APPENDIX M

Preliminary Geotechnical Investigation Report

LANGAN
ENGINEERING & ENVIRONMENTAL SERVICES

20 August 2009

Mr. Frank Nussbaum
Labrador Properties, Inc.
One Columbus Place
North Tower, Suite 38F
New York, NY 10019

Re: Preliminary Geotechnical Investigation Report
Chester Village Project
Chester, Orange County, New York
Langan Project No. 9123501

Dear Frank:

In accordance with our 31 July 2009 proposal and your subsequent authorization, we have completed our preliminary geotechnical investigation at the above-referenced project site. Based on current plans, the development is to include changes to site grades to accommodate the construction of approximately 55 residential townhouse buildings, two affordable senior unit buildings, a club house, and supporting roadways, utilities and infrastructure. Our preliminary field investigation was developed based on the current site layout and grading. All ground elevations in the report refer to National Geodetic Vertical Datum 1929. A brief description of our preliminary work, findings, and recommendations is provided below.

PRELIMINARY GEOTECHNICAL INVESTIGATION

Review of Available Information

We reviewed available geologic maps and USDA soil surveys to develop an understanding of general subsurface conditions. Site soils are glacially derived materials of varying composition and compactness. According to the soil survey, a "fragipan" layer of soil is present throughout the site. This type of soil is very dense; water tends to perch above it. According to the USGS Geologic Map bedrock in the site vicinity is expected to consist of shales, siltstones, and argillites of the Passaic Formation.

The project site is characterized by gently sloping features and broad hilltops. Elevations vary approximately 138 feet across the site. The highest elevation is located on a broad hilltop in the northwest corner of the site at an elevation of 600 feet. The lowest elevation is in the southwest corner of the site. Delineated wetlands are located in south central / middle portion of the site.

Field Investigation

Our preliminary field investigation consisted of excavating 20 test pits to characterize the predominant subsurface conditions that can be expected to be encountered during site grading activities. The test pits were excavated to depths of 15 feet (i.e., the maximum reach of the equipment) by Robert Young Excavating Contractors on 7 and 10 August 2009, using a caterpillar CAT 320D rubber-tire backhoe. The test pit locations correspond to areas where both cuts and fills are anticipated; see Sketch LSK-1 for test pit locations.

PRELIMINARY FINDINGS & RECOMMENDATIONS

Findings

In general, the information collected during our preliminary investigation indicates no major impediments exist for the proposed site layout and grading.

The subsurface conditions observed in the test pits indicate a surficial layer of loose topsoil about 8 inches thick over stiff/dense predominantly granular soils. A very dense predominantly granular soil layer (i.e., till or fragipan) was encountered in the majority of test pits to depths of at least 15 feet. The soils consist of varying proportions of silt, clay, sand, gravel and cobbles, with occasional boulders encountered. The till or fragipan is typically more compact and contains higher proportions of cobbles and coarse angular gravel than the shallower soils. A uniform water table was not encountered; however, locally perched water was observed in four test pits (TP-9, TD-16, TD-19, and TP-20). Test Pit logs are attached.

Preliminary Recommendations

Based on our preliminary investigation the site soils appear to be generally suitable for supporting the proposed relatively lightly-loaded buildings and corresponding infrastructure. Below are preliminary recommendations related to site grading activities. Prior to final design, additional investigation is needed to address specific design issues.

Site Grading

The proposed site grading will require the majority of cuts to be on the order of 5 to 10 feet; however, at a few locations cuts to about 22 feet or more will be necessary. Water encountered in TP-16 is about 6 feet below proposed Stormwater Management Basin "B". Fills up to about 17 feet will be necessary. We anticipate that conventional earthmoving equipment (eg, excavators and loaders) will be suitable to perform site grading. Rock was not encountered in any of the test pits we observed; however, should shale, siltstone, or argillite be present locally in deeper cuts, we anticipate conventional excavators outfitted with either rock-ripping teeth or a hoe-ram attachment will be capable of excavating rock. We do not anticipate blasting would be necessary based on our preliminary findings.

Site Clearing

Clearing and grubbing of all trees (including removal of any associated roots systems) and vegetation designated for removal should be performed. All debris and trees/vegetation should

be properly disposed off site in accordance with applicable regulations. All clearing activities should be performed in strict accordance with the approved soil erosion and sediment control plan prepared for this project. The Contractor should control surface water runoff and protect subgrade soils by maintaining proper slopes for drainage and preventing ponding of water. Topsoil should be stripped from the proposed construction areas, and should be stockpiled and protected from erosion for future use. Any topsoil stripped from the ground surface can be re-used as topsoil in landscaped areas.

Soil Fill Materials

Predominantly granular site soils containing a maximum particle size of 6 inches, and approved by a qualified geotechnical engineer, may be re-used as compacted fill within 2 feet of utilities or pavement subgrade and within 3 feet in landscape areas. Soil fill should be placed in 12-inch-thick loose lifts and compacted to 95% of its maximum dry density as determined by the Modified Proctor method (ASTM D1557). Any larger cobbles or boulders should be placed in deeper fills. Site soils having relatively high percentages of fines are expected to be difficult to handle, place, and compact if they are allowed to become excessively wet and do not contain sufficient gravel and/or cobbles. Therefore, the Contractor should make provisions to place such material during warm/dry weather, as well as, dry portions of the excavated material, as necessary, prior to compaction to acceptable moisture content as determined by the Geotechnical Engineer.

Should imported material be needed, the fill should consist of a relatively well graded mixture of sand and gravel with not more than 15 percent (by weight) finer than the No. 200 sieve. The use of any imported fill containing a higher percentage of fines would need to be evaluated by our office during construction. Suitable fill should be free of organics and other deleterious materials and should have a maximum particle size no greater than 4 inches.

In addition, any imported fill proposed for use at the site should contain no contamination in exceedence of New York State DEC Cleanup objectives as referenced in "Hazardous Waste Reduction Technical Assistance Guidance Memorandum HWR-94-4046," dated 24 January 1994. The Contractor should provide documentation of compliance prior to delivery of any fill to the site. Grain size distribution, maximum dry density, and the optimum water content determinations should be made on representative samples of the backfill and fill materials proposed by the Contractor.

All earthwork operations, including fill mixing, placement and compaction, should be subject to inspection and testing by a qualified geotechnical engineer. No fill material should be placed on areas where free water is standing, on frozen subgrade areas, or on surfaces which have not been approved by the inspecting geotechnical engineer.

ADDITIONAL INVESTIGATION

Additional test pits and soil borings (including monitoring wells) should be performed prior to final design. Analyses are required to develop complete and final recommendations for building foundations, embankments, retaining walls, utilities, pavements, and stormwater basins.

CLOSURE

The preliminary findings and recommendations herein address the typical site grading conditions anticipated to be encountered. Additional investigations are recommended in order for us to develop final design recommendations, and to satisfy any Building Code requirements.

We thank you for allowing us to assist you at this initial stage of the project, and we look forward to continuing to assist you in the future. If you have any questions regarding this report, please call.

If you have any questions or need additional information, please call.

Sincerely,
Langan Engineering and Environmental Services, Inc.

Mark K. Seel, P.E.
Associate

MKS:gj

cc: Bryan Waisnor / Langan

NJ Certificate of Authorization No. 24GA27996400
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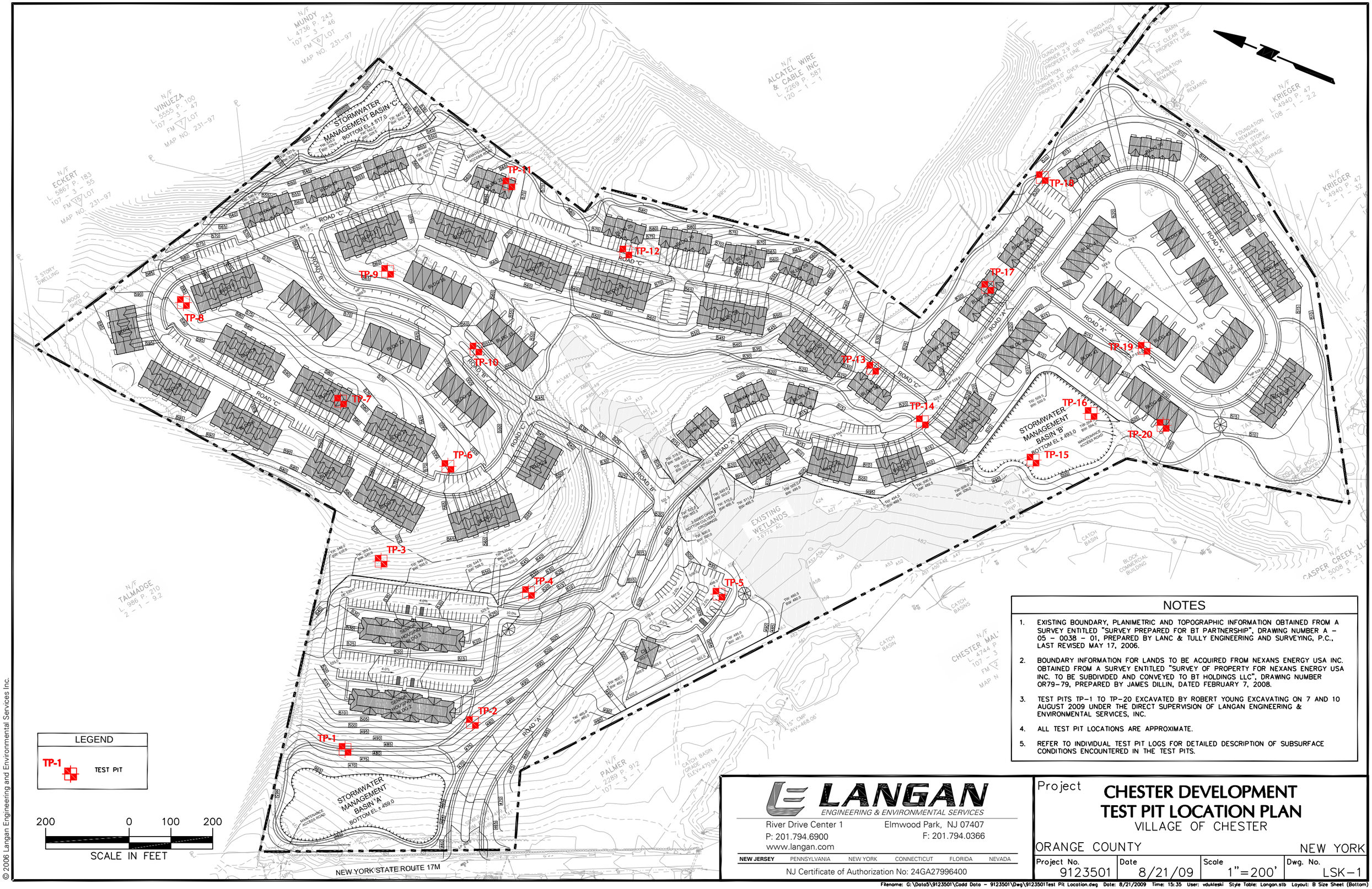

NOTES

1. EXISTING BOUNDARY, PLANIMETRIC AND TOPOGRAPHIC INFORMATION OBTAINED FROM A SURVEY ENTITLED "SURVEY PREPARED FOR BT PARTNERSHIP", DRAWING NUMBER A – 05 – 0038 – 01, PREPARED BY LANC & TULLY ENGINEERING AND SURVEYING, P.C., LAST REVISED MAY 17, 2006.
2. BOUNDARY INFORMATION FOR LANDS TO BE ACQUIRED FROM NEXANS ENERGY USA INC. OBTAINED FROM A SURVEY ENTITLED "SURVEY OF PROPERTY FOR NEXANS ENERGY USA INC. TO BE SUBDIVIDED AND CONVEYED TO BT HOLDINGS LLC", DRAWING NUMBER OR79–79, PREPARED BY JAMES DILLIN, DATED FEBRUARY 7, 2008.
3. TEST PITS TP–1 TO TP–20 EXCAVATED BY ROBERT YOUNG EXCAVATING ON 7 AND 10 AUGUST 2009 UNDER THE DIRECT SUPERVISION OF LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, INC.
4. ALL TEST PIT LOCATIONS ARE APPROXIMATE.
5. REFER TO INDIVIDUAL TEST PIT LOGS FOR DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS ENCOUNTERED IN THE TEST PITS.

LEGEND

TP-1 TEST PIT

200 0 100 200

SCALE IN FEET

LANGAN
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NJ Certificate of Authorization No: 24GA27996400

Project
CHESTER DEVELOPMENT
TEST PIT LOCATION PLAN
VILLAGE OF CHESTER

ORANGE COUNTY NEW YORK

Project No.	Date	Scale	Dwg. No.
9123501	8/21/09	1"=200'	LSK–1

Filename: G:\Data5\9123501\Cadd Data – 9123501\Dwg\9123501Test Pit Location.dwg Date: 8/21/2009 Time: 15:35 User: vdukleski Style Table: Langan.stb Layout: B Size Sheet (Bottom)

LOG OF TEST PIT TP-1

PROJECT NAME	PROJECT NUMBER	DATE
Chester Development	9123501	8/10/09
LOCATION	**ELEVATION**	
Chester, NY	Approx. el. 480 (NGVD 29)	
EXCAVATION CONTRACTOR	**DEPTH**	**WATER LEVEL - First** / **WATER LEVEL - Completion**
Robert Young Excavating	15 ft	- ▽ / - ▼
EQUIPMENT	**FOREMAN**	**LANGAN PERSONNEL**
CAT 320D Rubber-Tired Excavator	Robert Young	Himanshu Tripathi

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+480.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist) [TOPSOIL]	0			Start at 12:40 pm.
	+479.3	Light Brown to Brown Silty f-m SAND, some clay, trace to little subrounded cobbles, trace f-c angular gravel (dry-moist)	1			
			2			
			3			
			4			
			5			
			6			
	+473.0		7			Difficult to excavate beyond 7'.
		Dark Brown to Brown Silty f-m SAND, some subrounded cobbles, trace to little f-c angular gravel (moist)	8			
			9			
			10			
			11			
			12			
			13			Side walls stable at 13'. No groundwater encountered in the excavation.
			14			
	+465.0	End of test pit at 15' at 1:00 pm.	15			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			16			
			17			

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LOG OF TEST PIT TP-2

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/10/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 502 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 15 ft	WATER LEVEL - First: - ▽	WATER LEVEL - Completion: - ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+502.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist) [TOPSOIL]	0			Start at 7:30 am.
	+501.3	Light Brown Silty CLAY, some f-m sand, trace to little subrounded cobbles, trace f-c angular gravel (dry-moist)	1			
			2			
			3			
			4			
			5			
			6			
	+495.0	Brown Silty f-m SAND, some clay, trace to little f-c angular gravel (dry-moist)	7			Difficult to excavate beyond 7'.
			8			
			9			
	+492.0	Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (moist)	10			
			11			
			12			
			13			Side walls stable at 13'.
			14			No groundwater observed.
	+487.0	End of test pit at 15' at 8:00 am.	15			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			16			
			17			

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LOG OF TEST PIT TP-3

PROJECT NAME	PROJECT NUMBER	DATE
Chester Development	9123501	8/10/09
LOCATION	**ELEVATION**	
Chester, NY	Approx. el. 550 (NGVD 29)	
EXCAVATION CONTRACTOR	**DEPTH**	**WATER LEVEL - First** / **WATER LEVEL - Completion**
Robert Young Excavating	15 ft	- ▽ / - ▼
EQUIPMENT	**FOREMAN**	**LANGAN PERSONNEL**
CAT 320D Rubber-Tired Excavator	Robert Young	Himanshu Tripathi

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+550.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist) [TOPSOIL]	0			Started at 9:00 am.
	+549.3	Light Brown Silty f-m SAND, some subrounded cobbles, trace f-c angular gravel, trace clay (moist)	1			
			2			
			3			
			4			
	+545.0	Dark Brown to Brown Silty f-m SAND, some clay, trace f-c angular gravel (moist)	5			Side walls stable at 5'.
			6			
			7			
			8			
			9			
	+540.0	Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (moist)	10			Difficult to excavate beyond 10'.
			11			
			12			
			13			Side walls stable at 13'.
			14			No groundwater encountered.
	+535.0	End of test pit at 15' at 9:15 am.	15			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			16			
			17			

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LOG OF TEST PIT TP-4

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/10/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 540 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 15 ft	WATER LEVEL - First: - ▽	WATER LEVEL - Completion: - ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+540.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (dry-moist) [TOPSOIL]	0			Start at 8:30 am.
	+539.3	Light Brown Silty CLAY, some f-m sand, trace to little subrounded cobbles, trace f-c angular gravel (dry-moist)	1			
			2			
			3			
		2' x 2' BOULDER	4			
	+535.0		5			
		Brown Silty f-m SAND, some clay, trace to little subrounded cobbles, trace f-c angular gravel (moist)	6			Difficult to excavate beyond 5'.
			7			Side walls stable at 6'.
			8			
			9			
	+530.0		10			
		Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (moist) [TILL]	11			Very difficult to excavate beyond 10'.
			12			Side walls stable at 11'.
			13			
			14			No groundwater encountered.
	+525.0		15			
		End of test pit at 15' at 8:45 am.	16			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			17			

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LOG OF TEST PIT TP-5

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/10/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 500 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 15 ft	WATER LEVEL - First: - ▽	WATER LEVEL - Completion: - ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+500.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist) [TOPSOIL]	0			Start at 8:10 am.
	+499.3	Light Brown Silty CLAY, some f-m sand, trace f-c angular gravel, trace subrounded cobbles (dry)	1			
	+498.0	Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (dry-moist)	2			
			3			
			4			Difficult to excavate at 4'.
			5	S1	GRAB	Grab sample at 5'.
			6			
			7			
			8			
			9			
			10			Side wall stable at 10'.
	+489.0		11			
		Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (moist) [TILL]	12			Very difficult to excavate beyond 11'.
			13			
			14			No groundwater encountered.
	+485.0		15			
		End of test pit at 15' at 8:20 am.	16			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			17			

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LOG OF TEST PIT TP-6

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/10/09
LOCATION: Chester, NY	ELEVATION: Approx. el. 596 (NGVD 29)	
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 13 ft	WATER LEVEL - First: - ▽ / WATER LEVEL - Completion: - ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+596.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist)	0			Start at 9:35 am.
	+595.3	Light Brown Silty f-m SAND, some f-c angular gravel, trace subrounded cobbles, trace clay (dry-moist)	1			
			2			
			3			
			4			
	+591.0	Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (dry-moist)	5			Difficult to excavate beyond 5'.
			6			
		1.5' x 2' BOULDER	7			
			8			
			9			Side wall stable at 9'.
	+586.0	Brown Silty f-m SAND, some f-c angular gravel, trace clay(dry-moist) [TILL]	10			Very difficult to excavate beyond 10'.
			11			
			12			No groundwater encountered.
	+583.0	End of test pit at bucket refusal at 13' at 9:45 am.	13			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			14			
			15			
			16			
			17			

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LOG OF TEST PIT TP-7

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/10/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 590 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 13 ft	WATER LEVEL - First: - ▽	WATER LEVEL - Completion: - ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+590.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist)	0			Start at 9:55 am.
	+589.3	Light Brown Silty f-m SAND, some clay, trace f-c angular gravel, trace subrounded cobbles (moist)	1			
			2			
			3			
	+586.0	Brown Silty f-m SAND, some clay, trace f-c angular gravel, trace subrounded cobbles (moist)	4			Difficult to excavate beyond 4'.
			5			
			6			
	+583.0	Dark Brown to Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (moist) [TILL]	7			Very difficult to excavate beyond 7'.
			8			
			9			Side wall stable at 9'.
			10	S1	GRAB	Grab sample at 9'.
		2' x 3' BOULDER	11			
			12			No groundwater encountered.
			13			Side walls stable at 13'.
	+577.0	End of test pit at bucket refusal at 13' at 10:15 am.	14			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			15			
			16			
			17			

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LOG OF TEST PIT TP-8

PROJECT NAME	PROJECT NUMBER	DATE
Chester Development	9123501	8/10/09
LOCATION	**ELEVATION**	
Chester, NY	Approx. el. 588 (NGVD 29)	
EXCAVATION CONTRACTOR	**DEPTH**	**WATER LEVEL - First** / **WATER LEVEL - Completion**
Robert Young Excavating	13 ft	- ▽ / - ▼
EQUIPMENT	**FOREMAN**	**LANGAN PERSONNEL**
CAT 320D Rubber-Tired Excavator	Robert Young	Himanshu Tripathi

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+588.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist)	0			Start at 10:30 am.
	+587.3	Light Brown Silty f-m SAND, some clay, trace f-c angular gravel, trace subrounded cobbles (moist)	1			
			2			
			3			
	+584.0	Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (dry)	4			Difficult to excavate beyond 4'.
			5			
			6			
			7			
	+580.0	Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (dry-moist) [TILL]	8			Very difficult to excavate beyond 8'.
			9			
			10			
			11			
			12			No groundwater encountered.
	+575.0		13			Side walls stable at 13'.
		End of test pit at bucket refusal at 13' at 10:45 am.				Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			14			
			15			
			16			
			17			

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LOG OF TEST PIT TP-9

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/10/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 574 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 15 ft	WATER LEVEL - First: - ▽	WATER LEVEL - Completion: - ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+574.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist)	0			Start at 10:50 am.
	+573.3	Light Brown to Gray Silty CLAY, some f-m sand, trace f-c angular gravel (moist)	1			
			2			
			3			Perched water at 3'.
			4			
			5			
	+568.0	Brown Silty f-m SAND, some clay, trace f-c angular gravel, trace subrounded cobbles (moist)	6			Difficult to excavate beyond 6'.
			7			
			8			Side walls stable at 8'.
			9			
			10			
			11			
			12			
			13			
		Brown Silty f-m SAND, some clay, trace to little subrounded cobbles, trace f-c angular gravel (moist)	14			No groundwater encountered.
						Side walls stable at 14'.
	+559.0		15			
		End of test pit at 15' at 11:00 am.	16			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			17			

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LOG OF TEST PIT TP-10

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/10/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 580 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 15 ft	WATER LEVEL - First: - ▽	WATER LEVEL - Completion: - ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+580.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist) [TOPSOIL]	0			Start at 11:10 am.
	+579.3	Light Brown to Brown Silty f-m sand, some f-c angular gravel, trace subrounded cobbles, trace clay (dry-moist)	1			
			2			
			3			
			4			
			5			
			6			
			7			
		Light Brown to Brown Silty f-m sand, some f-c angular gravel, trace to little subrounded cobbles, trace clay (dry-moist)	8			Side walls stable at 8'.
			9			
	+570.0	Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (dry-moist)	10			Difficult to excavate beyond 10'.
			11			
			12			
			13			
			14			No groundwater encountered.
						Side walls stable at 15'.
	+565.0	End of test pit at 15' at 11:25 am.	15			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			16			
			17			

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LOG OF TEST PIT TP-11

PROJECT NAME	PROJECT NUMBER	DATE
Chester Development	9123501	8/10/09
LOCATION	**ELEVATION**	
Chester, NY	Approx. el. 580 (NGVD 29)	
EXCAVATION CONTRACTOR	**DEPTH**	**WATER LEVEL - First** / **WATER LEVEL - Completion**
Robert Young Excavating	15 ft	- ▽ / - ▼
EQUIPMENT	**FOREMAN**	**LANGAN PERSONNEL**
CAT 320D Rubber-Tired Excavator	Robert Young	Himanshu Tripathi

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+580.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist) [TOPSOIL]	0			Start at 11:30 am.
	+579.3	Brown Silty f-m sand, some f-c angular gravel, trace subrounded cobbles, trace clay (dry-moist)	1			
			2			
			3			
			4			
			5			
			6			
	+573.0		7			Difficult to excavate beyond 7'.
		Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (moist) [TILL]	8			Side walls stable at 8'.
			9			
			10			
			11			
			12			
			13			
			14			No groundwater encountered.
						Side walls stable at 14'.
	+565.0		15			
		End of test pit at 15' at 11:45 am.				Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			16			
			17			

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LOG OF TEST PIT TP-12

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/10/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 584 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 15 ft	WATER LEVEL - First: - ▽	WATER LEVEL - Completion: - ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+584.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist) [TOPSOIL]	0			Start at 12:00 pm.
	+583.3	Light Brown to Brown Silty f-m sand, some clay, trace f-c angular gravel, trace subrounded cobbles (dry-moist)	1			
			2			
			3			
			4			
			5			
			6			
			7			
	+576.0	Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (moist)	8			Difficult to excavate beyond 8'.
			9			
			10			
			11			
			12			
			13			Side walls stable at13'.
			14			No groundwater encountered.
	+569.0	End of test pit at 15' at 12:20 pm.	15			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			16			
			17			

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LOG OF TEST PIT TP-13

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/7/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 518 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 15 ft	WATER LEVEL - First: -	WATER LEVEL - Completion: -
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+518.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist) [TOPSOIL]	0			Start at 1:30 pm.
	+517.3	Light Brown Silty CLAY, some f-m sand, trace f-c angular gravel, trace subrounded cobbles (dry-moist)	1			
			2			
			3			
			4			
			5			
	+512.0	Brown Silty f-m SAND, some clay, trace f-c angular gravel, trace subrounded cobbles (moist)	6			Easy excavation 0-6'.
			7			
			8			
	+509.0	Brown Silty f-m SAND, some f-c angular gravel, trace subrounded cobbles, trace clay (moist) [TILL]	9			Very difficult excavation beyond 9'.
			10			
			11			
			12			
			13			Side walls stable at 13'.
			14			No groundwater encountered.
	+503.0	End of test pit at 15' at 1:45 pm.	15			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			16			
			17			

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LOG OF TEST PIT TP-14

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/7/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 508 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 15 ft	WATER LEVEL - First: - ▽	WATER LEVEL - Completion: - ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+508.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (dry-moist) [TOPSOIL]	0			Start at 2:10 pm.
	+507.3	Light Brown Silty CLAY, some f-m sand, trace f-c angular gravel, trace subrounded cobbles (dry-moist)	1			
			2			
			3			
		BOULDER	4			
	+503.0	Brown Silty f-m SAND, some clay, trace to little subrounded cobbles, trace f-c angular gravel (moist)	5			
			6			Moderate difficulty in excavating beyond 5'.
			7			Side walls stable at 7'.
			8			
			9			
	+498.0	Brown Silty f-m SAND, some f-c angular gravel, trace clay (moist) [TILL]	10			Very difficult excavation beyond 10'.
			11			
			12			
			13			
			14			No groundwater encountered.
						Side walls stable at 14'.
	+493.0	End of test pit at 15' at 2:30 pm.	15			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			16			
			17			

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LOG OF TEST PIT TP-15

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/7/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 490 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 15 ft	WATER LEVEL - First: - ▽	WATER LEVEL - Completion: - ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+490.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (dry-moist) [TOPSOIL]	0			Start at 11:15 am.
	+489.3	Light Brown Silty CLAY, some f-m sand, trace f-c angular gravel, trace subrounded cobbles (dry-moist)	1			
			2			
			3			
			4			
			5			
	+484.0	Brown Silty f-m SAND, some f-c angular gravel, trace subrounded cobbles, trace clay (dry-moist)	6			
			7			Side walls stable at 7'.
			8			
			9			
			10			Side walls stable at 10'.
	+479.0	Brown Silty f-m SAND, some f-c angular gravel, trace clay (dry-moist)	11			Difficult excavation beyond 11'.
			12			
	+477.0	Gray Silty CLAY, some f-c angular gravel, trace fine sand (dry) [TILL]	13			Very difficult to excavate beyond 13'. Grab sample at 13'.
			14			No groundwater encountered.
			15			Side walls stable at 14'.
	+475.0	End of test pit at 15' at 11:30 am.	16			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			17			

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LOG OF TEST PIT TP-16

PROJECT NAME	PROJECT NUMBER	DATE
Chester Development	9123501	8/7/09
LOCATION	**ELEVATION**	
Chester, NY	Approx. el. 494 (NGVD 29)	
EXCAVATION CONTRACTOR	**DEPTH**	**WATER LEVEL - First** / **WATER LEVEL - Completion**
Robert Young Excavating	15 ft	12 ft ▽ / 12 ft ▼
EQUIPMENT	**FOREMAN**	**LANGAN PERSONNEL**
CAT 320D Rubber-Tired Excavator	Robert Young	Himanshu Tripathi

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+494.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (dry-moist) [TOPSOIL]	0			Start at 10:30 am.
	+493.3	Light Brown Silty CLAY, some subrounded cobbles, trace f-m sand, trace f-c angular gravel (dry)	1			
			2			
			3			
	+490.0	Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (dry-moist)	4			
			5			
			6			Side walls stable at 6'.
			7			
			8			Difficult to excavate beyond 8'.
			9			
		2' x 2' BOULDER	10			
	+484.0					Very difficult to excavate beyond 10'.
			11			Grab sample at 11'.
		Brown Silty f-m SAND, some subrounded cobbles, trace to little f-c angular gravel, trace clay (wet) [TILL] ▼	12			Groundwater observed at 12'.
			13			Side walls collapsing beyond 12'.
			14			
		2' x 3' BOULDER	15			
	+479.0	End of test pit at 15' at 11:00 am.				Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			16			
			17			

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LOG OF TEST PIT TP-17

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/7/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 518 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 15 ft	WATER LEVEL - First: - ▽	WATER LEVEL - Completion: - ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+518.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (dry-moist) [TOPSOIL]	0			Start at 12:45 pm.
	+517.0	Brown Silty CLAY, some f-m sand, trace f-c angular gravel, trace subrounded cobbles (dry)	1			
			2			
			3			
			4			
			5			
	+512.0	Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (dry-moist)	6			Side walls stable at 6'.
			7			
			8			Difficult to excavate beyond 8'.
			9			
			10			
	+507.0		11			Very difficult to excavate beyond 11'.
		Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (moist) [TILL]	12			
			13			
			14			No groundwater observed.
						Side walls stable at 14'.
	+503.0	End of test pit at 15' at 1:15 pm.	15			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			16			
			17			

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LOG OF TEST PIT TP-18

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/7/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 510 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 11 ft	WATER LEVEL - First: - ▽	WATER LEVEL - Completion: - ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+510.0	Brown Gravelly f-m SAND, some subrounded cobbles, trace silt, trace roots (dry) [FILL]	0			Start at 8:30 am.
	+507.0	Light Brown Silty CLAY, some f-m sand, trace f-c angular gravel, trace subrounded cobbles (dry-moist)	3			Grab sample at 3'.
		2' x 3' BOULDER	6			Side walls stable at 6'.
			7			Difficult to excavate beyond 7'.
	+502.0	Brown Gravelly f-m SAND, some silt, trace clay, trace subrounded cobbles (moist) [TILL]	8			Very difficult to excavate beyond 8'.
		3' x 4' BOULDER	10			No groundwater observed.
			11			Side walls stable at 11'.
	+499.0	End of test pit at bucket refusal at 11' at 9:10 am.	11			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			17			

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LOG OF TEST PIT TP-19

PROJECT NAME: Chester Development	PROJECT NUMBER: 9123501	DATE: 8/7/09	
LOCATION: Chester, NY	ELEVATION: Approx. el. 506 (NGVD 29)		
EXCAVATION CONTRACTOR: Robert Young Excavating	DEPTH: 12 ft	WATER LEVEL - First: 11 ft ▽	WATER LEVEL - Completion: 11 ft ▼
EQUIPMENT: CAT 320D Rubber-Tired Excavator	FOREMAN: Robert Young	LANGAN PERSONNEL: Himanshu Tripathi	

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+506.0	Dark Brown f-m SAND, some silt, trace roots, trace fine gravel (moist) [TOPSOIL]	0			Start at 9:20 am.
	+505.0	Brown Silty CLAY, some f-m sand, trace f-c angular gravel, trace subrounded cobbles (dry-moist)	1			
		2' x 3' BOULDER	2			
	+502.0	Brown Silty f-m SAND, some f-c angular gravel, trace subrounded cobbles, trace clay (dry-moist)	3			
			4			
			5			Side walls stable at 5'.
			6			
			7			
			8			
	+497.0	Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (wet) [TILL]	9			Very difficult to excavate beyond 9'.
			10			
		▼	11			Groundwater observed at 11'.
			12			Side walls stable at 12'.
	+494.0	End of test pit at bucket refusal at 12' at 9:45 am.	13			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			14			
			15			
			16			
			17			

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LOG OF TEST PIT TP-20

PROJECT NAME	PROJECT NUMBER	DATE
Chester Development	9123501	8/7/09
LOCATION	**ELEVATION**	
Chester, NY	Approx. el. 502 (NGVD 29)	
EXCAVATION CONTRACTOR	**DEPTH**	**WATER LEVEL - First** / **WATER LEVEL - Completion**
Robert Young Excavating	15 ft	12 ft ▽ / 12 ft ▼
EQUIPMENT	**FOREMAN**	**LANGAN PERSONNEL**
CAT 320D Rubber-Tired Excavator	Robert Young	Himanshu Tripathi

Symbol	ELEV (feet)	DESCRIPTION	Depth Scale	SAMPLE Number	SAMPLE Type	REMARKS
	+502.0	Dark Brown f-m SAND, trace silt, trace roots, trace fine gravel (moist) [TOPSOIL]	0			Start at 10:00 am.
	+501.0	Light Brown Silty CLAY, some f-m sand, trace to little subrounded cobbles, trace f-c angular gravel (dry)	1			
			2			
			3			
			4			
	+497.0	Brown Silty f-m SAND, some f-c angular gravel, trace to little subrounded cobbles, trace clay (dry)	5			Side walls stable at 5'.
			6			
			7			
			8			
			9			
	+492.0	Brown Silty f-m SAND, some f-c angular gravel, trace subrounded cobbles, trace clay (wet) [TILL]	10			Very difficult to excavate beyond 10'. Side walls stable at 10'.
			11			
		▼	12			Groundwater observed at 12'.
			13			Side walls collapsing beyond 13'.
			14			
	+487.0	End of test pit at 15' at 10:25 am.	15			Test pit backfilled with excavated soil and backfill compacted with excavator bucket.
			16			
			17			