ESSEX COUNTY OFFICE OF COMMUNITY RESOURCES

7551 Court Street · P.O. Box 217 · Elizabethtown, New York 12932
Telephone (518) 873-3426 · Fax (518) 873-3751

Anna Reynolds
Director

Rob Wick, PMP
Project Manager

TO: All Bidders / Respondents

FROM: Rob Wick, PMP Project Manager

DATE: December 19th 2019

SUBJECT: Addendum #2 Newcomb Salt Shed

Revision to GC Scope:

1. **The GC will not be responsible for excavation of the foundation footings and back fill nor for site preparation specifically for the structure footprint; the Town will be conducting this activity.**

2. **The GC will provide site preparation for the rest of the site per the plans & specifications, such as construction site entrance and sediment controls, etc.**

3. **The GC will provide concrete for the footings and precast structures as defined in Specification # 03300 'Cast in Place Concrete'; the Geotechnical Report is included and attached to this Addenda.**

4. **Foundation Wall System Spec # 03420 details the submittal requirements for the concrete footer, precast structures, and connecting canopy.**

5. **The GC will not be responsible for the paving of the site or paving inside the salt shed; Essex County DPW will be performing this activity. Coordination among the Town and County will be conducted through the course of construction for appropriate construction schedule phasing.**

END OF ADDENDUM # 2

ATLANTIC TESTING LABORATORIES

Canton
6431 U.S. Highway 11
P.O. Box 29
Canton, NY 13617
315-386-4578 (T)
315-386-1012 (F)

November 19, 2018

AES Northeast, PLLC
10-12 City Hall Place
Plattsburgh, New York 12901-2952

Attn: Mr. Brad Noviski

Re: Subsurface Investigation and Geotechnical Evaluation Services
Proposed Salt Storage Building
Town of Newcomb Highway Department
Newcomb, Essex County, New York
ATL Report No. CD4530E-01-11-18

Ladies and Gentlemen:

Enclosed is one digital copy of the referenced report. ATL appreciates the opportunity to provide geotechnical services for your project.

Please note that upon completion of the subsurface investigation, the boreholes were backfilled with on-site soil. It is important that the backfilled borings be monitored for settlement or subsidence. This will be the responsibility of AES Northeast, PLLC and/or their Client. ATL assumes no liability for loss or damage resulting from borehole settlement.

The soil samples obtained during this investigation will be retained for a period of six months and subsequently discarded, unless otherwise instructed.

Please contact our office should you have any questions or comments on this information, or if we may be of further service. We look forward to our continued association to obtain a successful completion of this project.

Sincerely,
ATLANTIC TESTING LABORATORIES, Limited

Adam J. Schneider, PE
Engineer

AJS/BTB/ajs

Enclosures

SUBSURFACE INVESTIGATION
AND
GEOTECHNICAL BASELINE REPORT

PROPOSED SALT STORAGE BUILDING
TOWN OF NEWCOMB HIGHWAY DEPARTMENT
NEWCOMB, ESSEX COUNTY,
NEW YORK

AES NORTHEAST, PLLC

PREPARED FOR: **AES Northeast, PLLC**
10-12 City Hall Place
Plattsburgh, New York 12901-2952

PREPARED BY: **Atlantic Testing Laboratories, Limited**
6431 U.S. Highway 11
P. O. Box 29
Canton, New York 13617

ATL Report No. CD4530E-01-11-18

November 19, 2018

TABLE OF CONTENTS

SUBSURFACE INVESTIGATION
AND
GEOTECHNICAL BASELINE REPORT

PROPOSED SALT STORAGE BUILDING
TOWN OF NEWCOMB HIGHWAY DEPARTMENT
NEWCOMB, ESSEX COUNTY,
NEW YORK

AES NORTHEAST, PLLC

1.0 INTRODUCTION

At the request of Mr. Brad Noviski, representing AES Northeast, PLLC (AES), and in accordance with our proposal (ATL File No. CD998-822XX-04-18, dated October 3, 2018) Atlantic Testing Laboratories, Limited (ATL) performed a subsurface investigation and geotechnical evaluation for the referenced project. The subsurface investigation was performed on October 22, 2018.

The purpose of the investigation was to ascertain the general subsurface soil and groundwater conditions at the site of the proposed project, to evaluate the engineering significance of these findings, and to provide recommendations related to the design and construction of foundations and asphalt pavement.

The proposed project site is located at the existing Town of Newcomb Highway department material storage facility located on Rt 28N in Newcomb, New York. The approximate project coordinates are N 43°56'58" latitude and W 74°04'19" longitude. A **Site Location Plan** is included in **Appendix A**. All dimensions and elevations referenced in this report are in units of feet, unless otherwise noted.

2.0 PROJECT DESCRIPTION

The proposed project will consist of constructing a new salt storage building. The proposed building will be a ~~wood framed roof structure supported on cast in place concrete footings and foundation walls that will extend above grade.~~ The building will have an asphalt paved interior surface with a proposed finish floor elevation of 1663.5 feet. A geotextile fabric is proposed between the courses of asphalt pavement.

"...fabric structure supported on concrete footer and pre-cast structures that a fabric structure shall be secured to..."

3.0 SITE SURFACE CONDITIONS

The proposed site is located at the southwest corner of the existing material storage area maintained by the Town of Newcomb Highway Department. The site is currently covered with gravel. The current topographic information for the site was not provided at the time this report was prepared. Based on the observations of the field drilling crew, the site was generally flat in the area of the proposed building with a stockpile located to the north of the proposed footprint.

4.0 SUBSURFACE INVESTIGATION & SAMPLING METHODOLOGY

Two boring locations were selected by representatives of AES and staked in the field by representatives of ATL. The boring surface elevations were not provided to ATL. A **Boring Location Plan**, prepared by AES, is included in **Appendix B**.

Two soil borings were advanced for the project utilizing 3¼-inch hollow stem augers. Soil sampling and standard penetration testing was performed utilizing a 2-inch outside diameter split spoon sampler in accordance with ASTM D 1586. Soil sampling was performed continuously to a depth of 12 feet and thereafter at 5-foot intervals to boring termination at a depth of 22 feet.

The soil samples were visually classified in the laboratory by an engineering technician in general accordance with the Burmister Soil Classification System. The split spoon sampler does not recover material larger than 1⅜-inch in nominal dimension; therefore, the soil classifications may not be representative of the entire soil matrix. The visual classifications and the standard penetration test results are presented on the **Subsurface Investigation Logs** included in **Appendix C**.

The boreholes were backfilled with on-site soils upon completion. It is important that the backfilled borings be monitored for settlement or subsidence. This will be the responsibility of AES and/or their Client. ATL assumes no liability for loss or damage resulting from borehole settlement.

5.0 SITE SUBSURFACE CONDITIONS

The following description of subsurface conditions is based on the subsurface soil and groundwater conditions encountered during this subsurface investigation. Actual subsurface conditions may vary across the site in both the horizontal and vertical dimensions. Detailed subsurface descriptions are provided on the Subsurface Investigation Logs.

5.1 Soil Borings

Borings B-1 and B-2 encountered medium compact (N values 10 to 30) silty, gravelly sand that extended to depths ranging 6 to 8 feet below the surface. The medium compact silty, gravelly sand was underlain by medium compact to compact (N values 30 to 50) silty, gravelly sand that extended to boring termination at a depth of approximately 22 feet below the surface.

5.2 Groundwater

Groundwater measurements were performed during the subsurface investigation through cased and open boreholes. The recovered soil samples were also classified for coloration and relative moisture conditions.

Based on groundwater measurements and soil moisture content, freestanding groundwater was encountered in the borings at depths ranging from 13.6 to 14.7 feet at the time of the investigation.

Since the borings were backfilled upon completion, the freestanding groundwater readings may not have had sufficient time to stabilize in the open boreholes. Perched water should be anticipated in shallow foundation and utility excavations, especially during wetter periods of the year. It is anticipated that perched water encountered in the foundation excavations may be controlled by pumping from sumps installed around the perimeter of the excavations.

Fluctuations in water levels may occur due to seasonal and climatic variations, changes in surface runoff patterns, construction activity, and subsequent development of the site along with other interrelated factors.

6.0 LABORATORY ANALYSES

Select soil samples were submitted to ATL's geotechnical laboratory for physical analyses. Water Content Determination of Soil (ASTM D 2216) was performed on 10 soil samples. The test results are located on the Subsurface Investigation Logs included in Appendix C and in **Laboratory Test Results, Appendix D**.

A Particle Size Analysis without Hydrometer (ASTM D 422) was performed on two soil samples. The Particle Size Distribution Curves are included in **Laboratory Test Results, Appendix D**.

7.0 GEOTECHNICAL ENGINEERING DISCUSSION

The Geotechnical Engineering Discussion is based on information provided by AES and the subsurface conditions outlined in this report.

7.1 Proposed Building

7.1.1 Site Work

Site work will require removal of any surficial topsoil and organic material, within the footprint of the proposed building. The building footprint should be prepared to the asphalt pavement subgrade elevation of approximately 1662 feet or approximately 1.4 feet below the finish floor elevation (assuming 5-inches of asphalt pavement and 12 inches of Granular subbase).

Prior to placing fill necessary to raise site grades the subgrade soils should be proof compacted with a 10-ton roller under the direction of a Geotechnical Engineer and proof rolled in accordance with Geotechnical Recommendation 8.3.1.

7.1.2 Building Foundations

Shallow foundations can be utilized to support the proposed building. Footings requiring frost protection should be founded a minimum of 5 feet below final exterior grade. The footing subgrade soil should be proof compacted utilizing a dual-drum walk-behind vibratory roller; a Wacker DPU 6055 vibrating plate tamper; or equivalent, under the direction of a Geotechnical Engineer.

Footing subgrades that become saturate and unstable during construction should be over excavated 6 inches and a 6-inch layer of NYSDOT Number 2, crushed stone should be placed on stable, native subgrade soils. The Number 2, crushed stone should be compacted with four passes of a dual-drum walk-behind vibratory roller; a Wacker DPU 6055 vibrating plate tamper; or equivalent, under the direction of the Geotechnical Engineer. The NYSDOT Number 2, crushed stone will enhance the soil bearing capacity, and provide a stable working surface and dewatering media if ground or surface water enters the foundation excavations during construction.

All foundation excavations should be continuously monitored by a Geotechnical Engineer to verify subgrade stability and to ensure that adequate soil bearing capacity is obtained.

The on-site soils may be utilized as exterior foundation backfill, provided all deleterious organic and oversize materials (particles larger than 4 inches in diameter) are removed and the material is properly moisture conditioned. All interior foundation backfill should consist of Granular Fill. All new fill should be placed in accordance with Geotechnical Recommendations 8.5.4 and 8.5.5.

7.1.3 Soil Bearing Capacity and Settlement

Shallow footings supported on compacted in-situ soil and/or NYSDOT Number 2, crushed stone, that overlies stable, native soils may be designed using an allowable soil bearing capacity of 4000 psf, provided the recommendations presented in this report are followed.

Continuous strip footings should be a minimum 18 inches wide and individual spread footings a minimum 36 inches wide.

A detailed settlement analysis was outside the scope of this investigation; however, total and differential post construction settlement less than 1-inch and ½-inch, respectively, are estimated.

7.1.4 Interior Pavement

It is our understanding that the interior of the building will be asphalt paved. The proposed geotextile should be installed between the intermediate and top courses of the pavement structure.

7.2 Frost Protection

Shallow foundations requiring frost protection should be founded a minimum of 5 feet below final exterior grade.

7.3 Seismic

Based on the field standard penetration test results, the seismic site classification for the project site has been determined to be D. The maximum considered earthquake spectral response acceleration for short periods, (S_{MS}) is 0.531g and at 1-second period, (S_{M1}) is 0.243g as determined in accordance with the International Building Code, 2015.

7.4 General

Construction equipment and foot traffic should be limited on exposed subgrades, especially during wetter periods of the year. The granular soils encountered in the soil borings will be susceptible to sidewall sloughing in open excavations, particularly where perched water is encountered.

Cobbles and boulders may be encountered in the building foundation and utility excavations. Perched groundwater should be anticipated in shallow foundation and utility excavations during wetter periods of the year.

The soil parameters presented in the following table may be used for the following backfill materials.

Table of Soil Properties

Soil Property	Granular Fill	Engineered Structural Fill
Angle of Internal Friction (°)	32	34
Active Earth Coefficient (K_a)*	0.31	0.28
At Rest Earth Coefficient (K_o)*	0.47	0.44
Passive Earth Coefficient (K_p)*	3.25	3.54
Ultimate Coefficient of Sliding Friction	0.44	0.47
Wet Unit Weight (pcf)	130-140	135-145

*The Rankine earth pressure coefficients (ultimate values) are for level backfill placed in a fully drained condition.

8.0 GEOTECHNICAL RECOMMENDATIONS

The following recommendations are presented as the minimum requirements for the design, planning, and construction of the foundation systems and interior asphalt pavement. The concepts and geotechnical engineering considerations presented in the preceding sections must be considered in project design and construction.

8.1. Site Preparation

8.1.1. Site work should be scheduled during drier portions of the year to avoid possible delays and additional costs associated with construction during the wet seasons.

8.1.2. The building subgrade should be prepared as discussed in Sections 7.1.1 of the Geotechnical Engineering Discussion.

8.1.3. Site surface grading should be designed to convey surface water away from the site structures and pavement.

8.1.4. The contractor must follow excavation safety practices as mandated by 29 CFR Part 1926 (OSHA) and by applicable state regulations.

8.2. Foundations

8.2.1. All foundation excavations should be monitored by a Geotechnical Engineer to verify the stability and soil bearing capacity of the foundation subgrades.

8.2.2. Exterior footings should be founded a minimum of 5 feet below final exterior grade to provide adequate frost protection.

8.2.3. Shallow footings founded on compacted native soils and/or NYSDOT Number 2, crushed stone, that overlies stable, native soils, may be designed using a maximum allowable soil bearing capacity of 4000 psf, provided the recommendations presented in this report are followed.

8.3. Interior Asphalt Pavement

8.3.1. Where possible, areas to receive pavement structures should be proof rolled using a tandem axle truck with a minimum gross weight of 40,000 lbs. Rollers or low ground pressure construction equipment shall not be used for proof rolling. The proof rolling must be conducted under the observation of the Geotechnical Engineer. Any areas noted to weave or deflect should be excavated to stable material, at the direction of the Geotechnical Engineer, and replaced with Granular Fill.

8.3.2. **Heavy Duty Asphalt Pavement** (Trucks) structures should consist of the following:

Thickness	Course	NYSDOT Marshall Mixes[2]	NYSDOT Superpave Mixes
2”	Bituminous Top Course	Section 403, Type 7F	Section 402, 9.5 mm, F3
NA	Geotextile	Mirafi MVP 500	
3”	Bituminous Intermediate Course	Section 403, Type 3	Section 402, 19.0 mm, F9
12”	Granular Subbase[1]	Section 304, Type 2	Section 304, Type 2

(1) The product of crushed ledge rock.
(2) NYSDOT 2008 Standard Specification

8.3.3. The Granular Subbase should be placed and compacted in accordance with Geotechnical Recommendations 8.5.4 and 8.5.5.

8.3.4. The bituminous pavements should be compacted with a vibratory roller to densities in excess of 92% of the maximum theoretical specific gravity of bituminous paving materials as determined by ASTM D 2041.

8.3.5. It is anticipated there will be future revisions to the New York State DOT specifications for bituminous mixtures. Prior to bidding this project, ATL must review the final pavement specifications.

8.4. Dewatering

8.4.1. It will be the contractor's responsibility to maintain adequate water control at all times. Project specifications should clearly indicate that standing water, and/or saturated, unstable soil conditions will not be tolerated in areas to receive foundations or utilities. The project specifications should state that the contractor will not be reimbursed for extras related to the control of water.

8.4.2. All dewatering activities should comply with New York State Department of Environmental Conservation (NYSDEC) storm water discharge requirements and/or local regulations for construction.

8.5. Backfill and Compaction Requirements

8.5.1. The on-site soils, excluding deleterious organics and oversize material (particles larger than 4 inches in diameter), may be used for exterior foundation backfill and general site fill, provided the soil is placed and compacted in accordance with Geotechnical Recommendations 8.5.4 and 8.5.5. Granular Fill should be utilized as interior foundation backfill.

8.5.2. **Granular Fill** should consist of a clean, screened, crushed, or bank-run gravel conforming to the following gradation:

Sieve Size	Percent Passing
4"	100
¼"	35-65
#200	0-10

8.5.3. **Engineered Structural Fill** should consist of a screened, crushed gravel or crushed ledge rock conforming to the following gradation:

Sieve Size	Percent Passing
3"	100
1"	80 - 95
½"	45 - 75
#4	30 - 60
#40	10 - 40
#200	0 - 7

8.5.4. All fill and backfill should be placed and compacted in lifts not exceeding eight inches in loose thickness, at a moisture content of ± 2% of the Optimum Moisture Content, and to densities in excess of 95%, as determined by ASTM D1557, or as directed by the Geotechnical Engineer.

8.5.5. Compaction should be performed with vibratory rollers unless there is concern for damage to adjacent structures or underground utilities.

8.6 Testing and Inspection

8.6.1 The final site grading, foundation plans and project specifications should be reviewed by ATL, as the Geotechnical Engineer of Record, to verify that there has not been a misinterpretation of this report and/or ATL's understanding of the project.

8.6.2 We recommend that ATL, as the Geotechnical Engineer of Record, be retained to perform Special Inspections in accordance with the Building Code of New York State during site earthwork and foundation installations. An ATL geotechnical representative familiar with the findings and recommendations of this report will be able to assess the subsurface conditions encountered during construction, provide necessary remedial recommendations, and verify that adequate bearing capacities and proper foundation installation requirements are achieved.

8.6.3 All foundation construction and backfilling should be monitored and tested by an Independent Testing Agency, conforming to ASTM E-329, "Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection." ATL conforms to ASTM E-329 and can be retained to perform required construction phase monitoring and testing services, including applicable Special Inspections and Structural Tests in accordance with the Building Code of New York State.

9.0 SUMMARY

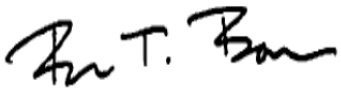
The subsurface investigation logs and this report in its entirety should be provided to the contractors for information and interpretation. The subsurface investigation logs may not be representative of the entire site subsurface condition, but only what was encountered at the individual test locations at the time of the investigation. The subsurface soil and groundwater conditions may be different from those described on the subsurface investigation logs.

This report was prepared to present the findings of our subsurface investigation and engineering evaluation, and to outline concepts to be utilized in foundation design and construction. These concepts may require alterations to meet the specific design and economic considerations for this project.

Prepared by:

Adam J. Schneider, PE
Engineer

Reviewed by:

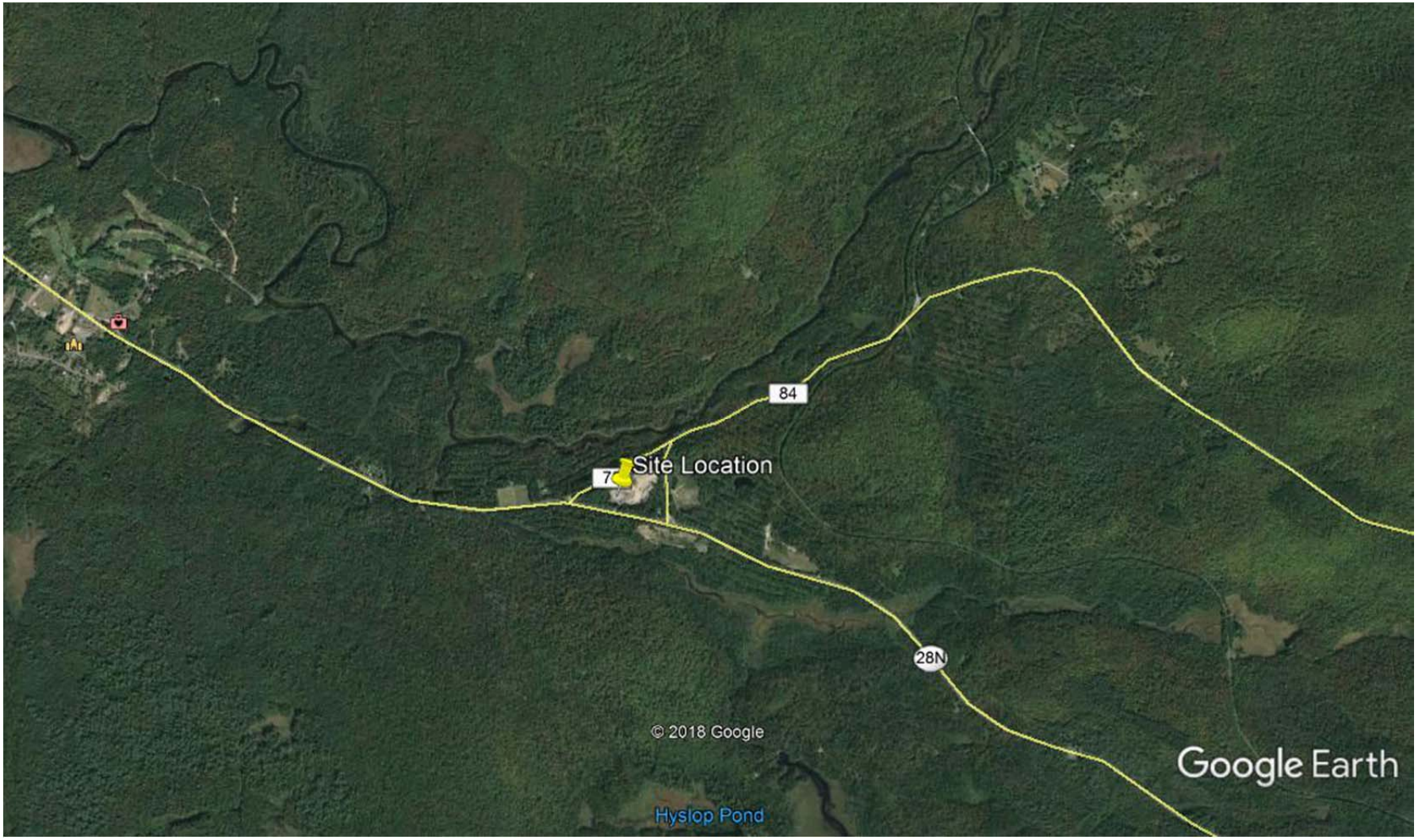


Brian T. Barnes, PE
Senior Engineer

AJS/BTB/ajs

APPENDIX A

SITE LOCATION PLAN



Site Location Map	Drawn by: AJS	Scale: Not to scale	Project No.: CD4530	Date: November 2018
Salt Storage Building **Newcomb, New York**	***ATLANTIC TESTING LABORATORIES*, Limited** Albany, NY · Binghamton, NY · Canton, NY · Elmira, NY · Plattsburgh, NY Poughkeepsie, NY · Syracuse, NY · Rochester, NY · Utica, NY · Watertown, NY			

APPENDIX B

BORING LOCATION PLAN


Newcomb Salt Storage Site
Write a description for your map.
Legend
0
Feature 1
B-2
B-1
Google Earth
© 2018 Google
N
400 ft

APPENDIX C

SUBSURFACE INVESTIGATION LOGS

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Report No.: **CD4530E-01-11-18**

Client: **AES Northeast**

Boring Location: **See Boring Location Plan**

Project: **Subsurface Investigation**
Newcomb Salt Shed
Newcomb, New York

Start Date: **10/22/2018** Finish Date: **10/22/2018**

Boring No.: **B-1** Sheet **1** of **1**

Groundwater Observations

Date	Time	Depth	Casing
10/22/2018	**AM**	**14.0'**	**15.0'**
10/22/2018	**AM**	**14.7'**	**20.0'**

Coordinates
Latitude
Longitude

Sampler Hammer
Weight: **140** lbs.
Fall: **30** in.
Hammer Type: **Automatic**

Ground Elev.:

Boring Advance By: **3 1/4" Auger**

Borehole caved at 5.8 feet.`

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	Recovery (Inches)
								f - fine; m - medium; c - coarse; and - 35-50%; some - 20-35%; little - 10-20%; trace - 0-10%	
1	AUGER	1	0.0	2.0	SS	9 11 10 10		Dark Brown cmf SAND; trace mf GRAVEL; trace SILT (moist, non-plastic)	10
2		2	2.0	4.0	SS	10 12 14 12		NO RECOVERY	0
4		3	4.0	6.0	SS	5 7 11 18		Dark Brown c-mf SAND; some mf GRAVEL; little SILT (moist, non-plastic) w=29.9%	6
6							6.0		
		4	6.0	8.0	SS	12 14 14 14		Dark Brown cmf SAND; and cmf GRAVEL; little SILT (moist, non-plastic) w=13.5%	12
8		5	8.0	10.0	SS	17 19 18 22		Dark Brown f SAND; trace SILT (moist, non-plastic) w=8.1%	16
10		6	10.0	12.0	SS	20 21 21 23		Similar Soil (moist, non-plastic) w=13.5%	12
15		7	15.0	17.0	SS	16 19 20 26		Dark Brown cmf+ SAND; trace f GRAVEL; trace SILT (saturated, non-plastic) w=21.7%	10
20		8	20.0	22.0	SS	18 21 24 24		Dark Brown f SAND; trace SILT (saturated, non-plastic)	15
22							22.0		
								Boring terminated at 22.0 feet.	
24								Notes: 1. Borehole backfilled with onsite soils.	

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: **Tyler Weston; Ben Crary**

Inspector:

ATL-LOG1 LL CD4530 AES NORTHEAST-NEWCOMB.GPJ ATL4-08.GDT 11/16/18

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Report No.: **CD4530E-01-11-18**

Client: **AES Northeast**

Boring Location: **See Boring Location Plan**

Project: **Subsurface Investigation**
Newcomb Salt Shed
Newcomb, New York

Start Date: **10/22/2018** Finish Date: **10/22/2018**

Boring No.: **B-2** Sheet **1** of **1**

Groundwater Observations

Date	Time	Depth	Casing
10/22/2018	**PM**	**13.6'**	**15.0'**
10/22/2018	**PM**	**14.0'**	**20.0'**

Coordinates
Latitude
Longitude

Sampler Hammer
Weight: **140** lbs.
Fall: **30** in.
Hammer Type: **Automatic**

Ground Elev.:

Boring Advance By: **3 1/4" Auger**

Borehole caved at 4.6 feet.

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	Recovery (Inches)
								f - fine; m - medium; c - coarse; and - 35-50%; some - 20-35%; little - 10-20%; trace - 0-10%	
1	AUGER	1	0.0	2.0	SS	5 8 11 7	2.0	Dark Brown cmf+ SAND; some mf GRAVEL; little SILT (moist, non-plastic)	5
2		2	2.0	4.0	SS	6 8 10 9		Brown c-mf+ SAND; some SILT; trace f GRAVEL (moist, non-plastic) w=8.8%	4
4		3	4.0	6.0	SS	6 7 7 9		Similar Soil (moist, non-plastic) w=12.5%	12
6		4	6.0	8.0	SS	8 10 11 6	8.0	Brown cmf+ SAND; trace f GRAVEL; trace SILT (moist, non-plastic) w=11.6%	8
8		5	8.0	10.0	SS	10 14 13 13		Brown f SAND; trace SILT (moist, non-plastic) w=12.9%	6
10		6	10.0	12.0	SS	9 13 15 11		Similar Soil (moist, non-plastic) w=16.0%	5
15		7	15.0	17.0	SS	12 17 19 15		Similar Soil (moist, non-plastic)	8
20		8	20.0	22.0	SS	11 18 20 17	22.0	Brown cmf+ SAND; trace SILT (moist, non-plastic)	10
22								Boring terminated at 22.0 feet.	
24								Notes: 1. Borehole backfilled with onsite soils.	

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: **Tyler Weston; Ben Crary**

Inspector:

ATL-LOG1 LL CD4530 AES NORTHEAST-NEWCOMB.GPJ ATL4-08.GDT 11/16/18

APPENDIX D

LABORATORY TEST RESULTS

ATLANTIC TESTING LABORATORIES

WBE certified company

LABORATORY DETERMINATION OF MOISTURE CONTENT OF SOILS
ASTM D 2216

PROJECT INFORMATION

Client:	AES Northeast	**ATL Report No.:**	CD4530SL-01-11-18
Project:	Newcomb Salt Storage Shed	**Report Date:**	November 15, 2018
	Newcomb, New York	**Date Received:**	November 13, 2018

TEST DATA

Boring No.	Sample No.	Depth (ft)	Moisture Content (%)
B-1	S-3 [1]	4-6	29.9
	S-4 [1]	6-8	13.5
	S-5	8-10	8.1
	S-6	10-12	13.5
	S-7	15-17	21.7
B-2	S-2 [1]	2-4	8.8
	S-3 [2]	4-6	12.5
	S-4 [2]	6-8	11.6
	S-5	8-10	12.9
	S-6	10-12	16.0

REMARKS

1. Sample mass was less than the minimum mass outlined in the referenced test method.

Reviewed By: Jeffrey Ames Date: 11/15/18

ATLANTIC TESTING LABORATORIES

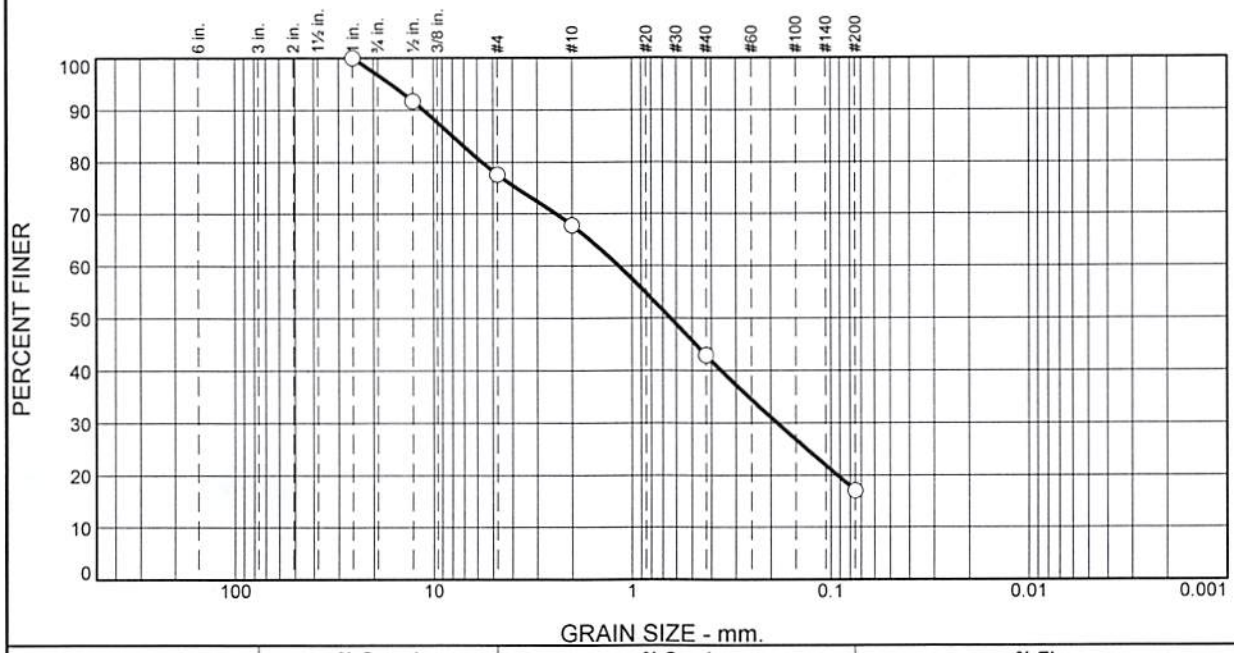
Particle Size Distribution Report

Project: Newcomb Salt Storage Shed, Newcomb, NY **Report No.:** CD4530SL-01-11-18

Client: AES Northeast **Date:** 11/15/18

Sample No: B-1, S-3 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 4-6'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	3	19	10	25	26	17	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1"	100		
1/2"	92		
#4	78		
#10	68		
#40	43		
#200	17		

* (no specification provided)

Soil Description

Dark Brown c-mf SAND; some mf GRAVEL; little SILT

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 7.9885 D_{60}= 1.1659 D_{50}= 0.6433
D_{30}= 0.1857 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Moisture Content = 29.9%

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amos Date: 11/15/18

ATLANTIC TESTING LABORATORIES

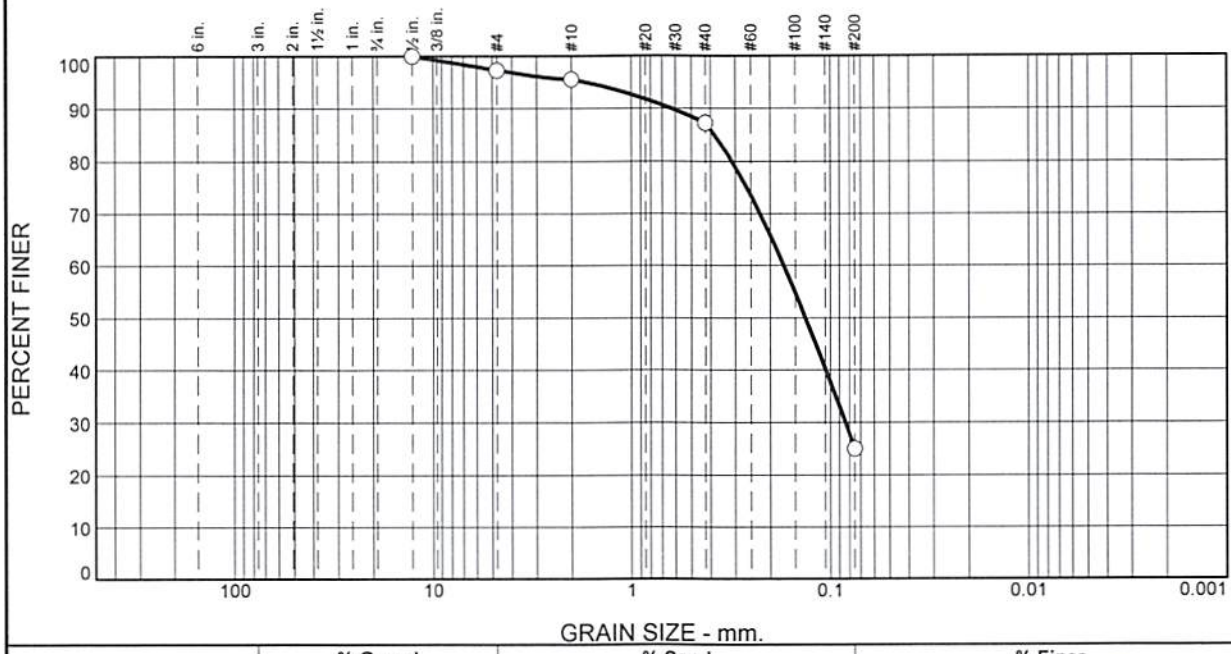
Particle Size Distribution Report

Project: Newcomb Salt Storage Shed, Newcomb, NY **Report No.:** CD4530SL-01-11-18

Client: AES Northeast **Date:** 11/15/18

Sample No: B-2, S-2 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 2-4'



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	3	1	9	62	25	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1/2"	100		
#4	97		
#10	96		
#40	87		
#200	25		

* (no specification provided)

Soil Description

Brown c-mf+ SAND; some SILT; trace f GRAVEL

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 0.3813 D_{60}= 0.1712 D_{50}= 0.1334
D_{30}= 0.0839 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Moisture Content = 16.0%

Figure

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Reviewed by: Judy Ames Date: 11/15/18