חת	 • • • • • •		)( f v	<b>X</b> /~11	<b>4.</b> NOV. 24.65	ERM 399 Bo ylston Street, 6th Floor	SITE MA	AP	<u></u>
				vv ell a	#: MW-216S	ERM Boston, MA 02116	gu		Ņ
Projec		Raytheon-W	ayland		Project Number:	143.69	ldii	4	l '
Client:		Raytheon			Logged by:	Viktoria Zoltay	Existing Building	ہم	
Drillin	_	Drillex			Driller:	20 1 1 02	_ B	MW-216	s
	Started:	20-Jul-02			Date Finished:	20-Jul-02	ing	#	MW-216D
Locati		Wayland, M.	A	<del></del>	Drilling Method:	4.25" ID HSA	ist	1 -	
	n Diam:	2"		Length:	10'	Slot Size: 0.010"	Ex	MW-216N	4
	g Diam:	2"		Length:	12'	Type: PVC			
	g Depth:	22'		Well Dep		Boring Diam.: 8"			1
Surfac	e Elev.:	134.8'		MP:	TOC	Depth to GW: 17.58'	Notes:	DTW mea	sured on
				MP Elev.	134.54'			20-Sep-02	
							C1- #	PID Conc.	I al. Camania # 0a
Depth	XX7 11 T	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon I	Description/Soil Classification	Sample # & Depth	(ppm) spoon/HS	Lab Sample # & Analyses
Dopui	Well Log		menes	Lacovery	Spiit Spooli I	2000 i puon don Classification	a Depui	5p0011/110	2 11101 y 303
1. [		#							
					_				_
<b>-</b> 2 <b>-</b>					=				_
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<b>-</b> 6 <b>-</b>					_				
_ 0 _					<del>_</del>				٦
<b>–</b> 7 <b>–</b>									_
- 8 -									
		SAND &			Coarse SAND & CD	AVEL, small Cobbles intermixed, brown	S-1		
9 -		8	9-10-13-17	15"		A V LL, Sman Coopies michinized, 010W		0.0	_
10		GRAVEL			loose; damp.		8'-10'		
<b>-</b> 10 <b>-</b>					Coorga CAND/ ~1	I frogments and Cravel some and Can't	9.2		_
- 11 -	.;:	SAND	5-10-13-15	16"	Coarse SAND w/ smal	l fragments and Gravel, some red Sand	S-2	0.0	_
ŀ					and Gravel, small Col	bbles, loose, dense; damp.	10'-12'		
<b>-</b> 12 <b>-</b>		:				*			_
<b>-</b> 13		SAND	16-17-19-21	17"		D w/interbedded Gravel, loose, light	S-3	0.0	_
			2 21	- /	brown; damp.		12'-14'		
<b>-</b> 14 <b>-</b>		-							_
<b>-</b> 15 <b>-</b>		NR	17-15-14-14	NR	_	NO RECOVERY	S-4	NR	_
		] '''	1, 10 11 17	1 11	1	TO ILLOVERT	14'-16'	1,11	
<b>-</b> 16 <b>-</b>		-							_
<b>–</b> 17 <b>–</b>		SAND	19-15-14-17	12"	-Coarse brown SAND	w/interbedded Gravel, loose; damp.	S-5	0.0	
1/		SAIND	ェノーエ <b>ジーエサー</b> エ /	12	- Coarse orown SAND	minicipedded Graver, 100se, damp.	16'-18'	0.0	٦
<b>-</b> 18 <b>-</b>		:			_				_
<b>–</b> 19 <b>–</b>		SAND	5-5-7-8	16"	Fine SAND, med. der	nse, some very fine Silty Sand, medium	S-6	0.1	
17		SAIND	5-5-1-0	10	dense; wet.		18'-20'	0.1	
<b>-</b> 20 <b>-</b>		:			uchse, wet.		10-20		
1		CAND	10 12 20 21	22"	Madium fire - CAND	Condr. Cilt intonhade 1 1	S-7	0.0	
<b>-</b> 21 <b>-</b>		SAND	10-13-20-21	23"	- wiedium fine SAND,	Sandy Silt interbeds, brown, dense; wet	20'-22'	0.0	7
<b>-</b> 22 <b>-</b>	∷⊟∷	:			_		20'-22'		_
					Bottom of Boring at 2	22' bgs.			
<b>–</b> 23 <b>–</b>					_				_
<b>-</b> 24 <b>-</b>					_				_
Well Construction					Well Construction of	of Following Page			
<b>25</b>						<u> </u>			
NR=	No Reco	very		Key to	Well Construction				

Sandpack Well Screen Grout

Bentonite Seal Cement Native Fill

D	R	II	Ι.	IN	C	I (	C	for	Well	#•
IJ	'n		ıLı		(T		Ŋт	101	wen	#:

\* Well #: MW-216S ERM 399 Bo ylst on Street, 6th Floor Bos ton, MA 02116

Page 2 of 2

		1		1	ERM Boston, MA 02116	1450 2 01 2			
Depth	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # Analyses	
					Well Construction Details:				
	ı				_				
	ı				Protective Flushmount Roadbox				
7	ı				0-1' Concrete Surface Seal				
7	İ				1'-9' Native Material				
	ı				9'-11' Bentonite Chip Seal				
-	ı				11'-22' #1 Silica Sand Filter Pack				
-	ı								
-	ı				12'-22' 0.010" Slotted PVC Well Screen				
-	ı				22' Bottom of Borehole				
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7	İ								
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						9 ER	RM  Description Street, 6th Floor	SITE MA	.Р	▲
DRILLI	NG LO	G for W	'ell #:	MW-216M		ERM Bos	ston, MA 02116	1g		$\mid  \stackrel{T}{N} \mid$
Project:	Raytheon-Way	yland		Project Number:	143.69			Existing Building	Ь	
Client:	Raytheon			Logged by:	Viktoria 2	Zoltay			γ'	
Drilling Co:	Drillex			Driller:				m	MW-216	s
Date Started:	20-Jul-02			Date Finished:	20-Jul-02				MW-216	<b>■</b> MW-216D
Location:	Wayland, MA			Drilling Method:	4.25" ID			Kist	₩W-216	
Screen Diam:	2"		Length:	5' 26'		Slot Size:	0.010"	山	MW-2101	
Casing Diam:	2"		Length:			Type:	PVC	41		
	31'		Well Depth:	31'		Boring Diam.:	8"	NI-4		
Surface Elev.:	134.8'		MP:	TOC		Depth to GW:	17.63'	Notes:		
			MP Elev.:	134.59'						
		DI.						Sample #	PID Conc.	Lab Sample # &
Depth Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split	t Spoon D	escription/Soi	l Classification	& Depth	(ppm) spoon/HS	Analyses
1 Well Edg			-	F	•	*		+ -	-	-
<b>-</b> 3 <b>-</b>				_						_
- 6 -				_						
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24	(			_						-
-27				_						_
l ::::::::::::::::::::::::::::::::::::										
30 - 30				Bottom of Bor	ring at 31'	has				
<b>-</b> 33 <b>-</b>					5 at 31	053.				_
<b>-</b> 36 <b>-</b>				_						_
				Well Constru	ction Det	tails:				
<b>-</b> 39 <b>-</b>				Protective Flus	shmount 1	Roadbox				
<b>-</b> 42 <b>-</b>				0-1'		te Surface Sea	1			_
<b>-</b> 45 <b>-</b>				1'-15'		Material				_
<b>-</b> 48 <b>-</b>				15'-24'			entonite Slurry Grout			_
<b>-</b> 51 <b>-</b>				_			emonite Sturry Grout			_
<b>-</b> 54 <b>-</b>				24'-25'		ite Chip Seal				_
<b>-</b> 57 <b>-</b>				25'-31'	#1 Silic	a Sand Filter I	Pack			_
<b>-</b> 60 <b>-</b>				26'-31'	0.010"	Slotted PVC V	Vell Screen			_
				31'	Bottom	of Borehole				
<b>-</b> 63 <b>-</b>										
<b>-</b> 66 <b>-</b>				_						-
<b>-</b> 69 <b>-</b>				_						_
<b>-</b> 72 <b>-</b>										
75				_						_
			Key to Well	Construction Sandpack		Well Screen	Grout			
			F 2 + 2	Sanupack	$\overline{}$	AA CII DCIECII	V///] Grout			



Bentonite Seal



Cement



Native Fill

Bottom of Boring at 57' bgs  Bottom of Boring at 57' bgs	DRILLING LOG for Well #:       Project:     Raytheon-Wayland       Client:     Raytheon       Drilling Co:     Drillex       Date Started:     20-Jul-02       Location:     Wayland, MA       Screen Diam:     2"     Length:       Casing Diam:     2"     Length:       Boring Depth:     57'     Well Depth:       Surface Elev.:     134.8'     MP:       MP Elev.:	MW-216D   ERM   399 Bo ylst on Street, 6th Floor Boston, MA 02116	Notes: DTW measured on 20-Sep-02
Key to Well Construction	Depth Well Log Stratigraphy inches Recovery  - 3 - 6 9 12 15 18 - 18 - 18 - 18 - 18 18 18 18 18 18 18 18 18 18 18 18 18 18 18 18 18 18 18	Well Construction Details:  Protective Flushmount Roadbox 0-1' Concrete Surface Seal 1'-15' Native Material 15'-50' Portland Cement & Bentonite Slurry Grout 50'-51' Bentonite Chip Seal 51'-57' #1 Silica Sand Filter Pack 52'-57' 0.010" Slotted PVC Well Screen 57' Bottom of Borehole  Bottom of Boring at 57' bgs	Sample # (ppm) Lab Sample # &





Cement



Native Fill

DRIL	LING	LOG for	r Well a	# MW-2	17S	ERM 399 Bo ERM Boston	ylst on Street, 6th Floor n, MA 02116	SITE MA	AP	<b>↑</b> N			
Project:	Raytheon-			Project Nu		143.70		11	Railroad Track	s			
Client:	Raytheon			Logged by		Michael Horesh	l		ШШПП				
Drilling Co:	Geosearch	, Inc.		Driller:		Joe Keenan		11					
Date Started:		,		Date Finis	hed:	28-Jun-02		11 _	MW-217M	Ð <sup>MW-217D</sup>			
Location:	Wayland,	MA		Drilling M		4.25" ID HSA		1					
Screen Diam:			Length:	10'		Slot Size:	0.010"		Rt. 2	20			
Casing Diam:			Length:	14'		Type:	PVC	11					
Boring Depth			Well Depth:	24'		Boring Diam.:	8"	Russe	ell's Garden Cei	nter			
Surface Elev.	: 129.5'		MP:	TOC		Depth to GW:	16.05'	Notes:	DTW mea	sured on			
			MP Elev.:	130.06'					10/10/200	MW-217M MW-217D MW-217S Rt. 20  Garden Center  TW measured on /10/2002.  ID Conc. (ppm) Lab Sample # &			
									PID Conc.				
Depth Well 1	I og Stratigra	Blowcounts per 6 aphy inches	Recovery	S	plit Spoon I	Description/Soi	il Classification	Sample # & Depth	(ppm) spoon/HS				
1				Protective 0-1' 1'-12' 12'-13' 13'-25' 14'-24' 25'	Concrete S Portland C Bentonite 0 #1 Silica S 0.010" Slot Bottom of	urface Seal ement and Ben Chip Seal and Filter Pack tted PVC Well Borehole							
25	:1:1				of Boring at	23 ugs				_			
			· ·	Construction	<u>n</u>	Well Screen	Grout						

Sandpack Well Screen Grout
Bentonite Seal Cement

DDII I I	NG LOG for W	all #.	MW-217M  ERM 399 Boylston Street, 6th Floor Boston MA 02116  SITE MA	AP N
Project: Client: Drilling Co: Date Started: Location: Screen Diam: Casing Diam: Boring Depth: Surface Elev.:	Raytheon-Wayland Raytheon Geosearch, Inc. 28-Jun-02 Wayland, MA 2" 2" 45' 129.5'	Length: Length: Well Depth: MP: MP Elev.:	Project Number: 143.70 Logged by: Michael Horesh Driller: Joe Keenan Date Finished: 28-Jun-02 Drilling Method: Drive and Wash 5' Slot Size: 0.010" 39' Type: PVC	Railroad Tracks  MW-217M MW-217D  MW-217S  Rt. 20  sell's Garden Center  DTW measured on  10/10/2002
Depth Well Log	Blowcounts per 6 Stratigraphy inches	Recovery	Sample # Split Spoon Description/Soil Classification & Depth	PID Conc. (ppm) Lab Sample # & spoon/HS Analyses
- 3 - 6 - 12 - 15 - 18 - 18 - 18 - 18 - 18 - 18 - 18			Well Construction Details:  Protective Flushmount Roadbox  0-1' Concrete Surface Seal  1'-34' Portland Cement and Bentonite Slurry Grout  34'-37' Bentonite Chip Seal  37'-45' #1 Silica Sand Filter Pack  39'-44': 0.010" Slotted PVC Well Screen  45' Bottom of Boring  Bottom of Boring at 45' bgs.	
		Key to Well 0	onstruction	



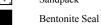


Well Screen Cement



RII	J.I.	NGLO	OG for	Well #	ERM 399 Bo ylst on Street, 6th Floor Boston, MA 02116	SITE MA	AP	<b>↑</b> N
ject:		heon-Wayla		*	Project Number: 143.70		Railroad Track	· ·
ent:		heon	inu		Logged by: Michael Horesh			 
lling Co:		search, Inc.			Driller: Joe Keenan			
te Started					Date Finished: 27-Jun-02		MW-217M	₱ MW-217D
cation:		land, MA			Drilling Method Drive and Wash		√ MW-	217S
een Diar		,		Length:	5' Slot Size: 0.010"		Rt. 20	
sing Diar				Length:	59.5' Type: PVC	D	111- C1 C	t.
ring Dep				Well Depth		Rus	sell's Garden C	enter
face Ele	v.: 129.:	5'		MP:	TOC Depth to GW: 15.71'	Notes:	DTW mea	sured on
				MP Elev.:	130.20'		10/10/200	2
			D			Sample #	PID Conc. (ppm)	Lab Sample # &
th Wel	ll Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	& Depth	spoon/HS	Analyses
777	77				_			_
-///					_			_
								_
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								_
-///					_			_
					<u> </u>			_
					Brown/tan medium to coarse SAND, trace Gravel,	S-1		-
-///		SAND	6-8-10-11	20"			0.0	_
-///	<i>-</i> ///				reddish-brown stratification throughout section, dry.	8'-10'		_
_///					_			_
								_
-///					_			-
-///	<u> </u>				Lield boson to come /house CAND 1:41- 6:14 - come	G 2		_
-///		SAND	13-8-9-9	12"	Light brown to orange/brown SAND, little Silt, orange	S-2	0.0	_
-///					layering, 2 medium sand lenses, poorly sorted, moist.	13'-15'		_
								_
								_
-///					-			-
-///	<i>////</i>				_			_
		SAND &	8-8-11-11	13"	Orange/brown medium SAND and SILT, trace Gravel,	S-3	0.0	_
		SILT	0 0-11-11	1.5	some stratification, well to moderately sorted, moist.	18'-20'	0.0	_
					,,,			-
-///					-			-
-					_			_
-///								_
		SAND &	l		Medium brown SAND and SILT, trace Clays, stratification	S-4	0.0	

Key to Well Construction



SILT

Sandpack



and orange staining, moist, middle 6" saturated.

Cement



Grout

23'-25'

DRILLING LOG for Well #:

MW-217D ERM System Street, 6th Floor Boston, MA 02116

Page 2 of 3

		00 101		ERM Boston, MA 02116	1 agc	2 01	
Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sampl # & Analys
				_			
	SAND	5-6-7-8	15"	Reddish-brown medium SAND, red-stained interbed (3/4"), other minor stained layers, saturated.	S-5 28'-30'	0.0	
				<b>-</b>			
	SAND	5-5-7-10	20"	Light brown medium/fine SAND, little red coarse Sand, saturated.	S-6 33'-35'	0.0	
				_ _			
	SAND	8-8-8-9	15"	Orange/brown fine grain SAND, some Silt, stratified orange staining throughout interval, moist to saturated.	S-7 38'-40'	0.0	
				<b>-</b>			
	SILT & CLAY	3-4-4-4	22"	Gray SILT and CLAY, some dark green Clay interbeds, top of interval well sorted, orange stained Sand, moist to saturated.	S-8 43'-45'	0.0	
				_			
	SILT & CLAY	4-6-6-8	24"	Gray SILT and CLAY w/ multiple dark gray Clay, dense interbeds; saturated.	S-9 48'-50'	0.0	
				_ _			
	SILT & CLAY	7-5-4-4	21"	Gray SILT and CLAY w/ Clay interbed (1"), saturated.	S-10 53'-55'	0.0	

DRI	LLII	NG I	Page	3 of	3			
Depth W	Vell Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
<b>-</b> 56 <b>-</b>					_			_
<b>-</b> 58 <b>-</b> 59 <b>-</b>		SILT	2-3-3-8	20"	Gray SILT, some clay, sparse dark gray clay interbeds, well	S-11	0.0	
<b>-</b> 60 <b>-</b>		JIL I	2-3-3-0	20	sorted, saturated.	58'-60'	0.0	
<b>-</b> 61 <b>-</b> 62 <b>-</b>					<b>-</b> -			_
<b>-</b> 63 <b>-</b> 64 <b>-</b>		SILT & CLAY	4-5-6-58	21"	Gray SILT and CLAY, homogeneous, bottom 4" Sand & Gravel w/ fines and large clasts, saturated.	S-12	0.0	_
<b>-</b> 65 <b>-</b>					Spoon Refusal at 64.5' (120 blowcounts)			_
<b>-</b> 67 <b>- -</b> 68 <b>-</b>					Bottom of Boring at 65' bgs			
<b>-</b> 69 <b>-</b>					Well Construction Details:			_
<b>-</b> 70 <b>-</b>					Protective Flushmount Roadbox			_
<b>-</b> 71 <b>-</b>					0-1' Concrete Surface Seal			-
<b>-</b> 72 <b>-</b>					1'-54.5' Portland Cement and Bentonite Slurry Grout			-
<b>-</b> 73 <b>-</b>					54.5'-57.5' Bentonite Chip Seal			_
<b>-</b> 74 <b>-</b>					57.5'-65' #1 Silica Sand Filter Pack			-
<b>-</b> 75 <b>-</b>					59.5'-64.5' 0.010" Slotted PVC Well Screen			-
<b>-</b> 76 <b>-</b>					65' Bottom of Boring			_
<b>-</b> 77 <b>-</b>					-			_
<b>-</b> 78 <b>-</b>					<b>-</b>			-
<b>-</b> 79 <b>-</b>					<del>-</del>			_
- 80 -					<u>-</u>			_
<b>-</b> 81 <b>-</b>					<u> </u>			
<b>-</b> 82 <b>-</b>					<u> </u>			
<b>-</b> 83 <b>-</b>					<u> </u>			-
<b>-</b> 84 <b>-</b>					<u> </u>			-
85					<b>–</b>			_

DRIL	LING LO	OG for V	Vell #:	MW-218S ERM 399 Boylston Street, 6th Floor Boston, MA 02116	SITE MAP				
Project:	Raytheon-Waylar			Project Number: 143.70			'		
Client:	Raytheon	iiu		Logged by: Michael Horesh					
Drilling Co:	Geosearch, Inc.			Driller: Jeremiah Fluck	Rt. 20				
Date Started:				Date Finished: 2-Jul-02					
Location:	Wayland, MA			Drilling Method: 4.25" ID HSA		<b>⊕</b> MW-218S			
Screen Diam:			Length:	10' Slot Size: 0.010"		MW-218S MW-218M MW-218D			
Casing Diam			Length:	12' Type: PVC					
Boring Depth			Well Depth:	22' Boring Diam.: 8"	Russell's Garden Center				
Surface Elev.			MP:	TOC Depth to GW: 16.65'	Notes:	DTW mea	sured on		
	··· <u></u>		MP Elev.:	130.24'	10/10/02				
		Blowcounts per 6			Sample #	PID Conc. (ppm)	Lab Sample # &		
Depth Well	Log Stratigraphy	inches	Recovery	Split Spoon Description/Soil Classification	& Depth	spoon/HS	Analyses		
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<b>///</b>				<u></u>					
			[ [						
3 -			<b>I</b>	_			-		
///									
- //			[	Well Construction Details:					
<b>5</b>				- Wen Constituction Details.			_		
				Protective Flushmount Roadbox					
6 ///				0-1' Concrete Surface Seal					
7 ////			-				_		
0				1'-7' Portland Cement and Bentonite Slurry					
8 -				7'-10' Bentonite Chip Seal					
9 -				7-10 Bentonite Chip Sear			_		
10				10'-23' #1 Silica Sand Filter Pack					
10 -				12'-22' 0.010" PVC Well Screen					
- 11 -			-	12-22 0.010 FVC Well Screen			_		
- 12 -				23' Bottom of boring					
			[	_			7		
13			-	<del>_</del>			-		
14									
• 14 <b>-</b>	<b>3</b> :::			_			7		
15	<b>3</b> :::		-	<del>_</del>			_		
• 16 <b>-</b>	<b>∄</b> ∷∷			_					
<b>-</b> 17 <b>-</b>	<b>]</b> :::		-	<del>_</del>			→		
1888	<b>∄</b> ∷∷								
- 18 -	<b>]</b> :::			_			7		
19	<b>∄∷</b> ∷		-	_			-		
[iiii	<b>]</b> :::								
- 20 -	<b>∄</b> ∷:			_			7		
21 -	<b>∄</b> ∷:			_			<b>│</b>		
::::≣	<b>]</b> :::								
22				_					
23	:::::		<b> </b>				_		
				Bottom of Boring at 23' bgs.					
<b>24</b>				_					
25 -				<del>-</del>			_		
			Key to Well (	Construction					





Well Screen Cement



DR	ILI	IN	NG LC	G for	Well #:	MW-21	8M	ERM		ylston Street, 6th Floor , MA 02116	SITE MA	AP ,	1
Project			heon-Wayla			Project Number				·			
Client:		Rayt				Logged by:	Michael	Horesh					
Drilling	g Co:		search, Inc.			Driller:	Jeremial	Fluck				Rt. 20	
Date S		2-Jul				Date Finished:	2-Jul-02					10.20	
Locatio	on:	Way	land, MA			Drilling Method	d: Drive ar	d Wash				<b>⊕</b> MW-2188	:
Screen	Diam:	2"			Length:	5'		Slot Siz	e:	0.010"		MW-218N MW-218D	И
Casing	Diam:	2"			Length:	45'		Type:		PVC	Russ	ell's Garden Cen	
	Depth:				Well Depth:			Boring		4"			
Surface	e Elev.:	129.	4'		MP:	TOC		Depth t	o GW:	16.74'	Notes:		asured on
					MP Elev.:	130.16'		•				10/10/02	2
												PID Conc.	
Depth	Well L	00	Stratigraphy	Blowcounts per 6 inches	Recovery	Spl	it Spoon E	escripti	on/Soil	Classification	Sample # & Depth	(ppm) spoon/HS	Lab Sample # & Analyses
Бериг	weni	.og	Suudgrupny	meneg	recevery	Spi	it Spoon E	escripti	JII/ DOII	Classification	ш Вери	эроон 110	cc / mary ses
, 1													
「' 7	//	$/\!\!/\!\!/$				-							
- 6 -	//					_							_
_ 9 _	//					_							
	//					_							
<b>-</b> 12 <b>-</b>	//					-							-
<b>–</b> 15 <b>–</b>	//	$/\!\!/\!\!/$				_							_
	//					Well Const	ruction De	etails:					
<b>-</b> 18 <b>-</b>	//					-							_
<b>–</b> 21 <b>–</b>	//					Protective F	lushmount	Roadbo	X				_
	//					0-1' Co	ncrete Sur	face Sea	l				
<b>–</b> 24 <b>–</b>	//					- 1'-40' Poi	tland Com	ant and	Donton	nite Slurry Grout			1
<b>-</b> 27 <b>-</b>	//								Benton	inte Sturry Grout			-
<b>-</b> 30 <b>-</b>	//					40'-43' Ber	ntonite Ch	ip Seal					_
<b>–</b> 33 <b>–</b>	//					43'-51' #1	Silica San	d Filter l	Pack				
						45'-50' 0.0	10" PVC V	Well Scr	een				_
<b>–</b> 36 <b>–</b>	//				•	-	ttom of Bo						7
<b>-</b> 39 <b>-</b>						<b>-</b> 31 B0	nom or bo	ing					=
42					•	-							-
45	::				]	_							
1													
<b>-</b> 48 <b>-</b>													1
<b>-</b> 51	::3:3:	:											
<b>-</b> 54 <b>-</b>						Bottom of B	oring at 51	' bgs.					
													7
<b>–</b> 57 <b>–</b>					•								1
<b>–</b> 60 <b>–</b>					•	-							-
<b>-</b> 63 <b>-</b>						_							_
						_							_ [
<b>–</b> 66 <b>–</b>						_							1
<b>–</b> 69 <b>–</b>					ļ.	_							-
<b>-</b> 72 <b>-</b>						-							
													]
<b>–</b> 75 <b>–</b>	ı	1 1			77 . ***	- · · · ·							
					Key to Well	Construction							



Well Screen Cement



					CITED NA		<u> </u>
DDII.	TINCI	OC for I	X/~11 #.	399 Boylston Street 6th Floor	SITE MA	vБ	NT.
	LING LO		ven #:	MW-218D ERM Boston, MA 02116			N I
Project:	Raytheon-Wayla	and		Project Number: 143.70			
Client: Drilling Co:	Raytheon Geosearch, Inc.			Logged by: Michael Horesh  Driller: Jeremiah Fluck		Rt. 20	
Date Started:				Date Finished: 1-Jul-02			
Location:	Wayland, MA			Drilling Method: Drive and Wash		₩W-218	s
Screen Diam			Length:	5' Slot Size: 0.010"		₩W-218 ₩W-218 ₩W-218E	M )
Casing Diam	n: 2"		Length:	81' Type: PVC	Russell's Garde	en Center	
Boring Depth			Well Depth:	86' Boring Diam.: 4"			
Surface Elev.	.: 129.4'		MP:				easured on
			MP Elev.:	130.02'		#######	
					C .1. #	PID Conc.	7 1 C1- # 0-
Depth Well	Log Stratigraphy	Blowcounts per 6 inches	7	Split Spoon Description/Soil Classification	Sample # & Depth	(ppm) spoon/HS	Lab Sample # & Analyses
Depth Well	Eog	money	Recovery	Spin Spoon Description Son Classification	& Depth	3p001.11c	rinary 500
##	#			_		İ	<u> </u>
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- 2 -				-		İ	<del>-</del>
<b>-</b> 3 <b>-</b>				_		ı	
_ 4				_		İ	
<i>"</i>				_		İ	
<b>-</b> 5 <b>-</b>				-		ı	-
- 6 -				_		İ	
7						ı	!
				_		ı	
- 8 -	W	+	+		~	<u> </u>	<u> </u>
- 9 -	SAND	4-4-6-11	16"	Brown/tan medium SAND, little Gravel, little Cobbles,	S-1	0.0	
10				larger Cobbles at bottom of section, dry.	8'-10'	İ	
-10 -						·	
<b>-</b> 11 <b>-</b>				-		ı	<del>-</del>
<b>-</b> 12 <b>-</b>				_		İ	
						ı	
- 13 -					S-2		
<b>-</b> 14 <b>-</b>		12-15-17-18	0"	<b>N</b> R		İ	-
<b>-</b> 15 <b>-</b>	<u>///</u>			_	13'-15'		
<i>///</i>						İ	
<b>-</b> 16 <b>-</b>				_		İ	
<b>-</b> 17 <b>-</b>				-		ı	-
<b>-</b> 18 <b>-</b>	<b>///</b>						
		1-161010	1 11	Medium brown coarse SAND, Gravel (top 4"), well sorted,	S-3		
<b>-</b> 19 <b>-</b>	SAND	17-16-13-13	11"			0.0	-
- 20 -	<b>///</b>	<del> </del>	<b></b>	saturated.	18'-20'	<u> </u>	_
<b>-</b> 21 <b>-</b>				_		İ	
				_		İ	
<b>-</b> 22 <b>-</b>				-		ı	-
- 23 -	<b>///</b>	<u> </u>		_			
	SAND &	;	1.4"	Medium brown to orange/brown SAND and SILT with	S-4	1	
<b>-</b> 24 <b>-</b>		10-10-12-14	14"	_		0.0	

NR = No Recovery

SILT

Key to Well Construction Grout Sandpack Well Screen  $\blacksquare$ Bentonite Seal Cement

orange staining, some Clay, trace Cobbles, saturated.

23'-25'

<sup>\*</sup> Bottom 4' of borehole collapsed. Well set at 86' bgs.

## **DRILLING LOG for Well #:** MW-218D



Page 2 of 4

	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sa & An
					_			
					_			
		SAND	13-12-6-6	13"	Grayish brown coarse to medium SAND, little Cobbles,	S-5	0.0	
					clean Gravel at top, well-sorted, moist.	28'-30'		
					_			
		SAND	5-4-3-3	18"	Light brown/gray coarse SAND, little Gravel, Gravel/ Cobble lens—(1") at top, light orange-stained bands throughout, Sand lenses (1"),	S-6	0.0	
		J. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	0 1 0 0		well sorted; moist to saturated.	33'-35'	0.0	
-0					_			
					_			
		CAND	5767	22"	Light brown/gray medium SAND, little fine Sand, cobble	S-7	0.0	
		SAND	5-7-6-7	22"	lens at top (1.5"), orange stained bands throughout; saturated.	38'-40'	0.0	
					_			
					_			
					Light brown/gray fine SAND, coarse Sand lens (2") at top,	S-8		
-8		SAND	10-9-11-12	13"	light orange stained bands throughout, well sorted, satutrated.	43'-45'	0.0	
					_			
-2								
-2		SAND	2-3-4-4	16"	Gray to light gray fine SAND, trace Silt, Gravel lens with	S-9	0.0	
-					orange staining, well sorted, saturated.	48'-50'		
-2								
		SILT	5-5-4-5	17"	Gray SILT, little fine Sand, well sorted, saturated.	S-10	0.0	
		511.1	J-J- <del>1-</del> J	1 /	Gray 5121, fittle fifte band, well softed, saturated.	53'-55'		

**DRILLING LOG for Well #:** MW-218D

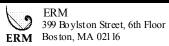
ERM 399 Boylston Street, 6th Floor ERM Boston, MA 02116

Page 3 of 4

					<b>ERM</b> Boston, MA 02116			
Depth	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
<b>-</b> 56 <b>-</b>								_
57 <b>–</b>								_
								_
<b>-</b> 58 <b>-</b>		SILT &	9-8-11-12	21"	Gray SILT and CLAY, some fine Sand, well sorted, saturated	S-11	0.0	_
<b>-</b> 59 <b>-</b>		CLAY	9-0-11-12	21	-Gray Stell and CEAT, some time saild, wen sorted, saturated	58'-60'	0.0	-
<b>-</b> 60 <b>-</b>								
-61 -								_
<b>-</b> 62 <b>-</b>					Γ			-
<b>-</b> 63 <b>-</b>		SILT &	0.7.4.6	100	Medium gray SILT and CLAY with interbedded dark gray	S-12	0.0	-
64 <b>-</b> 65 _		CLAY	8-7-4-6	19"	Clay, Sand and Gravel w/ fines and large clasts, saturated.	63'-65'	0.0	=
-03 -								
<b>-</b> 66 <b>-</b>					<del>-</del>			_
<b>-</b> 67 <b>-</b>					<del>-</del>			-
<b>–</b> 68 <b>–</b>		SILT &			Medium gray SILT and CLAY with interbedded dark gray	S-13		
<b>-</b> 69 <b>-</b>		CLAY	6-3-4-7	24"	dense Clay, trace fine sand at bottom 2", saturated.	68'-70'	0.0	-
<b>-</b> 70 <b>-</b>		CEATT			uense eray, nace mie sand at oottom 2 , sataratea.	00 70		
<b>-</b> 71 <b>-</b>					<del> </del>			-
<b>-</b> 72 <b>-</b>					<del> </del>			-
<b>-</b> 73 <b>-</b>		SAND &			Gray/brown to gray fine SAND and SILT, some Clay, well	S-14		<u>-</u>
<b>-</b> 74 <b>-</b>		SILT	8-17-17-16	20"	sorted, saturated.	73'-75'	0.0	-
<b>-</b> 75 <b>-</b>		SILI			Softed, Saturated.	13-13		
<b>-</b> 76 <b>-</b>					-			-
77					-			-
<b>-</b> 78 <b>-</b>					C SHT 14 CH 11 4 1 0 2 5 H	0.15		-
<b>-</b> 79		SILT	9-9-10-12	22"	Gray SILT, some sand, trace Clay, well sorted, 0.25"	S-15	0.0	_
<b>-</b> 80 <b>-</b>					dark-stained bands at top, saturated.	78'-80'		
<b>-</b> 81 <b>-</b>					-			<del>-</del>
-82 -					-			<u>-</u>
-83 -								<u>-</u>
<b>-</b> 84 <b>-</b>		SILT	17-11-12-9	18"	Gray/brown SILT, some Clay, Clay and Silt at bottom,	S-16	0.0	<del>-</del>
85					well sorted, saturated.	83'-85'		_

## DRILLING LOG for Well #:

MW-218D



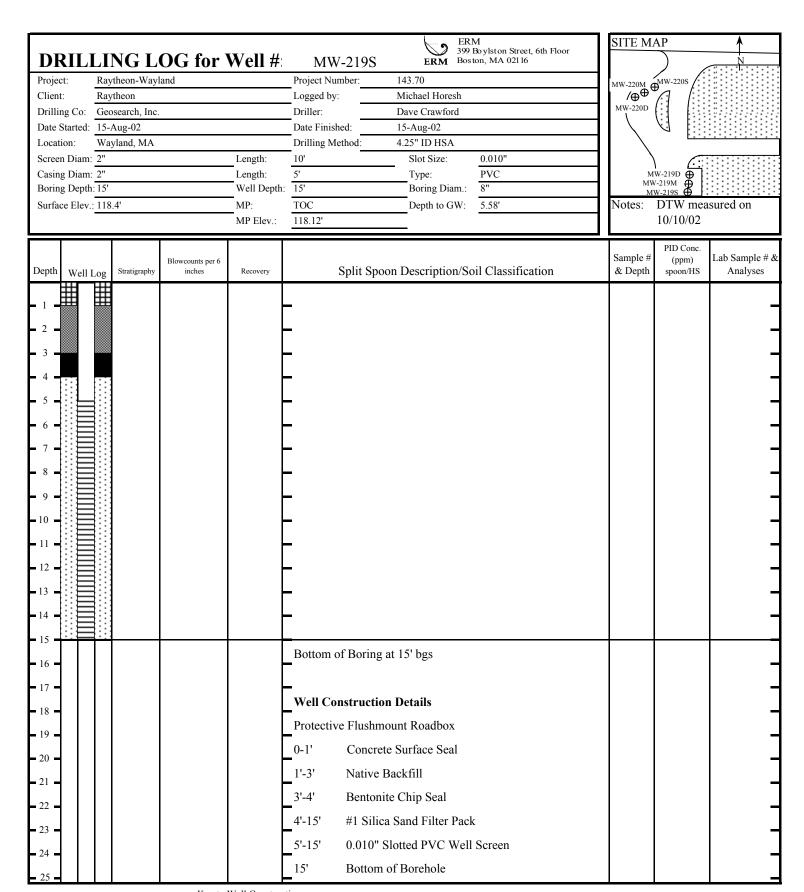
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epth	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample & Analyses
6 <b>–</b>					_			
8 <b>-</b> 9 <b>-</b> 0 <b>-</b>		SAND	11-20-17-30	17"	Top 7": Gray/brown medium SAND; Bottom 6": Gravel and Cobbles, little Silt, poorly sorted, saturated.	S-17 88'-90'	0.0	
1 -					Bottom of Boring at 90' bgs*.			
2 -					Well Construction Details:			
3 =					Protective Flushmount Roadbox			
; <b>_</b>					0-1' Concrete Surface Seal			
					1'-76' Portland Cement & Bentonite Slurry Grout			
					76'-79' Bentonite Chip Seal			
_					79'-87' #1 Silica Sand Filter Pack			
					81'-86' 0.010" PVC Well Screen			
0					90' Bottom of Boring*			
1 =								
2 =					_			
3 =					_			
4 =					_			
5 🗕					_			
6 =					<u>L</u>			
7 =					_			
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.5 _								

<sup>\*</sup> Bottom 4' of borehole collapsed. Well set at 86' bgs.



Key to Well Construction

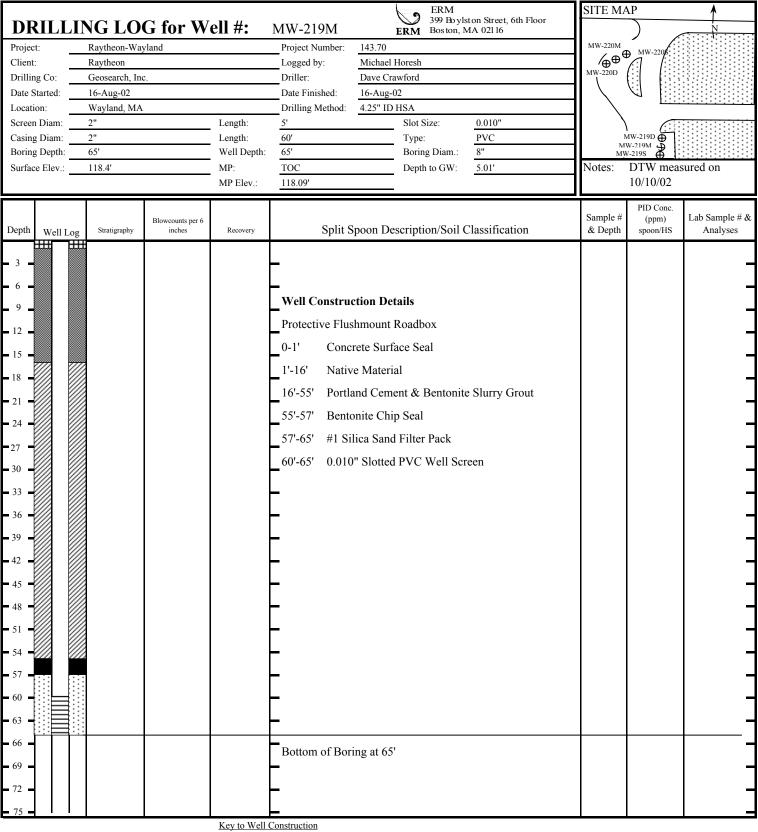
Sandpack
Bentonite Seal



Well Screen

Cement







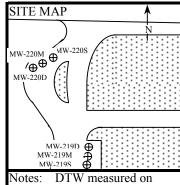


Well Screen Cement



Grout Native Fill

DRIL	LING LOG for	Well#	MW-219D	ERM 399 Bo ylst on St ERM Boston, MA 02	,
Project:	Raytheon-Wayland		Project Number:	143.70	
Client:	Raytheon		Logged by:	Michael Horesh	
Drilling Co:	Geosearch, Inc.		Driller:	Dave Crawford	
Date Started:	14-Aug-02		Date Finished:	15-Aug-02	
Location:	Wayland, MA		Drilling Method:	Drive and Wash	
Screen Diam:	2"	Length:	5'	Slot Size:	0.010"
Casing Diam:	2"	Length:	71'	Type:	PVC
Boring Depth:	: 79'	Well Depth:	76'	Boring Diam.:	4"
Surface Elev.:	: 118.4'	MP:	TOC	Depth to GW:	4.67'
	-	MP Elev.:	117.95'		
		_			



10/10/02

Depth	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
- 1 -					_			_
- 2 -					_			_
<b>-</b> 3 <b>- -</b> 4 <b>-</b>					_ _			
<b>-</b> 5 <b>-</b>					_			-
<b>-</b> 6 <b>-</b>								
- 8 -					_			_
<b>-</b> 9 <b>-</b>					-			-
<b>-</b> 10 <b>-</b> 11 <b>-</b>		SILT	7-7-8-7	14"	Orange/brown well sorted SILT w/ orange horizontal staining, bottom 4" gray Silt w/ some dark gray Clay interbeds.	S-1 10'-12'	0.0	-
<b>-</b> 12 <b>- -</b> 13 <b>-</b>					interocus.	10 12		
<b>-</b> 14 <b>-</b>					_			-
<b>-</b> 15 <b>- -</b> 16 <b>-</b>		SILT	5-4-4-5	13"	Gray well sorted SILT, little Clay, dark gray Clay interbeds (1/4").		0.0	
<b>-</b> 17 <b>-</b>						15'-17'		-
<b>-</b> 18 <b>-</b> 19 <b>-</b>								
<b>-</b> 20 <b>-</b>						S-3		-
<b>-</b> 21 <b>-</b> 22 <b>-</b>		SILT	4-4-4-3	11"	Gray well sorted SILT w/ some dark gray Clay interbeds.	20'-22'	0.0	_
<b>-</b> 23 <b>-</b>					_			
<b>-</b> 24 <b>-</b>								-
<b>25</b>					=			_

Key to Well Construction



Sandpack Bentonite Seal



Well Screen Cement



Native Backfill

**DRILLING LOG for Well #:** MW-219D

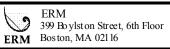


Page 2 of

(/// (///	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sa & An
	SILT	6-7-6-7	16"	Gray well sorted SILT, some fine Sand, dark gray Clay interbeds (1/4" to 1/2").	S-4 25'-27'	0.0	
				_ _			
	SAND	3-3-3-3	10"	Gray well sorted fine SAND, some Silt, minor bedding of dark minerals.	S-5 30'-32'	0.0	
	SAND	4-5-5-7	11"	Gray well sorted fine to medium SAND, little Silt.	S-6 35'-37'	0.0	
				<b>-</b>			
	SAND & SILT	7-4-7-8	5"	Gray well sorted fine SAND and SILT.	S-7 40'-42'	0.0	
				<b>-</b>			
	SAND	5-7-7-8	14"	Gray well sorted fine SAND, some silt, dark gray Clay interbeds (2").	S-8 45'-47'	0.0	
				_ _			
	SILT	10-5-5-4	8"	Gray well sorted SILT and dark gray Clay.	S-9 50'-52'	0.0	
				- -			

**DRILLING LOG for Well #:** 

MW-219D



Page 3 of 4

				ERM BOSTOII, IVIA 021 10	Ŭ		
Depth Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Sample # & Analyse
- 56 <b>-</b>	SAND & SILT	7-8-9-7	16"	Gray well sorted fine SAND and SILT, little Clay, dark gray Clay interbeds (1/4").	S-10 55'-57'	0.0	_
- 58 - - 59 - - 60 -							
61 -62 -62	SILT	5-7-7-4	15"	Gray SILT, some to little Clay, dark gray Clay interbeds (1/4" to 1/2") some fine sand, well sorted.	S-11 60'-62'	0.0	_
- 63 - - 64 - - 65 -				_ _			<u>-</u>
66 -67	SILT	7-5-5-4	18"	Medium to dark gray SILT, some dark gray clay interbeds up to 1/3" thick.	S-12 65'-67'	0.0	_
- 68 - - 69 - - 70 -				<b>-</b> -			-
-71	SILT	12-10-8-12	23"	Dark brown/gray SILT, some gray Clay, dark brown/gray horizontal bedding througout interval.	S-13 70'-72'	0.0	_
- 73 74 75 75 75 75 75 75 75				<b>-</b>			-
76	SILT	7-6-20-35	14"	Gray-gray/brown SILT, little to some Clay and Gravel at bottom 4" of interval.	S-14 75'-77'	0.0	-
78 - 79 - 79	TILL	25-35-40-100*	12"	TILL (unsorted Sand and Gravel)	S-15 77'-79'	0.0	
- 80 - - 81 - - 82 - - 83 - - 84 -				Spoon Refusal at 79' bgs  * Bottom 3' of borehole collapsed prior to well installation.			-
85		) blowcounts		Well Construction Details on Following Page			_

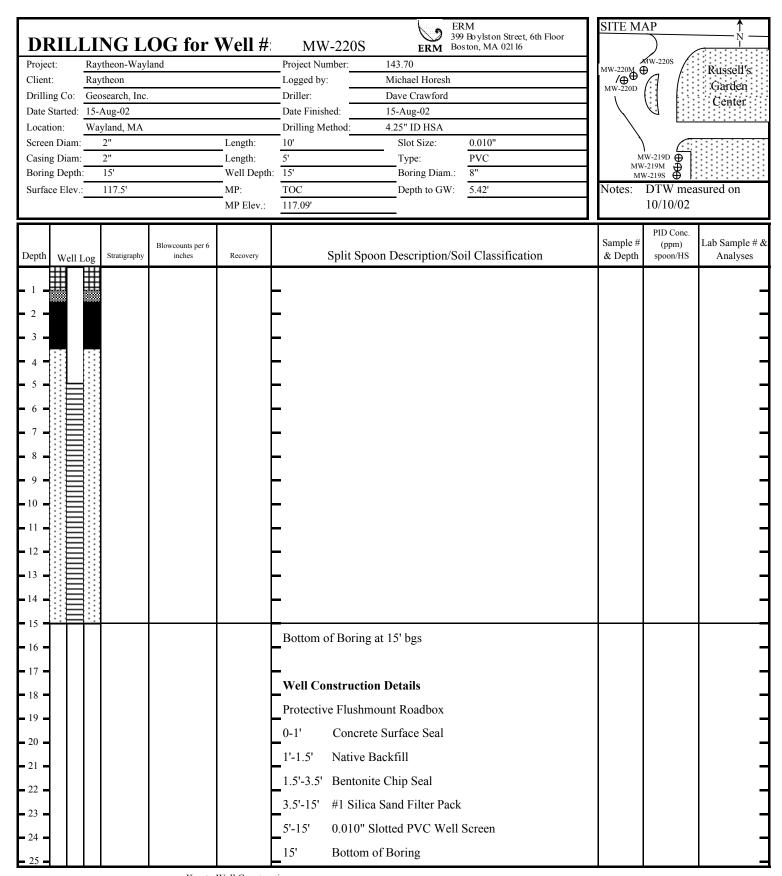
<sup>\*</sup> Spoon Refusal after 100 blowcounts

**DRILLING LOG for Well #** MW-219D

ERM 399 Boylston Street, 6th Floor Boston, MA 02116

Page 4 of 4

					ERIVI Boston, MAY 02110			
Depth	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
					Well Construction Details			
-								
					<b>_</b>			-
					Protective Flushmount Roadbox			
<u> </u>					0-1' Concrete Surface Seal			_
L.					1'-10' Native Backfill			
L.					10'-67' Portland Cement and Bentonite Slurry Grout			
					67'-69' Bentonite Chip Seal			
					69'-76' #1 Silica Sand Filter Pack			
					71'-76' 0.010" Slotted PVC Well Screen			
					79' Bottom of Borehole			
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L _								_
					Γ			7
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<b>†</b> -					<del> </del>			−
<b>-</b>					<del> </del>			-
<u> </u>					_			_



Key to Well Construction

Sandpack

Bentonite Seal

Well Screen

Cement



Project   Suppleme	DRILLI	NG LOG for V	Vell #:	MW-220M	399 Boylston Street, 6th Floor Boston, MA 02116	SITE	MAP	<u> </u>			
Depth   Well Log   Sustilization   Recovery   Split Spoon Description/Soil Classification   Sample   Option   Spoon	Client: Drilling Co: Date Started: Location: Screen Diam: Casing Diam: Boring Depth:	Raytheon Geosearch, Inc. 14-Aug-02 Wayland, MA 2" 2" 65'	Length: Well Depth: MP:	Logged by: Driller: Date Finished: Drilling Method: 5' 60' 65' TOC	Michael Horesh		MW-219D MW-219M MW-219M MW-219S Motes: DTW measured on 10/10/02				
75	- 3 - 6 - 9 - 12 - 15 - 18 - 21 - 24 - 27 - 30 - 33 - 36 - 39 - 42 - 45 - 51 - 54 - 57 - 60 - 63 - 66 - 66 - 66 - 66 - 66 - 66	Stratigraphy inches		Well Construct Protective Flus 0-1' Conc 1'-15' Nativ 15'-56' Portl 56'-58' Bent 58'-65' #1 S 60'-65' 0.010	crion Details hmount Roadbox crete Surface Seal we Backfill and Cement and Bentonite Slurry Grout onite Chip Seal ilica Sand Filter Pack O" Slotted PVC Well Screen om of Borehole		PID Conc. (ppm)	Lab Sample # & Analyses			
Key to Well Construction			Kev to Well (	Construction							

Sandpack



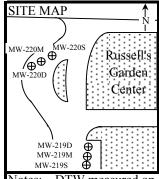
Bentonite Seal



Well Screen Cement



DRILI	LING LOG for	Well#	MW-220D	3	ERM 99 Boylst on Street, 6th Floor Boston, MA 02116	<u>S</u>
Project:	Raytheon-Wayland		Project Number:	143.70		М
Client:	Raytheon		Logged by:	Michael Horesh		Ħ,
Drilling Co:	Geosearch, Inc.		Driller:	Dave Crawford		
Date Started:	12-Aug-02		Date Finished:	13-Aug-02		H
Location:	Wayland, MA		Drilling Method:	Drive and Wash		11
Screen Diam:	2"	Length:	5'	Slot Size:	0.010"	H
Casing Diam:	2"	Length:	96'	Type:	PVC	H
Boring Depth:	107'	Well Depth:	101'	Boring Diam.	: 4"	l L
Surface Elev.:	117.5'	MP:	TOC	Depth to GW	5.19'	N
		MP Elev.:	116.99'			
						ᅳ



Notes: DTW measured on 10/10/02

Depth	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
- 1 -								_
<b>-</b> 2 <b>-</b>					_			_
<b>-</b> 3 <b>-</b>					<del> -</del>			_
<b>-</b> 4 <b>-</b>					<del> -</del>			_
<b>-</b> 5 <b>-</b>					<del> -</del>			_
<b>-</b> 6 <b>-</b>					<del>-</del>			_
7 -								
9								
<b>-</b> 10 <b>-</b>								_
<b>-</b> 11 <b>-</b>		SAND &	20-17-12-15	14"	Coarse SAND & GRAVEL, well sorted, little Pebbles, trace	S-1	0.0	_
<b>-</b> 12 <b>-</b>		GRAVEL			Cobbles; bottom 7": brown Clay, little Silt.	10'-12'		_
<b>–</b> 13 –					<del> -</del>			_
<b>-</b> 14 <b>-</b>					<del> -</del>			_
<b>-</b> 15 <b>-</b>		SILT &	7611	2211	Gray, well sorted SILT & CLAY, medium Sand lens, thin	S-2	0.0	_
<b>-</b> 16 <b>-</b>		CLAY	7-6-4-4	22"	(1/4") thin dark gray Clay interbeds throughout.	15'-17'	0.0	
<b>-</b> 17 <b>-</b> 18 <b>-</b>				_				
<b>-</b> 19 <b>-</b>								_
<b>-</b> 20 <b>-</b>								_
<b>-</b> 21 <b>-</b>		SILT &	3-3-5-5	12"	Gray/brown SILT and CLAY, well sorted, two 1/4" dark gray	S-3	0.0	_
<b>-</b> 22 <b>-</b>		CLAY			Clay interbeds.	20'-22'		_
<b>-</b> 23 <b>-</b>					<del> </del>			_
<b>-</b> 24 <b>-</b>					_			_
<b>–</b> 25 <b>–</b>					<b>—</b>			_

Key to Well Construction



Sandpack Bentonite Seal



Well Screen Cement



Grout Native Backfill **DRILLING LOG for Well #:** MW-220D

ERM 399 Bo ylston Street, 6th Floor Bos ton, MA 021 16

5 2 of

Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sam Anal
Well Log	SILT &	7-5-4-9	12"	Gray SILT and CLAY, well sorted, trace Cobbles at base of	S-4	0.0	Anai
	CLAY	7-3-4-9	12"	interval.	25'-27'	0.0	
				_			
	GAND 0			D. A. G. CAND COUT. II I	0.5		
	SAND & SILT	7-7-7-8	14"	Brown-gray/brown fine SAND & SILT, well sorted, orange horizontal staining at bottom of interval, trace Silty Clay.	S-5 30'-32'	0.0	
	SILI			norizontal stanning at bottom of interval, trace Sitty Clay.	30-32		
				<del>-</del>			
	SAND	5-6-9-11	11"	Medium Brown medium to coarse SAND, well sorted, some	S-6	0.0	
	5.11.15	0 / 11		Silt, Sand and Gravel lens at 0.5'.	35'-37'	0.0	
				_			
				_			
				Gray madium SAND, wall contact same City same branch	S-7		
	SAND	6-7-5-9	11"	Gray medium SAND, well sorted, some Silt, some brown horizontal bedding, trace Gravel.	40'-42'	0.0	
					.0 12		
				_			
	SAND	4-7-9-10	11"	Gray to gray/brown fine SAND, well sorted, some Silt.	S-8	0.0	
					45'-47'		
				_			
				-			
	SAND &			Gray well sorted fine SAND and SILT, trace Clay, some	S-9		
	SILT	3-3-4-4	13"	horizontal bedding of dark minerals.	50'-52'	0.0	
	<u> </u>				2002		

**DRILLING LOG for Well #:** MW-220D

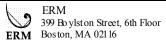
ERM 399 Bo ylston Street, 6th Floor Bos ton, MA 021 16

5 3 of

						DID C	
Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sa Ana
	SAND	12-9-8-8	13"	Gray-gray/brown coarse SAND, some Gravel, some Silt, little Clay, well sorted.	S-10 55'-57'	0.0	
				-			
	SAND	7-7-6-6	13"	Gray well sorted medium to coarse SAND, some fine Sand, little Silt, little Clay, minor bedding of dark minerals.	S-11 60'-62'	0.0	
	SILT &	7-8-11-21	13"	Gray well sorted SILT and CLAY.	S-12 65'-67'	0.0	
	CENTI			_	05 -07		
				-			
	SILT	7-4-7-8	24"	Gray well sorted SILT, few interbeds of dark gray Clay, minor horizontal bedding of sediments.	S-13 70'-72'	0.0	
				nonzontal bedding of sediments.	10-12		
				-			
	SILT &	11-5-5-5	24"	Gray SILT and CLAY, some medium Sand, trace fine Sand.	S-14 75'-77'	0.0	
					,,		
	CLAY	5-6-6-6	24"	Gray CLAY, some Silt, some medium Sand.	S-15 80'-82'	0.0	
				-			
				-			

DRILLING LOG for Well #:

MW-220D



Page 4 of 5

			00 101	* * * * * * * * * * * * * * * * * * * *	ERM Boston, MA 021 16	1 agc	7 01	
Depth	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	mple #	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
- 86 -		SAND	40-45- 55-50	24"	Dark gray poorly sorted coarse SAND, little clay-sharp contact bottom 1' medium gray Silt and Clay, some Clay interbeds.	S-16 5'-87'	11.6	-
- 87 - - 88 - - 89 -					- -			- -
- 90 - - 91 - - 92 -		SAND	18-35- 40-53	24"	Gray well sorted fine SAND, trace Silt; bottom 6": Medium gray Silt and Clay, some Clay interbeds.	S-17 0'-92'	1.3	_
<b>-</b> 93 <b>-</b> - 94 <b>-</b>					- -			- -
<b>-</b> 95 <b>- -</b> 96 <b>- -</b> 97 <b>-</b>		SAND	20-25- 25-28	24"	Gray/brown fine SAND, some Silt at bottom 10" of interval, trace Clay, well sorted.	S-18 5'-97'	0.7	<u>-</u>
<b>-</b> 98 <b>-</b>					<del>-</del> -			- -
- 100 - - 101 - - 102 -		SAND &	17-22- 22-73	24"	Gray-gray/brown medium SAND and SILT; bottom 12": Silt, trace Clay, minor dark gray Clay interbeds at bottom of interval	S-19 0'-102	0.7	-
<b>-</b> 103 <b>- -</b> 104 <b>-</b>					- -			- -
- 105 - - 106 - - 107 -		SILT	60-100- 80-82	24"	Gray SILT at top of interval, coarsening to medium coarse Sand, poorly sorted Sand & Gravel, TILL at bottom 6".	S-20 5'-107	0.0	-
<b>-</b> 108 <b>-</b> <b>-</b> 109 <b>-</b>					Bottom of Borehole at 107'  * Bottom 6' of borehole collapsed prior to well installation			- -
- 110 - - 111 - - 112 -					- -			- -
-112 - -113 - -114 -					- - -			- -
_115 _					<u>-</u>			<u> </u>

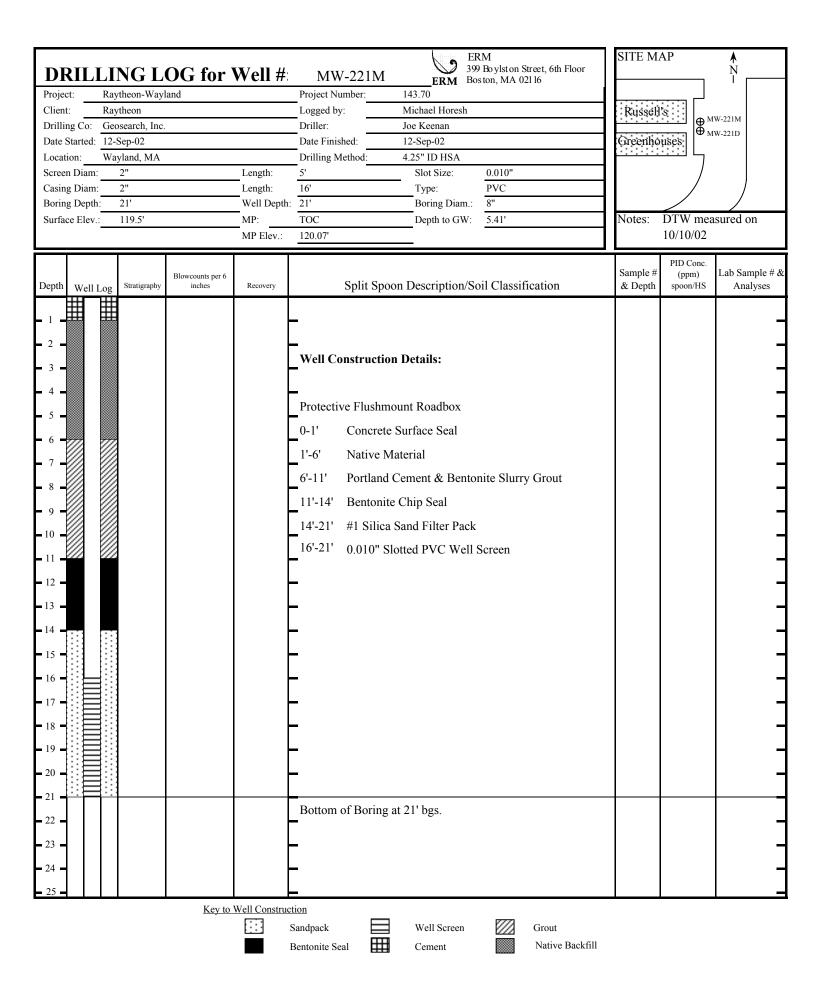
**DRILLING LOG for Well #** MW-220D

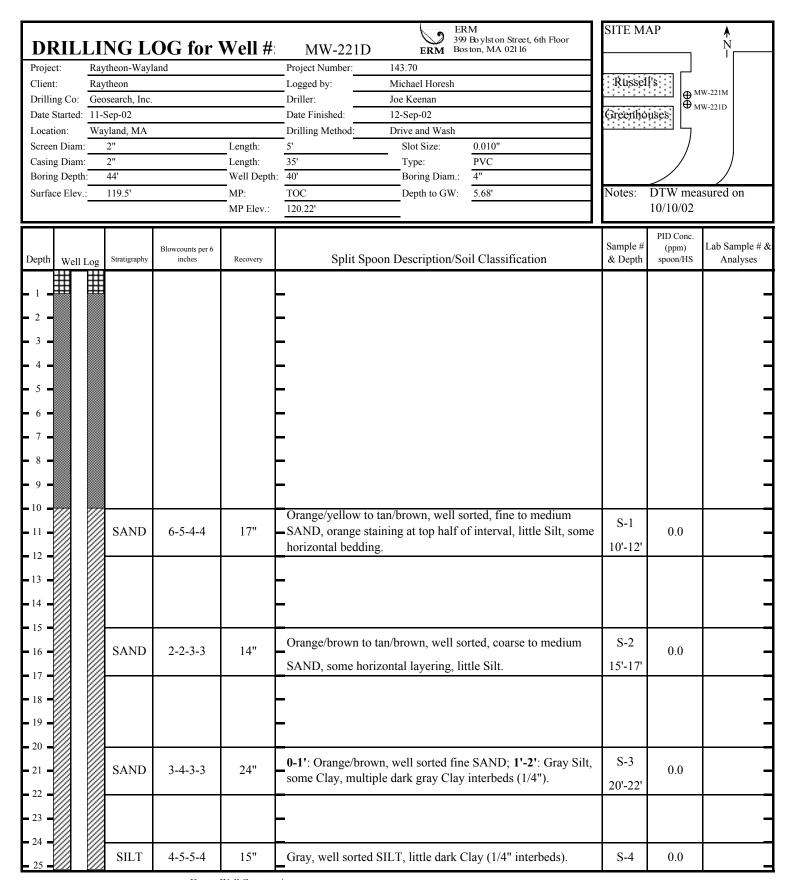
ERM
399 Bo ylston Street, 6th Floor
Boston, MA 021 16

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Well Construction Details  Protective Flushmount Roadbox  0-1' Concrete Surface Seal  1'-15' Native Backfill  15'-92' Portland Cement and Bentonite Slurry Grout  92'-94' Bentonite Chip Seal	Depth Wel	Blowcounts per inches	Recovery	Split Spoon Description/Soil Classification	Sample #	PID Conc. (ppm) spoon/HS	Lab Sample #
94'-101' #1 Silica Sand Filter Pack 96'-101' 0.010" Slotted PVC Well Screen 107' Bottom of Borehole	Depth Wel	Stratigraphy Blowcounts per inches	Recovery	Protective Flushmount Roadbox  0-1' Concrete Surface Seal  1'-15' Native Backfill  15'-92' Portland Cement and Bentonite Slurry Grout  92'-94' Bentonite Chip Seal  94'-101' #1 Silica Sand Filter Pack  96'-101' 0.010" Slotted PVC Well Screen	Sample # & Depth		Lab Sample # & Analyses





Key to Well Construction





Well Screen

Cement

Grout Native Backfill

## **DRILLING LOG for Well #:** MW-221D

ERM 399 Boylston Street, 6th Floor ERM Boston, MA 02116

Page

3

					ERM Boston, WA 021 10			
Depth	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample : & Analyses
<b>-</b> 26 <b>-</b>						24'-26'		_
<b>-</b> 27 <b>-</b>					_			_
- 28 -					_			<u>-</u>
- 29 -								-
- 30		SILT	2-4-2-3	18"	Brown/gray, well sorted SILT, trace fine Sand, some Clay.	S-5 29'-31'	0.0	-
<b>-</b> 31 <b>-</b>								_
- 32 -					-			-
- 33 - 34								- -
35		SILT	5-7-7-12	12"	Top 6": Gray, well sorted SILT, little Clay; Bottom 6": gray—Silt, little Clay, some poorly sorted Cobbles and Gravel	S-6 34'-36'	0.0	_
<b>-</b> 36 <b>-</b>					(bottom 6").	34-30		<u>-</u>
<b>-</b> 37 <b>-</b>					_			-
<b>-</b> 38 <b>-</b>					_			-
- 39 -		TIL I	29-50-	7"	Very dark gray Cobbles, some brown Silty matrix, little Gravel,	S-7	0.0	<u> </u>
<b>-</b> 40 <b>-</b> 41 <b>-</b>		TILL	88-49	/"	poorly sorted.	39'-41'	0.0	
<b>-</b> 42 <b>-</b>		TILL	30-41- 65-70	21"	Brown-dark brown, poorly sorted Cobbles and Gravel, little coarse Sand, little Silt.	S-8 41'-43'	0.0	_
<b>4</b> 3 <b>-</b>								-
<b>- 44 - -</b> 45 <b>-</b>		TILL	120*	1"	Brown, poorly sorted Cobbles and Gravel, little to some Silt.	S-9 44'-46'	0.0	-
<b>-</b> 46 <b>-</b>					Spoon refusal at 44' bgs			
48								_
<b>-</b> 49 <b>-</b>					_			_
<b>-</b> 50 <b>-</b>					_			_
<b>-</b> 51 <b>-</b>					<del>-</del>			_
<b>-</b> 52 <b>-</b>					<del> </del>			-
<b>-</b> 53 <b>-</b>					<b>-</b>			-
<b>-</b> 54 <b>-</b>					Well Construction Details on Following Page			-
_ 55 _					<b>–</b>			_

<sup>\* 120</sup> blowcounts accounted for 1" penetration



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				,, ,,,	ERM Boston, MA 02116	rage	3 01	J
Depth	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
			Blowcounts		ERIVI Boston, MIT 02110	Sample #	PID Conc. (ppm)	Lab Sample # &
								- - - - -

Project: Client: Drilling Co Date Starte Location: Screen Dia Casing Dia Boring Dep	Client: Raytheon   Drilling Co: Geosearch, Inc.			Length: Length: Well Depth: MP:	MW-307 Project Number: Logged by: Driller: Date Finished: Drilling Method: 5' 6' 11' TOC 124.86'	39	NA NA m.: 4"	or	⊕ B-301	B-310 ⊕  ⊕ B-309  B-308 ⊕  MW-307  ⊕ B-306	k Fer
Depth We	ell Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon	Description	/Soil Classification		Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
1 2 - 3 - 4 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5		SAND		36"	-		ND, some Gravel, tra	ace	S-1 0'-5'	0.0	- -
- 6		SAND		52"	Gray/brown fine S intervals, wet.	AND, black	and orange horizonta	al Sand	S-2 5'-10'	0.0	-
11											
<b>-</b> 12 <b>-</b>					Bottom of Boring	at 11' bgs.					_
<b>-</b> 13 <b>-</b>					<b>–</b> Well Construction	n Details:					-
<b>-</b> 14 <b>-</b>					Protective Steel St						
<b>-</b> 15 <b>-</b>					0'-1' Concrete S						_
<b>–</b> 16 <b>–</b>					1'-3: Native Bacl						_
<b>-</b> 17 <b>-</b>					3'-4' Bentonite C						_
<b>-</b> 18 <b>-</b>					4'-11' #1 Silica Sa	_	k				
<b>-</b> 19 <b>-</b>					6'-11' 0.010" Slott						_
<b>-</b> 20 <b>-</b>					11' Bottom of E						_
<b>-</b> 21 <b>-</b>				•							_
<b>-</b> 22 <b>-</b>					-						_
<b>-</b> 23 <b>-</b>					_						=
<b>-</b> 24 <b>-</b>					_						-
<b>25</b>					_						_
				Key to Well	Construction						

Sandpack





DF	RILL	ING L	OG for	r Well #	# MW-313S	ERM 399 Bo ERM Boston	ylston Street, 6th Floor n, MA 02116	SITE MA  MW-314  MW-314		MW-315S IW-315D
Projec		Raytheon-Way			Project Number:	143.72		₩W-314	D ₩	- i
Client	: <u> </u>	Raytheon			Logged by:	Michael Horesh				ndaı
Drillin	ıg Co: (	Geosearch, Inc.			Driller:	Rodney				Bou
Date S	Started: 2	26-Aug-02			Date Finished:	26-Aug-02				spu
Locati	on:	Wayland, MA			Drilling Method:	Hand Auger				Wetlands Boundary
	Diam:	1"		Length:	5'	Slot Size:	0.010"			
_	g Diam:	1"		Length:	3'	Type:	PVC	∰ MW-313S ∰ MW-313D		MW-307 ⊕
	g Depth:	8'		Well Depth:		Boring Diam.:	2"	₩W-313D		/
Surfac	e Elev.:	111.1'		MP: MP Elev.:	TOC	Depth to GW:	4.18'			
				MIT Elev.:	114.61'					
			Blowcounts per					Sample #	PID Conc. (ppm)	Lab Sample # &
Depth	Well Lo	g Stratigraphy	6 inches	Recovery	Split Spoon	Description/Soi	l Classification	& Depth	spoon/HS	Analyses
1					0.5'-1' Native I 1'-2' Bentonite 2'-8' #1 Silica 3'-8' 0.010" SI	n Details andpipe e Surface Seal				
<b>25</b>										_
				Key to Well	Construction					<u></u>



DR	<u>I</u> L	LIN	IG L	OG for	· Well a	H MW-313D ERM 399 Boylston Street, 6th Floor Boston, MA 02116	MW-314		MW-315S N IW-315D
Project	:	Rayth	eon-Wayl	and		Project Number: 143.72	₩W-314	υ Φ.,	
Client:		Rayth	eon			Logged by: Michael Horesh			Wetlands Boundary
Drilling			earch, Inc.			Driller: Pat Hines			Bot
Date S	arted:	28-Au				Date Finished: 28-Aug-02			spun /
Locatio	n:		and, MA			Drilling Method: Drive and Wash			/etla
Screen					Length:	5' Slot Size: 0.010"			- Φ
Casing		_			Length:	Z5' Type: PVC	₩-313S		MW-307
Boring					Well Depth:	Boring Diam.: 4"	₩W-313D		
Surface	Elev.	.: 11	11.1'		MP:	TOC Depth to GW: 6.31'			
					MP Elev.:	114.37'			
Donth				Blowcounts per	D	Split Span Description/Spil Classification	Sample #	PID Conc. (ppm)	Lab Sample # &
Depth	Well	Log	Stratigraphy	6 inches	Recovery	Split Spoon Description/Soil Classification	& Depth	spoon/HS	Analyses
- 1 - 2 - 3 - 4 -	#					- - -			- - - -
<b>-</b> 5 <b>-</b>						<b>0-1.2':</b> Dark brown, well sorted Silt and Clay, low density.			<u> </u>
<b>-</b> 6 <b>-</b>			SAND	3-4-4-5	24"	■1.2'-2.0': Dark gray/brown medium to coarse SAND, moderately	S-1	0.0	_
_			571111	3-4-4-3	27	sorted, some fine Sand.	5'-7'	0.0	
- 7 -							,		_
<b>-</b> 8 <b>-</b>						_			_
<b>-</b> 9 <b>-</b>					-	-			_
<b>-</b> 10 <b>-</b>						<u>-</u>			
<b>-</b> 11 <b>-</b>			SILT	2-3-3-3	13"	Medim gray well sorted SILT, thin (1/8") Clay interbed,	S-2	0.0	_
			SIL I	2333	15	trace Gravel, trace fine Sand.	10'-12'	0.0	
<b>-</b> 12 <b>-</b>						<del>-</del>			_
<b>–</b> 13 <b>–</b>					Ļ	-			_
8									
<b>-</b> 14 <b>-</b>					Ī				_
<b>-</b> 15 <b>-</b>		_							_
<b>-</b> 16 <b>-</b>			SILT	4-5-6-6	13"	Dark medium gray well sorted SILT, little to trace Clay.	S-3	0.0	_
			SILI	4-3-0-0	13	- Dark medium gray wen sorted 5121, nate to trace City.	15'-17'	0.0	
<b>-</b> 17 <b>-</b>						<u>-</u>			=
<b>-</b> 18 <b>-</b>					Ļ	-			_
8									
<b>-</b> 19 <b>-</b>					ľ	-			
<b>-</b> 20 <b>-</b>									_
21			SILT	5-5-5-4	12"	Dark madium grov wall contact CH T 1:41- Class	S-4	0.0	
			SILI	3-3-3-4	12"	Dark medium gray well sorted SILT, little Clay.	20'-22'	U.U	
<b>-</b> 22 <b>-</b>					-	-	20-22		_
<b>-</b> 23 <b>-</b>						_			_
					ſ				_
<b>=</b> 24 <b>=</b>					ŀ	-			_
<b>-</b> 25 <b>-</b>	-						<u> </u>		
					Key to Well	Construction			

Sendential







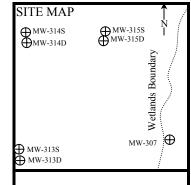
Project: Raytheon-Wayland Client: Raytheon Drilling Co: Geosearch, Inc. Date Started: 26-Aug-02 Location: Wayland, MA Screen Diam: 1" Casing Diam: 1" Boring Depth: 8' Surface Elev.: 110.8'	Project M Logged I Driller: Date Fin Drilling Length: 5' Length: 3' Well Depth: 8' MP: TOC MP Elev.: 114.10'	y: Michael Horesh Rodney shed: 26-Aug-02	MW-314 → MW-314 → MW-3138 → MW-313E	s ⊕¹ D ⊕ <sup>M</sup>	WW-315S IW-315S Ww.315S Ww.315S Ww.315S Ww.315S Ww.315S Www.315S W
Depth   Well Log   Stratigraphy   Blowcounts per 6 inches     1	Botton	Split Spoon Description/Soil Classification  of Boring at 8' bgs.  onstruction Details rotective Standpipe Concrete Surface Seal Native Backfill Bentonite Chip Seal #1 Silica Sand Filter Pack 0.010" Slotted PVC Well Screen Bottom of Borehole	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
25	Key to Well Constructi	on_	<u> </u>		_



Well Screen Cement



DRILI	LING LOG fo	r Well #	4 MW-314D		M Bo ylst on Street, 6th Floor ton, MA 02116
Project:	Raytheon-Wayland		Project Number:	143.72	
Client:	Raytheon		Logged by:	Michael Horesh	ı
Drilling Co:	Geosearch, Inc.		Driller:	Pat Hines	
Date Started:	29-Aug-02		Date Finished:	30-Aug-02	
Location:	Wayland, MA		Drilling Method:	Drive and Wash	1
Screen Diam:	1"	Length:	5'	Slot Size:	0.010"
Casing Diam:	1"	Length:	25'	Type:	PVC
Boring Depth	32'	Well Depth:	30'	Boring Diam.:	4"
Surface Elev.:	110.8'	MP:	TOC	Depth to GW:	4.91'
		MP Elev.:	114.09'		



Depth	Well Log	Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
_ 1 _								
		SILT	WOR	14"	Dark brown well sorted SILT, trace Clay, low density	S-1	0.0	
			Work		interval, black staining at top 3".	5'-7'	0.0	
8								
9 -					_			
<b>-</b> 10 <b>-</b>								_
- 11 -		SILT	8-10-12-11	14"	Medium gray, well sorted SILT, trace Clay, some black	S-2	0.0	
12					staining throughout section, trace Gravel at top of interval.	10'-12'		_
- 13					<u>-</u>			_
<b>-</b> 14 <b>-</b>								
<b>-</b> 15 <b>-</b>								
<b>-</b> 16 <b>-</b>		SILT	6-8-8-7	12"	Gray, well sorted SILT, little fine Sand, trace Clay.	S-3	0.0	
<b>-</b> 17 <b>-</b>						15'-17'		
- 18 -				,	_			_
<b>-</b> 19 <b>-</b>					_			4
<b>-</b> 20 <b>-</b>								_
- 21 -	_	SILT	7-7-10-8	20"	Gray, well sorted SILT, some Clay, minor horizontal bedding.	S-4	0.0	4
<b>-</b> 22 <b>-</b>					ocading.	20'-22'		_
- 23 -					<u> </u>			4
<b>-</b> 24 <b>-</b>					<u> </u>			4
<b>-</b> 25 <b>-</b>					_			_

WOR=Weight of Rod

Key to Well Construction





Well Screen Cement



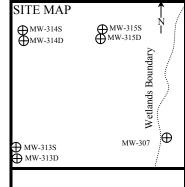
Grout Native Fill

DR	RILL	ING L	OG for	· Well #	# MW-315S	ERM 399 Bo ERM Boston	oylston Street, 6th Floor n, MA 02116	SITE MA  MW-3148  MW-3141		AW-315S IW-315D
	Project: Raytheon-Wayland				Project Number:	143.72		<b>⊕</b> MW-314I	D <b>⊕</b> м	- i
Client		Raytheon			Logged by:	Michael Horesh				ndar
Drillin					Driller:	Rodney				Bou
Date Started: 26-Aug-02			Date Finished:	26-Aug-02				l spu		
Locati	on: V	ayland, MA			Drilling Method:	Hand Auger				Wetlands Boundary
	Diam:	1"		Length:	5'	Slot Size:	0.010"			
	g Diam:	1"		Length:	3'	Type:	PVC	₩W-313S ₩W-313D		MW-307 ⊕
	Depth:	8'		Well Depth:		Boring Diam.:	2"	₩W-313D		/
Surfac	e Elev.:	110.7'		MP:	TOC	Depth to GW:	4.09'			
				MP Elev.:	114.07'					
			Blowcounts per					Sample #	PID Conc. (ppm)	Lab Sample # &
Depth	Well Lo		6 inches	Recovery	Split Spoon	Description/Soi	il Classification	& Depth	spoon/HS	Analyses
1					0.5'-1' Native I 1'-2' Bentonite 2'-8' #1 Silica 3'-8' 0.010" SI	n Details andpipe e Surface Seal				
<b>-</b> 25 <b>-</b>								<u> </u>		
				Key to Well	Construction					





DRILLING LOG for Well # MW-315D ERM 399 Boylston Street, 6th Floor Boston, MA 02116							
Project:	Raytheon-Wayland		Project Number:	143.72			
Client:	Raytheon		Logged by:	Michael Horesh			
Drilling Co:	Geosearch, Inc.		Driller:	Pat Hines			
Date Started:	30-Aug-02		Date Finished:	30-Aug-02			
Location:	Wayland, MA		Drilling Method:	Drive and Wash			
Screen Diam:	1"	Length:	5'	Slot Size:	0.010"		
Casing Diam:	1"	Length:	25'	Type:	PVC		
Boring Depth	32'	Well Depth:	30'	Boring Diam.:	4"		
Surface Elev.:	lev.: 110.7' MP:		TOC	Depth to GW:	5.01'		
		MP Elev.:	113.79'	_			



Depth	 Stratigraphy	Blowcounts per 6 inches	Recovery	Split Spoon Description/Soil Classification	Sample # & Depth	PID Conc. (ppm) spoon/HS	Lab Sample # & Analyses
- 1 -							_
<b>-</b> 2 <b>-</b> 3 <b>-</b>							_
<b>-</b> 4 <b>-</b>							-
<b>-</b> 6 <b>-</b>	SILT & CLAY	WOR-5	6"	Dark brown to black SILT and CLAY, organic-rich, well-sorted, low density interval.	S-1 5'-7'	0.6	-
<b>-</b> 7 <b>-</b> 8 <b>-</b>					3-1		_
<b>-</b> 9 <b>-</b>				-			_
<b>-</b> 11 <b>-</b>	SILT & CLAY	5-6-6-9	10"	Medium gray, well sorted SILT and CLAY, top 2" coarse Sand and Gravel.	S-2 10'-12'	0.3	
<b>-</b> 12 <b>-</b> 13 <b>-</b>					10 12		_
<b>-</b> 14 <b>-</b> 15 <b>-</b>				_			_
<b>-</b> 16 <b>-</b>	SILT	6-8-8-7	17"	Med. gray, well sorted SILT, trace Clay, top 3" med. to dark gray Silt and Clay.	S-3 15'-17'	0.0	_
<b>-</b> 17 <b>-</b> 18 <b>-</b>							
<b>-</b> 19 <b>-</b> 20 <b>-</b>							_
<b>-</b> 21 <b>-</b>	SILT	4-5-5-7	11"	Gray, well sorted SILT, minor horizontal bedding, top 3" gra Silt, little Clay, little Cobbles.	S-4 20'-22'	0.0	_
<b>-</b> 22 <b>-</b> 23 <b>-</b>				<del>-</del>			_
<b>=</b> 24 <b>=</b> 25 <b>=</b>				<u></u>			_

WOR=Weight of Rod

Key to Well Construction





Well Screen Cement



Native Fill