Appendix H

PRELIMINARY HYDROGEOLOGIC STUDY



GEOTECHNICAL ENGINEERS AND ENVIRONMENTAL CONSULTANTS

Preliminary Hydrogeologic Study

Stateline Retail Center East and West Disposal Areas Southeast, New York

Prepared for:

Camarda Development Company 1699 Route 6, Suite 1 Carmel, NY 10512

Prepared by:

Geo**Design**, Inc. 984 Southford Road Middlebury, CT 06762 Tel. (203) 758-8836 Fax. (203) 758-8842

> File No. 321-05 December, 2006

d/b/a GeoDesign, PC

December 18, 2006 File 321-05

Mr. Fred Koelsch Camarda Development Company 1699 Route 6, Suite 1 Carmel, NY 10512

Via: email <u>Fkoelsch@suscom.net</u>

Re: Preliminary Hydrogeologic Study Stateline Retail Center U.S. Route 6, Southeast NY

Dear Fred:

This report presents the results of Geo**Design**'s preliminary Hydrogeologic Study of the site of the proposed Stateline Retail Center development in the Town Southeast, New York.

Background Information

Based on information provided by Insite, two areas are targeted for sewage disposal for this project. The first, the East Area, consists of an approximately 400' by 380' area near the northeast corner of the site. The second, the West area, consists on an L-shaped area approximately a 160' to 240' by 800' area (average approximately 200' by 800') located at the westerly end of the site. It is currently anticipated that in excess of 5,000 gallons per day of sewage flow will be required to service different possible development scenarios for the site. Subsurface treatment and disposal (using conventional primary sewage treatment in tank and effluent recharge into leaching trenches) is being considered.

Pre-Existing Subsurface Data

Insite excavated and logged 12 deep test holes (test pits) on December 10 and 13, 2004 in a portion of the proposed East disposal area. Insite also excavated and logged about 18 deep test holes (test pits) in December, 2004 in a portion of the proposed West disposal area. Excavation depths reached to seven feet maximum in the pits. Bedrock was encountered in some of the test pits and not in others to depth of up to about 7 feet. Some bedrock outcroppings are present in portions of the site. Groundwater was not encountered at depth shallower than 6 feet. In one of the test holes a localized water seep was observed at a depth of 12 inches, but this it was not

determined to represent groundwater. The shallow soils were generally described a "Fine Sandy Silt" or "Fine Sandy Silt and Gravel" and locally as "Fine Sand".

New Subsurface Data

Additional subsurface data was obtained in accordance with a workplan dated October 4, 2006. The purpose of the new data was to allow the preliminarily estimation of the flow rate capacities of the East and the West areas in accepting subsurface sewage flow. This data was used to determine preliminary design groundwater levels and hydraulic parameters in both areas. The field investigation was performed in a manner that provided both the NYC DEP and the Putnam Dept. of Health an opportunity to review and comment on our technical approach (work plan) and witness the field testing. The intent of this approach was to help ensure that the data obtained would be acceptable to these agencies during the final site characterization phase. The final phase is scheduled to occur in future once the disposal site(s) have been chosen, once target flow rates have been selected, and at a time of the year which will allow measuring groundwater levels during the wet season (Spring or early Summer).

As described in the workplan, we engaged a subcontractor to drill 8 test borings at each area. Borings at the East and West Areas are termed BE-1 to BE-8, and BW-1 to BW-8, respectively. Drilling, testing, well installation, and well measurements occurred between October 5 and 13, 2006. A NYC DEP representative (Mr. Matt Gianetta) visited the site on the first day of drilling and testing. Subsequent groundwater observation levels were measured on October 16 and 18, 2006.

Boring logs are attached in the Appendix and boring locations are shown on Figures 1A and 1B for the East and West Areas, respectively. Each borings was terminated with a 2-inch diameter PVC observation well to allow measurement of stabilized groundwater levels. Wells were constructed with five-foot long 0.01-inch slotted screens and solid risers. Well locations and elevations (ground surface and top of riser) were surveyed by the project surveyor (Insite) and provided to us in AutoCAD format.

Borings were either extended to refusal or terminated with rock core five to ten feet below the bedrock surface. A summary of bedrock data is included in Table No. 2. We performed in-situ permeability tests below groundwater levels using the falling head methodology in unconsolidated materials in selected borings to estimate in-situ permeability. We also performed six gradation tests of selected soil samples to confirm visual classification of representative soil samples and determine D_{10} size. Test data sheets and results are included in the Appendix.

We measured several sets of stabilized groundwater levels in all of the wells. This data is summarized in Table No. 1, attached. The phreatic (groundwater) surface levels as measured on

October 18, 2006 are also depicted on Figures 1A and 1B. Based on this data we estimated the groundwater flow gradient and direction at each proposed disposal area.

Calculated Permeability Estimates

To supplement the limited field permeability testing, we performed Kozeny-Carman analyses. These analyses correlate in-situ relative density and estimated D_{10} particle size to permeability. The relative density was estimated based on standard penetration test N-values (from the test borings), and the particle size is based on the six gradation tests. The results of these data and analyses are summarized in Table 4.

Interpretation of Field Data and Analyses

East Area

About 6 to 12 inches of topsoil and subsoil are present in this area. These deposits overlie generally medium dense gravelly Sand and Silt, to depths depths ranging from as little as 6 feet in BE-2 to as much as 27 feet in BE-7. This stratum generally becomes denser and siltier with depth, and overlies dense Glacial Till or Gneiss Bedrock.

Depths to stabilized groundwater ranged from about 6.5 to 12.5 feet except in BE-7, near the stream where depth to water was about 1.8 foot. These reading correspond to approximate Elevations 482 to 452 decreasing toward the north. This 30 foot range in groundwater levels yields approximate hydraulic gradients of about 0.11 toward the north.

In-situ permeability test data (summarized on Table No. 3) indicated an average permeability of 1.5 feet per day. The Kozeny-Carman analyses (summarized on Table No. 4) indicate an estimated permeability of about 2.2 feet per day. These values are consistent with each other and fall within the range of published values for the gravelly sand and silt (as determined by visual classifications and gradation tests).

West Area

About 6 to 24 inches of topsoil and subsoil are present in this area. These deposits overlie generally medium dense Sand and Silt grading to Silt and Sand, to depths ranging from about 13 to 25 feet. This stratum generally becomes denser and siltier with depth, and grades to dense Glacial Till. It overlies Gneiss Bedrock.

Depths to stabilized groundwater ranged from about 10.5 to 25.5 feet except in BW-8 nearest the wetland where depth to water was about 5.5 feet. These reading correspond to approximate Elevations 506 to 463 decreasing toward the north. This 43 foot range in groundwater levels yields approximate hydraulic gradients of about 0.08 toward the north.

In-situ permeability test data (summarized on Table No. 3) indicated an average permeability of 0.27 foot per day. The Kozeny-Carman analyses (summarized on Table No. 4) indicate an estimated average permeability of about 0.06 foot per day. These values indicate a high degree of variability, but are consistent with medium dense silty granular soils grading to dense silty Glacial Till soils.

Data Comparison between East and West Areas

Depth to bedrock is greater at the West Area than at the East Area. Thus, the thickness of unconsolidated materials is greater in the West Area than in the East Area. Depth to groundwater is generally higher at the West area than at the East Area. Saturated thicknesses of the aquifer are about 8 and 13 feet at the West Area and at the East Area, respectively.

Based on limited testing, the estimated in-situ permeability of the East Area is on the order of five to ten times higher than that of the West Area.

Estimated Potential for Subsurface Disposal, Conclusions, and Recommendations

Based on the referenced data, we offer the following preliminary conclusions regarding the potential for subsurface discharge and treatment of sewage. From a hydrogeologic standpoint, in general two primary factors control the suitability of discharging sewage and/or water into the ground. One is the ability of shallow soils (near the trenches) to infiltrate water at a sufficiently high rate. The other is the ability of deeper soils/bedrock formations to convey the water without excessive mounding or breakout.

We recommend that during final design percolation testing be performed at shallow depths to investigate the shallow infiltration capacity of both the East and the West Areas.

For preliminary planning purposes, we estimated the capacity of each site to accept sewage disposal flows with no breakout. Simplified one-dimensional analyses were made. The results of these analyses are included in Figures 2A and 2B, and 3A and 3B for the East and West areas, respectively. The summary of the input flow used for these analyses is included in Table No. 5. The most important assumption made for these analyses is the design base flow (groundwater flow or recharge) present at each site (e.g. before sewage flows are applied). A design value equal to 10 inches per year was used (see Figures 2A and 3A). This value is consistent with the time of the year the wells were read and the simplified model was calibrated to (October 2006) as well as the rainfall in the prior six-month period (April 2006 to October 2006). We also compared recent precipitation data to historic values for this region using recent Danbury Airport precipitation data and historic data. Refer to Tables 6A and 6B, and the partial plot of the data in Table 6B for this comparison. The values of Hydraulic Transmissivities are also critical and were estimated using the referenced permeability data, the estimated aquifer thickness, and our

experience with the types of soils/bedrock present at the site. We note that the post-flow hydraulic transmissivities used in our analyses were increased from predicted existing values to account for the expected increased aquifer thickness as the groundwater rises after the application of sewage flows. Lastly, we note that the wells were not read during the wet season, thus additional judgment had to be used. Groundwater readings made during the Spring or early Summer will be required during final design to evaluate the effects of increased based flow during the wet season.

Based on our preliminary calculations, we estimate that the East and West Areas, will be capable of accommodation approximately 7,000 gallons per day (gpd) and 3,000 gpd, respectively. See Figures 2B and 3B.

For final design, we anticipate that a mounding analysis will be required (by the NYC DEP) using a 2-D model. This will require additional testing to provide the necessary data that will then be used in analyses and preparation of a computer model to evaluate / confirm the suitability for subsurface disposal. We expect that all of the data obtained during the present study can be directly re-used for future studies of the site.

This report is subject to the attached limitations. We are available to meet with you and or Insite to discuss these results or answer any questions you may have.

If you have any questions concerning this report please the undersigned (203-758-8836, extension 105).

Very Truly Yours,

Geo**Design**, Inc.

Original Signed

Ulrich La Fosse, P.E. Senior Principal

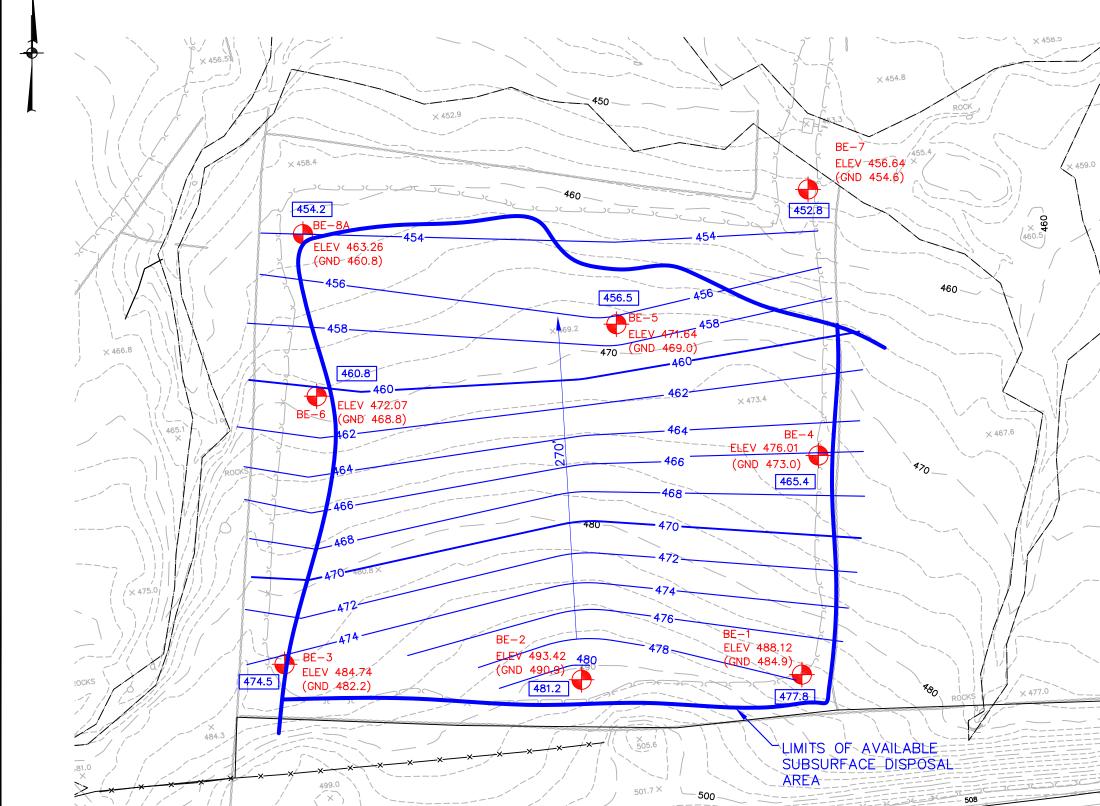
Attachments: Figures Tables Boring and Wells Logs Gradations Testing Results Falling Head Test Results Limitations

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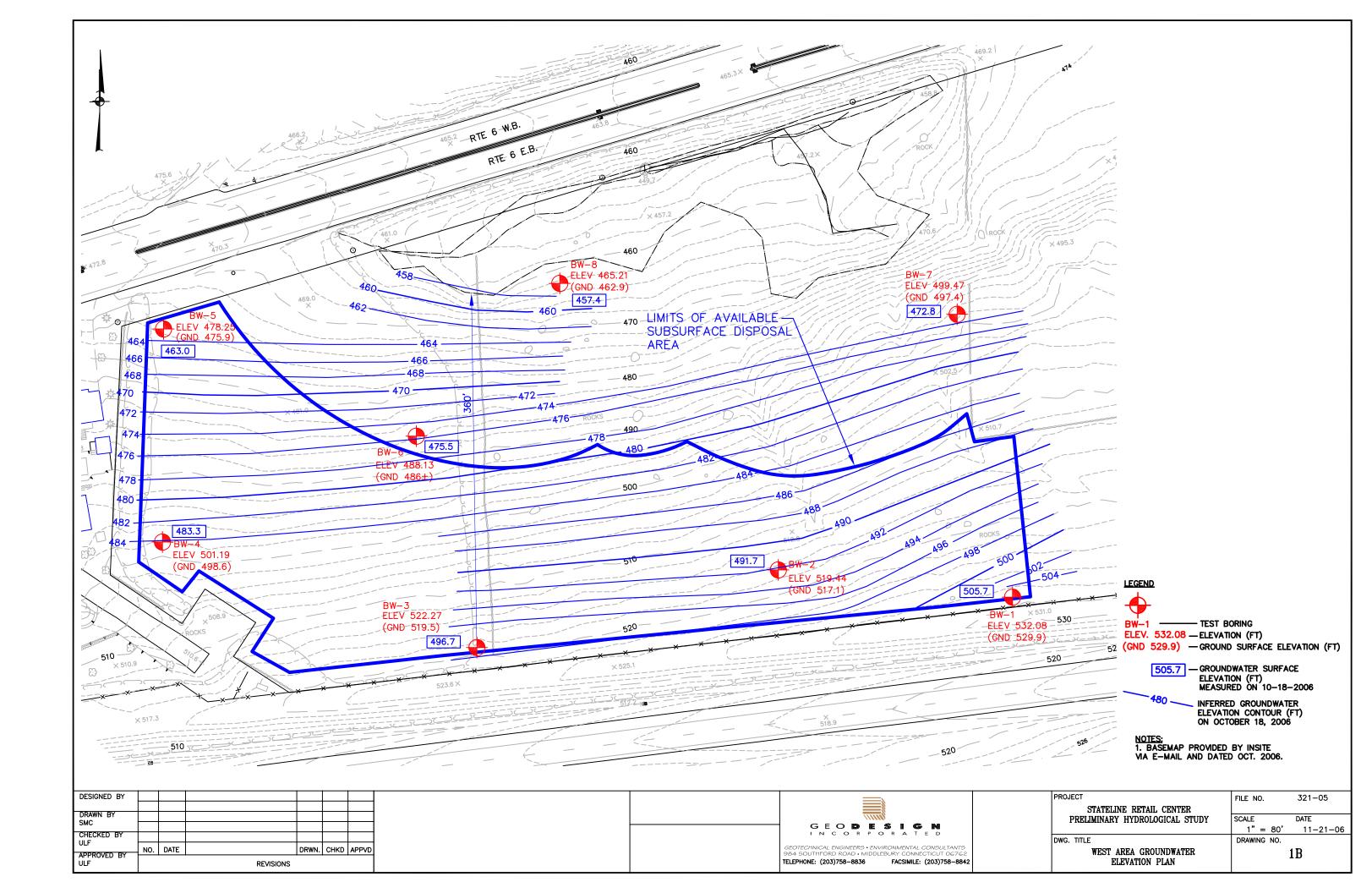
APPENDICES

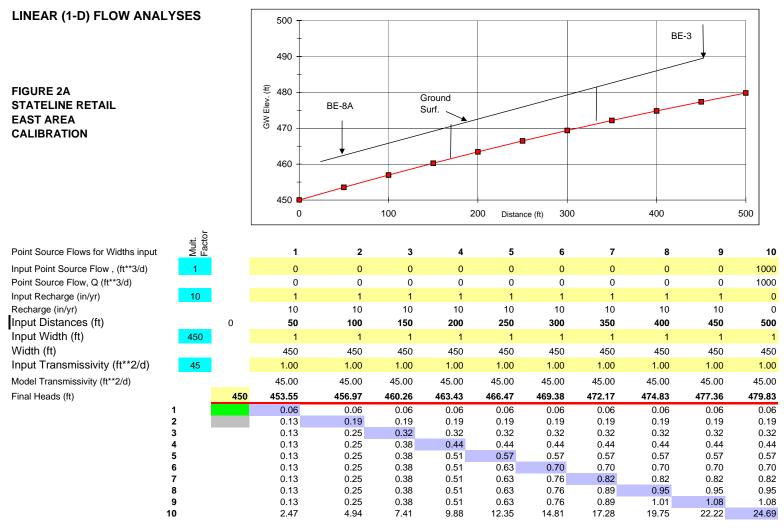
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LEGEND BE-1 — TEST BORING ELEV. 488.12 — ELEVATION (FT) (GND 484.9) — GROUND SURFACE 477.8 — GROUNDWATER SI MEASURED ON 10 470 — INFERRED GROUNI ELEVATION CONTO ON OCTOBER 18, NOTES: 1. BASEMAP PROVIDED BY INSITE VIA E-MAIL AND DATED OCT. 20	URFACE ELEV/ D-18-2006 DWATER DUR (FT) 2006	
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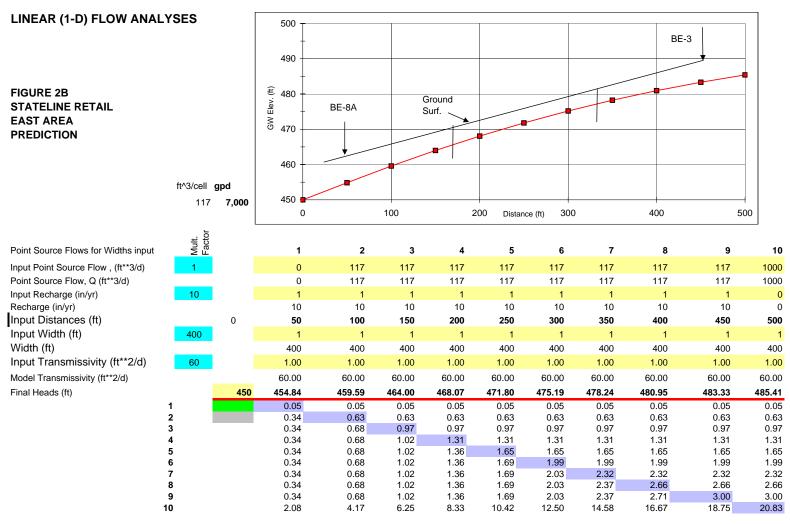
Note: the formula is different along the diagonal shaded locations to account for less head loss when not all of the flow causes head loss through the starting node. There is a divide by 2 term to account for this. Note formula is WL**2/2T in McWhorter & Sunada p.150 see added section for constant T by PFR This is the same formula being applied to the shaded elements where the average of 1/2 the flow causes head loss thorugh the element with recharge.

The head loss for a point source of flow is: Q * L/T

The head loss over an element with distributed flow is: q*L**2/(2*T)

The head loss over an element that is downgradient of a distributed flow element is treated like head loss from a point source. $Q = q^*L$ and therefore the head loss is Q^*L/T or q^*L^*L/T

Shaded head loss is the head loss through that node



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LINEAR (1-D) FLOW ANALYSES 500 BE-3 490 € 480 **FIGURE 3A** Ground Elev. STATELINE RETAIL BW-8 Surf. WEST AREA дV 470 CALIBRATION 460 450 0 100 200 Distance (ft) 300 400 500 Facto Mult. Point Source Flows for Widths input 2 7 8 9 10 1 3 4 5 6 Input Point Source Flow , (ft**3/d) 0 0 0 0 0 0 0 0 0 0 Point Source Flow, Q (ft**3/d) 0 0 0 0 0 0 0 0 0 220 Input Recharge (in/yr) 10 1 1 0 1 1 1 1 1 1 Recharge (in/yr) 10 10 10 10 10 10 10 10 10 0 Input Distances (ft) 0 50 100 150 200 250 300 350 400 450 500 Input Width (ft) 700 1 1 1 1 1 1 1 1 1 Width (ft) 700 700 700 700 700 700 700 700 700 700 Input Transmissivity (ft**2/d) 15 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 Model Transmissivity (ft**2/d) 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 Final Heads (ft) 450 454.28 458.18 461.70 464.84 467.60 469.98 471.98 473.60 474.84 475.89 0.19 1 0.19 0 19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 2 0.38 0.57 0.57 0.57 0.57 0.57 0.57 0.57 0.57 0.57 3 0.38 0.76 0.95 0.95 0.95 0.95 0.95 0.95 0.95 0.95 4 0.38 0.76 1 1 4 1.33 1 33 1 33 1.33 1.33 1 33 1.33 5 0.38 0.76 1.52 1.71 1 71 1.14 1.71 1 71 1 7 1 171 6 0.38 0.76 1.14 1.52 1.90 2.09 2.09 2.09 2.09 2.09 7 0.38 0.76 1.14 1.52 1.90 2.28 2.47 2.47 2.47 2.47 8 0.38 0.76 1.14 1.52 1.90 2.28 2.66 2.85 2.85 2.85 0.38 0.76 1.90 2.28 3.04 9 1.14 1.52 2.66 3.23 3.23 1.05 10 2.10 3.14 4.19 5.24 6.29 7.33 8.38 9.43 10.48

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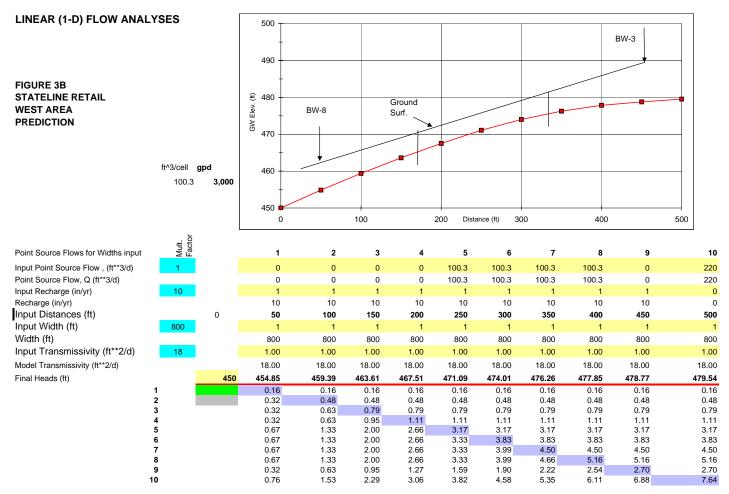
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TEST BORING AND WELL LOGS

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Depth (ft)	Casin	Number	Type	Penet (inche	Recovery (inches)	Depth (ft)	0 - 6	6 - 12	12 - 18	18 - 24	Corin (min./	Moist Conte	Depth & Elevation(fee	t)		Class	sification	System: B	urmister				
		1	SS	24	16	0.0	2	3	4	7			0.5 Tops Subs	soil soil ⁴	489.5	Lo		rown fin to coars					SILT,
		2.0 Sand 488.0 o & Gravel 0 O Madium data																					
	5 2 SS 24 12 50 6 12 15 15 Medium dense, brown fine to coal																						
													-		Þ	0							
5		2	00	24	12	5.0	6	12	15	15			-		0	, C Me	edium	dense, k	orown	fine to	o coars	e SA	ND,
		2	33	24	12	5.0	0	12	15	15			-		5								
-																0 (
																0							
10	5 -																						
		3	SS	14	8	10.0	18	36	100/2"				11.2		₹ ¢	Ve so	ery den me fine	se, gray e to coa	/ fine f rse Sa	to coa and, li	rse GR ttle Silt	AVEI	-,
													Cobb & Bou		478.8	X							
													-										
													_										
15													-			R							
													-										
													-										
													-										
20																							
										000/7			21.0		•							<u> </u>	
		C-1	С	60	60	21.0	IKEC	= 100%	; RQD=	90%]	6		Bedr	ock 4	469.0	Ex We	cellent	t Quality ed, gray	, Mod , GNE	eratel ISS	y Hard,	Sligh	itly
											6		-										
											9		-										
25	A · · ·		rof		 				d to 7	E foct t	11 hroug												
arks	Coi	red		1.2									oulder using augered th						obbles	s from	11.2 to	21 f	eet
Remarks	Up	on	com	pleti									lled. Well co n #2 WG filt										
Note	sur	fac	e we	ell ⁱ wa	as ba	ckfilled		entonite	e chips.	Lockir	ng pro	otectiv	e standpipe								er neiol	w yro	
	2)	Nate ∖fter	r leve corin	l readu g; NR	1gs have = Not R	e been ma lecorded.	ade at times	and under	condition	s stated, fl	uctuatio	ns of gro	oundwater may o				-			leasurem	ents were 1	nade. A	\C =
	1	VOR	/H =	Weight	t of Rod	/Hammer					* ·		Spoon; SSL = 3.	5 inch II	D Split	spoon; ST	- Snelby	1 ube; V = V	v ane;	Bori	ng No.:	B	Ξ-2

													BC				LOG			Bo	ring No.:	B	<u>-2</u>
			c		. 0		E	() S I	G	N					oject]					Pag	ge No.:	2 (of 2
			Geo			ngineer	р О rs and En	ivironme					State	line	e Re	etai	I Cente	er		File	e No.:	<u>0321</u>	-005.0
			Те	elepho	Mic ne: 20	984 S dlebury 3-758-8	Southfor y, Conne 8836	cticut 0	6762 203-75	8-8842			Sout	hea	ast,	Ne	w York	ζ.		Ch	ecked By	r: <u>U</u>	<u>LF</u>
	ng Co	-		_	New E	England E	Boring Co						Casing	<u>.</u>	Sampl					1	Observations		
	man: Desig		:р.:		Jeff Le Chi Zh								Type: HW I.D.: 4.0 in.		SS 1.38		Dat	te	Depth (ft)	Elev. (ft)		Notes	
	Start oordi			_	Octobe	er 6, 200	06		Finished: ordinate:	Octobe	er 6, 20	006	Hammer Wt.: NA Hammer Fall: NA		140 ll 30 ir			/9/06 /10/06			In well In well		
Grou	ind Si			vation	· /			90.0					Rig Type: Bo	mbar	rdier		¥ 10/	/16/06	9.8	480.2	In well		
Stati	on:					Offset:	ft ample I	nforma	tion				Hammer Type: Safe	ety - F	Hydraul	ilic	<u> </u>	<u>/18/06</u>			In well		
	ows/ft			Ę							me	(%)	Description		Symbol			San	ipic i)(301)	ption		
Depth (ft)	Casing Blows/ft	Number	be	Penetration (inches)	Recovery (inches)	Depth (ft)	E	Blows / 6 in	nch Interv	al	Coring Time (min./ft)	Moisture Content (%)	Depth &		Syr								
De	Ca	Nu	Type	Per (in	(in Re	De	0 - 6	6 - 12	12 - 18	18 - 24		Сой	Elevation(feet) Bedrock			Class	ification Sys	stem: Bu	rmister				
		C-2	С	60	57	26.0	[REG	C= 95%;	RQD=		11		(Continued)		¥}-	Fai	ir Quality	, Mode	erate	ly Ha	rd, Sligh	tly	
		02	0	00		20.0					10		-		×.	We	eathered,	, gray,	GNE	ISS			
											10												
30											12												
											7		31.0										
													Bottom 45 of Exploration at 31.0 ft	59.0									
													a: 51.01										
						<u> </u>							-										
35													-										
													-										
40																							
													-										
						<u> </u>							-										
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						<u> </u>																	
45													-										
													-										
													-										
50																							
rks																							
Remarks																							
Note	e									• • •													
11010	2)	Wate After	r leve corin	il readin ig; NR =	igs have = Not R	e been ma lecorded.		s and under	r condition	s stated, flu	uctuatio	ns of gro	oundwater may occur due t							easuren	nents were m	ade. AC	=
	Í	WOR	H =	Weight	of Rod	/Hammer	re; D = Dri Little = 10						Spoon; SSL = 3.5 Inch ID	Split	spoon;	, 51 =	- Sneiby Tub	be; $v = V$	ane;	Bori	ng No.:	BE-	2

																-	LOG	r		Bo	ring No.:	BE-3
			c	зI	= 0	D	E	§ S I	G	N				Р	roject	t Naı	me			Pag	ge No.:	1 of 1
			I Geo	N otechr			rs and En	ivironme					S	Statelir	ne R	etai	il Cent	er		File	e No.:	0321-005.0
			Te	elepho			Southfore y, Conne 8836	ecticut 0	6762 : 203-758	8-8842				Southe	east,	, Ne	ew Yor	ĸ		Che	ecked By	: <u>ULF</u>
	ing Co	-		- ^ -	New E	ingland E	Boring Co						1	Casing:		ipler:				1	bservations	
	eman: Desig		ep.:		Chi Zh	arpenter nang							Type:	HW 4.0 in.	5	8 in.		Date	Depth (ft)	Elev. (ft)		Notes
	e Start Coordi		:	-	Octobe	er 5, 200	06		Finished: ordinate:	Octobe	er 6, 20	06	Hammer Wt.: Hammer Fall:	NA NA	<u>140</u> 30) Ibs in.		0/6/06		474.2 474.5	Open hole In well	2
Gro Stat		urfac	ce Ele	vation	(feet):	Offset:		83.0					Rig Type: Hammer Type:		ardier	ulic	_	0/10/06 0/18/06		474.4 475.3	In well	
Suit							Sample I	nforma	tion				Strat			lune					iption	
(t	Casing Blows/ft			ion	v	(1)					lime	s (%)	Descrip	tion	Symbol							
Depth (ft)	asing I	Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	0 - 6	Blows / 6 in 6 - 12	12 - 18	al 18 - 24	Coring Time (min./ft)	Moisture Content (%)	Depth & Elevation(feet)		S.	Class						
		1	L SS	24	20	0.0	1	1	2	3		V	0.5 Topso		<u>/</u>	Ve		e, browr	n fine			AND and
													Silty Sand & G		0	SIL		line to	coars	e Gr	aver, trac	e Roots
															20							
						<u> </u>									0							
5		2	00	04	00		4									Lo	ose. bro	own/ara	v fine	to co	oarse SA	ND, some
		2	SS	24	20	5.0	4	4	5	6					۰C	Silf	t, little fi	ne to co	barse	Grav	/el	
													7.0 Glacia Till	al 476.0								
														Ţ								
10																		<u> </u>				
		3	SS	24	20	10.0	14	17	17	19						De coa	ense, gra arse GF	ay fine f RAVEL,	some	arse S e Silt,	SAND ar (moist)	id fine to
_													12.0 Bottor	n 471.(
													of Explora at 12.0									
15																						
3																						
i 						<u> </u>		<u> </u>														
						<u> </u>		<u> </u>					-									
						<u> </u>																
20																						
						<u> </u>	<u> </u>	<u> </u>														
25					<u> </u>	<u> </u>		<u> </u>		-1.4								-4				
arks	Mo	vec	13 f	eet r	orth t	to case	e a hole	e for fall	ling hea	ad test.			el next morni	0					nch r	elote)	and a 1	2 foot risor
Remarks	Ris	er	stick	up is	s appr	roxima	ately 2.5	5 feet. S	Screen	was ba	ckfille	d with	a #2 WG filte	r sand.	From	2 fe	et abov	e scree	en to	1.5 fe		
Not	es: 1) s	Strati	ificatio	on line	s represe	ent appro:	oximate bou	indary betv	veen mater	ial types, ti	ransition	ns may b	e gradual.				•	•				
	2) 3)	Wate After Abbr	corin eviati	l readu g; NR ons: A	ngs have = Not Ro = Auger	e been ma ecorded. r; C = Co	ade at times ore; D = Dri	s and under	r condition	s stated, flu	ictuatio	ns of gro	undwater may occ Spoon; SSL = 3.5							easuren	nents were m	ade. AC =
	1	WOR	t/H = 1	Weigh	t of Rod/	/Hammer	r Little = 10				-	-		~P	- r - 0	,	, .		.,	Bori	ng No.:	BE-3

														BOF				r J		Bo	ring No.:	BE-4
			c	3 E	= 0	D	E	() S I	G	N					rojec					Pag	ge No.:	1 of 1
			l Geo	N Notechn			P O	ivironme	• • •				S	Statelir	ne R	etai	il Cen	ter		File	e No.:	0321-005.0
			Те	elepho			Southfor y, Conne 8836	ecticut 0	6762 : 203-758	8-8842				Southe	east	, Ne	ew Yo	ork		Ch	ecked By	: <u>ULF</u>
	ng Co	mpa			New E	ingland I	Boring Co							Casing: HW		npler:			1	1	Observations	
Geo	man: Desig		p.:	-	Chi Zh									4.0 in.	1.3	85 8 in.		Date	(ft)	Elev. (ft)		Notes
	e Start Coordi		:	-	Octobe	er 5, 200	06		Finished: ordinate:	Octobe	er 6, 20	06	Hammer Wt.: Hammer Fall:	NA NA		0 lbs) in.		10/5/06 10/6/06	10.0 9.7	463.0 463.3	Wet samp	ble
Gro Stati		urfac	e Ele	vation	(feet):	Offset:		73 .0					Rig Type: Hammer Type:	Bomb			_	10/9/06 10/16/06	8.2 6.9		In well	
Jul							Sample I	Informa	tion				Strat	a			1				iption	
ft)	Casing Blows/ft			ion	r.	(j)) 	nch Interv	-l	Time)	e (%)	Descrip	tion	Symbol							
Depth (ft)	Casing	Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min/ft)	Moisture Content (%)	Depth & Elevation(feet)		s	Class	sification	System: Bu	rmister			
_	-	1	SS	24	8	0.0	1	2	2	3			Topso 1.0	oil	<u>x 1/</u>	Lo	ose, da	ark brow	n fine	to co	oarse SA	ND and ace Wood
													Silty Sand & G			011	_ , 301					
		2 SS 24 18 50 12 12 11 13 Medium de																				
_	5 Modium dense brown/grav fine to coal																					
5		2	SS	24	18	5.0	12	12	11	13					b	Me	edium o	dense, b	rown	/gray	fine to c	oarse
														Ţ	° °	SA	ND an	d Silt, lit	tie fin	e to (coarse G	ravel
														Ţ	0 (
						<u> </u>								÷	o C							
10		3	SS	24	20	10.0	5	2	5	6				Ť	0	Lo	ose, gr	ay fine t	0 CO2	irse S	SAND, so	ome Silt,
		3	33	24	20	10.0	5	2	5	0						tra	ce fine	Ġravel,	(wet))		
															0							
		-4-	-ss-	—1—	-1-	-13.5-							13.6 Bottor		5	∖Ve	ry den	se, gray	fine t	0 COS	arse Grav	vel /
15						<u> </u>							of Explora at 13.6									
						<u> </u>																
20																						
						<u> </u>																
						<u> </u>																
5																						
25																						
23													led. Well co #2 WG filte									
Remarks													e standpipe									ground
2																						
2 2	2)	Wate After	r level	l readir g· NR :	igs have = Not R	e been ma ecorded		s and unde	r condition	s stated, flu	ictuation	ns of gro	undwater may occ							easuren	nents were m	ade. AC =
	3) /	Abbr VOR	eviatio /H = V	ons: A Weight	= Auger	r; C = Co /Hammer	r Little = 10				-	-	Spoon; SSL = 3.5	Inch ID Spl	lit Spoo	on; ST =	= Shelby	Γube; V = V	ane;	Bori	ng No.:	BE-4

													_			LOG		Borin	ng No.:	BE-5
			c	ЭВ		D	E	() S I	G	N					et Nai			Page	No.:	1 of 1
			I Geo	ы htechn	-		р О rs and En	ivironme	хте ental Con				Statelir	ne F	Retai	il Center		File N	No.:	0321-005.0
			Te	lenho			Southfore y, Conne	ecticut 0	6762 : 203-758	8-8842			South	east	t, Ne	ew York		Chec	ked By:	ULF
	ng Co			-	New E	Ingland I	Boring Co			0 00 12			Casing:		npler:				ervations	
	man: Desig		ep.:	-	Jeff Le								Type: HW I.D.: 4.0 in.		SS 38 in.		pth E t) ((ft)		Notes
	Start			-	Octob	er 9, 200)6		Finished: oordinate:	Octobe	er 10, 2	006	Hammer Wt.: NA Hammer Fall: NA		0 lbs 0 in.		<u>.9 45</u> .9 45	58.1 li	n well n well	
Grou	ind S			vation	(feet):			71.0					Rig Type: Bomb	oardier		▼ 10/16/06 12	.8 45	58.2 lr	n well	
Stati	on:					Offset:	ft Sample I	Informa	ution				Hammer Type: Safety	- Hydr	aulic			58.4 lr		
	jws/ft			-							ne	()	Strata Description	Symbol		Sample	e Des	script	.1011	
Depth (ft)	Casing Blows/ft	Number	ЭС	Penetration (inches)	Recovery (inches)	Depth (ft)	В	Blows / 6 i	nch Interv	al	Coring Time (min/ft)	Moisture Content (%)	Depth &	Syn						
Del	Cas		Type				0 - 6	6 - 12	12 - 18	18 - 24	Coi (mi	Mo Coi	Elevation(feet)	St 12		sification System: Burmis		e fine	to coa	urse Sand
		1	SS	24	10	0.0	2	3	4	7			1.0 Subsoil 470.0			ce Roots	50111			ii se Sanu,
													2.0 Sand 469.0 & Gravel	00						
													a Glavel	0 (
5														0						
		2	SS	24	18	5.0	10	13	22	25				0		ense, brown fine to arse GRAVEL, tra			SAND a	and fine to
						<u> </u>	<u> </u>							0						
							<u> </u>		<u> </u>					0						
									<u> </u>))						
10		3	SS	24	24	10.0	6	7	12	12				0		edium dense, brow				SAND,
							-							0 (litti	e fine to coarse G	rave	el, tra	ce Silt	
													¥	0						
														0						
15							<u> </u>		<u> </u>					0		ry dense, gray to	hlac	k fino	to coa	rse
		4	SS	24	20	15.0	16	21	37	53			40.0	° <	GF	RAVEL and fine to eathered Rock)	coa	rse S	SAND, t	race Silt,
<u>ì</u>									<u> </u>				16.8 17.5 Weathered 454.2 Rock 454.2	T/1-						
													Bottom of Exploration	5						
20							1		-				at 17.5 ft							
						<u> </u>	<u> </u>		<u> </u>											
							<u> </u>													
25	Un	0n	COM	nleti		drilling		 	 meter P		was	inetal	led. Well consists o		0 foo	t screen (0.010 in	ch el	lote) ·	and a 1	0 foot riser
Remarks	Ris	er	stick	up is	s appi	roxima	ately 2.6	6 feet. S	Screen	was ba	ckfille	d with	#2 WG filter sand. e standpipe was co	Fron	n 2 fe	eet above screen t	o 1.5			
Ren	Jul			***				2			3 010									
Note	^{(S:} 1) S	Strati	ificatio	on line:	represe	ent appro	oximate bou	indary betv	ween mater	rial types, ti	ransition	ns may b	e gradual.							
	2) V 3) 1	Wate After Abbr	er leve corin eviation	l readir g; NR = ons: A	igs have = Not R = Augei	e been ma lecorded. r; C = Co	ade at times ore; D = Dri	s and unde	r condition	s stated, flu	ictuation	ns of gro	undwater may occur due to o Spoon; SSL = 3.5 Inch ID Sp			-		suremen	its were ma	ade. AC =
	1	WOR	ℓ/H = `	Weight	of Rod	/Hammer	r Little = 10				-	-	. .	1				Boring	g No.:	BE-5

								Ì									LOG			Bor	ing No.:	BE	- -6
			c	ЭE	EC	D		() S I	G	N					roject					Pag	e No.:	<u> </u>	of 1
			I Geo	N Dtechn			р О s and En	wironme					S	Statelir	e R	etai	l Cente	er		File	No.:	<u>0321-</u>	-005.0
			Те	elepho			Southfor y, Conne 8836	cticut 0	6762 : 203-758	8-8842				Southe	east,	, Ne	w Yorl	k		Che	ecked By	r: <u>UI</u>	LF
	ng Co	ompa		-	New E	England I	Boring Co	ntractors					1	Casing:		pler:			1		bservations		
	eman: Desig	n Re	р.:	-	Jeff Le								Type:	HW 4.0 in.	S 1.38	iS B in.	_ Da	ate	Depth (ft)	Elev. (ft)		Notes	
	e Start			_	Octob	er 9, 200	9			Octobe	er 9, 20	06	Hammer Wt.:	NA) Ibs		0/10/06			In well		
	Coordi und Su			vation	(feet):		47	E. Co 73.0	ordinate:				Hammer Fall: Rig Type:	NA Bomb	30 ardier	in.		D/11/06 D/16/06			In well		
Stat	ion:					Offset:							Hammer Type:	Safety -	Hydra	ulic	Ţ						
	/s/ft					S	ample I	nforma	tion				Strat Descrip		0			San	nple I	Descri	ption		
(ff)	Casing Blows/ft	er		Penetration (inches)	ss)	(ii)	Е	Blows / 6 i	nch Interv	al	Coring Time (min./ft)	Moisture Content (%)	_		Symbol								
Depth (ft)	Casin	Number	Type	Penet (inche	Recovery (inches)	Depth (ft)	0 - 6	6 - 12	12 - 18	18 - 24	Corin (min./	Moist Conte	Depth & Elevation(feet)			Class	sification Sy	/stem: Bu	rmister				
		1	SS	24	20	0.0	4	4	6	6			0.5 Topso Silty		<u>N/z</u>		edium de arse Sar				SILT, sor	ne fine	to
													Sand & G		0	000		ia, iiac		010			
															0								
															°C								
5) o (Ma	dium da		rov b		fina ta a		
		2 SS 24 18 50 13 10 7 11														ND, son	ne Silt,	trace	e fine	Gravel	oarse		
															0								
														¥									
															°C								
10		3	SS	24	20	10.0	6	7	12	12					0 (edium de						rse
															0	SA	ND, son	ne fine	to co	arse	Gravel,	(wet)	
															0								
15															°C								
		4	SS	24	20	15.0	4	4	5	7		-			o (Lo	ose, bro	wn fine	e to co	oarse	SAND,	little Sil	t
90/61															0								
															° (
BURING LOG MC 12/19/03 BURING LUGS GPJ GEUDESIGN STANDARD GDT 12/19/06) o (
20		5	SS	24	20	20.0	7	9	9	15						Ме	edium de	ense, b	rown	fine t	o coarse	SAND)
		5	55	24	20	20.0	1	3	3						0		d SILT, t						
													22.0 Sand		0								
Сер Сер		6	SS	6	3	23.0	110						& Grav 23.5		o (Ve	ry dense	e, brow	n fine	e to co	arse Gl	RAVEL	and
25 j 25													Bottor of Explora at 23.5	ation		tine	e to coar	rse SA	ND, li	ttie S	lit		/
20 20 20													at 20.0										
DNIX(n box fe			•													
19/03 BC Remarks	Ris	er	stick	up is	s app	roxima	itely 3.2	2 feet. S	Screen	was ba	ckfille	d with	lled. Well con #2 WG filte	r sand.	From	2 fe	et above	e [`] scree	en to	1.5 fe			
12/19/ Rei													e standpipe										
Not	es: 1) s	Strati	ficatio	on lines	s repres	ent appro	ximate bou	indary betw	veen mater	rial types, ti	ransitio	ns may b	e gradual.										
lG LO	2)	Wate After	r leve corin	l readın g; NR =	igs have = Not R	e been ma lecorded.	ide at times	s and unde	r condition	is stated, flu	ictuatio	ns of gro	undwater may occ Spoon; SSL = 3.5				-			easurem	ients were n	ade. AC =	-
NINOS	V	NOR	/H = '	Weight	of Rod	/Hammer				3%; And = 3	-	-				, 51 -	Sheloy ru		,	Bori	ng No.:	BE-	ò

																	LOG	r		Bo	ring No.:	BE	E-7
			Ċ	GI	EC	D	E) S	G	N				Р	rojec	t Naı	me			Pag	ge No.:	<u> 1 c</u>	of 1
			Geo	N otechi			P O	nvironme					5	Statelir	ne R	etai	il Cent	er		File	e No.:	<u>0321-</u>	-005.0
			Те	eleph			Southfor y, Conne 8836	ecticut 0	6762 : 203-758	8-8842				Southe	east	, Ne	ew Yor	ĸ		Ch	ecked By	r: <u>U</u>	<u>LF</u>
	ng Co	-	any:				Boring Co	ontractors						Casing:		pler:			1		Observations	;	
	man: Desig		ep.:		Tim C Chi Zł	arpenter nang							Type:	HW		8 8 in.		Date	Depth (ft)	Elev. (ft)		Notes	
	Start		.r	•		er 9, 200	06	Date	Finished:	Octobe	er 10, 2	006	Hammer Wt.:	NA	-) Ibs	¥ 1	0/9/06	5.0	449.0	Wet spoo	n	
	oordi				(2		— .		ordinate:				Hammer Fall:	NA		in.		0/10/06	2.2		In well		
Grou		urtac	ce Ele	vatior	(feet):	Offset:		54 .0					Rig Type: Hammer Type:			aulic	_	0/16/06 0/18/06	2.0		In well In well		
						S	ample 1	Informa	tion				Strat						nple I				
	Casing Blows/ft			5							me	(%	Descrip		Symbol				r		1		
Depth (ft)	ng Bl	Number	0	Penetration (inches)	Recovery (inches)	Depth (ft)	E	Blows / 6 i	nch Interv	al	Coring Time (min./ft)	Moisture Content (%)			Syr								
Dep	Casi	Nun	Type	Pene (incl	(incl	Dep	0 - 6	6 - 12	12 - 18	18 - 24	Cori (mir	Moi Con	Depth & Elevation(feet)				sification S						
		1	SS	24	20	0.0	1	1	2	4			Topso 1.0		<u>7, 1</u>	Ve	ry loose	e, dark l	orowr	SIL	T and fin Gravel, tra	e to coa	arse
													Sano & Grav	vel 🛓			d Timbe			136 0	, aver, th		513
														Ţ	0								
	5 . </td <td></td> <td></td> <td></td> <td></td>																						
5	5 2 SS 24 18 5.0 8 8 12 5 7.0 7.0 7.0																						
	2 SS 24 18 5.0 8 8 12 5 7.0 1 1 1 1 1 1 1 1 1																						
	2 SS 24 18 5.0 8 8 12 5 7.0 1 1 1 1 1 1 1 1 1 2 SS 24 18 5.0 8 8 12 5 1 1 1 1 1 1 1 1 2 SS 24 18 5.0 8 8 12 5 1 1 1 1 1 1 1 1 2 Silty state 1 1 1 1 1 3 1 1 1 1 1 1 447.0 0 1 1 1 1														0								
	2 SS 24 18 5.0 8 8 12 5																						
	2 SS 24 18 5.0 8 8 12 5 1 Medium dense, gray some fine to coarse 1 <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>																						
10															0								
		3	SS	24	20	10.0	8	9	2	2					0						coarse S se Grav		i)
															þ }								
															°C								
															0 (
15		4	SS	24	12	15.0	8	8	11	11						Me	edium de	ense, g	ray S	ILT a	nd fine t	o medii	um
		-				10.0									°C		ND						
															0 (
															$\left \right\rangle _{o}$								
													20.0		°C								
20		5	SS	24	20	20.0	20	28	33	40			20.0 Glacia								arse GR/	AVEL,	
													. Till			SO	me fine	to coar	se Sa	and, l	ittle Silt		
					1																		
25																							
		6	SS	14	12	25.0	37	51	100/2"				26.0								o mediu		D,
j j													26.2 Botto				ine Sill,	nue nn	ie 10 (Juars	e Gravel		
													of Explor at 26.2										
													led. Well co										riser.
Remarks													2 WG filter : e standpipe								t below g	ground	
Ret																		-					
Note	S. 1.	14	.e	1°						-1 4			du -1										
	2)	Wate After	r leve corin	l readı g; NR	ngs hav = Not R	e been ma Recorded.	ade at time	s and unde	r condition		ictuatio	ns of gro	undwater may occ							easuren	nents were m	ade. AC =	=
	Í	NOR	2/H =	Weigh	t of Rod	l/Hammer	r i			%; And =			Spoon; SSL = 3.5	men 1D Spl	nt Spoo	ni, 51 ⁻	- Sneiby It	ude, $v = V$	ane;	Bori	ng No.:	BE-7	7

								Ì						BOI				r J		Boi	ing No.:	BE-8
			c	ЗI	= 0	D	E	() S I	G	N					rojec					Pag	e No.:	1 of 1
			l Geo	N Dtechr			р О s and En	wironme					S	Statelir	ne R	etai	il Cen	iter		File	e No.:	0321-005.0
			Te	elenho			Southfor y, Conne 8836	cticut 0	5762 203-758	8-8847				Southe	east	, Ne	ew Yo	ork		Che	ecked By	: <u>ULF</u>
	ing Co				New E	ingland I	Boring Co		205-750	5-0042				Casing:		npler:			Ground	water C	bservations	
	eman: Desig		ep.:	-	Tim Ca Chi Zh	arpenter ang							Type:	HW 4.0 in.		85 8 in.	_	Date	Depth (ft)	Elev. (ft)		Notes
	e Start Coordi			-	Octob	er 6, 200	06		Finished: ordinate:	Octobe	er 6, 20	06	Hammer Wt.: Hammer Fall:	NA	-) lbs) in.		10/6/06 10/6/06	10.0 8.0		Wet samp	le ing head test
Gro	und Si			vation	(feet):			E. CO 60.0					Rig Type:	Bomb	ardier		¥	10/0/00	0.0	452.0	Belore lai	ing head test
Stat	ion:					Offset:	ft ample I	nforma	tion				Hammer Type:		- Hydra	aulic	Ţ	S				
	ws/ft			_		3		morma			ne		Strat Descrip		lodi			Sar	nple I	Jescri	ption	
Depth (ft)	Casing Blows/ft	Number	e	Penetration (inches)	Recovery (inches)	Depth (ft)	E	Blows / 6 in	nch Interv	al	Coring Time (min/ft)	Moisture Content (%)	5 1 0		Symbol							
Dep	Casi	Nun	Type	Pen (inc	Rec	Dep	0 - 6	6 - 12	12 - 18	18 - 24	Cori (mir	Moi Con	Depth & Elevation(feet)		N IZ			System: Bi			. to oppr	se SAND
																	d SÍLT	, some t	ine to		se Grave	
		& Gravel																Jei				
		2 SS 24 20 5.0 10 13 10 9 Medium dens little Silt, (moi 																				
_	Image: Second																					
5		Image: Second															dense, b	rown	fine t	o coarse	SAND,	
															°C	iitti	ie olit,	(moist)				
														Ţ) ° (
															C							
10		2 SS 24 20 5.0 10 13 10 9 Image: Single constraints of the s															ark brov	vn fine		narse SA	ND some	
		3	Image: Second																			
													12.0 Botto									
													of Explor at 12.0									
15																						
8																						
20																						
0																						
25 sk																						
	Afte	er t	akin	g sa	mple	S-3, n	noved b	orehole	e 2 feet	to the e	east a	and be	egan BE-8A.									
Remarks																						
2 2																						
Note	2)	w ate	r leve	l readu	igs have	e been ma	ximate bou de at times	ndary betv and under	veen mater	ial types, tr s stated, flu	ansition	ns may b ns of gro	e gradual. undwater may occ	eur due to o	ther fac	tors th	an those p	present at the	e time m	easurem	nents were m	ade. AC =
	3) / V	Abbr WOR	eviatio VH = '	ons: A Weight	= Auger of Rod	/Hammer					-	s = Split	Spoon; SSL = 3.5	Inch ID Sp	lit Spoo	on; ST	= Shelby	Tube; V = V	/ane;	Der	na Ne i	DE 0
	4) l	Prop	ortions	s Used	Trace =	= 1-10%;	Little = 10	-20%; Son	ne = 20-35	%; And = 3	35-50%									BOLI	ng No.:	DE-0

GEO DESIGN											BORING LOG Project Name								ring No.:	В	E-8A			
												Pag	ge No.:	1	l of 1									
INCORPORATED Geotechnical Engineers and Environmental Consultants											Stateline Retail Center								e No.:	<u>032</u>	1-005.0			
	984 Southford Road Middlebury, Connecticut 06762 Telephone: 203-758-8836 Fax: 203-758-8842												Southeast, New York							Checked By: ULF				
Bor	Boring Company: New England Boring Contractors													Casing: Sampler: C						Indwater Observations				
	GeoDesign Rep.: Chi Zhang											Type: I.D.:	HW 4.0 in.	-	SS 38 in.		Date	Depth (ft)	Elev. (ft)		Notes			
												Hammer Wt.: Hammer Fall:	NA NA		0 lbs) in.		10/10/06 10/11/06			In well In well				
	Ground Surface Elevation (feet): 460.0											Rig Type:	Bomb	ardier			10/16/06			In well				
Stat	Station: Offset: ft Sample Information									Hammer Type Stra			aulic	÷	Sar	Descri	ption							
	Casing Blows/ft		Type	Penetration (inches)					(%)			Descrij		Symbol			~ ~ ~			P				
Depth (ft)	asing B	Number			Recovery (inches)	Depth (ft)			nch Interv	[]	Coring Time (min./ft)	Moisture Content (%)	Depth &	Sy										
D	Ü	Z			Ξ.Ξ		0 - 6	6 - 12	12 - 18	18 - 24	υ£	ΣŬ	Elevation(feet)		Class	sification	System: Bi	ırmister					
5																								
														Į										
_																								
10		1	SS	24	8	10.0	14	52									ry dens ce Silt	se, dark	gray	fine t	o coarse	SAN	ID,	
													11.5 Bould	ler 448.5		lia								
													13.0 Glaci	al 447.0										
									29				Till											
15		2	SS	24	12	15.0	15	21		32						Ve	ry dens	se, gray	-brow	n fine to coarse SAND				
<u>م</u>																		, intro in		500130		1		
20																								
		3	SS	4	4	20.0	100/4"											/ dense, gray SILT			and fine to coarse arse Gravel			
													1				,						/	
25																								
20.GP		4	SS	3	3	25.0	100/3"						25.3 Botto of Explo					se, gray ne fine			ie fine to Gravel	coar	se /	
													at 25.	3 ft										
Irks	Au	ger	ed to	o 10	feet b	below g	grade fo	or fallin	g head	test the	en be	gan sa	ata descript	0 foot de	epth;	; refu	sal at 1	11.5 fee	t; core	ed bo	ulder to	13 fe	et.	
Remarks	Ris	ser	stick	up is	appi	roxima	ately 2.4	feet. S	Screen	was bao	ckfille	d with	lled. Well consists of a 20 foot screen (0.010 inch n #2 WG filter sand. From 2 feet above screen to e standpipe was concreted in place to protect we						1.5 feet below ground					
Not																								
BURING LOG MC 12/19/03 BURING LUGS GPJ GEUDESIGN STANUARU GUT 12/19/05		AILEI	COLIII	g, INK "	- INUL IX	ecolueu.							e gradual. undwater may oc Spoon; SSL = 3.5							easurem	nents were n	nade. A	C =	
SUKIN	1	WOR	/H =	Weight	of Rod	/Hammer				3%; And = 3	-	-	opoon, 00E – 9.3		opot	, 01 '	Shelby I	, v - v	ano,	Bori	ng No.:	BE-	-8A	

											BORING LOG Project Name								ing No.:	_B\	N-1				
													Pag	e No.:	1	of 2									
	GEODESIGN INCORPORATED												Stateline Retail Center								No.:	<u>0321</u>	-005.0		
	Geotechnical Engineers and Environmental Consultants 984 Southford Road Middlebury, Connecticut 06762												Southeast, New York								ecked By	:L	JLF		
	Telephone: 203-758-8836 Fax: 203-758-8842													Casing: Sampler: G							ndwater Observations				
	Boring Company: New England Boring Contractors Foreman: Tim Carpenter												Туре:	HW	-	SS		Date	1	Elev.	osei vations	Notes			
												I.D.:	4.0 in.		.38 in.	_		(ft)	(ft)						
										Hammer Wt.: Hammer Fall:			40 lbs 30 in.		10/12/06 10/12/06			In well In well							
	Ground Surface Elevation (feet): 527.0									Rig Type:		nbardie		Ţ Ţ	10/18/06	27.4	499.6	In well							
Sta	Station: Offset: ft I Sample Information									Hammer Type:		<u>/ - Hyd</u>	Iraulic	Ŧ	0	1 7		<i></i>							
	vs/ft												Strat Descrip		lo		Sample Description								
(ff)	Casing Blows/ft	A multiple Peretration T Ype T ype T Ype Peretration T Ype Inchesion Peretration Depth Inchesion Inchesion A month Inc				Moisture Content (%)			Symbol																
Depth (ft)	Casin	Number	Type	Penet (inch	Recovery (inches)	Depth (ft)	0 - 6	6 - 12	12 - 18	18 - 24	Coring T (min./ft)	Moist Conte	Depth & Elevation(feet)			Class	ification	System: Bi	ırmister						
		1	SS	24	18	0.0	2	2	4	5			0.5 Topso Sanc		5.11			own fine to coar					LT,		
											& Sil	•		301			30 01	avei,	liace in	5013					
	5																								
		2	SS	24	20	5.0	12	12	15	15							edium o d SILT	dense, b	rown	fine t	o coarse	SANI	2		
																an									
																9 21 21									
1	, ,																								
		3	SS	24	20	10.0	9	10	10	11							edium o d SILT	dense, b	rown	fine t	o coarse	SANI	D		
1	5																								
90		4	SS	24	20	15.0	10	16	27	27						De	nse, g	ray SILT	and	fine to	o mediui	n SAN	ID		
12/15/																									
GDT																									
ARD.																									
DUD 20																									
IGN S		5	SS	24	24	20.0	25	36	40	25						Ve	ry den	se, SILT	, som	e fine	e to med	ium S <i>i</i>	AND		
ODES																<u></u>									
Ч СЕ Г																									
S.GP																									
00 1 0	5												25.0												
ORIN							t; moist				95 to 1	35 faa	t below grad	۵											
Image: Second control of the second) in ct-	alate) and - ()) fr - 1	t rico-									
. 12/19 Ru	Ris	ser	stick	up is	s app	roxima	ately 1.1	I feet. S	Screen	was ba	ckfille	ed with	#2 WG filte	r sand	. Froi	m 2 fe	et abo	ve scree	en to	1.5 fe					
U V V No	SUI	Strat	ificatio	on lines	as ba	CKTILLEC ent appro	ximate bou	entonite	e chips	. LOCKIP	ng pro	ns may b	e standpipe e gradual. undwater may occ	was co	oncre	eted in	place	to prote	ct we			ada +C			
NG LC	3)	After Abbr	eviati	g; NR = ons: A =	= Not R = Auge	r; C = Co	re; D = Dr						undwater may occ Spoon; SSL = 3.5							casurem	ients were m	aue. AC	_		
BORII		WOF	2/H =	Weight	of Rod	/Hammer				5%; And =	-	-					*			Bori	ng No.:	BW	-1		

									June	,							LOG	ſ		Bo	ring No.:	BW-1
			(G	≣_C	D	E	() S_I	G	N					Project					Pag	ge No.:	2 of 2
			Geo	N otechn	-	O R Engineer 984 9	P O rs and En Southford	nvironme									il Cent				e No.:	0321-005.0
			<u> </u>	elephc		ddlebury 03-758-8	y, Conne	ecticut 06	6762 : 203-758	8-8842			S	Southe	east,	, Ne	ew Yoi	rk		Ch	ecked By	: <u>ULF</u>
	ng Co man:	-	iny:	_		England E arpenter	Boring Co r	ntractors					<u>(</u> 	<u>Casing:</u> HW		n <u>pler:</u> SS		(Date		water C	Observations	Notes
Geol	Desig	n Re	зр.:	_	Chi Zh	nang		Dete	The fact water		- 44 (I.D.:	4.0 in.	1.38	8 in.]		(ft)	(ft)		Notes
N. C	Starte oordii	inate:		_		er 10, 20)06		Finished: pordinate:	Octobe	<u>er 11, ∠</u>	.006	Hammer Wt. <u>:</u> Hammer Fall <u>:</u>	NA NA	30) lbs) in.	▼ 1	10/12/06 10/12/06	25.5	501.5	In well In well	
Grou Stati		ırfac	e Ele	evation		Offset:		27.0					Rig Type: Hammer Type:		ardier - Hydra		⊻ 1 ⊈	10/18/06	27.4	499.6	In well	
	ų					S	Sample I	informa	tion				Strata					San	nple I	Descri	iption	
Depth (ft)	Casing Blows/ft	ber		Penetration (inches)	Recovery (inches)	Depth (ft)	F	Blows / 6 in	nch Interv	/al	Coring Time (min./ft)	Moisture Content (%)	- Descript	10n	Symbol							
Dept	Casi	Number	Type		Reco	Depi	0 - 6	6 - 12	12 - 18	18 - 24	Cori (min	Moi		od 5094			sification S				to coore	
	-	6	SS	3	3	25.0	100/3"		<u> </u>	<u> </u>		<u> </u>	Weather Rock				ace Silt,					e SAND,
	-	\square	\vdash	<u> </u>	<u> </u>	<u> </u>			<u> </u>	<u> </u>	+'	<u> </u>	-	¥								
	\neg	-		<u> </u>		<u> </u>							-									
30																						
		\vdash	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>			<u> </u>		<u> </u>	-		阏							
	$ \rightarrow$	\vdash	\vdash	_	_	<u> </u>	<u> </u>		<u> </u>	<u> </u>		<u> </u>	-									
	-	\square	\vdash	<u> </u>	<u> </u>	<u> </u>			<u> </u>		<u> </u>	<u> </u>	-		圆							
35	+	$ \downarrow$	\square	\vdash	$\left \right $	<u> </u>			<u> </u>		+		35.0									
													Bottom of Explora	ation								
		\square		<u> </u>	<u> </u>	 			<u> </u>	<u> </u>		 	at 35.0	ft								
	-	\mid		–	<u> </u>				<u> </u>		<u> </u>	 	-									
- 10	\dashv	\square	\vdash	 	<u> </u>						+!		-									
40	+	$ \uparrow$		-	$\left \right $						+		-									
		\square		<u> </u>	<u> </u>	 	 		<u> </u>	<u> </u>		 										
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45	-	\square		 	<u> </u>	<u> </u>			<u> </u>	<u> </u>	+'	<u> </u>	-									
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		$\mid \mid$	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	I	<u> </u>	<u> </u>		 										
50				<u> </u>																		
arks																						
Remarks																						
Note	s: 1) {	Strati	ificati	on line:	s represe	ent appro	oximate bou	undary betv	ween mate	rial types, t	ransitio	ns may t	e gradual.									
	2) V A 3) A	Water After Abbre	er leve r corin reviatio	el readin ng; NR = ions: A =	ngs have = Not Ro = Auger	e been ma Recorded. er; C = Co	ade at times ore; D = Dri	s and under	r condition	ns stated, flu	luctuation	ons of gro	Spoon; SSL = 3.5 Is							neasuren	nents were m	ade. AC =
						l/Hammer = 1-10%;	r ; Little = 10)-20%; Sor	ne = 20-35	5%; And =	35-50%)								Bori	ng No.:	BW-1

																	LOG		Boi	ring No.:	BW-2
			c	зI	E C	D	\\\ \\	() S I	G	N					Projec				Pag	ge No.:	1 of 2
			l Geo	N etechr			P O	ivironme	те ntal Con				S	Statelir	ne R	etai	l Center		File	e No.:	0321-005.0
			Τe	elepho			Southfor y, Conne 8836	cticut 0	6762 203-758	3-8842			:	South	east	, Ne	ew York		Che	ecked By	: <u>ULF</u>
	ing Co	mpa			New E	Ingland I	Boring Co							Casing:		npler:		1	1	bservations	1
	eman: Desig	n Re	:	-	Tim C Chi Zh	arpenter nang	•						Type: I.D.:	HW 4.0 in.		85 8 in.	Date	Depth (ft)	Elev. (ft)		Notes
	e Start Coordi		:	-	Octob	er 12, 20	006		Finished: ordinate:	Octobe	er 12, 2	006	Hammer Wt. <u>:</u> Hammer Fall:	NA NA) lbs) in.	▼ 10/13/06▼	25.5	489.5	In well	
	und S			vation	(feet):	Offset:		15.0					Rig Type: Hammer Type:	Bomb	bardier		¥ ¥				
5141							ample l	nforma	tion				Strat				L	nple I	Descri	ption	
	Casing Blows/ft			uo							ime	(%)	Descrip		Symbol					P	
Depth (ft)	asing B	Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)		Blows / 6 in			Coring Time (min/ft)	Moisture Content (%)	Depth &		Sy						
D	U U	z 1	SS	ਕੂ ਦ 24	20 × 3	0.0	0-6	6 - 12	12 - 18 2	18 - 24 4	υE	ΣŬ	Elevation(feet) 0.5 Topsc	bil	<u>17</u>	Ve	sification System: B ry loose, brow	n SIL		e fine to	coarse
													Glacia Till	al 514.	5	Sa	nd, trace Roo	S			
5																Do	nse, gray fine	to co	area		
		2	SS	24	18	5.0	9	10	29	11						tra	ce fine to coal	se Gr	avel		iu oil i,
10																					
		3	SS	24	20	10.0	11	23	24	36							nse, gray fine e fine to coars			SAND, s	ome Silt,
45																					
15		4	SS	16	8	15.0	51	100/4"									ry dense, gray e Gravel	fine	SAND	and SII	T, trace (-)
20		5	SS	15	15	20.0	41	64	101/3"							Ve	ry dense, darl	gray	fine t	o coarse	SAND and
		-														SIL	T, little fine to	coars	se Gra	avel	
5																					
25																					
rks	Ris	er	stick	up is	s app	roxima	ately 2.3	3 feet. S	Screen	was bao	ckfille	d with	#2 WG filte	r sand.	From	1 2 fe	t screen (0.01 et above scre	en to	1.5 fe) and a et below	17 foot riser. / ground
Remarks	sur	fac	e we	ell wa	as ba	ckfilled	d with b	entonite	e chips.	. Lockin	g pro	otectiv	e standpipe	was co	ncrete	ed in	place to prote	ect we	11.		
Not	es: 15 -		6			ant	wina - 4 - 1	mda1		ial to a		1	- anadu-1								
	2)	Wate After	r leve corin	l readu g; NR	1gs have = Not R	e been ma lecorded.	ade at times	s and under	r condition		ictuatio	ns of gro	undwater may occ				an those present at th = Shelby Tube; V =		easurem	nents were m	nade. AC =
	Í	NOR	2/H = 1	Weigh	t of Rod	/Hammer	r i			%; And = 3			5poon, 55L = 3.5	шен нэ эр	ла эроо	nı, 31 =	– sneiby rube; v =	v alle,	Bori	ng No.:	BW-2

														BOF				Ĵ		Bo	ring No.:	BW-2
			Ċ	G E	و م			SI R A	G	N				tatelin	rojec			otor			ge No.:	2 of 2
			Geo		ical E	ngineer 984 S	s <i>and En</i> Southfor	<i>vironme</i> d Road	ntal Con												e No.:	0321-005.0
					ne: 20	3-758-8	3836		6762 203-758	3-8842				Southe								:: <u>ULF</u>
	ng Co man:	mpa	any:	_		ngland E arpenter		ntractors					-	asing: HW		npler: SS		Date	Depth	Elev.	Observations	Notes
	Desig Start		ep.:		Chi Zh Octobe	ang er 12, 20	06	Date	Finished:	Octobe	er 12. 2	2006		.0 in. NA	-	8 in.) Ibs	¥	10/13/06	(ft) 25.5		In well	
N. C	oordi	nate		_		,	_	E. Co	ordinate:				Hammer Fall:	NA	30) in.	¥					
Stati		urfac	ce Ele	vation		Offset:		15.0					Rig Type: Hammer Type:				¥ ¥					
	s/ft					S	ample I	nforma	tion				Strata Descripti					Sar	nple I	Descri	iption	
1 (ft)	Casing Blows/ft	er		ration ss)	ery s)	(iji)	Е	Blows / 6 in	nch Interv	al	Coring Time (min./ft)	Moisture Content (%)	Descripti	ion	Symbol							
Depth (ft)	Casin	Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	0 - 6	6 - 12	12 - 18	18 - 24	Corin (min/	Moist Conte	Depth & Elevation(feet)					ı System: Bı				
		6	SS	14	12	25.0	38	60	100/4"				26.0	¥	$\omega \lambda \lambda$	Ve SIL	ry den _T, tra	ise, gray ce fine G	fine f Grave	to me	dium SA	ND and
													Weathere Rock	ed 489.0	R							
													-									
													30.0									
30													Bottom of Explorat)							
													at 30.01	ft								
													-									
													-									
35													-									
													-									
													-									
													_									
40													-									
													-									
													-									
													-									
45																						
													-									
													-									
													-									
50													-									
50			I	I	I	1		I	I			I	1									
Remarks																						
Rć																						
Note	2) '	Wate	r leve	l readın	gs have	been ma	cimate bou de at times	ndary betv and under	veen mater	ial types, tr s stated, flu	ansition ctuatio	ns may b ns of gro	e gradual. oundwater may occu	r due to ot	ther fac	tors that	an those	present at the	e time n	neasuren	nents were m	ade. AC =
	3) /	Abbr NOR	eviati VH =	ons: A = Weight	= Auger of Rod/	Hammer				Piston San %; And = 3	-	-	Spoon; SSL = 3.5 In	nch ID Spl	lit Spoo	on; ST :	= Shelby	Tube; V = V	ane;	Bori	ng No.:	BW-2

														ŀ				LOG			Bo	ring No.:	BW	/-3
			Ċ	ЭI	EC		E	s I	G	N						5	t Nai				Pag	ge No.:	<u> 1 o</u>	<u>f 1</u>
			l Geo	N Dtechr			р О rs and En	wironme	сте ental Con	D Desultants				Sta	atelin	ie R	letai	il Cente	er		File	e No.:	<u>0321-</u>	005.0
			Те	elepho			Southfor y, Conne 8836	cticut 0	6762 : 203-758	3-8842				Sc	outhe	east	, Νe	ew Yor	k		Che	ecked By	r: <u>UL</u>	<u>.</u> F
	ng Co	mpa		.	New E	ngland l	Boring Co	ntractors							sing:		npler:			1		bservation	3	
	eman: Desig	n Re	ep.:	-	Jeff Le								Type: I.D.:		W) in.		3S 88 in.	D	ate	Depth (ft)	Elev. (ft)		Notes	
	e Start Coordi			-	Octob	er 10, 20	006		Finished: oordinate:	Octobe	er 11, 2	006	Hammer Wt Hammer Fal	-			0 lbs) in.		0/11/06 0/11/06			In well In well		
				vation	(feet):			20.0					Rig Type:		Bomb			¥ 10	0/13/06			In well		
Stat	ion:					Offset:			tion				Hammer Ty		Safety -	Hydra	aulic	¥ 10	0/18/06			In well		
	ws/ft					<u> </u>	ample I	niorma	tion		e	<u> </u>	Desci	rata riptio	m	bol			San	nple I	Descri	ption		
Depth (ft)	Casing Blows/ft	ber		Penetration (inches)	Recovery (inches)	Depth (ft)	E	Blows / 6 i	nch Interv	al	Coring Time (min./ft)	Moisture Content (%)				Symbol								
Dept	Casi	Number	Type	Pene (inch	Recc (inch	Dept	0 - 6	6 - 12	12 - 18	18 - 24	Cori) (min	Mois Cont	Depth & Elevation(fe	· ·				sification Sy						
		1	SS	24	18	0.0	9	10	13	14			Gla	osoil acial	519.5			edium de ND, trac			SILT	and fine	e to med	lium
													T	ill										
5																								
5		2	SS	24	14	5.0	39	47	100/5"									ry dense me Silt,						
																	301	nie Olit,			.0ai 3			
10		3	SS	24	16	10.0	23	13	21	33							De	ense, gra	ay-light	brow	n SIL	T and fi	ne to	
		Ŭ		24		10.0	20	10									coa	arse SA	ND, litt	le fine	e to c	oarse G	ravel	
15																		ry dense		<u> </u>	and	fina ta a		
		4	SS	11	10	15.0	67	100/5"									SA	ND, trac	e, gray ce fine	to co	arse	Gravel	Jaise	
20																								
		5	SS	3	3	20.0	100/3"								-			ery dense e to coa				oarse S/	AND and	<u>_ </u>
															₹ ₹									
															Ţ									
													05.0											
25		6	SS	0	0	25.0							25.0 Bot of Exp	tom	495.0		Re	fusal						
													at 2	5.0 ft										
ks	Spo	oon	n ref	usal	at 17	feet b	elow gr	ade. C	ored th	ough a	1 foo	ot diar	neter cobb	ole.					(0.04)) =	10.6- 1	
Remarks	Ris	er	stick	up is	s app	roxima	ately 2.6	6 feet. S	Screen	was bad	ckfille	d with	led. Well o #2 WG fi	lter s	and. I	From	1 2 fe	et abov	e scree	en to	1.5 fe	et belov	v ground	iser. 1
R	sur	rac	ew	en Wa	as da	CKTIILEC	a with D	entonit	e cnips	. LOCKIN	ig pro	Nectiv	e standpip	be Wa	as cor	icret	ea in	i piace to	o prote	ci we	11.			
Note	es: 1) s 2) y	Strati Wate	ifications for the second s	on line l readi	s represe	ent appro	ximate bou	ndary betw and unde	veen mater	ial types, tr s stated. flu	ansition	ns may b	e gradual. undwater may	occur	lue to of	her fac	ctors the	an those pre	sent at the	time m	easuren	ients were n	nade. AC =	
1	3)	After Abbr	corin eviati	g; NR ons: A	= Not R = Auge	ecorded.	re; D = Dri						Spoon; SSL = 3											
								-20%; Sor	me = 20-35	%; And = 3	35-50%										Bori	ng No.:	BW-3	3

																LOC	r J		Boi	ring No.:	BW-4
			c	ЭE		D	E	() S I	G	N				Projec					Pag	e No.:	1 of 1
			l Geo	N Notechn			р О rs and En	wironme					Stateli	ne R	Retai	il Cen	iter		File	e No.:	0321-005.0
			Τe	elephc			Southfor y, Conne 8836	cticut 0	6762 203-75	8-8842			South	east	t, Ne	ew Yo	ork		Che	ecked By	: <u>ULF</u>
	ing Co	ompa		· ·	New E	Ingland I	Boring Co		200 10				Casing:		npler:		(Ground	water C	bservations	1
	eman: Desig	n Re	р.:	-	Jeff Le								Type: HW I.D.: 4.0 in.		SS 38 in.	_	Date	Depth (ft)	Elev. (ft)		Notes
	e Start Coordi			-	Octob	er 11, 20	006		Finished: ordinate:	Octobe	er 11, 2	006	Hammer Wt. <u>:</u> NA Hammer Fall: NA		0 lbs 0 in.		10/11/06 10/13/06			In well In well	
				vation	(feet):			DO.0					Rig Type: Bom	bardier		Ţ	10/13/06			In well	
Stat	ion:					Offset:	ft ample I	nforma	tion				Hammer Type: Safety	- Hydr	aulic	¥	Som	amla F	Jagani	ntion	
	jws/ft			-							ne	()	Strata Description	Symbol			San	nple I	Jesch	ption	
Depth (ft)	Casing Blows/ft	Number	е	Penetration (inches)	Recovery (inches)	Depth (ft)	E	Blows / 6 i	nch Interv	al	Coring Time (min/ft)	Moisture Content (%)	Douth &	Syn							
Dep	Cas		Type		<u> </u>		0 - 6	6 - 12		18 - 24	(mi Cor	Mo Cor	Depth & Elevation(feet)	- <u>s</u> ,			System: Bu		- son	na fina tr	o coarse
		1	SS	24	8	0.0	3	3	3	4			Silty 499. Sand & Gravel	60			ce Root		, 501		J COal Se
														0 0							
5														o (C 4		
		2	SS	24	16	5.0	8	13	14	14				0			, trace fi			o coarse	SAND
													7.5	0							
													Cobble 492.	5							
10													Silty 491. Sand & Gravel								
		3	SS	24	14	10.0	12	15	12	14) ()			dense, b :, trace fi			o coarse	e SAND,
														0 0							
														0 (
15																					
		4	SS	24	10	15.0	12	24	24	27				0							little fine to sed Rock)
9													17.0 Decomposed483.	þ Ì							
00/GL/ZL													Rock								
20																					
		5	SS	24	22	20.0	17	26	31	39										vn fine to Fravel, tra	
de of													25.0								
25 25 0													Bottom 475. of Exploration	0							
on د LUو													at 25.0 ft								
SOKING SOKING										w grade VC wel		instal	led. Well consists c	of a 1	0 foo	ot scree	en (0.010) inch	slots) and a [.]	17 foot riser
Remarks	Ris	er	stick	up is	s appi	roxima	ately 2.5	5 feet. S	Screen	was bao	ckfille	d with	a #2 WG filter sand. e standpipe was co	Fron	n 2 fe	eet abo	ve scree	en to 1	1.5 fe		
IC 12/1											0.										
BUKING LUG MC 127903 BUKING LUGS GPU GEUDESIGN SI ANUAKU GUI	- 2)	Wate	r leve	l readir	igs have	ent appro e been ma ecorded.	ximate bou ade at times	indary betw s and unde	veen mater	rial types, tr is stated, flu	ransition actuatio	ns may b ns of gro	e gradual. undwater may occur due to o	other fac	ctors th	an those p	present at the	time m	easurem	nents were m	ade. AC =
JKING	3)	Abbr WOR	eviation /H = 1	ons: A Weight	= Auger	r; C = Co /Hammer	r i						Spoon; SSL = 3.5 Inch ID Sp	olit Spo	on; ST	= Shelby	Tube; $V = V$	'ane;	Bori	ng No ·	BW-4
й	4) 1	тор	лиопя	s Used:	11ace =	- 1-10%;	Little = 10	-2070, 30f	ne – 20-33	3%; And = 3	55-50%								5011		2 4

													BC			LOG		Bor	ing No.:	BW-5
			c	ЭE	= 0	D	E	() S I	G	N				Proje				Pag	e No.:	1 of 1
			। Geo	N Notechn			rs and En	wironme					State	line F	Retai	il Center		File	No.:	0321-005.0
			Те	elepho			Southford y, Conne 8836	cticut 0	5762 203-758	3-8842			Sout	heas	t, Ne	ew York		Che	cked By	: <u>ULF</u>
	ng Co	ompa			New E	ngland I	Boring Co						Casing:		mpler:				bservations	
	eman: Desig	n Rej	p.:	-	Jeff Le Chi Zh								Type: HW I.D.: 4.0 in.		SS 38 in.	Date	Depth (ft)	Elev. (ft)		Notes
	e Start Coordi			-	Octobe	er 11, 20	006		Finished: ordinate:	Octobe	er 12, 2	006	Hammer Wt.: NA Hammer Fall: NA		0 lbs 0 in.	▼ 10/13/06 ▼ 10/16/06			In well	
Gro Stat		urfac	e Ele	vation	(feet):	Offset:		75 .0					Rig Type: Bo Hammer Type: Safe	mbardie		¥ 10/18/06 ¥	13.1	461.9	In well	
Jui							ample I	nforma	tion				Strata			1	ple D	escrij	otion	
t)	Casing Blows/ft			ion	v	(l					lime	\$ (%)	Description	Symbol			-	-		
Depth (ft)	asing I	Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)		Blows / 6 in			Coring Time (min./ft)	Moisture Content (%)	Depth &	Ś.	Class	i Cartina Cartana D				
	0	ے 1	ь ss	<u>д</u> 13	8	0.0	0 - 6 3	6 - 12 3	12 - 18 100/1"	18 - 24	05	40	Elevation(feet) Topsoil 1.0	<u>711</u>	Ve	sification System: Burn ery dense, dark k	orowr			
														4.0		arse Sand, little	nne t	10 CO	arse Gra	ivei
													2.5 Sand 47	2.50						
													& Gravel	0						
5		2	SS	24	10	5.0	7	16	13	9				0	Me	edium dense, wh	nite fi	ne to	coarse	SAND and
		2	33	24	10	5.0		10	13	9				0		e to coarse GRA				
														0						
														0						
10																	fine	. 4		
		3	SS	5	3	10.0	100/5"							0	_ ve ∖(+)	ry dense, browr fine GRAVEL,	i, fine	e to co (-) Sil	t	AND, little
							<u> </u>							0)						
													13.0 Decomposed46 Bedrock	2.0						
15							<u> </u>						(inferred)							
8																				
2 1													17.0 Bottom 45	8.0						
													of Exploration at 17.0 ft							
			_																	
20																				
25	\ \ /h	ite		brod	rotur			hearic	d while	advono		allor h	it from 13 to 17 fo	ot don	th P	oller bit refueel a	ot 17	foot	donth	
Remarks											0		led. Well consists						·) foot riser
Ren	Ris	er s	stick	up is	s appr	roxima	ately 2.3	8 feet. S	Screen	was bao	ckfille	d with	#2 WG filter sand e standpipe was d	d. Fror	n 2 fe	eet above screer	n to 1	.5 fe		
Note	es: 1) s	Strati	ficatio	on line:	s represe	ent appro	ximate bou	indary betv	veen mater	ial types, tr	ansitio	ns may b	e gradual.			· ·			ante were	ada AC -
	3)	After Abbre	corin _{eviatio}	g; NR = ons: A	= Not R = Auger	ecorded. ;; C = Co	ore; D = Dri						undwater may occur due to Spoon; SSL = 3.5 Inch ID				ne;			
						Hammer = 1-10%;	Little = 10	-20%; Son	ne = 20-35	%; And = 3	35-50%							Borir	ng No.:	BW-5

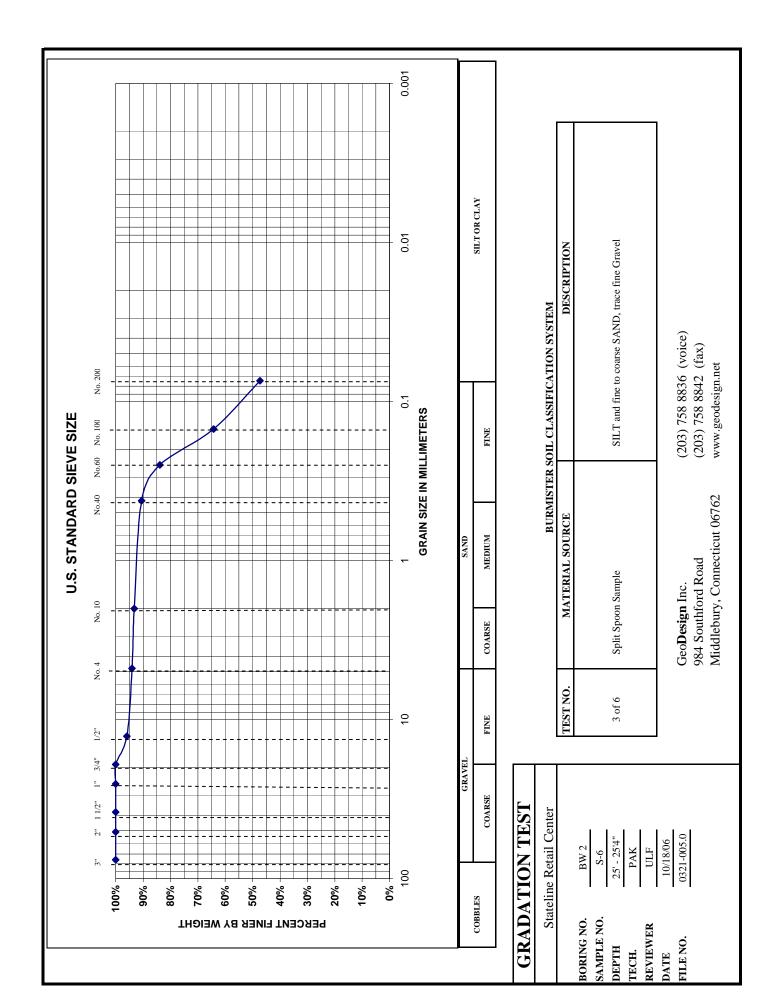
														-		_	LOG	r		Bo	ring No.:	BW-6
			c	ЭВ	= 0	-	E	() S I	G	N					Project					Pag	ge No.:	1 of 1
			l Geo	N Dtechr		O R ngineer	P O s and En Southfor	wironme									I Cent			File	e No.:	0321-005.0
			Те	elepho			, Conne	cticut 0	6762 203-758	8-8842			5	South	east,	Ne	ew Yor	ſĸ		Che	ecked By	: <u>ULF</u>
	ng Co man:	-	any:	-	New E Jeff Le		Boring Co	ntractors					<u>(</u> Type:	Casing: HW	<u>Samp</u> SS			(Date		water C Elev.	bservations	
Geo	Desig	n Re	ep.:	-	Chi Zh	ang							I.D.:	4.0 in.	1.38	in.			(ft)	(ft)		Notes
	e Start loordi		:	-	Octobe	er 12, 20	106		Finished: ordinate:	Octobe	er 13, 2	2006	Hammer Wt. <u>:</u> Hammer Fall <u>:</u>	NA NA	 			0/13/06 0/16/06			Open hole In well	<u>9</u>
Grou Stati		urfac	ce Ele	vation	(feet):	Offset:		36 .0					Rig Type: Hammer Type:		bardier - Hydrau	ulic	¥ 1 ¥	0/18/06	10.3	475.7	In well	
	'n,					S	ample I	nforma	tion				Strata					San	nple I	Descri	iption	
(ft)	Casing Blows/ft	ar		ation ()	ery	(ft)	Е	Blows / 6 i	nch Interv	al	Time t)	it (%)	Descript	.1011	Symbol							
Depth (ft)	Casing	Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Depth & Elevation(feet)			Class	ification S	system: Bu	rmister			
		1	SS	24	12	0.0	1	1	2	6			0.5 Topso Sand	485.5	<u>\$1/2</u> 50	Ve	ry loose	e, browr	1 fine	SAN	D, little S	Silt
													& Grav	el	0							
															0 C							
															0 0 (
5		2	SS	24	12	5.0	13	21	27	35								own fin Gravel,			e SAND,	some fine
															0							
															$\left o \right $							
															°							
10		3	SS	9	6	10.0	61	100/3"					10.0 Glacia Till	I 47		Vei	ry dens	e, black	k-darl	c gray	/ SILT ar coarse (nd fine to
														Ţ		(we	eathere	d Rock)			
15		4	SS	24	18	15.0	30	34	31	43			-			Vei	ry dens	e, blacl	fine	to co	arse GR	AVEL,
																sor	ne fine	to coar	se Sa	and, t	race Silt	
													18.0									
													Decompo Rock (inferre									
20													20.0 Botton	n 466.0								
													of Explora at 20.0									
25																						
arks	Ris	er	stick	is up	s appr	roxima	itely 2.3	8 feet. S	Screen	was ba	ckfille	ed with	led. Well cor #2 WG filter	sand.	From	2 fe	et abov	/e scree	en to	1.5 fe		
Remarks	əul	ac	с W(en Wa	ao 1)9(-rille(a vvitil D	entonit	e unips		ig hic	JIECIIV	e standpipe v	was CO	nciele	uII	place l	o prote	ci we			
Note	es: 1) s	Strati	ificatio	on line	s represe	ent appro:	ximate bou	indary betw	veen mater	ial types, ti	ransitio	ns may b	e gradual.									
	2) V 3) 1	Wate After Abbr	er leve corin eviation	l readii g; NR ons: A	ngs have = Not Re = Auger	been ma ecorded. ; C = Co	de at times re; D = Dri	and under	r condition	s stated, flu	ictuatio	ns of gro	undwater may occu Spoon; SSL = 3.5 I				-					
						Hammer = 1-10%;		-20%; Sor	ne = 20-35	%; And = 3	35-50%									Bori	ng No.:	BW-6

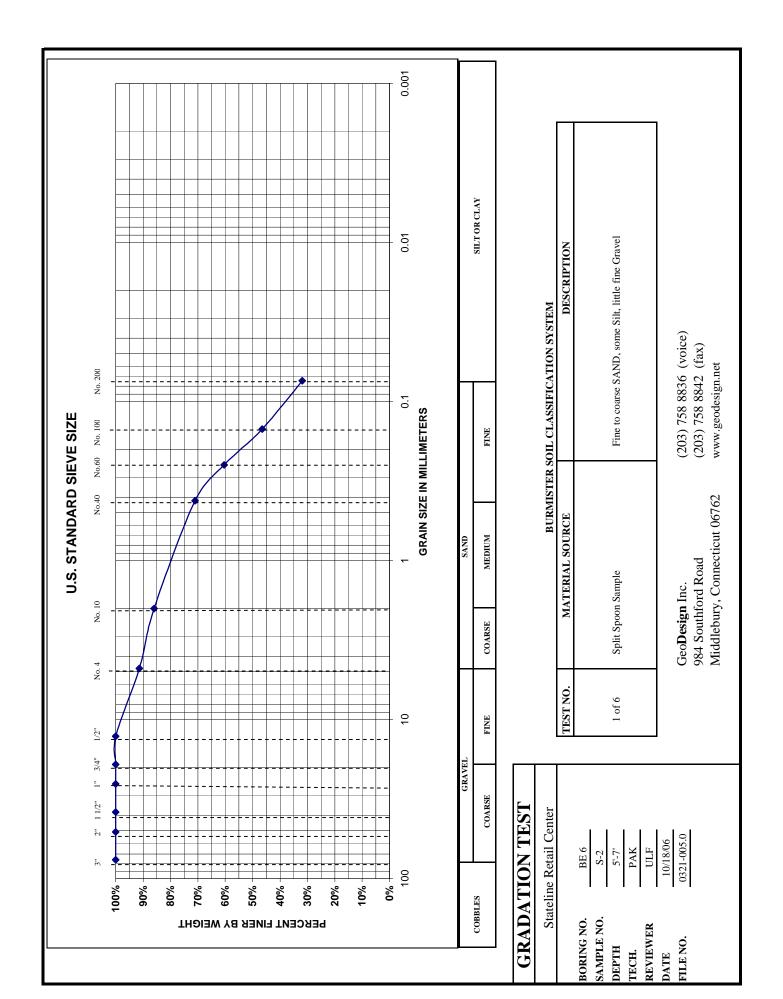
													В	OF	RIN	G	LOC	r J		Bor	ing No.:	BV	V-7
				ЭЕ	EC			§ 6 I	G	N				P	roject	t Nar	ne				e No.:	10	
			I Gao	Ы	с	OR	P O	R A					Stat	telin	e Re	etai	l Cen	ter		File	No.:	<u>0321</u> .	-005.0
			Geo	necnn		984	Southford y, Conne	l Road		isuuunis			So	uthe	east,	Ne	ew Yo	rk		Che	cked By	: <u> U</u>	LF
Bor	ing Co	mna		· ·)3-758-	8836 Boring Co		203-758	3-8842			Casir	ing:	Sam	pler:		(Ground	water O	bservations		
	eman:	mpe	ny.	-		arpenter		Tractors					Туре: НУ		S	-		Date		Elev.		Notes	
	Desig e Start		p.:	-	Chi Zh	nang er 10, 20	006	Date	Finished:	Octobe	or 11 2	006	I.D.: 4.0 i Hammer Wt.: NA		1.38	3 in. Ibs	¥	10/12/06	(ft)	(ft)	In well		
	Coordi			-	OCIOD	ci 10, 20			ordinate:		J 11, Z	000	Hammer Fall: NA		30		-	10/13/06			In well		
Gro Stat		urfac	e Ele	vation	(feet):	Offset:		95 .0					Rig Type: Hammer Type: Sa	Bomba		ulio	¥ ▼	10/15/06	24.7	470.3	In well		
5141	1011.						ample I	nforma	tion				Strata	alety -		uiic	-	San	anle I	Descri	ntion		
	ws/ft			-							ne	()	Description	n	lodi			San			puon		
Depth (ft)	Casing Blows/ft	ber		Penetration (inches)	Recovery (inches)	Depth (ft)	В	lows / 6 ii	nch Interv	al	Coring Time (min /ft)	Moisture Content (%)			Symbol								
Dept	Casi	Number	Type	Pene (inch	Recc	Dept	0 - 6	6 - 12	12 - 18	18 - 24	Corii (min	Mois Cont	Depth & Elevation(feet)			Class	ification	System: Bu	rmister				
		1	SS	24	18	0.0	2	4	5	7			0.5 Topsoil Sand	494.5	<u>\\/</u> 0		ose, br ce Roc		T, so	me fir	ne to coa	arse Sa	and,
													& Gravel		0 (
															ρ_{o}								
															° C								
5															0 (
		2	SS	20	14	5.0	19	31	50	50/2"					0						to coars		sil+
															0				, 10 00		OAND,		-inc
															0 C								
10															0								
		3	SS	3	2	10.0	100/3"										ry dens arse Sa		brow	n SIL	T, little fi	ne to	
															° C	1008	arse Sa	anu]
															o (
													13.5 Decomposed	1/181 5									
15													Weathered Ro										
0/e1/																							
															闭								
פּ ק																							
													20.0		闷								
20		C-1	с	60	60	20.0	[REC	= 100%	; RQD=	14%]			20.0 Bedrock	475.0	X	Ve	ry Poo	r Quality	, Sofi	t, Extr	emely V	/eathe	red,
					-											dar	гк gray	, GNEIS	S, ve	ry clo	se jointi	ng	
- - -																							
														¥									
25 25		L .	ator	- of 4		t bolo:	w grada	in info	rod do	l compor) ck		*									
rks	Spo	oon	refu	usal	at 13	.5 feet	v grade below g	grade;	rollerbit	advan	ced to	o 20 fe	et.	-		f -		- (0.01)		-l-1	\	0.6	
Remarks	Ris	ser :	stick	up is	s app	roxima	ately 1.9	5 feet.	Screer	was ba	ackfill	ed wi	led. Well consis h #2 WG filter s	sand.	Fror	n 2 f	feet ab	ove scre	een to) 1.5 f			
													e standpipe was										
													e gradual. undwater may occur du							easurem	ents were m	ade. AC =	=
OKING	1	WOR	/H = '	Weight	of Rod	/Hammer	re; D = Dri Little = 10				-	s = Split	Spoon; SSL = 3.5 Inch	1D Spli	it Spooi	n; ST =	= Shelby	Tube; $V = V$	ane;	Bori	ng No.:	BW-	7

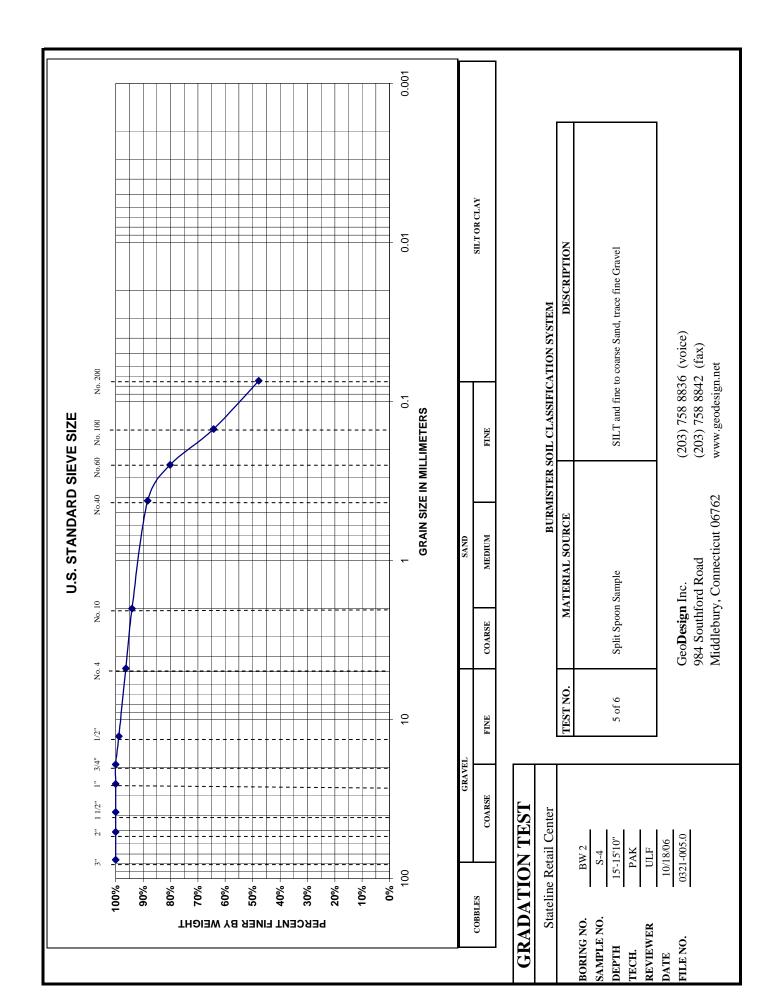
													B				LOG			Bo	ring No.:	BW-7
			Ċ	G E		D O R		N SI R A	G	N			Stat		-	t Nai	ne I Cent	or			ge No.:	2 of 2
			Geo		ical E	ngineer 984 S	s and En Southfor	<i>ivironme</i> d Road	ntal Con								w Yor				No.:	0321-005.0
					ne: 20	3-758-8	3836		5762 203-758	8-8842									C		bservations	: <u>ULF</u>
Bori: Fore	-	-	iny:	_		ngland E arpenter		ntractors					Type: <u>HW</u>	-		npler: SS	D	ate	Depth	Elev.	oservations	Notes
Geol			р.:		Chi Zh								I.D.: 4.0 i			8 in.			(ft)	(ft)		
Date N. C			:	-	Octobe	er 10, 20	06		ordinate:	Octobe	er 11, 2	2006	Hammer Wt.: NA Hammer Fall: NA	4 4) Ibs) in.		0/12/06 0/13/06			In well In well	
Grou Stati		urfac	e Ele	vation		Offset:		95.0						Bomba		ulia	¥ 1 ¥	0/15/06	24.7	470.3	In well	
Stati	on:							nforma	tion				Hammer Type: Sa Strata	atety -	Hydra	aulic	÷	Son	anla I	Descri	ntion	
	lows/ft			ц							ime	(%)	Description	ı	Symbol			San	iipie i	Jesen	puon	
Depth (ft)	Casing Blows/ft	Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)		Blows / 6 in			Coring Time (min./ft)	Moisture Content (%)	Depth &		Sy							
Д		∠ C-2	C E	42	≈ := 42	25.0	0 - 6 [REC	6 - 12 = 100%	12 - 18 ; RQD=		05	20	Elevation(feet) Bedrock			Po		ty, Mo	derate	ely W	eathered	I, dark
													(Continued)		Ø	gra	ay, GNE	ISS, cl	ose jo	ointing	9	
															ÿ							
													28.5 Bottom	466.5	X							
30													of Exploration at 28.5 ft									
00																						
]									
35																						
													-									
													-									
													-									
													-									
40													-									
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45											+		-									
											-		-									
													-									
50																						
							L	1			1				1							
Remarks																						
Rei																						
Note	s: 1) s	Strati	ficatio	on lines	represe	ent appro:	kimate bou	indary betw	veen mater	ial types, t	ransitio	ns may b	e gradual.									
	2)	Wate After	r leve corin	l readin g: NR =	gs have = Not R	 been ma ecorded. 	de at times	s and under	condition	s stated, flu	uctuatio	ns of gro	Spoon; SSL = 3.5 Inch				-			easuren	ients were m	ade. AC =
	1	WOR	/H =	Weight	of Rod	Hammer		-20%; Son			-	-	1,	~p.i	POO	,			-,	Bori	ng No.:	BW-7

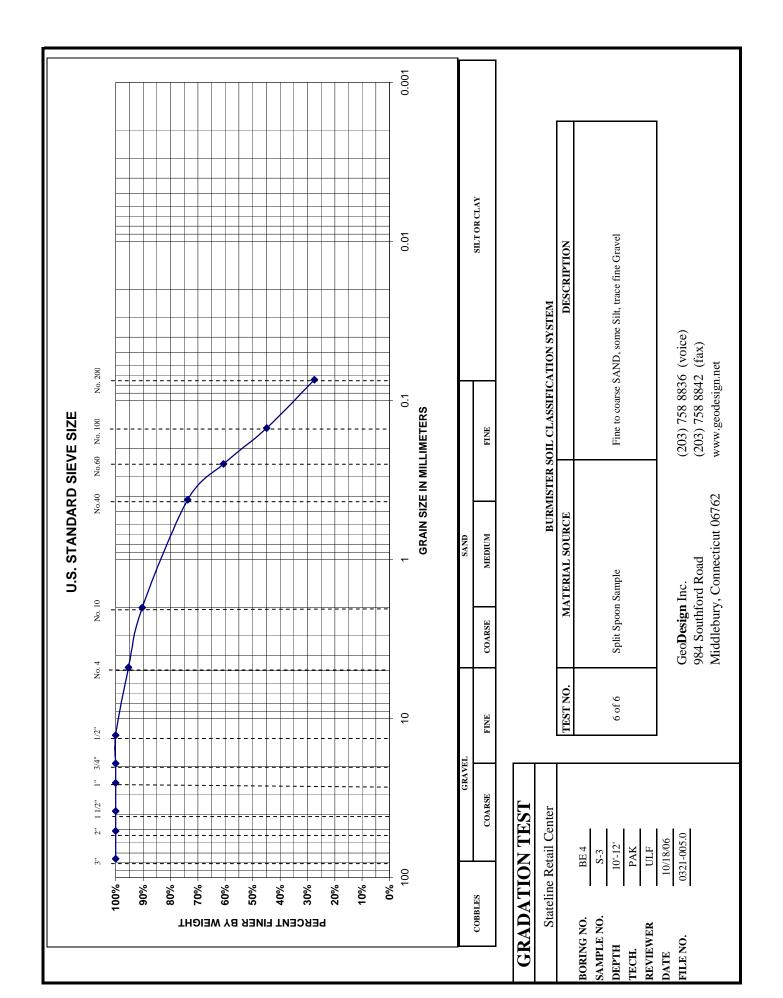
															RIN Project		LOG		Bo	ring No.:	BW-8
			C	G E	್ದಂ	D OR		N SI R A	G	N			S		2		I Center			ge No.:	1 of 1
			Geo	otechn		984 \$	rs and En Southford	d Road		sultants							w York			e No.: aakad Pa	0321-005.0
D				· ·	one: 20	3-758-		Fax	5762 203-758	8-8842				Casing:	Sam			Group		bservations	
Fore	ng Co man:			-	Tim Ca	arpenter	Boring Co	ntractors					Туре:	HW	S	S	Date	1	n Elev. (ft)		Notes
	Desig Start		:p.:	-	Chi Zh Octobe	ang er 12, 20	006	Date	Finished:	Octobe	er 13, 2	006	Hammer Wt.:	4.0 in. NA	1.38 140		▼ 10/13/0		456.4		
	oordi und S			vation	(feet):		46	E. Co 52.0	ordinate:				Hammer Fall <u>:</u> Rig Type:	NA Bomb	30 ardier	in.	¥ ¥				
Stat	on:					Offset:	ft ample I	nforma	tion				Hammer Type: Strata		- Hydra	ulic	¥	ample	Descri	intion	
	llows/ft			uo	<u> </u>		-				ime	(%)	Descrip		Symbol		5	ampie	Desen	puon	
Depth (ft)	Casing Blows/ft	Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	0 - 6	lows / 6 ii 6 - 12	nch Interv	al 18 - 24	Coring Time (min./ft)	Moisture Content (%)	Depth & Elevation(feet)			Class	ification System:	Burmiste	r		
	0	1	SS	24	14	0.0	1	1	4	5		1	0.7 Topso Subso		<u>x 1,</u>		ose, dark bro			me fine	Sand, trace
													2.0 Glacia								
													. Till								
5														_		Me	dium dense	aray-h	rown	fine to c	oarse
		2	SS	24	20	5.0	8	11	11	8				Ţ		SA	ND and SIL	, som	e fine	to coars	e Gravel
-																					
10																					
15																Mo	dium donco	ara bi	own f	ino to oo	200
		3	SS	24	20	15.0	8	10	15	15						GR (we	dium dense RAVEL and fi et)	ne to c	oarse	SAND,	some Silt,
																·	,				
													19.0 Decompo								
20													. Rock								
25													25.0								
													Botton of Explora at 25.0	ation							
Remarks	Ris	er	stick	up is	s appi	roxima	itely 2.3	s feet. S	Screen	was bao	ckfille	d with	lled. Well cor #2 WG filter e standpipe v	r sand.	From	2 fe	et above scr	een to	1.5 fe) and a et below	7 foot riser. 9 ground
Re																					
	2)	Wate After	r leve corin	l readır g; NR :	igs have = Not R	e been ma ecorded.	de at times	and under	r condition		ictuatio	ns of gro	undwater may occ						neasuren	nents were m	ade. AC =
	3)	Abbr WOR	eviatio /H = 1	ons: A Weight	= Auger	r; C = Co /Hammer				Piston San %; And = 3	-	-	Spoon; SSL = 3.5	Inch ID Sp	lit Spoor	n; ST =	= Shelby Tube; V =	Vane;	Bori	ng No.:	BW-8

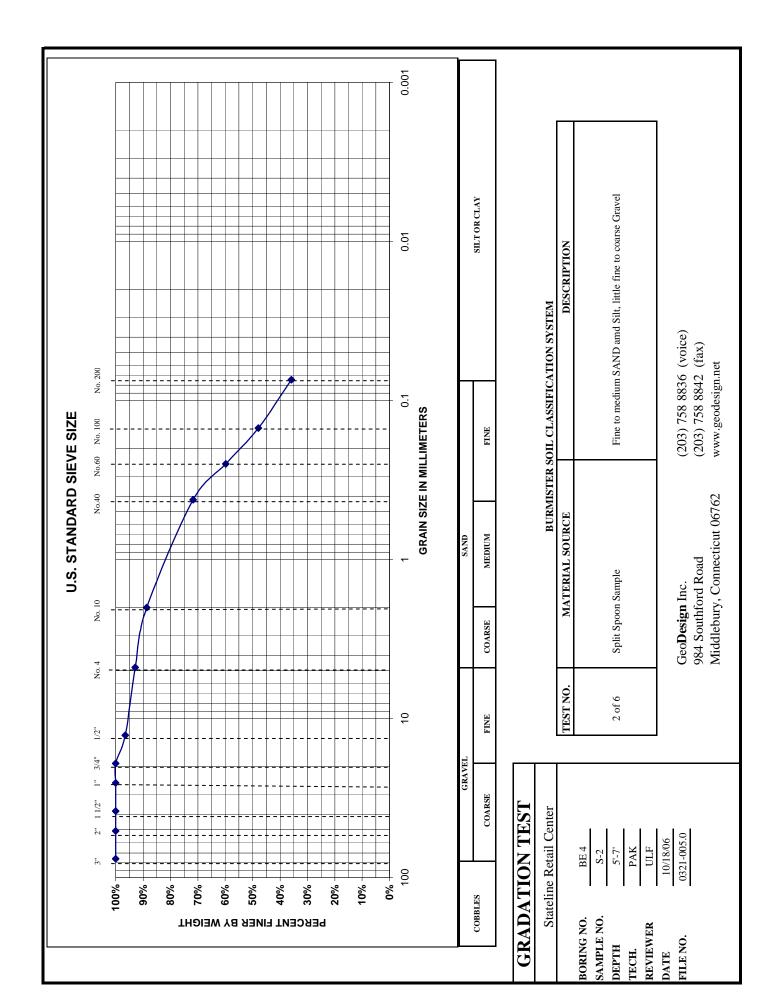
GRADATION TEST RESULTS

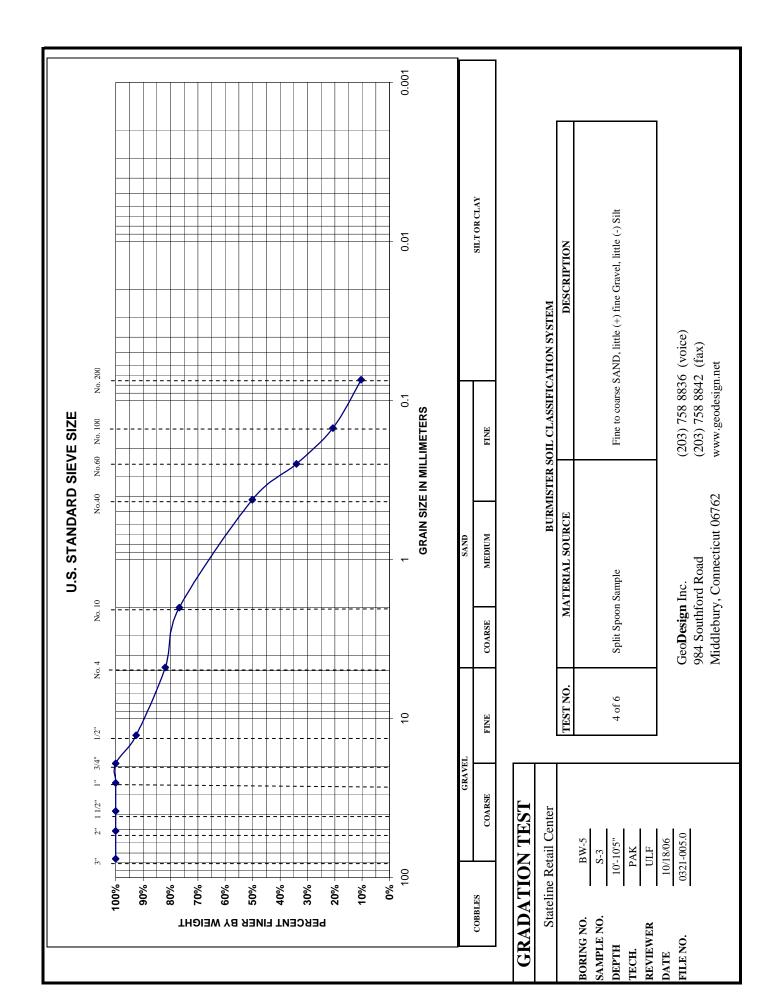












IN-SITU FALLING HEAD TEST DATA

			Statelin	e Retail Ce	nter			
			Southe	east, New Y	ork			
			Calculation of Soil Permea	bility from	Falling Head Test [Data		
Well No.: Test Type: Date:	BE-3 Falling Head 10/6/2006					Driller: Engineer: Weather:	Tim Carpente Chi Zhang Cloudy, 60's	er
Ground surface El.: Top of Casing El.: Top of Wick El.:	482.2 484.7 472.2	(ft.) (ft.) (ft.)	Depth to Top of Wick: Depth to Bottom of Wick:	10.0 12.0	(ft.) (ft.)	Length of Wick (L): Radium of Wick (R):	2.0 0.19	(ft.) (ft.)
			Depth to Groundwater: Groundwater Elevation:	8.8 473.4	(ft.) (ft.)	In(L/R): R^2/2L:		(in.)
Elapsed Time	t2 - t1	DTW	h1	h2	ln(h1/h2)	k	k	k
(min.)	(min.)	(in.)	(in.)	(in.)	(((((((((((((((((((((((((((((((((((((((in/min)	(cm/sec)	(ft/day)
0.00 1.00 2.00 4.00 5.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00 22.00	0.00 1.00 2.00 1.00 3.00 2.00 2.00 2.00 2.00 2.00 2.00 2	0.0 1.8 2.1 3.5 6.0 7.0 9.0 9.5 10.5 11.0 12.0 13.0 14.0	136.1 134.3 134.0 132.6 130.1 129.1 127.1 126.6 125.6 125.1 124.1 123.1 122.1	134.3 134.0 132.6 130.1 129.1 127.1 126.6 125.6 125.1 124.1 123.1 122.1	0.0133 0.0022 0.0105 0.0190 0.0077 0.0156 0.0039 0.0079 0.0040 0.0080 0.0081 0.0081	3.32E-03 5.58E-04 1.31E-03 4.75E-03 6.42E-04 1.95E-03 4.92E-04 9.90E-04 4.98E-04 1.00E-03 1.01E-03 1.02E-03	1.41E-04 2.36E-05 5.55E-05 2.01E-04 2.72E-05 8.25E-05 2.08E-05 4.19E-05 2.11E-05 4.24E-05 4.24E-05 4.31E-05	3.99E-01 6.70E-02 1.57E-01 5.70E-01 7.71E-02 2.34E-01 5.91E-02 1.19E-01 5.98E-02 1.20E-01 1.21E-01
24.00 26.00 30.00 75.00	2.00 8.00 4.00 45.00	15.0 16.0 17.0 28.0	121.1 120.1 119.1 108.1	121.1 120.1 119.1 108.1	0.0082 0.0328 0.0084 0.0969	1.03E-03 1.02E-03 5.22E-04 5.38E-04	4.35E-05 4.33E-05 2.21E-05 2.28E-05	1.23E-01 1.23E-01 6.26E-02 6.45E-02
					Maximun k Value Minimun k Value Average k Value	4.92E-04	2.01E-04 2.08E-05 5.47E-05	5.70E-01 5.91E-02 1.55E-01

Notes:

Ground surface elevations were interpolated from existing contours, and are approximate.
 Groundwater levels were measured during drilling.

			Statelir	ne Retail Co	enter			
			South	east, New Y	/ork			
			Calculation of Soil Permea	ability from	Falling Head Test	Data		
Well No.: Fest Type: Date:	BE-4 Falling Head 10/6/2006					Driller: Engineer: Weather:	Tim Carpente Chi Zhang Cloudy, 60's) Y
Ground surface El.: Top of Casing El.: Top of Wick El.:	473.0 476.0 463.0	(ft.) (ft.) (ft.)	Depth to Top of Wick: Depth to Bottom of Wick:	10.0 12.0	(ft.) (ft.)	Length of Wick (L): Radium of Wick (R):	2.4 0.20	(ft.) (ft.)
			Depth to Groundwater: Groundwater Elevation:	13.8 459.3	(ft.) (ft.)	ln(L/R): R^2/2L:		(in.)
Elapsed Time	t2 - t1	DTW	h1	h2	ln(h1/h2)	k	k	k
(min.)	(min.)	(in.)	(in.)	(in.)	. ,	(in/min)	(cm/sec)	(ft/day)
0.75	0.00	57.6	143.5					
1.25	0.50	74.4	126.7	126.7	0.1245	6.43E-02	2.72E-03	7.72E+0
1.75	0.50	81.6	119.5	119.5	0.0585	3.02E-02	1.28E-03	3.63E+0
2.25	0.50	87.6	113.5	113.5	0.0515	2.66E-02	1.13E-03	3.19E+0
2.75	0.50	91.2	109.9	109.9	0.0322	1.66E-02	7.05E-04	2.00E+0
3.25	0.50	96.0	105.1	105.1	0.0447	2.31E-02	9.77E-04	2.77E+0
3.75	0.50	99.6	101.5	101.5	0.0348	1.80E-02	7.62E-04	2.16E+0
4.25	0.50	103.2	97.9	97.9	0.0361	1.87E-02	7.90E-04	2.24E+0
5.25	1.00	108.0	93.1	93.1	0.0503	1.30E-02	5.50E-04	1.56E+0
6.75	1.50	112.8	88.3	88.3	0.0529	9.11E-03	3.86E-04	1.09E+0
7.75	1.00	117.6	83.5	83.5	0.0559	1.44E-02	6.11E-04	1.73E+0
8.75	1.00	120.0	81.1	81.1	0.0292	7.53E-03	3.19E-04	9.04E-0
15.00	6.25	129.6	71.5	71.5	0.1260	5.21E-03	2.20E-04	6.25E-0
18.90	3.90	132.0	69.1	69.1	0.0341	2.26E-03	9.57E-05	2.71E-0
22.83	3.93	134.4	66.7	66.7	0.0353	2.32E-03	9.83E-05	2.79E-0
27.83	5.00	136.8	64.3	64.3	0.0366	1.89E-03	8.01E-05	2.27E-0
34.67	6.84	138.0	63.1	63.1	0.0188	7.11E-04	3.01E-05	8.53E-0
44.50	9.83	140.4	60.7	60.7	0.0388	1.02E-03	4.31E-05	1.22E-0
I		1	11		Maximun k Value	e 6.43E-02	2.72E-03	7.72E+0
					Minimun k Value		1.28E-03	3.63E+0

Average k Value 2.66E-02 1.13E-03

3.19E+00

Notes:

Ground surface elevations were interpolated from existing contours, and are approximate.
 Groundwater levels were measured during drilling.
 Volume of pea stone used to fill the wick was approaximately 139% of the theoratical volume of cavity (casing O.D. x length of wick) Raidus and length of wick were adjusted accordingly using the actual volume of pea stone used.

			0	- Detail C				
			Statelin	e Retail Ce	nter			
			Southe	east, New Y	ork			
		(Calculation of Soil Permea	bility from	Falling Head Test [Data		
Well No.: Test Type: Date:	BE-5 Falling Head 10/9/2006					Driller: Engineer: Weather:	Jeff Leavitt Chi Zhang Cloudy, 60's	
Ground surface El.: Top of Casing El.: Top of Wick El.:	469.0 471.6 456.0	(ft.) (ft.) (ft.)	Depth to Top of Wick: Depth to Bottom of Wick:	13.0 15.0	(ft.) (ft.)	Length of Wick (L): Radium of Wick (R):	2.1 0.19	(ft.) (ft.)
			Depth to Groundwater: Groundwater Elevation:	12.9 456.1	(ft.) (ft.)	ln(L/R): R^2/2L:		(in.)
Elapsed Time	t2 - t1	DTW	h1	h2	ln(h1/h2)	k	k	k
(min.)	(min.)	(in.)	(in.)	(in.)		(in/min)	(cm/sec)	(ft/day)
0.00	0.00	0.0	186.5	400 7	0.0044	4 705 00	0 00 - 00	5 7 4 5 00
0.50	0.50	16.8	169.7	169.7	0.0944	4.78E-02	2.02E-03	5.74E+00
1.50 2.00	1.00	25.2 26.4	161.3 160.1	161.3	0.0508	1.29E-02	5.44E-04	1.54E+00 4.54E-01
2.00	0.50 0.50	26.4	155.3	160.1 155.3	0.0075 0.0304	3.78E-03 1.54E-02	1.60E-04 6.53E-04	4.54E-01 1.85E+00
3.00	0.50	33.6	152.9	155.5	0.0304	7.89E-03	6.53E-04 3.34E-04	9.47E-01
3.00 4.25	1.25	39.6	152.9	152.9	0.0156	8.11E-03	3.34E-04 3.43E-04	9.47E-01 9.73E-01
4.25 5.75	1.25	43.2	143.3	146.9	0.0400	4.19E-03	3.43E-04 1.77E-04	9.73E-01 5.03E-01
5.75	2.00	43.2 58.8	143.3	143.3	0.0248	4.19E-03 1.46E-02	6.18E-04	1.75E+00
10.00	2.00	68.4	118.1	127.7	0.0782	8.80E-03	3.72E-04	1.06E+00
13.00	3.00	80.4	106.1	106.1	0.1072	9.05E-03	3.83E-04	1.00E+00
15.00	2.00	88.8	97.7	97.7	0.0825	1.04E-02	3.03L-04 4.42E-04	1.25E+00
20.00	5.00	103.2	83.3	83.3	0.1595	8.08E-03	4.42E-04 3.42E-04	9.69E-01
25.00	5.00	115.2	71.3	71.3	0.1556	7.88E-03	3.34E-04	9.46E-01
30.00	5.00	126.0	60.5	60.5	0.1643	8.32E-03	3.52E-04	9.99E-01
		<u>I</u>			Maximun k Value Minimun k Value Average k Value	4.78E-02 3.78E-03 1.19E-02	2.02E-03 1.60E-04 5.06E-04	5.74E+00 4.54E-01 1.43E+00

Notes:

Ground surface elevations were interpolated from existing contours, and are approximate.
 Groundwater levels were measured during drilling.
 Volume of pea stone used to fill the wick was approaximately 115% of the theoratical volume of cavity (casing O.D. x length of wick) Raidus and length of wick were adjusted accordingly using the actual volume of pea stone used.

			Stateli	ne Retail C	enter			
			South	east, New `	York			
			Calculation of Soil Perme	ability from	Falling Head Test	Data		
Well No.: Test Type: Date:	BE-8 Falling Head 10/9/2006					Driller: Engineer: Weather:	Tim Carpente Chi Zhang Sunny, 70's	PL
Ground surface El.: Top of Casing El.: Top of Wick El.:	460.8 463.3 450.3	(ft.) (ft.) (ft.)	Depth to Top of Wick: Depth to Bottom of Wick:	10.5 12.5	(ft.) (ft.)	Length of Wick (L): Radium of Wick (R):	2.1 0.19	(ft.) (ft.)
			Depth to Groundwater: Groundwater Elevation:	8.0 452.8	(ft.) (ft.)	ln(L/R): R^2/2L:		(in.)
Elapsed Time	t2 - t1	DTW	h1	h2	ln(h1/h2)	k	k	k
(min.)	(min.)	(in.)	(in.)	(in.)	```	(in/min)	(cm/sec)	(ft/day)
0.00	0.00	0.0	125.5					
0.50	0.50	5.0	120.5	120.5	0.0406	2.05E-02	8.67E-04	2.46E+0
1.50	1.00	13.0	112.5	112.5	0.0687	1.73E-02	7.32E-04	2.08E+0
2.00	0.50	16.0	109.5	109.5	0.0270	1.36E-02	5.76E-04	1.63E+0
2.50	0.50	18.0	107.5	107.5	0.0184	9.28E-03	3.93E-04	1.11E+0
3.00	0.50	21.0	104.5	104.5	0.0283	1.43E-02	6.03E-04	1.71E+0
4.25	1.25	26.0	99.5	99.5	0.0490	9.88E-03	4.18E-04	1.19E+0
5.75	1.50	31.0	94.5	94.5	0.0515	8.66E-03	3.66E-04	1.04E+0
7.75	2.00	38.0	87.5	87.5	0.0769	9.69E-03	4.10E-04	1.16E+0
10.00	2.25	44.0	81.5	81.5	0.0710	7.95E-03	3.37E-04	9.54E-0
13.00	3.00	52.0	73.5	73.5	0.1033	8.67E-03	3.67E-04	1.04E+0
14.00	1.00	55.0	70.5	70.5	0.0417	1.05E-02	4.44E-04	1.26E+0
15.00	1.00	57.0	68.5	68.5	0.0288	7.25E-03	3.07E-04	8.70E-0
24.00	9.00	73.0	52.5	52.5	0.2659	7.44E-03	3.15E-04	8.93E-0
30.00	6.00	82.0	43.5	43.5	0.1880	7.89E-03	3.34E-04	9.47E-0
43.00	13.00	91.0	34.5	34.5	0.2317	4.49E-03	1.90E-04	5.39E-0
53.00	10.00	98.0	27.5	27.5	0.2266	5.71E-03	2.42E-04	6.85E-0
63.00	10.00	102.0	23.5	23.5	0.1571	3.96E-03	1.67E-04	4.75E-0
					Maximun k Value	2.05E-02	8.67E-04	2.46E+0
					Minimun k Value	3.96E-03	1.67E-04	4.75E-0
						0.002 00	1.07 = 04	4.100.0

Average k Value 9.82E-03 4.16E-04 1.18E+00

Notes:

Ground surface elevations were interpolated from existing contours, and are approximate.
 Groundwater levels were measured during drilling.
 Volume of pea stone used to fill the wick was approaximately 109% of the theoratical volume of cavity (casing O.D. x length of wick) Raidus and length of wick were adjusted accordingly using the actual volume of pea stone used.

			Statelin	e Retail Ce	enter			
			Southe	east, New Y	′ork			
			Calculation of Soil Permea	bility from	Falling Head Test [Data		
Well No.: Test Type: Date:	BW-6 Falling Head 10/13/2006					Driller: Engineer: Weather:	Tim Carpente Chi Zhang Sunny, 60's	er
Ground surface El.: Top of Casing El.: Top of Wick El.:	486.0 488.1 471.0	(ft.) (ft.) (ft.)	Depth to Top of Wick: Depth to Bottom of Wick:	15.0 17.0	(ft.) (ft.)	Length of Wick (L): Radium of Wick (R):	2.0 0.19	(ft.) (ft.)
			Depth to Groundwater: Groundwater Elevation:	11.4 474.6	(ft.) (ft.)	In(L/R): R^2/2L:		(in.)
Elapsed Time	t2 - t1	DTW	h1	h2	ln(h1/h2)	k	k	k
(min.)	(min.)	(in.)	(in.)	(in.)	```	(in/min)	(cm/sec)	(ft/day)
0.00	0.00	0.0	162.4					
1.50	1.50	0.3	162.1	162.1	0.0015	2.56E-04	1.09E-05	3.08E-0
2.50	1.00	0.8	161.6	161.6	0.0031	7.71E-04	3.26E-05	9.25E-0
3.50	1.00	1.0	161.4	161.4	0.0015	3.87E-04	1.64E-05	4.64E-0
4.25	0.75	1.3	161.1	161.1	0.0016	5.16E-04	2.18E-05	6.19E-0
5.00	0.75	1.5	160.9	160.9	0.0016	5.17E-04	2.19E-05	6.20E-0
5.83	0.83	1.8	160.6	160.6	0.0016	4.66E-04	1.97E-05	5.59E-0
6.33	0.50	2.0	160.4	160.4	0.0016	7.83E-04	3.31E-05	9.40E-0
7.00	0.67	2.3	160.1	160.1	0.0016	5.81E-04	2.46E-05	6.98E-0
7.83	0.83	2.5	159.9	159.9	0.0016	4.68E-04	1.98E-05	5.62E-0
8.50	0.67	2.8	159.6	159.6	0.0016	5.86E-04	2.48E-05	7.03E-0
9.00	0.50	3.0	159.4	159.4	0.0016	7.83E-04	3.31E-05	9.39E-0
10.50	1.50	3.5	158.9	158.9	0.0031	5.23E-04	2.21E-05	6.28E-0
11.83	1.33	4.0	158.4	158.4	0.0032	5.92E-04	2.51E-05	7.10E-0
13.00	1.17	4.5	157.9	157.9	0.0032	6.75E-04	2.86E-05	8.10E-0
14.67	1.67	5.0	157.4	157.4	0.0032	4.74E-04	2.01E-05	5.69E-0
17.58	2.91	6.0	156.4	156.4	0.0064	5.46E-04	2.31E-05	6.56E-0
20.75	3.17	7.0	155.4	155.4	0.0064	5.06E-04	2.14E-05	6.07E-0
24.00	3.25	8.0	154.4	154.4	0.0065	4.96E-04	2.10E-05	5.95E-0
27.25	3.25	9.0	153.4	153.4	0.0065	4.99E-04	2.11E-05	5.99E-0
31.17	3.92	10.0	152.4	152.4	0.0065	4.17E-04	1.77E-05	5.00E-0
		1			Maximun k Value Minimun k Value Average k Value	7.83E-04 3.87E-04 5.45E-04	3.31E-05 1.64E-05 2.31E-05	9.40E-0 4.64E-0 6.54E-0

Notes:

Ground surface elevations were interpolated from existing contours, and are approximate.
 Groundwater levels were measured during drilling.

			.					
			Statelir	ne Retail Ce	nter			
			South	east, New Y	ork			
			Calculation of Soil Permea	ability from	Falling Head Tes	t Data		
Well No.: Test Type: Date:	BW-8 Falling Head 10/13/2006					Driller: Engineer: Weather:	Tim Carpente Chi Zhang Sunny, 60's	er
Ground surface El.: Top of Casing El.: Top of Wick El.:	462.9 465.2 447.9	(ft.) (ft.) (ft.)	Depth to Top of Wick: Depth to Bottom of Wick:	15.0 17.0	(ft.) (ft.)	Length of Wick (L): Radium of Wick (R):	2.0 0.19	(ft.) (ft.)
		. ,	Depth to Groundwater: Groundwater Elevation:	11.4 451.5	(ft.) (ft.)	In(L/R): R^2/2L:		(in.)
Elapsed Time	t2 - t1	DTW	h1	h2	ln(h1/h2)	k	k	k
(min.)	(min.)	(in.)	(in.)	(in.)		(in/min)	(cm/sec)	(ft/day)
0.00	0.00	29.0	135.5					
1.00	1.00	30.0	134.5	134.5	0.0074	1.85E-03	7.83E-05	2.22E-01
1.50	0.50	34.0	130.5	130.5	0.0302	1.51E-02	6.38E-04	1.81E+00
2.00	0.50	36.0	128.5	128.5	0.0154	7.71E-03	3.26E-04	9.25E-01
2.50	0.50	38.0	126.5	126.5	0.0157	7.83E-03	3.32E-04	9.40E-01
3.50	1.00	41.0	123.5	123.5	0.0240	5.99E-03	2.54E-04	7.19E-01
4.00	0.50	43.0	121.5	121.5	0.0163	8.15E-03	3.45E-04	9.78E-01
4.50	0.50	44.0	120.5	120.5	0.0083	4.13E-03	1.75E-04	4.95E-01
5.00	0.50	46.0	118.5	118.5	0.0167	8.36E-03	3.54E-04	1.00E+00
6.00	1.00	48.0	116.5	116.5	0.0170	4.25E-03	1.80E-04	5.10E-01
7.00	1.00	49.0	115.5	115.5	0.0086	2.15E-03	9.11E-05	2.58E-01
8.00 9.00	1.00	51.0 52.5	113.5 112.0	113.5 112.0	0.0175 0.0133	4.36E-03 3.32E-03	1.85E-04 1.41E-04	5.23E-01 3.99E-01
	1.00						-	
11.00 13.00	2.00 2.00	55.5 58.0	109.0 106.5	109.0 106.5	0.0271 0.0232	3.39E-03 2.90E-03	1.43E-04 1.23E-04	4.07E-01 3.48E-01
13.00	2.00	58.0 60.0	106.5	106.5	0.0232	2.90E-03 3.14E-03	1.23E-04 1.33E-04	3.48E-01 3.77E-01
15.00	2.00	60.0 62.0	104.5	104.5	0.1257	3.14E-03 2.41E-03	1.33E-04 1.02E-04	3.77E-01 2.89E-01
19.00	2.00	62.0 64.0	102.5	102.5	0.0193	2.41E-03 2.46E-03	1.02E-04 1.04E-04	2.89E-01 2.95E-01
23.00	2.00	64.0 68.0	96.5	96.5	0.0406	2.46E-03 2.53E-03	1.04E-04 1.07E-04	2.95E-01 3.04E-01
23.00	4.00	71.0	96.5 93.5	96.5 93.5	0.0406	2.53E-03 1.97E-03	8.34E-05	2.36E-01
30.00	4.00 3.00	71.0	93.5 91.5	93.5 91.5	0.0316	1.80E-03	6.34E-05 7.62E-05	2.36E-01 2.16E-01
37.00	7.00	76.0	88.5	88.5	0.0333	1.19E-03	5.03E-05	1.43E-01
41.00	4.00	78.0	86.5	86.5	0.0229	1.43E-03	6.04E-05	1.71E-01
II		1	1 1		Maximun k Val Minimun k Val		6.38E-04 5.03E-05	1.81E+00 1.43E-01

Minimun k Value Average k Value 1.19E-03 3.97E-03 5.03E-05 1.68E-04 4.77E-01

Notes:

Ground surface elevations were interpolated from existing contours, and are approximate.
 Groundwater levels were measured during drilling.

TABLES

Table No. 1

Groundwater and Well Data

Stateline Retail Center Southeast, NY

	2	nean	5	9	9	2	22	8	9	4	25	Ŧ	9	5	35	17	37	10
	DTW	from mean	5.85	99.66	7.66	6.72	12.52	7.98	1.76	6.64	24.25	25.41	21.16	14.71	12.85	10.47	24.37	5.5
October Data Only	Range between	Min and Max	1.3	0.7	6.0	2.3	0.3	0.3	0.4	0.2	0.0	0.0	1.6	9.0	0.1	0.2	0.2	0.00
Octobe	Mean	Elev.	478.4	480.9	474.0	465.2	456.3	460.7	452.6	454.1	505.7	491.7	497.3	483.6	463.0	475.4	472.9	457.41
	Min.	Elev.	477.8	480.5	473.6	464.0	456.2	460.6	452.4	453.9	505.7	491.7	496.7	483.3	463.0	475.3	472.8	457.41
	Мах	Elev.	479.1	481.2	474.5	466.3	456.5	460.8	452.8	454.2	505.7	491.7	498.3	483.9	463.1	475.5	473.0	457.41
	906	Elev.	477.8	481.2	474.5	465.4	456.5	460.8	452.8		505.7		496.7	483.3	463.0	475.5	472.8	
	10/18/2006	DTW	7.1	9.7	7.7	7.6	12.5	8.0	1.8		26.4		22.8	15.3	13.0	10.5	24.6	
	1	DBR	10.3	12.2	10.2	10.6	15.2	11.3	3.8		26.4		25.5	17.9	15.3	12.6	26.6	
	90	Elev.	479.0	481.2		466.3	456.3	460.7	452.6	454.2					463.0	475.3		
	10/16/2006	DTW	5.9	9.7		6.7	12.7	8.1	2.0	6.6					13.0	10.7		
	1	DBR	9.2	12.2		9.7	15.4	11.4	4.0	9.1					15.3	12.8		
	90	Elev.										491.7	496.7	483.5	463.1		472.8	457.4
	10/13/2006	DTW										25.4	22.8	15.1	12.9		24.6	5.5
	٢	DBR										27.8	25.5	17.7	15.2		26.6	7.8
	90	Elev.									505.7						473.0	
	10/12/2006	DTW									24.2						24.4	
	1	DBR									26.4						26.4	
	90	Elev.					456.2	460.6		454.1			498.3	483.9				
	10/11/2006	DTW					12.8	8.2		6.7			21.2	14.7				
	Ŧ	DBR					15.5	11.5		9.2			23.9	17.3				
	90	Elev.		480.6	473.6		456.2	460.6	452.4	453.9								
	10/10/2006	DTW		10.3	8.6		12.8	8.2	2.2	6.9								
	Ŧ	DBR		12.8	11.1		15.5	11.5	4.2	9.3								
	90	Elev.	477.8	480.5	473.7	464.0												
	10/9/2006	DTW	7.1	10.4	8.5	9.0												
	· ·	DBR	10.4	12.9	11.0	12.0												
	90	Elev.	479.1															
	10/6/2006	DTW	5.8															
	· ·	DBR	9.1															
	Well Depth	Below GS	18.5	31.0	12.0	13.6	17.5	23.5	26.2	25.0	25.0	30.0	25.0	25.0	25.0	20.0	28.5	25.0
	Stickup		3.2	2.5	2.5	3.0	2.6	3.3	2.0	2.5	2.2	2.3	2.8	2.6	2.4	2.1	2.1	2.31
	G.S.	Elev.	484.9	490.9	482.2	473.0	469.0	468.8	454.6	460.8	529.9	517.1	519.5	498.6	475.9	486.0	497.4	462.90
	Ref.	Elev.	488.1	493.4	484.7	476.0	471.6	472.1	456.6	463.3	532.1	519.4	522.3	501.2	478.3	488.1	499.5	465.21
	Well	No.	BE-1	BE-2	BE-3	BE-4	BE-5	BE-6	BE-7	BE-8	BW-1	BW-2	BW-3	BW-4	BW-5	BW-6	BW-7	BW-8

Notes:

Ref Elev. = Reference Elevation marked on top of solid PVC well riser inside protective casing.
 DTW = Depth to Water Below Ground Surface

3) GS = Ground Surface4) Elev. = Groundwater Surface Elevation

DBR = Depth below reference
 All data is stated in feet.

7) Well locations located by GeoDesign by taping from existing site features. Well elevations surveyed by Insite Engineering.

TABLE No. 2 Summary of Depth to Bedrock

Stateline Retail Center Southeast, NY

East SSDS Area

Boring	Ground Surface	Depth to	Bedrock	RQD	RQD	Notes
	Elevation	Top of Bedrock	Elevation	0-5' run	5'-10' run	
	(ft.)	(ft.)	(ft.)	(%)	(%)	
BE-1A	484.0	8.5	475.5	100	90	
BE-2	490.0	21.0	469.0	90	70	A layer of cobbles and boulders exists from Elev.479 to Elev. 469
BE-3	483.0	7.0	476.0	N/A	N/A	Weathered Rock inferred from spoon sample and roller bit
BE-4	473.0	N/A	N/A	N/A	N/A	Spoon Refusal at Elev. 459.4
BE-5	471.0	10.8	460.2	N/A	N/A	Weathered Rock inferred from spoon sample and roller bit
BE-6	473.0	N/A	N/A	N/A	N/A	Spoon Refusal at Elev. 449.5
BE-7	454.0	N/A	N/A	N/A	N/A	Spoon Refusal at Elev. 427.8
BE-8A	460.0	N/A	N/A	N/A	N/A	Spoon Refusal at Elev. 434.7

West SSDS Area

Boring	Ground Surface Elevation	Depth to Top of Bedrock	Bedrock Elevation	RQD 0-5' run	RQD 5'-10' run	Notes
	(ft.)	(ft.)	(ft.)	(%)	(%)	
BW-1	0.00	20	-20.00	N/A		Roller bit 10 feet through the weathered rock to refusal, did not core
BW-2	0.00	26	-26.00	N/A	N/A	Roller bit 5 feet through the weathered rock to refusal, did not core
BW-3	0.00	N/A	N/A	N/A	N/A	Spoon Refusal: infer bedrock
BW-4	0.00	17	-17.00	N/A	N/A	Roller bit 8 feet through the weathered rock to refusal, did not core
BW-5	0.00	13	-13.00	N/A	N/A	Roller bit 4 feet through the weathered rock to refusal, did not core
BW-6	0.00	18	-18.00	N/A	N/A	Roller bit 2 feet through the weathered rock to refusal, did not core
BW-7	0.00	13.5	-13.50	14.4	50	Roller bit 6.5 into decomposed rock and core 10 feet
BW-8	0.00	19	-19.00	N/A	N/A	Roller bit 5 feet through the weathered rock to refusal, did not core

Note: 1. RQD = Rock Quality Designation. Defined as the total length of sound core pieces, 4 inches or greater in length, expressed as a percentage of the total length cored.

Table No. 3Summary of Average Soil Permeability

Stateline Retail Center Southeast, New York

	Falling He	ead Test Data		
Area	Well No.		Permeability	
		(in/sec)	(cm/sec)	(ft/day)
East Area	BE-3	1.29E-03	5.47E-05	1.55E-01
	BE-4	2.66E-02	1.13E-03	3.19E+00
	BE-5	1.19E-02	5.06E-04	1.43E+00
	BE-8	9.82E-03	4.16E-04	1.18E+00
	Average	1.24E-02	5.26E-04	1.49E+00
West Area	BW-6	5.45E-04	2.31E-05	6.54E-02
	BW-8	3.97E-03	1.68E-04	4.77E-01
	Average	2.26E-03	9.56E-05	2.71E-01

to Estimate Coefficient of Permability Kozeny - Carman Analyses Table No. 4

Stateline Retail Center Southeast, New York

Area	Test Boring	Sample	Sample	D10	SPT "N-value	Descriptive	Relative	in-situ	in-situ	Coefficient of	Coefficient of
	No.	No.	Depth			Density	Density	void ratio	porosity	Permability	Permability
			(ft.)	(mm)	(blows / ft)		(%)	е	n	k (cm/sec)	k (ft/day)
West	BW-2	S-4	15'-15'10"	0.007	100	Very dense	100	0.140	0.12	5.54E-07	1.57E-03
Area	BW-2	S-6	25'-25'4"	0.007	160	Very dense	100	0.140	0.12	5.54E-07	1.57E-03
	BW-5	S-3	10'-10'5"	0.075	100	Very dense	100	0.140	0.12	6.36E-05	1.80E-01
East	BE-4	S-2	5'-7'	0.075	23	Medium Dense	50	0.495	0.33	2.14E-03	6.08E+00
Area	BE-4	S-3	10'-12'	0.015	2	Loose	25	0.673	0.40	1.92E-04	5.45E-01
	BE-6	S-2	5'-7'	0.003	17	Medium Dense	45	0.531	0.35	4.13E-06	1.17E-02

Relative Density	(%) 0 to 15	15 to 35	35 to 65	65 to 85	85 to 100	
Descriptive Density	Verv loose	Loose	Medium Dense	Dense	Very dense	
(bl/ ft)	0 to 4	4 to 10	10 to 30	30 to 50	50 +	

emin	emax
0.14	0.85

West Area	Minimum:	5.54E-07	1.57E-03
	Maximum:	6.36E-05	1.80E-01
	Average:	2.16.E-05	6.12E-02
East Area	Minimum:	4.13E-06	1.17E-02
	Maximum:	2.14E-03	6.08E+00
	Average:	7.80.E-04	2.21E+00

References: 1.) Lambe & Whitman p 30 and p 287 and Kozeny-Carman Method

Geo**Design**, Inc.

Table No. 5Effluent Flow Analysis

Stateline Retail Center Southeast, New York

input effluent source flow flow gal/day (ft*3/d)	East Area Input over 8 50- (north-south dir No. of cells = Q total	-	West Area Input over 4 50-1 (north-south dire No. of cells = Q total	
50066.862583.6750100.3875117.01000133.71250167.11500200.52000267.43000401.1	4,000 5,000 6,000 7,000 8,000 10,000 12,000 16,000 24,000	gpd gpd gpd gpd gpd gpd gpd	2,000 2,500 3,000 3,500 4,000 5,000 6,000 8,000 12,000	gpd gpd gpd gpd gpd gpd gpd
Avg. Width of Recharg (East West Dire	je Area 400 feet		800 feet	
Flow into model (at cell 10)			
from Darcy Q=kia, max flo 2.8	w into model is about 2.8 ft^3 450	@/day per foot 1260 ft^3/day say 1000 ft^3/day also no rainfall flow		
Adjustment to Transmissiv	ity resulting from increased sa East Area	aturated flow thickness	West Area	
Existing Site Avg. Depth to Existing Site Avg. Sat Thio Max gw rise Proposed Max Sat Thickne	kness 13.6 (8' - 3' = 5') 5	(17' - 3' = 14')	17 8 14 22	
	ratio 1.37	,	2.75	
	Say 1.3		2	

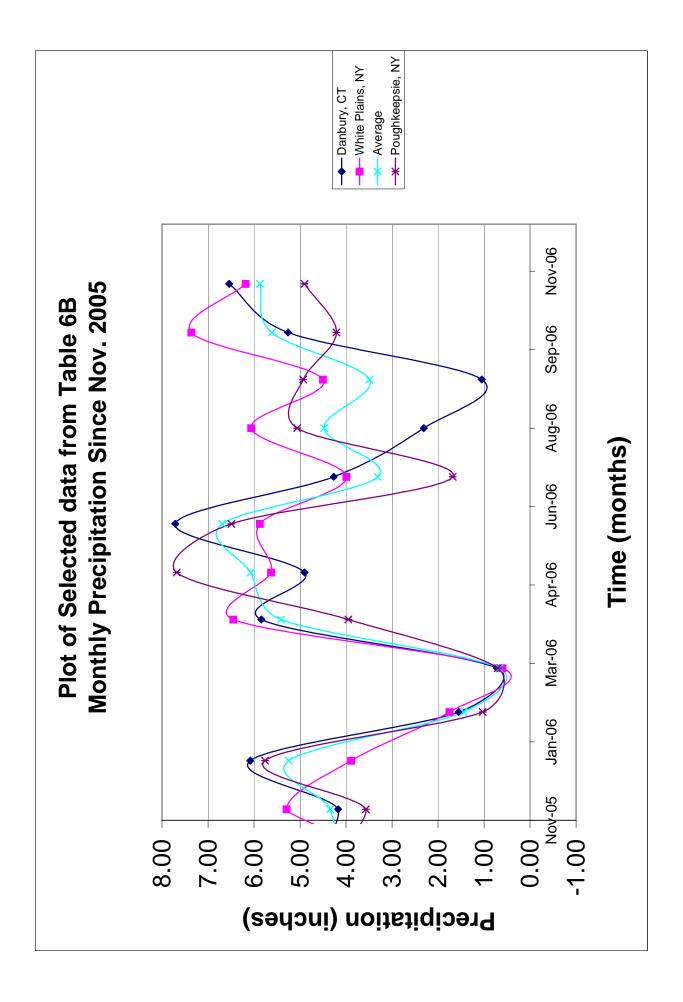
						Table No	o. 6A						
						Precipitation Poughkeep	n at Station I osie, NY	KPOU					
Precip.													
(in)		_					onth		-			_	
1835	J -	F _	M	A _	M	J -	J -	A _	S -	0	<u>N</u>	D -	TOT/
1836	-			-	-			-			-	-	-
1837	-	-	-	-	-	-	-	-	-	-	-	-	-
1838	-	-	-	-	-	-	-	-	-	-	-	-	-
1839	-	-	-	-	-	-	-	-	-	-	-	-	-
1840	-	-		-	-	-	-	-	-	-	-	-	-
1841 1842	-	-	-	-	-	-	-	-	-	-	-	-	-
1843	-			-				-				-	
1844	-	-	-	-	-	-	-	-	-	-	-	-	-
1845	-	-	-	-	-	-	-	-	-	-	-	-	-
1846	-	-	-	-	-	-	-	-	-	-	-	-	-
1847	-	-	-	-	-	-	-	-	-	-	-	-	-
1848 1849	-	-	-	-	-	-	-	-	-	-	-	-	-
1849	-	-	-	-	-	-	-	-	-	-	-	-	
1851	-	-	-	-	-	-	-	-	-	-	-	-	-
1852	-	-	-	-	-	-	-	-	-	-	-	-	-
1853	-	-	-	-	-	-	-	-	-	-	-	-	-
1854	-	-	-	-	-	-	-	-	-	-	-	-	-
1855	-	-	-	-	-	-	-	-	-	-	-	-	-
1856 1857	-	-	-	-	-	-	-	-	-	-	-	-	-
1858				-	-			-	-	-	-	-	
1859	-	-	-	-	-	-	-	-	-	-	-	-	-
1860	-	-	-	-	-	-	-	-	-	-	-	-	-
1861	-	-	-	-	-	-	-	-	-	-	-	-	-
1862	-	-	-	-	-	-	-	-	-	-	-	-	-
1863	-	-	-	-	-	-	-	-	-	-	-	-	-
1864 1865	-	-	-	-	-	-	-	-	-	-	-	-	-
1866	-	-	-	-	-	-	-	-	-	-	-	-	-
1867	-	-	-	-	-	-	-	-	-	-	-	-	-
1868	-	-	-	-	-	-	-	-	-	-	-	-	-
1869	-	-	-	-	-	-	-	-	-	-	-	-	-
1870	-	-	-	-	-	-	-	-	-	-	-	-	-
1871 1872	-	-	-	-	-	-	-	-	-	-	-		-
1872	-	-		-		-					-		-
1874	-	-	-	-	-	-	-	-	-	-	-	-	-
1875	-	-	-	-	-	-	-	-	-	-	-	-	-
1876	-	-	-	-	-	-	-	-	-	-	-	-	-
1877	-	-	-	-	-	-	-	-	-	-	-	-	-
1878	-	-	-	-	-	-	-	-	-	-	-	-	-
1879 1880	-	-	-	-	-	-	-	-	-	-	-	-	
1881	-		-	-	-	-		-	-	-	-	-	-
1882	-	-		-	-	-	-	-	-	-	-	-	-
1883	-	-	-	-	-	-	-	-	-	-	-	-	-
1884	-	-	-	-	-	-	-	-	-	-	-	-	-
1885	-	-	-	-	-	-	-	-	-	-	-	-	-
1886	-	-	-	-	-	-	-	-	-	-	-	-	-
1887 1888	-	-	-	-	-	-	-	-	-	-	-	-	-
1889	-			-	-			-	-	-	-	-	-
1890	-	-		-	-	-	-	-	-	-	-	-	-
1891	-	-	-	-	-	-	-	-	-	-	-	-	-
1892	-	1.00	2.30	-	-	-	5.86	-	-	-	-	-	-
1893	2.17	6.24	-	-	-	-	-	-	-	-	-	-	-
1894 1895	-	-	-	-	-	-	-	1.37	- 1.16	- 3.45	- 3.70	- 3.03	-
1895	- 1.05	- 5.49	6.12	- 0.87	- 3.28	- 3.57	3.96	2.92	4.30	2.31	2.98	1.37	- 38.2
1897	2.11	2.22	2.74	2.41	5.42	2.77	15.71	3.75	1.62	1.06	4.46	4.39	48.6
1898	3.54	3.46	2.23	3.35	6.38	0.95	3.87	8.77	3.35	5.08	3.16	2.68	46.8
1899	2.70	4.00	5.32	1.69	1.75	4.57	5.84	0.86	6.51	1.26	1.78	1.79	38.0
1900	2.82	5.33	3.36	1.81	4.20	2.17	4.28	3.14	2.78	2.80	3.86	2.07	38.6
1901	1.57	0.70	4.88	8.26	6.43	1.23	6.47	7.20	3.59	2.28	1.66	6.16	50.4

						Table No	o. 6A						
					Historical	Precipitatior	n at Station I	KPOU					
						Poughkeep	sie, NY						
Precip.													
(in)	J	F	14	٨	M		nth	^	S	ο	N	D	TOTAL
1902	2.38	г 4.13	M 4.12	A 3.28	M 2.33	J 4.55	J 7.57	A 2.34	6.21	5.56	N 0.99	5.37	48.83
1903	3.09	4.40	3.88	2.61	0.74	10.90	3.26	7.96	2.29	6.17	1.53	2.73	49.56
1904	2.51	2.35	2.91	3.34	2.29	2.65	4.48	6.00	4.20	2.74	1.34	1.84	36.65
1905 1906	3.27 2.56	1.35 2.05	2.75 3.72	2.28	0.79 3.71	4.10 2.84	4.30 6.36	4.46	4.79 2.26	2.16 3.56	1.74 1.43	2.73 4.21	34.72 40.62
1907	3.19	2.39	2.08	2.15	3.50	3.42	2.53	2.04	6.11	4.95	4.35	4.39	41.10
1908	2.38	5.13	2.15	2.11	5.93	1.43	4.48	3.81	0.78	1.99	0.63	2.43	33.25
1909 1910	3.00 4.93	4.79 2.86	2.66	5.41 4.77	2.25 2.77	2.15 4.38	2.96	5.46 4.11	3.60 2.04	0.90	1.31 3.43	3.66 2.05	38.15 35.86
1910	2.20	2.61	2.99	2.80	1.88	5.43	2.10	6.46	2.04	5.67	2.67	3.01	40.98
1912	1.24	1.91	5.87	3.55	3.72	1.54	3.00	3.66	2.96	2.86	2.25	4.12	36.68
1913	3.13	2.29	4.68	4.52	2.50	1.02	1.64	3.62	3.13	6.46	2.18	2.47	37.64
1914 1915	3.57 4.79	2.03 4.75	3.77 0.42	3.24 1.75	2.65 2.10	2.80 2.79	4.63 6.10	2.01 7.30	0.24 2.32	2.52 2.57	2.48	4.10 5.73	34.04 41.70
1915	0.98	3.34	2.66	2.71	2.10	4.87	6.50	1.99	2.32	1.04	2.65	4.09	35.94
1917	2.79	1.67	3.04	1.71	2.66	3.60	2.55	1.67	0.95	4.61	1.05	2.77	29.07
1918	3.33	2.19	1.39	4.10	3.52	3.44	4.69	3.36	3.42	1.23	2.31	3.82	36.80
1919 1920	2.70 2.19	2.96 4.33	4.46 3.04	2.66 3.83	3.99 1.93	2.03 5.21	7.17 4.26	4.40	4.21 5.75	<u>3.17</u> 1.87	4.01 3.04	2.55 4.32	44.31 43.81
1920	2.19	2.95	2.76	4.94	2.07	3.38	4.20	2.81	2.60	1.05	3.72	2.04	34.75
1922	1.12	2.35	3.54	2.40	4.64	6.49	5.68	3.47	2.02	1.88	0.97	3.20	37.76
1923	4.22	1.87	2.43	2.98	2.33	3.32	3.07	1.82	2.87	3.87	3.90	3.44	36.12
1924 1925	3.60 3.75	2.46 2.61	0.90 3.30	5.35 1.74	4.60 2.57	1.79 4.13	1.94 7.10	2.34	4.38 2.97	0.44 3.52	2.12 3.39	1.66 2.43	31.58 39.27
1925	1.82	3.91	1.77	2.47	1.50	2.34	3.62	4.66	2.71	3.78	3.08	2.43	34.20
1927	2.17	2.51	1.40	2.20	5.15	2.80	4.08	6.59	2.89	5.57	7.14	4.34	46.84
1928	2.05	3.86	2.11	4.52	2.32	7.06	7.92	8.27	2.64	0.75	2.26	1.09	44.85
1929 1930	3.18 2.13	3.14 1.80	2.14 2.28	6.55 2.07	3.25 3.04	1.82 4.22	2.67	3.02 3.48	2.73	3.61 1.20	2.43 3.65	3.69 2.57	38.23 31.38
1930	1.39	1.77	2.60	3.07	4.93	5.91	6.55	3.73	1.46	1.82	1.31	2.37	36.98
1932	3.00	1.83	3.24	1.79	3.09	3.01	4.24	4.34	1.65	5.60	7.27	1.76	40.82
1933	1.31	2.56	4.04	4.52	2.09	2.70	2.31	9.25	5.48	2.10	0.99	2.23	39.58
1934 1935	2.36	2.14 2.45	2.74	3.93 3.08	4.31 1.79	3.62 3.45	5.44 3.56	2.75 1.29	8.14 2.92	2.20 2.35	4.25 4.83	2.22	44.10 31.97
1936	3.94	2.86	4.99	3.38	2.48	3.38	4.34	6.99	3.13	3.19	1.71	4.66	45.05
1937	6.42	1.86	2.73	4.51	4.08	6.38	2.95	3.91	3.11	2.96	2.92	2.32	44.15
1938	2.95	1.55	1.61	2.06	4.39	5.95	7.08	5.97 2.04	9.85	1.83 4.27	2.24	2.51	47.99
1939 1940	2.26 0.98	3.78 2.01	2.75 3.66	4.28	1.18 5.58	2.48 3.33	2.70 4.45	3.13	2.24 2.64	2.00	1.32 4.35	1.22 2.88	30.52 39.70
1941	2.17	2.22	0.95	0.78	1.64	4.80	5.01	2.39	0.87	1.78	1.92	2.64	27.17
1942	2.76	1.81	4.98	0.87	2.79	2.68	4.03	4.37	3.40	3.87	4.54	4.59	40.69
1943	2.67	1.56 1.33	2.58 4.22	3.14 3.28	5.51	4.46	6.47	1.10	1.73	6.67	3.70 4.88	0.51	40.10
1944 1945	0.98 4.06	3.50	4.22	4.77	1.79 7.49	5.08 5.82	3.50 10.77	0.61 5.73	4.87 5.60	1.45 2.40	4.88	2.98 3.81	34.97 60.25
1946	1.14	2.62	1.58	1.50	4.61	2.93	5.97	2.95	3.68	1.42	0.76	2.12	31.28
1947	2.53	1.84	2.39	4.30	5.06	4.32	4.36	3.24	2.85	2.43	6.09	3.18	42.59
1948	3.06	1.92	3.12	4.57	4.41	4.34	2.10	2.35	0.78	1.99	3.85	7.40	39.89
1949 1950	4.69 3.79	2.48	1.19 2.80	2.37 2.42	4.60	0.99 4.02	3.19 4.12	4.26 3.68	2.54 2.29	2.34	1.90 5.69	4.03	34.58 40.49
1951	3.30	3.28	5.07	2.89	3.78	3.52	3.53	5.87	3.17	3.62	5.26	3.50	46.79
1952	4.01	1.69	3.28	7.41	5.33	4.96	4.32	5.87	4.73	0.85	2.35	3.69	48.49
1953 1954	4.09	2.23	6.63	5.58	5.22	3.15	2.52	2.19	2.33	4.31	1.86 6.77	4.64	44.75
1954	1.52 0.79	1.88 2.85	3.07 4.38	2.97 3.62	4.57 1.75	1.57 2.37	2.09 0.82	5.18 12.71	5.48 2.59	1.45 10.40	4.42	3.27 0.54	39.82 47.24
1956	1.84	3.63	3.71	4.41	2.78	1.68	4.36	1.72	6.30	2.49	1.72	4.25	38.89
1957	1.80	1.15	2.13	4.60	2.94	1.19	2.23	1.66	2.29	3.11	3.05	5.71	31.86
1958 1959	4.32 2.92	2.54 2.56	3.60 2.43	6.01 3.01	3.85 1.83	1.82 3.58	2.92 3.98	2.20 3.56	3.95 0.72	5.04 6.81	3.73 3.26	0.62	40.60 37.59
1959	2.92	2.56	1.71	3.01	3.51	4.75	5.65	2.28	6.08	2.21	1.76	1.63	37.59
1961	2.35	3.47	3.08	4.78	4.10	3.14	2.96	1.99	2.52	1.54	4.12	2.69	36.74
1962	3.03	5.20	1.11	2.94	1.36	2.82	1.43	3.85	1.91	2.59	2.33	2.99	31.56
1963	2.69	2.18	2.57	1.04	1.36	4.32	4.16	1.81	3.12	0.36	5.36	2.22	31.19
1964 1965	2.12 2.24	1.79 2.24	2.26 1.13	3.41 2.40	0.94	2.98 1.54	1.99 2.91	2.35 4.38	1.30 2.66	0.89	1.67 2.16	2.82 2.08	24.52 27.71
1966	1.89	2.24	1.99	2.40	3.13	1.04	0.96	0.87	6.86	4.49	3.14	2.23	31.01
1967	1.23	1.52	4.44	3.44	2.91	7.23	5.32	5.76	1.48	2.92	2.54	4.16	42.95
1968	1.20	0.72	3.86	2.37	6.50	5.57	0.72	2.05	3.83	2.16	3.88	3.87	36.73

					Historical	Precipitatior Poughkeep		(POU					
Precip.						Ma	nth						
(in)	J	F	М	А	М	J	J	А	S	0	Ν	D	тот/
1969	1.45	1.85	2.51	4.21	3.27	4.16	5.06	3.60	3.25	1.56	6.41	4.15	41.4
1970	0.43	2.97	2.01	3.82	2.96	2.96	1.89	4.03	3.31	2.93	3.96	3.10	34.3
1971	1.68	3.58	1.99	2.62	5.03	1.47	5.22	10.92	3.98	3.51	3.41	2.70	46.1
1972	2.23	3.53	3.22	4.75	7.74	7.99	4.13	2.14	1.93	3.68	8.11	5.33	54.7
1973	2.81	1.82	3.83	6.50	6.17	4.89	2.43	1.24	2.71	1.61	1.76	8.65	44.4
1974	4.20	1.12	3.86	3.94	4.46	4.65	4.25	3.82	5.20	2.55	2.82	3.08	43.9
1975	3.51	3.11	3.99	1.88	3.14	3.99	13.63	3.15	7.19	4.31	4.35	2.98	55.2
1976	3.67	2.76	1.79	2.28	3.36	2.67	5.10	7.27	3.90	6.78	0.67	2.09	42.3
1977	1.27	3.33	6.11	4.17	2.59	3.38	1.43	3.24	5.95	4.72	5.25	4.45	45.8
1978	7.09	1.13	3.38	1.08	7.08	3.29	2.83	4.14	2.76	1.97	1.70	3.38	39.8
1979	6.65	3.09	2.05	3.95	5.82	1.62	2.10	4.32	5.71	4.02	3.50	1.85	44.6
1980	0.64	0.92	4.55	5.18	1.86	3.62	2.79	2.50	1.83	3.15	3.07	0.57	30.6
1981	0.77	5.42	0.15	4.01	4.82	3.81	3.79	0.64	2.81	4.12	1.28	3.61	35.2
1982	3.76	3.15	2.78	3.63	2.97	8.39	3.58	3.86	2.14	1.60	3.00	0.93	39.7
1983	3.72	2.23	7.39	8.51	6.84	4.03	1.28	4.00	2.36	3.57	4.91	6.60	55.4
1984	1.33	3.37	3.70	5.14	11.49	1.58	5.53	1.90	0.84	2.20	2.04	2.65	41.7
1985	1.00	2.04	2.58	1.71	4.19	3.34	4.66	4.68	5.31	1.72	6.11	2.23	39.5
1986	3.48	3.52	2.96	1.68	2.10	5.87	9.00	2.84	0.46	2.51	5.23	3.28	42.9
1987 1988	3.65 2.11	0.32	3.12 1.61	6.47 1.36	2.22 4.51	2.35 0.30	4.51 8.49	3.79 4.54	6.59 1.93	4.70	1.27 7.10	1.50 0.88	40.4
1988	1.72	2.97	3.00	2.78	4.51	7.21	1.63	3.63	6.71	6.54	1.86	1.01	50.1
1989	4.10	3.49	3.00	3.05	6.04	3.28	3.30	7.91	1.19	5.85	2.70	5.00	50. 49.1
1990	1.50	1.63	3.82	3.58	5.05	2.21	2.72	4.92	4.81	4.07	3.70	3.03	49.
1992	1.70	1.92	3.02	3.12	2.83	3.34	7.18	2.81	1.98	1.31	4.60	4.16	38.0
1993	2.28	2.70	5.69	5.17	1.07	2.71	1.32	1.95	6.05	3.82	3.46	3.62	39.8
1994	3.69	2.86	5.25	3.06	3.63	5.62	5.12	5.97	3.03	1.23	3.56	2.67	45.6
1995	4.49	2.52	2.53	3.76	3.51	2.34	11.27	1.80	3.30	9.98	5.40	2.62	53.5
1996	7.41	2.21	3.26	6.56	3.71	4.06	11.62	1.39	5.94	7.48	2.58	7.09	63.3
1997	2.68	1.47	4.11	4.86	5.15	2.24	4.29	4.52	2.70	1.83	6.01	3.50	43.3
1998	3.72	2.54	4.17	4.26	6.33	10.79	2.23	2.67	3.78	3.74	1.39	1.06	46.6
1999	6.16	2.53	5.36	1.57	3.38	1.50	2.11	4.22	6.94	3.47	2.40	2.08	41.7
2000	2.95	3.31	4.58	4.90	8.10	7.02	4.23	5.28	3.70	1.77	2.63	4.27	52.7
2001	2.18	2.25	6.37	0.11	2.69	4.64	2.85	3.24	4.76	0.79	0.85	2.08	32.8
2002	1.03	0.87	2.39	3.96	4.51	4.12	3.84	4.05	2.74	5.63	5.18	2.91	41.2
2003	2.58	2.56	3.08	1.47	3.78	4.47	2.44	4.31	9.22	4.34	4.31	3.98	46.5
2004	1.95	1.86	1.87	2.92	2.27	1.74	4.94	6.23	8.14	1.8	2.93	3.48	40.1
2005	4.79	1.58	3.88	3.78	1.95	4.7	7.78	2.01	0.61	17.59	4.68	3.57	56.9
2006	5.76	1.03	0.7	3.95	7.68	6.49	1.68	5.06	4.93	4.21	4.9		46.3
96 to 2006													
Mean	2.79	2.59	3.13	3.46	3.78	3.71	4.35	3.89	3.53	3.26	3.23	3.12	40.8
Min.	0.43	0.32	0.15	0.11	0.74	0.30	0.72	0.61	0.24	0.36	0.63	0.51	24.5
Max.	7.41	5.49	7.39	8.51	11.81	10.90	15.71	12.71	9.85	17.59	8.11	8.65	63.3
Median	2.67	2.46	3.00	3.28	3.50	3.38	4.08	3.63	2.97	2.59	3.04	2.96	40.1

1. All data from Station KPOU (Poughkeepsie) except for select collected from West Point, NY Station or Danbury, CT Station.

	Table N	lo. 6B								
Monthly Precipitation since January 2003										
Month	Poughkeepsie, NY (KPOU)	Danbury, CT (KDXR)	White Plains, NY (KHPN)	Average						
Jan-03	2.58	2.60	2.07	2.42						
Feb-03	2.56	2.74	1.15	2.15						
Mar-03	3.08	3.86	3.90	3.61						
Apr-03	1.47	2.42	2.84	2.24						
May-03	3.78	4.33	4.44	4.18						
Jun-03	4.47	8.87	7.98	7.11						
Jul-03	2.44	4.07	1.78	2.76						
Aug-03	4.31 9.22	6.83	4.57	5.24						
Sep-03 Oct-03	9.22	7.99 5.03	7.25 4.35	8.15 4.57						
Nov-03	4.34	4.11	4.33	4.19						
Dec-03	3.98	6.19	5.45	5.21						
Jan-04	1.95	1.57	1.83	1.78						
Feb-04	1.86	2.21	2.62	2.23						
Mar-04	1.87	3.33	3.87	3.02						
Apr-04	2.92	5.31	5.31	4.51						
May-04	2.27	3.11	3.92	3.10						
Jun-04	1.74	2.46	3.19	2.46						
Jul-04	4.94	4.75	7.04	5.58						
Aug-04	6.23	2.50	3.46	4.06						
Sep-04	8.14	8.10	11.50	9.25						
Oct-04	1.80	2.23	1.34	1.79						
Nov-04	2.93	3.87	3.86	3.55						
Dec-04	3.48	4.13	3.15	3.59						
Jan-05 Feb-05	4.79	3.98	3.89	4.22						
Mar-05	1.58 3.88	2.32 3.35	2.94 3.59	2.28 3.61						
Apr-05	3.78	5.14	4.93	4.62						
May-05	1.95	2.01	1.32	1.76						
Jun-05	4.70	2.75	3.81	3.75						
Jul-05	7.78	3.74	8.60	6.71						
Aug-05	2.01	0.65	1.93	1.53						
Sep-05	0.61	1.88	1.36	1.28						
Oct-05	17.59	15.35	15.58	16.17						
Nov-05	4.68	4.98	3.91	4.52						
Dec-05	3.57	4.17	5.29	4.34						
Jan-06	5.76	6.08	3.89	5.24						
Feb-06	1.03	1.55	1.75	1.44						
Mar-06	0.70	0.72	0.60	0.67						
Apr-06	3.95	5.84	<u>6.45</u> 5.63	5.41						
May-06 Jun-06	7.68 6.49	4.90 7.71	5.63	6.07 6.69						
Jul-06	1.68	4.27	3.99	3.31						
Aug-06	5.06	2.31	6.06	4.48						
Sep-06	4.93	1.05	4.50	3.49						
Oct-06	4.21	5.26	7.36	5.61						
Nov-06	4.90	6.54	6.18	5.87						
2003 Annual Total	46.54	59.04	49.92	51.83						
2004 Annual Total	40.13	43.57	51.09	44.93						
2005 Annual Total	56.92	50.32	57.15	54.80						
2006 Annual Total thru Oct.	41.49	39.69	46.10	42.43						
April 2006 - Oct. 2006 (6 months preceeding	34.00	31.34	39.86	35.07						
date of Estimated Flows)										



LIMITATIONS

LIMITATIONS

Explorations

- 1. The analyses and conclusions submitted in this report are based in part upon the data obtained from widely spaced subsurface explorations. The nature and extent of variations between these explorations may become evident with further investigation. If such variations appear, it will be necessary to reevaluate the conclusions of this report.
- 2. The stratification lines on the logs and soil profile described in the text are intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic. For specific information, refer to the boring logs.
- 3. Water level readings have been made in the drill holes and observation wells at times and under conditions stated on the logs. These data have been reviewed and interpretations made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater and flow rates may occur due to variations in rainfall, temperature and other factors occurring since the time measurements were made.

<u>Analyses</u>

4. Preliminary one-dimensional calculations were made during this study. Efforts have been made to check the validity of the assumptions for the simulations performed to-date, and in our opinion, the results have been reasonable. However, it is recognized that calculations developed using different methodologies and/or different assumptions could produce different flow patterns. It should also be noted that fluctuations in the flow patterns variations will occur due to changes in rate and sequence of applications of sewage flows, seasonal precipitation and other climatic fluctuations, as well as other factors. Final analyses using additional data including water level readings made during the wet seasons are required to confirm the results included herein.

Review

5. In the event that any changes in the nature, design or location of the proposed subsurface disposal systems or other proposed site development features affecting groundwater recharge are planned, the preliminary conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by Geo**Design**, Inc. It is recommended that this firm be provided the opportunity to perform final design phase studies to confirm the predicted flow rates.

Uses of Report

6. This report has been prepared for the exclusive use of Camarda Development Company for specific application to the proposed subsurface disposal system at the proposed Stateline Retail Center, U.S. Route 6, Southeast, New York in accordance with generally accepted hydrogeologic practices. No other warranty, express or implied, is made.