NRTH	H&A	K	10/21/2013	44.964685	-71.424357	23	18	8.9	11/26/2013	K	Bulk	7’-9’	SOIL	45	149	14	113	
NRTH	H&A	L	10/31/2013	44.95902	-71.424873	20	2	6.3	12/9/2013	L	Core	3’-5’	ROCK	50	179	12	110	
NRTH	H&A	L	10/31/2013	44.95902	-71.424873	20	2	6.3	12/9/2013	L	Core	7’-9’	ROCK	67	219	6	112	
NRTH	H&A	M	11/4/2013	44.955639	-71.424257	20		4.1	12/9/2013	M	Bulk	3’-5’	SOIL	61	261	32	84	
NRTH	H&A	M	11/4/2013	44.955639	-71.424257	20		4.1	12/9/2013	M	Bulk	7’-9’	SOIL	47	161	17	108	
NRTH	H&A	N1	11/4/2013			18.6	12	13.7	12/9/2013	N1	Bulk	3’-5’	SOIL	38	128	13	116	
NRTH	H&A	N-1 CoreC-1	11/4/2013			18.6		Not Observed	12/9/2013	N-1 CoreC-1	Core	8’-8.5’	ROCK	32	79	1	166	
NRTH	H&A	N2	11/5/2013			20	11.2	6.9	12/9/2013	N2	Bulk	3’-5’	SOIL	52	195	14	111	
NRTH	H&A	N2	11/5/2013			20	11.2	6.9	12/9/2013	N2	Bulk	7’-9’	SOIL	35	128	15	111	
NRTH	H&A	O	11/6/2013	44.949851	-71.415889	20		2.8	12/9/2013	O	Bulk	3’-5’	SOIL	43	150	18	109	
NRTH	H&A	O	11/6/2013	44.949851	-71.415889	20		2.8	12/9/2013	O	Bulk	7’-9’	SOIL	49	189	18	108	
NRTH	H&A	R	11/14/2013	44.945834	-71.400571	20		3.6	12/9/2013	R	Bulk	8’-10’	SOIL	41	135	18	107	
NRTH	H&A	S	11/5/2013	44.945354	-71.395349	20		3.2	12/9/2013	S	Bulk	3’-5’	SOIL	50	160	13	117	
NRTH	H&A	S	11/5/2013	44.945354	-71.395349	20		3.2	12/9/2013	S	Bulk	7’-9’	SOIL	44	127	14	115	
NRTH	H&A	T	11/1/2013	44.944209	-71.391016	20	6.5	6.8	12/9/2013	T	Bulk	3’-5’	SOIL	36	162	15	113	
NRTH	H&A	T	11/1/2013	44.944209	-71.391016	20	6.5	6.8	12/9/2013	T	Core	7’-9’	ROCK	44	153	11	120	
NRTH	H&A	U	11/7/2013	44.942037	-71.378399	20	18.3	3.8	12/9/2013	U	Bulk	3’-5’	SOIL	40	169	17	114	
NRTH	H&A	U	11/7/2013	44.942037	-71.378399	20	18.3	3.8	12/9/2013	U	Bulk	7’-9’	SOIL	41	152	14	115	
NRTH	H&A	V	11/13/2013	44.939839	-71.376818	21		2.5	12/9/2013	V	Bulk	3’-5’	SOIL	48	219	29	90	
NRTH	H&A	V	11/13/2013	44.939839	-71.376818	21		2.5	12/9/2013	V	Bulk	7’-9’	SOIL	51	234	19	102	
NRTH	H&A	X	11/12/2013	44.935925	-71.373327	22	16.5	6.2	12/9/2013	X	Bulk	4’-6’	SOIL	47	147	11	119	
NRTH	H&A	X	11/12/2013	44.935925	-71.373327	22	16.5	6.2	12/9/2013	X	Bulk	8’-10’	SOIL	35	116	18	106	
NRTH	H&A	Y	11/7/2013	44.933751	-71.369558	21.5	15	Not Observed	12/19/2013	Y	Bulk	3-5	SOIL	52	207	14	115	
NRTH	H&A	Y	11/7/2013	44.933751	-71.369558	21.5	15	Not Observed	12/19/2013	Y	Bulk	7-9	SOIL	44	157	12	120	
ROCK	Quanta Subsurface	BH-53	8/31/2016	44.282256	-71.726688	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.1'	SOIL (SM)	58	151	8	122	
ROCK	Quanta Subsurface	BH-54	8/31/2016	44.283071	-71.729493	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	54	175	26	102	
ROCK	Quanta Subsurface	BH-55	8/31/2016	44.283952	-71.733923	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	50	161	18	120	
ROCK	Quanta Subsurface	BH-56	8/30/2016	44.28483	-71.737519	16	11	Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	60	202	13	112	
ROCK	Quanta Subsurface	BH-57	8/30/2016	44.284691	-71.741322	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM/GM)	69	155	3	128	
ROCK	Quanta Subsurface	BH-58	8/30/2016	44.282293	-71.742272	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM/GM)	72	175	3	122	
ROCK	Quanta Subsurface	BH-59	8/30/2016	44.279629	-71.742141	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SW)	68	146	4	117	
ROCK	Quanta Subsurface	BH-60	8/30/2016	44.27699	-71.742593	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	65	201	8	121	
ROCK	Quanta Subsurface	BH-61	8/30/2016	44.274307	-71.742535	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	59	177	11	123	
ROCK	Quanta Subsurface	BH-62	8/29/2016	44.271611	-71.742879	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	56	157	7	121	
ROCK	Quanta Subsurface	BH-63	8/29/2016	44.269031	-71.742912	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	62	198	8	114	
ROCK	Quanta Subsurface	BH-64	8/29/2016	44.266377	-71.74452	14.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	56	155	4	127	
ROCK	Quanta Subsurface	BH-65	8/29/2016	44.26399	-71.746373	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	63	159	6	117	
ROCK	Quanta Subsurface	BH-66	8/26/2016	44.261814	-71.748566	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	52	155	11	126	
ROCK	Quanta Subsurface	BH-67	8/26/2016	44.260336	-71.751245	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-4.5'	SOIL (SP/SM)	62	170	12	106	
ROCK	Quanta Subsurface	BH-68	8/29/2016	44.259353	-71.754216	16.5		11	10/7/2016	S1	Sleeve	5'-6.5'	SOIL (SM)	80	242	7	106	
SHEB	H&A	B-15	12/8/2015	44.014215	-71.684964	14.3		5.7	12/22/2015	B-15	S3	4'-4.3'	SOIL (SW)	51	131	8	120	
SHEB	H&A	B-15A	12/11/2015	43.999264	-71.683679	15		Not Observed	1/4/2016	B-15A	S3	4’-6’	SOIL (SW)	74	166	5	120	
SHEB	H&A	B-16	12/8/2015	43.986633	-71.683254	15		12.3	12/22/2015	B-16	S3	4’-6’	SOIL (SP)	52	228	15	110	
SHEB	H&A	B-16A	12/8/2015	43.973212	-71.684331	15		5.7	12/22/2015	B-16A	S3	4’-6’	SOIL (SP)	57	207	10	110	
SHEB	H&A	B-17	12/8/2015	43.959743	-71.681623	15		Not Observed	12/22/2015	B-17	S3	4'-4.5'	SOIL (SM)	61	285	29	118	
SHEB	H&A	B-17A	12/9/2015	43.946784	-71.676692	15		7	12/22/2015	B-17A	S3	4’-6’	SOIL (SP)	95	393	37	80	
SHEB	H&A	B-18	12/9/2015	43.934658	-71.683673	15		9.4	12/22/2015	B-18	S3	4’-6’	SOIL (SP)	60	196	7	110	
SHEB	H&A	B-18A	12/9/2015	43.921062	-71.68565	15		13	12/22/2015	B-18A	S3	4’-6’	SOIL (SW)	48	146	9	120	
SHEB	H&A	B-19	12/9/2015	43.906389	-71.68351	15		Not Observed	12/22/2015	B-19	S3	4'-5'	SOIL (SP)	59	227	6	110	
SHEB	H&A	B-19A	12/11/2015	43.893805	-71.675908	15	5	Not Observed	1/4/2016	B-19A	S3	4’-5’	SOIL (SP)	61	257	14	110	
SHEB	H&A	B-20	12/10/2015	43.880183	-71.667369	15		5.4	12/22/2015	B-20	S3	4’-6’	SOIL (SW)	55	208	10	120	
SHEB	H&A	B-20A	12/10/2015	43.868058	-71.668735	15		7.9	12/22/2015	B-20A	S3	4’-6’	SOIL (SP)	47	196	13	110	
SHEB	H&A	B-21	12/10/2015	43.854108	-71.666582	15		7.4	12/22/2015	B-21	S3	4’-6’	SOIL (SM)	53	243	22	118	
SHEB	H&A	B-21A	12/10/2015	43.840962	-71.661218	15		2.9	12/22/2015	B-21A	S3	4’-6’	SOIL (SP)	55	264	12	110	

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BOREHOLE DATA									THERMAL RESISTIVITY DATA									Notes
Alignment Name	Geotech Company	Borehole ID	Date Drilled	Borehole Coordinates		Borehole Depth (ft)	Depth to Rock (ft)	Depth to Groudwater (ft)	GeoTherm Report Date	Sample ID	Sample Type	Sample Depth (ft)	Material Type	Lab Determined Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (pcf)	
				Latitude	Longitude									Wet	Dry			
SHEB	H&A	B-22	12/10/2015	43.827541	-71.662212	15		11.1	12/22/2015	B-22	S3	4’-6’	SOIL (SW)	50	207	12	120	
SHEB	H&A	B-22A	12/10/2015	43.813744	-71.664682	15		10.1	12/22/2015	B-22A	S3	4’-6’	SOIL (SP)	60	280	15	110	
SHEB	Terracon	B-2A	1/15/2016	44.245206	-71.762253	17	4		2/17/2016	B-2A	Bulk	6' - 9'	ROCK	64	210	11	110	
SHEB	Terracon	B-4A	1/15/2016	44.193542	-71.751657	17		9	2/17/2016	B-4A	Bulk	8' - 10'	SOIL (SP)	48	163	7	119	
SHEB	Terracon	B-5	1/15/2016	44.181974	-71.756322	17		4	2/17/2016	B-5	Bulk	8' - 10'	SOIL (SM)	35	106	9	131	
SHEB	Terracon	B-5A	1/15/2016	44.168781	-71.764208	17		16	2/17/2016	B-5A	Bulk	8' - 10'	SOIL (ML)	39	147	12	118	
SHEB	Terracon	B-6	1/15/2016	44.158589	-71.777301	17		5	2/17/2016	B-6	Bulk	8' - 10'	SOIL (SM)	34	127	13	124	
SHEB	Terracon	B-6A	1/15/2016	44.1475	-71.789025	17		8	2/17/2016	B-6A	Bulk	8' - 10'	SOIL (SM)	36	137	14	120	
SHEB	Terracon	B-7	1/12/2016	44.134031	71.785166	15.8		9	2/17/2016	B-7	Bulk	8' - 10'	SOIL (SM)	44	227	21	104	
SHEB	Terracon	B-7A	1/12/2016	44.123974	-71.799756	15	14.5	9	2/17/2016	B-7A	Bulk	8' - 10'	SOIL (SP/SM)	40	131	10	128	
SHEB	Quanta Subsurface	BH-69	8/24/2016	44.256305	-71.761142	15.7		Not Observed	10/7/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	78	168	3	123	
SHEB	Quanta Subsurface	BH-70	8/24/2016	44.25363	-71.761728	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	59	223	17	110	
SHEB	Quanta Subsurface	BH-71	8/24/2016	44.251005	-71.762614	15.5		Not Observed	10/7/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	77	322	10	98	
SHEB	Quanta Subsurface	BH-72	8/26/2016	44.248483	-71.762799	15.2		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	57	166	5	129	
SHEB	Quanta Subsurface	BH-73	8/24/2016	44.243616	-71.761687	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	68	190	7	98	
SHEB	Quanta Subsurface	BH-74	8/24/2016	44.24086657	-71.760459	2		Not Observed										NO SAMPLE TAKEN, HYDROCARBON ODORS AT 2'
SHEB	Quanta Subsurface	BH-75	8/26/2016	44.238341	-71.758831	15.5		14	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM/GM)	73	168	5	127	
SHEB	Quanta Subsurface	BH-76	8/26/2016	44.235737	-71.757865	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	57	185	15	105	
SHEB	Quanta Subsurface	BH-77	8/4/2016	44.233334	-71.756589	15		8.2	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (GM)	105	194	1.8	105	
SHEB	Quanta Subsurface	BH-78	8/25/2016	44.231328	-71.755665	14.6		9	9/30/2016	S1	Sleeve	5'-6.5'	SOIL (SM/GM)	79	180	3	112	
SHEB	Quanta Subsurface	BH-81	8/31/2016	44.224299	-71.749053	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (OL)	127	397	8	90	
SHEB	Quanta Subsurface	BH-82	8/23/2016	44.221527	-71.750035	15.5		14	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM/GM)	66	186	12	101	
SHEB	Quanta Subsurface	BH-83	8/23/2016	44.218713	-71.750149	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	77	222	5	105	
SHEB	Quanta Subsurface	BH-84	8/23/2016	44.215882	-71.750239	15.5		8.5	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	68	290	27	84	
SHEB	Quanta Subsurface	BH-85	8/23/2016	44.213173	-71.7503	15.5		7.5	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (CL)	82	285	25	99	
SHEB	Quanta Subsurface	BH-86	8/23/2016	44.210674	-71.750434	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	58	180	17	108	
SHEB	Quanta Subsurface	BH-87	8/23/2016	44.207983	-71.751475	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	70	185	3	102	
SHEB	Quanta Subsurface	BH-88	8/23/2016	44.20621	-71.75265	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM/GM)	55	162	13	115	
SHEB	Quanta Subsurface	BH-89	8/23/2016	44.203278	-71.754078	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	50	140	9	130	
SHEB	Quanta Subsurface	BH-90	8/23/2016	44.200968	-71.754343	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	58	170	15	119	
SHEB	Quanta Subsurface	BH-91	8/17/2016	44.198192	-71.753585	15.5		9	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	75	223	8	104	
SHEB	Quanta Subsurface	BH-92	8/17/2016	44.195533	-71.752372	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	64	170	7	109	
SHEB	Quanta Subsurface	BH-94	8/4/2016	44.190538	-71.750294	15.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SW/SM)	56	177	7	110	
SHEB	Quanta Subsurface	BH-95	8/17/2016	44.186398	-71.751817	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	60	155	7	117	
SHEB	Quanta Subsurface	BH-96	8/17/2016	44.184516	-71.754086	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	56	165	6	116	
SHEB	Quanta Subsurface	BH-98	8/4/2016	44.179542	-71.75778	15.5		13.5	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (GM)	94	218	3.8	99	
SHEB	Quanta Subsurface	BH-99	8/4/2016	44.173201	-71.761464	15.5		8.5	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP/SM)	65	198	19	96	
SHEB	Quanta Subsurface	BH-100	8/17/2016	44.165963	-71.766066	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SW)	62	181	3	112	
SHEB	Quanta Subsurface	BH-101	8/31/2016	44.156819	-71.78101	16.5		11	10/7/2016	S1	Sleeve	5.5'-7'	SOIL (SM)	79	287	10	96	
SHEB	Quanta Subsurface	BH-102	8/4/2016	44.154624	-71.783513	15.5		4	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (ML)	54	233	24	89	
SHEB	Quanta Subsurface	BH-103	8/16/2016	44.152381	-71.785341	15		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	59	263	16	105	
SHEB	Quanta Subsurface	BH-104	8/4/2016	44.149929	-71.787051	15.5		14	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SW/SM)	66	167	7	108	
SHEB	Quanta Subsurface	BH-105	8/31/2016	44.144151	-71.789799	16.5		3.5	10/7/2016	S1	sleeve	5.5'-7'	SOIL (SP)	65	158	15	123	
SHEB	Quanta Subsurface	BH-106	8/17/2016	44.141967	-71.788444	15		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	66	228	17	111	
SHEB	Quanta Subsurface	BH-107	8/16/2016	44.139454	-71.786657	15		Not Observed	9/30/2016	S1	Sleeve	4'-5.2'	SOIL (GM)	60	218	8	135	
SHEB	Quanta Subsurface	BH-108	8/16/2016	44.13716	-71.784667	15		Not Observed	10/7/2016	S1	Sleeve	9.5'-11'	SOIL (GW/SP)	64	174	14	117	
SHEB	Quanta Subsurface	BH-109	8/16/2016	44.12858	-71.792834	15		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SW)	63	142	6	120	
WMNF	H&A	B-23	12/11/2015	43.801101	-71.673994	15		3.8	1/4/2016	B-23	S3	4’-6’	SOIL (SP/SM)	46	188	14	115	
WMNF	H&A	B-23A	12/14/2015	43.788569	-71.668006	15		Not Observed	1/4/2016	B-23A	S3	4’-6’	SOIL (SM)	51	226	15	118	
WMNF	H&A	B-24	12/11/2015	43.778912	-71.679923	15		7.8	1/4/2016	B-24	S3	4’-6’	SOIL (SP)	60	258	12	110	
WMNF	H&A	B-24A	12/15/2015	43.765116	-71.687067	15	8	12	1/4/2016	B-24A	S3	4’-6’	SOIL (SW)	60	179	8	120	
WMNF	H&A	B-25	12/15/2015	43.751006	-71.686953	15		5.5	1/4/2016	B-25	S3	4’-6’	SOIL (ML)	62	257	29	108	
WMNF	H&A	B-25A	12/14/2015	43.73839	-71.676438	15		7.4	1/4/2016	B-25A	S3	4’-6’	SOIL (SM)	56	190	26	118	
WMNF	H&A	B-26	12/14/2015	43.725875	-71.676485	15	12	7.5	1/4/2016	B-26	S3	4’-6’	SOIL (ML)	63	267	27	108	
WMNF	H&A	B-26A	12/14/2015	43.71697	-71.661321	15		13	1/4/2016	B-26A	S3	4’-6’	SOIL (SP)	78	267	5	110	
WMNF	Terracon	B-8	1/12/2016	44.113134	-71.813851	15.8	15.8	6	2/17/2016	B-8	Bulk	8' - 10'	SOIL (GM)	58	253	23	101	
WMNF	Terracon	B-8A	1/12/2016	44.103156	-71.821477	17		12	2/17/2016	B-8A	Bulk	8' - 10'	SOIL (SP)	68	196	4	115	
WMNF	Terracon	B-9	1/8/2016	44.093082	-71.827365	17		8	2/17/2016	B-9	Bulk	10' - 14'	SOIL (GW/GM)	40	141	12	122	
WMNF	Terracon	B-9A	1/8/2016	44.08395	-71.81225	17		12	2/17/2016	B-9A	Bulk	10' - 14'	SOIL (SP/SM)	52	176	12	118	
WMNF	Terracon	B-10	1/8/2016	44.076164	-71.795459	16.7		10	2/17/2016	B-10	Bulk	8' - 11'	SOIL (SM)	51	209	22	112	
WMNF	Terracon	B-10A	1/8/2016	44.062669	-71.792333	17		9	2/17/2016	B-10A	Bulk	8' - 10'	SOIL (GP/GM)	51	191	16	114	
WMNF	Terracon	B-11	1/7/2016	44.047567	-71.79316	15			2/17/2016	B-11	Bulk	8' - 10'	SOIL (SM)	68	174	6	116	
WMNF	Terracon	B-11A	1/7/2016	44.037327	-71.785886	15.1	13.5		2/17/2016	B-11A	Bulk	9' - 12'	SOIL (SM)	45	168	14	116	
WMNF	Terracon	B-12	1/6/2016	44.032376	-71.768103	15.3			2/17/2016	B-12	Bulk	6'- 10'	SOIL (SP/SM)	48	215	23	104	
WMNF	Terracon	B-12A	1/7/2016	44.024317	-71.752317	17	7		2/17/2016	B-12A	Bulk	10'-14'	SOIL	45	191	10	120	
WMNF	Terracon	B-12A	1/8/2016	44.024317	-71.752317	17	7		2/17/2016	B-12A	Core	12' - 12.5'	ROCK	49	68	<1	171	
WMNF	Terracon	B-13A	1/6/2016	44.028594	-71.719139	14	8	4	2/17/2016	B-13A	Core	11' - 12'	ROCK	53	71	<1	169	
WMNF	Terracon	B-14	1/6/2016	44.031538	-71.701313	17			2/17/2016	B-14	Bulk	8' - 10'	SOIL	45	126	11	131	
WMNF	Quanta Subsurface	BH-110	8/16/2016	44.126831	-71.795591	15		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	66	205	9	112	
WMNF	Quanta Subsurface	BH-112	8/16/2016	44.123109	-71.800882	15	10	Not Observed	10/20/2016	RC1	Core	9.6'-10.5'	ROCK	36	73	<1	164	
WMNF	Quanta Subsurface	BH-113	8/5/2016	44.119297	-71.805637	15	6.5	Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SM)	48	214	27	87	
WMNF	Quanta Subsurface	BH-114	8/5/2016	44.117818	-71.808605	15.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SM)	65	289	41	53	
WMNF	Quanta Subsurface	BH-115	8/5/2016	44.116062	-71.81201	14.2	13	8	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SM)	56	228	26	80	
WMNF	Quanta Subsurface	BH-117	8/5/2016	44.113671	-71.816327	14.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (GM)	78	175	7	103	
WMNF	Quanta Subsurface	BH-118	8/5/2016	44.112152	-71.818869	14.3		3	10/7/2016	S1	Sleeve	9.5'-11'	SOIL (GM)	62	144	12	131	
WMNF	Quanta Subsurface	BH-119	8/5/2016	44.109253	-71.819989	15.5	12.5	3	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (PT)	44	298	38	56	
WMNF	Quanta Subsurface	BH-120	8/3/2016	44.107177	-71.819752	15	8.5	Not Observed	10/20/2016	RCS1	Core	9'-12'	ROCK	49	69	<1	160	
WMNF	Quanta Subsurface	BH-120	8/3/2016	44.107177	-71.819752	15	8.5	Not Observed	10/26/2016	RC1	Core	12.4'-12.95'	ROCK	41	76	<1	175	
WMNF	Quanta Subsurface	BH-121	8/3/2016	44.104394	-71.820177	14.6		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SW/SM)	53	244	25	75	
WMNF	Quanta Subsurface	BH-122	8/3/2016	44.10232	-71.82255	10.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SW/SM)	70	148	4.3	116	
WMNF	Quanta Subsurface	BH-123	8/3/2016	44.100259	-71.824592	15	8	Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP)	49	162	12	118	
WMNF	Quanta Subsurface	BH-124	8/3/2016	44.098299	-71.827671	15	7.5	Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SW/SM)	77	318	42	50	

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Alignment Name	Geotech Company	Borehole ID	Date Drilled	Borehole Coordinates		Borehole Depth (ft)	Depth to Rock (ft)	Depth to Groudwater (ft)	GeoTherm Report Date	Sample ID	Sample Type	Sample Depth (ft)	Material Type	Lab Determined Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (pcf)	
				Latitude	Longitude									Wet	Dry			
WMNF	Quanta Subsurface	BH-125	8/3/2016	44.096395	-71.830381	4		Not Observed										NO SAMPLE TAKEN, HYDROCARBON ODORS AT 4'
WMNF	Quanta Subsurface	BH-126	8/1/2016	44.09507	-71.830301	15.4		5.5	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP/SM)	88	227	7	100	
WMNF	Quanta Subsurface	BH-128	8/1/2016	44.090733	-71.824626	6.8		Not Observed										NO SAMPLE RECOVERED, HYDROCARBON ODORS AT 4
WMNF	Quanta Subsurface	BH-129	8/1/2016	44.088722	-71.822073	7.2		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SW/SM)	58	192	24	75	
WMNF	Quanta Subsurface	BH-130	8/1/2016	44.087014	-71.819203	14.7		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP)	61	218	33	71	
WMNF	Quanta Subsurface	BH-131	8/1/2016	44.085356	-71.816415	15		6.5	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SW/SM)	51	184	19	110	
WMNF	Quanta Subsurface	BH-133	8/1/2016	44.083289	-71.810187	15.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.2'	SOIL (SW/SM)	58	199	13	100	
WMNF	Quanta Subsurface	BH-134	8/1/2016	44.081529	-71.806507	15.5		7	10/7/2016	S1	Sleeve	4'-5.5'	SOIL (SW)	59	140	8	131	
WMNF	Quanta Subsurface	BH-135	8/1/2016	44.07836	-71.800313	15.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP)	90	178	2.8	103	
WMNF	Quanta Subsurface	BH-136	7/29/2016	44.068378	-71.792034	15.5		Not Observed	8/25/2016	S1	Sleeve	4'-4.5'	SOIL (SP/SM)	64	223	30	76	
WMNF	Quanta Subsurface	BH-137	7/29/2016	44.065407	-71.791859	15.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SC)	74	207	25	80	
WMNF	Quanta Subsurface	BH-138	7/29/2016	44.05838	-71.79272	15.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP/SM)	55	294	34	63	
WMNF	Quanta Subsurface	BH-139	7/29/2016	44.05471	-71.79407	15		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SM)	67	187	7	100	
WMNF	Quanta Subsurface	BH-141	7/29/2016	44.04252	-71.7918	4.7		Not Observed	8/25/2016	S1	Sleeve	4' - 4.7'	SOIL (SW/SM)	52	138	7	124	
WMNF	Quanta Subsurface	BH-142	7/29/2016	44.040123	-71.791759	15.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SM)	57	156	6	117	
WMNF	Quanta Subsurface	BH-143	7/29/2016	44.036727	-71.783512	15	8.1	Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP)	77	165	4.2	115	
WMNF	Quanta Subsurface	BH-144	7/27/2016	44.035967	-71.779863	15		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP)	80	184	4	111	
WMNF	Quanta Subsurface	BH-145	7/27/2016	44.033706	-71.771124	15	8	Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SW/SM)	68	143	8	121	
WMNF	Quanta Subsurface	BH-146	7/27/2016	44.02919	-71.763271	15	12.2	Not Observed	8/25/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	71	177	9	113	
WMNF	Quanta Subsurface	BH-147	7/27/2016	44.027531	-71.760163	14.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SM)	58	184	11	112	
WMNF	Quanta Subsurface	BH-148	7/27/2016	44.027081	-71.756551	15.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SM)	69	208	14	105	
WMNF	Quanta Subsurface	BH-149	7/27/2016	44.022567	-71.751017	15.5		6.2	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SW/SM)	63	193	6	106	
WMNF	Quanta Subsurface	BH-150	7/26/2016	44.02083	-71.747658	14.9	13.5	8	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SM)	66	188	12	111	
WMNF	Quanta Subsurface	BH-151	7/26/2016	44.019886	-71.744384	15	12.5	Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP/SM)	74	216	13	109	
WMNF	Quanta Subsurface	BH-152	7/26/2016	44.01993	-71.741195	14.3	13	Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP)	61	197	18	92	
WMNF	Quanta Subsurface	BH-153	7/26/2016	44.020852	-71.737593	15.5		6	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (OL)	108	385	15	83	
WMNF	Quanta Subsurface	BH-154	7/26/2016	44.021439	-71.733845	14.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (OL)	94	328	24	100	
WMNF	Quanta Subsurface	BH-155	7/26/2016	44.023933	-71.727683	14.5		8.5	10/7/2016	S1	Sleeve	4.5' - 6'	SOIL (GP)	72	178	5	111	
WMNF	Quanta Subsurface	BH-156	7/25/2016	44.026197	-71.72425	14.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SC)	95	189	5	103	
WMNF	Quanta Subsurface	BH-157	7/25/2016	44.02783	-71.722037	15.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (ML)	66	244	19	77	
WMNF	Quanta Subsurface	BH-159	7/25/2016	44.029258	-71.715416	15.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP)	61	172	15	103	
WMNF	Quanta Subsurface	BH-160	9/21/2016	44.02945	-71.71149	16.4		Not Observed	10/10/2016	S1	Sleeve	5'-6.5'	SOIL (SW-SM)	133	345	5	96	
WMNF	Quanta Subsurface	BH-161	5/27/2016	44.029281	-71.707821	15		Not Observed	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (SP/GP)	98	185	3.0	107	
WMNF	Quanta Subsurface	BH-162	5/27/2016	44.029997	-71.704391	15.5		Not Observed	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	65	135	6.0	126	
WMNF	Quanta Subsurface	BH-164	5/27/2016	44.032878	-71.69814	7.7		Not Observed	8/25/2016	S1	Sleeve	4'-5.5'	SOIL (ML)	77	277	25	85	
WMNF	Quanta Subsurface	BH-165	7/22/2016	44.030142	-71.687863	6.4		Not Observed	10/7/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	87	329	4	98	
WMNF	Quanta Subsurface	BH-166	9/1/2016	44.028815	-71.685487	16.5		Not Observed	9/30/2016	S1	Bulk	1'-7'	SOIL (SM)	70	160	4	116	
WMNF	Quanta Subsurface	BH-167	9/27/2016	44.023246	-71.684354	15	6	Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (ML)	63	190	12	104	
WBR3	Quanta Subsurface	BH-168	5/27/2016	44.020323	-71.683247	15	4	Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	78	315	33	77	
WBR3	Quanta Subsurface	BH-169	5/27/2016	44.017684	-71.683719	15		7.5	6/30/2016	S2	Sleeve	4'-5.5'	SOIL (GP)	141	167	1.0	116	
WBR3	Quanta Subsurface	BH-171	6/27/2016	44.012651	-71.685317	15.5		8	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (GM)	80	164	6	110	
WBR3	Quanta Subsurface	BH-172	5/27/2016	44.00986	-71.686064	5.5		Not Observed	8/25/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	69	170	10	113	
WBR3	Quanta Subsurface	BH-173	5/26/2016	44.007653	-71.68551	15.5		Not Observed	9/30/2016	S2	Sleeve	9'-10.5'	SOIL (SP/GP)	64	170	5	107	
WBR3	Quanta Subsurface	BH-174	5/26/2016	44.004322	-71.684681	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (GP)	60	103	1.0	121	
WBR3	Quanta Subsurface	BH-175	5/26/2016	44.002428	-71.684382	15.5		8.7	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	72	188	6.0	107	
WBR3	Quanta Subsurface	BH-177	5/26/2016	43.997116	-71.683149	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	52	158	6.0	104	
WBR3	Quanta Subsurface	BH-178	5/26/2016	43.994698	-71.683267	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	82	248	8.0	101	
WBR3	Quanta Subsurface	BH-179	5/26/2016	43.992866	-71.6858	7.1		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	62	193	14.0	107	
WBR3	Quanta Subsurface	BH-180	5/26/2016	43.990603	-71.684598	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	68	279	6.0	93	
WBR3	Quanta Subsurface	BH-181	5/26/2016	43.988052	-71.683679	8		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	62	243	6.0	95	
WBR3	Quanta Subsurface	BH-182	5/26/2016	43.986189	-71.682756	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	74	220	5.0	96	
WBR3	Quanta Subsurface	BH-183	5/26/2016	43.983027	-71.682339	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	92	188	2.0	107	
WBR3	Quanta Subsurface	BH-184	5/25/2016	43.981139	-71.683484	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	68	232	5.0	93	
WBR3	Quanta Subsurface	BH-185	5/25/2016	43.978168	-71.685195	15	11.3	Not Observed	11/9/2016	RS1	Core	12'	ROCK	36	62	<1	176	
WBR3	Quanta Subsurface	BH-186	5/25/2016	43.976069	-71.684251	14.8		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	54	251	10.0	91	
WBR3	Quanta Subsurface	BH-188	6/24/2016	43.97037	-71.685067	15.5		Not Observed	10/7/2016	S1	Sleeve	9.5'-11'	SOIL (SM)	62	171	12.0	122	
WBR3	Quanta Subsurface	BH-189	6/24/2016	43.967801	-71.685666	15	13	Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (GM)	75	212	11	94	
WBR3	Quanta Subsurface	BH-190	5/25/2016	43.965458	-71.686172	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	82	148	3.0	112	
WBR3	Quanta Subsurface	BH-191	5/25/2016	43.963016	-71.684479	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	107	199	3.0	105	
WBR3	Quanta Subsurface	BH-193	6/24/2016	43.957186	-71.679561	15.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP/SM)	68	194	8	104	
WBR3	Quanta Subsurface	BH-194	5/25/2016	43.954718	-71.680359	15.5		13	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	82	268	11.0	100	
WBR3	Quanta Subsurface	BH-195	5/25/2016	43.952331	-71.681529	15.5		7	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	64	178	15.0	101	
WBR3	Quanta Subsurface	BH-196	5/24/2016	43.94999	-71.680246	15.5		8	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (ML)	87	327	41.0	74	
WBR3	Quanta Subsurface	BH-197	5/24/2016	43.94846	-71.677571	15		Not Observed	6/30/2016	S1	Sleeve	4'-4.42'	SOIL (SM)	50	108	7.0	120	
WBR3	Quanta Subsurface	BH-199	5/24/2016	43.943589	-71.678624	15.5		Not Observed	10/7/2016	S1	Sleeve	4.5'-5.5'	SOIL (SP)	83	379	10.0	90	
WBR3	Quanta Subsurface	BH-200	5/24/2016	43.940497	-71.678593	15.5		12.5	7/14/2016	S2	Sleeve	4'-5.5'	SOIL (SM)	54	267	19.0	83	
WBR3	Quanta Subsurface	BH-201	5/24/2016	43.938137	-71.679826	15.5		8.5	7/14/2016	S2	Sleeve	4'-5.5'	SOIL (SM/ML)	85	315	18.0	99	
WBR3	Quanta Subsurface	BH-202	5/24/2016	43.936396	-71.681493	15.5		12.3	7/14/2016	S2	Sleeve	4'-5.5'	SOIL (SM)	78	382	20.0	75	
WBR3	Quanta Subsurface	BH-204	5/23/2016	43.930101	-71.685076	15.5		6.5	10/7/2016	S1	Bulk	0'-4'	SOIL (SM)	64	179	11.0	122	
WBR3	Quanta Subsurface	BH-205	8/31/2016	43.92721	-71.685553	16.5		14.5	10/7/2016	S1	Sleeve	6'-7.5'	SOIL (SP)	89	267	3.0	107	
WBR3	Quanta Subsurface	BH-206	5/23/2016	43.924391	-71.685804	15.5		12	9/30/2016	S1	Bulk	0'-4'	SOIL (SM/GM)	66	165	8	115	
WBR3	Quanta Subsurface	BH-208	5/23/2016	43.919277	-71.685079	15.5		13	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	46	142	6	118	
WBR3	Quanta Subsurface	BH-209	6/24/2016	43.916247	-71.685027	15.5		13	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP)	55	152	17	118	
WBR3	Quanta Subsurface	BH-210	5/23/2016	43.914006	-71.685406	15		8.5	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	52	144	4	118	
WBR3	Quanta Subsurface	BH-211	6/24/2016	43.909037	-71.684513	15.5		13	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SM)	61	188	8	105	
WBR3	Quanta Subsurface	BH-212	6/23/2016	43.903706	-71.682422	15.5		10	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SP)	59	178	15	105	
WBR3	Quanta Subsurface	BH-213	5/23/2016	43.901083	-71.682271	15.5		13.5	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	39	160	14	118	
WBR3	Quanta Subsurface	BH-214	5/23/2016	43.898609	-71.681551	15.5		Not Observed										INSUFFICIENT MATERIAL FOR TESTING
WBR3	Quanta Subsurface	BH-215	5/27/2016	43.896297	-71.67951	15.5		12.5	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	78	259	6.0	102	
WBR3	Quanta Subsurface	BH-217	5/27/2016	43.892134	-71.675054	15	10	Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	41	293	19.0	93	
WBR3	Quanta Subsurface	BH-218	5/27/2016	43.889664	-71.673882	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	88	379	16.0	79	
WBR3	Quanta Subsurface	BH-219	5/26/2016	43.88725	-71.672328	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	64	220	5.0	98	

Norther Pass Transmission Line Project
Trench Thermal Resitivity Study
Nov-16

BOREHOLE DATA									THERMAL RESISTIVITY DATA									Notes
Alignment Name	Geotech Company	Borehole ID	Date Drilled	Borehole Coordinates		Borehole Depth (ft)	Depth to Rock (ft)	Depth to Groudwater (ft)	GeoTherm Report Date	Sample ID	Sample Type	Sample Depth (ft)	Material Type	Lab Determined Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (pcf)	
				Latitude	Longitude									Wet	Dry			
WBR3	Quanta Subsurface	BH-220	5/26/2016	43.884959	-71.671032	15.5	15.5	Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	74	268	16.0	85	
WBR3	Quanta Subsurface	BH-221	5/26/2016	43.882332	-71.669309	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (ML)	74	327	32.0	78	
WBR3	Quanta Subsurface	BH-223	5/27/2016	43.878023	-71.665063	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	64	198	3.0	103	
WBR3	Quanta Subsurface	BH-224	5/26/2016	43.875793	-71.662815	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	68	212	4.0	102	
WBR3	Quanta Subsurface	BH-225	5/26/2016	43.873466	-71.663005	15.5		8.5	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	94	367	12.0	79	
WBR3	Quanta Subsurface	BH-226	5/26/2016	43.871339	-71.665427	15.5		8.5	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	84	281	9.0	95	
WBR3	Quanta Subsurface	BH-227	5/26/2016	43.869198	-71.667818	15.5		13.5	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	88	302	11.0	89	
WBR3	Quanta Subsurface	BH-228	6/23/2016	43.865996	-71.668644	15.5		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (SM)	70	216	5	108	
WBR3	Quanta Subsurface	BH-229	5/25/2016	43.863783	-71.668051	15.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	94	180	4.0	99	
WBR3	Quanta Subsurface	BH-230	5/25/2016	43.861061	-71.667452	15.5		8	8/25/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	64	199	10	92	
WBR3	Quanta Subsurface	BH-231	5/25/2016	43.857131	-71.667562	15.5		12	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	62	154	16.0	112	
WBR3	Quanta Subsurface	BH-232	5/25/2016	43.855762	-71.667276	15.5		13	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	98	194	4.0	95	
WBR3	Quanta Subsurface	BH-233	5/25/2016	43.853181	-71.666321	15.5		9	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	68	175	9.0	99	
WBR3	Quanta Subsurface	BH-234	5/27/2016	43.848627	-71.665449	15.5		10	9/30/2016	S1	Sleeve	9'-10.5'	SOIL (ML)	55	228	29	91	
WBR3	Quanta Subsurface	BH-235	5/25/2016	43.844242	-71.664397	15.5		13.5	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	65	198	11.0	97	
WBR3	Quanta Subsurface	BH-236	6/23/2016	43.841753	-71.662771	15.2		Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (GM)	57	183	14	106	
WBR3	Quanta Subsurface	BH-237	6/21/2016	43.840406	-71.660006	15	6	Not Observed	8/25/2016	S1	Sleeve	4' - 5.5'	SOIL (GM)	80	207	5	96	
WBR3	Quanta Subsurface	BH-238	5/24/2016	43.838013	-71.657981	15	7	9	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	57	219	10.0	106	
WBR3	Quanta Subsurface	BH-239	5/24/2016	43.83552	-71.658971	15		Not Observed	7/14/2016	S1	Sleeve	5'-6.5'	SOIL (SP)	62	188	5.0	104	
WBR3	Quanta Subsurface	BH-240	5/24/2016	43.832832	-71.660094	16.5		Not Observed	6/30/2016	S1	Sleeve	4'-5.5'	SOIL (ML)	71	294	14.0	88	
WBR3	Quanta Subsurface	BH-241	5/24/2016	43.830317	-71.661102	15		Not Observed	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	59	227	7.0	98	
WBR3	Quanta Subsurface	BH-243	6/21/2016	43.82517	-71.66282	15.5		Not Observed	7/14/2016	S1	Sleeve	4'-5.5'	SOIL ((SP/SM)	67	254	5.0	88	
WBR3	Quanta Subsurface	BH-244	6/21/2016	43.822518	-71.663547	15.5		14	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (GM)	55	197	7.0	109	
WBR3	Quanta Subsurface	BH-245	6/21/2016	43.819742	-71.663455	15.5		Not Observed	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	56	162	9.0	102	
WBR3	Quanta Subsurface	BH-246	8/31/2016	43.817495	-71.662726	16.5		Not Observed	10/7/2016	S1	Sleeve	6'-7.5'	SOIL (GW)	112	263	2.0	113	
WBR3	Quanta Subsurface	BH-247	6/21/2016	43.814372	-71.663772	15.5		Not Observed	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (SM)	52	86	3.0	122	
WBR3	Quanta Subsurface	BH-249	5/24/2016	43.810603	-71.668392	15.5		11.5	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (SP)	60	231	4.0	98	
WBR3	Quanta Subsurface	BH-250	5/23/2016	43.808335	-71.670156	15.2		Not Observed	9/16/2016	S1	Bulk	0'-4'	SOIL (SP)	43	146	6	118	
WBR3	Quanta Subsurface	BH-251	5/23/2016	43.806027	-71.67195	15		3	9/16/2016	S1	Bulk	0'-4'	SOIL (SP)	45	143	8	118	
WBR3	Quanta Subsurface	BH-252	5/23/2016	43.803951	-71.673353	15.5		10	9/16/2016	S1	Bulk	0'-4'	SOIL (SP)	44	138	9	118	
WBR3	Quanta Subsurface	BH-254	6/21/2016	43.796286	-71.673308	15.5		4.5	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (GP)	41	98	11.0	114	
WBR3	Quanta Subsurface	BH-255	6/20/2016	43.794794	-71.671809	15		Not Observed	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (GM)	58	244	13.0	90	
WBR3	Quanta Subsurface	BH-256	6/20/2016	43.792982	-71.669789	15.5		9	7/14/2016	S1	Sleeve	4'-5.5'	SOIL (SP/SM)	82	360	15.0	90	
WBR3	Quanta Subsurface	BH-257	5/21/2016	43.790564	-71.669202	15.5		Not Observed	9/16/2016	S1	Bulk	0'-4'	SOIL (SP)	42	158	19	118	
WBR3	Quanta Subsurface	BH-259	6/20/2016	43.78450368	-71.66879346	15.5		13.5										INSUFFICIENT MATERIAL FOR TESTING
WBR3	Quanta Subsurface	BH-260	5/21/2016	43.783437	-71.670993	15	14.8	8.5	9/16/2016	S1	Bulk	0'-4'	SOIL (SP)	45	138	13	114	
WBR3	Quanta Subsurface	BH-261	5/21/2016	43.781941	-71.674072	15.5		8	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	55	165	10	116	
WBR3	Quanta Subsurface	BH-262	5/21/2016	43.780394	-71.676954	15.5		9	9/16/2016	S1	Bulk	0'-4'	SOIL (SP)	57	165	10	116	
WBR3	Quanta Subsurface	BH-264	5/20/2016	43.77653	-71.681884	15.5		Not Observed	9/16/2016	S1	Bulk	0'-4'	SOIL (SP)	45	144	8	121	
WBR3	Quanta Subsurface	BH-265	5/20/2016	43.774316	-71.683764	15.5		Not Observed	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	47	166	11	116	
WBR3	Quanta Subsurface	BH-267	9/21/2016	43.76251	-71.68719	16.5	11.3	Not Observed	10/20/2016	S1	Sleeve	5'-6.5'	SOIL (SP)	73	262	14	83	
WBR3	Quanta Subsurface	BH-268	9/14/2016	43.75948	-71.68751	16.5		Not Observed	10/7/2016	S1	Sleeve	5'-6.5'	SOIL (GP)	85	291	4	111	
WBR3	Quanta Subsurface	BH-269	9/14/2016	43.7567	-71.68781	16.5		Not Observed	10/7/2016	S1	Sleeve	5'-6.5'	SOIL (ML)	56	365	23	90	
WBR3	Quanta Subsurface	BH-270	9/1/2016	43.754132	-71.687767	15.5		Not Observed	9/30/2016	S1	Sleeve	4'-5.5'	SOIL (SM/GM)	79	208	5	96	
WBR3	Quanta Subsurface	BH-271	5/20/2016	43.751546	-71.687288	15.5		Not Observed	9/16/2016	S1	Bulk	0'-4'	SOIL (GP)	46	129	9	122	
WBR3	Quanta Subsurface	BH-272	5/20/2016	43.74935	-71.68499	16	7.5	Not Observed	10/20/2016	RC1	Core	4.65'-5.75'	ROCK	36	74	<1	178	
WBR3	Quanta Subsurface	BH-273	5/19/2016	43.747356	-71.683346	15.5		10.5	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	50	155	10	121	
WBR3	Quanta Subsurface	BH-274	5/18/2016	43.745659	-71.680713	15.4	13.5	5.5	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	49	140	7	123	
WBR3	Quanta Subsurface	BH-275	5/18/2016	43.743554	-71.679598	15.5		Not Observed	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	55	138	5	123	
WBR3	Quanta Subsurface	BH-276	5/18/2016	43.740794	-71.678323	15.5		14.3	10/26/2016	RC1	Core	13.6'-14.3'	ROCK	31	75	<1	174	
WBR3	Quanta Subsurface	BH-276	5/18/2016	43.740794	-71.678323	15.5		14.3	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	46	135	11	126	
WBR3	Quanta Subsurface	BH-278	5/18/2016	43.733344	-71.675309	15.5		Not Observed	9/16/2016	S1	Bulk	0'-4'	SOIL (GP)	44	98	6	137	
WBR3	Quanta Subsurface	BH-279	5/16/2016	43.731144	-71.675103	15.5		Not Observed	9/16/2016	S1	Bulk	3'-5.5'	SOIL (SM)	51	158	11	121	
WBR3	Quanta Subsurface	BH-281	5/18/2016	43.72375	-71.676302	15.5		Not Observed	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	48	149	9	121	
WBR3	Quanta Subsurface	BH-283	5/17/2016	43.721601	-71.670009	15.5		Not Observed	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	56	160	19	121	
WBR3	Quanta Subsurface	BH-284	5/17/2016	43.720253	-71.666812	15.5		Not Observed	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	52	154	12	121	
WBR3	Quanta Subsurface	BH-285	5/17/2016	43.718766	-71.663795	15.5		Not Observed	9/16/2016	S1	Bulk	0'-4'	SOIL (SM)	47	140	12	124	
WBR3	Quanta Subsurface	BH-287	5/16/2016	43.714565	-71.659359	15.5		Not Observed	9/16/2016	S1	Bulk	0'-4'	SOIL (SP/SM)	48	148	13	121	
WBR3	Quanta Subsurface	BH-288	5/16/2016	43.712138	-71.65781	15.5		Not Observed	9/16/2016	S1	Bulk	1'-4'	SOIL (SP/SM)	50	165	5	116	

ATTACHMENT A

Exploratory Test Boring Logs

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-53

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/31/16 **COMPLETED** 8/31/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.282256 **LONGITUDE** -71.726688
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), moderate brown, moist, loose, fine to medium grained, coarse grained gravel, subangular
4.0						
5	SPT 1	100	16-66-50/1"	SM		ALLUVIUM: SILTY SAND WITH GRAVEL (SM), yellowish gray, dry, very dense, fine to medium grained, coarse grained gravel, subangular
10	SPT 2	94	8-15-23 (38)	SM		-becomes moderate gray, with fine gravel, moist, dense
12.0						
15	SPT 3	67	7-26-37 (63)	GM		TILL: SILTY GRAVEL WITH SAND (GM), moderate brown to grayish black, moist, very dense, coarse grained gravel, fine to medium grained sand
15.5						

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-54

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/31/16 **COMPLETED** 8/31/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.283071 **LONGITUDE** -71.729493
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND (SM), trace gravel, light olive brown, fine to medium grained, fine grained gravel, rounded
	GB 1					1.5
				SM		ALLUVIUM: SILTY SAND (SM), trace gravel, light olive brown, moist, medium dense, fine to medium grained, fine grained gravel, subrounded
5	SPT 1	78	2-10-15 (25)			
						7.3
				SC		TILL: SANDY CLAY WITH GRAVEL (SC), light olive gray, moist, hard, low plasticity, fine to medium grained, fine grained gravel, subrounded
10	SPT 2	100	9-24-27 (51)			
15	SPT 3	100	9-37-53 (90)	SC		
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-55

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/31/16 **COMPLETED** 8/31/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.283952 **LONGITUDE** -71.733923
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), dusky brown, fine to medium grained, coarse grained gravel, subrounded
	GB 1					2.0
				SM		TILL: SILTY SAND WITH GRAVEL (SM), dusky brown, moist, medium dense, fine to medium grained, coarse grained gravel, subrounded
5	SPT 1	50	3-8-15 (23)			
						-without gravel
10	SPT 2	67	5-13-11 (24)	SM		
						12.0
				SC		TILL: CLAYEY SAND (SC), moderate brown, moist, very stiff, medium plasticity, fine to medium grained
15	SPT 3	56	6-10-12 (22)			
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-56

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/30/16 **COMPLETED** 8/30/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.28483 **LONGITUDE** -71.737519
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0	GB 1			OH		ORGANIC DEPOSITS: SANDY ORGANICS (OH), with roots, light olive brown, moist, fine to coarse grained	
1.5				SP		ALLUVIUM: POORLY GRADED SAND (SP), trace silt, light olive brown, moist, medium dense, fine to coarse grained sand	
5	SPT 1	67	1-4-14 (18)				
6.5				SM		TILL: SILTY SAND WITH GRAVEL (SM), light brownish gray, moist, very dense, fine to coarse grained, fine grained gravel, subangular	
10	SPT 2	71	37-50/1"				
11.0						BEDROCK: GNEISS	switched to mud rotary, roller bit 11 to 16 ft
15							
16.0						Bottom of borehole at 16.0 ft. Backfilled with auger cuttings	

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-57

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/30/16 **COMPLETED** 8/30/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.284691 **LONGITUDE** -71.741322
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND (SM), light gray, fine to medium grained
2.0				SM		TILL: SILTY SAND WITH GRAVEL (SM), moderate brown to medium light gray, dry, very dense, fine to medium grained, subangular, weathered gravel
5	SPT 1	100	24-31-62 (93)			-boulders present
10	SPT 2	28	5-2-9 (11)			-becomes moderate brown, medium dense, with trace, subangular, fine grained, gravel
12.5				SC		TILL: CLAYEY SAND (SC), trace gravel, brownish black, moist, hard, low plasticity, fine to medium grained, fine grained gravel, rounded
15	SPT 3	67	14-21-24 (45)			
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-58

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/30/16 **COMPLETED** 8/30/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.282293 **LONGITUDE** -71.742272
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), light gray to moderate brown, fine to medium grained, coarse grained gravel
2.0				SM		TILL: SILTY SAND WITH GRAVEL (SM), with cobbles, light gray, dry, dense, fine to medium grained, angular
5	SPT 1	56	13-21-18 (39)			
	SPT 2	0	50/3"	SM		-with granitic cobbles and boulders
10						
15	SPT 3	56	9-17-13 (30)	SM		-with trace gravel, grayish black, moist, fine grained gravel, with granitic cobbles and boulders
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-59

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/30/16 **COMPLETED** 8/30/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.279629 **LONGITUDE** -71.742141
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), moderate brown, fine to medium grained, coarse grained gravel, angular
					3.0	
				SW-SM		TILL: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), moderate brown, moist, medium dense, fine to coarse grained, fine grained gravel, angular
5	SPT 1	100	8-10-11 (21)			
10	SPT 2	56	3-10-14 (24)	SW-SM		-becomes moderate brown to dusky purple
15	SPT 3	67	8-15-14 (29)	SW-SM		-becomes moderate brown
					15.5	
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-60

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/30/16 **COMPLETED** 8/30/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.27699 **LONGITUDE** -71.742593
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES deep fill mapped nearby

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND (SM), medium brown to light gray, fine to medium grained
					1.5	
				SP-SM		FILL: POORLY GRADED SAND WITH SILT (SP-SM), medium gray to grayish red, dry, very dense, fine to medium grained, highly weathered
5	SPT 1	94	13-19-31 (50)			
					9.0	
10	SPT 2	67	6-8-10 (18)	SM		TILL: SILTY SAND (SM), trace gravel, medium brown, moist, medium dense, fine to medium grained, fine grained gravel, angular
15	SPT 3	83	5-6-7 (13)	SM		
					15.5	
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-61

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/30/16 **COMPLETED** 8/30/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.274307 **LONGITUDE** -71.742535
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND (SM), trace gravel, light gray, fine grained, coarse grained gravel, rounded
2.0				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, light brownish gray, moist, dense, fine to medium grained, coarse grained gravel, rounded
5	SPT 1	94	13-15-19 (34)			
7.0				SW-SM		ALLUVIUM: WELL GRADED SAND WITH SILT (SW-SM), moderate brown, moist to wet, medium dense, fine to medium grained
10	SPT 2	94	4-5-7 (12)			
12.5				SC		TILL: CLAYEY SAND (SC), grayish brown, moist, very dense, low plasticity, fine to medium grained
15	SPT 3	94	6-27-43 (70)			
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-62

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/29/16 **COMPLETED** 8/29/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.271611 **LONGITUDE** -71.742879
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), moderate brown, fine grained, coarse grained gravel, subrounded
					2.0	
				SP-SM		TILL: POORLY GRADED SAND WITH GRAVEL AND SILT (SP-SM), very light gray to moderate brown, moist, dense, fine grained, coarse grained gravel, subrounded, iron oxide staining
5	SPT 1	44	9-16-20 (36)			
					7.0	
				SC		TILL: CLAYEY SAND (SC), moderate brown, moist, medium dense, low plasticity, fine grained
10	SPT 2	78	6-11-12 (23)			
					11.5	
				SW-SC		TILL: WELL GRADED SAND WITH CLAY (SW-SC), moderate brown, moist, very dense, low plasticity, fine grained
15	SPT 3	89	21-26-36 (62)			
					15.5	
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-63

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/29/16 **COMPLETED** 8/29/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.269031 **LONGITUDE** -71.742912
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), fine grained, coarse grained gravel, subrounded
	GB 1					
				SP-SM		TILL: POORLY GRADED SAND WITH GRAVEL AND SILT (SP-SM), moderate brown, moist, medium dense, fine grained, coarse grained gravel, rounded
5	SPT 1	22	10-13-15 (28)			
					9.0	
10	SPT 2	100	5-8-8 (16)	SW-SM		TILL: WELL GRADED SAND WITH SILT (SW-SM), trace gravel, moderate brown, moist, medium dense, fine grained, coarse grained gravel
15	SPT 3	100	25-26-38 (64)	SW-SM	15.5	-becomes very dense
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-64

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/29/16 **COMPLETED** 8/29/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.266377 **LONGITUDE** -71.74452
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: SILTY GRAVEL (GM), coarse grained gravel, subrounded
	GB 1					
				GP-GM		TILL: POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM), dry, medium dense, fine grained, coarse grained gravel, subrounded
5	SPT 1	67	23-11-8 (19)			
				SM		TILL: SILTY SAND (SM), medium gray, moist, medium dense, fine grained
10	SPT 2	78	10-10-13 (23)			-boulders and cobbles present
	SPT 3	40	50/5"	SM		-becomes very dense, with trace, rounded, coarse grained, gravel

2.0
7.0
14.5

Bottom of borehole at 14.5 ft.
Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-65

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/29/16 **COMPLETED** 8/29/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.26399 **LONGITUDE** -71.746373
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), moderate brown to dark gray, fine grained, coarse grained gravel, rounded
5	SPT 1	39	6-3-5 (8)	SM		-becomes moderate brown, moist, loose
						6.0
				SM		TILL: SILTY SAND WITH GRAVEL (SM), moderate brown to light olive gray, moist to wet, medium dense, fine grained, coarse grained gravel, subrounded
10	SPT 2	50	3-9-11 (20)	SM		
						12.0
				SW-SM		TILL: WELL GRADED SAND WITH SILT (SW-SM), trace gravel, moderate brown, moist, medium dense, fine grained, coarse grained gravel
15	SPT 3	56	6-8-11 (19)			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
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Spokane Valley, WA 99027
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BORING NUMBER BH-66

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Bethlehem, NH

DATE STARTED 8/26/16 **COMPLETED** 8/26/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.261814 **LONGITUDE** -71.748566
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND (SM), trace gravel, moderate brown, fine grained, coarse grained gravel, subrounded
2.5				SP-SM		TILL: POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, dusky brown, moist, medium dense, fine grained, coarse grained gravel, rounded
5	SPT 1	44	28-14-11 (25)			
10	SPT 2	89	14-19-22 (41)	SP-SM		-becomes moist to wet, decrease in gravel content
12.0				SW-SM		TILL: WELL GRADED SAND WITH SILT (SW-SM), moderate brown, moist, very dense, fine to coarse grained
15	SPT 3	100	26-42-56 (98)			
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-67

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/26/16 **COMPLETED** 8/26/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.260336 **LONGITUDE** -71.751245
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND (SM), trace gravel, moderate brown, fine grained, fine grained gravel, rounded
2.0						
				SM		TILL: SILTY SAND WITH GRAVEL (SM), moderate brown, moist, very dense, fine grained, coarse grained gravel, rounded
	SPT 1	50	50/4"			
5						-boulder from 6 to 8 ft
10	SPT 2	67	6-10-16 (26)	SM		-becomes moderate brown to light olive brown, medium dense
15	SPT 3	67	5-26-37 (63)	SM		-becomes very dense, with trace gravel
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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Telephone: 509-892-9409

BORING NUMBER BH-68

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/29/16 **COMPLETED** 8/29/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR SW Cole
LATITUDE 44.259353 **LONGITUDE** -71.754216
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 11.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION
0				SM			FILL: SILTY SAND WITH GRAVEL (SM), trace organics, moderate yellowish brown, damp, very fine to fine grained, medium to coarse grained gravel, subangular
						3.0	
				SM			ALLUVIUM: SILTY SAND WITH GRAVEL (SM), moderate yellowish brown to yellowish gray, moist, medium dense, medium grained gravel
5	SPT 1	78	5-7-14 (21)				
10	SPT 2	100	11-13-21 (34)				
				SM		11.0 ▽	
				SC			TILL: CLAYEY SAND WITH GRAVEL (SC), light olive gray, wet, dense, low plasticity, very fine to fine grained, fine grained gravel, subangular
15						15.0	
	SPT 3	100	13-15-35 (50)	CL			TILL: GRAVELLY CLAY (CL), yellowish gray, moist, hard, low plasticity, very fine grained, fine grained gravel, angular
						16.5	

Bottom of borehole at 16.5 ft.
Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-69

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/24/16 **COMPLETED** 8/24/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.256305 **LONGITUDE** -71.761142
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP-SM		FILL: POORLY GRADED SAND WITH GRAVEL AND SILT (SP-SM), dark olive gray (5Y 3/2), fine to coarse grained gravel, fine to medium grained sand, subrounded to rounded
3.0						
				SM		TILL: SILTY SAND WITH GRAVEL (SM), yellowish brown (10YR 5/4), moist, dense, fine to medium grained sand, subangular
5	SPT 1	44	14-14-17 (31)			
10	SPT 2	61	8-8-13 (21)	SM		-becomes medium dense
15						-boulder from 14 to 15 ft
	SPT 3	25	50-50/2"	SM		-becomes dark yellowish brown, very dense
15.7						Bottom of borehole at 15.7 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
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Telephone: 509-892-9409

BORING NUMBER BH-70

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/24/16 **COMPLETED** 8/24/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.25363 **LONGITUDE** -71.761728
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				CL		ORGANIC DEPOSITS: LEAN CLAY WITH SAND AND GRAVEL (CL), trace organics, dark olive gray (5Y 3/2), moist, soft, high plasticity, fine to medium grained sand, subangular
						3.0
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH GRAVEL AND SILT (SP-SM), reddish brown (5YR 5/4), moist, medium dense, fine grained gravel, fine to medium grained sand, subangular to subrounded
5	SPT 1	72	7-10-15 (25)			
10	SPT 2	83	10-14-18 (32)	SP-SM		-becomes dense, with fine grained sand, fine to coarse grained gravel
15	SPT 3	83	16-23-32 (55)	SP-SM		-becomes very dense
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-71

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/24/16 **COMPLETED** 8/24/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.251005 **LONGITUDE** -71.762614
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				ML		FILL: SANDY SILT WITH GRAVEL (ML), and clay, dark grayish brown (10YR 4/2), moist, soft, low plasticity, fine grained sand, subangular to subrounded
2.5						
				SP-SM		TILL: POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), dark grayish brown (10YR 4/2), moist, very dense, fine to medium grained sand, subrounded
5	SPT 1	100	40-50/4"			
						-cobbles from 7 to 9 ft
10	SPT 2	39	8-17-39 (56)	SP-SM		-becomes dark yellowish orange, fine grained sand, fine to coarse grained, subangular gravel
				SP-SM		-becomes yellowish brown (10YR 5/4), subangular to subrounded gravel
15	SPT 3		25-50-50 (100)			
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-72

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/26/16 **COMPLETED** 8/26/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.248483 **LONGITUDE** -71.762799
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), moderate brown, fine grained, coarse grained gravel, subangular
2.5				SM		TILL: SILTY SAND WITH GRAVEL (SM), light brownish gray, dry, very dense, fine grained, coarse grained gravel, subangular
5	SPT 1	94	24-33-35 (68)			
7.0				SW-SM		TILL: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), light brown, moist, dense, fine grained, fine to coarse grained gravel
10	SPT 2	67	8-12-20 (32)			
15	SPT 3	71	34-61-52/2"	SW-SM		-becomes very dense, with coarse grained gravel
15.2						Bottom of borehole at 15.2 ft. Backfilled with auger cuttings

QS
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BORING NUMBER BH-73

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/24/16 **COMPLETED** 8/24/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.243616 **LONGITUDE** -71.761687
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND (SP), trace gravel, dark reddish brown (5YR 3/4), moist, fine to medium grained sand, subangular
5	SPT 1	83	8-23-25 (48)	SP		-becomes moderate brown to dusky red, dense, with subrounded gravel
						6.0
				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL AND SILT (SP-SM), dark grayish brown (10YR 4/2), moist, medium dense, fine to coarse grained gravel, fine grained sand, subangular to subrounded
10	SPT 2	61	8-11-15 (26)			
						12.0
				GP		STREAM TERRACE DEPOSITS: POORLY GRADED GRAVEL WITH SAND (GP), pale olive (5Y 6/4) to pale yellow (5Y 8/4), very dense, fine to coarse grained gravel, fine to medium grained sand, subrounded to subangular
15	SPT 3	50	35-35-50 (85)			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

Quanta Subsurface
4308 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER B-74

CLIENT PAR Electric
PROJECT NAME Northern Pass
PROJECT NUMBER 201-16-NH
PROJECT LOCATION Franconia, New Hampshire
DATE STARTED 8/24/16 **COMPLETED** 8/24/16
GROUND ELEVATION **HOLE SIZE** 4.23" I.D.
DRILLING CONTRACTOR Geosearch
NORTHING **EASTING**
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** Automatic
LOGGED BY S.Laing **CHECKED BY** Z. Wright
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0		SP	2.0	FILL: SAND (SP), moderate brown, moist, poorly graded, hydrocarbon odor

Bottom of Borehole at 2.0 feet

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-75

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/26/16 **COMPLETED** 8/26/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.238341 **LONGITUDE** -71.758831
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 14.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			GM		STREAM TERRACE DEPOSITS: SILTY GRAVEL WITH SAND (GM), light gray, moist, coarse grained gravel, fine to medium grained sand, subrounded
2.5				GM		STREAM TERRACE DEPOSITS: SILTY GRAVEL WITH SAND (GM), pale blue to light gray, dry, dense, coarse grained gravel, subrounded
5	SPT 1	67	12-26-24 (50)			
8.0				SM		STREAM TERRACE DEPOSITS: SILTY SAND WITH GRAVEL (SM), moderate brown to light gray, moist, medium dense, coarse grained gravel, subrounded
10	SPT 2	39	3-9-11 (20)			
12.0				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), moderate brown, wet, medium dense, coarse grained gravel, fine to coarse grained sand, subrounded
15	SPT 3	56	4-5-11 (16)			
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-76

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/26/16 **COMPLETED** 8/26/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.235737 **LONGITUDE** -71.757865
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		ORGANIC DEPOSITS: SILTY SAND (SM), trace gravel, trace organics, moderate brown, moist, fine grained, fine grained gravel, subrounded
						2.0
				SM		STREAM TERRACE DEPOSITS: SILTY SAND (SM), trace gravel, moderate brown, moist, medium dense, fine grained, fine grained gravel, subrounded
5	SPT 1	44	2-2-4 (6)			
						7.0
				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL AND SILT (SP-SM), moderate brown, moist, very dense, fine to medium grained, fine to coarse grained gravel, subrounded, trace manganese oxide staining
10	SPT 2	67	5-22-36 (58)			
15	SPT 3	67	50-41-32 (73)	SP-SM		
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-77

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/4/16 **COMPLETED** 8/4/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.233334 **LONGITUDE** -71.756589
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 5 inside digsafe box
▽ **AT TIME OF DRILLING** 8.2ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL WITH SILT AND SAND (GM), trace organics, dark brown, moist, medium to coarse grained gravel, subangular, very fine to fine grained matrix
2.5				GM		STREAM TERRACE DEPOSITS: GRAVEL WITH SILT AND SAND (GM), dark yellowish orange, dry, dense, medium to coarse grained gravel, fine grained sand, angular to subangular, extensive oxidation
5	SPT 1	83	8-18-26 (44)			
▽						-becomes wet, medium dense
10	SPT 2	17	8-6-16 (22)			
12.0				SW-SM		STREAM TERRACE DEPOSITS: WELL GRADED SAND WITH SILT (SW-SM), pale brown and dark yellowish orange, wet, very dense, fine to medium grained sand, trace fines, zones of oxidation throughout
15	SPT 3	100	9-10-50/0"			
15.0						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-78

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/25/16 **COMPLETED** 8/25/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.231328 **LONGITUDE** -71.755665
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 9.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), trace organics, dark yellowish brown, damp, very fine to fine grained, medium to coarse grained gravel, subangular
5	SPT 1	67	6-13-24 (37)			-becomes yellowish gray, dense, without organics
						7.0 STREAM TERRACE DEPOSITS: COBBLES, and gravel, very dense, medium to very coarse grained gravel, subangular to rounded, angular cobble fragments
10	SPT 2	0	50/1"			▽ -becomes wet, with silty sand
	SPT 3	100	50/1"			14.6 -with subangular gravel
						Bottom of borehole at 14.6 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-81

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/31/16 **COMPLETED** 8/31/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.224299 **LONGITUDE** -71.749053
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			OL		ORGANIC DEPOSITS: ORGANIC SOIL WITH SAND (OL), grayish black, fine to medium grained, roots and wood present
5	SPT 1	22	5-4-4 (8)	OL		-becomes moist, loose
					6.3	
				SM		STREAM TERRACE DEPOSITS: SILTY SAND (SM), trace gravel, moderate brown to grayish orange, moist, very dense, fine to medium grained, fine grained gravel, subangular
10	SPT 2	67	21-33-20 (53)	SM		
15	SPT 3	44	1-1-1 (2)	SM		-becomes moderate brown to dusky yellow, moist to wet, very loose
					15.5	
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-82

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/23/16 **COMPLETED** 8/23/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.221527 **LONGITUDE** -71.750035
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 14.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		ORGANIC DEPOSITS: SILTY SAND (SM), trace gravel, moderate brown, fine to medium grained, medium grained gravel
					4.0	
5	SPT 1	56	3-3-4 (7)	SW-SM		ALLUVIUM: WELL GRADED SAND WITH SILT (SW-SM), trace gravel, moderate gray with dark reddish brown, moist, loose, fine grained, rounded, iron oxide staining
					7.0	
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH GRAVEL AND SILT (SP-SM), moderate brown to pale reddish brown, medium dense, fine to medium grained, coarse grained gravel, rounded, minor oxidation
10	SPT 2	44	9-7-7 (14)			
					13.0	
				SM		ALLUVIUM: SILTY SAND (SM), moderate brown, wet, very loose, fine grained
15	SPT 3	22	1-1-3 (4)			▽
					15.5	
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-83

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/23/16 **COMPLETED** 8/23/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.218713 **LONGITUDE** -71.750149
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), dark grayish brown (10YR 4/2), moist, fine to coarse grained gravel, fine to medium grained sand, subangular to subrounded
						3.0
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, dark yellowish orange to dusky yellow, moist, loose, fine to coarse grained gravel, fine grained sand
5	SPT 1	83	6-4-6 (10)			
						8.0
				SP		ALLUVIUM: POORLY GRADED SAND (SP), trace silt, moderate yellowish brown, wet, dense, fine to medium grained sand
10	SPT 2	72	6-7-30 (37)			
15	SPT 3	72	15-15-12 (27)	SP		-becomes medium dense, with trace fine grained gravel
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
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Telephone: 509-892-9409

BORING NUMBER BH-84

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/23/16 **COMPLETED** 8/23/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.215882 **LONGITUDE** -71.750239
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 8.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), yellowish brown (10YR 5/4), moist, fine grained gravel, fine to medium grained sand, angular to subrounded
5	SPT 1	100	1-1-1 (2)	SP		-becomes moderate yellowish brown to orange, fine grained sand with silt, very loose, trace asphalt
				SP		ALLUVIUM: POORLY GRADED SAND (SP), dark grayish brown (10YR 4/2), wet, medium dense, fine to medium grained sand ▽
10	SPT 2	39	8-8-6 (14)	ML		ALLUVIUM: SILT WITH SAND (ML), trace clay, yellowish brown (10YR 5/4), moist, stiff, low plasticity, fine grained sand
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), yellowish brown (10YR 5/4), wet, very dense, medium grained sand
15	SPT 3	22	30-34-34 (68)			

7.5
10.3
12.5
15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-85

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/23/16 **COMPLETED** 8/23/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.213173 **LONGITUDE** -71.7503
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 7.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), dark grayish brown (10YR 4/2) to dark reddish brown (5YR 3/4), moist, fine to coarse grained gravel, fine to medium grained sand, subangular to subrounded
						4.1
5	SPT 1	78	5-5-6 (11)	CL		ALLUVIUM: LEAN CLAY (CL), yellowish brown (10YR 5/4), moist, stiff, medium plasticity
						7.0
				SP-SM		▽ ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, yellowish brown (10YR 5/4) to dark grayish brown (10YR 4/2), wet, medium dense, fine to medium grained sand
10	SPT 2	39	8-8-20 (28)			
15	SPT 3	50	35-48-48 (96)	SP-SM		-becomes very dense, light olive gray, with medium to coarse grained sand, subangular to subrounded gravel
						15.0
				SP		TILL: POORLY GRADED SAND WITH GRAVEL (SP), olive gray (5Y 5/2), moist, very dense, fine to coarse grained gravel, fine to coarse grained sand, angular to subangular
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-86

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/23/16 **COMPLETED** 8/23/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.210674 **LONGITUDE** -71.750434
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		ORGANIC DEPOSITS: SILTY SAND (SM), trace gravel, trace roots, grayish black to moderate brown, moist, loose, fine grained, subrounded
	GB 1			SM		ALLUVIUM: SILTY SAND (SM), dusky brown, moist, loose, fine grained, micaceous
5	SPT 1	67	5-6-7 (13)			
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH GRAVEL AND SILT (SP-SM), moderate brown to grayish green, moist, loose, fine to medium grained, medium to coarse grained sand, subrounded
10	SPT 2	67	4-3-3 (6)			
				SC		ALLUVIUM: CLAYEY SAND (SC), moderate brown, moist, loose, low plasticity, fine grained, weakly bedded
15	SPT 3	78	2-4-3 (7)			

1.5
7.0
13.0
15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-87

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/23/16 **COMPLETED** 8/23/16 **GROUND ELEVATION** NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch **LATITUDE** 44.207983 **LONGITUDE** -71.751475
DRILLING METHOD Hollow Stem Auger **DRILLING EQUIPMENT** CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), yellowish brown (10YR 5/4) to dark grayish brown (10YR 4/2), moist, fine to coarse grained gravel, fine grained sand, subrounded
						2.0
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), trace cobbles, yellowish brown, moist, very dense, fine to coarse grained gravel, fine grained sand, subrounded
5	SPT 1	56	28-49-50 (99)			
	SPT 2	0	50/3"	SP		-gneissic boulder from 8.5 to 12 ft
10						
						STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL, yellowish brown (10YR 5/4), moist to wet, very dense, fine to coarse grained sand, angular to subrounded
15	SPT 3	59	14-40-50/5"	SP		
						15.0
				SP-SM		TILL: POORLY GRADED SAND WITH GRAVEL AND SILT (SP-SM), pale olive (5Y 6/4), moist to wet, very dense, fine to coarse grained gravel, fine to coarse grained sand, angular to subangular
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-88

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/23/16 **COMPLETED** 8/23/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.20621 **LONGITUDE** -71.75265
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			GM		STREAM TERRACE DEPOSITS: SILTY GRAVEL WITH SAND (GM), moderate brown, moist, fine to coarse grained, fine to coarse grained gravel, subrounded
5	SPT 1	56	8-12-17 (29)	GM		-becomes damp, medium dense, minor oxidation
						7.0
				SW-SM		TILL: WELL GRADED SAND WITH SILT (SW-SM), moderate gray, moist, loose, fine grained
10	SPT 2	44	3-5-3 (8)			
						13.0
				SC		TILL: CLAYEY SAND (SC), moderate gray with grayish brown, moist, very loose, fine grained
15	SPT 3	67	1-1-1 (2)			
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-89

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/23/16 **COMPLETED** 8/23/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.203278 **LONGITUDE** -71.754078
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				OL		ORGANIC DEPOSITS: ORGANIC SOIL WITH GRAVEL (OL), dark brown, fine grained, coarse grained gravel, subangular, roots present
	GB 1					
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH GRAVEL AND SILT (SP-SM), light brown to grayish red, dry, dense, fine grained, coarse grained gravel, subangular, minor oxidation
5	SPT 1	56	11-15-15 (30)			
10	SPT 2	67	2-3-4 (7)	SM		ALLUVIUM: SILTY SAND (SM), trace gravel, moderate gray to moderate brown, moist, loose, fine grained, fine grained gravel, subrounded, micaceous
15	SPT 3	67	1-1-1 (2)	SM		-becomes moderate gray, wet, very loose, fine grained, minor clay lenses with low plasticity
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

2.0
8.0
15.5

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BORING NUMBER BH-90

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/23/16 **COMPLETED** 8/23/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.200968 **LONGITUDE** -71.754343
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 55 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), reddish brown (5YR 4/4), moist, fine to medium grained sand, subrounded
5	SPT 1		6-8-10 (18)	SP		-becomes medium dense
				SP-SM		4.8 ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), brownish yellow (10YR 6/6) to yellowish brown (10YR 5/4), wet, medium dense, fine to medium grained sand
10	SPT 2	0	2-6-9 (15)	SP-SM		-becomes moderate yellowish brown
15	SPT 3	39	1-1-2 (3)	SP-SM		-becomes light olive gray, wet, very loose, with fine grained sand, micaceous,

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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Telephone: 509-892-9409

BORING NUMBER BH-91

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/17/16 **COMPLETED** 8/17/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.198192 **LONGITUDE** -71.753585
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 9.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), dark grayish brown, moist, fine grained gravel, fine to medium grained sand, subangular
					2.5	
				SP		ALLUVIUM: POORLY GRADED SAND (SP), trace gravel, olive (5Y 5/6) to yellowish brown (10YR 5/8), moist, medium dense, fine to coarse grained gravel, fine to medium grained sand, subangular to subrounded
5	SPT 1	78	7-11-11 (22)			
						▽ -becomes light olive gray, very loose, moist to wet, with fine grained sand, trace silt
10	SPT 2	67	2-2-2 (4)	SP		
15	SPT 3	72	3-4-3 (7)	SP		-becomes dark yellowish orange, moist, loose
					15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

QS
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Telephone: 509-892-9409

BORING NUMBER BH-92

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/17/16 **COMPLETED** 8/17/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.195533 **LONGITUDE** -71.752372
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), dark grayish brown (10YR 4/2), moist, medium dense, fine to medium grained sand, subrounded
						4.4
5	SPT 1	83	9-11-16 (27)	SP		ALLUVIUM: POORLY GRADED SAND (SP), trace silt, brownish yellow (10YR 6/6), moist, medium dense, fine to medium grained sand, poorly to well graded, minor amounts of coarse grained sand
10	SPT 2	100	6-8-10 (18)	SP		
15	SPT 3	100	10-8-12 (20)	SP		-becomes dark yellowish orange to moderate yellowish brown
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
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Telephone: 509-892-9409

BORING NUMBER BH-94

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/4/16 **COMPLETED** 8/4/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.190538 **LONGITUDE** -71.750294
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 20 inches inside digsafe box

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				OL		FILL: GRAVELLY ORGANIC SOIL WITH SAND (OL), dark brown, moist, very fine to fine grained, fine to coarse grained gravel, angular, organics present
						2.0
				SW-SM		ALLUVIUM: WELL GRADED SAND WITH GRAVEL AND SILT (SW-SM), brown to pale brown, moist, dense, fine to coarse grained gravel, subangular, trace fines, zones of oxidation throughout
5	SPT 1	100	11-19-19 (38)			
10	SPT 2	100	16-20-25 (45)	SW-SM		
15	SPT 3	100	10-21-25 (46)	SW-SM		-becomes pale brown, no oxidation
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
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BORING NUMBER BH-95

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/17/16 **COMPLETED** 8/17/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.186398 **LONGITUDE** -71.751817
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), yellowish brown, moist, fine to medium grained, fine grained sand, subrounded
2.5						
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), yellowish brown (10YR 5/4), moist, dense, fine to medium grained sand
5	SPT 1	94	15-17-19 (36)			
10	SPT 2	72	4-5-6 (11)	SP-SM		
15	SPT 3	39	20-20-20 (40)	SP-SM		-with subangular to subrounded gravel, minor amounts of coarse grained sand
15.5						

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-96

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/17/16 **COMPLETED** 8/17/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.184516 **LONGITUDE** -71.754086
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), grayish brown, moist, fine to medium grained, fine grained gravel, subangular
					2.0	
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, yellowish brown (10YR 5/4), moist, very dense, fine grained gravel, fine to medium grained sand, subrounded
5	SPT 1	78	9-19-33 (52)			
10	SPT 2	0	15-16-23 (39)	SP-SM		-becomes dark yellowish orange, with fine to medium grained sand, dense, trace coarse sand, micaceous
15	SPT 3	100	6-8-10 (18)	SP-SM		-becomes medium dense, fine grained
					15.5	
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-98

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/4/16 **COMPLETED** 8/4/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.179542 **LONGITUDE** -71.75778
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 15 inches from digsafe box
▽ **AT TIME OF DRILLING** 13.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL WITH SILT AND SAND (GM), trace organics, dark brown to dark yellowish brown, dry, loose, fine to coarse grained gravel, angular, fine grained matrix
5	SPT 1	100	16-15-12 (27)	GM		-without organics, medium dense
						6.0
				GM		ALLUVIUM: GRAVEL WITH SILT AND SAND (GM), brown, moist, very dense, coarse grained gravel, angular to subangular, weak cementation, fine grained matrix
10	SPT 2	100	16-40-25 (65)			
						11.5
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), pale brown, wet, medium dense, fine grained sand
						▽
15	SPT 3	100	8-10-7 (17)			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-99

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Franconia, NH

DATE STARTED 8/4/16 **COMPLETED** 8/4/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.173201 **LONGITUDE** -71.761464
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 19 inches from digsafe box
▽ **AT TIME OF DRILLING** 8.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), trace organics, dark brown, moist, fine to coarse grained gravel, fine grained sand
						4.5
5	SPT 1	83	2-2-3 (5)	SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), brown to light brown, moist to wet, loose, fine to medium grained sand, oxidation throughout
						▽
10	SPT 2	72	4-7-8 (15)	SP-SM		-becomes wet, medium dense, silt content decreases
15	SPT 3	100	7-5-5 (10)	SP-SM		-becomes brown to dark yellowish orange, trace fines, extensive oxidation throughout
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-100

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/17/16 **COMPLETED** 8/17/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.165963 **LONGITUDE** -71.766066
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), grayish brown, moist, fine to medium grained, fine grained gravel, angular
					2.0	
				SW-SM		ALLUVIUM: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), yellowish brown / moderate yellowish brown (10YR 5/4), moist, dense, fine to coarse grained sand, angular to subrounded
5	SPT 1	83	6-14-30 (44)			
					6.5	
				SP-SM		TILL: POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), very pale brown (10YR 7/4) to brownish yellow (10YR 6/6), moist, very dense, fine to medium grained sand, subangular to subrounded, with trace amounts of coarse grained sand
10	SPT 2	89	38-27-43 (70)	SP-SM		
15	SPT 3	50	6-19-30 (49)	SP-SM		-becomes dense, moderate yellowish brown, trace subrounded gravel
					15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-101

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/31/16 **COMPLETED** 8/31/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.156819 **LONGITUDE** -71.78101
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 11.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL (GM), with sand, with silt, trace organics, grayish blue green to dark yellowish brown, damp, very fine to fine grained, medium to coarse grained gravel, angular
						3.5
				SM		TILL: SILTY SAND (SM), yellowish gray, moist, medium dense, fine grained
5	SPT 1	100	9-11-11 (22)			
10	SPT 2	89	9-10-7 (17)	SM		-becomes wet, with trace clay ▽
						14.0
				SP-SM		TILL: POORLY GRADED SAND WITH SILT (SP-SM), pale yellowish brown, wet, dense, fine to medium grained
15	SPT 3	83	12-20-13 (33)			
						16.5
						Bottom of borehole at 16.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-102

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/4/16 **COMPLETED** 8/4/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.154624 **LONGITUDE** -71.783513
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 29 inches from digsafe arrow tip
▽ **AT TIME OF DRILLING** 4.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), trace organics, dark brown, moist, fine to medium grained, fine grained gravel, subangular
						2.0
				ML		ALLUVIUM: SANDY SILT (ML), pale brown, wet, stiff, fine grained, minor zones of oxidation
						▽
5	SPT 1	100	7-8-8 (16)			
						6.8
				CL		ALLUVIUM: SANDY CLAY (CL), pale brown, moist, stiff, low plasticity, fine grained, minor zones of oxidation
						9.5
10	SPT 2	100	4-6-7 (13)	SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), pale brown, moist, medium dense, minor zones of oxidation
						13.0
				SM		ALLUVIUM: SILTY SAND (SM), pale brown to brown, wet, medium dense, fine grained, micaceous
15	SPT 3	89	4-6-6 (12)			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-103

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/16/16 **COMPLETED** 8/16/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.152381 **LONGITUDE** -71.785341
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), olive brown, moist, fine to medium grained, fine to coarse grained gravel, subangular
						2.0
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, reddish yellow to olive brown, moist, loose, fine grained, subrounded
5	SPT 1	83	4-4-4 (8)			
10	SPT 2	100	6-11-21 (32)	SP-SM		-becomes dense, olive, without gravel
						13.0
				SM		TILL: SILTY SAND WITH GRAVEL (SM), olive gray (5Y 5/2), moist, medium dense, fine to medium grained sand
15	SPT 3	89	10-14-16 (30)			
						15.0
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-104

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/4/16 **COMPLETED** 8/4/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.149929 **LONGITUDE** -71.787051
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 29 inches from digsafe arrow
▽ **AT TIME OF DRILLING** 14.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: GRAVEL (SM), with sand, with silt, trace organics, dark brown, moist
					1.8	
				SW-SM		ALLUVIUM: WELL GRADED SAND WITH SILT (SW-SM), trace gravel, light brown to pale brown, moist, dense, fine to coarse grained gravel, fine to coarse grained sand, subangular, trace fines, fine grained matrix
5	SPT 1	100	17-22-27 (49)			
10	SPT 2	100	15-23-50 (73)	SW-SM		-becomes very dense, minor zones of oxidation
					12.0	
				GM		ALLUVIUM: GRAVEL WITH SILT AND SAND (GM), brown, wet, very dense, fine to coarse grained gravel, fine grained sand, angular to subangular, weak cementation, very fine to fine grained matrix
15	SPT 3	100	16-26-36 (62)			▽
					15.5	
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-105

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/31/16 **COMPLETED** 8/31/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.144151 **LONGITUDE** -71.789799
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 3.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL (GM), with sand, with silt, with organics, grayish blue green to dark yellowish brown, moist, very fine to fine grained, fine to coarse grained gravel, angular ▽
5	SPT 1	100	13-17-20 (37)	SP		ALLUVIUM: POORLY GRADED SAND WITH GRAVEL (SP), trace fines, light olive gray, wet, dense, medium grained gravel, fine grained sand, subangular, zones of oxidation
						5.0
				ML		ALLUVIUM: SILT (ML), trace sand, and clay, light olive gray, wet, low plasticity, very fine grained, minor oxidation
10	SPT 2	100	5-6-7 (13)	SM		ALLUVIUM: SILTY SAND (SM), moderate yellowish brown, wet, medium dense, very fine to fine grained, iron oxide staining
						10.3
15	SPT 3	100	7-7-7 (14)	SM		-with trace clay
						16.5
						Bottom of borehole at 16.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-106

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/17/16 **COMPLETED** 8/17/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.141967 **LONGITUDE** -71.788444
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), olive brown, moist, fine to medium grained, fine to coarse grained gravel, subangular
2.5				SW-SM		ALLUVIUM: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), very pale brown (10YR 7/4), moist, medium dense, fine to coarse grained sand, subrounded
5	SPT 1	72	4-12-8 (20)			
5.0				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), olive gray (5Y 5/2), moist, medium dense, fine grained sand
8.0				CL		ALLUVIUM: LEAN CLAY WITH SAND (CL), yellowish brown (10YR 5/4), moist to wet, soft, medium plasticity, fine grained sand
10	SPT 2	61	3-3-6 (9)			
12.5				SM		ALLUVIUM: SILTY SAND (SM), brownish yellow (10YR 6/6), moist, very loose, fine grained sand
15	SPT 3	100	WOH			
15.0						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-107

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/16/16 **COMPLETED** 8/16/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.139454 **LONGITUDE** -71.786657
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), olive brown, moist, fine to medium grained, fine to coarse grained gravel, subrounded
						2.0
				GM		GLACIOLACUSTRINE: SILTY GRAVEL WITH SAND (GM), yellowish brown (10YR 5/4), moist, very dense, fine to coarse grained gravel, fine to coarse grained sand, subangular to subrounded
5	SPT 1	86	7-35-50/2"			
10	SPT 2	67	6-4-6 (10)	GM		9.5
				SP-SM		GLACIOLACUSTRINE: POORLY GRADED SAND WITH SILT (SP-SM), pale olive (5Y 6/4), moist, loose, fine grained sand, with 1/8 inch layers of silt and clay
						12.5
				CL		GLACIOLACUSTRINE: LEAN CLAY (CL), with silt, brownish yellow (10YR 6/6), moist, medium stiff, low plasticity
15	SPT 3	67	3-4-10 (14)			15.0
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-108

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/16/16 **COMPLETED** 8/16/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.13716 **LONGITUDE** -71.784667
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), moderate brown, moist, fine to medium grained, fine grained gravel, subangular
					3.0	
						ALLUVIUM: gneissic boulder from 3 to 7 ft
5	SPT 1	20	50/5"			
					7.0	
				GW-GM		ALLUVIUM: WELL GRADED GRAVEL WITH SAND WITH SILT (GW-GM), moist, dense, fine to coarse grained gravel, fine to medium grained sand, angular to subangular
10	SPT 2	67	12-16-21 (37)		9.8	
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), brownish yellow (10YR 6/6) to olive gray (5Y 5/2), moist, dense, fine to medium grained sand
15	SPT 3	78	14-14-18 (32)	SP-SM	15.0	-with silt and clay, dark yellowish orange, fine grained sand, micaceous
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-109

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/16/16 **COMPLETED** 8/16/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.12858 **LONGITUDE** -71.792834
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), grayish brown, moist, fine to medium grained, fine to coarse grained gravel, subangular
						2.5
				SW-SM		ALLUVIUM: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), yellowish brown (10YR 5/4), moist, very dense, fine to coarse grained gravel, fine to coarse grained sand, subangular to subrounded
5	SPT 1	72	6-20-39 (59)			
						7.5
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), olive gray (5Y 5/2), moist, loose, fine grained sand
10	SPT 2	83	3-3-7 (10)			
15	SPT 3	72	2-3-3 (6)	SP-SM		-becomes yellowish orange, with silt and clay, very loose
						15.0
						Bottom of borehole at 15.0 ft. Backfille with auger cuttings

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BORING NUMBER BH-110

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/16/16 **COMPLETED** 8/16/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR Geosearch
LATITUDE 44.126831 **LONGITUDE** -71.795591
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), olive brown, moist, fine to medium grained, fine grained gravel, subrounded
						2.5
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, olive, moist, medium dense, fine grained gravel, fine to medium grained sand, subrounded, with 1/2 inch layers of fine grained sand, silt, and clay
5	SPT 1	89	4-6-10 (16)			
						6.5
				CL		ALLUVIUM: LEAN CLAY (CL), trace silt, olive, moist, very stiff, low plasticity, laminated
10	SPT 2	67	4-6-10 (16)			
						12.0
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), olive, moist, loose, fine grained sand
15	SPT 3	94	2-3-3 (6)			
						15.0
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-112

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/15/16 **COMPLETED** 8/15/16
GROUND ELEVATION NA **HOLE SIZE** 4.25 in
DRILLING CONTRACTOR Geosearch
LATITUDE 44.123109 **LONGITUDE** -71.800882
DRILLING METHOD HSA/Wireline Coring / NQ Size/Series 8
DRILLING EQUIPMENT CME 75 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SW-SM		ALLUVIUM: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), olive to olive gray, moist, very dense, fine to coarse grained gravel, fine to coarse grained sand, angular
5	SPT 1		9-27-40 (67)	SW-SM		
8.0						
10	RC 1	100 (100)				BEDROCK: Fresh (I), white (N9) and grayish black (N2), fine to medium grained, medium strong (R3), GNEISS
15	RC 2	100 (100)				
15.0						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-113

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/5/16 **COMPLETED** 8/5/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.119297 **LONGITUDE** -71.805637
DRILLING METHOD Hollow Stem Auger/Mud Rotary
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 1 ft from digsafe arrow

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0				GM		FILL: GRAVEL WITH SILT AND SAND (GM), trace organics, moderate brown, moist	
						2.0	
				SM		ALLUVIUM: SILTY SAND (SM), olive gray, moist to wet, medium dense, very fine to fine grained, stratified, with layers of grading and oxidation	
5	SPT 1	100	4-7-10 (17)				
						6.5	
						BEDROCK: Weathered granitic rock	roller bit 7 to 15 ft
10	SPT 2	0	50/1"				
15	SPT 3		50/0"			15.0	
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings	

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BORING NUMBER BH-114

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/5/16 **COMPLETED** 8/5/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.117818 **LONGITUDE** -71.808605
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 1.9 ft from digsafe arrow

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL WITH SILT AND SAND (GM), trace organics, moderate brown, moist
					2.5	
				SM		ALLUVIUM: SILTY SAND (SM), olive gray, moist, loose, very fine to medium grained
					4.5	
5	SPT 1	56	3-3-3 (6)	OL		ALLUVIUM: SILT (OL), with clay, with organics, reddish brown, moist, medium stiff, low plasticity, very fine to fine grained
					7.5	
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), trace fines, olive gray, moist, very dense, fine grained sand, cobble present in sample
10	SPT 2	61	15-27-26 (53)			
					12.3	
				GP		ALLUVIUM: POORLY GRADED GRAVEL WITH SAND (GP), trace fines, olive gray, moist, dense, coarse grained gravel, fine grained sand, subangular
15	SPT 3	89	16-19-20 (39)			
					15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-115

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/5/16 **COMPLETED** 8/5/16
GROUND ELEVATION NA **HOLE SIZE** 4.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.116062 **LONGITUDE** -71.81201
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 3.8 ft from digsafe arrow
▽ **AT TIME OF DRILLING** 8.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: GRAVEL (SM), with sand, with silt, trace organics, moderate brown, moist
					1.5	
				SM		ALLUVIUM: SILTY SAND (SM), dark brown olive gray, moist, medium dense, very fine to fine grained, with lenses of clay, oxidation zones
5	SPT 1	100	8-9-19 (28)			
					6.5	
				GC		TILL: CLAYEY GRAVEL (GC), trace sand, medium brown, wet, fine to coarse grained gravel, fine grained sand, angular to subangular, iron oxide staining, weak cementation ▽
10	SPT 2	50	50			
					13.0	
						BEDROCK: Highly to completely weathered, schistose rock
	SPT 3	100	50/2"		14.2	

Bottom of borehole at 14.2 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-117

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/5/16 **COMPLETED** 8/5/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.113671 **LONGITUDE** -71.816327
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 2.9 ft from digsafe arrow

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL WITH SILT AND SAND (GM), trace organics, moderate brown, moist
					2.0	
				GM		ALLUVIUM: SILTY GRAVEL WITH SAND (GM), light brown, dry to moist, fine to coarse grained, medium to coarse grained gravel, angular to subangular, zones of oxidation throughout
5	SPT 1	64	20-50/5"			
					6.0	
				CL		ALLUVIUM: LEAN CLAY (CL), trace sand, light brown, moist, very stiff, low plasticity, fine grained sand
					8.5	
				GM		ALLUVIUM: GRAVEL WITH SILT AND SAND (GM), medium brown to olive gray, moist, fine grained, coarse grained gravel, subangular, iron oxide staining, with lenses of clay
10	SPT 2	100	50			
	SPT 3	100	50	GM		-becomes weakly cemented
					14.5	

Bottom of borehole at 14.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-118

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/5/16 **COMPLETED** 8/5/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.112152 **LONGITUDE** -71.818869
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 4 ft from digsafe arrow
▽ **AT TIME OF DRILLING** 3.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL WITH SILT AND SAND (GM), trace organics, moderate brown, moist, fine to coarse grained gravel, fine grained sand, subrounded
2.5				GC		▽ TILL: CLAYEY GRAVEL WITH SAND (GC), dark brown, wet, very dense, very fine to fine grained, medium grained gravel, subangular, iron oxide staining
5	SPT 1	100	50/4"			
8.0				GM		TILL: GRAVEL WITH SILT AND SAND (GM), moderate brown, wet, very dense, very fine to fine grained, fine to coarse grained gravel, subangular, iron oxide staining
10	SPT 2	100	12-14-50/3"			
14.3	SPT 3	100	50/3"	GM		-becomes pale brownish gray, with lenses of clay, coarse grained angular gravel, moderate cementation

Bottom of borehole at 14.3 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-119

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/5/16 **COMPLETED** 8/5/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.109253 **LONGITUDE** -71.819989
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 2 ft from digsafe arrow
▽ **AT TIME OF DRILLING** 3.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL WITH SILT AND SAND (GM), trace organics, moderate brown, moist
					2.5	
				PT		▽ ORGANIC DEPOSITS: PEAT (PT), with organics, dusky brown, wet, medium stiff, very fine to fine grained, strong odor
5	SPT 1	100	1-6-2 (8)			
					7.3	
				GP-GC		STREAM TERRACE DEPOSITS: SANDY GRAVEL (GP-GC), trace organics, moderate grayish brown, wet, dense, very fine to fine grained, fine to coarse grained gravel, angular, with lenses of clay
10	SPT 2	100	13-17-15 (32)			
					12.5	
						BEDROCK: Highly weathered, granitic rock
15	SPT 3	0	25-50/0"		15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-120

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/3/16 **COMPLETED** 8/4/16 **GROUND ELEVATION** NA **HOLE SIZE** 4.5 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 44.107177 **LONGITUDE** -71.819752
DRILLING METHOD SSA/Wireline Coring / NQ Size/Series 8 **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing/J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled 2 ft from digsafe arrow point

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: SILTY GRAVEL WITH SAND (GM)
					1.5	
				SM		STREAM TERRACE DEPOSITS: SILTY SAND (SM), olive gray to olive brown, moist, loose, fine grained sand, zones of oxidation throughout
	SPT 1	100	50/3"			-cobbles present
5						
					8.5	
						BEDROCK: Fresh (I), grayish blue green (5BG 5/2), very fine to fine grained, strong (R4), SCHIST, weakly foliated
10	RC 1	100 (77)				
	RC 2	100 (63)				-zone of extensive pyrite mineralization between 13.6 and 14.2 ft
15					15.0	
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-121

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/3/16 **COMPLETED** 8/3/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.104394 **LONGITUDE** -71.820177
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 3.5 ft from digsafe arrow point

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), olive brown, moist, fine to medium grained, fine grained gravel, subangular
						3.0
				SW-SM		ALLUVIUM: WELL GRADED SAND WITH GRAVEL (SW-SM), trace silt, light brown to olive brown, moist, medium dense, fine to coarse grained gravel, fine to coarse grained sand, angular to rounded
5	SPT 1	72	25-8-7 (15)			
						-becomes dense
10	SPT 2	0	6-9-23 (32)	SW-SM		
						12.5
				SC		TILL: CLAYEY SAND (SC), olive gray, moist, very dense, low plasticity, fine grained
	SPT 3	100	36-50/1"			
						14.6
						Bottom of borehole at 14.6 ft. Backfilled with auger cuttings

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BORING NUMBER BH-122

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/3/16 **COMPLETED** 8/3/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.10232 **LONGITUDE** -71.82255
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 32 inches from digsafe arrow point

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM)
						1.8
				SW-SM		STREAM TERRACE DEPOSITS: WELL GRADED SAND WITH GRAVEL WITH SILT (SW-SM), olive to olive brown, moist, medium dense, fine grained gravel, fine to coarse grained sand, subrounded
5	SPT 1	44	6-8-10 (18)			
						6.5
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), black, moist, medium dense, fine grained sand, subrounded, hydrocarbon odor, hydrocarbon staining
10	SPT 2	56	3-4-30 (34)			
						10.5

Bottom of borehole at 10.5 ft.
Backfilled with bentonite and drill cuttings

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BORING NUMBER BH-123

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/3/16 **COMPLETED** 8/3/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.100259 **LONGITUDE** -71.824592
DRILLING METHOD Solid Stem Auger/Mud Rotary
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 2 ft from digsafe arrow point

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						FILL	
						2.0	
				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), dark brown (7.5YR 3/2) to dark grayish brown (2.5Y 4/2), moist, medium dense, fine grained sand	
5	SPT 1	72	11-11-13 (24)				
						5.3	
				SW-SM		STREAM TERRACE DEPOSITS: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), olive brown to dark brown, fine grained gravel, fine to coarse grained sand, angular to subrounded, weathered schist fragments	
						8.0	roller bit from 8 to 15 ft, fresh rock at 13 ft
						BEDROCK: Highly weathered (IV), SCHIST	
10	SPT 2	0	50/2"				
						13.0	
						-becomes fresh to slightly weathered, with quartz, biotite, and pyrite	
15						15.0	

Bottom of borehole at 15.0 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-124

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/3/16 **COMPLETED** 8/3/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.098299 **LONGITUDE** -71.827671
DRILLING METHOD SSA/Wireline Coring / NQ Size/Series 8
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 1 ft from digsafe arrow point

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0						FILL	
						1.5	
				SW-SM		STREAM TERRACE DEPOSITS: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), trace organics, grayish brown and dark brown, moist, loose, fine grained gravel, fine to coarse grained sand, subangular, organic odor	
5	SPT 1	50	3-5-3 (8)				
						7.5	
						BEDROCK: Highly weathered (IV), foliated blueish, dark blueish gray fine grained, SCHIST	roller bit from 8.5 to 11 ft
10	SPT 2		50/0"				
	RC 1	93 (75)					
15						15.0	
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings	

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BORING NUMBER BH-125

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/3/16 **COMPLETED** 8/3/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.096395 **LONGITUDE** -71.830381
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES 4 ft off road from digsafe arrow

DEPTH (ft)	SAMPLE TYPE NUMBER	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0		SM		FILL: SILTY SAND WITH GRAVEL (SM), dark brown, hydrocarbon odor noted
4.0				Bottom of borehole at 4.0 ft. Backfilled with bentonite and drill cuttings

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BORING NUMBER BH-126

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 8/1/16 **COMPLETED** 8/1/16 **GROUND ELEVATION** NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 44.09507 **LONGITUDE** -71.830301
DRILLING METHOD Solid Stem Auger/Hollow Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES 1.5 ft from digsafe arrow ▽ **AT TIME OF DRILLING** 5.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM)
						2.0
				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), light brown to olive, moist, medium dense, fine grained sand
5	SPT 1	67	5-7-4 (11)			▽
	SPT 2	100	50/5"	SP-SM		-becomes olive to olive brown, wet, very dense, fine to medium grained sand, gravel content increases
10						
15	SPT 3	100	36-46-50/5"	SP-SM		-becomes yellowish brown, moist, fine grained sand, with weak cementation, possible derived from granitic source
						15.4
						Bottom of borehole at 15.4 ft. Backfilled with auger cuttings

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BORING NUMBER BH-128

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 8/1/16 **COMPLETED** 8/1/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR SW Cole
LATITUDE 44.090733 **LONGITUDE** -71.824626
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES 1.5 ft from digsafe arrow point at edge of road

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: SILTY GRAVEL (GM), trace sand, dark brown, moist, very loose, fine to coarse grained gravel, fine to coarse grained sand, subrounded, hydrocarbon odor noted
5	SPT 1	50	2-0-0 (0)	GM		
6.8						Bottom of borehole at 6.8 ft. Backfilled with bentonite and drill cuttings

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BORING NUMBER BH-129

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 8/1/16 **COMPLETED** 8/1/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR SW Cole
LATITUDE 44.088722 **LONGITUDE** -71.822073
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES 1.5 ft from arrow on road

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SW-SM		FILL: WELL GRADED SAND (SW-SM), dark brown, moist, medium dense, fine to medium grained sand
				SW-SM		4.8
5	SPT 1	61	2-1-11 (12)	SM		STREAM TERRACE DEPOSITS: SILTY SAND (SM), olive brown, wet, medium dense, fine grained sand, hydrocarbon odor at 7.2 ft
						7.2

Bottom of borehole at 7.2 ft.
Backfilled with bentonite and drill cuttings

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BORING NUMBER BH-130

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 8/1/16 **COMPLETED** 8/1/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR SW Cole
LATITUDE 44.087014 **LONGITUDE** -71.819203
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES 1.5 ft off of road from arrow point

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), olive gray, moist, loose, fine grained sand, subrounded to rounded
5	SPT 1	56	7-5-2 (7)	SP		
						7.0
				GM		STREAM TERRACE DEPOSITS: SILTY GRAVEL WITH SAND (GM), olive, moist, very dense, fine to coarse grained gravel, fine grained sand, subangular to subrounded
10	SPT 2	67	28-31-48 (79)			
						10.5
				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), olive gray, moist, dense, fine grained sand
	SPT 3	0	19-50/2"			
						14.7
						Bottom of borehole at 14.7 ft. Backfilled with auger cuttings

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BORING NUMBER BH-131

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 8/1/16 **COMPLETED** 8/1/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR SW Cole
LATITUDE 44.085356 **LONGITUDE** -71.816415
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES 1 ft off road from arrow point
▽ **AT TIME OF DRILLING** 6.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), olive brown, moist, fine grained gravel, fine to medium grained sand, subangular
						3.0
				SW-SM		STREAM TERRACE DEPOSITS: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), olive, wet, very dense, fine to coarse grained gravel, fine to coarse grained sand, subangular
5	SPT 1	50	6-10-50/2"			
						6.5 ▽
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), olive to olive brown, moist, very dense, fine to coarse grained gravel, fine grained sand, angular to subangular
10	SPT 2		32-22-30 (52)	SP		-boulders from 13 to 15 ft
15	SPT 3		25/0"	SP		15.0
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-133

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 8/1/16 **COMPLETED** 8/1/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR SW Cole
LATITUDE 44.083289 **LONGITUDE** -71.810187
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						FILL
						2.8
				SW-SM		STREAM TERRACE DEPOSITS: WELL GRADED SAND WITH GRAVEL AND SILT (SW-SM), with silt, brown to olive brown, moist, medium dense, fine to coarse grained gravel, fine to coarse grained sand, subrounded
5	SPT 1	56	10-8-4 (12)			
10	SPT 2	67	3-9-17 (26)	SW-SM		-becomes olive to olive brown, silty content decreases
						13.0
				CL		STREAM TERRACE DEPOSITS: SANDY CLAY WITH GRAVEL (CL), olive gray, moist to wet, stiff, low plasticity, fine grained gravel, fine grained sand
15	SPT 3	67	4-5-6 (11)			
						15.0
				ML		STREAM TERRACE DEPOSITS: SANDY SILT (ML), trace clay, stiff, fine grained sand
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-134

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 8/1/16 **COMPLETED** 8/1/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR SW Cole
LATITUDE 44.081529 **LONGITUDE** -71.806507
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES 2.3 ft off road from arrow point
▽ **AT TIME OF DRILLING** 7.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						FILL
						2.5
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), reddish gray, moist, dense, fine grained gravel, fine to medium grained sand, subangular to subrounded
5	SPT 1	11	12-18-22 (40)			
						7.0 ▽
				SW-SM		STREAM TERRACE DEPOSITS: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), olive, wet, dense, fine grained gravel, fine to coarse grained sand, subangular to subrounded
10	SPT 2	78	11-14-19 (33)			
						11.5
				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), olive, wet, medium dense, fine grained sand
15	SPT 3		5-7-9 (16)			
						15.0
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND (SP), olive gray, wet, medium dense, medium to coarse grained sand
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-135

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 8/1/16 **COMPLETED** 8/1/16
GROUND ELEVATION NA **HOLE SIZE** 4 in ID/8 in OD
DRILLING CONTRACTOR SW Cole
LATITUDE 44.07836 **LONGITUDE** -71.800313
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES 4 ft from arrow tip

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						FILL
						2.5
				SP		ALLUVIUM: POORLY GRADED SAND WITH GRAVEL (SP), light brown to olive brown, moist, very dense, fine to coarse grained gravel, fine to medium grained sand, subangular to subrounded, cobbles present
	SPT 1	83	50			
5						
						7.0
				SW-SM		ALLUVIUM: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), light brown to grayish brown, moist, very dense, fine to coarse grained gravel, fine to coarse grained sand, subrounded
10	SPT 2	78	24-32-35 (67)			
						13.5
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), light brown to gray, moist, loose, fine grained sand
15	SPT 3	100	3-4-5 (9)			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-136

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/29/16 **COMPLETED** 7/29/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.068378 **LONGITUDE** -71.792034
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						FILL: COBBLES, and sand
					2.0	
				SP-SM		FILL: POORLY GRADED SAND WITH SILT (SP-SM), trace clay, trace organics, olive brown, moist, very loose, fine grained sand
5	SPT 1	72	3-2-2 (4)			
					7.5	
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), light brown to olive brown, moist, medium dense, fine grained gravel, fine to medium grained sand, subangular to subrounded
10	SPT 2	50	11-7-9 (16)			
					12.0	
				SW-SM		STREAM TERRACE DEPOSITS: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), olive brown, wet, medium dense, fine to coarse grained gravel, fine to coarse grained sand, subrounded to rounded
15	SPT 3	72	17-12-11 (23)			
					15.5	
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-137

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/29/16 **COMPLETED** 7/29/16 **GROUND ELEVATION** NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 44.065407 **LONGITUDE** -71.791859
DRILLING METHOD Hollow Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						FILL
						1.9
				SC		ORGANIC DEPOSITS: CLAYEY SAND (SC), with roots, and organics, dark brown to grayish brown, moist, very loose, fine grained sand, organic smell
5	SPT 1	39	2-2-2 (4)			-becomes olive gray to olive, with silt, moist to wet, medium dense, trace organics
						8.0
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), and clay, olive brown, wet, medium dense, fine grained sand
10	SPT 2	83	2-4-18 (22)			
15	SPT 3	100	50/2"	SP-SM		-becomes dense
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-138

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/29/16 **COMPLETED** 7/29/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.05838 **LONGITUDE** -71.79272
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL AND SILT (SP-SM), brown, moist, loose, fine grained gravel, fine to coarse grained sand, angular to subangular
5	SPT 1	33	6-4-2 (6)	SP-SM		
						8.0
				SC		STREAM TERRACE DEPOSITS: CLAYEY SAND WITH GRAVEL (SC), olive gray, moist, medium dense, low plasticity, fine grained gravel, fine grained sand, subrounded to rounded
10	SPT 2	44	5-5-6 (11)			
						13.0
				CL		STREAM TERRACE DEPOSITS: LEAN CLAY (CL), trace gravel, light brownish gray to olive gray, wet, very stiff, fine grained gravel, subrounded
15	SPT 3	56	7-7-9 (16)			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-139

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/29/16 **COMPLETED** 7/29/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.05471 **LONGITUDE** -71.79407
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: POORLY GRADED SAND WITH GRAVEL (SM), with silt, light brown to brown, moist, medium dense, fine to medium grained sand, subangular
						4.5
5	SPT 1	67	12-12-11 (23)	SM		STREAM TERRACE DEPOSITS: SILTY SAND WITH GRAVEL (SM), brown to olive brown, moist, medium dense, fine to medium grained sand, subrounded to rounded, black patches of organic rich sediment
						9.0
	SPT 2	0	50/2"			-boulders from 9 to 13.5 ft
10						
						13.5
	SPT 3	73	26-50/5"	SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), brownish gray to reddish gray, moist, medium dense to very dense, fine to medium grained sand, subrounded, weathered schist at bottom of sample
15						15.0
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-141

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 7/29/16 **COMPLETED** 7/29/16 **GROUND ELEVATION** NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 44.04252 **LONGITUDE** -71.7918
DRILLING METHOD Solid Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES stopped drilling due to hydrocarbon odor

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0				SW-SM		FILL: WELL GRADED SAND WITH GRAVEL (SW-SM), with silt, brown, moist, very loose, fine grained gravel, fine to coarse grained sand, subrounded	
						-hydrocarbon odor noted	
	SPT 1	88	11-50/2"				refusal at 4.7 ft,
4.7						Bottom of borehole at 4.7 ft. Backfilled with bentonite and drill cuttings	

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BORING NUMBER BH-142

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/29/16 **COMPLETED** 7/29/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.040123 **LONGITUDE** -71.791759
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brownish gray to reddish gray, moist, medium dense, fine grained gravel, fine to coarse grained sand, subangular to subrounded
5	SPT 1	56	5-5-6 (11)	SM		
						6.0
				SW-SM		TILL: WELL GRADED SAND WITH GRAVEL (SW-SM), with silt, light brown to brown, moist, very dense, fine to coarse grained sand, angular to subangular
10	SPT 2	47	8-23-50/5"			
						11.8
				SP-SM		TILL: POORLY GRADED SAND WITH GRAVEL WITH SILT (SP-SM), grayish brown, moist, very dense, fine to coarse grained gravel, fine to medium grained sand, subangular, broken up cobble
15	SPT 3	50	21-50			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-143

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/29/16 **COMPLETED** 7/29/16 **GROUND ELEVATION** NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 44.036727 **LONGITUDE** -71.783512
DRILLING METHOD Solid Stem Auger/Mud Rotary **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Laing **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0				SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), light brown to reddish brown, moist, medium dense, fine grained gravel, fine to medium grained sand, subrounded	
5	SPT 1	78	9-6-6 (12)	SP			
						8.1	
						BEDROCK: Highly weathered (IV), GRANITE, granitic cuttings	roller bit from 8.6 to 15 ft
10	SPT 2	0	50/1"				
15						15.0	

Bottom of borehole at 15.0 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-144

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/27/16 **COMPLETED** 7/27/16 **GROUND ELEVATION** NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 44.035967 **LONGITUDE** -71.779863
DRILLING METHOD SSA/Wireline Coring / NQ Size/Series 8 **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), trace organics, brown, moist, loose, coarse grained gravel, fine to medium grained sand, subrounded	
3.5				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), grayish brown, moist, medium dense, fine to coarse grained gravel, medium to coarse grained sand, subrounded	
5	SPT 1	83	10-9-9 (18)				
8.0						STREAM TERRACE DEPOSITS: BOULDERS AND COBBLES	
10	RC 1						cored through boulder from 10 to 11.5 ft
11.5				GP		STREAM TERRACE DEPOSITS: POORLY GRADED GRAVEL (GP), white and black and gray, coarse grained, subrounded, with some boulders	
15	SPT 2		50/0"	GP			
15.0						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings	

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BORING NUMBER BH-145

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/27/16 **COMPLETED** 7/27/16
GROUND ELEVATION NA **HOLE SIZE** 4.5In
DRILLING CONTRACTOR SW Cole
LATITUDE 44.033706 **LONGITUDE** -71.771124
DRILLING METHOD SSA/Wireline Coring / NQ Size/Series 8
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, angular	
						3.0	
				SW-SM		STREAM TERRACE DEPOSITS: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), brown (7.5YR 5/3), moist, medium dense, fine to coarse grained gravel, fine to coarse grained sand, subrounded	
5	SPT 1	78	6-9-6 (15)				
						8.0	auger refusal at 8 ft
						BEDROCK: Fresh (I), whiteish green and black, coarse grained, strong (R4) to very strong (R5), GRANITE, granular, slightly metamorphosed, minor amounts of epidote	
10						10.8	
	RC 1	97 (60)				Core loss from 10.8 to 11 ft -becomes slightly weathered, medium strong to strong	
15						15.0	
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings	

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BORING NUMBER BH-146

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/27/16 **COMPLETED** 7/27/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.02919 **LONGITUDE** -71.763271
DRILLING METHOD HSA/Wireline Coring / NQ Size/Series 8
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, angular
3.0						
				SM		TILL: SILTY SAND WITH GRAVEL (SM), olive brown, moist, dense, coarse grained gravel, fine to medium grained sand, angular, iron oxide staining
5	SPT 1	67	6-15-24 (39)			
9.0						
	SPT 2	67	50/3"	ML		TILL: SANDY SILT WITH GRAVEL (ML), grayish brown, moist, hard, fine to coarse grained gravel, fine to medium grained sand, angular -boulder at 9.5 ft
10						
12.2						
	RC 1	71 (71)				BEDROCK: Fresh (I), gray and black, medium to coarse grained, strong (R4) to very strong (R5), GRANITE, biotite rich
15						
15.0						

Bottom of borehole at 15.0 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-147

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/27/16 **COMPLETED** 7/27/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.027531 **LONGITUDE** -71.760163
DRILLING METHOD Solid Stem Auger/Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), grayish brown, moist, fine to coarse grained gravel, fine to medium grained sand, angular
						2.8
				SM		TILL: SILTY SAND (SM), trace gravel, gray, moist, very dense, fine grained, fine grained gravel, trace coarse sand, micaceous
5	SPT 1	89	12-19-27 (46)			
						8.0
				SP		TILL: POORLY GRADED SAND WITH GRAVEL (SP), gray, moist, very dense, fine to coarse grained gravel, fine to medium grained sand, subrounded
10	SPT 2	100	16-32-34 (66)			-boulder from 11.6 to 12.8 ft
						12.8
				SM		TILL: SILTY SAND WITH GRAVEL (SM), dark gray, moist, very dense, fine to coarse grained gravel, fine to coarse grained sand, angular
	SPT 3	100	50			14.5

Bottom of borehole at 14.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-148

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/27/16 **COMPLETED** 7/27/16 **GROUND ELEVATION** NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 44.027081 **LONGITUDE** -71.756551
DRILLING METHOD Solid Stem Auger/Hollow Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SC		ORGANIC DEPOSITS: CLAYEY SAND (SC), trace organics, dark brown, moist, fine to medium grained sand
						1.5
				SM		STREAM TERRACE DEPOSITS: SILTY SAND WITH GRAVEL (SM), dark brown, moist, medium dense, fine to coarse grained gravel, fine to medium grained sand, angular
5	SPT 1	61	23-9-18 (27)			
						5.8
				GP		TILL: POORLY GRADED GRAVEL WITH SAND (GP), brown, moist, very dense, fine to coarse grained gravel, medium to coarse grained sand, subangular, iron oxide staining
10	SPT 2	100	50	GP		-cobbles and boulders from 10 to 12.5 ft
						13.0
				SP-SM		TILL: POORLY GRADED SAND WITH SILT (SP-SM), gray, moist, very dense, medium to coarse grained sand
15	SPT 3	100	43-43-44 (87)			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-149

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/27/16 **COMPLETED** 7/27/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.022567 **LONGITUDE** -71.751017
DRILLING METHOD Solid Stem Auger/Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 6.2ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, fine to coarse grained gravel, fine to medium grained sand, angular
					2.8	
				SW-SM		STREAM TERRACE DEPOSITS: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), brown, moist, medium dense, fine grained gravel, fine to coarse grained sand, subangular
5	SPT 1	56	7-7-6 (13)			
					6.0	
				SW-SM		▽ TILL: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), gray, moist, medium dense, fine to coarse grained gravel, fine to coarse grained sand, subangular
10	SPT 2	72	21-34-12 (46)	SW-SM		-becomes wet, dense
					14.0	
15	SPT 3	89	5-6-6 (12)	CL		TILL: CLAY WITH GRAVEL (CL), dark gray, wet, stiff, fine grained gravel, fine to medium grained sand, angular
					15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-150

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/26/16 **COMPLETED** 7/26/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.02083 **LONGITUDE** -71.747658
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 8.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0				SP		FILL: GRAVELLY POORLY GRADED SAND (SP), grayish brown, moist, fine to coarse grained gravel, fine to coarse grained sand, subrounded	
						-becomes dark brown, silt content increases	
3.5				SM		FILL: SILTY SAND (SM), grayish brown, wet, medium dense, medium to coarse grained sand	
5	SPT 1	61	7-9-8 (17)				
5.0				OL		ORGANIC DEPOSITS: GRAVELLY ORGANIC SOIL WITH SAND (OL), black, moist, very stiff, fine grained gravel, fine to medium grained sand	
						▽	
10				OL		-boulder from 9 to 10.3 ft	
	SPT 2	50	1-2-50/4"			-trace gravel and clay, wet, soft	
						-boulder from 12 to 13.5 ft	
13.5						BEDROCK: Probable bedrock	auger refusal at 14.9 ft
14.9						Bottom of borehole at 14.9 ft. Backfilled with auger cuttings	

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BORING NUMBER BH-151

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/26/16 **COMPLETED** 7/26/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.019886 **LONGITUDE** -71.744384
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0				SP-SM		FILL: POORLY GRADED SAND WITH SILT (SP-SM), gray, moist, loose, medium grained sand	
5	SPT 1	50	3-3-5 (8)				
				OL		ORGANIC DEPOSITS: ORGANIC SOIL (OL), black, moist, fine to medium grained sand	
				SW-SM		STREAM TERRACE DEPOSITS: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), orange and brown, wet, very dense, fine to coarse grained gravel, fine to coarse grained sand, subrounded	
10	SPT 2	100	50/3"	SW-SM		-boulder from 9.5 to 12.5 ft	
						BEDROCK: Probable bedrock	
15							auger refusal at 15 ft

5.0
6.3
12.5
15.0

Bottom of borehole at 15.0 ft.
Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-152

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/26/16 **COMPLETED** 7/26/16 **GROUND ELEVATION** NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 44.01993 **LONGITUDE** -71.741195
DRILLING METHOD Solid Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), trace organics, grayish brown, moist, very dense, fine to coarse grained gravel, fine to coarse grained sand, subrounded
						4.5
5	SPT 1	47	2-3-50/3"	SM		TILL: SILTY SAND WITH GRAVEL (SM), dark gray, moist, very dense, fine to coarse grained gravel, fine to coarse grained sand, angular -boulder from 5.3 to 8.6 ft
10	SPT 2	28	4-11-19 (30)	SM		
						13.0
	SPT 3	100	50/4"			BEDROCK: Highly weathered (IV), orangeish white and brown, medium to coarse grained, medium strong (R3), GRANITE, moist
						14.3

Bottom of borehole at 14.3 ft.
Backfilled with auger cuttings

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Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-153

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/26/16 **COMPLETED** 7/26/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.020852 **LONGITUDE** -71.737593
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 6.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SW-SM		FILL: GRAVELLY WELL GRADED SAND WITH SILT (SW-SM), grayish brown, fine to coarse grained gravel, fine to coarse grained sand, subrounded
					3.0	
				OL		ORGANIC DEPOSITS: ORGANIC SOIL WITH SAND (OL), dark brown, wet, medium dense, fine to medium grained sand, some cobbles
5	SPT 1	72	14-17-32 (49)		5.0	
						STREAM TERRACE DEPOSITS: COBBLES AND BOULDERS
						▽
10					10.2	
	SPT 2	50	35-35-30 (65)	SM-GM		TILL: SILTY SAND WITH GRAVEL (SM-GM), dark gray, moist, very dense, fine to coarse grained gravel, fine to coarse grained sand, angular
						-gravel and cobbles at 13 ft
15	SPT 3	56	5-20-31 (51)	SM-GM		-highly oxidized zone
					15.5	
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-154

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/26/16 **COMPLETED** 7/26/16 **GROUND ELEVATION** NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 44.021439 **LONGITUDE** -71.733845
DRILLING METHOD Solid Stem Auger/Hollow Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				OL		ORGANIC DEPOSITS: ORGANIC SOIL WITH SAND (OL), black, wet, medium dense, fine to medium grained sand, granitic cobble
5	SPT 1	63	12-39-50/4"			4.8
				SM		TILL: SILTY SAND WITH GRAVEL (SM), gray, moist, very dense, fine grained gravel, fine grained sand, angular
10	SPT 2	83	23-37-50 (87)	SM		
	SPT 3	100	50/5"	GP		14.0 14.5 TILL: Granitic cobbles

Bottom of borehole at 14.5 ft.
Backfilled with auger cuttings

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Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-155

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/26/16 **COMPLETED** 7/26/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.023933 **LONGITUDE** -71.727683
DRILLING METHOD Solid Stem Auger/Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 8.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SC		ORGANIC DEPOSITS: SANDY CLAY (SC), with gravel, trace organics, black, coarse grained gravel, fine to medium grained sand, subrounded
					2.0	
				GP		STREAM TERRACE DEPOSITS: POORLY GRADED GRAVEL (GP), brownish gray, moist, very dense
						-boulders present
	SPT 1	50	50/2"			
5	SPT 2	78	25-50/3"			
						-boulders present
					8.5	▽
				SM-ML		TILL: SILTY SAND WITH GRAVEL (SM-ML), gray, moist, very dense, fine to coarse grained gravel, fine to coarse grained sand, angular
10	SPT 3	89	31-41-54 (95)			
	SPT 4	100	50	SM-ML	14.5	-gravel content increases
						Bottom of borehole at 14.5 ft. Backfilled with auger cuttings

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Telephone: 509-892-9409

BORING NUMBER BH-156

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/25/16 **COMPLETED** 7/25/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.026197 **LONGITUDE** -71.72425
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SC		FILL: CLAYEY SAND (SC), brown and black, wet, medium dense, fine to medium grained sand, with organic clay clumps
						4.5
5	SPT 1	56	7-8-14 (22)	SM		ALLUVIUM: SILTY SAND (SM), brown, moist, medium dense, fine to medium grained sand
						8.5
10	SPT 2	100	15-50	ML		TILL: SANDY SILT WITH GRAVEL (ML), dark gray, wet, very hard, coarse grained gravel, fine to medium grained sand, angular, iron oxide staining
	SPT 3	0	50	ML		14.5

Bottom of borehole at 14.5 ft.
Backfilled with auger cuttings

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Telephone: 509-892-9409

BORING NUMBER BH-157

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/25/16 **COMPLETED** 7/25/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.02783 **LONGITUDE** -71.722037
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, fine to coarse grained gravel, fine to medium grained sand, subangular, cobbles present
4.0						
5	SPT 1	17	5-4-4 (8)	ML		ORGANIC DEPOSITS: SANDY SILT (ML), trace organics, dark brown, wet, firm, fine to medium grained sand
7.0						
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND (SP), gray, wet, very dense, medium grained sand, light brown, silty sand at 10 ft
10	SPT 2	83	7-50			
10.0						
				ML		TILL: SANDY SILT WITH GRAVEL (ML), dark gray, moist, hard, fine grained gravel, fine to coarse grained sand
15	SPT 3	56	22-20-27 (47)	ML		
15.5						
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-159

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/25/16 **COMPLETED** 7/25/16
GROUND ELEVATION NA **HOLE SIZE** 5.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.029258 **LONGITUDE** -71.715416
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND (SP), trace gravel, trace asphalt, dark brown, moist to wet, very loose, coarse grained gravel, fine to medium grained sand, subrounded
5	SPT 1	44	2-1-2 (3)	SP		
						6.0
				ML		ORGANIC DEPOSITS: SANDY SILT (ML), trace organics, dark brown to black, wet, very soft, low plasticity, fine to medium grained sand, gravel present at 10 ft
10	SPT 2	39	1-1-10 (11)	ML		
						10.0
				SP-GP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP-GP), light brown, moist, very dense, fine to coarse grained gravel, medium to coarse grained sand, subrounded -boulder present from 11.1 to 13.1 ft
15	SPT 3	56	16-50/3"	SP-GP		
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-160

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 9/21/16 **COMPLETED** 9/21/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.02945 **LONGITUDE** -71.71149
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT CME 850 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Tiger **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND (SP), trace gravel, grayish brown, moist, loose, fine grained gravel, fine to medium grained sand, subangular to subrounded
						4.5
5	SPT 1	83	1-2-5 (7)	SW-SM		ALLUVIUM: WELL GRADED SAND WITH SILT AND GRAVEL (SW-SM), trace organics, moderate yellowish brown, moist, loose, fine grained gravel, fine to coarse grained sand, subangular to subrounded, micaceous
						-boulders and cobbles from 6.5 to 10 ft
10	SPT 2		16-10-7 (17)	SW-SM		
						10.5
				ML		TILL: SILT WITH GRAVEL (ML), olive gray, moist, very stiff, fine to coarse grained gravel, angular to subangular, trace pyrite
15	SPT 3		22-32-50/5"	ML		-becomes hard, with sand
						16.4
						Bottom of borehole at 16.4 ft. Backfilled with auger cuttings

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BORING NUMBER BH-161

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 5/27/16 **COMPLETED** 5/27/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.029281 **LONGITUDE** -71.707821
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				OL		0.5 ORGANIC DEPOSITS: (OL)
				SP-GP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP-GP), with cobbles, and boulders, grayish brown, moist, very dense, fine to coarse grained gravel, medium to coarse grained sand, subrounded
5	SPT 1	100	20-39-40 (79)	SP-GP		
						9.0
10	SPT 2	83	50	GP		TILL: POORLY GRADED GRAVEL WITH SAND (GP), gray, moist, very dense, fine to coarse grained gravel, medium to coarse grained sand, subrounded
						14.0
15	SPT 3	78	39-50/3"	SM		TILL: SILTY SAND WITH GRAVEL (SM), gray, moist, very dense, fine to coarse grained gravel, fine to medium grained sand, subrounded
						15.0

Bottom of borehole at 15.0 ft.
Backfilled with auger cuttings

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Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-162

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/27/16 **COMPLETED** 5/27/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 44.029997 **LONGITUDE** -71.704391
DRILLING METHOD Hollow Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		ORGANIC DEPOSITS (0.5)
				SM		FILL: SILTY SAND WITH GRAVEL (SM), and cobbles, brown, loose, fine to coarse grained gravel, fine to medium grained sand (2.0)
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), and cobbles, gray, moist, very dense, fine to coarse grained gravel, fine to medium grained sand, subrounded
5	SPT 1	72	22-41-50 (91)			
						(7.5)
				SM		STREAM TERRACE DEPOSITS: SILTY SAND WITH GRAVEL (SM), gray, moist, very dense, fine to coarse grained gravel, fine to medium grained sand, subrounded
10	SPT 2	94	36-42-50 (92)			
15	SPT 3	56	15-33-21 (54)	SM		(15.5)
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-164

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/27/16 **COMPLETED** 5/27/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.032878 **LONGITUDE** -71.69814
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
Auto **GROUND WATER LEVEL:**
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND (SM), trace gravel, trace organics, brown, moist, loose, fine to medium grained
						3.0
				ML		FILL: SANDY SILT (ML), dark brown, moist, soft, fine grained, hydrocarbon odor
5	SPT 1	61	4-2-1 (3)			
						7.7

Bottom of borehole at 7.7 ft.
Backfilled with bentonite and drill cuttings

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BORING NUMBER BH-165

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 7/22/16 **COMPLETED** 7/22/16
GROUND ELEVATION NA **HOLE SIZE** 4.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.030142 **LONGITUDE** -71.687863
DRILLING METHOD Solid Stem Auger/Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES hit unmarked water line at 6.4 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), brown, moist, medium dense, fine to medium grained, fine grained gravel
5	SPT 1	28	8-10-9 (19)	SP		
					6.4	Bottom of borehole at 6.4 ft. Backfilled with auger cuttings

Quanta Subsurface
4308 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-166

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 9/1/16 **COMPLETED** 9/1/16
GROUND ELEVATION **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.0288150310516 **LONGITUDE** -71.6854870039969
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY**
GROUND WATER LEVEL:
NOTES vacuumed to 7 ft before drilling

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						Asphalt
					1.0	
				SM		FILL: Silty SAND (SM), with cobbles, rounded
	GB 1				4.0	
5				GM		ALLUVIUM
						-boulders up to 1 ft in diameter
10	SPT 1	24	26-16-50/5"			GRAVEL WITH SAND AND SILT, pale yellowish brown, dry, loose, very fine to fine grained, medium to very coarse grained gravel, angular to subangular, dry
15	SPT 2	44	10-19-24 (43)			-with oxidation zones
					16.5	Bottom of Borehole at 16.5 feet

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BORING NUMBER BH-167

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 9/27/16 **COMPLETED** 9/28/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 44.023246 **LONGITUDE** -71.684354
DRILLING METHOD HSA/Wireline Coring / NQ Size/Series 8 **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				OL		FILL: ORGANIC SILT (OL), with organics, dusky brown, dry, very loose, very fine grained
					4.3	
5	SPT 1	50	15-12-11 (23)			ALLUVIUM: Highly to completely weathered, massive, light brown (5YR 5/6), medium to coarse grained, extremely weak granite
					6.0	
						BEDROCK: Highly weathered (IV) to completely weathered (V), light brown, yellowish red / light brown (5YR 5/6), medium to coarse grained, extremely weak (R0), GRANITE, with extensive oxidation
					7.5	
10	RC 1	78 (56)				BEDROCK: Fresh (I), light gray to medium dark gray, light gray (N7) to medium dark gray (N4), medium to coarse grained, strong (R4), GNEISS, weakly foliated, with extensive pyrite mineralization
15	RC 2	100 (100)				-becomes foliated
					15.0	
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-168

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/27/16 **COMPLETED** 5/27/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 44.020323 **LONGITUDE** -71.683247
DRILLING METHOD HSA/Wireline Coring / NQ Size/Series 8 **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, subrounded
3.0				SM		ALLUVIUM: (SM), dark gray and black, wet, medium to coarse grained, highly weathered, foliated, boulders from 3 to 4 ft
4.0	SPT 1	67	50			BEDROCK: Slightly weathered (II), white and black, strong (R4), SCHIST, schistose foliated, biotite rich, moderately fractured
5	RC 1	93 (77)				
10	RC 2	98 (98)				-unfractured below 9 ft
15	RC 3	100 (100)				
15.0						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-169

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/27/16 **COMPLETED** 5/27/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.017684 **LONGITUDE** -71.683719
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 7.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, subrounded
						3.0
				GP		STREAM TERRACE DEPOSITS: POORLY GRADED GRAVEL (GP), with boulders, and cobbles, grayish brown, moist, very dense, coarse grained gravel, subrounded
5	SPT 2		14-38-34 (72)			
						7.5 ▽
				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), brown, wet, medium dense, medium to coarse grained
10	SPT 3	100	4-2-14 (16)			
	SPT 4	0	50/1"	SP-SM		-boulders and cobbles from 14 to 15 ft
15						15.0
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-171

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 6/27/16 **COMPLETED** 6/27/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.012651 **LONGITUDE** -71.685317
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 8.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL (GM), with sand, with silt, trace organics, dark yellowish brown to dark yellowish brown, moist, medium dense, very fine to fine grained, coarse grained gravel, subangular
5	SPT 1	72	12-15-16 (31)	GM		
					5.5	
				GM		STREAM TERRACE DEPOSITS: SILTY GRAVEL WITH SAND (GM), pale yellowish brown, moist, dense, fine to coarse grained gravel, fine to medium grained sand, subrounded
						▽
10	SPT 2	83	24-13-6 (19)	GM		-becomes wet, medium dense
					13.0	
				GP		STREAM TERRACE DEPOSITS: POORLY GRADED GRAVEL (GP), trace fines, pale yellowish brown, wet, loose
15	SPT 3	50	1-2-3 (5)			
					15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-172

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/27/16 **COMPLETED** 5/27/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.00986 **LONGITUDE** -71.686064
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to coarse grained sand, subrounded
					3.0	
				SP		FILL: POORLY GRADED SAND (SP), with asphalt, black, moist, loose, fine to medium grained, hydrocarbon odor
5	SPT 1	44	5-3-2 (5)		5.5	

Bottom of borehole at 5.5 ft.
Backfilled with bentonite and drill cuttings

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BORING NUMBER BH-173

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.007653 **LONGITUDE** -71.68551
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand
						3.5
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), grayish brown, moist, medium dense, fine to coarse grained gravel, medium to coarse grained sand, subrounded
5	SPT 1	0	50			
10	SPT 2	44	8-14-15 (29)	SP		
15	SPT 3	78	9-6-6 (12)	SP		-becomes light brown, poorly graded, medium grained, without gravel
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-174

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.004322 **LONGITUDE** -71.684681
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND (SP), trace gravel, brown, moist, loose, fine grained gravel, fine to medium grained sand
						3.0
				GP		STREAM TERRACE DEPOSITS: POORLY GRADED GRAVEL WITH SAND (GP), grayish brown, moist, very dense, fine to coarse grained gravel, medium to coarse grained sand, boulders and cobbles present
5	SPT 1	50	24-33-32 (65)			
10	SPT 2	44	16-14-12 (26)	GP		-becomes dense
						13.0
				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), grayish brown, moist, medium dense, medium grained
15	SPT 3	78	4-4-7 (11)			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-175

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 44.002428 **LONGITUDE** -71.684382
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 8.7ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand
						4.0
5	SPT 1	78	5-6-10 (16)	SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND (SP), trace gravel, brown, moist, medium dense, fine grained gravel, fine to medium grained sand, subrounded
						8.7 ▽
10	SPT 2	56	3-2-3 (5)	ML		STREAM TERRACE DEPOSITS: SILT WITH SAND (ML), trace organics, black, wet, firm, fine to medium grained sand
						11.0
				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, grayish brown, wet, medium dense, coarse grained gravel, medium grained sand
15	SPT 3	61	2-7-14 (21)	SP-SM		
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-177

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.997116 **LONGITUDE** -71.683149
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand
5	SPT 1	39	2-2-1 (3)	SM		-becomes very loose, medium to coarse grained sand
						6.0
				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), brown, wet, medium dense, fine to medium grained
10	SPT 2	61	6-7-8 (15)	SP-SM		
15	SPT 3	67	4-4-8 (12)	SP-SM		
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-178

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.994698 **LONGITUDE** -71.683267
DRILLING METHOD Hollow Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND (SM), trace gravel, trace organics, brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand
5	SPT 1	50	1-1-1 (2)	SM		-becomes very loose, silt content decreases
						6.0
				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), light brown, moist, medium dense, medium grained
10	SPT 2	94	4-5-5 (10)	SP-SM		
15	SPT 3	100	3-3-5 (8)	SP-SM		-becomes loose, moisture content increases
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-179

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.992866 **LONGITUDE** -71.6858
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), orange to brown, wet, medium dense, fine to coarse grained gravel, medium to coarse grained sand, chemical odor noted
5	SPT 1	44	8-6-8 (14)	SM		
7.1						Bottom of borehole at 7.1 ft. Backfilled with bentonite and drill cuttings

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BORING NUMBER BH-180

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.990603 **LONGITUDE** -71.684598
DRILLING METHOD Solid Stem Auger/Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand
2.5				SM		STREAM TERRACE DEPOSITS: SILTY SAND WITH GRAVEL (SM), tan, moist, very dense, fine to coarse grained gravel, fine grained sand, subangular
5	SPT 1	78	24-33-45 (78)			
10	SPT 2	90	38-50/4"	SM		-gravel content increases, cobbles and boulders present
15	SPT 3	67	38-50	SM		-with fine to medium grained sand, silt content increases
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-181

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.988052 **LONGITUDE** -71.683679
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES contaminated soil

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), trace asphalt, brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, chemical odor noted
5	SPT 1	56	9-9-9 (18)	SM		
					8.0	

Bottom of borehole at 8.0 ft.
Backfilled with bentonite and drill cuttings

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BORING NUMBER BH-182

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.986189 **LONGITUDE** -71.682756
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, grayish brown, moist, loose, fine grained gravel, medium grained sand
5	SPT 1	83	3-3-2 (5)	SP-SM		
10	SPT 2	78	3-4-5 (9)	SP-SM		-gravelly zone encountered
15	SPT 3	78	6-6-8 (14)	SP-SM		-becomes medium dense, fine to medium grained sand
					15.5	Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-183

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.983027 **LONGITUDE** -71.682339
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND (SM), trace gravel, brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand
						2.0
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), grayish brown, moist, loose, fine grained gravel, medium grained sand
5	SPT 1	89	5-4-5 (9)			
10	SPT 2	78	4-5-6 (11)	SP-SM		-becomes medium dense, silt content increases
15	SPT 3	78	4-5-5 (10)	SP-SM		
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-184

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16
GROUND ELEVATION NA **HOLE SIZE** 4.5 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.981139 **LONGITUDE** -71.683484
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, subrounded
						3.0
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), light brown, moist, loose, fine grained gravel, medium grained sand
5	SPT 1	56	4-4-3 (7)			
						-becomes grayish brown, without gravel
10	SPT 2	89	3-3-4 (7)	SP-SM		
15	SPT 3	83	4-5-6 (11)	SP-SM		
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-185

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.978168 **LONGITUDE** -71.685195
DRILLING METHOD SSA/Wireline Coring / NQ Size/Series 8 **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND (SM), trace gravel, brown, moist, loose, fine to medium grained
3.0						STREAM TERRACE DEPOSITS: brown, medium to coarse grained, highly weathered, massive, medium weak gneiss with schist zones boulder
5	SPT 1	20	50/5"			
						-boulders and cobbles present
10	SPT 2	20	50/5"			
11.3						BEDROCK: Fresh (I), dark gray, strong (R4), SCHIST, slightly fractured, foliated
15	RC 1	100 (100)				
15.0						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-186

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.976069 **LONGITUDE** -71.684251
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND (SM), trace gravel, dark brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand
						3.0
				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), dark brown, moist, medium dense, medium to coarse grained
5	SPT 1	100	5-8-12 (20)			
10	SPT 2	72	12-18-26 (44)	SP-SM		-becomes brown to orange, poorly graded, fine to coarse grained gravel, iron oxide staining, fragments of highly weathered granitic rock
	SPT 3	0	18-50/4"	SP-SM		
						14.8

Bottom of borehole at 14.8 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-188

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 6/24/16 **COMPLETED** 6/24/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.97037 **LONGITUDE** -71.685067
DRILLING METHOD Hollow Stem Auger/Mud Rotary **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled 5.3 ft from digsafe box

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL (GM), with sand, with silt, trace organics, dusky yellowish brown, dry to damp, loose, very fine to fine grained, medium to coarse grained gravel, subangular
						3.0
						STREAM TERRACE DEPOSITS: BOULDERS, and cobbles, granitic
	SPT 1	0	50/1"			
5						
						7.0
				SM		TILL: SILTY SAND (SM), moderate yellowish brown, moist, dense, very fine to fine grained, iron oxide staining
10	SPT 2	72	17-27-38 (65)			
15	SPT 3	72	14-25-28 (53)	SM		-becomes pale yellowish brown, with lenses of light olive gray clay
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-189

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 6/24/16 **COMPLETED** 6/24/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.967801 **LONGITUDE** -71.685666
DRILLING METHOD HSA/Wireline Coring / NQ Size/Series 8 **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL (GM), with sand, with silt, trace organics, dusky brown to moderate yellowish brown, dry, loose, very fine to fine grained, medium to coarse grained gravel, angular to subangular
5	SPT 1	50	6-3-3 (6)	GM		
						6.5
				SM		STREAM TERRACE DEPOSITS: SILTY SAND WITH GRAVEL (SM), pale yellowish brown, dry, medium dense, fine grained, fine to coarse grained gravel, subangular
10	SPT 2	72	5-9-9 (18)			
						13.0
15	RC 1	85 (85)				BEDROCK: Fresh (I), medium light gray and greenish gray, medium light gray (N6) and greenish gray (5GY 6/1), medium to coarse grained, strong (R4), GRANITE -composition becomes intermediate
						15.0
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-190

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Woodstock, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.965458 **LONGITUDE** -71.686172
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, subrounded
						3.0
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), light brown, moist, medium dense, fine to coarse grained gravel, medium to coarse grained sand, subrounded
5	SPT 1	50	7-9-9 (18)			
10	SPT 2	56	6-10-10 (20)	SP		
15	SPT 3	72	13-16-23 (39)	SP		-gravel content increases
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-191

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.963016 **LONGITUDE** -71.684479
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), light brown, moist, medium dense, medium to coarse grained
5	SPT 1	83	5-5-7 (12)	SP-SM		
10	SPT 2	89	8-9-9 (18)	SP-SM		-becomes grayish brown, fine to medium grained sand
15	SPT 3	83	8-10-12 (22)	SP-SM		-with medium to coarse grained sand
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-193

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 6/24/16 **COMPLETED** 6/24/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.957186 **LONGITUDE** -71.679561
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL (GM), with sand, with silt, trace organics, pale brown, dry, loose
					2.0	
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), grayish orange and pale yellowish brown, damp, dense, fine grained, silt lenses
5	SPT 1	94	15-21-27 (48)			
10	SPT 2	83	4-5-4 (9)	SP-SM		-becomes moderate yellowish brown, loose
					13.0	
				GP-GM		ALLUVIUM: POORLY GRADED GRAVEL (GP-GM), light brown, dry, loose, medium to very coarse grained gravel, angular to subangular, fine grained matrix
15	SPT 3	28	7-6-5 (11)			
					15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-194

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.954718 **LONGITUDE** -71.680359
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 13.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND (SM), trace gravel, trace organics, brown to gray, moist, loose, fine to medium grained gravel
						2.5
				SM		STREAM TERRACE DEPOSITS: SILTY SAND (SM), tan, moist, medium dense, medium grained
5	SPT 1	67	6-11-11 (22)			
						8.0
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND (SP), trace gravel, brown, moist, medium dense, fine to coarse grained gravel, medium to coarse grained sand, subrounded
10	SPT 2	72	6-11-14 (25)			▽
15	SPT 3	44	11-13-21 (34)	SP		-gravel content increases
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-195

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.952331 **LONGITUDE** -71.681529
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 7.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), trace organics, dark brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, subangular
						3.0
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), trace cobbles, brown to gray, moist, very dense, fine to coarse grained gravel, fine to coarse grained sand, subrounded
5	SPT 1	67	27-33-41 (74)			▽
						9.0
10	SPT 2	72	14-14-18 (32)	SM		STREAM TERRACE DEPOSITS: SILTY SAND WITH GRAVEL (SM), brown, wet, dense, fine to coarse grained gravel, fine to medium grained sand, subangular
15	SPT 3	89	2-2-3 (5)	SM		-becomes loose, gray, fine grained, without gravel, micaceous, wet
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-196

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/24/16 **COMPLETED** 5/24/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.94999 **LONGITUDE** -71.680246
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 8.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), trace cobbles, brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, rounded
						3.0
				ML		ORGANIC DEPOSITS: SANDY SILT (ML), trace organics, dark brown, moist, soft, fine to medium grained sand
5	SPT 1	78	2-1-3 (4)			
						5.5
				SM		ALLUVIUM: SILTY SAND (SM), trace organics, dark brown and gray, wet, very loose, fine grained gravel
						▽
10	SPT 2	100	0-0-1 (1)	SM		
15	SPT 3	94	4-10-13 (23)	SM		-becomes tan, silt content decreases, micaceous
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-197

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/24/16 **COMPLETED** 5/24/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.94846 **LONGITUDE** -71.677571
DRILLING METHOD HSA/Wireline Coring / NQ Size/Series 8
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, subrounded
3.5						SAPROLITE: decomposed schist
5	SPT 1	100	50/5"			
7.3						BEDROCK: Fresh (I), dark gray and white, strong (R4), GNEISS, biotite rich, with schistose zone
10	RC 1	100 (100)				
15	RC 2	100 (100)				
15.0						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-199

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/24/16 **COMPLETED** 5/24/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.943589 **LONGITUDE** -71.678624
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), dark brown, moist, loose, fine to medium grained gravel, fine to coarse grained sand, subrounded
3.5						
5	SPT 2	6	6-5-10 (15)	SP		ALLUVIUM: POORLY GRADED SAND WITH GRAVEL (SP), brown, moist, medium dense, fine to coarse grained gravel, fine to medium grained sand, subrounded
9.0						
10	SPT 3	83	6-7-7 (14)	SM		ALLUVIUM: SILTY SAND (SM), tan, moist, medium dense, fine grained
15	SPT 4	94	5-6-7 (13)	SM		
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-200

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/24/16 **COMPLETED** 5/24/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.940497 **LONGITUDE** -71.678593
DRILLING METHOD Solid Stem Auger/Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 12.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SC		FILL: CLAYEY SAND (SC), trace gravel, trace organics, dark brown, moist, loose, fine to medium grained sand, subrounded
3.5						
5	SPT 2	78	2-3-6 (9)	SM		STREAM TERRACE DEPOSITS: SILTY SAND (SM), light brown, wet, loose, fine to medium grained gravel, coarse sand in bottom 2 inches
						-granitic boulder from 7.7 to 9 ft
9.0						
10	SPT 3	50	11-13-11 (24)	GP		STREAM TERRACE DEPOSITS: POORLY GRADED SANDY GRAVEL (GP), gray, fine to coarse grained gravel, fine to coarse grained sand, subangular
12.5 ▽						
				SM		STREAM TERRACE DEPOSITS: SILTY SAND (SM), gray, wet, loose, fine grained
15	SPT 4	44	4-3-3 (6)			
15.5						
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-201

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/24/16 **COMPLETED** 5/24/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.938137 **LONGITUDE** -71.679826
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 8.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine to coarse grained gravel, fine to coarse grained sand, subangular
5	SPT 2	39	2-3-1 (4)			5.0
				ML		ORGANIC DEPOSITS: SILT (ML), trace organics, dark brown, moist, firm
						6.0
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND (SP), trace gravel, grayish brown, wet, medium dense, coarse grained gravel, fine to medium grained sand, subrounded ▽
10	SPT 3	72	9-13-9 (22)	SP		
15	SPT 4	78	13-13-11 (24)	SP		-gravel content decreases
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

QS
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Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-202

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/24/16 **COMPLETED** 5/24/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.936396 **LONGITUDE** -71.681493
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 12.3ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), dark brown, loose, medium grained gravel, fine to coarse grained sand, subrounded, trace plastic
5	SPT 2	33	2-2-3 (5)	SM		-with trace organics, moist
						6.5
				SM		ALLUVIUM: SILTY SAND (SM), grayish brown, wet, very loose, fine to medium grained, micaceous
10	SPT 3	83	0-0-3 (3)			-gravel layer
						11.5
				SP		▽ ALLUVIUM: POORLY GRADED SAND WITH GRAVEL (SP), grayish brown, wet, medium dense, fine to coarse grained gravel, medium to coarse grained sand, subrounded
15	SPT 4	78	10-11-10 (21)	SP		
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-204

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/23/16 **COMPLETED** 5/23/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.930101 **LONGITUDE** -71.685076
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 6.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, coarse grained gravel, fine to medium grained sand, subrounded
3.0				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), brown and white, moist, medium dense, fine to coarse grained gravel, fine to coarse grained sand, subrounded
5	SPT 2	56	15-10-6 (16)			
6.0				SM		▽ STREAM TERRACE DEPOSITS: SILTY SAND (SM), grayish brown, wet, medium dense, fine to medium grained, wet, 1 inch coarse sand lens
10	SPT 3	78	3-5-7 (12)			
10.0				ML		STREAM TERRACE DEPOSITS: SANDY SILT (ML), olive brown, wet, stiff, fine grained sand, stratified, iron oxide staining
13.0				SM		STREAM TERRACE DEPOSITS: SILTY SAND (SM), olive brown, wet, medium dense, fine grained, coarse sand and gravel in bottom 3 inches
15	SPT 4	72	4-9-20 (29)			
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-205

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 8/31/16 **COMPLETED** 8/31/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.92721 **LONGITUDE** -71.685553
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 14.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), trace asphalt, trace organics, dusky brown, damp, very fine to fine grained, medium to very coarse grained gravel, angular to subangular
						2.0
				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), very pale orange, dry, medium dense, fine to coarse grained gravel, angular to subangular, iron oxide staining
5	SPT 1	72	10-12-9 (21)	SP		
10	SPT 2	89	8-8-8 (16)	SP		-becomes moist
						12.5
				ML		STREAM TERRACE DEPOSITS: SANDY SILT (ML), light olive gray, wet, medium dense, low plasticity, very fine grained, minor zones of oxidation
15	SPT 3	100	2-4-14 (18)	ML		▽
						16.5
						Bottom of borehole at 16.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
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BORING NUMBER BH-206

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/23/16 **COMPLETED** 5/23/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.924391 **LONGITUDE** -71.685804
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 12.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND (SM), trace gravel, trace organics, brown, moist, fine to medium grained
						-becomes very loose, light brown, no gravel or organics
5	SPT 2	56	1-1-1 (2)	SM		
						8.5
				SM		ORGANIC DEPOSITS: SILTY SAND (SM), trace gravel, trace organics, dark brown, wet, loose
10	SPT 3	67	3-2-2 (4)			10.5
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), brown, wet, very loose, fine to medium grained ▽
15	SPT 4	89	1-1-2 (3)	SP-SM		15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-208

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/23/16 **COMPLETED** 5/23/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.919277 **LONGITUDE** -71.685079
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 13.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		ALLUVIUM: SILTY SAND (SM), trace organics, brown, moist, loose, fine to medium grained
						-becomes medium dense, light brown, no organics, medium to coarse grained, wet
5	SPT 2	89	6-7-7 (14)	SM		
					7.5	
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), light brown, moist, loose, medium to coarse grained
10	SPT 3	78	4-5-2 (7)			▽
15	SPT 4	78	5-6-9 (15)	SP-SM		-becomes medium dense, wet
					15.5	Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-209

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 6/24/16 **COMPLETED** 6/24/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.916247 **LONGITUDE** -71.685027
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 13.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL (GM), with sand, with silt, trace organics, dusky yellowish brown, dry to damp, loose, very fine to fine grained, medium to coarse grained gravel, subangular
					4.0	
5	SPT 1	72	2-1-1 (2)	SP		ALLUVIUM: POORLY GRADED SAND (SP), dark yellowish brown and light brown, damp, very loose, fine grained
					7.5	
				GM		ALLUVIUM: SILTY GRAVEL WITH SAND (GM), moderate brown, wet, dense, very fine to fine grained, medium to coarse grained gravel, subangular
10	SPT 2	67	14-20-15 (35)			▽
15	SPT 3	83	16-24-19 (43)	GM		-becomes moderate yellowish brown and light brown, angular to subangular gravel
					15.5	Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-210

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/23/16 **COMPLETED** 5/23/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.914006 **LONGITUDE** -71.685406
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 8.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0				SM		FILL: SILTY SAND (SM), trace organics, brown, moist, loose, fine to medium grained	
	GB 1						
						3.5	
				ML		ORGANIC DEPOSITS: SANDY SILT (ML), trace organics, dark brown, fine grained	
						4.5	
5	SPT 2	89	1-2-2 (4)	SM		ALLUVIUM: SILTY SAND (SM), brown and gray, moist, loose, fine to medium grained	
						8.0	
				SP		▽ ALLUVIUM: POORLY GRADED SAND (SP), trace gravel, gray and brown, wet, medium dense, fine to coarse grained gravel, medium to coarse grained sand	
10	SPT 3	56	9-13-15 (28)				could not obtain 14 inch sample due to running sands
15						15.0	

Bottom of borehole at 15.0 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-211

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 6/24/16 **COMPLETED** 6/24/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.909037 **LONGITUDE** -71.684513
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 13.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL (GM), with sand, with silt, dark yellowish brown, dry, loose
					1.0	
				SM		ALLUVIUM: SILTY SAND (SM), yellowish gray to pale yellowish brown, damp to moist, very loose, fine grained
5	SPT 1	78	1-2-1 (3)	SM		
					9.0	
10	SPT 2	72	11-12-12 (24)	CL		ALLUVIUM: SILTY CLAY (CL), trace sand, pale yellowish brown, moist, very stiff, low plasticity, fine grained sand
						▽
15	SPT 3	100	3-3-6 (9)	CL		-becomes stiff, wet, with minor zones of oxidation
					15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-212

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 6/23/16 **COMPLETED** 6/23/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.903706 **LONGITUDE** -71.682422
DRILLING METHOD Hollow Stem Auger/Mud Rotary
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 10.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL (GM), with sand, with silt, trace organics, dark yellowish brown, dry, loose
					4.0	
5	SPT 1	50	2-1-1 (2)	SP	5.0	ALLUVIUM: POORLY GRADED SAND (SP), moderate yellowish brown, moist, medium dense, fine grained
				OL		ALLUVIUM: ORGANIC SILT (OL), with clay, with organics, grayish brown, moist, soft, very fine grained
					8.0	
10	SPT 2	89	14-19-11 (30)	CL		ALLUVIUM: SILTY CLAY (CL), trace organics, moderate yellowish brown, damp, very stiff, low plasticity, very fine grained ▽
					13.0	
15	SPT 3	56	20-13-14 (27)	GM		ALLUVIUM: SILTY GRAVEL WITH SAND (GM), dusky yellow to yellowish gray, wet, medium dense, very fine to fine grained, medium to coarse grained gravel, angular, with lenses of silty clay
					15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-213

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/23/16 **COMPLETED** 5/23/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.901083 **LONGITUDE** -71.682271
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 13.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND (SM), brown, moist, loose, fine to medium grained
3.5						
5	SPT 2	72	3-4-5 (9)	SM		ALLUVIUM: SILTY SAND (SM), gray, moist, loose, fine grained, thinly bedded, micaceous
						-becomes highly oxidized
9.0						
10	SPT 3	78	5-7-7 (14)	ML		ALLUVIUM: SILT (ML), gray, moist, stiff, non plastic
						▽
15	SPT 4		3-3-4 (7)	ML		-becomes medium stiff, wet, 1 inch lens of coarse sand at bottom
15.5						

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-214

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/23/16 **COMPLETED** 5/23/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.898609 **LONGITUDE** -71.681551
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SC		ALLUVIUM: CLAYEY SAND (SC)
0.5					ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), brown, moist, loose, medium grained
	GB 1		SP-SM		
5	SPT 2	4-5-5 (10)	SP-SM		-becomes medium dense, medium to coarse grained
10	SPT 3	3-4-4 (8)	SP-SM		-becomes loose, with trace fine grained gravel, wet
15	SPT 4	5-5-5 (10)	SP-SM		-becomes medium dense, fine to medium grained sand, moist, silt content increases
15.5					Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-215

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/27/16 **COMPLETED** 5/27/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.896297 **LONGITUDE** -71.67951
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 12.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		ALLUVIUM: SILTY SAND (SM), pale yellowish brown, moist, medium dense, very fine to fine grained, micaceous
5	SPT 1	67	7-11-10 (21)	SM		
10	SPT 2	0	50/2"	SM		with minor traces of poorly graded sand, boulder from 9 to 11 ft
						11.0
				GM		ALLUVIUM: SILTY GRAVEL WITH SAND (GM), light brown to dusky brown, wet, dense, very fine to fine grained, coarse grained gravel, angular, with gravelly sand and silty sand
						▽
15	SPT 3	50	21-17-16 (33)			
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-217

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/27/16 **COMPLETED** 5/27/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.892134 **LONGITUDE** -71.675054
DRILLING METHOD HSA/Wireline Coring / NQ Size/Series 8 **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		STREAM TERRACE DEPOSITS: SILTY SAND (SM), and boulders, brown, moist, dense, very fine to fine grained, iron oxide staining, granitic boulders
5	SPT 1	78	8-41-37 (78)	SM		-becomes very dense, cobbles influencing blow counts
						8.5
10	SPT 2	100	50/1"			-felsic rock powder, high percentage of mica
	RC 1	100 (46)				BEDROCK: Fresh (I) to slightly weathered, very light gray and gray, strong (R4), GNEISS, high percentage of mica, zone of coarse mica mineralization at 14.6'-15'
15	RC 2	100 (100)				15.0
						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-218

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/27/16 **COMPLETED** 5/27/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.889664 **LONGITUDE** -71.673882
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND (SM), trace gravel, dark brown, moist, fine to medium grained, fine grained gravel
						2.0
				SM		ALLUVIUM: SILTY SAND (SM), brown, moist, very loose, fine grained, highly oxidized zones throughout sample
5	SPT 1	100	1-1-2 (3)			
						8.0
				SP		ALLUVIUM: POORLY GRADED SAND (SP), yellowish brown, moist, loose, fine grained, micaceous
10	SPT 2	89	4-4-4 (8)			
						13.0
				SW		ALLUVIUM: WELL GRADED SAND WITH GRAVEL (SW), pale yellowish brown to light brown, moist, loose, fine to coarse grained gravel, fine grained sand, subangular
15	SPT 3	89	3-2-3 (5)			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-219

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.88725 **LONGITUDE** -71.672328
DRILLING METHOD Hollow Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SM		FILL: (SM), brown, moist, loose
				2.0	
			SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), pale yellowish brown and light brown, moist, loose, fine to medium grained
5	SPT 1	3-3-4 (7)			
10	SPT 2	3-5-6 (11)	SP-SM		-becomes medium dense
15	SPT 3	5-7-7 (14)	SP-SM		
				15.5	Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-220

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.884959 **LONGITUDE** -71.671032
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SM		FILL: SILTY SAND (SM), brown, moist, loose, fine to medium grained
				2.0	
			SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), light brown, moist, medium dense, coarse grained gravel, fine grained sand, subangular
5	SPT 1	8-7-8 (15)			
10	SPT 2	5-5-6 (11)	SP		-becomes light brown and pale brown, without gravel
				14.0	
15	SPT 3	5-7-8 (15)	SW		STREAM TERRACE DEPOSITS: WELL GRADED SAND WITH GRAVEL (SW), pale yellowish brown, moist, medium dense, fine grained, fine grained gravel, subrounded
				15.5	
					Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-221

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.882332 **LONGITUDE** -71.669309
DRILLING METHOD Hollow Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			ML		ALLUVIUM: SANDY SILT (ML), pale yellowish brown, moist, stiff, very fine to fine grained, iron oxide staining
5	SPT 1	5-7-6 (13)	ML		-becomes very stiff
					9.0
10	SPT 2	20-42-13 (55)	SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), yellowish orange, moist, very dense, fine grained, contact with schistose boulder/cobble in SPT sample
15	SPT 3	8-11-13 (24)	SP-SM		-becomes medium dense
					15.5
					Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-223

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/27/16 **COMPLETED** 5/27/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.878023 **LONGITUDE** -71.665063
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), light brown, moist, loose, fine to coarse grained gravel, fine to coarse grained sand
5	SPT 1	100	4-5-5 (10)	SP		
10	SPT 2	78	4-6-7 (13)	SP		-becomes medium dense
						13.5
15	SPT 3	89	8-7-8 (15)	SP-SM		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), pale yellowish brown, moist, medium dense, fine to medium grained
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-224

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.875793 **LONGITUDE** -71.662815
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SP		ALLUVIUM: POORLY GRADED SAND WITH GRAVEL (SP), dark yellowish orange, moist, loose, fine grained gravel, fine grained sand
5	SPT 1	4-4-5 (9)	SP		-becomes light brown to dark yellowish orange, medium dense, with subangular gravel
10	SPT 2	50/0"	SP		-cobbles within a poorly graded sand matrix at 9 ft
					13.0
			SM		ALLUVIUM: SILTY SAND (SM), pale yellowish brown to yellowish gray, moist, medium dense, very fine to fine grained, laminated
15	SPT 3	6-6-7 (13)			15.5
					Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
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BORING NUMBER BH-225

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.873466 **LONGITUDE** -71.663005
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 8.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SM		FILL: SILTY SAND (SM), brown, moist, loose, fine to medium grained
					2.0
			SM		ALLUVIUM: SILTY SAND (SM), light brown to dark yellowish orange, moist, loose, fine grained, lenses of silt throughout
5	SPT 1	2-2-3 (5)			
					▽
10	SPT 2	5-7-8 (15)	SM		
					10.0
			SP		ALLUVIUM: POORLY GRADED SAND (SP), yellowish brown, wet, medium dense, fine grained
					13.5
15	SPT 3	5-7-20 (27)	SW		ALLUVIUM: WELL GRADED SAND WITH GRAVEL (SW), light brown to dark yellowish orange, wet, medium dense, medium to coarse grained gravel, fine grained sand, subangular, granitic gravel
					15.5
					Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-226

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.871339 **LONGITUDE** -71.665427
DRILLING METHOD Hollow Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled at stake location ▽ **AT TIME OF DRILLING** 8.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SM		FILL: SILTY SAND (SM), trace gravel, brown, moist, loose, fine to medium grained, fine grained gravel
				1.5	
			SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), yellowish brown to light brown, moist, medium dense, fine grained
5	SPT 1	5-5-7 (12)			
					▽
10	SPT 2	0-0-0 (0)	SP-SM		-becomes very loose, wet
15	SPT 3	7-12-14 (26)	SP-SM		-becomes medium dense, with granitic gravels
				15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-227

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Thornton, NH

DATE STARTED 5/26/16 **COMPLETED** 5/26/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.869198 **LONGITUDE** -71.667818
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 13.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SM		FILL: SILTY SAND WITH GRAVEL (SM)
				2.0	
			SP		ALLUVIUM: POORLY GRADED SAND WITH GRAVEL (SP), yellowish brown to light brown, moist, loose, fine grained gravel, fine grained sand, angular
5	SPT 1	2-3-2 (5)			
10	SPT 2	4-4-4 (8)	SP		
				13.0	
			SM		▽ ALLUVIUM: SILTY SAND (SM), brown, wet, very loose, fine grained, iron oxide staining
15	SPT 3	1-0-0 (0)			
				15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-228

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 6/23/16 **COMPLETED** 6/23/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.865996 **LONGITUDE** -71.668644
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL (GM), with sand, with silt, trace organics, dark yellowish brown, dry, loose, medium to coarse grained gravel, angular
						2.0
				SM		ALLUVIUM: SILTY SAND WITH GRAVEL (SM), pale yellowish orange and light brown, dry, medium dense, fine grained, fine grained gravel, subangular
5	SPT 1	89	8-12-13 (25)			
10	SPT 2	83	4-4-5 (9)	SM		-becomes loose, moist
						13.0
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), moderate yellowish brown and pale yellowish brown, moist, medium dense, fine grained
15	SPT 3	100	6-8-11 (19)			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-229

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.863783 **LONGITUDE** -71.668051
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), and silt, pale yellowish brown, moist, medium dense, coarse grained gravel, fine grained sand, subangular, silt lenses
					3.0
			SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), pale yellowish brown, moist, medium dense, fine grained sand
5	SPT 1	5-6-6 (12)			
10	SPT 2	5-7-7 (14)	SP-SM		
15	SPT 3	6-7-8 (15)	SP-SM		
					15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-230

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.861061 **LONGITUDE** -71.667452
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 8.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), grayish red, wet, medium dense, coarse grained gravel, fine grained sand, subangular
5	SPT 1	9-8-6 (14)	SP		
			SP		5.0 ALLUVIUM: POORLY GRADED SAND (SP), trace gravel, pale yellowish brown, moist, medium dense, fine grained gravel, fine grained sand, subrounded ▽
10	SPT 2	3-3-4 (7)	ML		8.8 ALLUVIUM: SANDY SILT (ML), pale yellowish brown, wet, medium stiff, very fine grained
15	SPT 3	2-3-4 (7)	SP-SM		14.0 ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), pale brown, wet, loose, fine grained
					15.5 Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-231

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.857131 **LONGITUDE** -71.667562
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 12.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SM		FILL: SILTY SAND WITH GRAVEL (SM), yellowish brown, wet, medium dense, coarse grained gravel, fine grained sand, angular, iron oxide staining
					2.0
			SM		STREAM TERRACE DEPOSITS: SILTY SAND WITH GRAVEL (SM), yellowish brown, moist, medium dense, fine grained, fine grained gravel, subrounded
5	SPT 1	7-8-9 (17)			
					9.0
10	SPT 2	13-14-12 (26)	SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), pale yellowish brown, wet, medium dense, medium grained gravel, fine grained sand, angular
					▽
					14.0
15	SPT 3	9-11-12 (23)	SM		STREAM TERRACE DEPOSITS: SILTY SAND (SM), pale yellowish brown, wet, medium dense, fine grained
					15.5
					Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-232

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.855762 **LONGITUDE** -71.667276
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 13.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), light brown to pale orange, moist, medium dense, fine grained
5	SPT 1	5-8-11 (19)	SP-SM		
					8.0
			ML		ALLUVIUM: SANDY SILT (ML), pale yellowish brown to dark yellowish orange, wet, stiff, very fine grained, iron oxide staining
10	SPT 2	5-7-8 (15)			▽
15	SPT 3	5-5-7 (12)	ML		
					15.5
					Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-233

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.853181 **LONGITUDE** -71.666321
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 9.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), brown, moist, loose, coarse grained gravel, fine grained sand, subangular
5	SPT 1	4-4-3 (7)	SP		
				8.0	
			OL		ORGANIC DEPOSITS: GRAVELLY ORGANIC SOIL (OL), grayish brown, wet, medium stiff, very fine grained, high silt content
10	SPT 2	1-1-4 (5)			▽
				13.5	
			ML		ALLUVIUM: SANDY SILT (ML), brown, wet, stiff, very fine grained, granitic gravel and cobbles at end of sample
15	SPT 3	3-10-5 (15)			
				15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-234

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/27/16 **COMPLETED** 5/27/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.848627 **LONGITUDE** -71.665449
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 10.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		GLACIOFLUVIAL: POORLY GRADED SAND WITH GRAVEL (SP), with silt, light brown to grayish brown, moist, dense, coarse to very coarse grained gravel, fine grained sand, angular, lenses of silt material
5	SPT 1	28	4-37-50 (87)	SP		
						8.0
				ML		GLACIOFLUVIAL: SILT (ML), with clay, yellowish brown, wet, stiff, medium plasticity, very fine grained, iron oxide staining
10	SPT 2	100	2-4-5 (9)			▽
15	SPT 3	100	2-3-4 (7)	ML		-becomes medium stiff, pale yellowish brown
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-235

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/25/16 **COMPLETED** 5/25/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.844242 **LONGITUDE** -71.664397
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 13.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SP-SM		GLACIOFLUVIAL: POORLY GRADED SAND WITH SILT (SP-SM), dark orange, moist, medium dense, fine grained
5	SPT 1	5-9-12 (21)	SP-SM		
10	SPT 2	8-8-9 (17)	SP-SM		-with fine to coarse angular gravel
					▽
15	SPT 3	5-6-6 (12)	SP-SM		-becomes wet
				15.5	Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-236

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 6/23/16 **COMPLETED** 6/23/16 **GROUND ELEVATION** NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.841753 **LONGITUDE** -71.662771
DRILLING METHOD Hollow Stem Auger/Mud Rotary **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	REMARKS
0				GM		FILL: GRAVEL (GM), with sand, with silt, trace organics, moderate yellowish brown, moist, loose, very fine to fine grained, fine to coarse grained gravel, subangular	
5	SPT 1	50	13-4-5 (9)	GM			
						5.5 TILL: SILTY GRAVEL WITH SAND, olive gray, moist, very dense, fine to coarse grained gravel, fine grained sand, subangular, with boulders and cobbles	
10	SPT 2	0	50/1"	GM		-with subangular, schistose, gravel, silt content increases	switched to mud rotary drilling
15	SPT 3	64	33-36-50/2"	GM		15.2 -becomes light olive gray, dense, wet, angular gravel	

Bottom of borehole at 15.2 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-237

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 6/21/16 **COMPLETED** 6/22/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.840406 **LONGITUDE** -71.660006
DRILLING METHOD HSA/Wireline Coring / NQ Size/Series 8 **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVEL (GM), with sand, with silt, trace asphalt, dark yellowish brown, damp, loose, very fine to fine grained, fine to coarse grained gravel, subangular
5	SPT 1	44	2-7-4 (11)	GM		
					6.0	
	RC 1	95 (94)				BEDROCK: Fresh (I) to slightly weathered (II), light gray (N7) to medium dark gray (N4), medium to coarse grained, strong (R4), GRANITE, with minor zones of oxidation, moderate pyrite mineralization
10						
	RC 2	100 (99)				-without oxidation or mineralization
15					15.0	

Bottom of borehole at 15.0 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-238

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/24/16 **COMPLETED** 5/24/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.838013 **LONGITUDE** -71.657981
DRILLING METHOD HSA/Wireline Coring / NQ Size/Series 8 **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled at stake location ▽ **AT TIME OF DRILLING** 9.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), brown, moist, loose, fine grained gravel, fine to medium grained sand, angular
3.0						
				SM		TILL: SILTY SAND WITH GRAVEL (SM), brown, moist, dense, coarse grained gravel, fine grained sand
5	SPT 1		13-19-22 (41)			
7.0						
						BEDROCK: Completely weathered (V), white (N9) and white / yellowish gray (5Y 8/1), very weak (R1), GRANITE, minor zones of oxidation ▽
10	SPT 2	100	37-40-50/4"			
	RC 1	100 (71)				BEDROCK: Fresh (I) to slightly weathered, yellowish red (5YR 5/6) and very pale brown (10YR 8/2), medium strong (R3), hornblende granite with zones of concentrated mineralization below 11 ft -elongated hornblende crystals from 13-14.8 ft
15						
15.0						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-239

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/24/16 **COMPLETED** 5/24/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.83552 **LONGITUDE** -71.658971
DRILLING METHOD Hollow Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SM		FILL: SILTY SAND (SM), trace gravel, brown, moist, loose, fine grained, fine grained gravel
				2.0	
			SP		TILL: POORLY GRADED SAND (SP), light brown, moist, medium dense, fine grained
5	SPT 1	8-9-9 (18)	SP		
				8.0	
			ML		TILL: SANDY SILT (ML), light olive brown to dark yellow, moist, very fine to fine grained
10	SPT 2	5-6-7 (13)			
	SPT 3	50/0"	ML		-boulders and cobbles from 13.5 to 15 ft
15				15.0	

Bottom of borehole at 15.0 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-240

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/24/16 **COMPLETED** 5/24/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.832832 **LONGITUDE** -71.660094
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			ML		GLACIOLACUSTRINE: SANDY SILT (ML), light olive brown to dusky yellow, moist, stiff, very fine to fine grained, iron oxide staining
5	SPT 1	5-5-5 (10)	ML		
10	SPT 2	2-1-1 (2)	ML		-becomes soft, laminated bedding
15	SPT 3	1-2-3 (5)	OL	15.0	GLACIOLACUSTRINE: ORGANIC SILT (OL), trace organics, dusky yellowish brown, moist, medium stiff, very fine to fine grained
				16.5	Bottom of borehole at 16.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-241

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/24/16 **COMPLETED** 5/24/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.830317 **LONGITUDE** -71.661102
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SM		FILL: SILTY SAND WITH GRAVEL (SM), trace organics, dark brown, moist, very loose, coarse to very coarse grained gravel, fine grained sand, angular
					3.0
			SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), light brown, moist, medium dense, fine grained
5	SPT 1	4-4-5 (9)			
10	SPT 2	5-6-6 (12)	SP-SM		
					-schistose boulders and cobbles from 13 to 15 ft
15	SPT 3	50/0"	SP-SM		
					15.0
					Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-243

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 6/21/16 **COMPLETED** 6/21/16 **GROUND ELEVATION** NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.82517 **LONGITUDE** -71.66282
DRILLING METHOD Hollow Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: GRAVELLY SAND (GM), and silt, trace organics, dark yellowish brown, dry, loose, very fine to fine grained
					1.0	
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), pale orange, dry, loose, fine grained
5	SPT 1	83	3-4-4 (8)	SP-SM		
10	SPT 2	100	3-5-5 (10)	SP-SM		-becomes moist
15	SPT 3	100	6-8-9 (17)	SP-SM		-becomes medium dense, silt content increases
					15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-244

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 6/21/16 **COMPLETED** 6/21/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.822518 **LONGITUDE** -71.663547
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 14.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: SANDY GRAVEL WITH SILT (GM), trace asphalt, dark yellowish brown, moist, medium dense, medium to coarse grained gravel, very fine to fine grained sand, subangular
5	SPT 1	72	4-13-10 (23)	GM		-becomes light greenish gray, medium grained gravel, weakly cemented, without asphalt
7.0						
				GP		STREAM TERRACE DEPOSITS: POORLY GRADED GRAVEL WITH SAND (GP), yellowish gray, moist, medium dense, fine grained gravel, fine to medium grained sand, subrounded
10	SPT 2	89	8-10-9 (19)			
15	SPT 3	100	7-14-17 (31)	GP		▽ -lenses of yellowish gray silty clay
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-245

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 6/21/16 **COMPLETED** 6/21/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.819742 **LONGITUDE** -71.663455
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), light brown, moist, medium dense, fine to coarse grained gravel, fine grained sand, subangular
5	SPT 1	72	10-8-7 (15)	SP		
				SP		ALLUVIUM: POORLY GRADED SAND (SP), trace silt, yellowish gray, moist, loose, fine grained
10	SPT 2	50	2-2-1 (3)	GM		ALLUVIUM: SANDY GRAVEL WITH SILT (GM), dark yellowish brown, moist, very loose, medium to coarse grained gravel, very fine to fine grained sand, subangular
				CL		ALLUVIUM: SILTY CLAY (CL), light olive gray, moist, stiff, very fine grained, iron oxide staining
15	SPT 3	56	3-4-5 (9)			

5.0
8.0
12.5
15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-246

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 8/31/16 **COMPLETED** 8/31/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.817495 **LONGITUDE** -71.662726
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					0.3	FILL: ASPHALT
				GW		FILL: GRAVEL (GW), with sand, with silt, dark yellowish orange, dry, dense, fine grained, fine to coarse grained gravel, angular to subangular, iron oxide staining
5	SPT 1	56	18-26-45 (71)	GW	7.5	
				SM		ALLUVIUM: SILTY SAND WITH GRAVEL (SM), moderate yellowish brown, damp, medium dense, fine grained, fine to coarse grained gravel, subangular, iron oxide staining
10	SPT 2	100	9-8-7 (15)	SM		
15	SPT 3	83	4-10-9 (19)	SM	16.5	-becomes stratified, with 0.25 inch layers of dark yellowish brown silty sand with trace clay
						Bottom of borehole at 16.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-247

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 6/21/16 **COMPLETED** 6/21/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.814372 **LONGITUDE** -71.663772
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: SANDY GRAVEL WITH SILT (GM), trace organics, loose, medium to coarse grained gravel, very fine to fine grained sand
						1.0
				SM		-highly weathered granitic boulders/cobbles from 1 to 4.3 ft, iron oxide staining,
						4.3
5	SPT 1	67	23-28-26 (54)	SM		STREAM TERRACE DEPOSITS: SILTY SAND (SM), yellowish brown, moist, dense, very fine to fine grained
10	SPT 2	78	12-13-14 (27)	SM		-becomes medium dense, with medium grained, angular gravel
15	SPT 3	89	11-22-24 (46)	SM		-becomes dense, with medium to coarse grained, sub angular gravel
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-249

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/24/16 **COMPLETED** 5/24/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.810603 **LONGITUDE** -71.668392
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 11.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SP		FILL: POORLY GRADED SAND (SP), yellowish brown to dark yellowish orange, moist, loose, fine grained
5	SPT 1	2-2-5 (7)	SP	6.0	
			SP-SM	9.0	STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH SILT (SP-SM), yellowish brown, moist, loose, fine grained
10	SPT 2	10-11-11 (22)	GP		STREAM TERRACE DEPOSITS: Completely to highly weathered, white-light gray and light brown, extremely weak, granitic boulder -zone of cobbles and boulders ▽
15	SPT 3	3-7-5 (12)	SM	14.0 15.5	STREAM TERRACE DEPOSITS: SILTY SAND (SM), light brown, wet, medium dense, fine grained

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-250

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/23/16 **COMPLETED** 5/23/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.808335 **LONGITUDE** -71.670156
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SP		ALLUVIUM: POORLY GRADED SAND WITH GRAVEL (SP), trace organics, brown, moist, very loose, coarse grained gravel, fine grained sand, subangular
5	SPT 2	100	2-1-3 (4)	SP		-no gravel or organics
8.5				SM		TILL: SILTY SAND WITH GRAVEL (SM), yellowish brown to dark yellowish brown, moist, medium dense, coarse to very coarse grained gravel, fine grained sand
10	SPT 3	100	15-21-39 (60)			TILL: BOULDERS, pale blue, iron oxide staining, highly to completely weathered, fine grained, very weak, foliated
10.0						
15	SPT 4		50/3"			-boulders from 15 to 15.2 ft, with zones of oxidation and clay
15.2						Bottom of borehole at 15.2 ft. Backfilled with auger cuttings

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BORING NUMBER BH-251

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Campton, NH

DATE STARTED 5/23/16 **COMPLETED** 5/23/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.806027 **LONGITUDE** -71.67195
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 3.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), trace organics, dark brown, moist, loose, coarse to very coarse grained gravel, fine grained sand, angular
2.0				SP		STREAM TERRACE DEPOSITS: POORLY GRADED SAND WITH GRAVEL (SP), light brown, moist, medium dense, fine to medium grained, fine grained gravel, subrounded ▽
5	SPT 2	50	1-3-22 (25)			
8.5				ML		STREAM TERRACE DEPOSITS: SANDY SILT (ML), yellowish brown, wet, hard, very fine grained
10	SPT 3	83	22-19-17 (36)			
10.5						STREAM TERRACE DEPOSITS: BOULDERS, grayish white and light brown, highly weathered, massive, extremely weak granite with zones of argillic alteration
15	SPT 4	100	50/4"			-becomes completely to highly weathered
15.0						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

Quanta Subsurface
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Telephone: 509-892-9409

BORING NUMBER BH-252

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/23/16 **COMPLETED** 5/23/16
GROUND ELEVATION _____ **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.80395122 **LONGITUDE** -71.67335336
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** _____
GROUND WATER LEVEL:
NOTES _____
▽ **AT TIME OF DRILLING** 10.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), trace organics, brown, wet, very loose, coarse to very coarse grained gravel, fine grained sand, angular, lenses of silt material, wet
						-loose, moist
4.5						
5	SPT 2	100	10-42-38 (80)			Grayish white and light brown, highly to moderately weathered, very weak, medium to coarse grained, massive granitic boulder
						-becomes extremely weak, completely to highly weathered granite, argillic alteration
10	SPT 3	100	12-20-22 (42)			▽
14.0						
15	SPT 4	100	13-27-42 (69)	SM		Silty SAND WITH GRAVEL (SM), reddish brown, wet, very dense, coarse to very coarse grained gravel, fine grained sand, rounded, granitic gravels, wet
15.5						Bottom of Borehole at 15.5 feet

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BORING NUMBER BH-254

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 6/21/16 **COMPLETED** 6/21/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.796286 **LONGITUDE** -71.673308
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 4.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: SANDY GRAVEL WITH SILT (GM), trace organics, dry, loose, medium to coarse grained gravel
					1.5	
				GP		ALLUVIUM: POORLY GRADED GRAVEL WITH SAND (GP), yellowish brown, wet, loose, medium to coarse grained gravel, fine grained sand, subangular
5	SPT 1	44	6-6-6 (12)			▽
					8.0	
				CL		GLACIOLACUSTRINE: SILTY CLAY (CL), light olive gray, wet, medium stiff, low plasticity, fine grained sand
10	SPT 2	39	2-3-4 (7)			
15	SPT 3	67	3-3-3 (6)	CL		-zones of oxidation throughout
					15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-255

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 6/20/16 **COMPLETED** 6/20/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.794794 **LONGITUDE** -71.671809
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				GM		FILL: SANDY GRAVEL WITH SILT (GM), trace asphalt, dry, dense, medium to coarse grained gravel, very fine to fine grained sand, subangular
5	SPT 1	50	17-21-29 (50)	GM		
7.0				GM		STREAM TERRACE DEPOSITS: SILTY GRAVEL WITH SAND (GM), trace cobbles, yellowish brown, moist, very dense, fine to coarse grained gravel, fine to medium grained sand, subrounded
10	SPT 2	72	22-27-30 (57)			
15	SPT 3	0	50/1"	GM		-rock flour and angular medium grained gravels
15.0						Bottom of borehole at 15.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-256

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 6/20/16 **COMPLETED** 6/20/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.792982 **LONGITUDE** -71.669789
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 9.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						FILL: SANDY GRAVEL WITH SILT, with silt, trace organics, grayish brown, moist, medium to coarse grained gravel, fine grained sand, angular
						3.3
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), trace organics, yellowish brown, moist, very loose, fine grained
5	SPT 1	89	1-2-3 (5)			
						▽ -without organics, wet
10	SPT 2	72	2-1-3 (4)	SP-SM		
						13.5
				GM		TILL: SANDY GRAVEL WITH SILT (GM), yellowish brown, wet, very dense, medium to coarse grained gravel, very fine to fine grained sand, subangular
15	SPT 3	59	10-17-50/5"			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-257

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/21/16 **COMPLETED** 5/21/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.790564 **LONGITUDE** -71.669202
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), trace organics, brown to dark brown, moist, loose, medium grained gravel, fine grained sand, subangular, lensed, silt lenses
						3.0
				SM		ALLUVIUM: SILTY SAND (SM), dark yellowish orange, moist, very loose, fine grained
5	SPT 2	83	2-2-2 (4)			
10	SPT 3	83	2-1-3 (4)	SM		
						10.3
				SP		ALLUVIUM: POORLY GRADED SAND (SP), grayish orange, moist, very loose, fine grained
15	SPT 4	89	9-11-10 (21)	SP		-becomes loose
						15.3
				SM		15.5 ALLUVIUM: SILTY SAND (SM), yellowish gray, moist, medium dense, fine grained
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-259

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Easton, NH

DATE STARTED 6/20/16 **COMPLETED** 6/20/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.78450368 **LONGITUDE** -71.66879346
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 13.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), trace organics, trace roots, grayish brown, moist, loose, fine to medium grained, coarse grained gravel, subangular
5	SPT 1	83	2-3-4 (7)	SM		5.0
				ML		ALLUVIUM: SANDY SILT (ML), dark yellowish orange, moist, medium stiff, fine grained, micaceous
						8.0
				SM		ALLUVIUM: SILTY SAND (SM), grayish brown, moist, dense, fine grained, with granitic cobbles
10	SPT 2	100	9-16-39 (55)			10.5
						ALLUVIUM: slight to moderately weathered, very pale orange (10YR 8/2) and light brown (5YR 5/6), medium to coarse grained, medium weak, massive, granitic boulder
						▽
15	SPT 3	100	19-50-31 (81)			-becomes completely to highly weathered, extremely to very weak
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-260

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/21/16 **COMPLETED** 5/21/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.783437 **LONGITUDE** -71.670993
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 8.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), olive gray, moist, very loose, medium to coarse grained gravel, fine to medium grained sand, subangular, lensed, silt lenses
						-becomes wet
				SP		4.5
5	SPT 2	100	2-1-2 (3)	ML		GLACIOLACUSTRINE: SANDY SILT (ML), light olive brown to dark yellow, wet, soft, very fine to fine grained, iron oxide staining
						▽
10	SPT 3	100	3-4-6 (10)	ML		-'becomes stiff, pale yellowish brown to light greenish brown, increase in oxidation zones
						13.8
	SPT 4	100	50-50/1"	SM		GLACIOLACUSTRINE: SILTY SAND (SM), gray to grayish brown, wet, very dense, fine grained
15						14.8
						15.0 BEDROCK: SCHIST

Bottom of borehole at 15.0 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-261

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/21/16 **COMPLETED** 5/21/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.781941 **LONGITUDE** -71.674072
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 8.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND (SM), and asphalt, trace organics, brown, moist, loose, coarse grained gravel, fine to medium grained sand, angular, trace organics
3.0						
				SP-SM		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP-SM), trace organics, yellowish brown, moist, very loose, fine to medium grained
5	SPT 2	100	2-1-1 (2)			
						▽
10	SPT 3	100	1-1-1 (2)	SP-SM		-becomes dark yellowish brown, higher percentage of organics, wet
14.5						-lens of coarse sand from 14-14.5 ft
15	SPT 4	89	3-4-4 (8)	SP-SM		ALLUVIUM: SILTY SAND (SM), gray to grayish brown, wet, loose, fine grained
15.5				SM		
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-262

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/21/16 **COMPLETED** 5/21/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.780394 **LONGITUDE** -71.676954
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 9.0ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), trace organics, and silt, yellowish brown, moist, loose, coarse grained gravel, medium grained sand, subangular, lensed, lenses of silt
3.5						
5	SPT 2	100	4-4-5 (9)	SM		ALLUVIUM: SILTY SAND (SM), grayish brown, moist, loose, fine grained, stratified
10	SPT 3	100	4-4-5 (9)	SM		▽ -increase in silt content, wet
15	SPT 4	100	3-4-6 (10)	SM		-becomes medium dense
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-264

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/20/16 **COMPLETED** 5/20/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.77653 **LONGITUDE** -71.681884
DRILLING METHOD Hollow Stem Auger **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), yellowish brown, wet, loose, medium grained gravel, medium to coarse grained sand, subangular
5	SPT 2	83	1-2-5 (7)	SP / SM		4.5 ALLUVIUM: SILTY SAND (SM), grayish brown, moist, loose, fine to medium grained
10	SPT 3	100	5-7-8 (15)	SM		-becomes medium dense, fine grained
15	SPT 4	100	5-4-5 (9)	SM		15.5 -becomes loose, micaceous
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-265

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/20/16 **COMPLETED** 5/20/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.774316 **LONGITUDE** -71.683764
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND (SM), trace gravel, trace organics, brown, moist, loose, fine to medium grained, fine grained gravel
5	SPT 2	83	3-1-2 (3)	SM / OL	4.5	ORGANIC DEPOSITS: ORGANIC SILT (OL), dark brown, moist, soft, very fine grained, organic silt
10	SPT 3	89	2-2-2 (4)	SM	9.0	ALLUVIUM: SILTY SAND WITH GRAVEL (SM), dark yellowish orange, moist, loose, medium to coarse grained gravel, fine to medium grained sand, subangular
15	SPT 4	33	5-7-7 (14)	SM	15.5	-becomes medium dense, grayish brown, fine to medium grained sand without gravel

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

QS
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BORING NUMBER BH-267

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 9/21/16 **COMPLETED** 9/21/16 **GROUND ELEVATION** NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole **LATITUDE** 43.76251 **LONGITUDE** -71.68719
DRILLING METHOD Solid Stem Auger/Mud Rotary **DRILLING EQUIPMENT** CME 850 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Tiger **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					0.3	FILL: ASPHALT
				SP		FILL: POORLY GRADED SAND WITH GRAVEL AND SILT (SP), moderate brown to light brown, dry, loose, fine to coarse grained gravel, fine to coarse grained sand, subangular to subrounded
					4.0	
5				SP		ALLUVIUM: POORLY GRADED SAND WITH SILT (SP), trace gravel, moderate brown to moderate reddish orange, dry, medium dense, fine to coarse grained gravel, fine to coarse grained sand, subangular to subrounded
	SPT 1	89	4-5-6 (11)			
10	SPT 2	67	17-24-50/3"	SP		-becomes very dense, increase in silt and gravel content
					11.3	
	RC 1	90 (54)				BEDROCK: Fresh (I) to slightly weathered (II), grayish black (N2) and very light gray (N8), fine to coarse grained, strong (R4), GNEISS, foliated, with zones of garnet, pyroxene mineralization, and chlorite alteration
15					16.5	

Bottom of borehole at 16.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-268

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 9/14/16 **COMPLETED** 9/14/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.75948 **LONGITUDE** -71.68751
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT Acker **SPT HAMMER** 140 lb Auto
LOGGED BY S. Tiger **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					0.3	FILL: ASPHALT
				SP		FILL: POORLY GRADED SAND WITH GRAVEL (SP), reddish brown / moderate brown (5YR 4/4), moist, loose, fine grained gravel, fine to medium grained sand, subangular to subrounded
					4.0	
5				SP		ALLUVIUM: POORLY GRADED SAND WITH GRAVEL (SP), dark grayish brown (10YR 4/2), moist, medium dense, fine to coarse grained gravel, fine to medium grained sand, subangular to subrounded, interbedded with medium to coarse grained sand
	SPT 1	58	8-14-13 (27)			
10	SPT 2	54	10-9-7 (16)	SP		
15	SPT 3	50	11-37-37 (74)	SP		-becomes very dense, increase in silt content, with coarse, angular to subangular gravel
					16.5	

Bottom of borehole at 16.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-269

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 9/14/16 **COMPLETED** 9/14/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.7567 **LONGITUDE** -71.68781
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT Acker **SPT HAMMER** 140 lb Auto
LOGGED BY S. Tiger **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
					0.5	FILL: ASPHALT
				SP		FILL: POORLY GRADED SILTY SAND WITH GRAVEL (SP), reddish brown (5YR 4/4), moist, loose, fine grained gravel, fine to medium grained sand, subangular to subrounded
					3.0	
				ML		GLACIOLACUSTRINE: SILT (ML), gray (5Y 6/1), moist, medium stiff, low plasticity
5						
	SPT 1	54	3-4-4 (8)			
10						
	SPT 2	58	6-6-10 (16)	ML		-with fine grained sand, and trace, fine grained gravel, becomes stiff
15						
	SPT 3	63	3-6-5 (11)	ML		-with clay and mottled oxidation staining
					16.5	
						Bottom of borehole at 16.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-270

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 9/1/16 **COMPLETED** 9/1/16
GROUND ELEVATION NA **HOLE SIZE** 2.25 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.754132 **LONGITUDE** -71.687767
DRILLING METHOD Solid Stem Auger
DRILLING EQUIPMENT Acker **SPT HAMMER** 140 lb Auto
LOGGED BY T. Vernon **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					0.5	FILL: ASPHALT
					1.0	FILL: CONCRETE
				SM		FILL: POORLY GRADED SAND WITH SILT (SM), and gravel, grayish red, moist, dense, fine to medium grained, coarse grained gravel, angular
5	SPT 1	67	8-17-14 (31)	SM	6.2	
				SC		GLACIOLACUSTRINE: CLAYEY SAND (SC), moderate olive brown, moist, stiff, low plasticity, fine grained
10	SPT 2	61	4-6-8 (14)		12.0	
				CL		GLACIOLACUSTRINE: LEAN CLAY (CL), moderate olive brown, moist to wet, medium dense, medium plasticity
15	SPT 3	67	3-6-8 (14)		15.5	
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-271

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/20/16 **COMPLETED** 5/20/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.751546 **LONGITUDE** -71.687288
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY J. Melton **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			GP		FILL: POORLY GRADED GRAVEL WITH SAND (GP), trace boulders, trace organics, brown, moist, loose, fine grained gravel, fine to medium grained sand, angular
5	SPT 2	33	4-16-5 (21)	GP		-becomes medium dense
						9.0
10	SPT 3	100	28-18-14 (32)	ML		GLACIOLACUSTRINE: SANDY SILT (ML), pale green and dark yellow, moist, dense, stratified, hydrocarbon odor noted, iron oxide staining
15	SPT 4	100	4-1-2 (3)	ML		-fine grained, hydrocarbon odor noted, 5 inch lens of dry sand, moist
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-272

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/19/16 **COMPLETED** 5/19/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.74935 **LONGITUDE** -71.68499
DRILLING METHOD HSA/Wireline Coring/NX Size/Series 8
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0			SM		ALLUVIUM: SILTY SAND WITH GRAVEL (SM), light brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, subrounded
					2.0
					BEDROCK: Fresh (I), medium dark gray (N4), fine to medium grained, very strong (R5), SCHIST, weak foliation, unfractured
5	RC 1	94 (94)			-5 inch felsic dike
					7.5
					BEDROCK: Fresh (I), white (N9) and dark greenish gray (5G 4/1), coarse grained, very strong (R5), GRANITE, slightly fractured
10	RC 2	100 (100)			-silicified zone from 11 to 11.4 ft
					11.4
					BEDROCK: Fresh (I), medium dark gray (N4), fine to medium grained, very strong (R5), SCHIST, weak foliation, unfractured
15	RC 3	83 (83)			
					16.0
					Bottom of borehole at 16.0 ft. Backfilled with auger cuttings

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BORING NUMBER BH-273

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/19/16 **COMPLETED** 5/19/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.747356 **LONGITUDE** -71.683346
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES
▽ **AT TIME OF DRILLING** 10.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), trace asphalt, brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, subrounded
						4.0
5	SPT 2	44	2-1-1 (2)	ML		GLACIOLACUSTRINE: SANDY SILT (ML), trace organics, brown, moist, very soft, fine grained sand
10	SPT 3	89	4-6-7 (13)	ML		-becomes stiff, gray, stratified, wet, without organics ▽
						14.0
15	SPT 4	89	5-15-16 (31)	SP		GLACIOLACUSTRINE: POORLY GRADED SAND (SP), trace gravel, orange, moist, dense, fine grained gravel, fine to medium grained sand, iron oxide staining
						15.5

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-274

CLIENT PAR Electrical Contractors **PROJECT NAME** Northern Pass

PROJECT NUMBER 16004 **PROJECT LOCATION** Plymouth, NH

DATE STARTED 5/18/16 **COMPLETED** 5/18/16 **GROUND ELEVATION** NA **HOLE SIZE** 6 in

DRILLING CONTRACTOR SW Cole **LATITUDE** 43.745659 **LONGITUDE** -71.680713

DRILLING METHOD Hollow Stem Auger/Wireline Coring / NQ Size/Series **DRILLING EQUIPMENT** Diedrich D50 **SPT HAMMER** 140 lb Auto

LOGGED BY S. Kearney **CHECKED BY** S. Kearney **GROUND WATER LEVEL:**

NOTES drilled 1' east of pavement edge ▽ **AT TIME OF DRILLING** 5.5ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		TILL: SILTY SAND (SM), trace gravel, trace cobbles, light brown, moist, loose, fine to medium grained, fine to coarse grained gravel
5	SPT 2	78	6-10-11 (21)	SM		-becomes medium dense, fine grained, with trace gravel, iron oxide staining, wet ▽
10	SPT 3	67	4-6-9 (15)	SM		-fine to medium grained sand, coarse grained angular gravel
						13.5
15	RC 1	100 (100)				BEDROCK: Fresh (I), white and black, very strong (R5), GRANITE, quartz and biotite rich
						15.4

Bottom of borehole at 15.4 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-275

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/18/16 **COMPLETED** 5/18/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.743554 **LONGITUDE** -71.679598
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND (SM), and gravel, trace organics, brown, moist, loose, fine to coarse grained gravel, fine to coarse grained sand, subrounded
5	SPT 2	89	2-1-1 (2)	SM		-becomes very loose, grayish brown to orange, mottled, fine grained, silty sand
8.0						
				SM		ALLUVIUM: SILTY SAND (SM), grayish brown to orange, wet, very loose, fine grained, stratified, iron oxide staining
10	SPT 3	100	1-1-1 (2)			-encountered cobbles at 12 ft
15	SPT 4	89	6-7-7 (14)	SM		-becomes medium dense, with fine to coarse grained subangular gravel
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-276

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/18/16 **COMPLETED** 5/18/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.740794 **LONGITUDE** -71.678323
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location
▽ **AT TIME OF DRILLING** 14.3ft

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), light brown, moist, loose, fine grained gravel, fine to medium grained sand, subrounded
					4.5	
5	SPT 2	89	2-2-2 (4)	ML		ORGANIC DEPOSITS: SANDY SILT (ML), and sand, trace organics, black, moist, soft, fine grained sand
					6.0	
				SM		ALLUVIUM: SILTY SAND (SM), brown, moist, very loose, fine grained sand
10	SPT 3	67	2-2-1 (3)	SM		
15	SPT 4	100	1-1-1 (2)	SM		▽ -becomes grayish brown to orange, stratified, iron oxide staining, silt content increases, wet
					15.5	

Bottom of borehole at 15.5 ft.
Backfilled with auger cuttings

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BORING NUMBER BH-278

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/18/16 **COMPLETED** 5/18/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.733344 **LONGITUDE** -71.675309
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled 4' west of stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			GP		ALLUVIUM: POORLY GRADED GRAVEL WITH SAND (GP), brown, moist, loose, fine grained gravel, fine to medium grained sand, subrounded
3.0						
				SM		ALLUVIUM: SILTY SAND (SM), trace organics, orangeish brown, moist, loose, fine to medium grained sand
5	SPT 2	67	6-5-3 (8)			
10	SPT 3	50	2-3-3 (6)	SM		-becomes loose, gravel content decreases, iron oxide staining
15	SPT 4	78	2-1-3 (4)	SM		-organic content increases, fine to coarse grained sand in spoon tip
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-279

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/16/16 **COMPLETED** 5/16/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.731144 **LONGITUDE** -71.675103
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at survey stake

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), dark brown, fine to coarse grained gravel, fine to medium grained sand, 4 inches of gravel base
5	SPT 2	89	3-5-5 (10)	SM		-becomes moist, medium dense, orangeish brown, without gravel, iron oxide staining
8.5						
10	SPT 3	100	10-19-27 (46)	SM		TILL: SILTY SAND (SM), trace gravel, light gray to orange, moist, very dense, fine grained gravel, fine grained sand, subrounded, iron oxide staining, thinly stratified
15	SPT 4	89	23-50-50 (100)	SM		-becomes dark gray to brown, with gravel and cobbles
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-281

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/18/16 **COMPLETED** 5/18/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.72375 **LONGITUDE** -71.676302
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		FILL: SILTY SAND WITH GRAVEL (SM), trace asphalt, brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, subrounded
	GB 1					
						3.0
				SP-SM		TILL: POORLY GRADED SAND WITH SILT (SP-SM), orangeish brown, moist, medium dense, fine grained sand
5	SPT 2	78	3-5-10 (15)			
						7.5
				ML		TILL: SANDY SILT (ML), trace cobbles, gray to orange, moist, very stiff, fine grained sand, cobbles up to 2 inches
10	SPT 3	72	5-10-11 (21)			
						12.5
				SM		TILL: SILTY SAND (SM), gray to orange, wet, medium dense, fine grained sand
15	SPT 4	78	8-8-9 (17)			
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-283

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/17/16 **COMPLETED** 5/17/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.721601 **LONGITUDE** -71.670009
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at survey stake

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), trace organics, brown, moist, loose, fine grained gravel, fine to medium grained sand
3.0						
				SM		GLACIOLACUSTRINE: SILTY SAND (SM), grayish brown and orange, medium dense, fine grained gravel, mottled, thinly stratified
5	SPT 2	89	3-7-7 (14)			
10	SPT 3	78	3-4-5 (9)	SM		-becomes loose, wet, silt content increases
10.5						
				ML		GLACIOLACUSTRINE: SANDY SILT (ML), grayish brown, wet, stiff, fine grained sand
15	SPT 4	89	5-7-6 (13)	ML		
15.5						
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-284

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/17/16 **COMPLETED** 5/17/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.720253 **LONGITUDE** -71.666812
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		GLACIOLACUSTRINE: SILTY SAND WITH GRAVEL (SM), dark brown, moist, loose, fine to coarse grained gravel, fine to medium grained sand, subangular
5	SPT 2	78	3-4-4 (8)	SM		-becomes light gray to orange, thinly stratified, iron oxide staining, micaceous
10	SPT 3	100	3-4-6 (10)	SM		-becomes medium dense, tan to orange, weak stratification, silt content decreases
15	SPT 4	100	6-7-6 (13)	SM		-becomes gray to orange, stratified, silt content increases
15.5						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

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BORING NUMBER BH-285

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/17/16 **COMPLETED** 5/17/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.718766 **LONGITUDE** -71.663795
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at stake location

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SM		FILL: SILTY SAND WITH GRAVEL (SM), trace asphalt, dark brown, moist, loose, fine to coarse grained
						4.0
5	SPT 2	78	1-1-1 (2)	ML		ORGANIC DEPOSITS: SILT WITH SAND (ML), trace organics, dark brown, moist, soft, fine to medium grained sand, grades to orange brown in spoon tip
						6.5
				SM		ALLUVIUM: SILTY SAND (SM), brown to light gray, moist, medium dense, fine grained sand, lensed, 1 inch thick sand medium to coarse grained sand lens
10	SPT 3	100	4-6-5 (11)			
15	SPT 4	100	4-3-5 (8)	SM		-becomes loose, light brown, fine to medium grained
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-287

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/16/16 **COMPLETED** 5/16/16
GROUND ELEVATION NA **HOLE SIZE** 6 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.714565 **LONGITUDE** -71.659359
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at survey stake

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0	GB 1			SP-SM		FILL: POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, trace organics, brown, moist, loose, fine to medium grained sand
						4.5
5	SPT 2	94	2-1-1 (2)	ML		GLACIOLACUSTRINE: SILT (ML), orangeish brown, moist, soft, mottled
						7.5
				SP-SM		GLACIOLACUSTRINE: POORLY GRADED SAND WITH SILT (SP-SM), brown, moist, loose, fine to medium grained sand
10	SPT 3	72	4-3-5 (8)			
15	SPT 4	100	5-5-5 (10)	SP-SM		-becomes medium dense, grayish brown, medium to coarse grained sand lenses
						15.5
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

QS
4708 N Barker RD
Spokane Valley, WA 99027
Telephone: 509-892-9409

BORING NUMBER BH-288

CLIENT PAR Electrical Contractors
PROJECT NAME Northern Pass
PROJECT NUMBER 16004
PROJECT LOCATION Plymouth, NH

DATE STARTED 5/16/16 **COMPLETED** 5/16/16
GROUND ELEVATION NA **HOLE SIZE** 4 in
DRILLING CONTRACTOR SW Cole
LATITUDE 43.712138 **LONGITUDE** -71.65781
DRILLING METHOD Hollow Stem Auger
DRILLING EQUIPMENT Diedrich D50 **SPT HAMMER** 140 lb Auto
LOGGED BY S. Kearney **CHECKED BY** S. Kearney
GROUND WATER LEVEL:
NOTES drilled at survey stake

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0				SM		ORGANIC DEPOSITS: SILTY SAND (SM), trace organics, black
				SP-SM		GLACIOLACUSTRINE: POORLY GRADED SAND WITH SILT (SP-SM), brown, loose, medium grained sand, becomes gray in spoon tip
	GB 1					
5	SPT 2	78	2-2-3 (5)			
10	SPT 3	28	4-5-6 (11)	SP-SM		-becomes medium dense, medium to coarse grained gravel in spoon tip
15	SPT 4	67	5-6-8 (14)	SP-SM		-becomes grayish brown
						Bottom of borehole at 15.5 ft. Backfilled with auger cuttings

0.5
15.5

BH-112: 9.6 ft – 14.6 ft
BH-120: 9.7 ft – 15 ft
BH-217: 10 ft – 15 ft
BH-238: 11 ft – 15 ft

BH-145: 10 ft – 15 ft
BH-146: 12.2 ft – 15 ft
BH-197: 7.6 ft – 15 ft

BH-267: 11.5 ft – 16.5 ft
BH-189: 13 ft – 15 ft
BH-185: 11.3 ft – 15 ft
BH-124: 11 ft – 15 ft
BH-237: 6 ft – 15 ft
BH-167: 5 ft – 15 ft

BH-168: 3.7 ft – 15 ft
BH-272: 3 ft – 16 ft
BH-274: 13.6 – 15.4 ft

ATTACHMENT B

Thermal Resistivity Test Results

4370 Contractors Common
Livermore, CA 94551
Tel: 925-999-9232
Fax: 925-999-8837
info@geothermusa.com

June 30, 2016

Quanta Subsurface
4308 N. Barker Road
Spokane Valley, WA 99027
Attn: Zach Wright

Re: Thermal Analysis of Native Soil Samples
Northern Pass Trenchless Investigation - New Hampshire (Project No. 201-16-NH)

The following is the report of thermal dryout characterization tests conducted on thirty-three (33) undisturbed tube samples of native soil received at our laboratory.

Thermal Resistivity Tests: For thermal dryout characterization the tube samples were tested 'as-is'. A series of thermal resistivity measurements were made in stages with moisture content ranging from the 'as-received' to the totally dry condition. The tests were conducted in accordance with the IEEE standard 442. The results are tabulated below and the thermal dryout curves are presented in **Figures 1 to 6.**

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-168, S1 @ 4.0'-5.5'	Silty sand with gravel	78	315	33	77
BH-169, S2 @ 4.0'-5.5'	Poorly graded gravel	141	167	1	116
BH-174, S1 @ 4.0'-5.5'	Sandy gravel	60	103	1	121
BH-175, S1 @ 4.0'-5.5'	Poorly graded sand	72	188	6	107
BH-177, S1 @ 4.0'-5.5'	Silty sand with gravel	52	158	6	104
BH-178, S1 @ 4.0'-5.5'	Silty sand	82	248	8	101
BH-179, S1 @ 4.0'-5.5'	Silty sand with gravel	62	193	14	107

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-180, S1 @ 4.0'-5.5'	Silty sand with gravel	68	279	6	93
BH-181, S1 @ 4.0'-5.5'	Silty sand with gravel	62	243	6	95
BH-182, S1 @ 4.0'-5.5'	Poorly graded sand	74	220	5	96
BH-183, S1 @ 4.0'-5.5'	Poorly graded sand	92	188	2	107
BH-184, S1 @ 4.0'-5.5'	Poorly graded sand	68	232	5	93
BH-186, S1 @ 4.0'-5.5'	Poorly graded sand	54	251	10	91
BH-190, S1 @ 4.0'-5.5'	Poorly graded sand with gravel	82	148	3	112
BH-191, S1 @ 4.0'-5.5'	Poorly graded sand	107	199	3	105
BH-194, S1 @ 4.0'-5.5'	Silty sand	82	268	11	100
BH-195, S1 @ 4.0'-5.5'	Poorly graded sand with gravel	64	178	15	101
BH-196, S1 @ 4.0'-5.5'	Sandy silt	87	327	41	74
BH-197, S1 @ 4.0'-5.5'	Silty sand with gravel	50	108	7	120
BH-215, S1 @ 4.0'-5.5'	Silty sand	78	259	6	102
BH-217, S1 @ 4.0'-5.5'	Silty sand	41	293	19	93
BH-218, S1 @ 4.0'-5.5'	Silty sand	88	379	16	79
BH-219, S1 @ 4.0'-5.5'	Poorly graded sand	64	220	5	98
BH-220, S1 @ 4.0'-5.5'	Poorly graded sand with gravel	74	268	16	85
BH-221, S1 @ 4.0'-5.5'	Sandy silt	74	327	32	78
BH-223, S1 @ 4.0'-5.5'	Poorly graded sand with gravel	64	198	3	103
BH-224, S1 @ 4.0'-5.5'	Poorly graded sand with gravel	68	212	4	102

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-225, S1 @ 4.0'-5.5'	Silty sand	94	367	12	79
BH-226, S1 @ 4.0'-5.5'	Poorly graded sand	84	281	9	95
BH-227, S1 @ 4.0'-5.5'	Poorly graded sand with gravel	88	302	11	89
BH-229, S1 @ 4.0'-5.5'	Poorly graded sand with gravel	94	180	4	99
BH-232, S1 @ 4.0'-5.5'	Poorly graded sand	98	194	4	95
BH-240, S1 @ 4.0'-5.5'	Sandy silt	71	294	14	88

Comments:

The thermal characteristic depicted in the dryout curves apply for the soils at their respective test dry density.

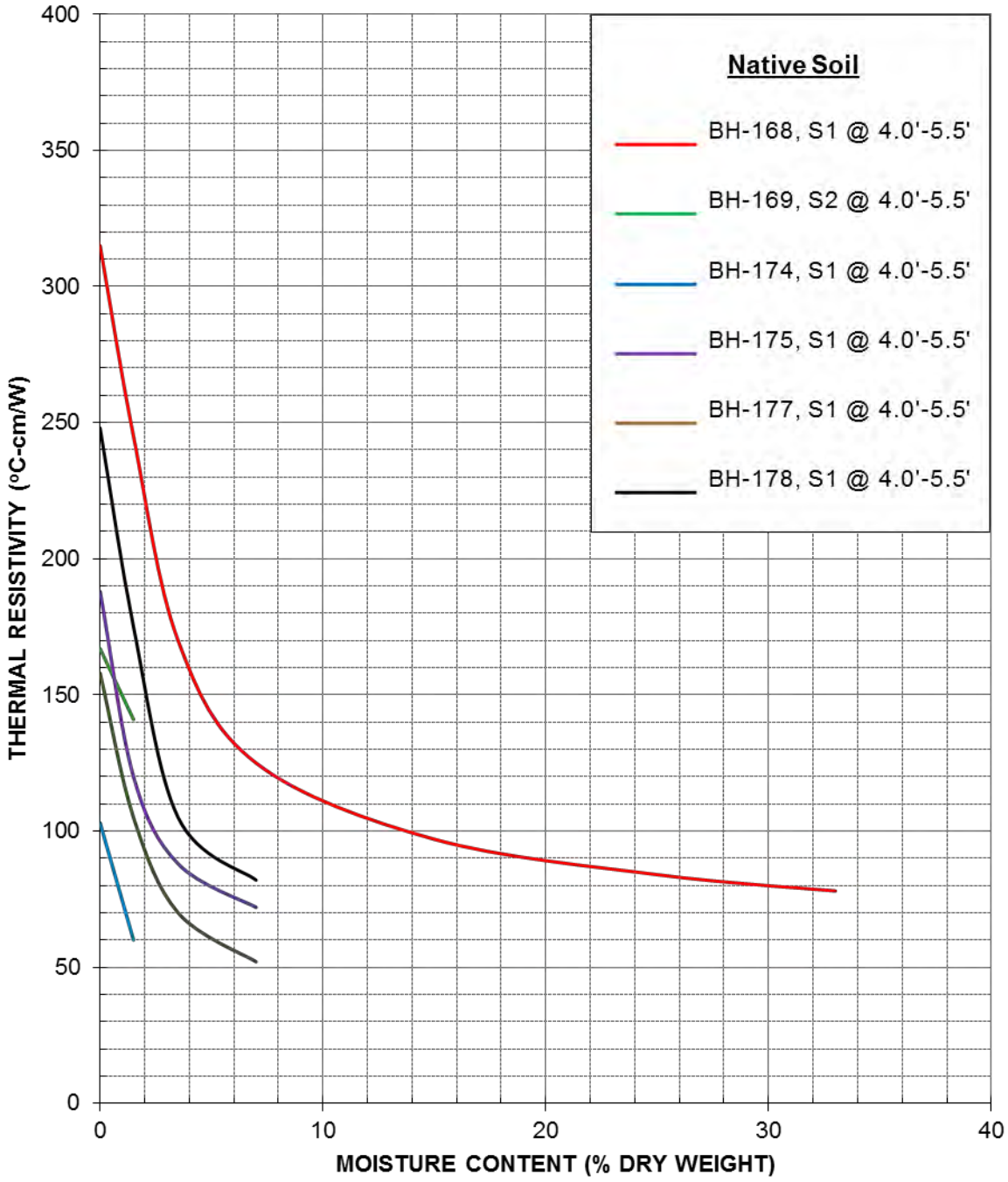
Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA

Nimesh Patel

Please Note: All samples will be disposed of after 5 days from date of report.

THERMAL DRYOUT CURVES



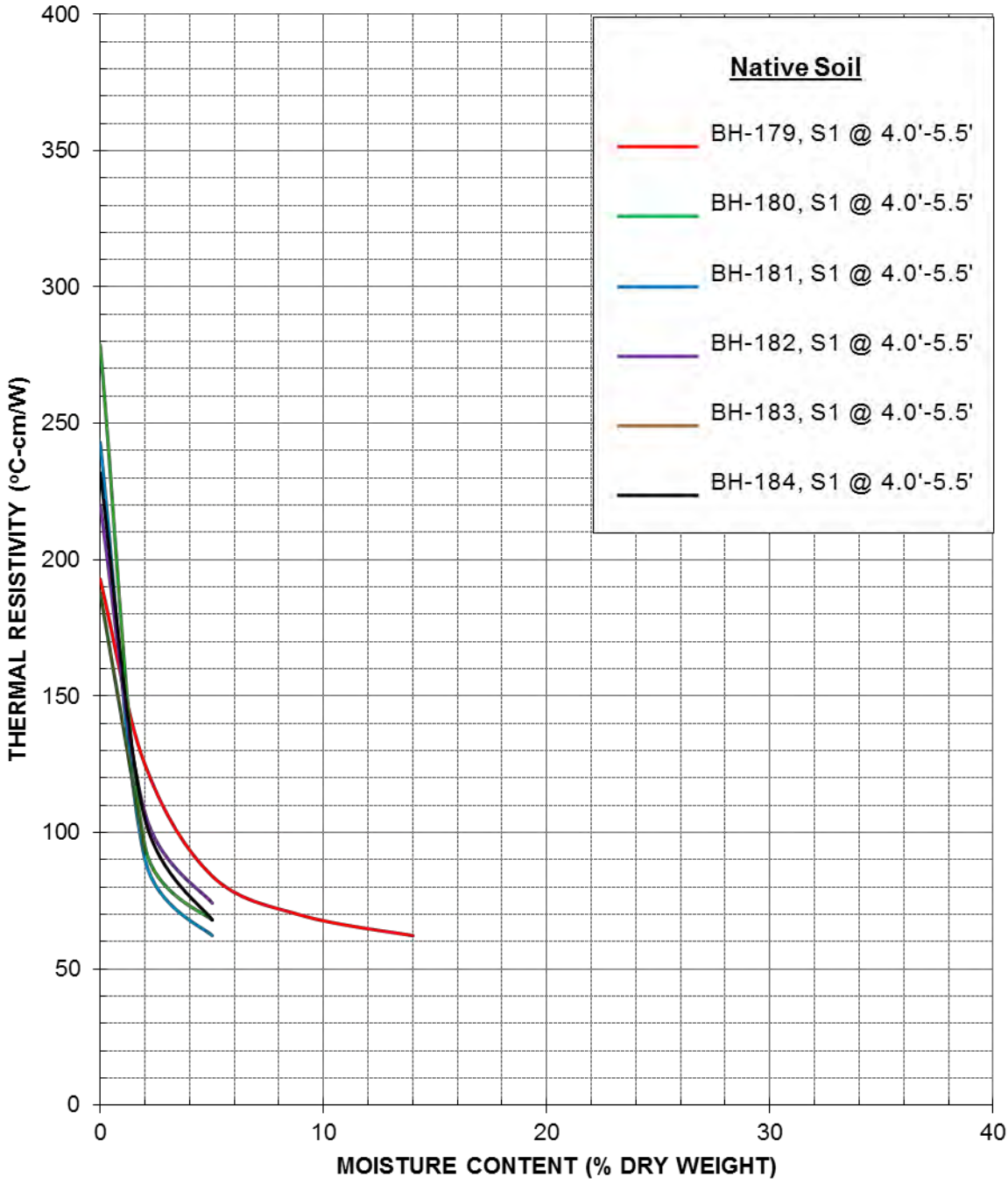
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

June 2016 **Figure 1**

THERMAL DRYOUT CURVES



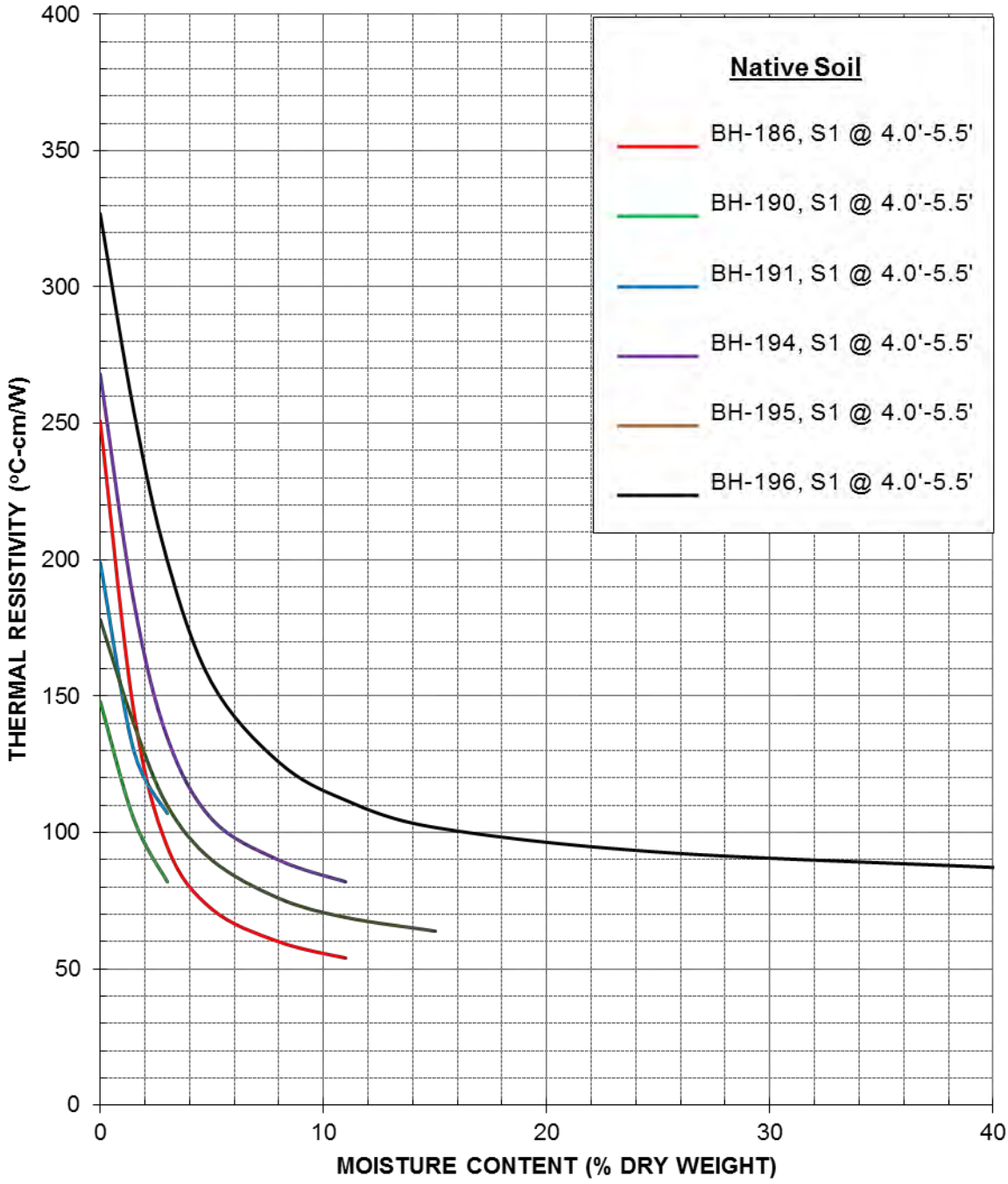
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

June 2016 **Figure 2**

THERMAL DRYOUT CURVES



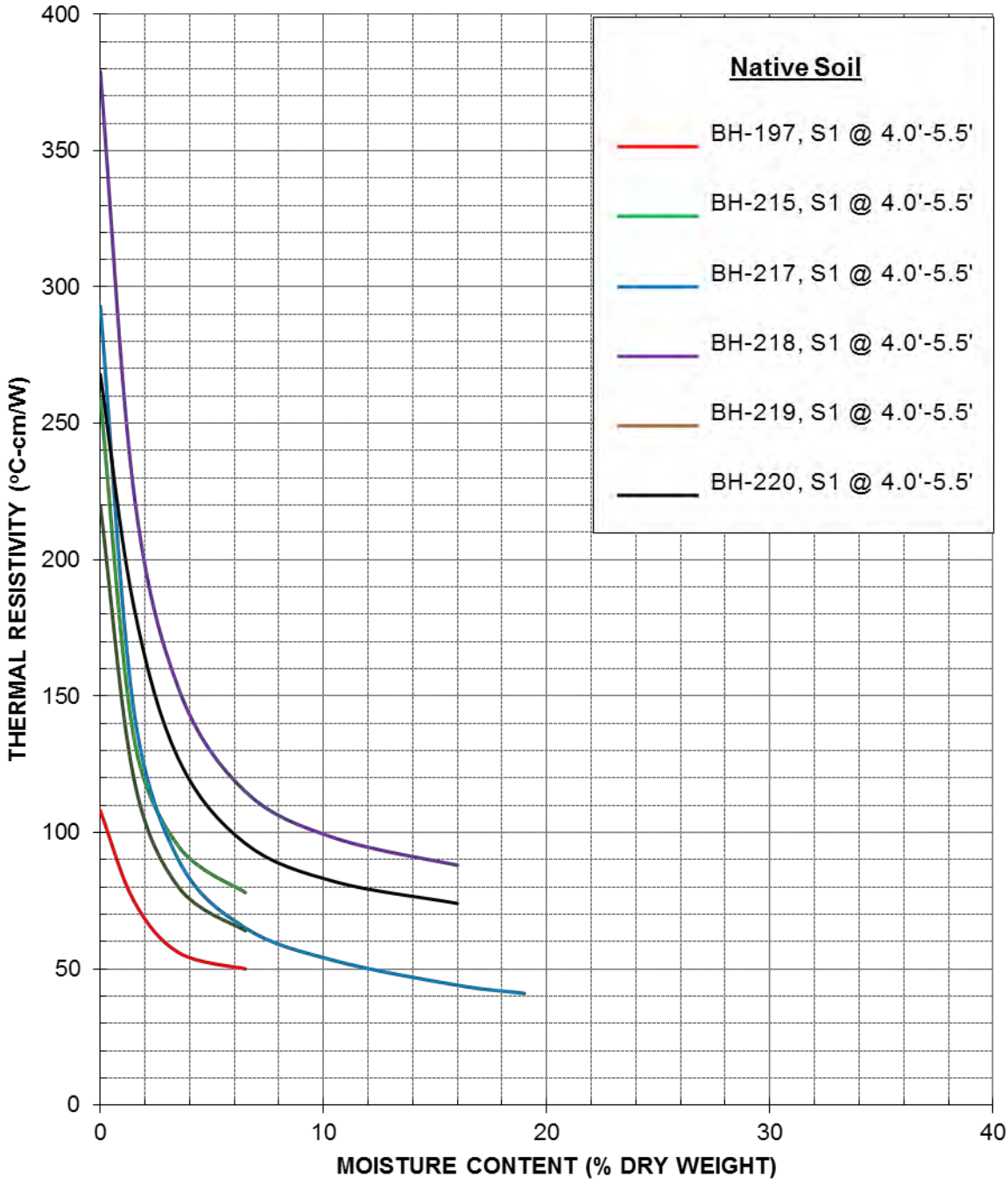
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

June 2016 **Figure 3**

THERMAL DRYOUT CURVES



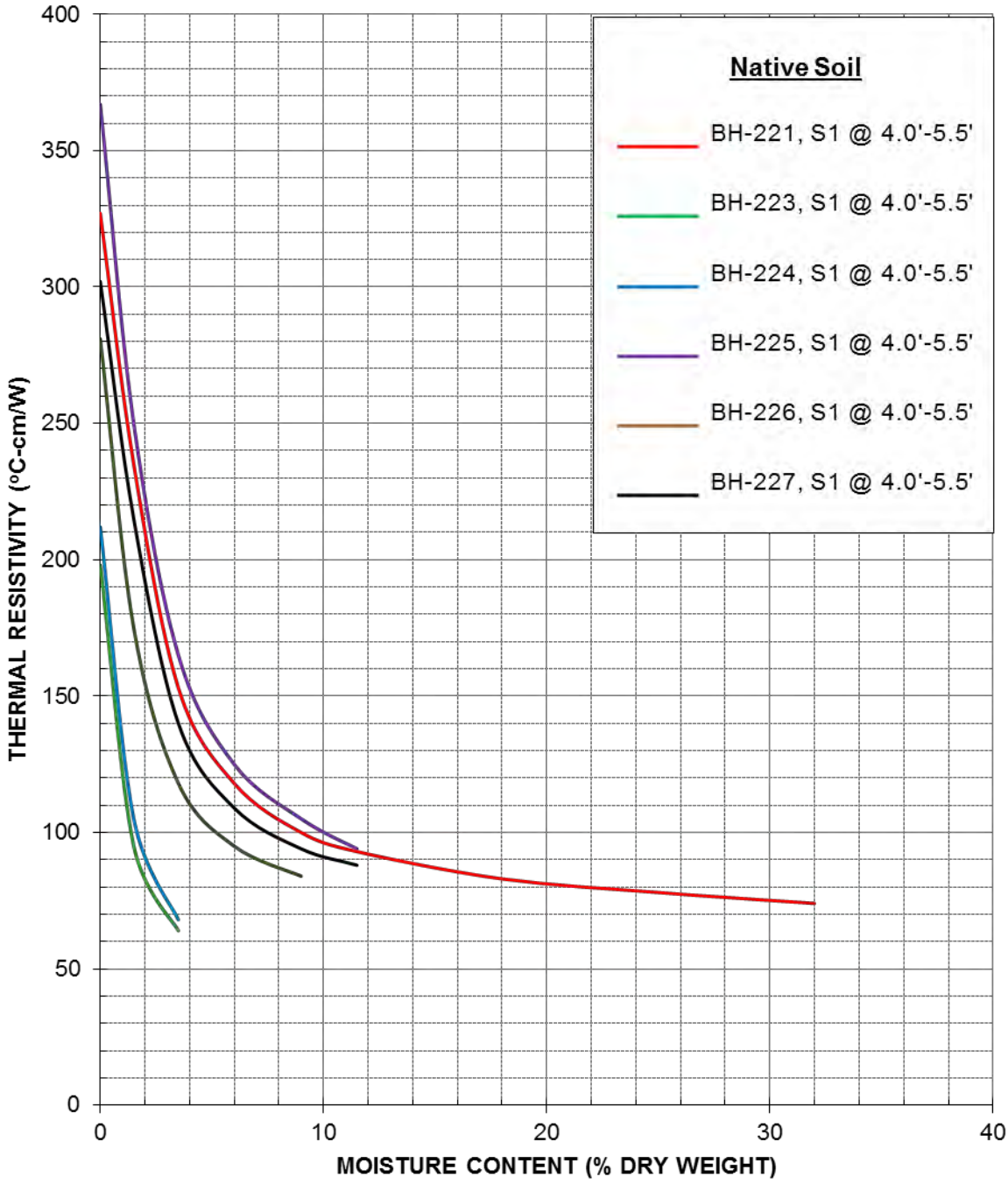
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

June 2016 **Figure 4**

THERMAL DRYOUT CURVES



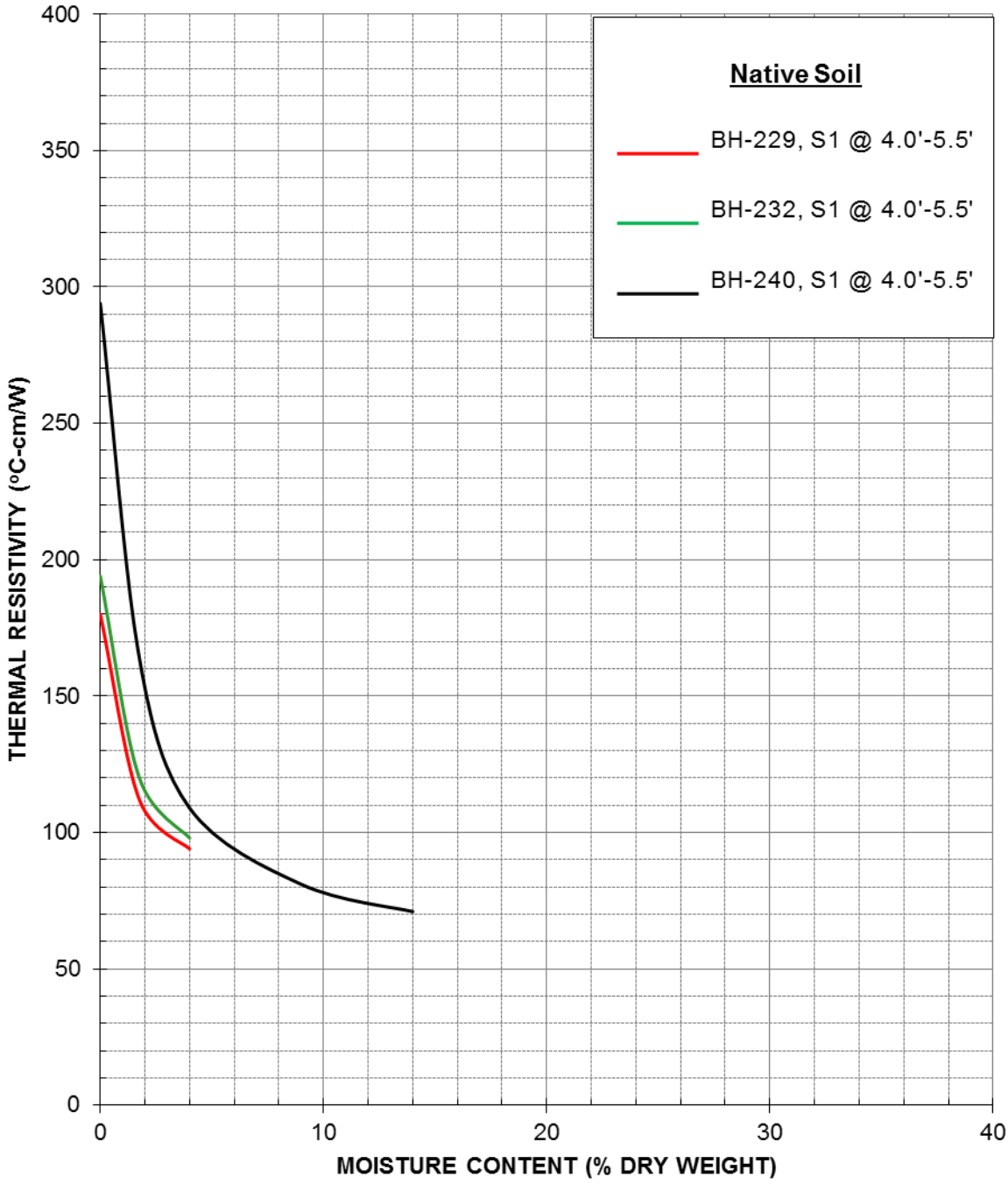
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

June 2016 **Figure 5**

THERMAL DRYOUT CURVES



Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

June 2016 **Figure 6**

4370 Contractors Common
Livermore, CA 94551
Tel: 925-999-9232
Fax: 925-999-8837
info@geothermusa.com

July 14, 2016

Quanta Subsurface
4308 N. Barker Road
Spokane Valley, WA 99027
Attn: Zach Wright

Re: Thermal Analysis of Native Soil
Northern Pass Trenchless Investigation - New Hampshire (Project No. 201-16-NH)

The following is the report of thermal dryout characterization tests conducted on nineteen (19) undisturbed tube samples of native soil received at our laboratory.

Thermal Resistivity Tests: For thermal dryout characterization the tube samples were tested 'as-received'. A series of thermal resistivity measurements were made in stages with moisture content ranging from the 'as-received' to the totally dry condition. The tests were conducted in accordance with the IEEE standard 442. The results are tabulated below and the thermal dryout curves are presented in **Figures 1 to 4.**

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-161 @ 4' - 5.5'	Sand with gravel (SP)	98	185	3	107
BH-162 @ 4' - 5.5'	Poorly graded silty sand with gravel (SP-GP)	65	135	6	126
BH-200 @ 4' - 5.5'	Silty sand (SM)	54	267	19	83
BH-201 @ 4' - 5.5'	Silty sand with gravel and silt with trace organics (SM-ML)	85	315	18	99
BH-202 @ 4' - 5.5'	Silty sand with gravel and trace organics (SM)	78	382	20	75
BH-231 @ 4' - 5.5'	Silty sand with gravel (SM)	62	154	16	112
BH-233 @ 4' - 5.5'	Poorly graded sand with gravel (SP)	68	175	9	99

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-235 @ 4' - 5.5'	Poorly graded sand (SP)	65	198	11	97
BH-238 @ 4' - 5.5'	Silty sand with gravel (SM)	57	219	10	106
BH-239 @ 5' - 6.5'	Poorly graded sand (SP)	62	188	5	104
BH-241 @ 4' - 5.5'	Poorly graded sand (SP)	59	227	7	98
BH-243 @ 4' - 5.5'	Poorly graded sand (SP)	67	254	5	88
BH-244alt @ 4' - 5.5'	Sandy gravel with silt and trace asphalt (GM)	55	197	7	109
BH-245alt @ 4' - 5.5'	Sandy gravel and poorly graded sand (GW-SP)	56	162	9	102
BH-247A @ 4' - 5.5'	Boulders, cobbles and silty sand	52	86	3	122
BH-249 @ 4' - 5.5'	Poorly graded sand (SP)	60	231	4	98
BH-254 @ 4' - 5.5'	Sandy gravel (GW)	41	98	11	114
BH-255 @ 4' - 5.5'	Sandy gravel with silt and trace asphalt (GM)	58	244	13	90
BH-256 @ 4' - 5.5'	Poorly graded sand with trace organics (SP)	82	360	15	90

Comments: The thermal characteristic depicted in the dryout curves apply for the soils at their respective test dry density.

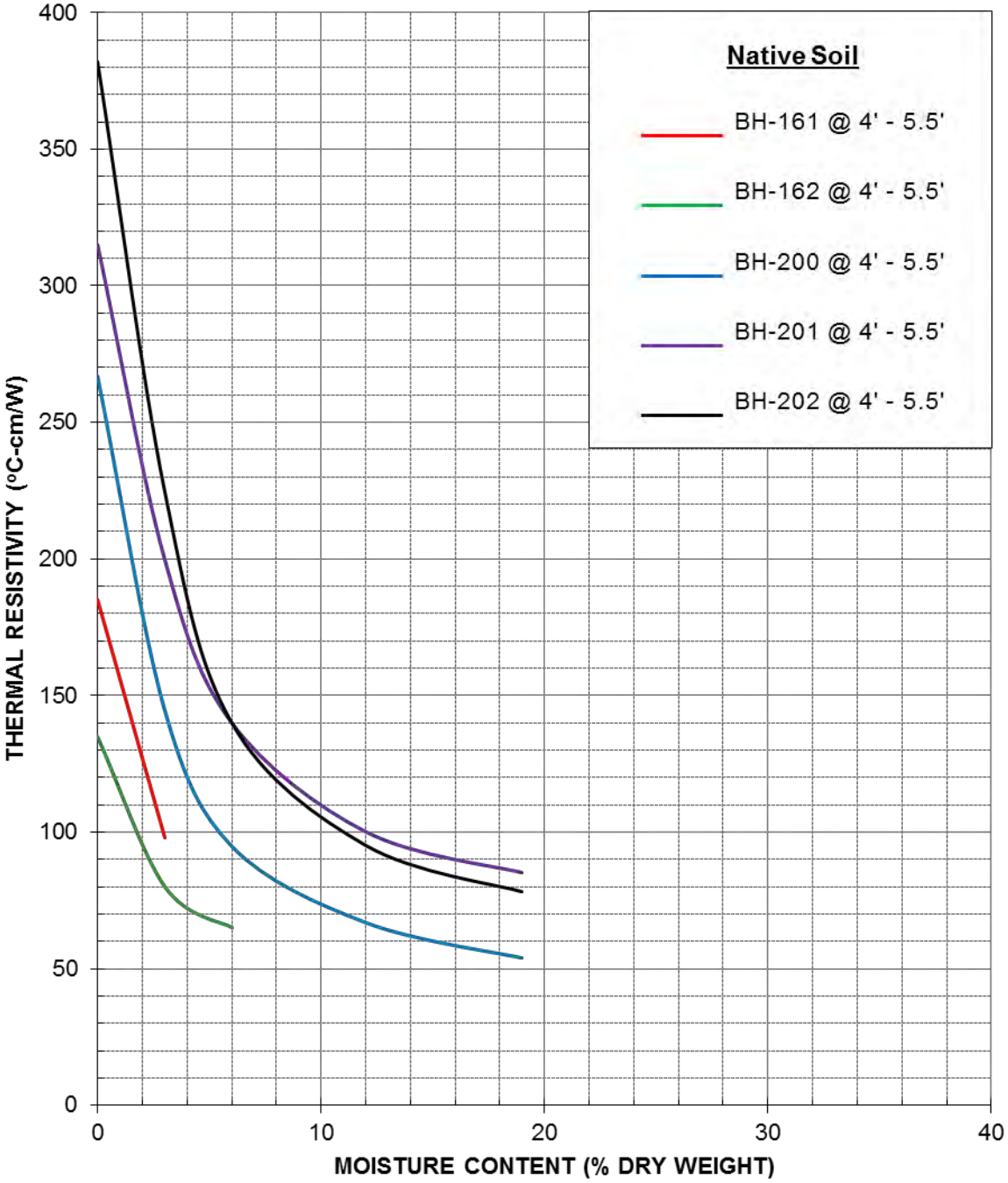
Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA

Nimesh Patel

Please Note: All samples will be disposed of after 5 days from date of report.

THERMAL DRYOUT CURVES



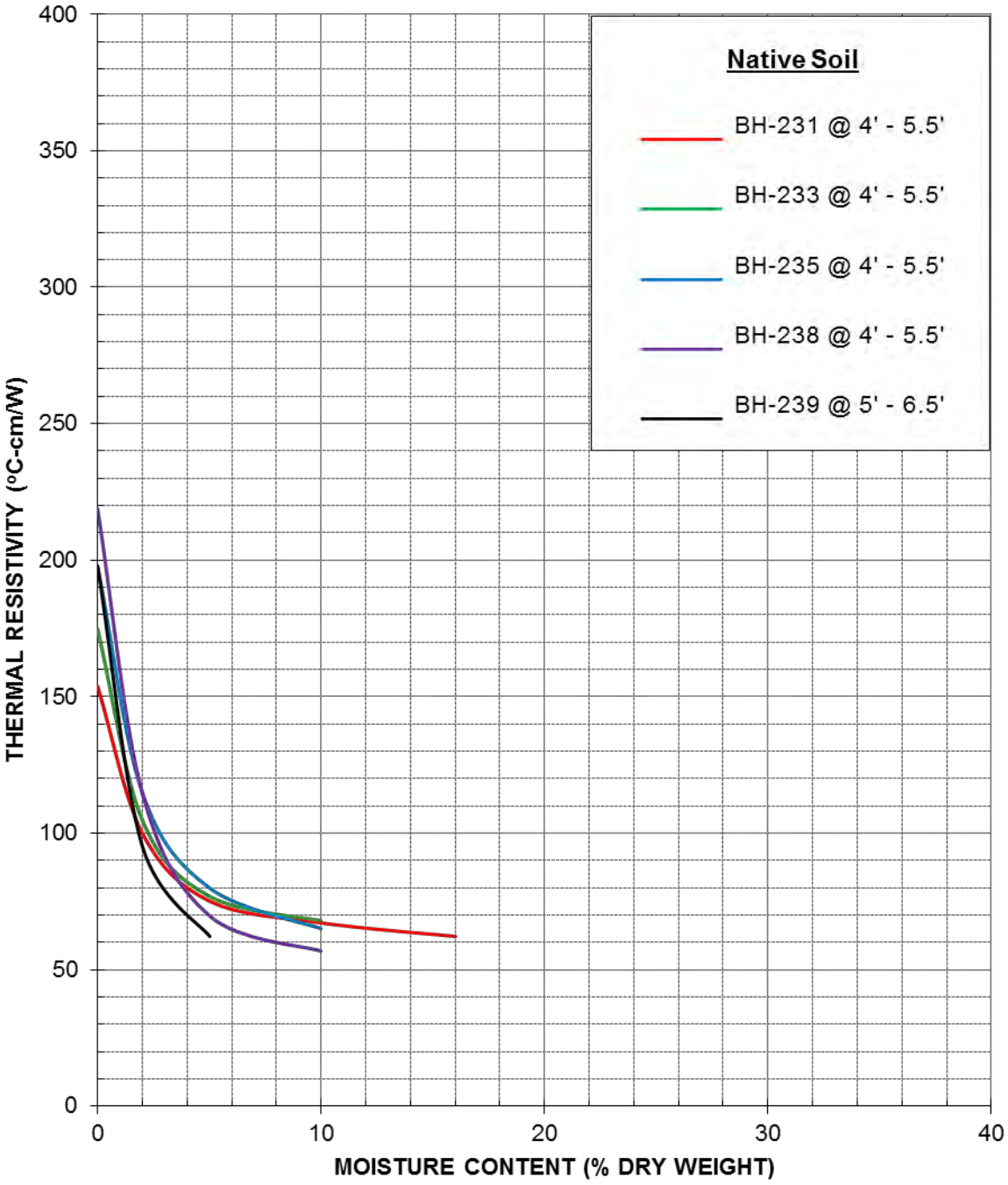
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

July 2016 **Figure 1**

THERMAL DRYOUT CURVES



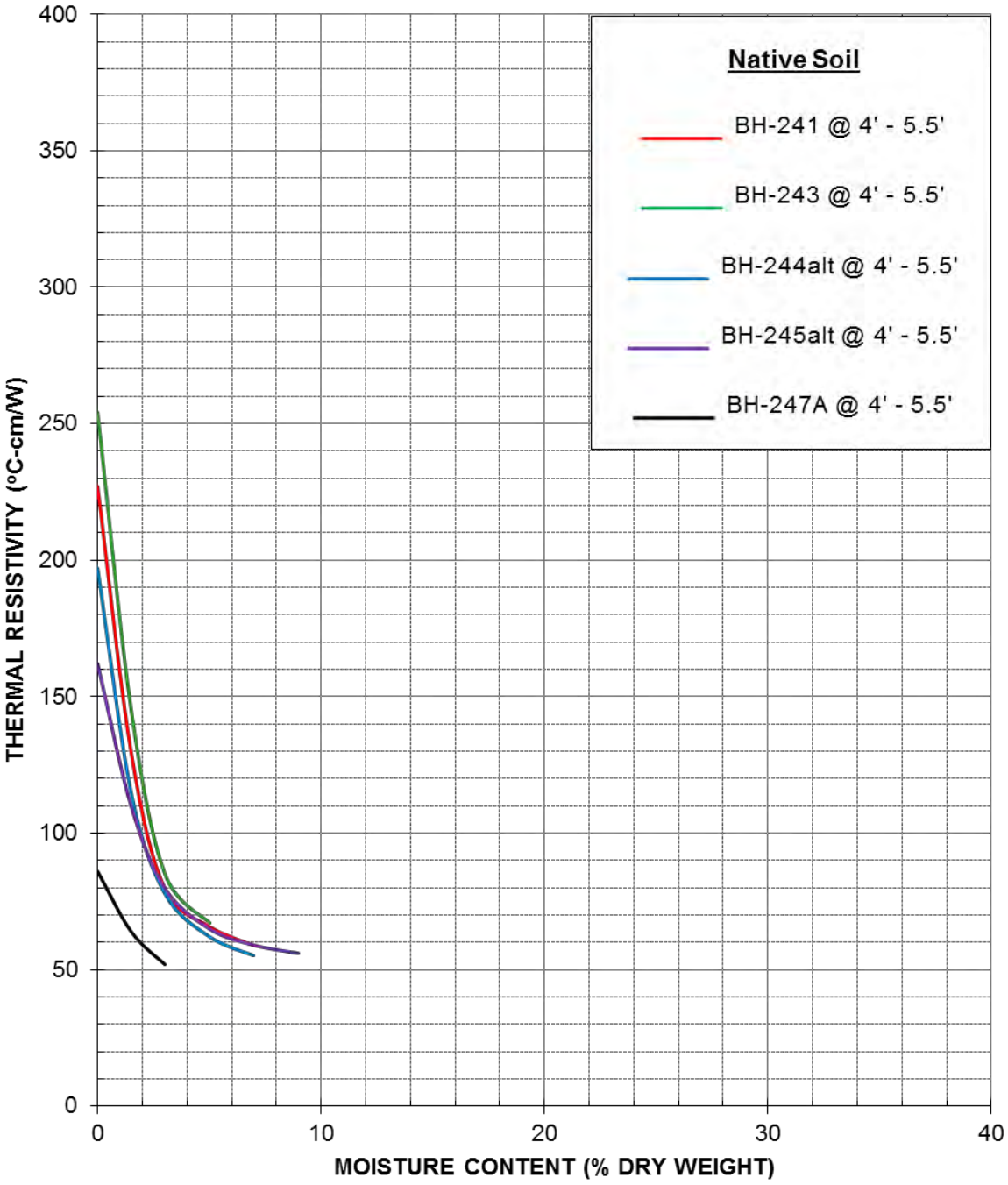
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

July 2016 **Figure 2**

THERMAL DRYOUT CURVES



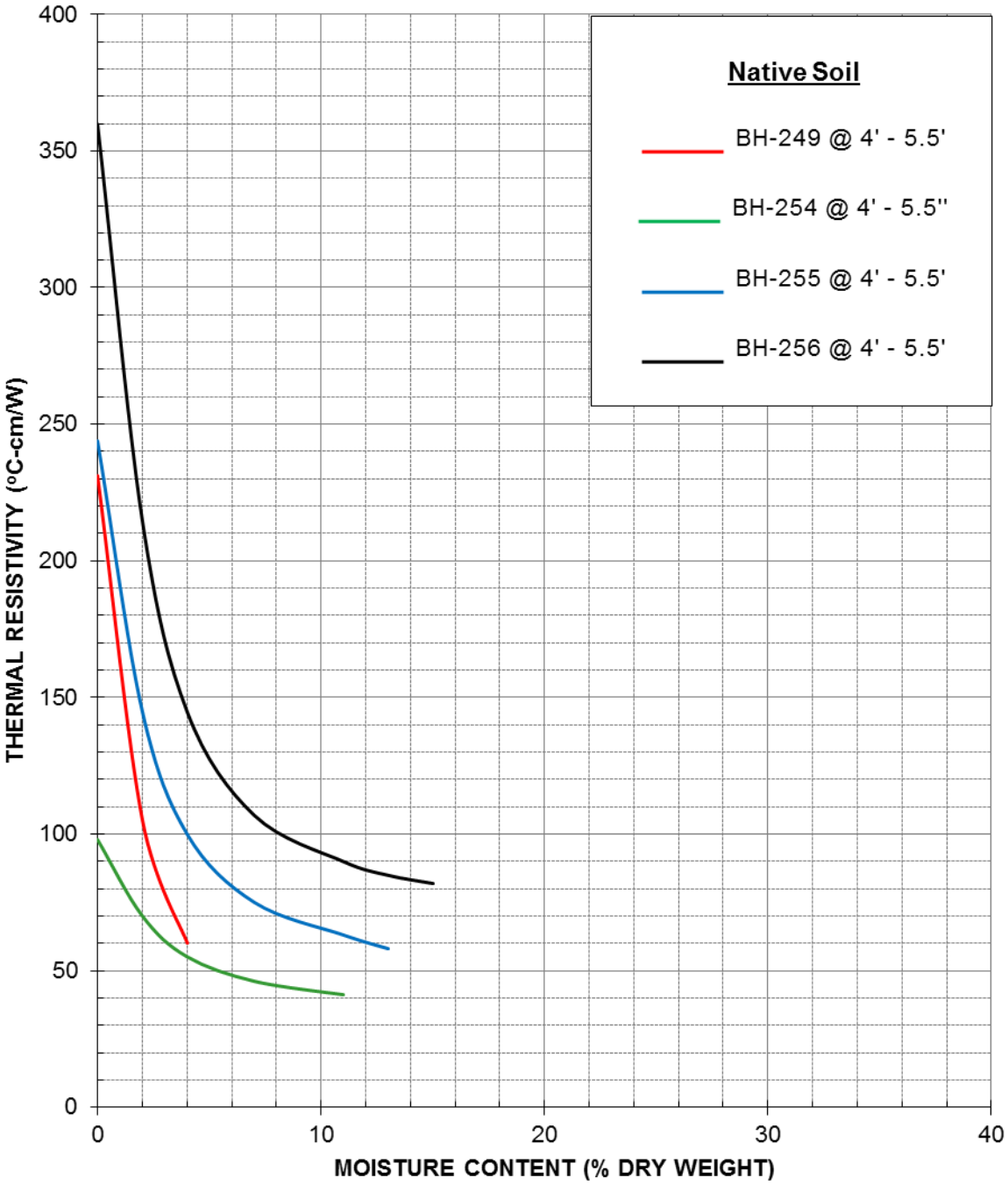
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

July 2016 **Figure 3**

THERMAL DRYOUT CURVES



Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

July 2016 **Figure 4**

4370 Contractors Common
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http://www.geothermusa.com

August 25, 2016

Quanta Subsurface
4308 N. Barker Road
Spokane Valley, WA 99027
Attn: Zach Wright

Re: Thermal Analysis of Native Soil Samples
Northern Pass Trenchless Investigation - New Hampshire (Project No. 201-16-NH)

The following is the report of thermal dryout characterization tests conducted on fifty-five (55) undisturbed tube samples of native soil received at our laboratory.

Thermal Resistivity Tests: For thermal dryout characterization the tube samples were tested 'as-received'. A series of thermal resistivity measurements were made in stages with moisture content ranging from the 'as-received' to the totally dry condition. The tests were conducted in accordance with the IEEE standard 442. The results are tabulated below and the thermal dryout curves are presented in **Figures 1 to 10.**

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-77 @ 4' - 5.5'	Silty gravel with sand	105	194	1.8	105
BH-94 @ 4' - 5.5'	Silty gravel with sand	56	177	7	110
BH-98 @ 4' - 5.5'	Silty gravel with sand	94	218	3.8	99
BH-99 @ 4' - 5.5'	Well graded sand	65	198	19	96
BH-102 @ 4' - 5.5'	Sandy silt	54	233	24	89
BH-104 @ 4' - 5.5'	Well graded sand	66	167	7	108

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-113 @ 4' - 5.5'	Silty sand	48	214	27	87
BH-114 @ 4' - 5.5'	Silty sand with gravel	65	289	41	53
BH-115 @ 4' - 5.5'	Silty sand with gravel	56	228	26	80
BH-117 @ 4' - 5.5'	Silty sand with gravel	78	175	7	103
BH-119 @ 4' - 5.5'	Poorly graded sand	44	298	38	56
BH-121 @ 4' - 5.5'	Silty sand with gravel	53	244	25	75
BH-122 @ 4' - 5.5'	Well graded sand	70	148	4.3	116
BH-123 @ 4' - 5.5'	Poorly graded sand	49	162	12	118
BH-124 @ 4' - 5.5'	Silty sand with gravel	77	318	42	50
BH-126 @ 4' - 5.5'	Poorly graded sand	88	227	7	100
BH-129 @ 4' - 5.5'	Silty sand	58	192	24	75
BH-130 @ 4' - 5.5'	Poorly graded sand with gravel	61	218	33	71
BH-131 @ 4' - 5.5'	Well graded sand	51	184	19	110
BH-133 @ 4' - 5.5'	Well graded sand	58	199	13	100
BH-135 @ 4' - 5.5'	Poorly graded sand with gravel	90	178	2.8	103
BH-136 @ 4' - 5.5'	Poorly graded sand with silt	64	223	30	76
BH-137 @ 4' - 5.5'	Clayey sand	74	207	25	80
BH-138 @ 4' - 5.5'	Poorly graded sand with silt	55	294	34	63
BH-139 @ 4' - 5.5'	Silty sand	67	187	7	100

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-141 @ 4' - 5.5'	Silty sand	52	138	7	124
BH-142 @ 4' - 5.5'	Silty sand	57	156	6	117
BH-143 @ 4' - 5.5'	Poorly graded sand with gravel	77	165	4.2	115
BH-144 @ 4' - 5.5'	Silty sand with gravel	80	184	4	111
BH-145 @ 4' - 5.5'	Silty sand with gravel	68	143	8	121
BH-146 ALT @ 4' - 5.5'	Silty sand with gravel	71	177	9	113
BH-147 @ 4' - 5.5'	Silty sand	58	184	11	112
BH-148 @ 4' - 5.5'	Silty sand with gravel	69	208	14	105
BH-149 @ 4' - 5.5'	Well graded sand	63	193	6	106
BH-150 @ 4' - 5.5'	Silty Sand	66	188	12	111
BH-151 @ 4' - 5.5'	Poorly graded sand	74	216	13	109
BH-152 @ 4' - 5.5'	Poorly graded sand with gravel	61	197	18	92
BH-153 @ 4' - 5.5'	Sandy peat	108	385	15	83
BH-154 @ 4' - 5.5'	Sandy peat	94	328	24	100
BH-156 @ 4' - 5.5'	Clayey sand	95	189	5	103
BH-157 @ 4' - 5.5'	Sandy silt	66	244	19	77
BH-159 @ 4' - 5.5'	Poorly graded sand with gravel	61	172	15	103
BH-164 @ 4' - 5.5'	Sandy silt	77	277	25	85
BH-167 @ 4' - 5.5'	Sandy silt	63	190	12	104

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-171 @ 4' - 5.5'	Silty sand with gravel	80	164	6	110
BH-172 @ 4' - 5.5'	Poorly graded sand with gravel	69	170	10	113
BH-189 @ 4' - 5.5'	Silty gravel with sand	75	212	11	94
BH-193 @ 4' - 5.5'	Poorly graded sand with gravel	68	194	8	104
BH-209 @ 4' - 5.5'	Poorly graded sand with gravel	55	152	17	118
BH-211 @ 4' - 5.5'	Silty sand	61	188	8	105
BH-212 @ 4' - 5.5'	Poorly graded sand with gravel	59	178	15	105
BH-228 @ 4' - 5.5'	Well graded sand	70	216	5	108
BH-230 @ 4' - 5.5'	Poorly graded sand with gravel	64	199	10	92
BH-236 @ 4' - 5.5'	Silty sand with gravel	57	183	14	106
BH-237 @ 4' - 5.5'	Silty sand with gravel	80	207	5	96

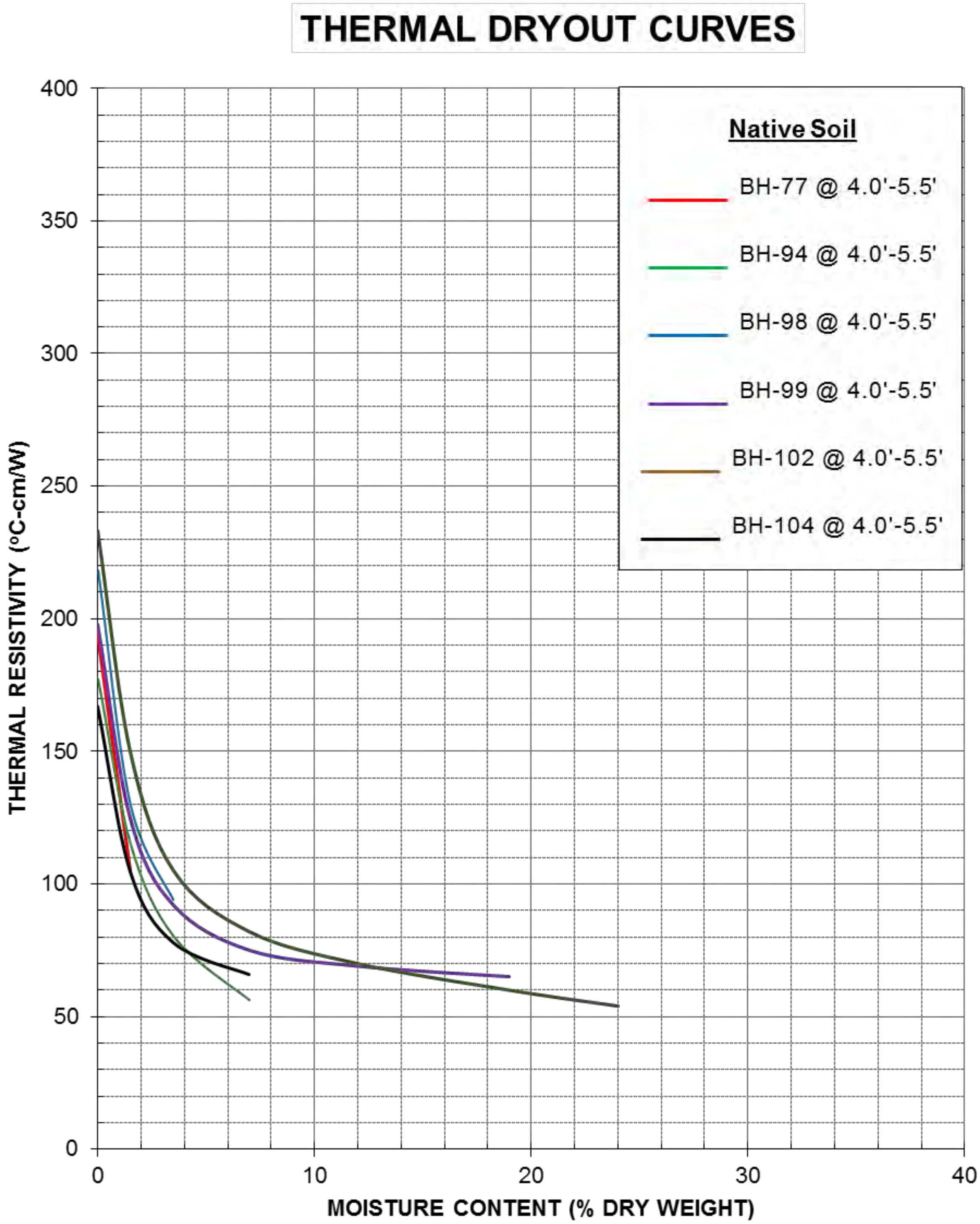
Comments: The thermal characteristic depicted in the dryout curves applies for the soils at their respective test dry density.

Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA

Nimesh Patel

Please Note: All samples will be disposed of after 5 days from date of report.



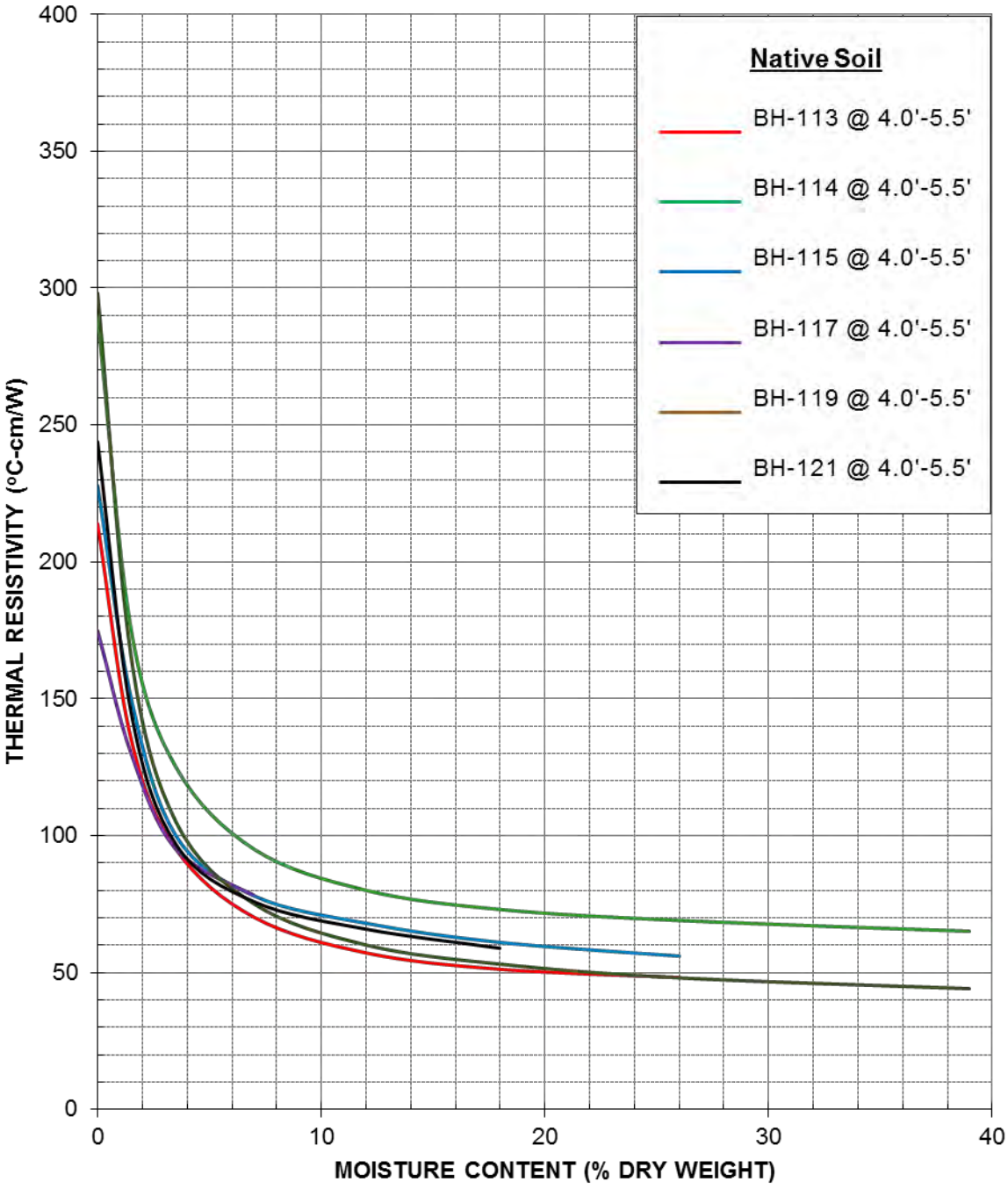
Quanta Subsurface

Thermal Analysis of Native Soil Samples

Northern Pass Trenchless Investigation

August 2016 **Figure 1**

THERMAL DRYOUT CURVES



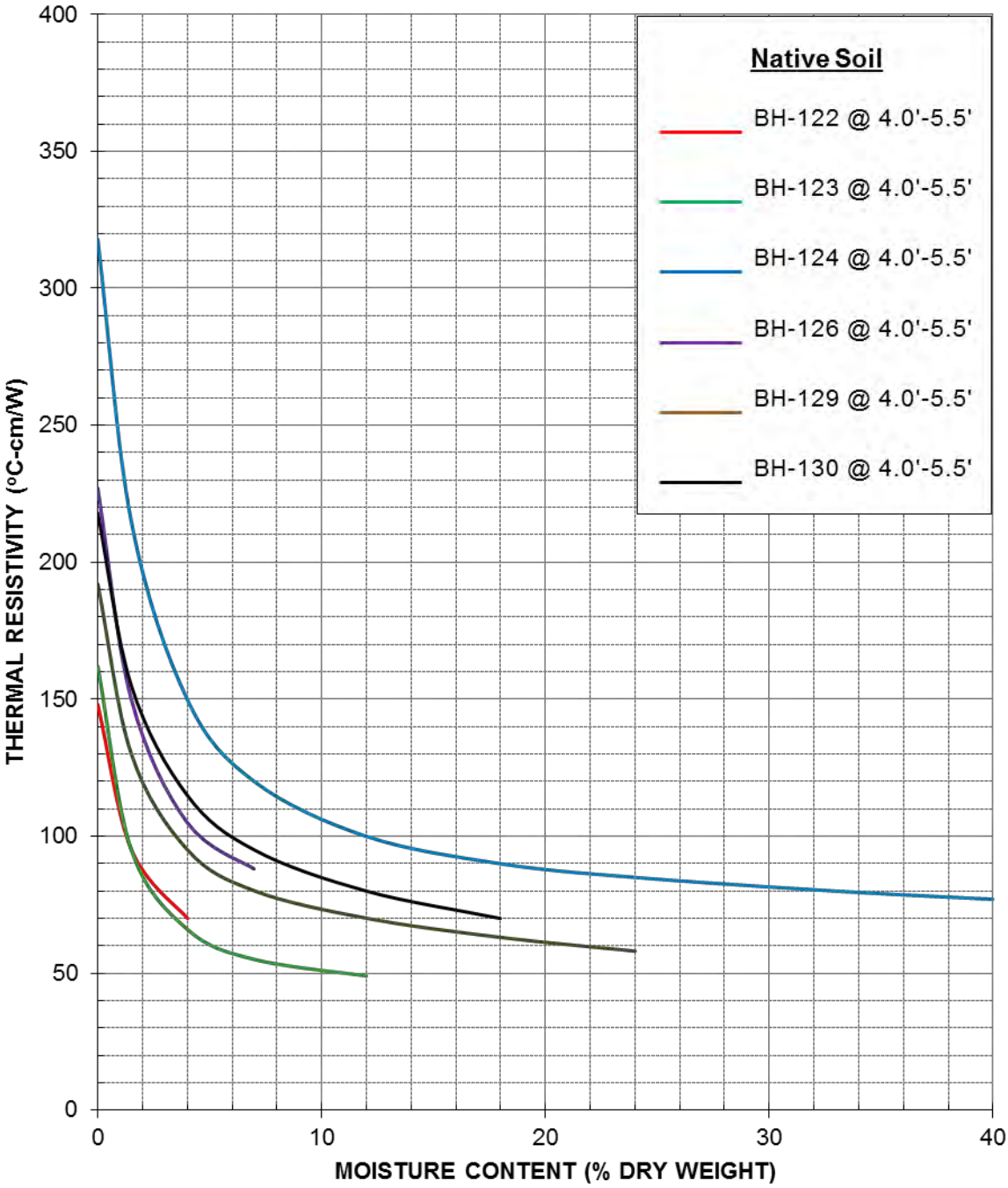
Quanta Subsurface

Thermal Analysis of Native Soil Samples

Northern Pass Trenchless Investigation

August 2016 **Figure 2**

THERMAL DRYOUT CURVES



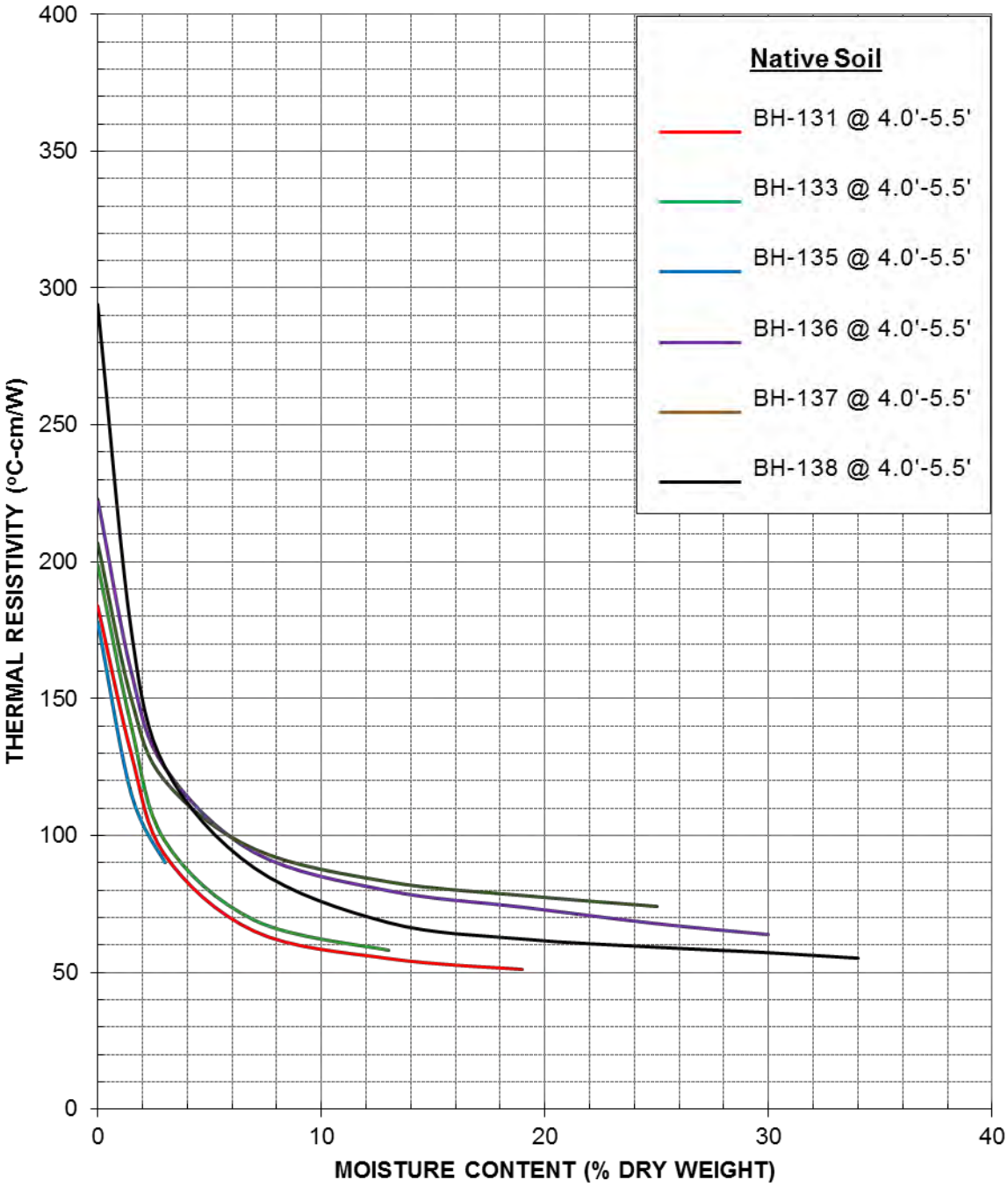
Quanta Subsurface

Thermal Analysis of Native Soil Samples

Northern Pass Trenchless Investigation

August 2016 **Figure 3**

THERMAL DRYOUT CURVES



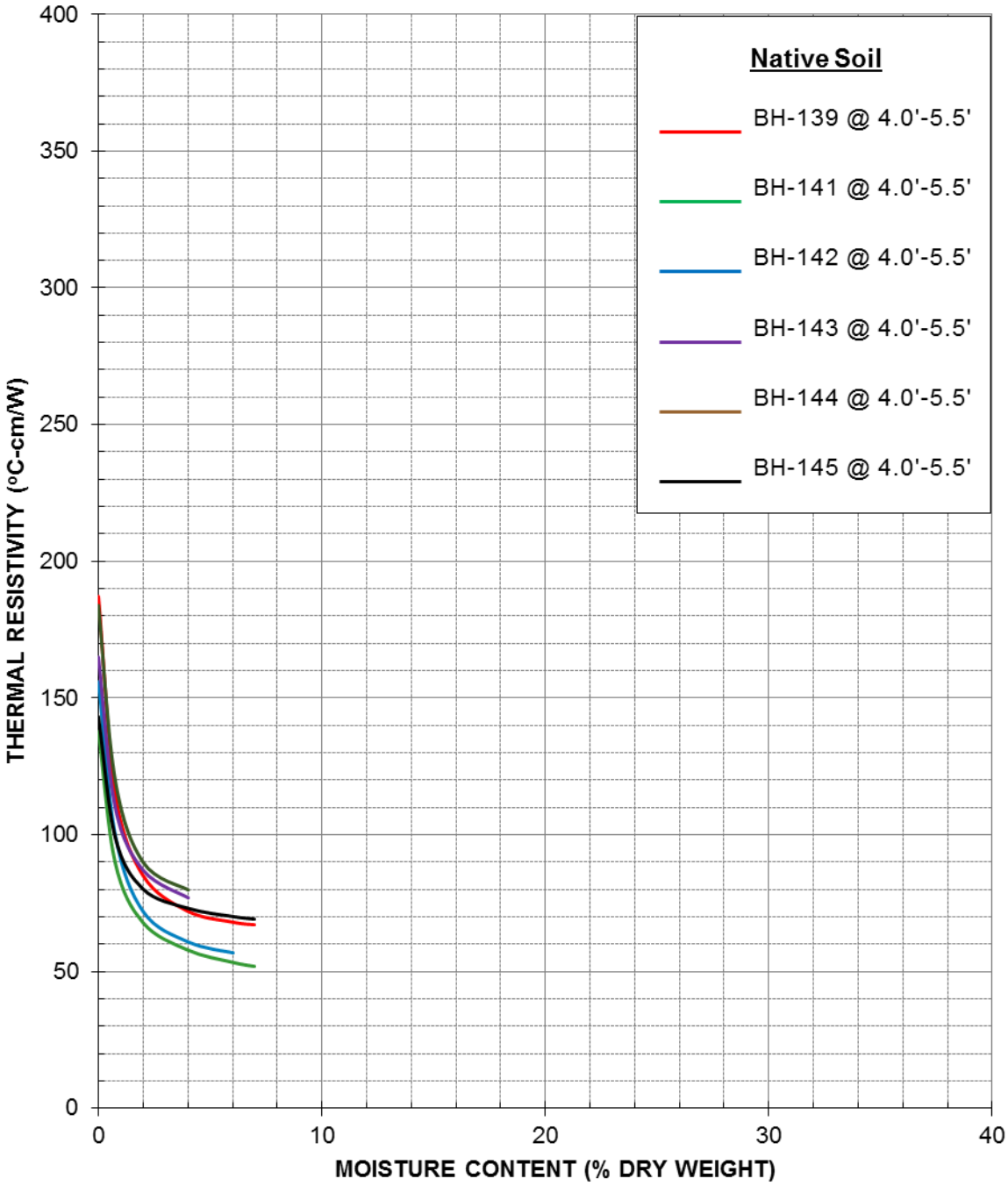
Quanta Subsurface

Thermal Analysis of Native Soil Samples

Northern Pass Trenchless Investigation

August 2016 **Figure 4**

THERMAL DRYOUT CURVES



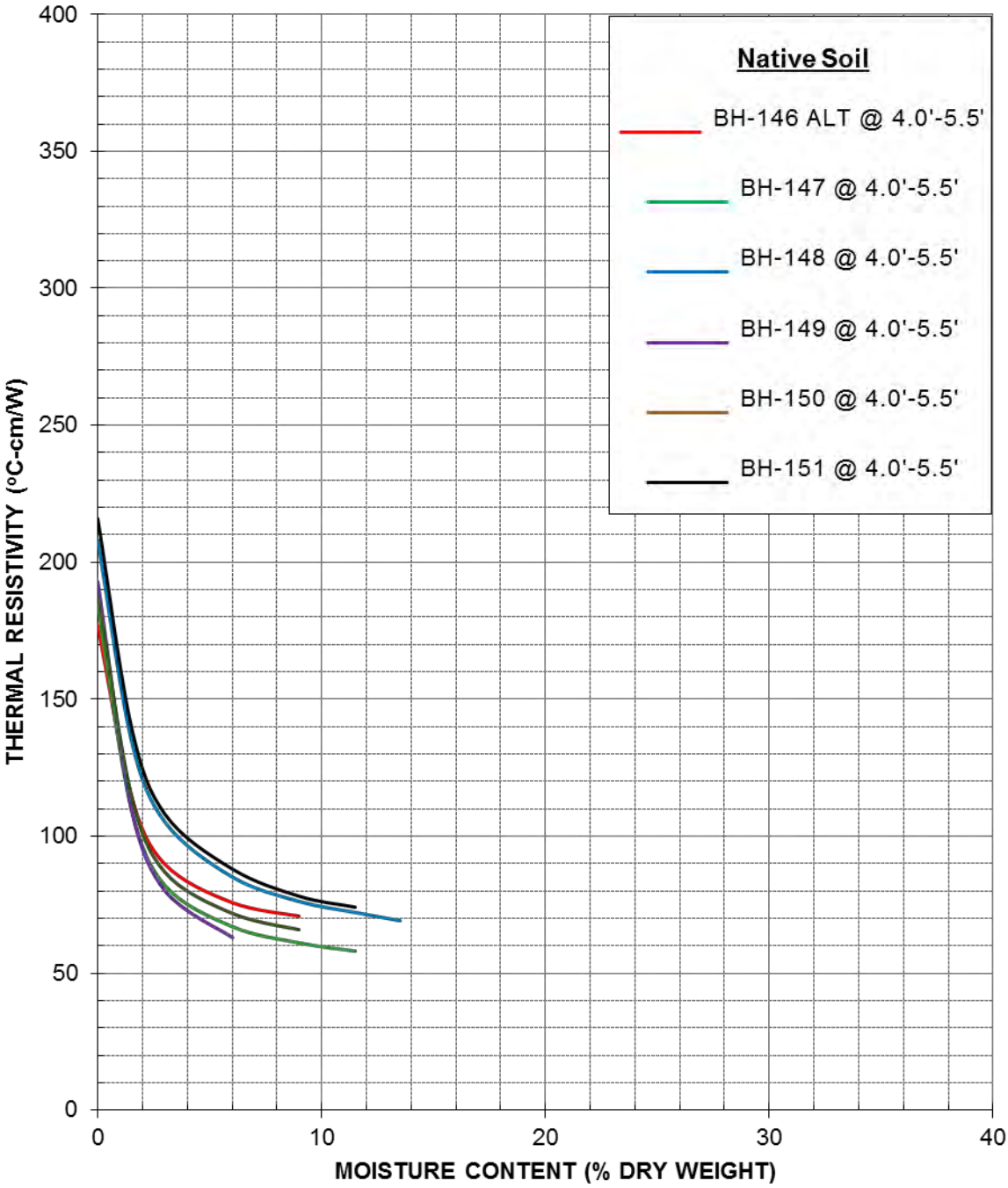
Quanta Subsurface

Thermal Analysis of Native Soil Samples

Northern Pass Trenchless Investigation

August 2016 **Figure 5**

THERMAL DRYOUT CURVES



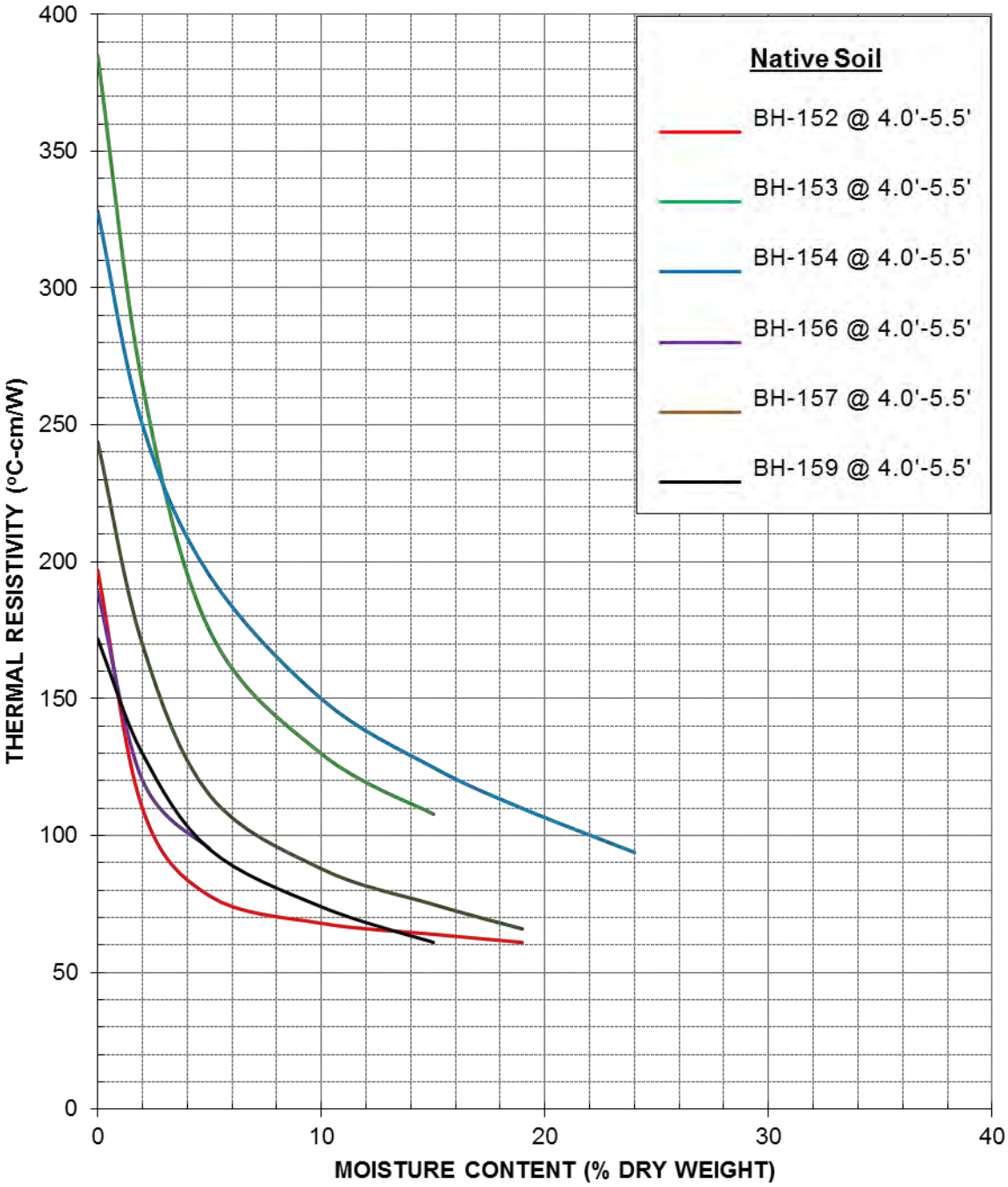
Quanta Subsurface

Thermal Analysis of Native Soil Samples

Northern Pass Trenchless Investigation

August 2016 **Figure 6**

THERMAL DRYOUT CURVES



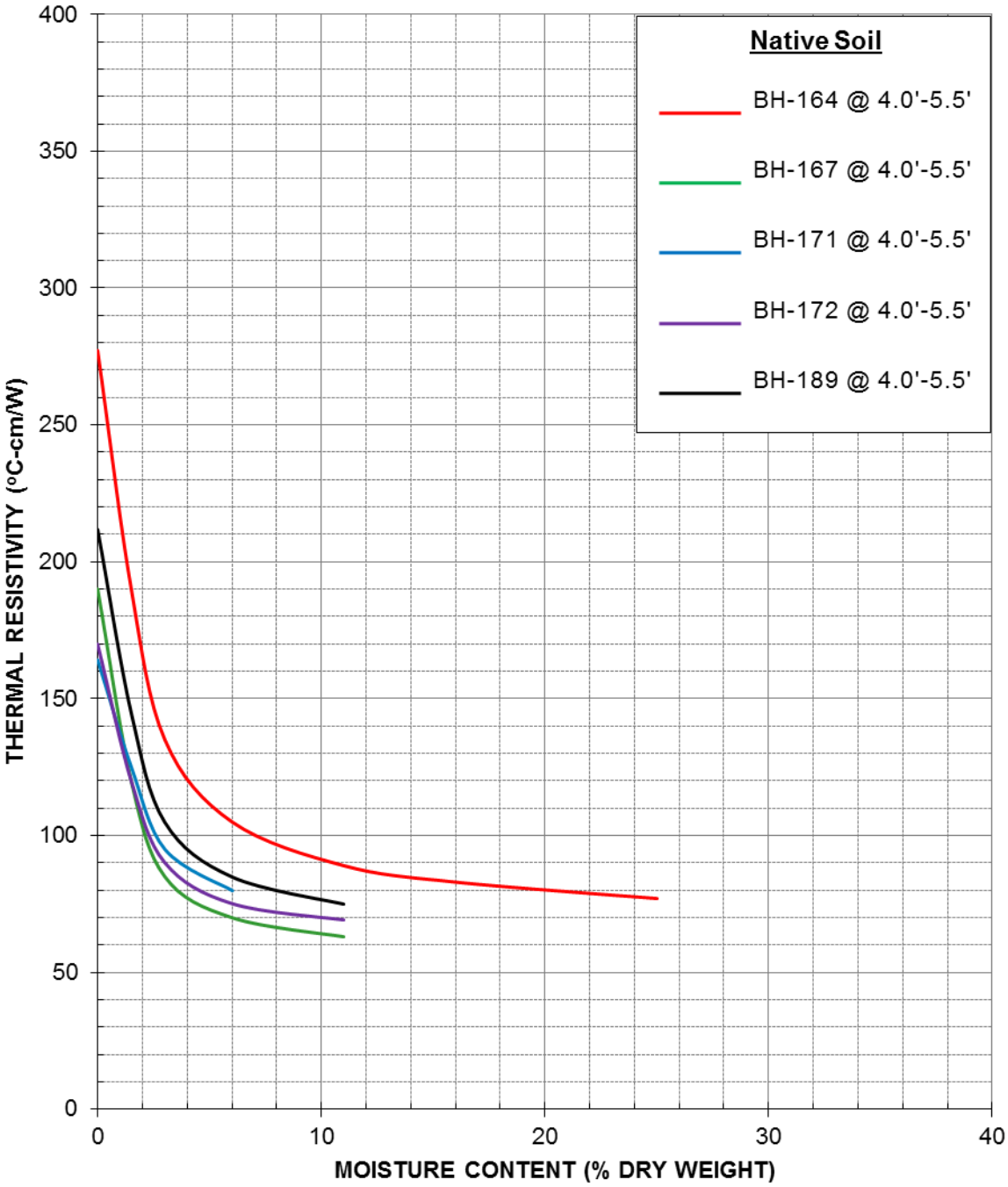
Quanta Subsurface

Thermal Analysis of Native Soil Samples

Northern Pass Trenchless Investigation

August 2016 **Figure 7**

THERMAL DRYOUT CURVES



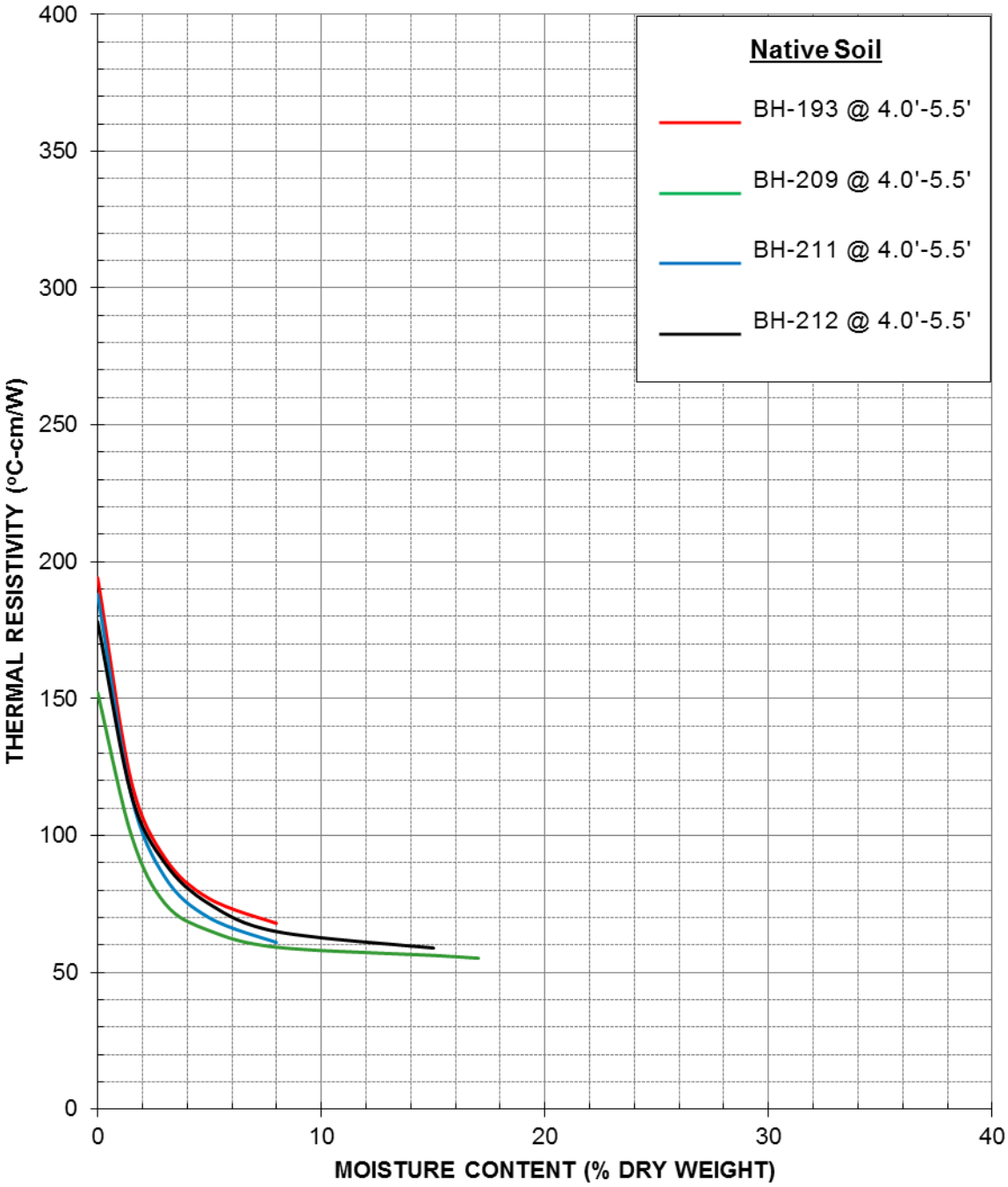
Quanta Subsurface

Thermal Analysis of Native Soil Samples

Northern Pass Trenchless Investigation

August 2016 **Figure 8**

THERMAL DRYOUT CURVES



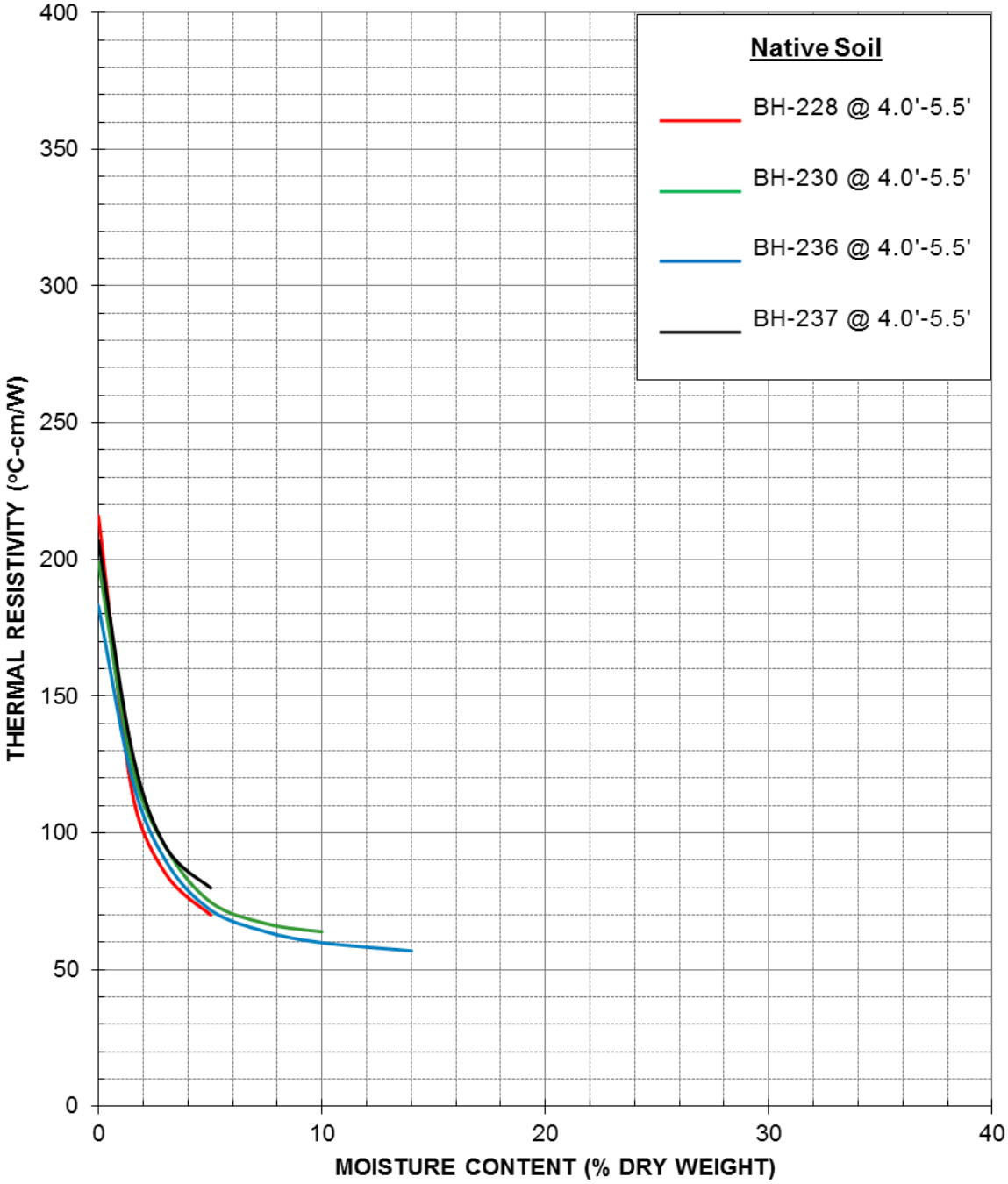
Quanta Subsurface

Thermal Analysis of Native Soil Samples

Northern Pass Trenchless Investigation

August 2016 **Figure 9**

THERMAL DRYOUT CURVES



Quanta Subsurface

Thermal Analysis of Native Soil Samples

Northern Pass Trenchless Investigation

August 2016 **Figure 10**

4370 Contractors Common
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September 16, 2016

Quanta Subsurface
4308 N. Barker Road
Spokane Valley, WA 99027
Attn: Zach Wright

Re: Thermal Analysis of Native Soil
Northern Pass Trenchless Investigation - New Hampshire (Project No. 201-16-NH)

The following is the report of thermal dryout characterization tests conducted on twenty-five (25) bulk samples of native soil received at our laboratory.

Thermal Resistivity Tests: For thermal dryout characterization the bulk samples were tested at 'as-received' moisture content and 95% of maximum dry density ***provided by Quanta Subsurface***. A series of thermal resistivity measurements were made in stages with moisture content ranging from the 'as-received' to the totally dry condition. The tests were conducted in accordance with the IEEE standard 442. The results are tabulated below and the thermal dryout curves are presented in **Figures 1 to 5.**

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-208 @ 0-4'	Brown fine to coarse silty sand with trace fine to coarse gravel	46	142	6	118
BH-210 @ 0-4'	Brown fine to coarse silty sand with trace fine to coarse gravel	52	144	4	118
BH-213 @ 0-4'	Brown fine to medium silty sand	39	160	14	118
BH-250 @ 0-4'	Brown fine to coarse silty sand with trace fine gravel	43	146	6	118
BH-251 @ 0-4'	Dark brown medium to coarse silty sand with trace fine gravel	45	143	8	118
BH-252 @ 0-4'	Brown fine to coarse silty sand with little fine to coarse gravel	44	138	9	118
BH257 @ 0-4'	Silty sand	42	158	19	118

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH260 @ 0-4'	Sandy silt clay	45	138	13	114
BH261 @ 0-4'	silty sand	55	165	10	116
BH 262 @ 0-4'	Silty sand	57	165	10	116
BH264 @ 0-4'	Poorly grade sand	45	144	8	121
BH265 @ 0-4'	Silty sand	47	166	11	116
BH271 @ 0-4'	poorly graded gravel	46	129	9	122
BH273 @ 0-4'	Silty sand	50	155	10	121
BH274 @ 0-4'	Silty sand	49	140	7	123
BH275 @ 0-4'	Silty sand	55	138	5	123
BH276 @ 0-4'	Silty sand	46	135	11	126
BH278 @ 0-4'	poorly graded gravel	44	98	6	137
BH279 @ 3'-5.5'	Silty sand	51	158	11	121
BH281 @ 0-4'	Silty sand	48	149	9	121
BH283 @ 0-4'	Silty sand	56	160	19	121
BH284 @ 0-4'	Silty sand	52	154	12	121
BH285 @ 0-4'	Silty sand	47	140	12	124
BH287 @ 0-4'	Silty sand	48	148	13	121
BH288 @ 1-4'	Silty sand	50	165	5	116

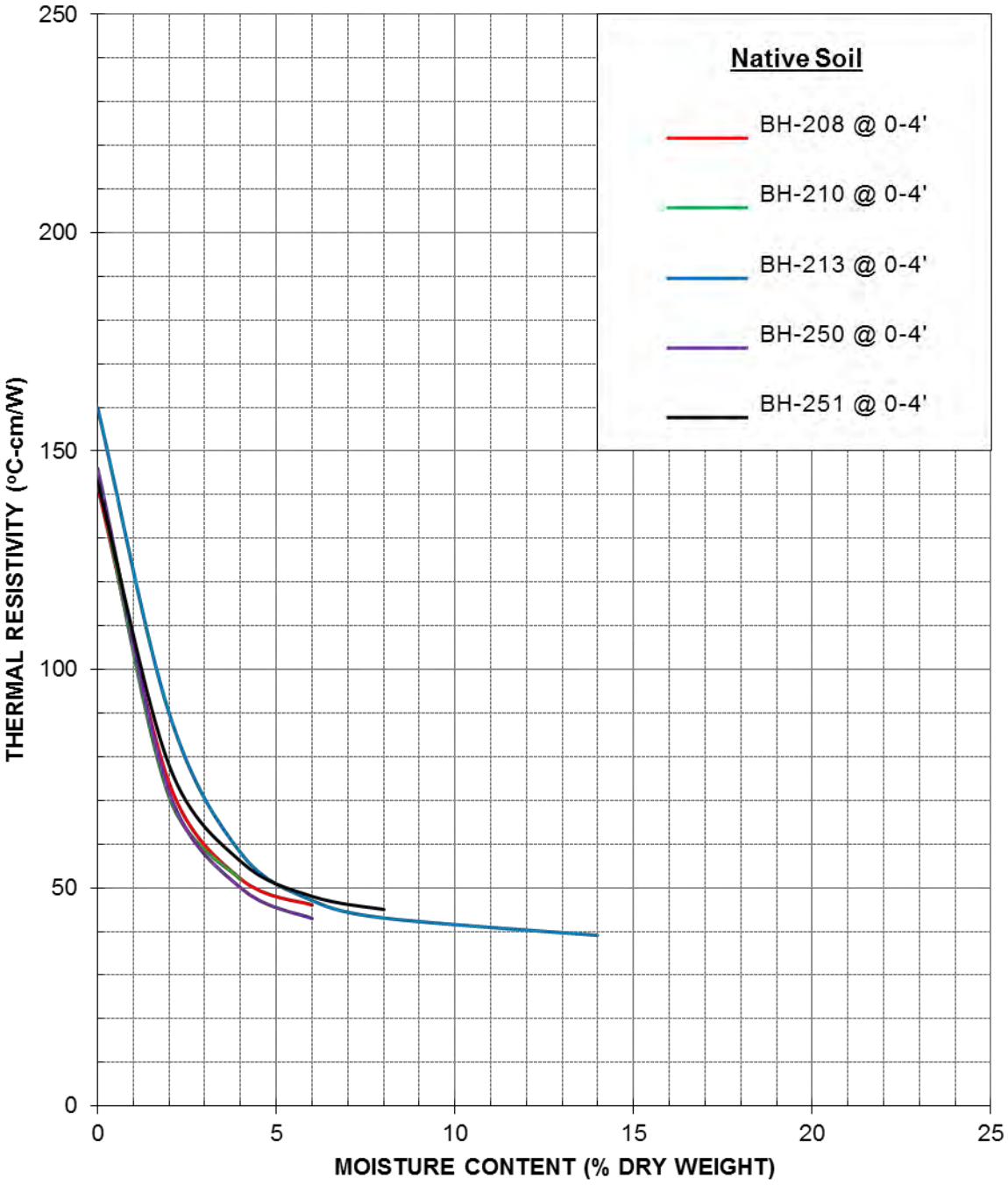
Comments: The thermal characteristic depicted in the dryout curves apply for the soils at their respective test dry density.

Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA

Nimesh Patel

THERMAL DRYOUT CURVES



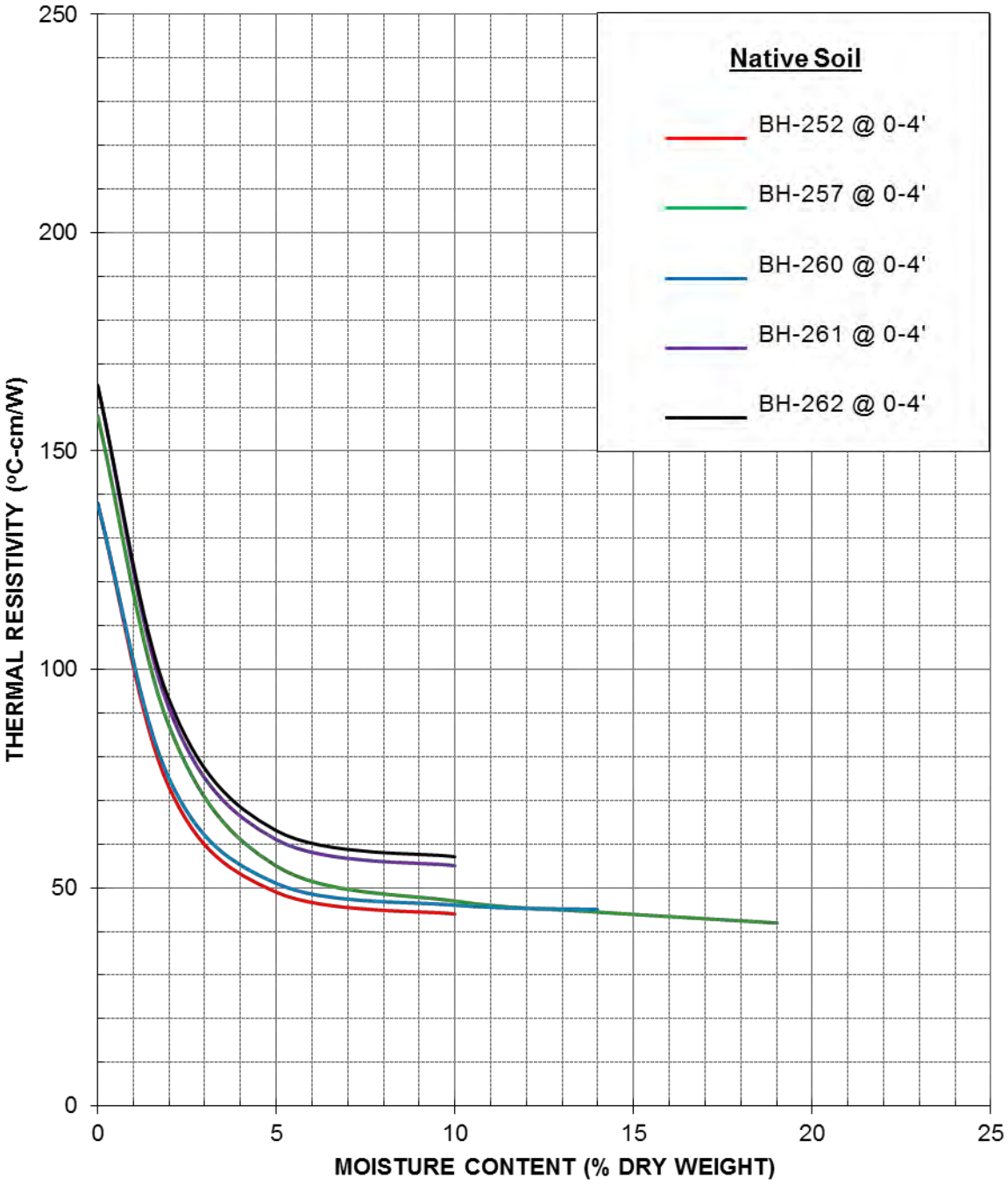
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 1**

THERMAL DRYOUT CURVES



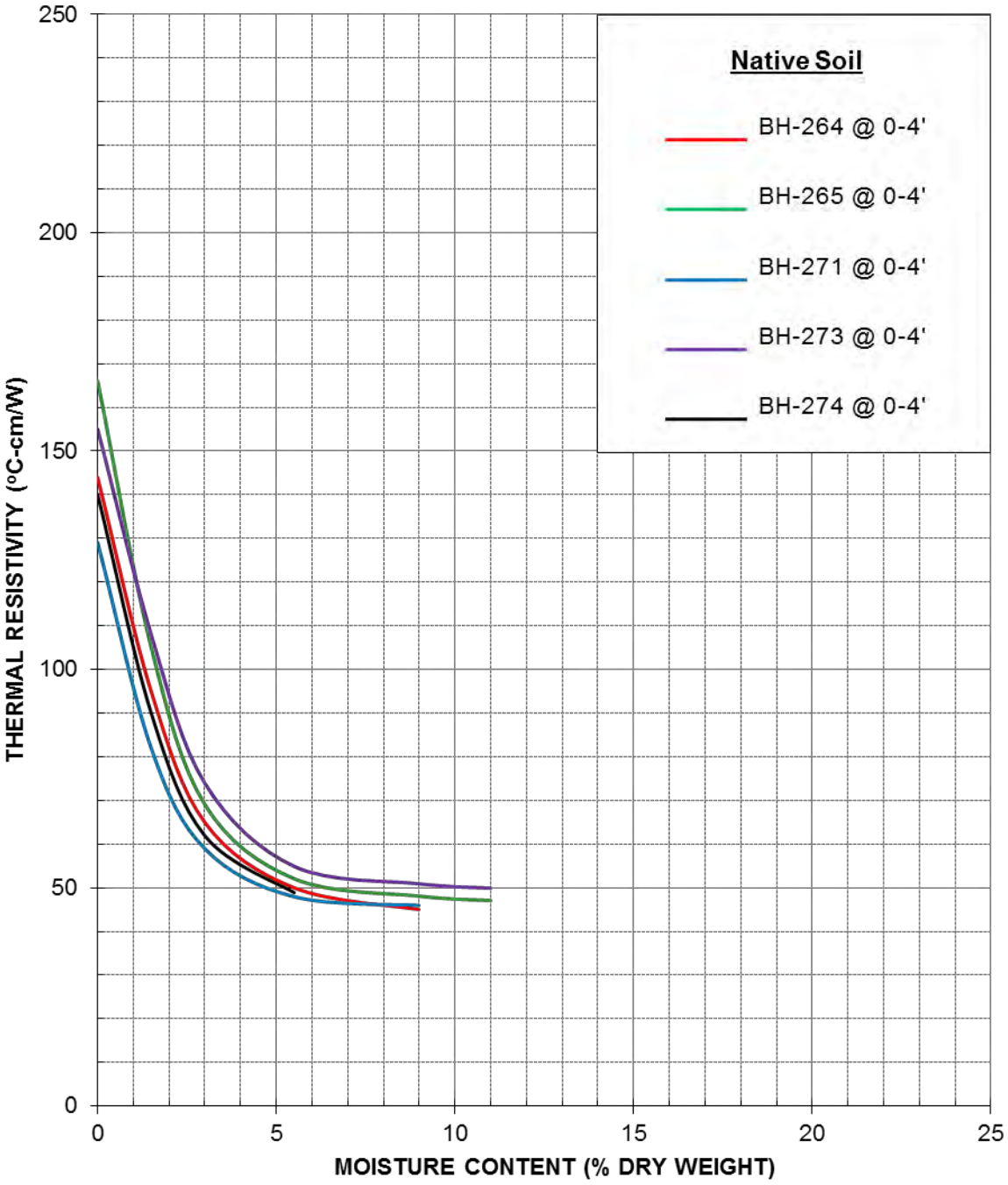
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 2**

THERMAL DRYOUT CURVES



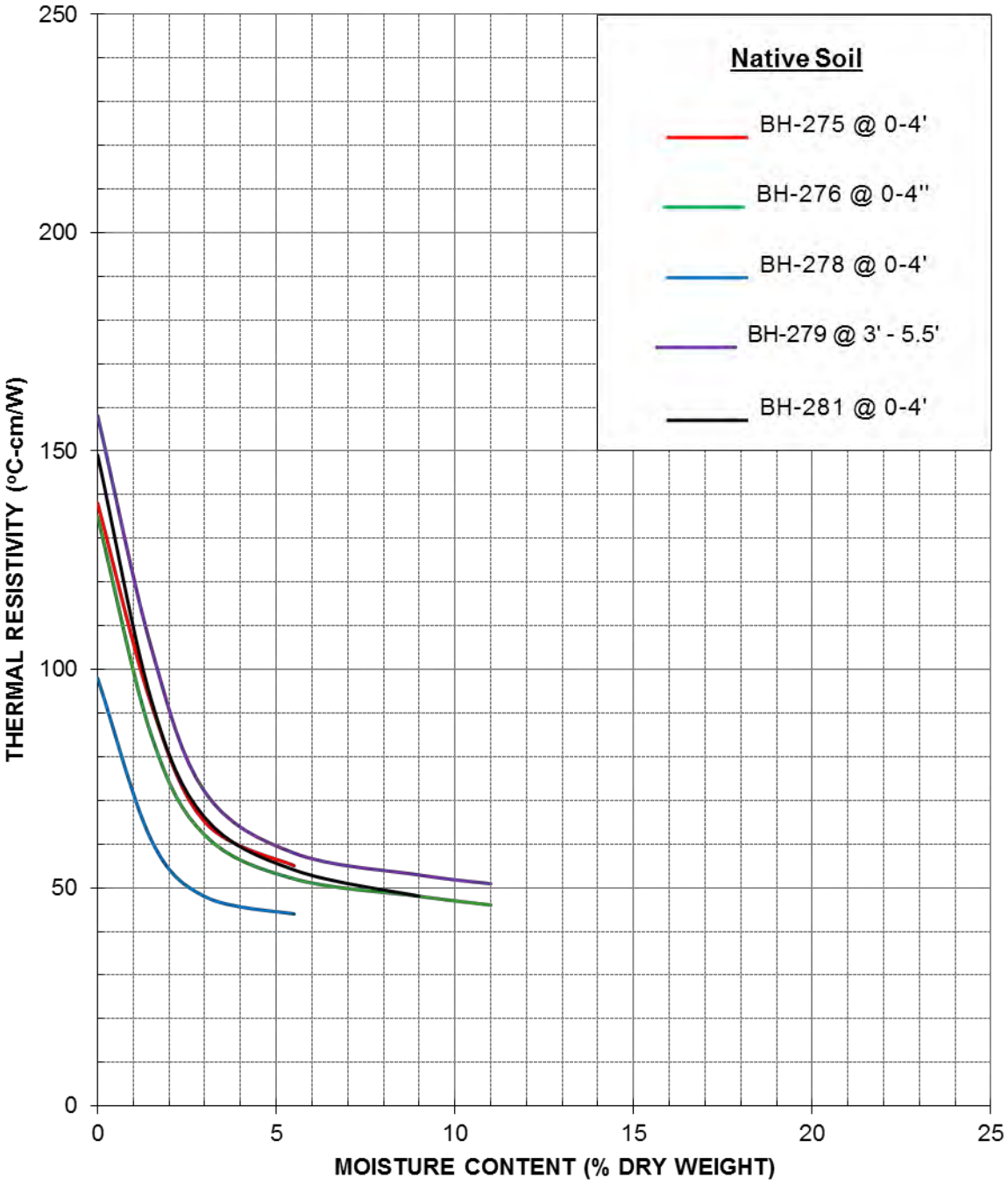
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 3**

THERMAL DRYOUT CURVES



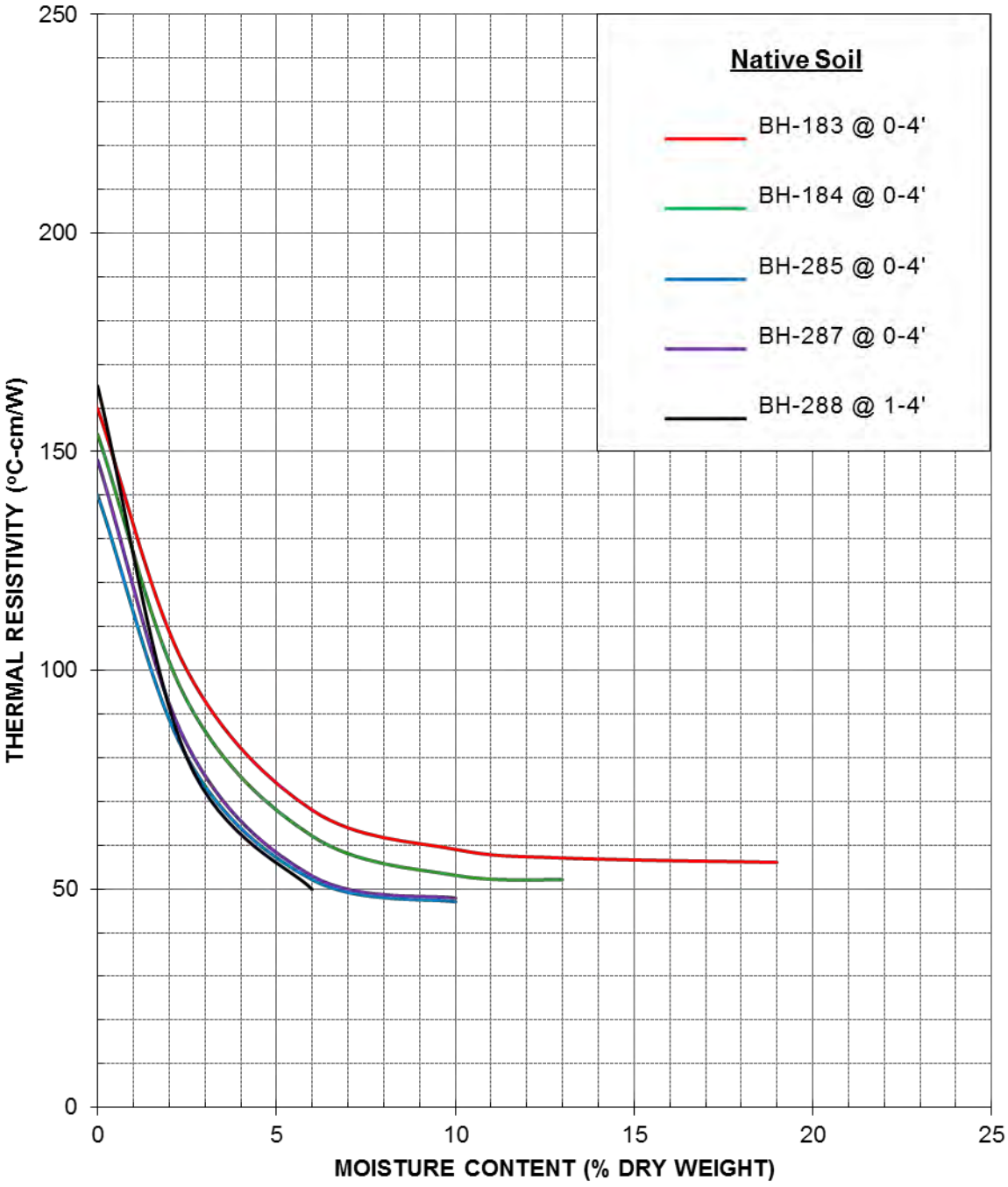
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 4**

THERMAL DRYOUT CURVES



Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 5**

4370 Contractors Common
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September 30, 2016

Quanta Subsurface
4308 N. Barker Road
Spokane Valley, WA 99027
Attn: Zach Wright

Re: Thermal Analysis of Native Soil
Northern Pass Trenchless Investigation - New Hampshire (Project No. 201-16-NH)

The following is the report of thermal dryout characterization tests conducted on forty-four (44) undisturbed tube samples and two (2) bulk samples of native soil received at our laboratory.

Thermal Resistivity Tests: For thermal dryout characterization the tube samples were tested 'as-received' and the bulk samples were tested at the 'as-received' moisture content and 95% of the maximum dry density ***provided by Quanta Subsurface***. A series of thermal resistivity measurements were made in stages with moisture content ranging from the 'as-received' to the totally dry condition. The tests were conducted in accordance with the IEEE standard 442. The results are tabulated below and the thermal dryout curves are presented in **Figures 1 to 8.**

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-53 S1 @ 4'-5.1'	Silty sand with gravel	58	151	8	122
BH-54 S1 @ 4'-5.5'	Silty sand	54	175	26	102
BH-55 S1 @ 4'-5.5'	Silty sand with gravel	50	161	18	120
BH-56 S1 @ 4'-5.5'	Poorly graded sand	60	202	13	112
BH-57 S1 @ 4'-5.5'	Silty sand with gravel	69	155	3	128
BH-58 S1 @ 4'-5.5'	Silty sand with gravel	72	175	3	122
BH-59 S1 @ 4'-5.5'	Well graded sand	68	146	4	117

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-60 S1 @ 4'-5.5'	Poorly graded sand with silt	65	201	8	121
BH-61 S1 @ 4'-5.5'	Poorly graded sand with silt	59	177	11	123
BH-62 S1 @ 4'-5.5'	Poorly graded sand with silt and gravel	56	157	7	121
BH-63 S1 @ 4'-5.5'	Poorly graded sand with silt and gravel	62	198	8	114
BH-64 S1 @ 4'-5.5'	Poorly graded sand with silt and gravel	56	155	4	127
BH-65 S1 @ 4'-5.5'	Silty sand with gravel	63	159	6	117
BH-66 S1 @ 4'-5.5'	Poorly graded sand with silt	52	155	11	126
BH-67 S1 @ 4'-4.5'	Silty sand with gravel	62	170	12	106
BH-70 S1 @ 4'-5.5'	Poorly graded sand with silt	59	223	17	110
BH-72 S1 @ 4'-5.5'	Silty sand with gravel	57	166	5	129
BH-73 S1 @ 4'-5.5'	Poorly graded sand with gravel	68	190	7	98
BH-75 S1 @ 4'-5.5'	Silty sand with gravel	73	168	5	127
BH-76 S1 @ 4'-5.5'	Silty sand	57	185	15	105
BH-78 S1 @ 5-6.5’	Silty sand with gravel	79	180	3	112
BH-81 S1 @ 4'-5.5'	Organic soil with sand	127	397	8	90
BH-82 S1 @ 4'-5.5'	Silty sand with gravel	66	186	12	101
BH-83 S1 @ 4'-5.5'	Poorly graded sand	77	222	5	105
BH-84 S1 @ 4'-5.5'	Poorly graded sand	68	290	27	84
BH-85 S1 @ 4'-5.5'	Lean Clay	82	285	25	99
BH-86 S1 @ 4'-5.5'	Silty sand	58	180	17	108
BH-87 S1 @ 4'-5.5'	Poorly graded sand with gravel	70	185	3	102

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-88 S1 @ 4'-5.5'	Silty sand with gravel	55	162	13	115
BH-89 S1 @ 4'-5.5'	Poorly graded sand with silt and gravel	50	140	9	130
BH-90 S1 @ 4'-5.5'	Poorly graded sand with gravel	58	170	15	119
BH-91 S1 @ 4'-5.5'	Poorly graded sand	75	223	8	104
BH-92 S1 @ 4'-5.5'	Poorly graded sand with gravel	64	170	7	109
BH-95 S1 @ 4'-5.5'	Poorly graded sand with gravel	60	155	7	117
BH-96 S1 @ 4'-5.5'	Poorly graded sand	56	165	6	116
BH-100 S1 @ 4'-5.5'	Well graded sand	62	181	3	112
BH-103 S1 @ 4'-5.5'	Poorly graded sand	59	263	16	105
BH-106 S1 @ 4'-5.5'	Poorly graded sand with silt	66	228	17	111
BH-107 S1 @ 0-4'	Silty gravel	60	218	8	135
BH-109 S1 @ 4'-5.5'	Well graded sand with gravel	63	142	6	120
BH-110 S1 @ 4'-5.5'	Poorly graded sand	66	205	9	112
BH-166 S1 @ 0-4'	Silty sand with gravel	70	160	4	116
BH-173 S2 @ 9-10.5'	Poorly graded sand with gravel	64	170	5	107
BH-206 @ 0-4'	Silty sand with gravel	66	165	8	115
BH-234 S1 @ 9-10.5’	Sandy silt	55	228	29	91
BH-270 S1 @ 0-4'	Silty sand with gravel	79	208	5	96

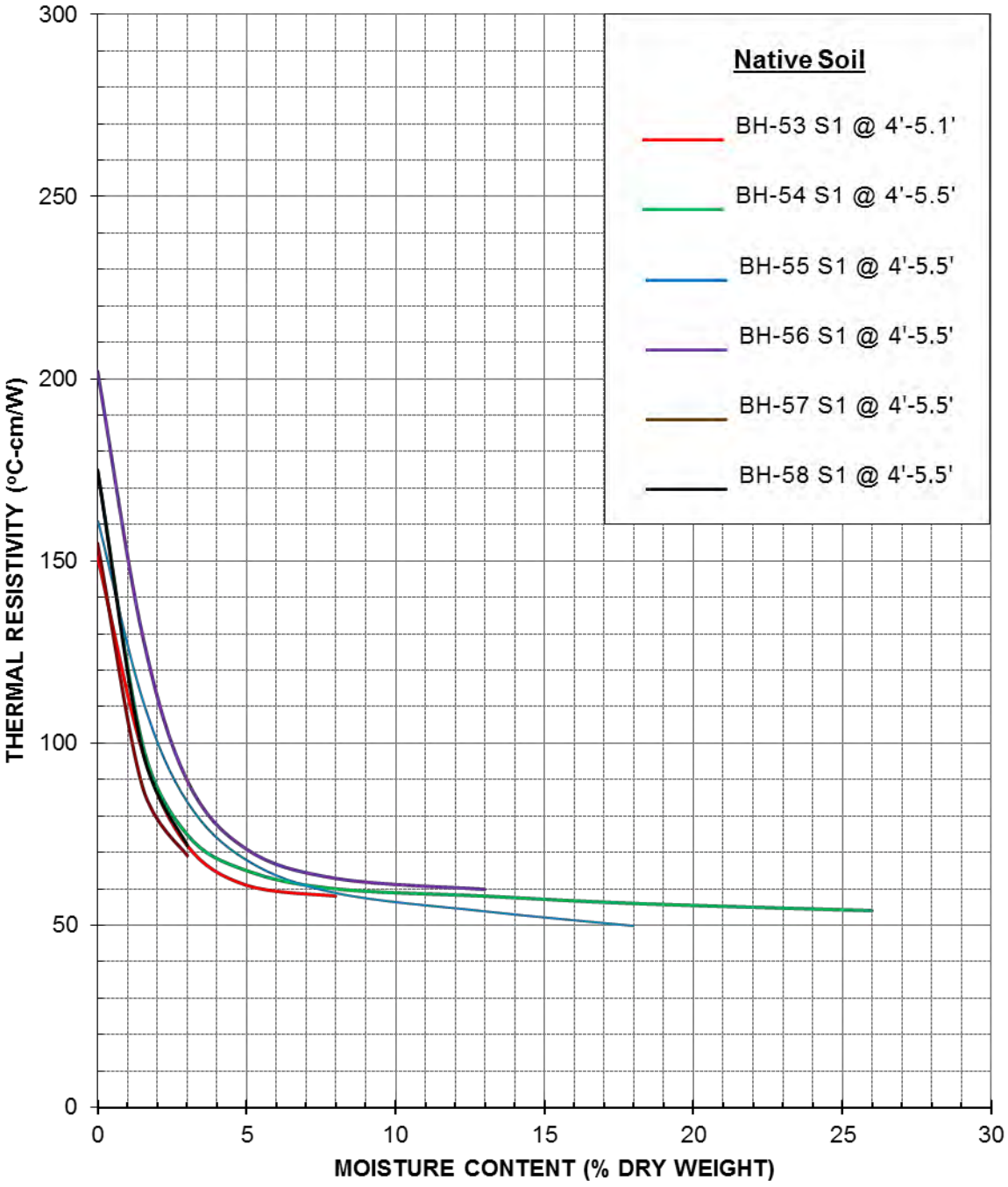
Comments: The thermal characteristic depicted in the dryout curves apply for the soils at their respective test dry density.

Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA

Nimesh Patel

THERMAL DRYOUT CURVES



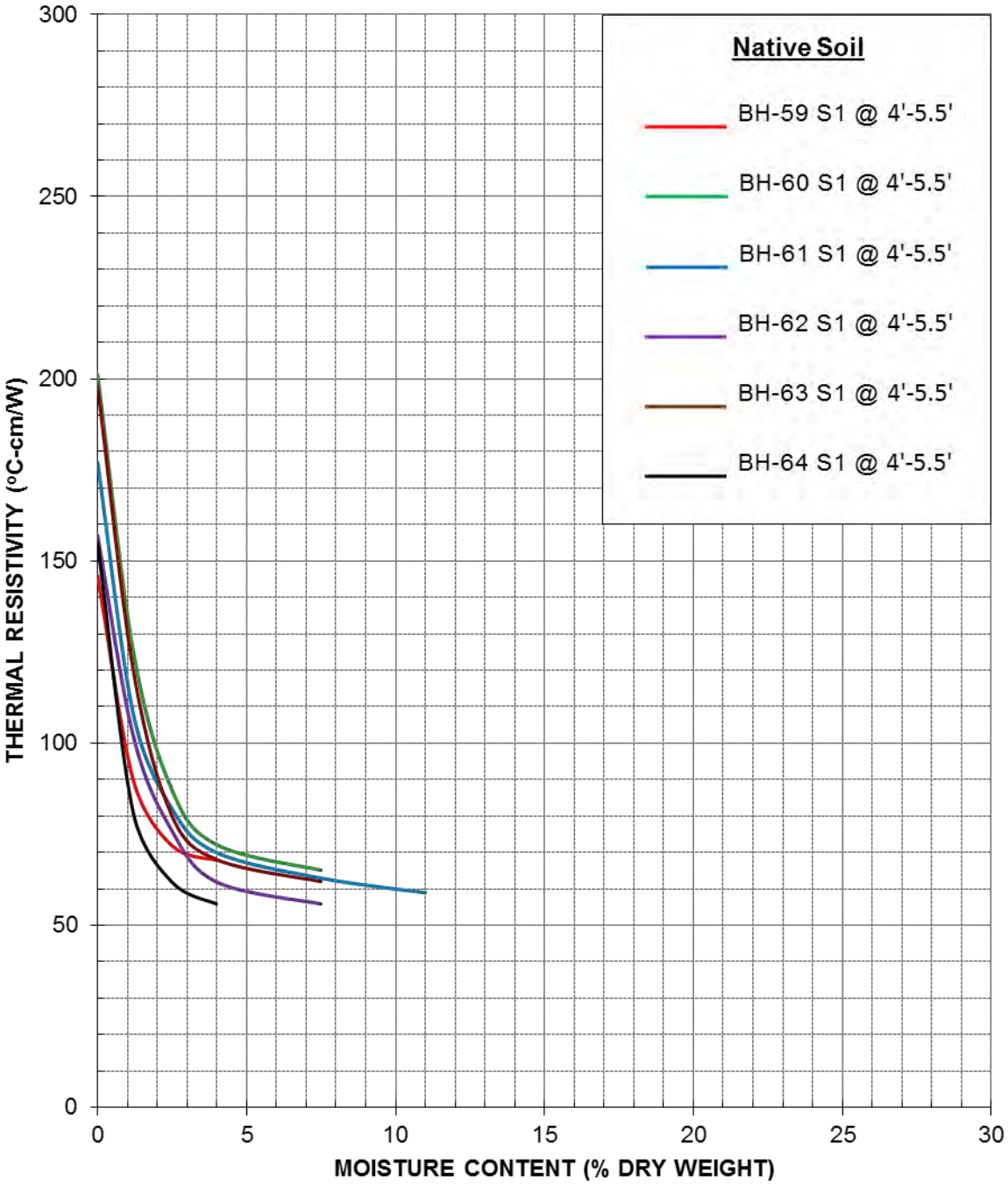
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 1**

THERMAL DRYOUT CURVES



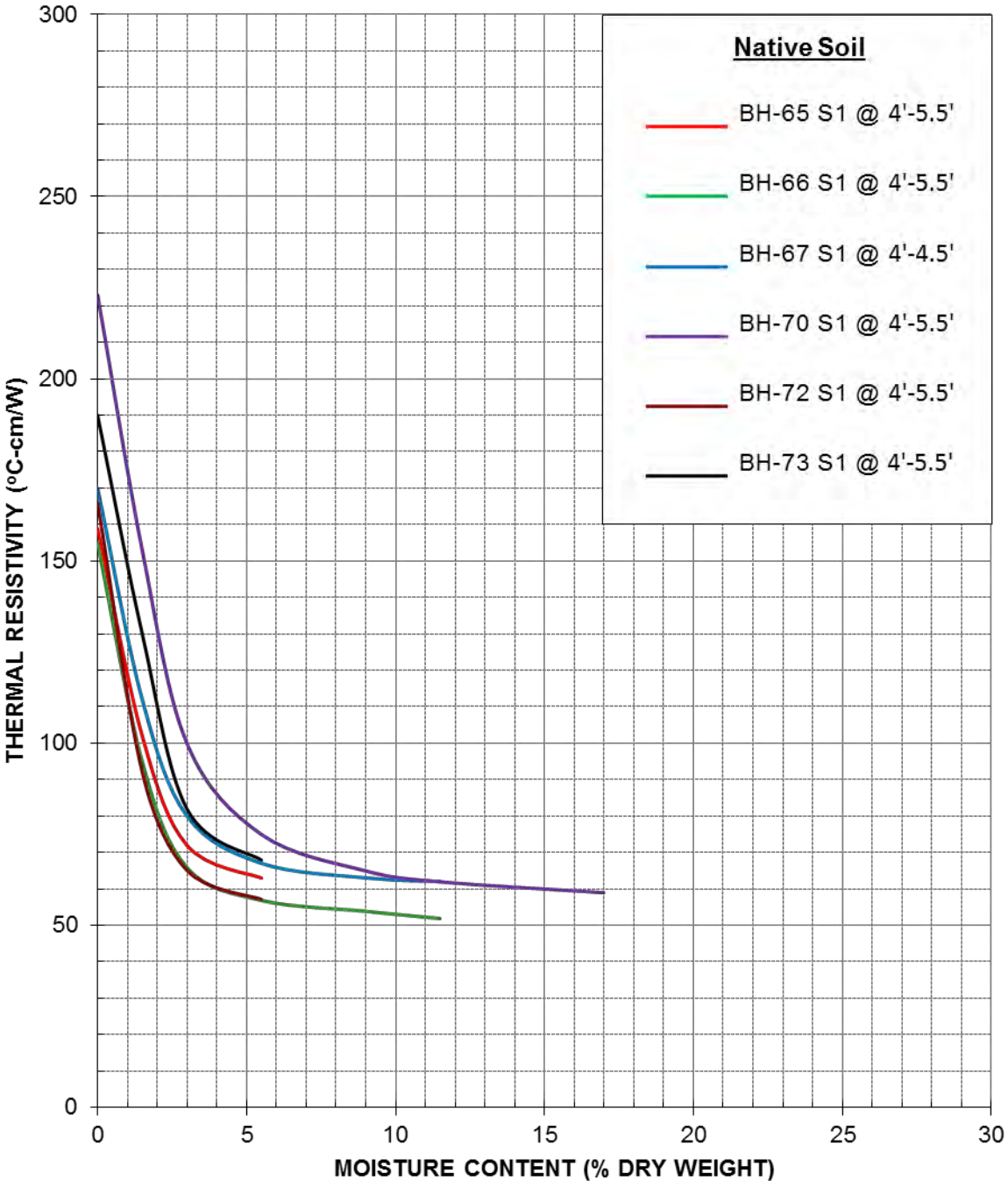
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 2**

THERMAL DRYOUT CURVES



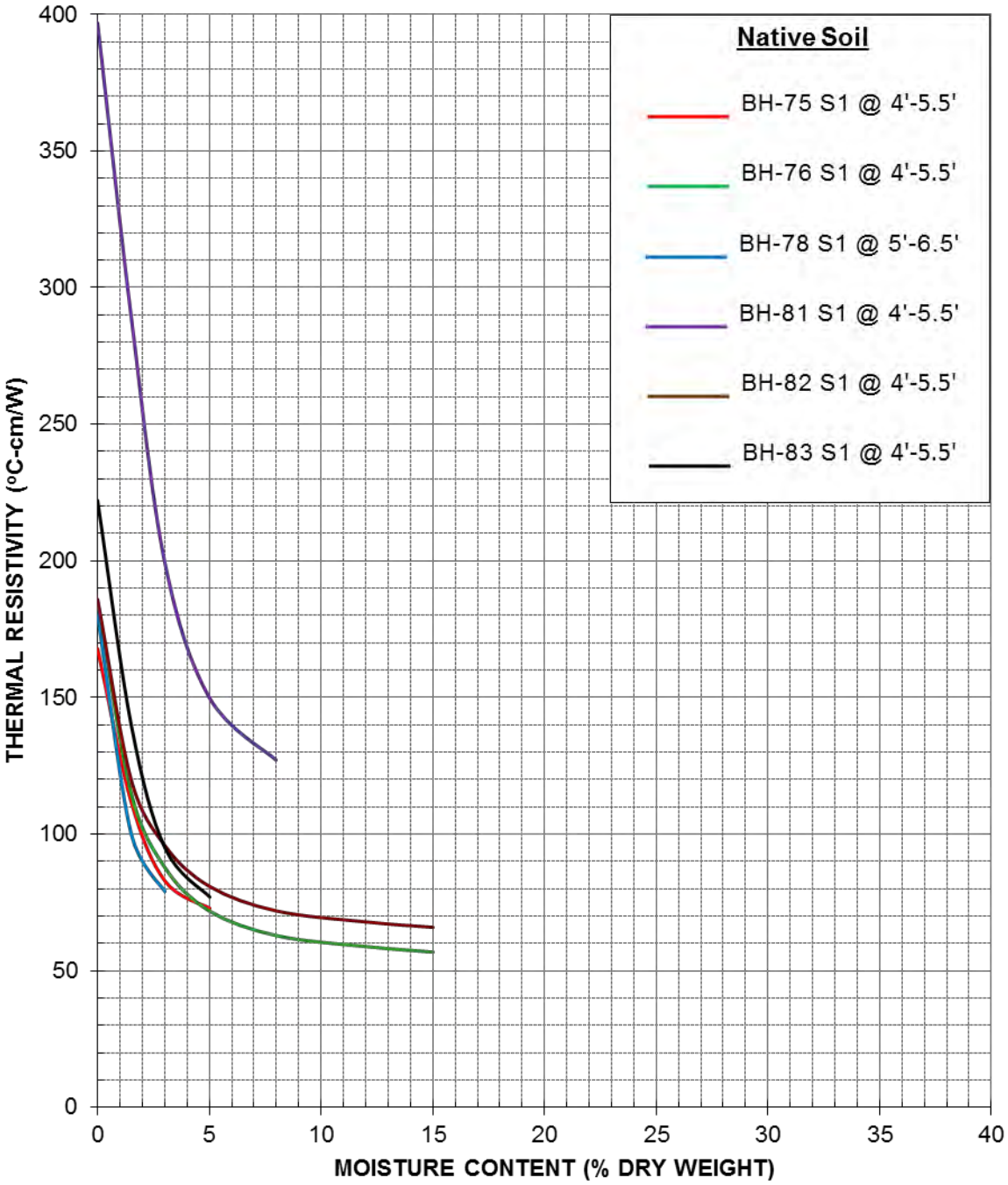
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 3**

THERMAL DRYOUT CURVES



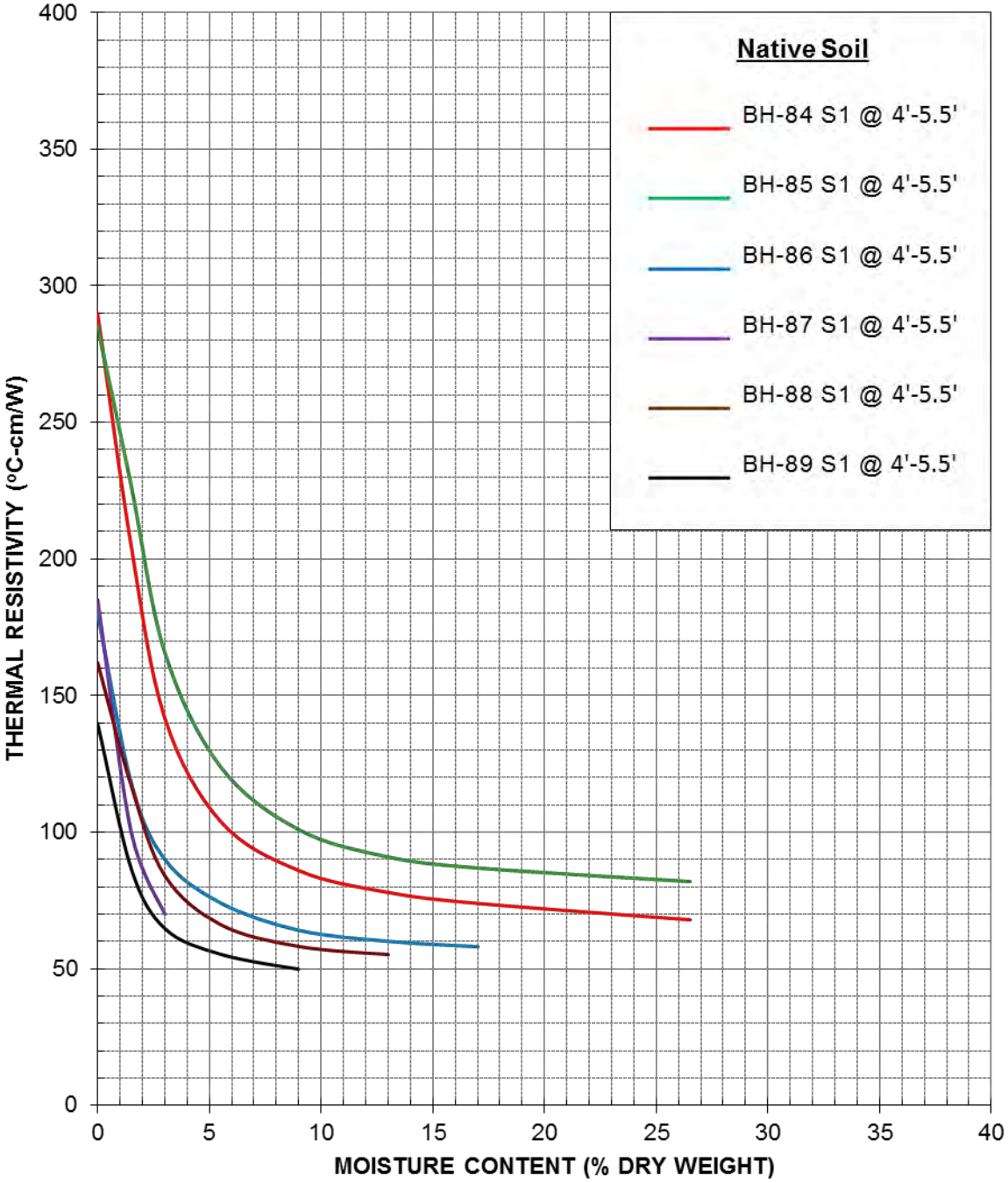
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 4**

THERMAL DRYOUT CURVES



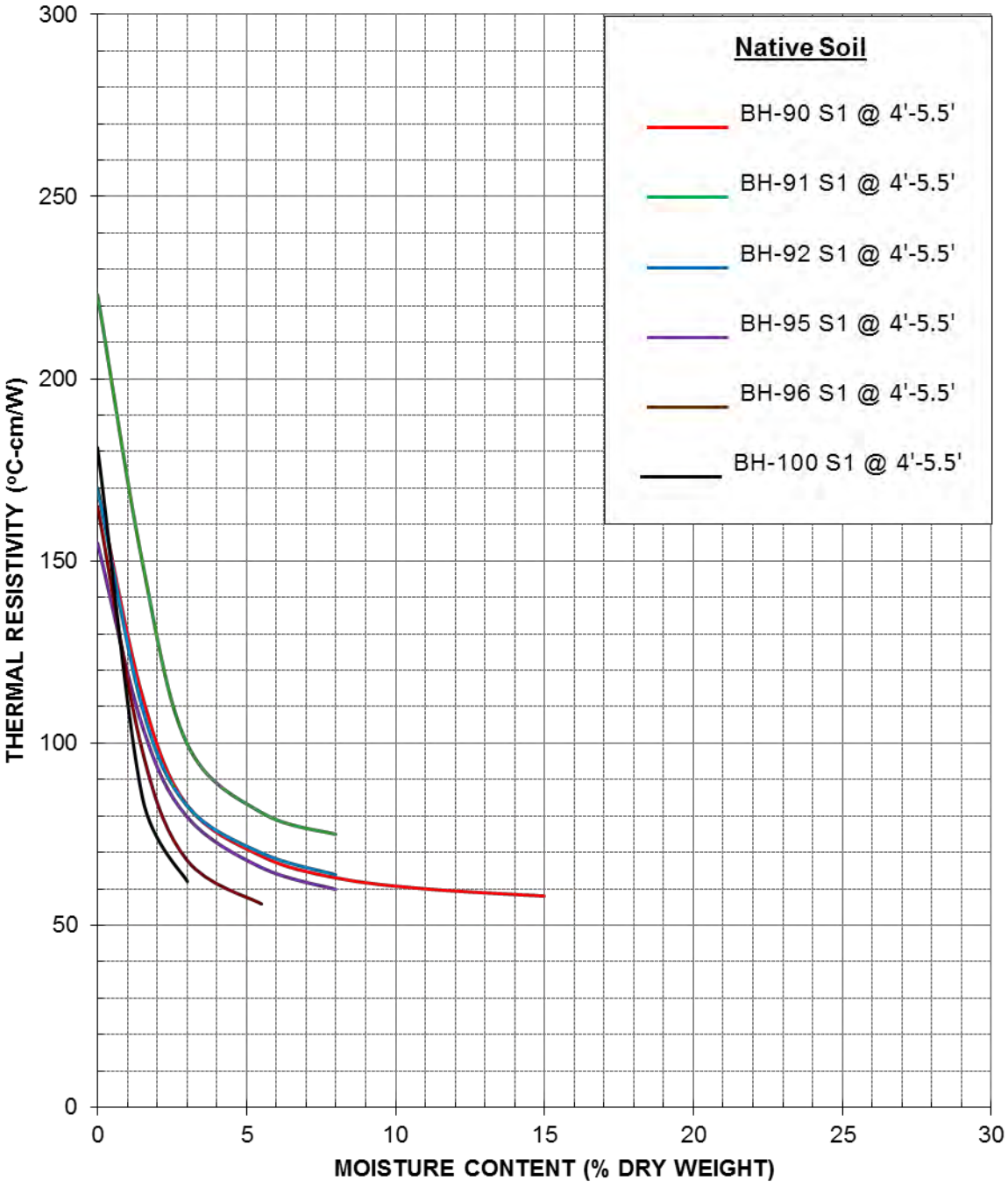
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 5**

THERMAL DRYOUT CURVES



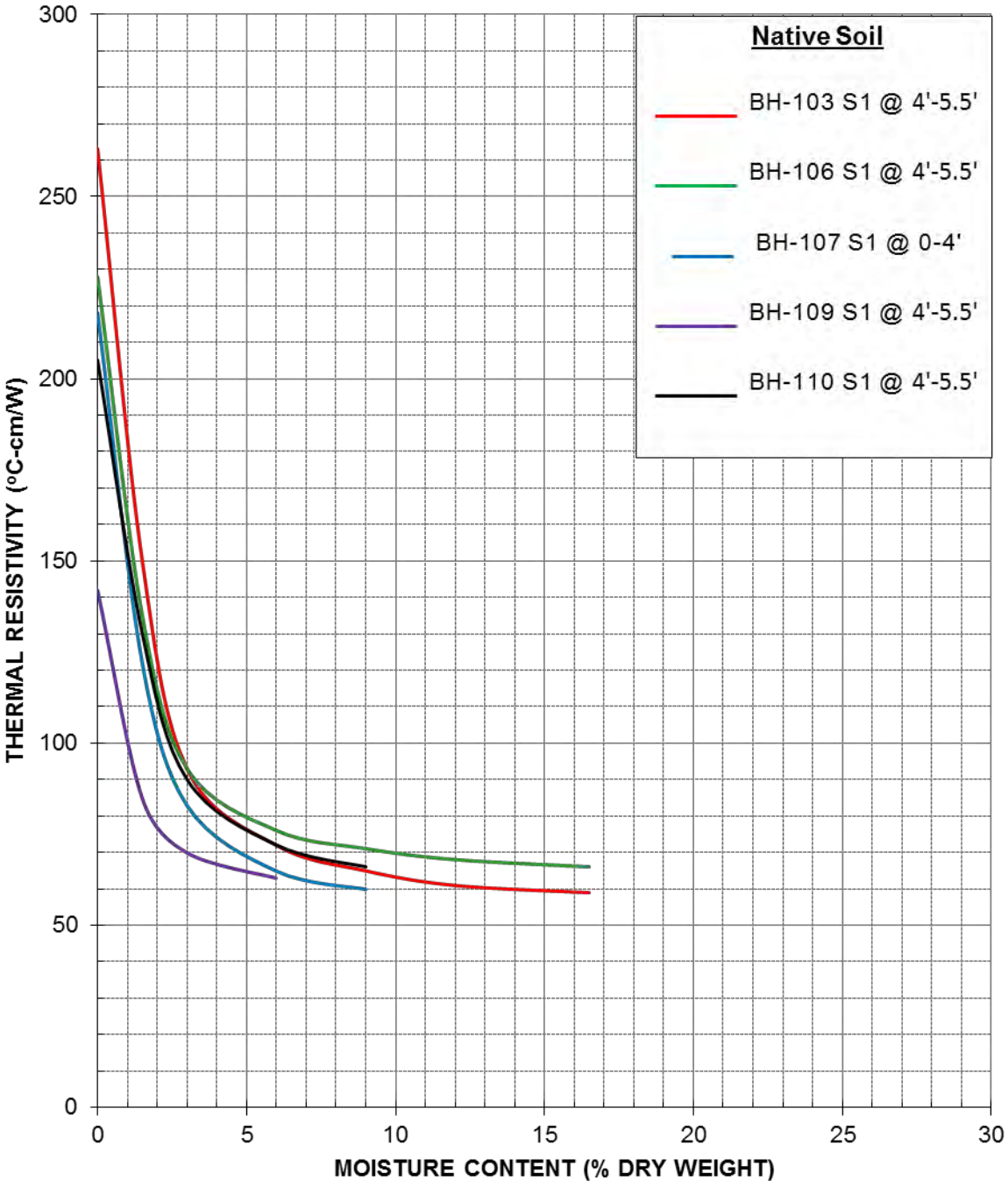
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 6**

THERMAL DRYOUT CURVES



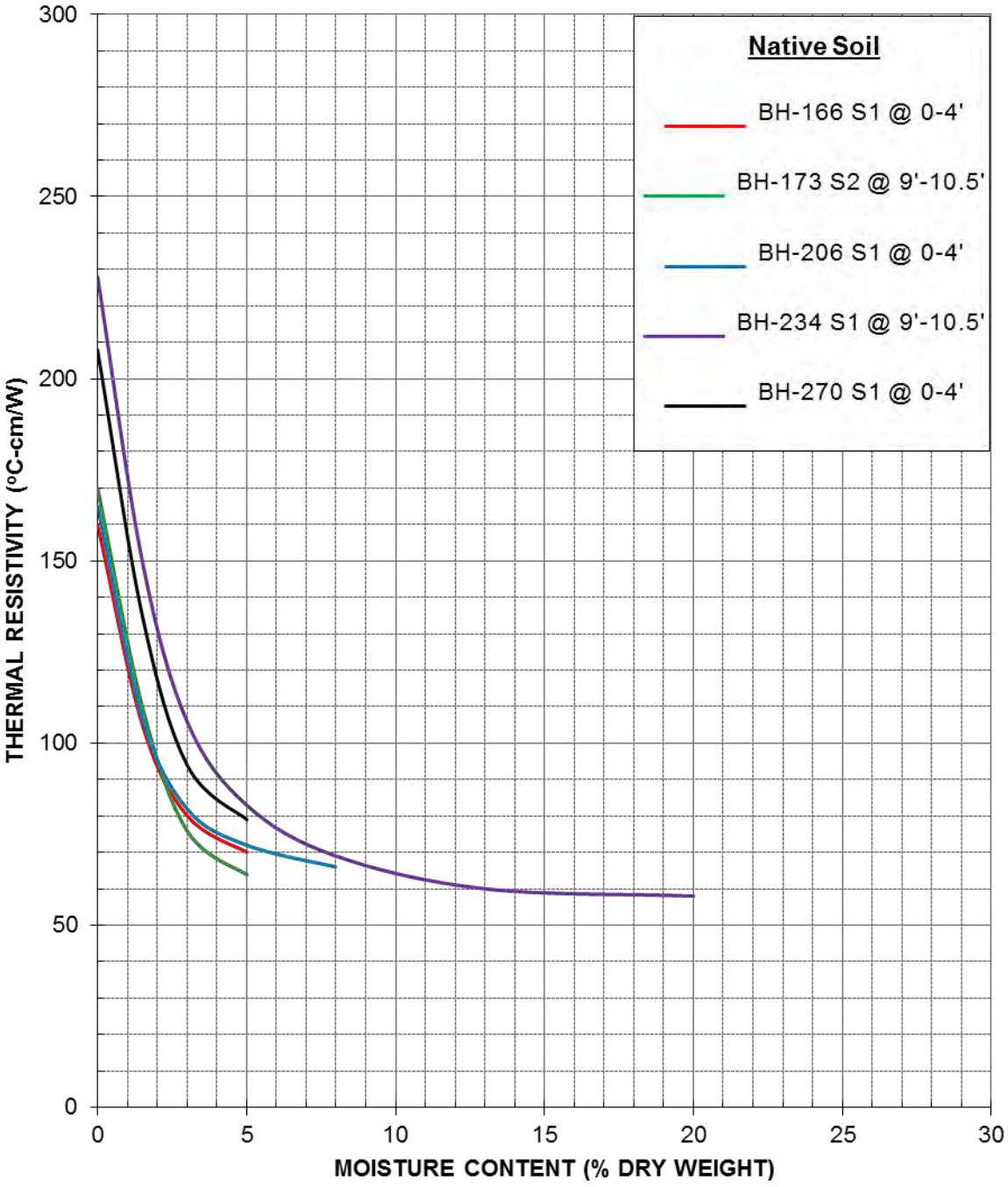
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 7**

THERMAL DRYOUT CURVES



Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

September 2016 **Figure 8**

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October 7, 2016

Quanta Subsurface
4308 N. Barker Road
Spokane Valley, WA 99027
Attn: Zach Wright

Re: Thermal Analysis of Native Soil
Northern Pass Trenchless Investigation - New Hampshire (Project No. 201-16-NH)

The following is the report of thermal dryout characterization tests conducted on sixteen (16) undisturbed tube samples and one (1) bulk sample of native soil received at our laboratory.

Thermal Resistivity Tests: For thermal dryout characterization the tube samples were tested 'as-received' and the bulk sample was tested at the 'as-received' moisture content and 95% of the maximum dry density ***provided by Quanta Subsurface***. A series of thermal resistivity measurements were made in stages with moisture content ranging from the 'as-received' to the totally dry condition. The tests were conducted in accordance with the IEEE standard 442. The results are tabulated below and the thermal dryout curves are presented in **Figures 1 to 3.**

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-68 S1 @ 6' – 7.5'	Silty sand	80	242	7	106
BH-69 S1 @ 4' – 5.5'	Silty sand	78	168	3	123
BH-71 S1 @ 4' – 5.5'	Poorly graded sand	77	322	10	98
BH-101 S1 @ 5.5' – 7'	Silty sand	79	287	10	96
BH-105 S1 @ 5.5' – 7'	Poorly graded sand	65	158	15	123
BH-108 S1 @ 9.5' – 11'	Gravel sand silt mixture poorly graded sand	64	174	14	117
BH-118 S1 @ 9.5' – 11'	Gravel sand silt mixture	62	144	12	131

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-134 S1 @ 4.5’ – 6’	Well graded sand	59	140	8	131
BH-155 S1 @ 4’ – 5.5’	Sandy gravel	72	178	5	111
BH-165 S1 @ 4’ – 5.5’	Poorly graded sand	87	329	4	98
BH-188 S1 @ 9.5’ – 11’	Silty sand	62	171	12	122
BH-199 S1 @ 9’ – 10.5'	Poorly graded sand	83	379	10	90
BH-205 S1 @ 6’ – 7.5'	Poorly graded sand	89	267	3	107
BH-246 S1 @ 6’ – 7.5’	Gravel sand silt mixture	112	263	2	113
BH-268 S1 @ 5’ – 6.5’	Poorly graded sand	85	291	4	111
BH-269 S1 @ 5’ – 6.5’	Silt inorganic	56	365	23	90
BH-204 S1 @ 0-4' (Bulk Sample)	Silty sand	64	179	11	122

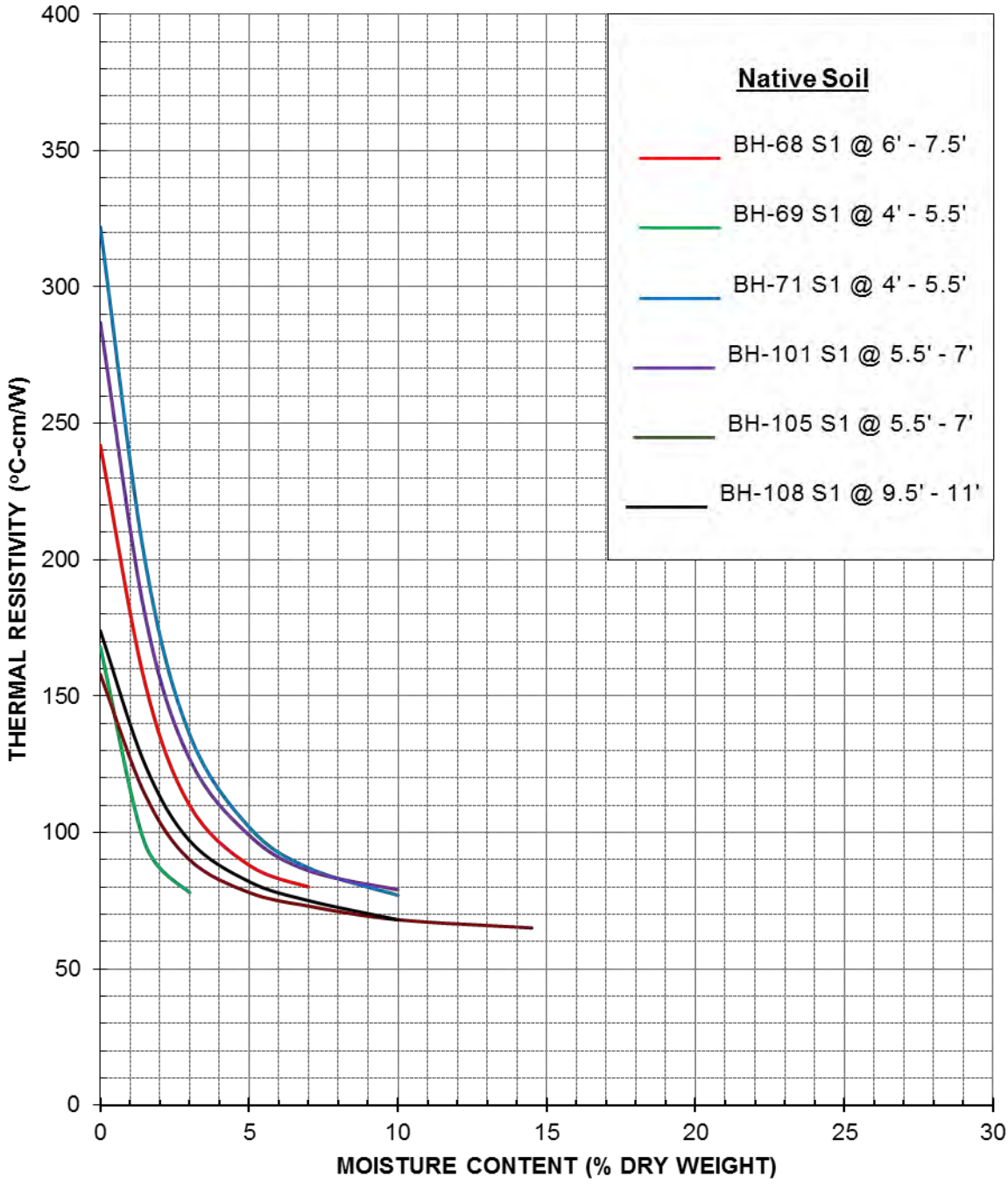
Comments: The thermal characteristic depicted in the dryout curves apply for the soils at their respective test dry density.

Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA

Nimesh Patel

THERMAL DRYOUT CURVES



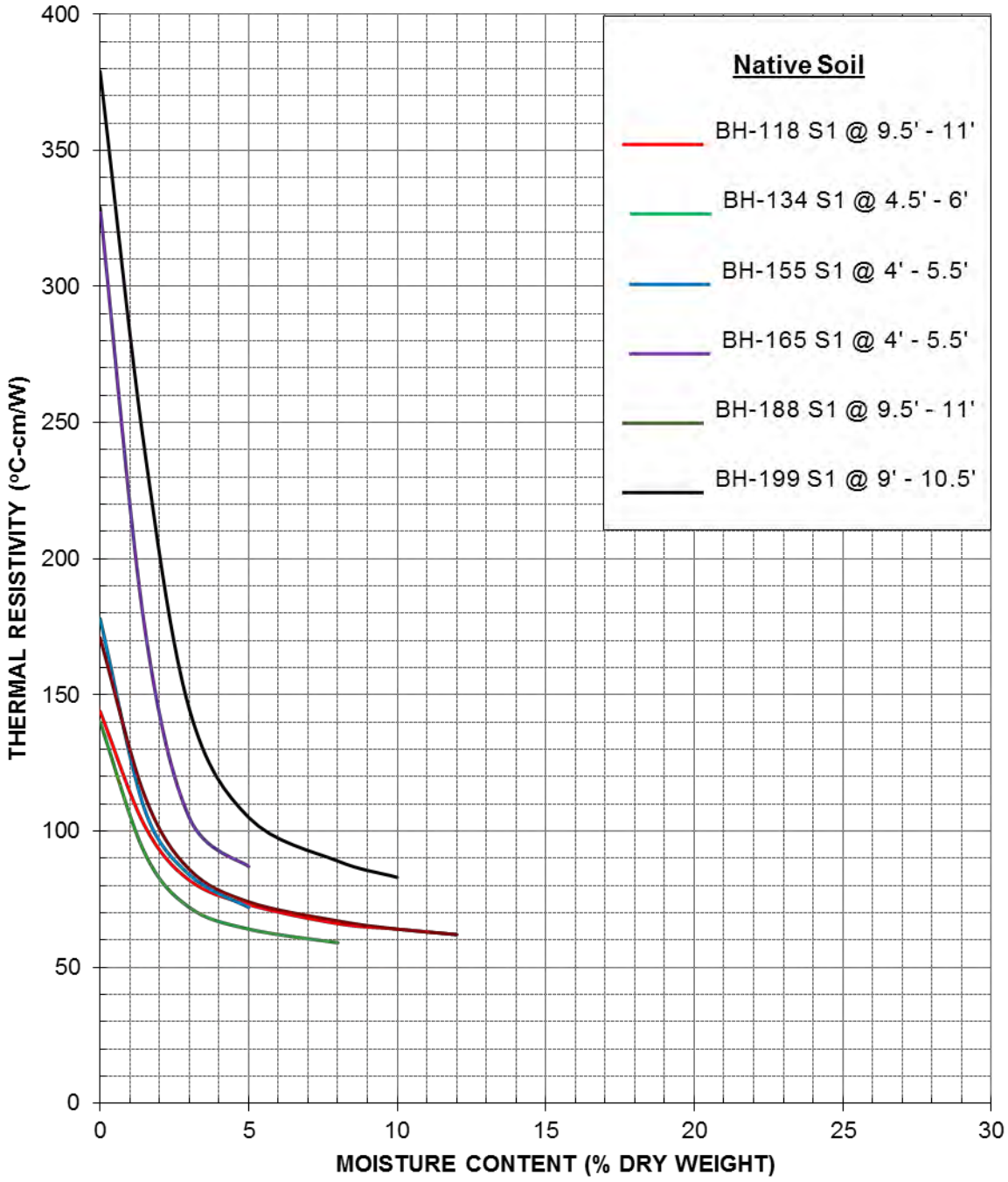
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

October 2016 **Figure 1**

THERMAL DRYOUT CURVES



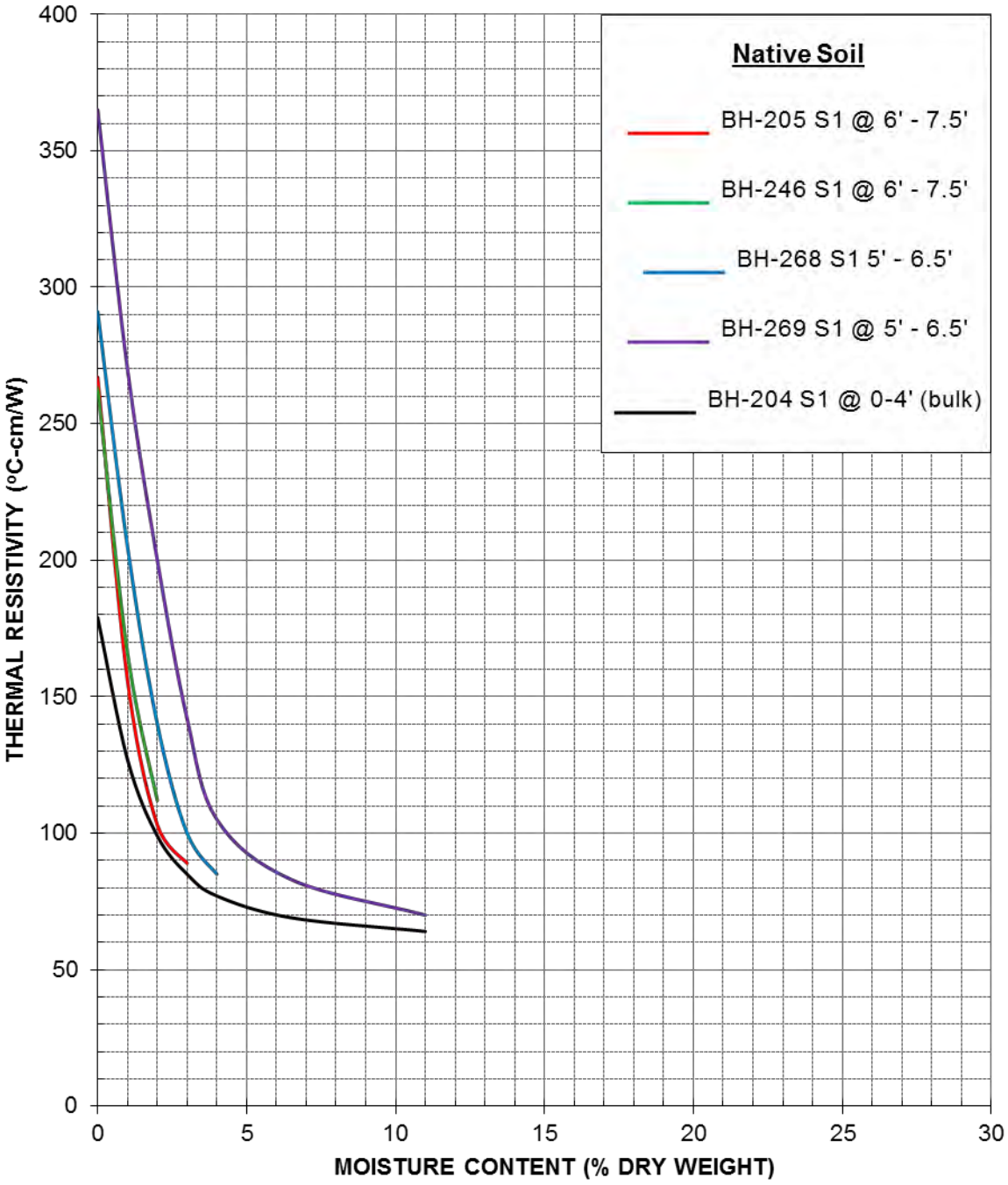
Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

October 2016 **Figure 2**

THERMAL DRYOUT CURVES



Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

October 2016 **Figure 3**

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October 20, 2016

Quanta Subsurface
4308 N. Barker Road
Spokane Valley, WA 99027
Attn: Zach Wright

Re: Thermal Analysis of Native Soil and Rock Core
Northern Pass Trenchless Investigation - New Hampshire (Project No. 201-16-NH)

The following is the report of thermal dryout characterization tests conducted on two (2) tube samples of native soil and three (3) rock core samples received at our laboratory.

Thermal Resistivity Tests: For thermal dryout characterization the samples were tested 'as-received'. A series of thermal resistivity measurements were made in stages with moisture content ranging from the 'as-received' to the totally dry condition. The tests were conducted in accordance with the IEEE standard 442. The results are tabulated below and the thermal dryout curves are presented in **Figures 1.** Due to the low moisture content of the rock core samples (surface moisture of less than 1%), it was not possible to draw the thermal dryout graphs.

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-112 @ 9.6' – 10.5'	Rock Core	36	73	<1	164
BH-272 @ 4.65' – 5.75'	Rock Core	36	74	<1	178
BH-120 @ 11.2'	Rock Core	49	69	<1	160
BH-160 @ 6.5' SPT1 S1	SW-SM	133	345	5	96
BH-267 @ 5' – 6.5'	SP	73	262	14	83

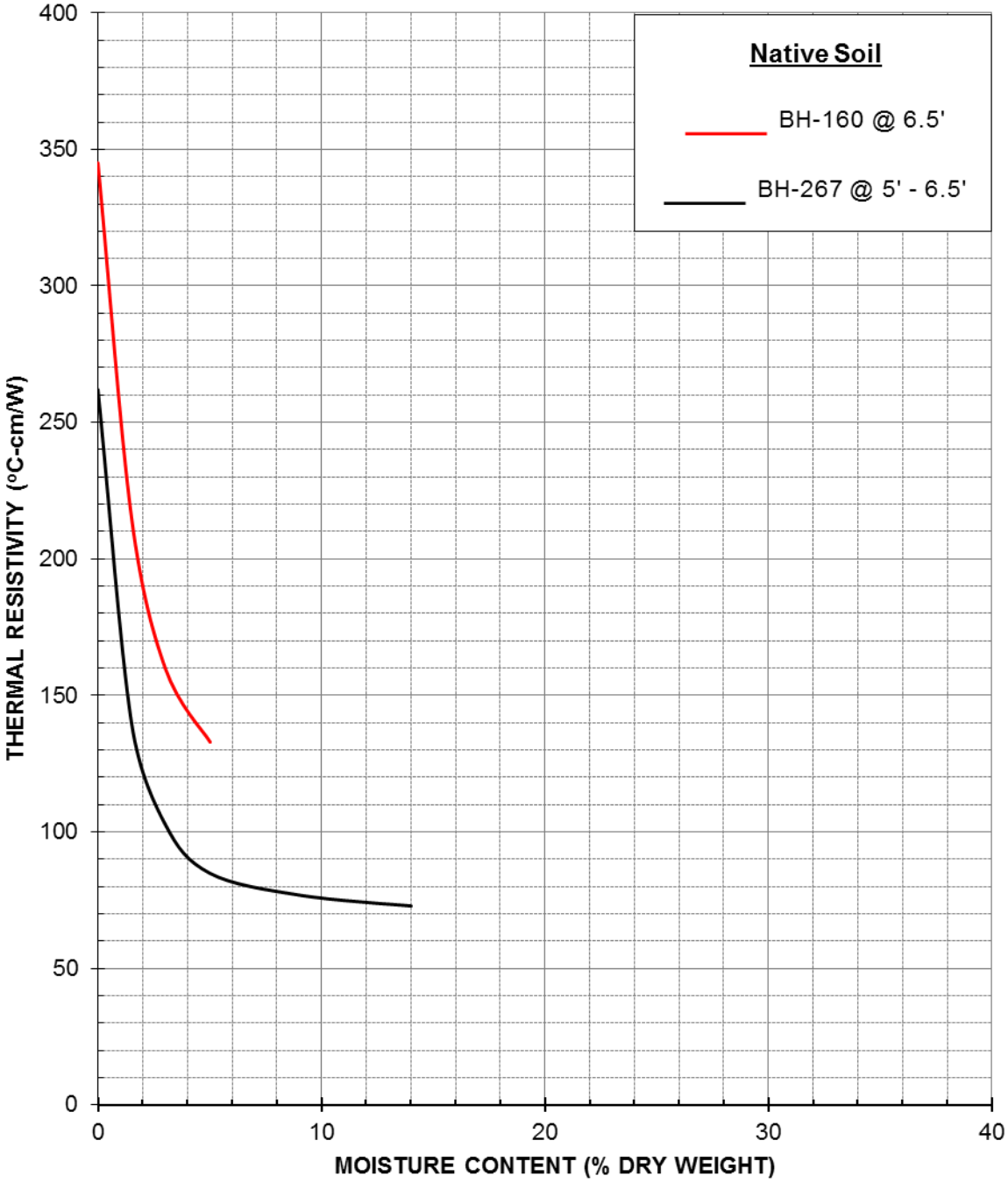
Comments: The thermal characteristic depicted in the dryout curves apply for the soils at their respective test dry density.

Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA

Nimesh Patel

THERMAL DRYOUT CURVES



Quanta Subsurface

Thermal Analysis of Native Soil

Northern Pass Trenchless Investigation

October 2016 **Figure 1**

4370 Contractors Common
Livermore, CA 94551
Tel: 925-999-9232
Fax: 925-999-8837
info@geothermusa.com

November 9, 2016

Quanta Subsurface
4308 N. Barker Road
Spokane Valley, WA 99027
Attn: Zach Wright

Re: Thermal Analysis of Rock Core Sample
Northern Pass Trenchless Investigation - New Hampshire (Project No. 201-16-NH)

The following is the report of thermal dryout characterization tests conducted on one (1) rock-core sample received at our laboratory.

Thermal Resistivity Tests: For thermal dryout characterization the sample was tested 'as-is'. A series of thermal resistivity measurements were made in stages with moisture content ranging from the 'as-received' to the totally dry condition with results tabulated below. The tests were conducted in accordance with the IEEE standard 442. Due to the low moisture content (surface moisture of less than 1%), it was not possible to draw the thermal dryout graph.

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Description (Quanta)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
		As-rcvd	Dry		
BH-185 @ 11.8' – 12.64'	Rock Core	36	62	<1	176

Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA

Nimesh Patel

ATTACHMENT C

Dry Density Test Results

S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

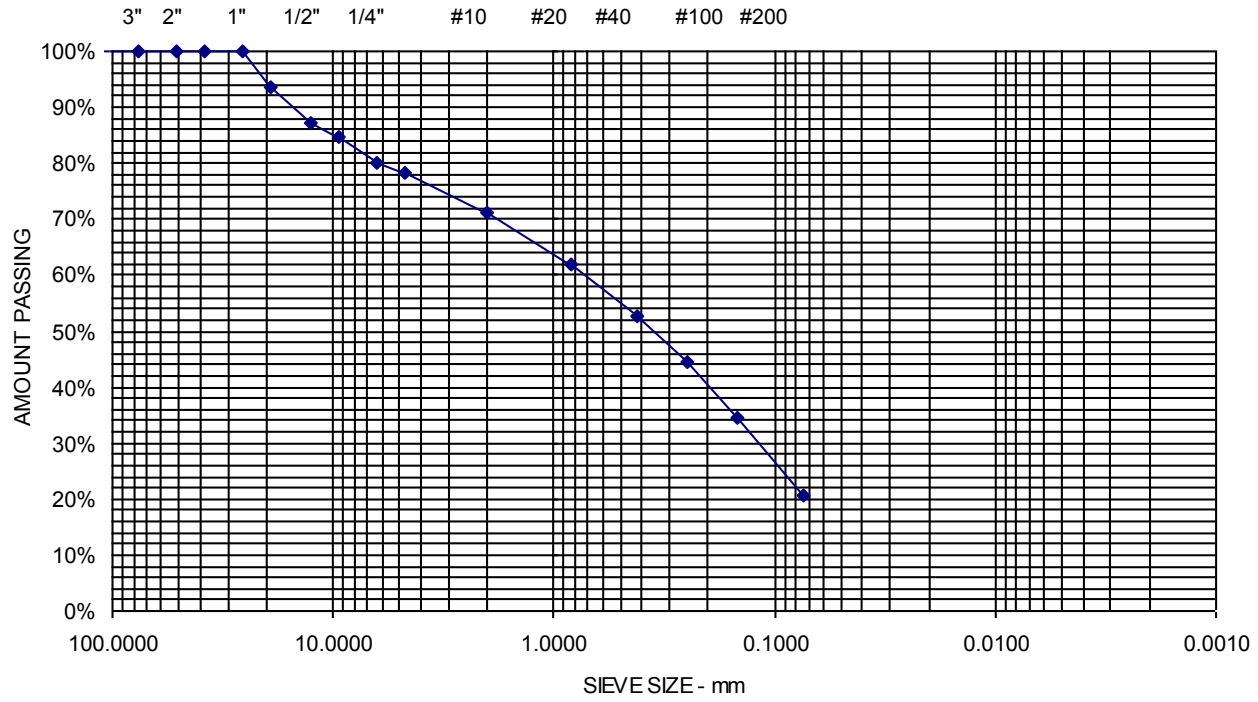
Project Name: VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES

Client: QUANTA SUBSURFACE

Material Source: **BH-274 (0-4')**

Project Number: 16-0600
Lab ID: 1277M
Date Received: 6/27/2016
Date Completed: 6/29/2016
Tested By: RILEY MOYER

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**94**	
12.5 mm	**1/2"**	**87**	
9.5 mm	**3/8"**	**85**	
6.3 mm	**1/4"**	**80**	
4.75 mm	**No. 4**	**78**	21.8% Gravel
2.00 mm	**No. 10**	**71**	
850 um	**No. 20**	**62**	
425 um	**No. 40**	**53**	57.4% Sand
250 um	**No. 60**	**44**	
150 um	**No. 100**	**34**	
75 um	**No. 200**	**20.8**	20.8% Fines



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S.W.COLE ENGINEERING, INC.

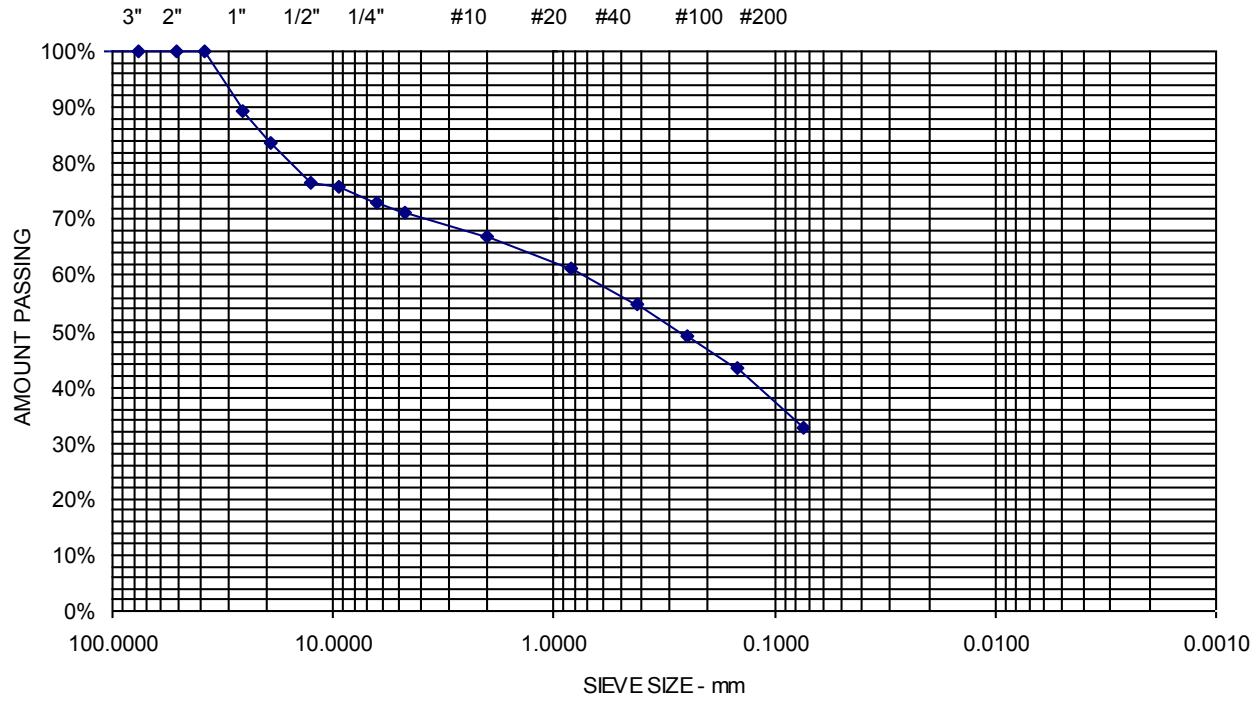
Report of Gradation

ASTM C-117 & C-136

Project Name: VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES
Client: QUANTA SUBSURFACE
Material Source: **BH-276 (0-4')**

Project Number: 16-0600
Lab ID: 1278M
Date Received: 6/27/2016
Date Completed: 6/29/2016
Tested By: RILEY MOYER

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**89**	
19.0 mm	**3/4"**	**83**	
12.5 mm	**1/2"**	**76**	
9.5 mm	**3/8"**	**76**	
6.3 mm	**1/4"**	**73**	
4.75 mm	**No. 4**	**71**	28.8% Gravel
2.00 mm	**No. 10**	**67**	
850 um	**No. 20**	**61**	
425 um	**No. 40**	**55**	38.4% Sand
250 um	**No. 60**	**49**	
150 um	**No. 100**	**43**	
75 um	**No. 200**	**32.9**	32.9% Fines



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S.W.COLE ENGINEERING, INC.

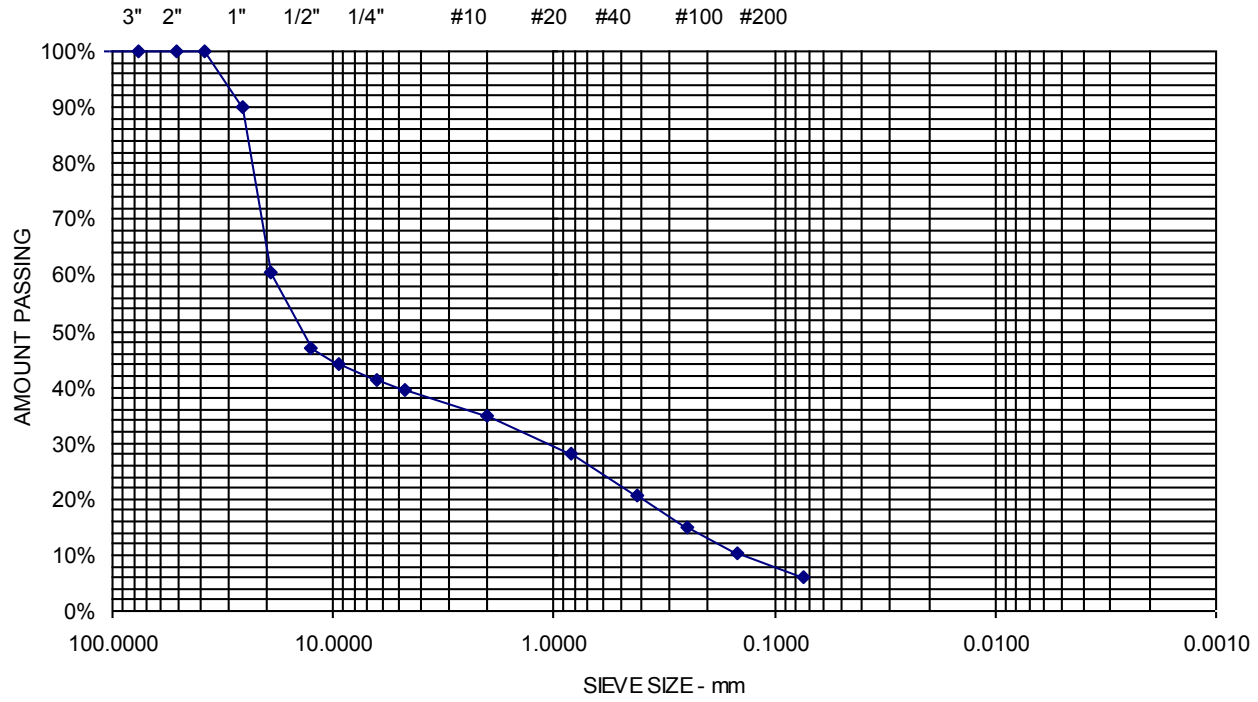
Report of Gradation

ASTM C-117 & C-136

Project Name: VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES
Client: QUANTA SUBSURFACE
Material Source: **BH-278 (0-4')**

Project Number: 16-0600
Lab ID: 1279M
Date Received: 6/27/2016
Date Completed: 6/29/2016
Tested By: RILEY MOYER

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**90**	
19.0 mm	**3/4"**	**61**	
12.5 mm	**1/2"**	**47**	
9.5 mm	**3/8"**	**44**	
6.3 mm	**1/4"**	**41**	
4.75 mm	**No. 4**	**40**	60.5% Gravel
2.00 mm	**No. 10**	**35**	
850 um	**No. 20**	**28**	
425 um	**No. 40**	**20**	33.6% Sand
250 um	**No. 60**	**15**	
150 um	**No. 100**	**10**	
75 um	**No. 200**	**5.9**	5.9% Fines



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S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

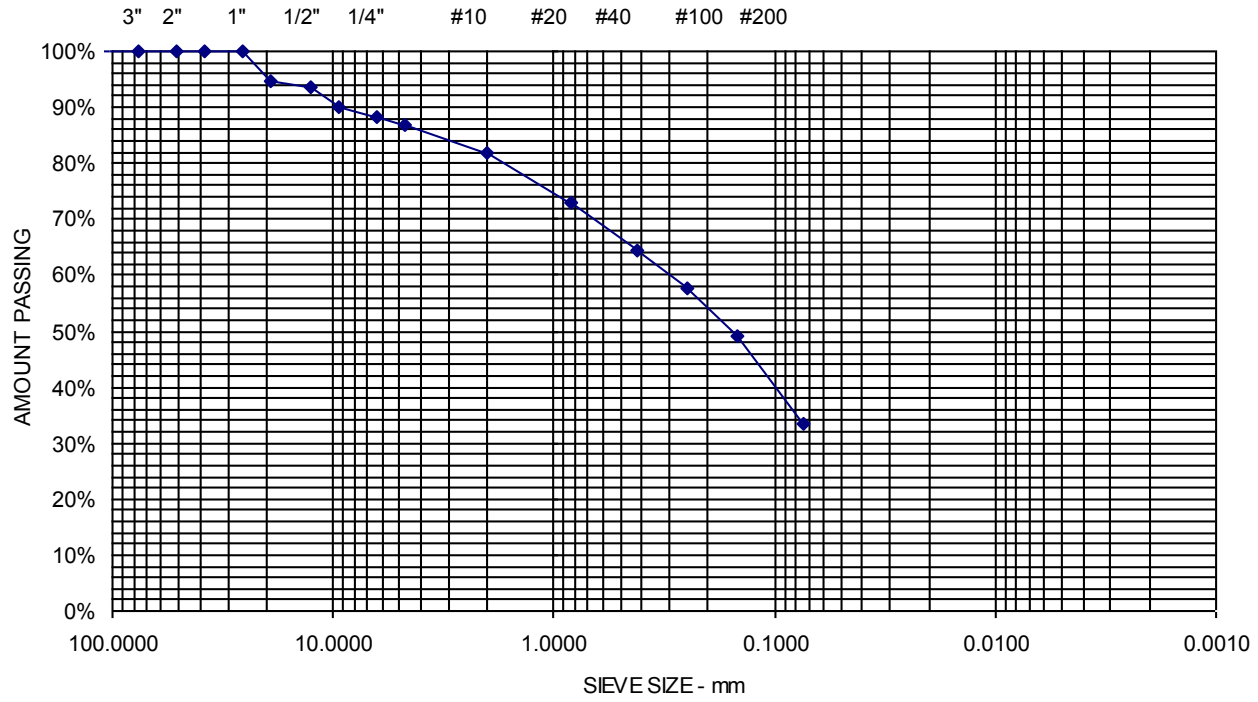
Project Name: VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES

Client: QUANTA SUBSURFACE

Material Source: **BH-285 (0-4')**

Project Number: 16-0600
Lab ID: 1280M
Date Received: 6/27/2016
Date Completed: 6/29/2016
Tested By: MARK BENNETT

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**95**	
12.5 mm	**1/2"**	**93**	
9.5 mm	**3/8"**	**90**	
6.3 mm	**1/4"**	**88**	
4.75 mm	**No. 4**	**87**	13.1% Gravel
2.00 mm	**No. 10**	**82**	
850 um	**No. 20**	**73**	
425 um	**No. 40**	**64**	53.3% Sand
250 um	**No. 60**	**58**	
150 um	**No. 100**	**49**	
75 um	**No. 200**	**33.6**	33.6% Fines



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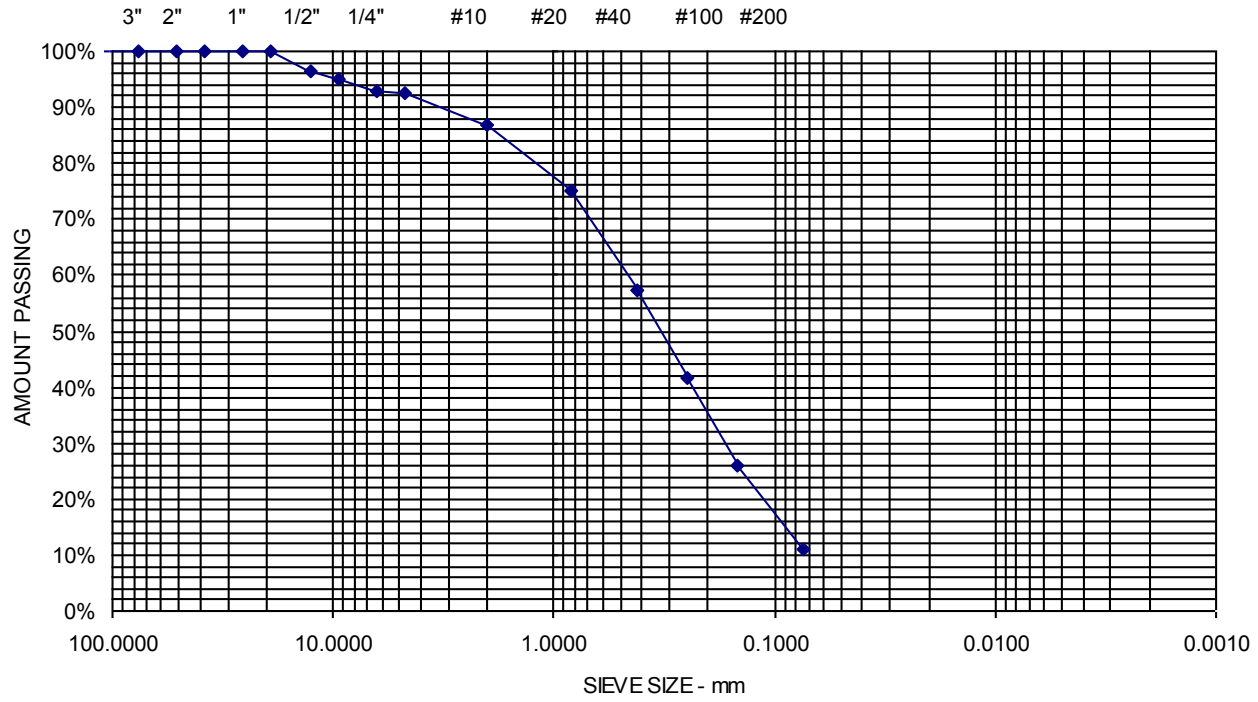
Report of Gradation

ASTM C-117 & C-136

Project Name: VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES
Client: QUANTA SUBSURFACE
Material Source: **BH-287 (0-4')**

Project Number: 16-0600
Lab ID: 1281M
Date Received: 6/27/2016
Date Completed: 6/29/2016
Tested By: MARK BENNETT

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**97**	
9.5 mm	**3/8"**	**95**	
6.3 mm	**1/4"**	**93**	
4.75 mm	**No. 4**	**92**	7.6% Gravel
2.00 mm	**No. 10**	**87**	
850 um	**No. 20**	**75**	
425 um	**No. 40**	**57**	81.3% Sand
250 um	**No. 60**	**42**	
150 um	**No. 100**	**26**	
75 um	**No. 200**	**11.1**	11.1% Fines



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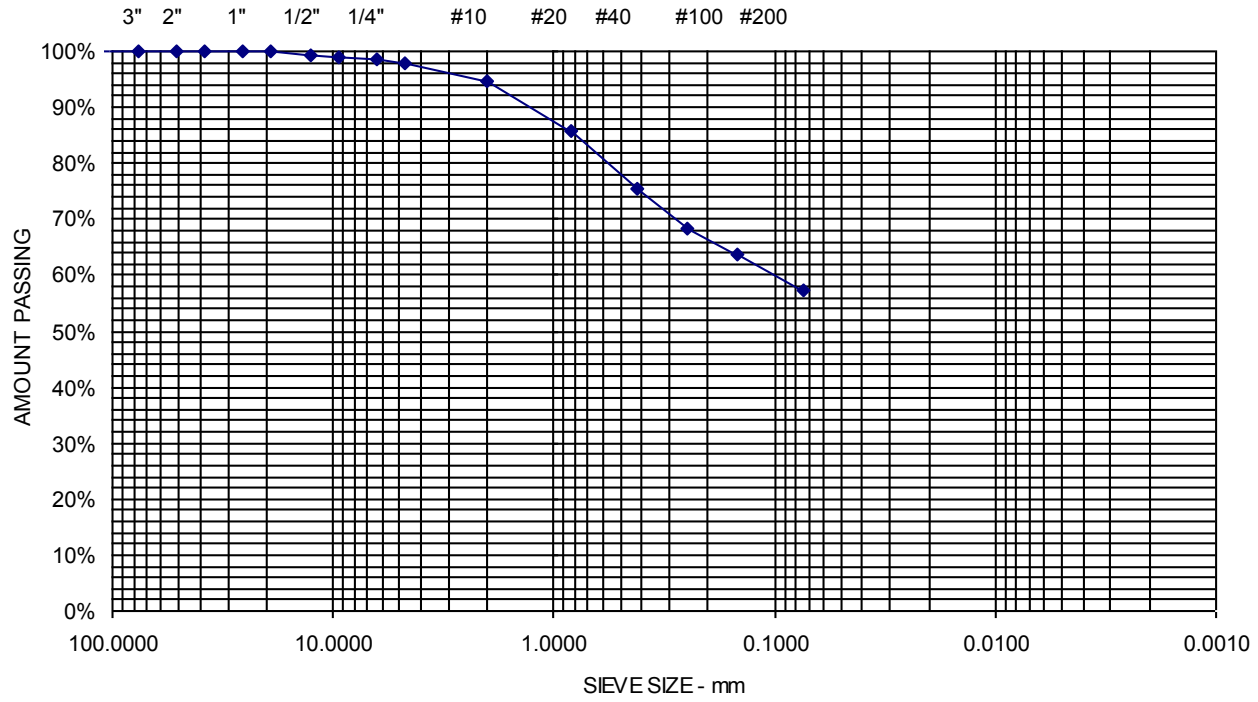
Report of Gradation

ASTM C-117 & C-136

Project Name	VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES	Project Number	16-0600
Client	QUANTA SUBSURFACE	Lab ID	1295M
		Date Received	7/6/2016
		Date Completed	7/14/2016
Material Source	**BH 260, 0-4 FOOT DEPTH**	Tested By	MARK BENNETT

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**99**	
9.5 mm	**3/8"**	**99**	
6.3 mm	**1/4"**	**98**	
4.75 mm	**No. 4**	**98**	2.3% Gravel
2.00 mm	**No. 10**	**95**	
850 um	**No. 20**	**86**	
425 um	**No. 40**	**75**	40.5% Sand
250 um	**No. 60**	**68**	
150 um	**No. 100**	**64**	
75 um	**No. 200**	**57.2**	57.2% Fines



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S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

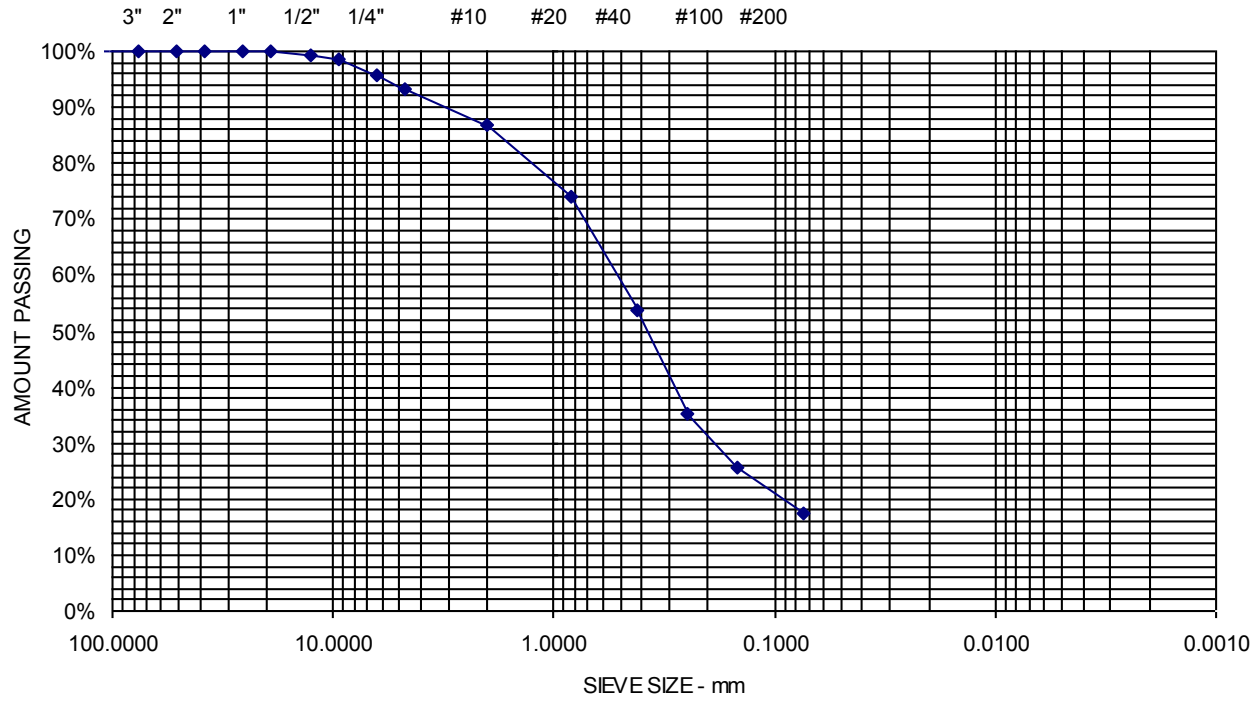
Project Name: VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES

Client: QUANTA SUBSURFACE

Material Source: **BH 261, 0-4 FOOT DEPTH**

Project Number: 16-0600
Lab ID: 1296M
Date Received: 7/6/2016
Date Completed: 7/14/2016
Tested By: MARK BENNETT

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**99**	
9.5 mm	**3/8"**	**99**	
6.3 mm	**1/4"**	**96**	
4.75 mm	**No. 4**	**93**	6.8% Gravel
2.00 mm	**No. 10**	**87**	
850 um	**No. 20**	**74**	
425 um	**No. 40**	**54**	75.7% Sand
250 um	**No. 60**	**35**	
150 um	**No. 100**	**26**	
75 um	**No. 200**	**17.5**	17.5% Fines



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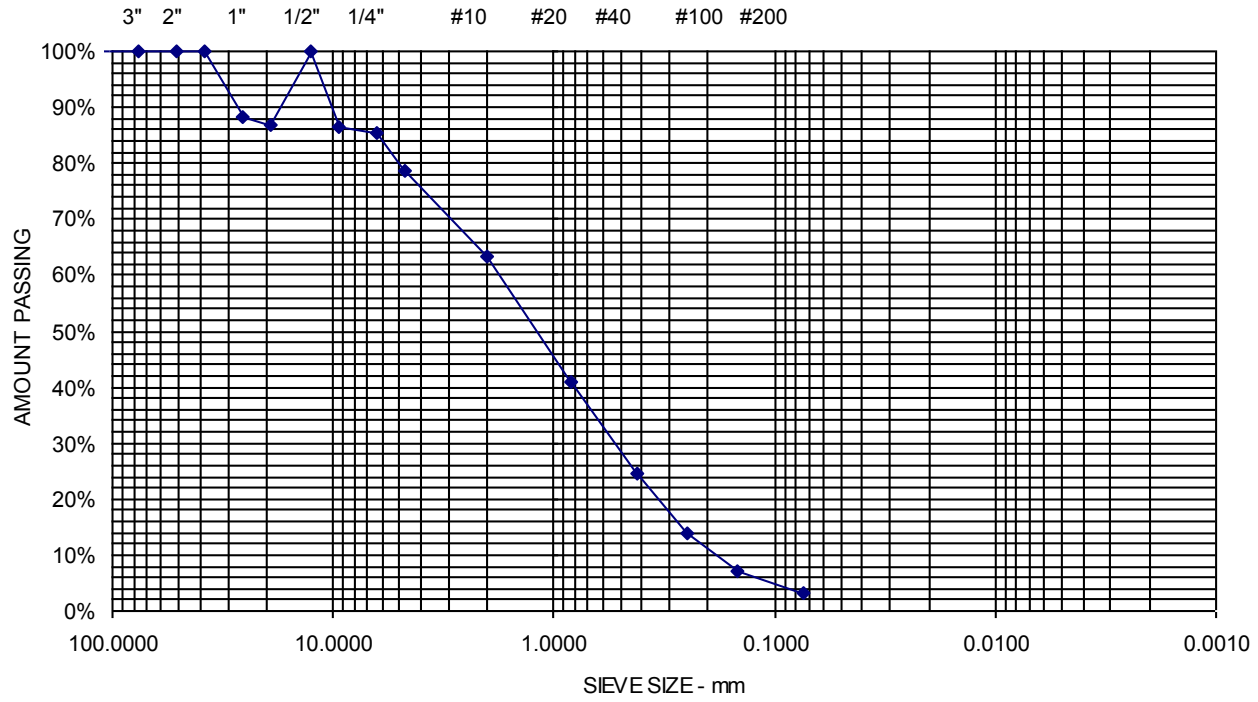
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES	Project Number	16-0600
Client	QUANTA SUBSURFACE	Lab ID	1297M
		Date Received	7/6/2016
		Date Completed	7/14/2016
Material Source	**BH 264, 0-4 FOOT DEPTH**	Tested By	MARK BENNETT

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**88**	
19.0 mm	**3/4"**	**87**	
12.5 mm	**1/2"**	**100**	
9.5 mm	**3/8"**	**86**	
6.3 mm	**1/4"**	**85**	
4.75 mm	**No. 4**	**79**	21.3% Gravel
2.00 mm	**No. 10**	**63**	
850 um	**No. 20**	**41**	
425 um	**No. 40**	**24**	75.5% Sand
250 um	**No. 60**	**14**	
150 um	**No. 100**	**7**	
75 um	**No. 200**	**3.2**	3.2% Fines



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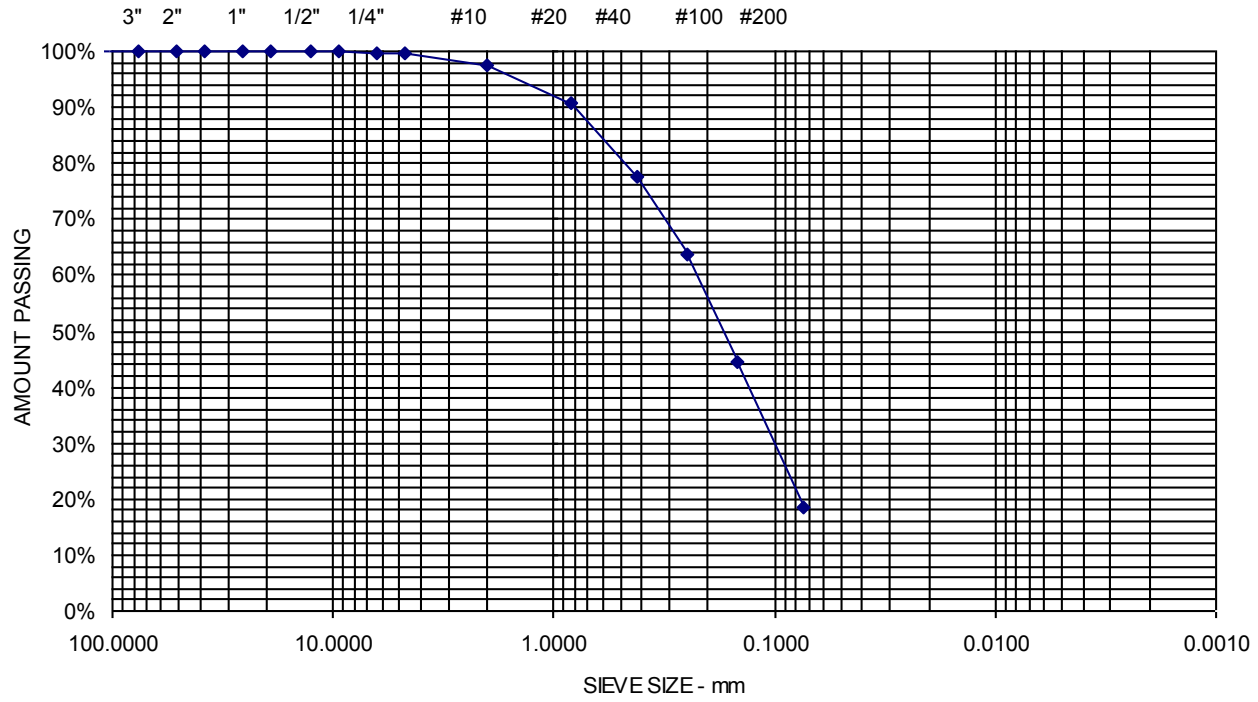
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES	Project Number	16-0600
Client	QUANTA SUBSURFACE	Lab ID	1298M
		Date Received	7/6/2016
		Date Completed	7/14/2016
Material Source	**BH 265, 0-4 FOOT DEPTH**	Tested By	MARK BENNETT

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**100**	
9.5 mm	**3/8"**	**100**	
6.3 mm	**1/4"**	**100**	
4.75 mm	**No. 4**	**100**	0.2% Gravel
2.00 mm	**No. 10**	**97**	
850 um	**No. 20**	**91**	
425 um	**No. 40**	**78**	81.3% Sand
250 um	**No. 60**	**64**	
150 um	**No. 100**	**44**	
75 um	**No. 200**	**18.5**	18.5% Fines



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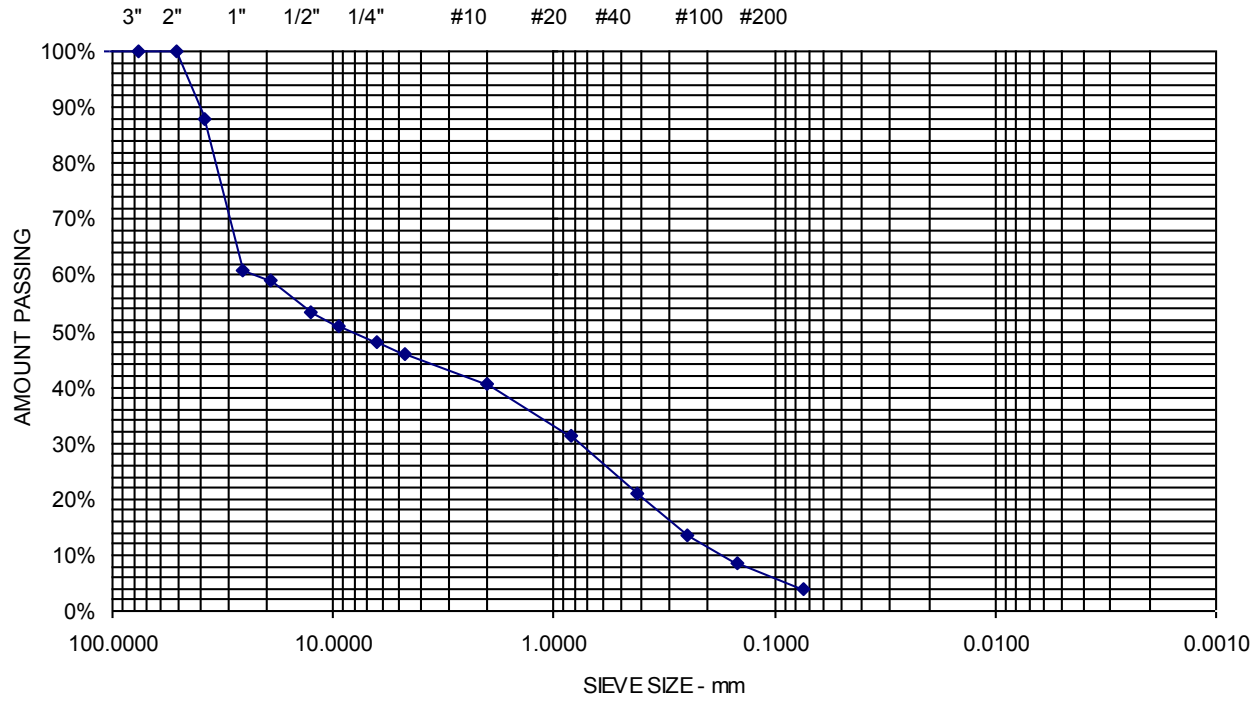
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES	Project Number	16-0600
Client	QUANTA SUBSURFACE	Lab ID	1299M
		Date Received	7/6/2016
		Date Completed	7/14/2016
Material Source	**BH 271, 0-4 FOOT DEPTH**	Tested By	MARK BENNETT

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**88**	
25.0 mm	**1"**	**61**	
19.0 mm	**3/4"**	**59**	
12.5 mm	**1/2"**	**54**	
9.5 mm	**3/8"**	**51**	
6.3 mm	**1/4"**	**48**	
4.75 mm	**No. 4**	**46**	53.9% Gravel
2.00 mm	**No. 10**	**40**	
850 um	**No. 20**	**31**	
425 um	**No. 40**	**21**	42.3% Sand
250 um	**No. 60**	**14**	
150 um	**No. 100**	**8**	
75 um	**No. 200**	**3.8**	3.8% Fines



Comments:

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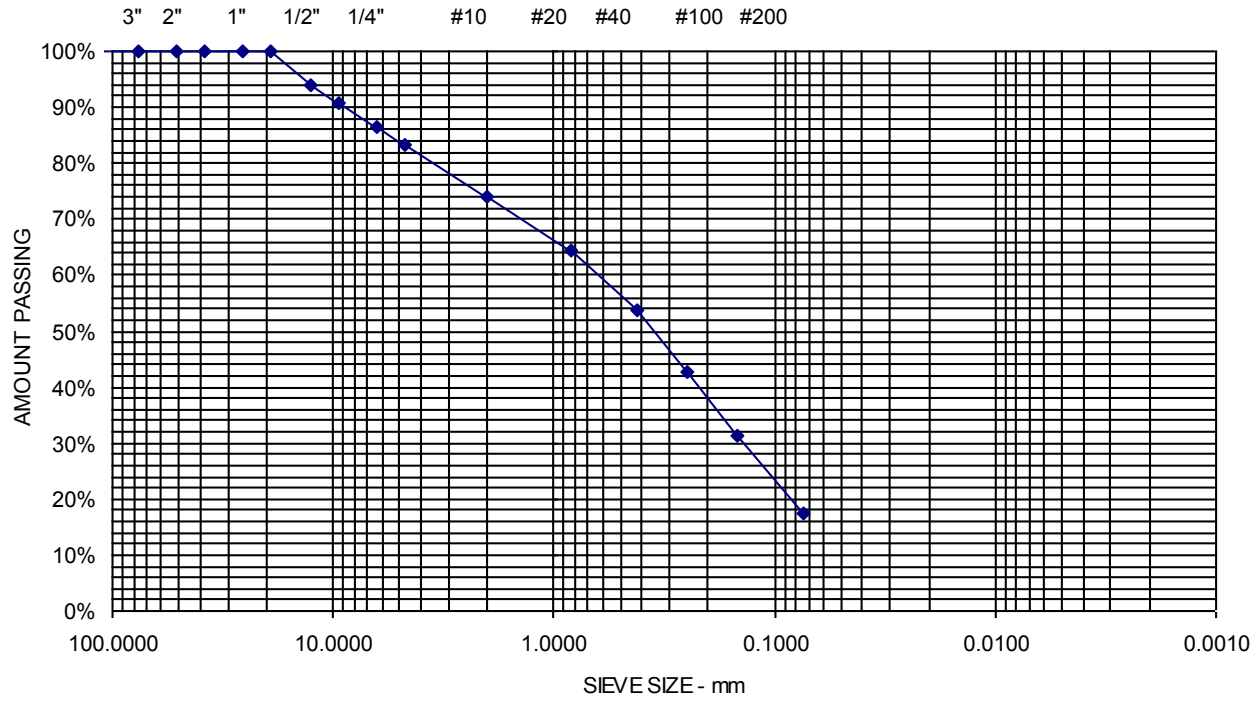
S.W.COLE ENGINEERING, INC.

Report of Gradation

ASTM C-117 & C-136

Project Name	VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES	Project Number	16-0600
Client	QUANTA SUBSURFACE	Lab ID	1300M
		Date Received	7/6/2016
		Date Completed	7/14/2016
Material Source	**BH 273, 0-4 FOOT DEPTH**	Tested By	MARK BENNETT

STANDARD DESIGNATION (mm/µm)	SIEVE SIZE	AMOUNT PASSING (%)	
150 mm	**6"**	**100**	
100 mm	**4"**	**100**	
75 mm	**3"**	**100**	
50 mm	**2"**	**100**	
38.1 mm	**1-1/2"**	**100**	
25.0 mm	**1"**	**100**	
19.0 mm	**3/4"**	**100**	
12.5 mm	**1/2"**	**94**	
9.5 mm	**3/8"**	**91**	
6.3 mm	**1/4"**	**87**	
4.75 mm	**No. 4**	**83**	16.8% Gravel
2.00 mm	**No. 10**	**74**	
850 um	**No. 20**	**64**	
425 um	**No. 40**	**54**	65.7% Sand
250 um	**No. 60**	**43**	
150 um	**No. 100**	**31**	
75 um	**No. 200**	**17.5**	17.5% Fines



Comments:

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S.W.COLE ENGINEERING, INC.

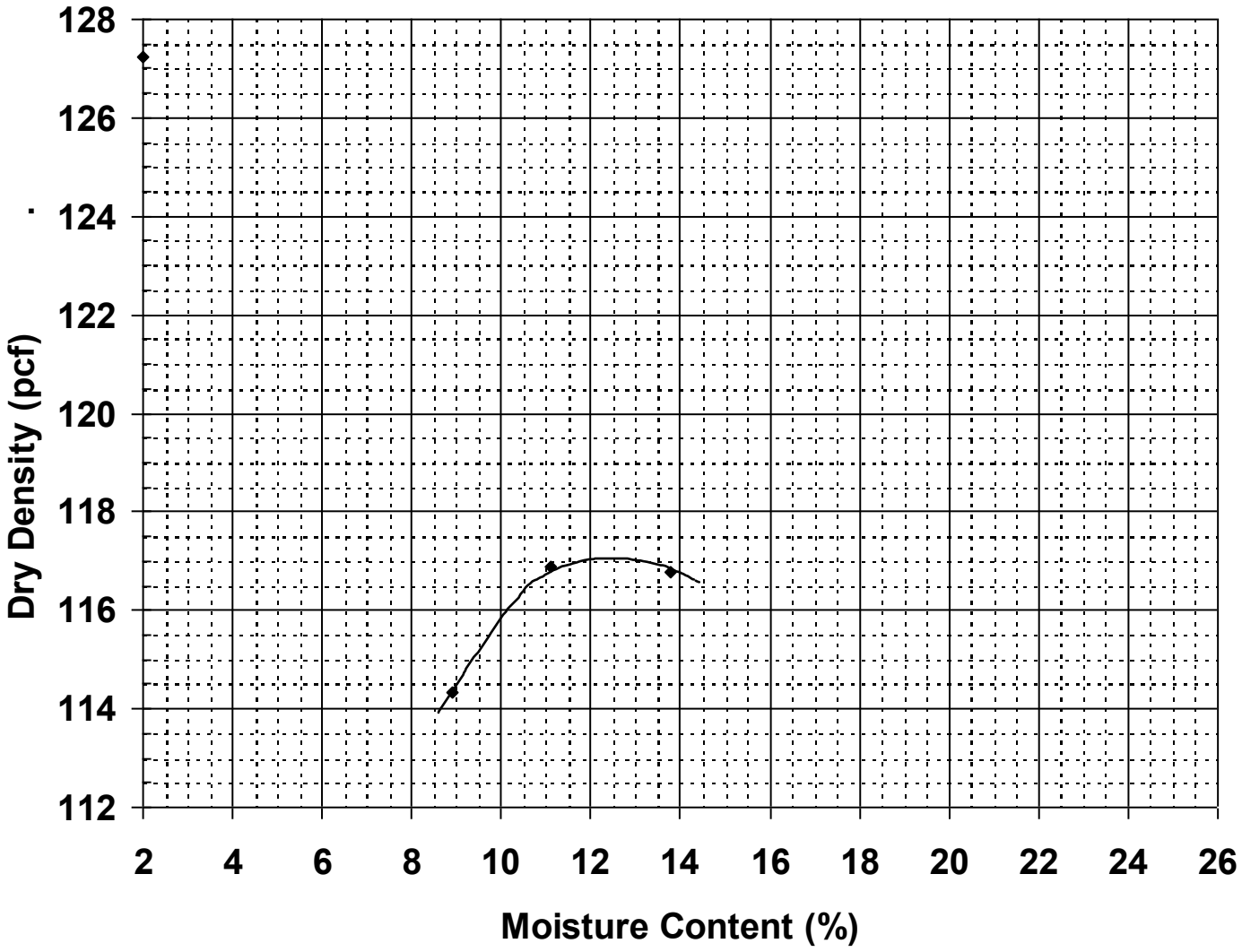
Report of Moisture-Density

Method ASTM D-698 STANDARD Procedure B

Project Name	VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES
Client	QUANTA SUBSURFACE
Material Type	SILTY SAND W/ TRACE GRAVEL
Material Source	BH-260

Project Number	16-0600
Lab ID	1395M
Date Received	8/12/2016
Date Completed	8/15/2016
Tested By	ANDREW MICHAUD

Moisture-Density Relationship Curve



Maximum Dry Density (pcf)	117.4
Optimum Moisture Content (%)	12.5
Percent Oversized	6.7%

Corrected Dry Density (pcf)	**119.4**
Corrected Moisture Content (%)	**11.8**

Comments

13 Delta Drive, Unit 8, Londonderry, NH 03053-2329 • Tel (603) 716-2111 • Fax (603) 716-2112 • www.swcole.com

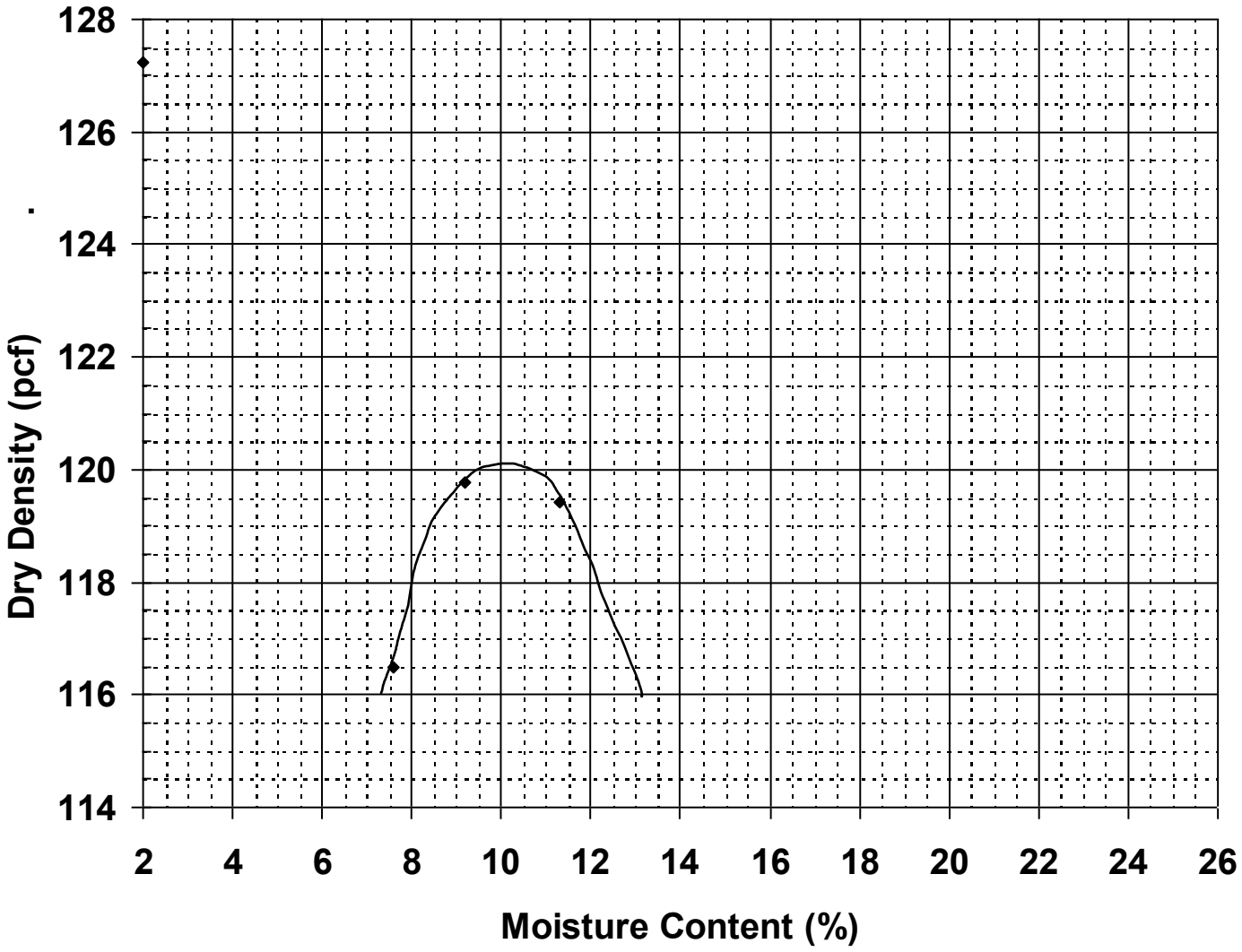
S.W.COLE ENGINEERING, INC.

Report of Moisture-Density

Method ASTM D-698 STANDARD Procedure B

Project Name	VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES	Project Number	16-0600
Client	QUANTA SUBSURFACE	Lab ID	1396M
Material Type	SANDY GRAVEL W/ TRACE SILT	Date Received	8/12/2016
Material Source	BH-271	Date Completed	8/15/2016
		Tested By	ANDREW MICHAUD

Moisture-Density Relationship Curve



Maximum Dry Density (pcf)	120
Optimum Moisture Content (%)	10
Percent Oversized	24.8%

Corrected Dry Density (pcf)	**127.5**
Corrected Moisture Content (%)	**8.0**

Comments

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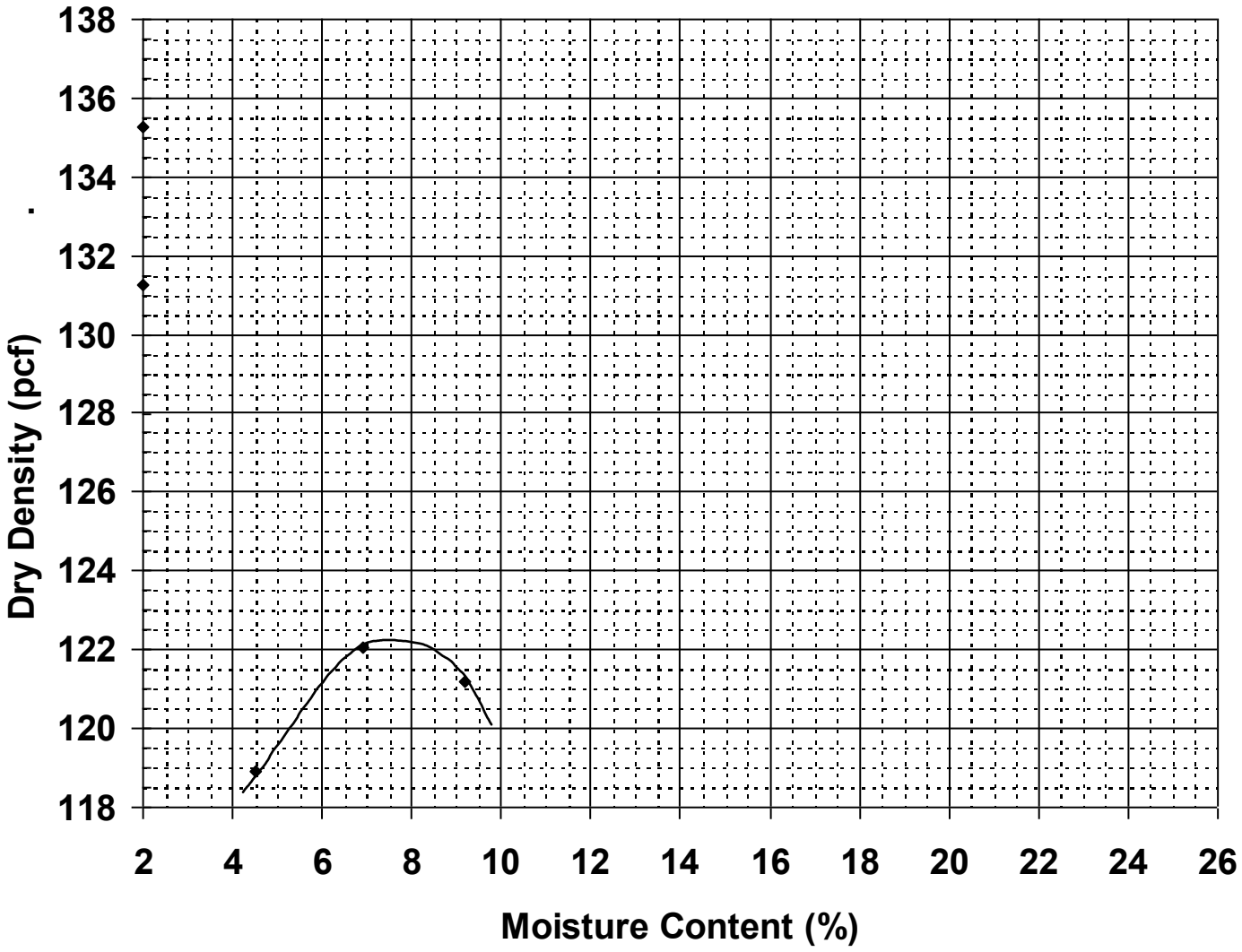
S.W.COLE ENGINEERING, INC.

Report of Moisture-Density

Method ASTM D-698 STANDARD Procedure B

Project Name	VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES	Project Number	16-0600
Client	QUANTA SUBSURFACE	Lab ID	1397M
Material Type	SILTY SAND W/ SOME GRAVEL	Date Received	8/12/2016
Material Source	BH-285	Date Completed	8/15/2016
		Tested By	ANDREW MICHAUD

Moisture-Density Relationship Curve



Maximum Dry Density (pcf)	122.3
Optimum Moisture Content (%)	7.9
Percent Oversized	24.1%

Corrected Dry Density (pcf)	**129.2**
Corrected Moisture Content (%)	**6.5**

Comments

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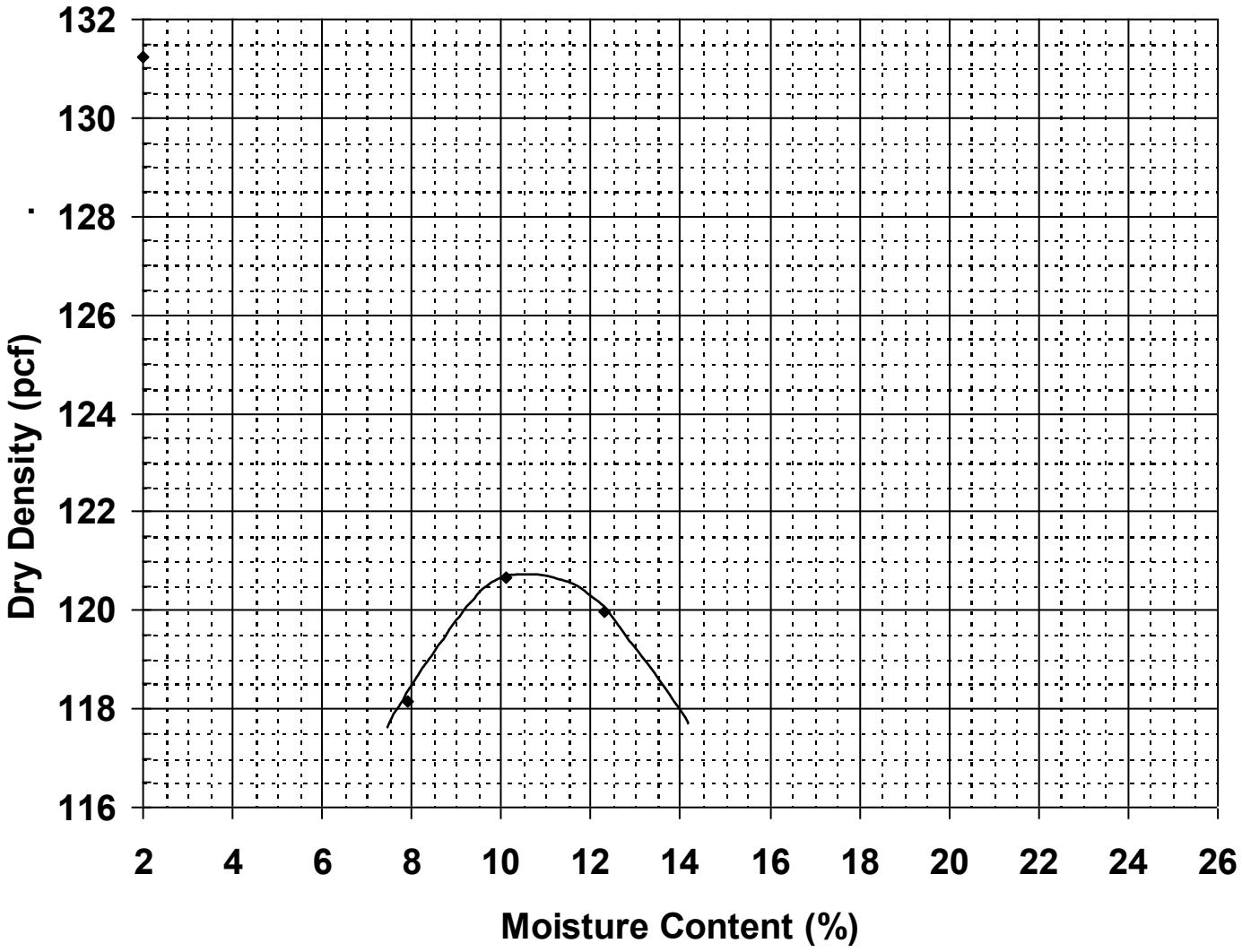
Report of Moisture-Density

Method ASTM D-698 STANDARD Procedure B

Project Name	VARIOUS NH - NORTHERN PASS TRANSMISSION LINE - LABORATORY TESTING SERVICES	Project Number	16-0600
Client	QUANTA SUBSURFACE	Lab ID	1398M
Material Type	SAND W/ TRACE SILT AND GRAVEL	Date Received	8/12/2016
Material Source	BH-287	Date Completed	8/15/2016
		Tested By	ANDREW MICHAUD

Moisture-Density Relationship Curve



Maximum Dry Density (pcf)	120.5
Optimum Moisture Content (%)	10.5
Percent Oversized	21.1%

Corrected Dry Density (pcf)	**126.7**
Corrected Moisture Content (%)	**8.7**

Comments

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