

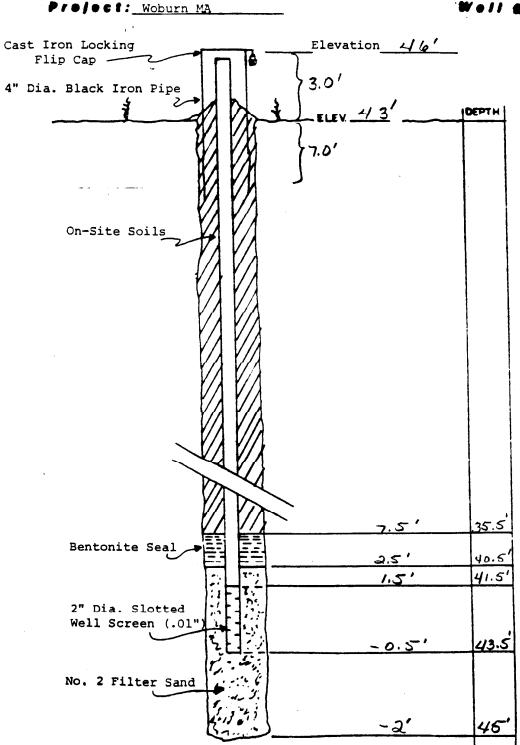
OBSERVATION WELL INSTALLATION DETAIL

ARMY CORPS OF ENGINEERS, NED

Aberjona River, Wells G&H

DACW-33-85-D-0011 D.O.#0003

FD85- 24



Dace 33-85-D-2011 Do. 3 Page 1 of Z Pages Boring Started 10/29/85 Boring Completed 10/29/85 Recort Submitted Casing Laft in Place Total 10 Fe
Page of Z Pages Boring Started 0 / 29 / 85 Boring Completed 0 / 29 / 85 Recort Submitted
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SEF FU-85-19 FOR SUIL LOG
DEE PU-05-19 FOR JUIL LOG
Weter Table Doom 0.37
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PIEZOMETER II	NSTALLATION	REPORT
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PROJECT	: ABERI	ona R	Ub.	SURN	DATE.	101	29/ 35	
		SEE DRA	0	FFSET FRUM			PIEZ NO.: F	0-85-24
				, DEPTH		RISE	PIPE _ /	/
PIEZ TY	PE: 2 3	SLOTE	2 .0	/ OF PI SOIL	EZ: 43.5			
(50IL]	(YPE): M	e SAND	(5P		E NO.: 55-		NG DIAM:	8"
METHOD	OF INSTALL	ATION: 4	"In	Auses				
TYPE OF	PROTECTION	ON X 10	Lowe	PIPE	L VE	NT: \angle	oct CA	P
GROUND		43'	_	ELEV. TOP OF RISER:	46'	ELEV PIEZ		7. <i>5</i>
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		AMBRIDGE	+ Bo	YER N	ONTRACT DAC.			WER
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OBSERVATION WELL INSTALLATION DETAIL

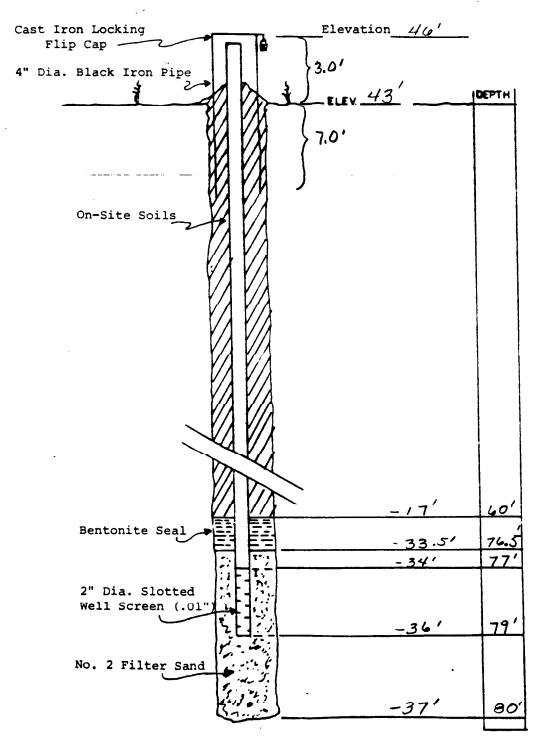
CIIOR:

Aberjona River, Wells G&H

Profect: Woburn MA

DACW-33-85-D-0011
D.O.#0003

Well wa FD85- /9



PROJECT No Site Abergone River, workern MA Hole No. FD-BS-190iam. (Casing) 4" Co-ordinates: N sec sketcle Drilled by Cambridge + Boyer (ATL) Purpose of Exploration soil Sampling and marifor confaminant plume at FP	Page 1 of Pages Boring Started _24 0+ 85 Boring Completed 10 /29/85 Report Submitted piczomater Sustallation to A Superfund Site
Elevation Top of Note	Casing Left in Place TOTAL 10' Feet 3.0' Stickup
Booth Nothed of Brilling From To and Type of Bit Used O' 820 H" Shiven casing washed out using 97/8" Thicare Filler bit HYDRAWT WATER WED DURING ALL DRILLIAGE Propaged by TA Book do 9 Field Beta Substited by Atlantic Testing Labs,	Heter Table Deeth

	U. S. #			8	SII	Pho	rione	12iUP	- wol	um MA	pe 4 of _3_Pc
NEW E	• -			_	Bor	ing No.	FD-85-	Desig.	19	Diam. (Cost	ng)_4"
FIELD LO	G OF	TES	ST E	ORIN	G Co-	ordino	185: 7	1 <u> 380</u>	· ske	tch E	
Elevetion To	p of Bo	oring	_4	3'		41.\$.L. Foot		ner W1/		Soring Starte	
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Total Rock (Foot		reriese 1		ete!	trop
Elevation Bo					7	, M. S.L.					•
Total Depth	of Bori	ng		80)	Fee1				Hdger Bore	
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Core Recover										A Reddoe	
Soil Sample Soil Sample										TA R-Odo P. Fisher	
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Sile	}				,	4 4 .4	Boring No.		Page _2
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	7						•	cobbles @ 63.0' an	d640'
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	∤	55-13	170	5,5	(a)	end of ercle	nations 10/25/85	SAME AS 55-1	,
						<u>'Sı</u>	15/2		

D. FORM 58A(Test)

Boring No. ED-85-19

Sile	rion	. R	iver	-			Boring No. F D-85-19		Page _=
D	- EPTH 1°• 67.5		E/SA	MPLE	BLOWS MERITY COME	l	NG AND CORING	CLASSIFICATION C	
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	7•0 7/5	5-14		REC 39.	54			SAME As S	5-11
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	75.5 - 76.5 -	516						SAME AS	55-11
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D.FORM 58A(Test)

Boring No FD 85- 19

			PIEZ	OMETER INST	TALLATION REP	ORT		
PROJECT	: Aberima	River, Wa	burn	HA	DATE.	10/24/	85	
LOCATIO	ON (STA): 50	ee sketch	<u> </u>	ENTER LINE			PIEZ NO.:FI)-85-19
PIEZ TY	(PE: 2"\$	Scorre	.010	DEPTI	IEZ: 79.5		<u>: </u>	
(SOIL)	TYPE): SA	NO YGRAV,	Love	SILT SAMPI	LE NO.: 55-			
METHOD	OF INSTALL	ATION: 33	6 Rome	ER BUT	Former	87	1 DRIVER	Cario.
FOR PI	F PROTECTIO	M X 1	DLon	<u> </u>	DE VE	NT:	OEK CAP	·
GROUND	ELEV .: 4	3′		OF RISER:	46'	PIEZ	TIP: - 3	365
FILTER	:#2	SAND	FROM	ELEV: -	<u>-37'</u>	TO	ELEV: -3	3.5
SEAL:	BENTONIT	E SLURA	F FROM	ELEV:	-33.5' CONTRACT OACH	T0	ELEV: —	17'
INSTAL	LED BY: 61	mbridge +	Boyer	CATL)	NO.: Do.	-3 FO	REMAN: //s	YER
METHOD	F INSTALLAT OF G PIEZ.:			185 AO TE		ERVATION	s: 10/30	185
TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH T WATER FEET
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0943	1	3.35						
0943				: !			.	· ·
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	2.0°5c	R CIEN				7		
								
								
								
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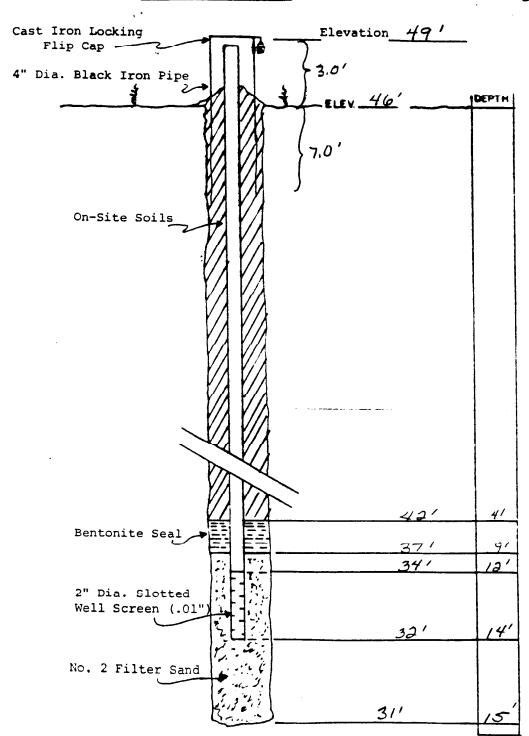
OBSERVATION WELL INSTALLATION DETAIL

ARMY CORPS OF ENGINEERS, NED

DACW-33-85-D-001:
D.O.#0003

Aberjona River, Wells G&H

Vell 4 - FD85- /7



AGENJONA RIVER PROJECT Site WELL GTH, WOSURN, NA Hole No. FD-85-17 Diam. (Casing) 4" Co-ordinates: N SEE E DAMWING Drilled by Campainase + Boxes	Boring Started 10/22/85 Boring Completed 10/22/85 Report Submitted
Purpose of Exploration <u>SET Plezo</u>	METER
Elevation Top of Hole	Casing Left in Place TOTAL 10 Foot 3.0 STICKLE SEE BURING FD-85-16 FOR SOIL LOG
Core RecoveredFt.;Dissin. Soil Sameleein. DissRo. Soil Sameleein. DissRo.	Water Table Deeth 2.51
Booth From To and Type of Bit bood O 15 8" AJOER, HYDRANT WATER USED DURING ALL DRILLING	Bround Water Back of Page Boring Location Sketch Back of Page Overturden Record Page Page Page Page Page Page Page
Proported by FRUL FISHER Floid Bala Subsited by ATLANTIC TESTING	LAB

PROJECT: ADELENA R. WORNAN MA DATE. 10/22/85 PROJECT: ADELENA R. WORNAN MA DATE. 10/22/85 LOCATION (STA): SEE DAMAING CENTER LINE: PIEZ NO.: FD-85- PIEZ TYPE: 2" S LOTTED . D/0" OF PIEZ: /4 DIAM: PIEZ TIP SET IN SOIL SOSIL SO	1			· PIF7	OMETER INST	ALLATION REP	ORT		
LOCATION (STA): See Organic Center Line: PIEZ NO.: FD-85- 2'LOVE DEPTH RISER PIPE DEPTH RISER PIPE DIAM: 4" PIEZ TYPE: 2" Section Of PIEZ: 4 DIAM: 4" PIEZ TIP SET IN SOIL FOOS-16 SAMPLE NO.: 5-3 BORING DIAM: 8" METHOD OF INSTALLATION: 8" Access TYPE OF PROTECTION FOR PIEZ: / / LONG X 4" A POC VENT: GROUND ELEV.: 46 OF RISER: 49.0' PIEZ TIP: 32' FILTER: #2 Sano FROM ELEV: 31' TO ELEV: 37' SEAL: 3/0 PECONITE FROM ELEV: 37' INSTALLED BY: COMPRIBED FROM ELEV: 37 FOREMAN: FINE OF INSTALLATION: 10/27/8 DATE OF INSTALLATION: 10/27/8 DATE OF OBSERVATIONS: 10/27/8 METHOD OF TESTING PIEZ: FALLNG HEADS DEPTH TO TIME WATER TIME WATER TIME MATER TI		•		1 2 5 4	OHETER INS	ACENTION REF	01.1		
LOCATION (STA): See Dagain CENTER LINE: PIEZ NO.: FD-85- PIEZ TYPE: 2"6 SLOTTED 0/0" OF PIEZ: A DIAM: A" PIEZ TYPE SET IN SOIL FO-5-16 (SOIL TYPE): FAC. SAND SAMPLE NO.: 5-3 BORING DIAM: R" METHOD OF INSTALLATION: 8" AUGUST TYPE OF PROTECTION FOR PIEZ: /0 LONG X A" OF FICE VENT: CAP GROUND ELEV.: A G OF RISER: A 9,0' PIEZ TIP: 32' FILTER: Z SANO FROM ELEV: 3/ TO ELEV: 37' SEAL: 3/0 PELOVITE FROM ELEV: 3/ TO ELEV: 42' CONTRACT DAGA 35-D-001 NO.: D.O. 3 FOREMAN: FINE METHOD OF TESTING PIEZ: FALLING HEAD TEST TESTING PIEZ: FALLING HEAD TEST TIME WATER TIME MATER TIME MINUTES FEET TIME MINUTES FEET TIME MATER TIME MATER TIME MINUTES FEET 724 - 5.50 1743 A 5.48 740 1 5.11 741 Z 5.42 740 1 5.11	PROJECT	: ADENO	na R.	WORUA	N. MA	DATE.	101	122/85	
PIEZ TYPE: 2"6 S_OTTEO .DIO" DEPTH OF PIEZ: A DIAM: A" PIEZ TIP SET IN (SOIL TYPE): FM. SAND SOIL FOOS-16 METHOD OF INSTALLATION: 8" AUGUST GROUND ELEV.: A G' DF RISER: A 9.0' PIEZ TIP: 32' FILTER: 2 SAND FROM ELEV: 3 / TO ELEV: 37' SEAL: 30 PELONITE FROM ELEV: 37' INSTALLED BY: CAMBRIDGE TO BE SERVATIONS: 10 /2 2/8 METHOD OF TESTING PIEZ: FRET MINUTES FEET TIME HATER TIME MATER TIME TIME WATER TIME TIME WATER TIME MINUTES FEET 724 - 5.50 /743 4 5.48 740 / 5.11 740 / 5.11 741 2 5.42	LOCATIO	N (STA):	See Des					PIEZ NO.: F	D-85-
SOIL FOST-IC SAMPLE NO.: 5-3 BORING DIAM: 8" METHOD OF INSTALLATION: 8" AUGUST VENT: LOCATION FOR PIEZ: 10 LONG X 4" & FROM ELEV. TOP OF RISER: 49.0' PIEZ TIP: 32' FILTER: 2 SAND FROM ELEV: 37' TO ELEV: 37' SEAL: 3/0 POLICITE FROM ELEV: 37' TO ELEV: 42' INSTALLED BY: CAMBRIGGE T STORE NO.: D.O. 3 FOREMAN: FIRME HOD OF TESTING PIEZ: FROM ELEV: FROM ELEV: TIME WATER TIME WATER TIME WINUTES FEET MINUTES FEET TIME WATER TIME WINUTES FEET TIME WINUTES FEET 724 - 5.50 1743 4 5.48 740 1 5.11 741 2 5.42			Z'Lor	v6	" DEPTH			R PIPE	1 11
METHOD OF INSTALLATION: 8" AUGUS TYPE OF PROTECTION FOR PIEZ: 10 LONG X 4" & FRC VENT: GROUND ELEV.: 46' DF RISER: 49,0' PIEZ TIP: 32' FILTER: 2 SANO FROM ELEV: 3/ TO ELEV: 37' SEAL: 30 FROM ELEV: 37' TO ELEV: 42' CONTRACT OF TO STORM TO STORM NO.: 0, 3 FOREMAN: 5.50C DATE OF INSTALLATION: 10/22/85 DATE OF OBSERVATIONS: 10/22/8 METHOD OF TESTING PIEZ.: FALLING HEAD TEST TIME LIAPSED DEPTH TO ELAPSED DEPTH TO TIME MATER TIME MINUTES FEET TIME MINUTES FEET TIME MINUTES FEET TIME MINUTES FEET 724 5.50 1743 4 5.48 740 1 5.11 741 2 5.42	PIEZ TI	P SET IN			SOIL	F0-05	-16		~ "
TYPE OF PROTECTION FOR PIEZ: O LONG X FROM ELEV. TOP				- 11 1		E NU.: 5-3	BOKI	NG DIAM:	8
GROUND ELEV.: 46' OF RISER: 49,0' PIEZ TIP: 32' FILTER: 2 SANO FROM ELEV: 3/ TO ELEV: 37 SEAL: 3/0 PECONITE FROM ELEV: 37 TO ELEV: 42' INSTALLED BY: SAMBRIAGE TO SAMBRIAGE				8" A	IGER				·
FILTER: #2 SANO FROM ELEV: 3/ TO ELEV: 37 SEAL: 3/0 PELONITE FROM ELEV: 37 TO ELEV: 42 INSTALLED BY: Camariace # Borer No.: Do. 3 FOREMAN: FISHER DATE OF INSTALLATION: 10/22/85 DATE OF OBSERVATIONS: 10/22/8 METHOD OF TESTING PIEZ.: FALING HEAD TEST ELAPSED DEPTH TO ELAPSED DEPTH TO TIME MATER TIME MINUTES FEET MINUTES FEET MINUTES FEET 724 - 5.50 1743 4 5.48 740 1 5.11 741 2 5.42	FOR PIE	Z:	10 LON			PRE VE		LOCIT CA	<u></u>
FILTER: #2 SANO FROM ELEV: 3/ TO ELEV: 37 SEAL: 3/0 PROJUTE FROM ELEV: 37 INSTALLED BY: CAMBRIDGE # BOYER NO.: D.O. 3 FOREMAN: FISHER NO.: D	GROUND	ELEV.:	46'			49.0		TIP: 3	<u>z´</u>
CONTRACT OACH 33-65-D-2011 NO.: D.O. 3 FOREMAN: FINE DATE OF INSTALLATION: 10 /2 2 /2 DATE OF OBSERVATIONS: 10 /2 2 /8 METHOD OF TESTING PIEZ.: FAZLING HEAD TEST TIME TIME WATER TIME TIME WATER TIME TIME WATER TIME MINUTES FEET MINUTES FEET MINUTES FEET MINUTES FEET 724 - 5.50 /743 4 5.48 739 0 .15 /747 8 5.50 1/2 4.41 740 1 5.11	FILTER:	#2	SANO	FROM	ELEV:	3/_'	TO	ELEV: 3	7 ′
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DATE OF INSTALLATION: 10 /2 2 /8 DATE OF OBSERVATIONS: 10 /2 2 /8 METHOD OF TESTING PIEZ.: FALLING HEAD TEST TIME SLAPSED DEPTH TO TIME TIME WATER TIME MANUTES FEET MINUTES FEET 724 - 5.50 /743 4 5.48 739 0 .15 /747 8 5.50 1/4 441 740 1 5.11	INSTALL	_) مرسوب				
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OBSERVATION WELL INSTALLATION DETAIL

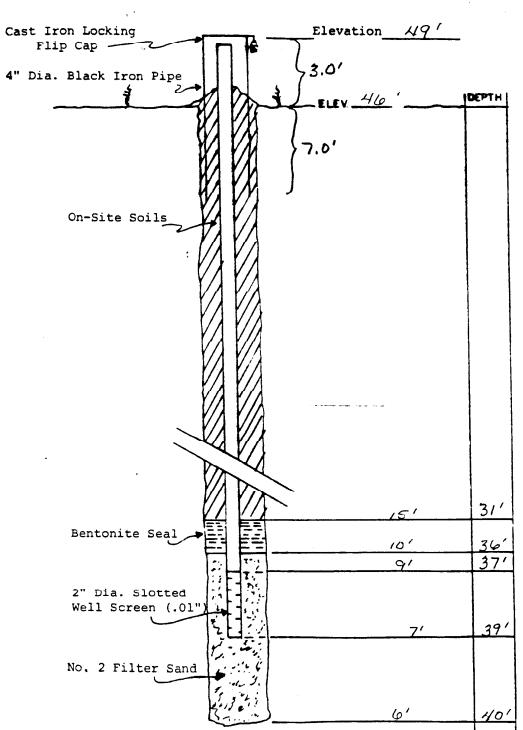
ARMY CORPS OF ENGINEERS, NED

Aberjona River, Wells G&H

Project: Woburn MA

Profest We. DACW-33-85-D-001
D.O.#0003

Well We. FD85- /8



ABERLULA RIVER BROJECT NO	DACW-33-85-D-0011
Site WELL GTH WORLEN, MA). <u>D.O = 3</u> Page 1 of <u>Z</u> Pages
Hole No. FD-85-18 Diam. (Casing) 4"	
	Boring Started 10/22/85
Co-ordinates: N SEC E DRAWING	Boring Completed 10/22/05
Orilled by CAMBRIOGE T BOTER	Report Submitted
Purpose of Exploration	AMATION,
Elevation Top of Note	Casing Left in Place TOTAL 10' Fee
Total Overburden Drilled 40 Feet	3.0 STICKUS
Elevation Top of RockN.S.L.	
Elevation Bottom of Hole M.S.L.	SEE BORING FD-85-16
Total Rock DrilledFeet	FOR Soil LOG
Total Beeth of Hole	
Core Recovered	
Soil SemplesIn. DiesIo.	.
Soil Samplesin. Dian No.	Water Table Deeth 2.841
Depth Method of Brilling	I Miles
From To and Type of Bit Used	
0 90 8" ALLER, HYDRANT WATER	Ground WaterBack of Page
USED OUPING ALL ORILLIAGE	Boring Location SketchBock of Page
	Overbrein BecordPage
	Rock BrillingPage
	hp
	716
Propered by PAUL FISHER 1 Field Bate	
Subsitted by ATLANTIC TESTING	44 64
MAILE TESTING	2 — 17 /5

PIEZ TY	,	SEE DAR	WING (DEPTH DO' OF PI	I EZ: <i>39</i> '	DIA	PIEZ NO.: F IR PIPE 1: 4	
(SOIL T	YPE): FI	MC, SAND		2011	FD-85 E NO.: 5-		ING DIAM:	8"
METHOD TYPE OF	OF INSTAL	LATION: 5	3'' A	UBER				
FOR PIE		10'LON	0 × 4	ELEV. TOP	VE سے	NT: ELEV	LOIX CA	0
GROUND	ELEV.:	46'		OF RISER:	49'	PIEZ	TIP: 7	·
FILTER:		SANO		ELEV:	6'	TO	ELEV:	o'
SEAL:	3/a" F	LONITE	FROM	ELEV:	10'		ELEV:	5
INSTALL	ED BY:	Ambrine	= + 8	exer N	ONTRACT OACO	7 F(DREMAN: /51	MER
DATE OF METHOD	INSTALLA	TION: 10	122	185	DATE OF OBS	ERVATION	IS: /o/z	3/25
	PIEZ.:	FAMIN	16 H	ENO TE	5/-			/
TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTI WAT FEE
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1421	0	,15			:			
	<u> </u>	5.29			:			! !
1422		574						•
1423	Z	5.82						:
REMARKS	: PIEE	FLUS ME	o Our	- PRIOR TO	TEST			
	Z'SCR	EEN			TEST			

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Compared to the control of the contr



DACW-33-85-D-001

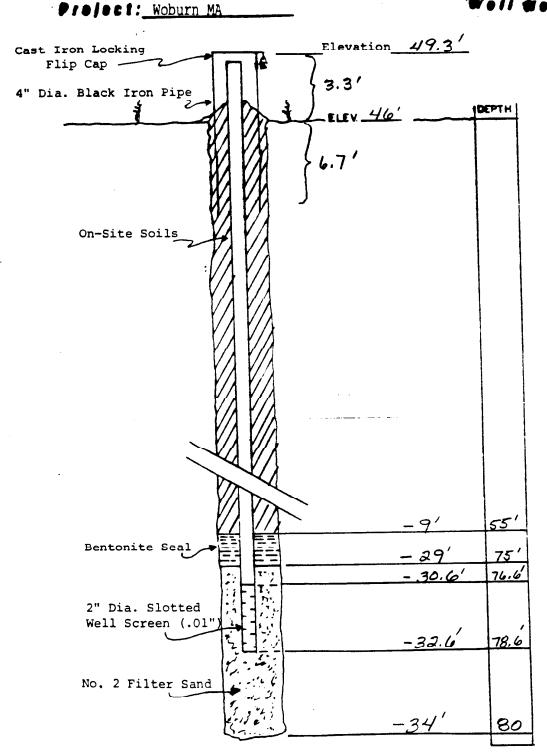
OBSERVATION WELL INSTALLATION DETAIL

CIIORI:

Project Wo. D.O.#0003

Aberjona River, Wells G&H

FD85- /6



CLUSTER 5-94

FO-85-16

ABERSONA RIVER PROJECT NO	0Acw-33-85-D-0011 Do. =3
Site WELL G+H WOBURN MA	Page 1 of 5 Pages
Hole No. FD-85-16 Dien. (Casing) 4"	Boring Started 10/17/85
Co-ordinates: N SEE E DEANING	Boring Completed 10/21/05
Orillad by <u>Cambaidue</u> + Bosea	Report Submitted
Purpose of Exploration Soil SAMPHING +	- PIEZUMETER INSTALLATION
Elevation Top of Note 46 N.S.L. Total Overburden Drilled 80 Feet	Casing Left in Place TOTAL 10' Feet 3.3 STRESUR
Elevation Top of RockN.S.L.	3.3 THURUP
Elevation Bottom of Nois — 34 M.S.L.	
Total Rock Drilled Feet	
Total beeth of Hole 80 Feet	
Core Recovered	•
Core RecoveredFt.;Dimin.	
Soil Secoles	-
Soil SamplesIn. Diam No.	Weter Table Deeth 2.68'
Depth He thod of Brilling From To and Type of Bit Used	180CR
0 80 3" ROLLER BIT FOLLOWED BY	Ground Water Back of Page
4" DRIVEN CASING	Boring Location SketchBock of Page
HYDRANT WATER USED FOR ALL	Overbunden RecordPage
DRILLING	Rock BrillingPage
	hp
Prepared by Pau Fisher Field Bata	
Sumitted by ATLANTIC TESTING	LAB. Data

FIELD LO Elevation To Total Overbu Elevation To Total Rock E Elevation Bo Total Depth Core Recover Soil Sample	OF EN NGLAND OF Dor P of Bor rden Dri p of Roc Orilled_ Office Dorin ed	Boring	BORIN 46 80 034 80 No. Boxe In. Did	M.S.L. Hemmer Wt. 140 Feet Hammer Drop 30 M.S.L. Casing Left 4 Feet Subserfees Water M.S.L. Obs. Well 2" Feet Drilled By CAN Mfg. Dec. Drill Tk amin. Inspected By: _A Classification By:	Diam. (Casing) 4° MANING E Boring Sterred Lo/12/85 Boring Completed 10/21/85 Detai Page BRIDGE & BOYER PACK MODATED (ME 55)
DEPTH	CORE/	SAMPLE PETTY	PER FT.	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
1.5 1.5 1.5 1.5 1.5 1.5	S-2	178 60% 178 60%	1-13- 20 4-5- 1	ADVONCE PORING BY 3" KOUCH BIT FOLIOUFE BY A" PLINER (ASING)	Brision (I. F. SLIL) Chief) Brision (I. F. SLIL) Brision (I. F. SLIL) Chief) Brision (I. F. SLIL) Chief Brision (I. F. SLIL)

Boring No. Page . Sile ABERJONA R. WUBURN, MOSS. FD-05-16 CORE/SAMPLE BLOWS DEPTH SAMPLING AND CORING CLASSIFICATION OF MATERIALS (SIZE TELL CORE OPERATIONS ٠. BULDERS ENCONTONO DE 50 Blows/ no Act ant SAND, and GRAVEL CUR 13/2 Copples encurated 6 30-22 Brown conf SAUD; and mfGRAU 17/8 30% 10 Level) 25-10 13/8 Wask sample 5-7 WASH SAMPLE 30-24 Grey conf SAND; and GRAVE (wet) 13/8 20% 19 NUNTROLL CORNES ENCOUNTER 6 31.0 7040.0' POLDER 4 WEEFS ENLOWING REU TO ACTO IN 9. 45075-10 13/8 NASH WASH SMACE 147.0 --11-23-17/8 26 came as s-9 50.0 l'ater isepthi: zi Frni 13/3 105 and of day (16-17-200) --9. YNU 1 (10/10/05) Gry MC SANI ; anoplace such 5-13 13/8 100, (wet) TR FM SAND W.D 21-40-6,000 as 5-13

D FORM 58A(Test)

Boring No ED-85-16

	SITE ABER	JONA R. N. MASS		Boring No. FD-65-16	Page 3
Ç	DEPTH	CORE/SAME	LE BLOWS	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIAL:
•	(E, 0)		14 - 22		
	w5-	5-15 13/8 52	19-32- 1920 36		GAME AS 5-13
•	70.0	5-16 1	. 38 35 35	- .	SAME AS 5-13
.	7,5	1-16	1.2	STRAT 10/21/85	COSS.E AT 72'
	75,0	5-17		•	Same As 5-13
	2	5-18	WASH	END OF EXPLORATION	Assumed Same As 5-13
				E SUL ON A TION	
				· •	
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and the same of th

	· Acco	. 0	,		ALLATION REP	ORT	511	
PROJECT	HBERJU	VAN M	here	6+11	DATE.	//	121/26	
			0	FFSET FROM		10	121/85	
				ENTER LINE: DEPTH		RISE	PIEZ NO.: F R PIPE	-D - 85-
PIEZ TY	PE: Z"# PSET IN	SLOTTE	2.01	0" OF PI SOIL		DIAM	: Z	
		SAND +	FM, GR	AVEL SAMPL		•	NG DIAM:	7"
	OF INSTALL	ATION:	" Rome	sa Fore	NED BY	4" [RIVEN O	CASI NO
TYPE OF FOR PIE	PROTECTIO Z:	N		" \$ P.O.			LOCK CAP	. :
GROUND	ELEV.:	46		ELEV. TOP OF RISER:	49.3	ELEV PIEZ		26
FILTER:	<u>#</u> Z	- SANO	FROM	ELEV:	-34	то	ELEV: - 2	29'
SEAL: 1		E SLURR	✓ FROM	ELEV:	29'		ELEV: -	9
				<u> </u>	ONTRACT OACA	V-33-85-	D-0011	
		AMBRICO			0.: n.o. =		REMAN:	SHER
DATE OF METHOD	<u>INSTALLAT</u> OF	ION: 10	121	185	DATE OF OBS	ERVATION	S: 10/2	2/85
TESTING	PIEZ.:	FACUIT	ve the	CAO TE	57			
TIME	ELAPSED TIME	DEPTH TO WATER	TIME	ELAPSED TIME	DEPTH TO WATER	TIME	ELAPSED TIME	DEPTH
	MINUTES	FEET		MINUTES	FEET		MINUTES	FEET
723		5.98	1732	4	5,98			· 1
728	0	.37	1736	8	:			i
	1 /A	5.89				-		
1729	/	5,95						1
17 30	2	5,77						
t				<u> </u>	•		<u> </u>	 -
KEMARKS	: 2'	SCAPLEN	USEO					
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OBSERVATION WELL INSTALLATION DETAIL

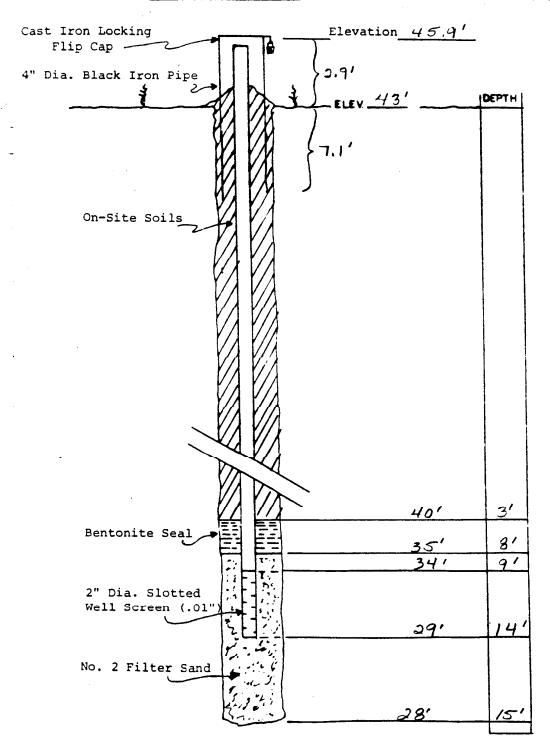
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Aberjona River, Wells G&H

Project: Woburn MA

DACW-33-85-D-0011 D.O.#0003

Well wa FD85- 30



Site WELLS ELY WAREN, MA	10. <u>D. O. # 3</u> Page 1 of <u>2</u> Pages
Site Wared, MA	
Hole No. <u>FD-85-30</u> Dien. (Casing) 4"	Boring Started 1/9/35
Co-ordinates: N SEE E DRAWING	Boring Completed 1/9/85
Orilled by CAMBRIDGE + BOYER	Report Submitted
Purpose of Exploration PREZOMETER	INSTALLATION
Elevation Top of Hole	Casing Laft in Place 107AL 10 Fee
Total Overburden Orilled 15 Feet	
Elevation Top of RockN.S.L.	
Elevation Bottom of Hole 28 M.S.L.	SEE FO-85-26 FOR SOIL LOG
Total Rock Brilled O Feet	
Total pepth of Hole	
Core Recovered	
Core RecoveredFt.: Dimin.	
Soil Sameles in. Dies No.	
Soil SmelesIn. DianRo.	Weter Table Deeth
Death Method of Brilling	Heex
o is 4" to Aug FK	Ground Water Back of Page
HUDAANT WATER USES DURING	
ALL DRILLING	Overteinten RecordPage
	Rock BrillingPage
Property PAUL FIGHER	
Sumitted by ATLANTIC TESTING	40
Maritim A Transfer of the Paris	

				PIEZ	OMETER INST	ALLATION REP	ORT				
ļ	PROJEC	T: ARRO	was Rui	h and	bougas.	MA DATE.		19/85			
į		211 /274	ONA RIV	0	FFSET FROM						
	LOCATION (STA): SEE CARWING CENTER LINE: PIEZ NO.: FD-85-30 DEPTH RISER PIPE										
	PIEZ T	YPE: 2" a	SLOTTER	2 .0.	0" OF PI		DIAM		"		
,	(SOIL	IP SET IN TYPE): N	IF SAND	(SP)	SOIL SAMPL	FD-85 E NO.: 55-		NG DIAM: 5	8"		
		OF INSTAL	LATION:	1"50	AUGER	,					
	FOR PI			Lone	Pos	VE	NT: \angle	JEH CAI	9		
	GROUND	ELEV.:	43'		ELEV. TOP OF RISER:	459'	ELEV PIEZ	TIP: 2°	7		
	FILTER	: #Z	SAND	FROM	ELEV:	28'	TO	ELEV: 3	5′		
	SEAL:	3/8 Per	ONITE	FROM	ELEV:	3 <i>5</i> ′	TO	ELEV: 4	0'		
	INSTAI	I FD RY	AMBRIOGA	- <u>+</u> /5		ONTRACT O.: \mathcal{D}, \mathcal{O} ,	≠ 3 F0	DEMAN.	s mere		
				1 .					, MARK		
	METHOD	F INSTALLA	TION: //	19/8	5	DATE OF OBS	ERVATION	S: 11/9	185		
		G PIEZ.:	FALLIN	16 //		5-3,					
)	TIME	ELAPSED TIME MINUTES	DEPTH: TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEFT	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET		
,	603		235						:		
	615		0			:			i		
		1/~	2,28		:	:					
,	1616	1	2,35								
	;		:		i				1		
	REMARK	(S: 5'	SCREEN		<u> </u>		<u> </u>				
		2 9	RISER	57	🛆						
			1/3/4	3/12/5	<u> </u>						
		-									
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	į						INS	PECTOR			



OBSERVATION WELL INSTALLATION DETAIL

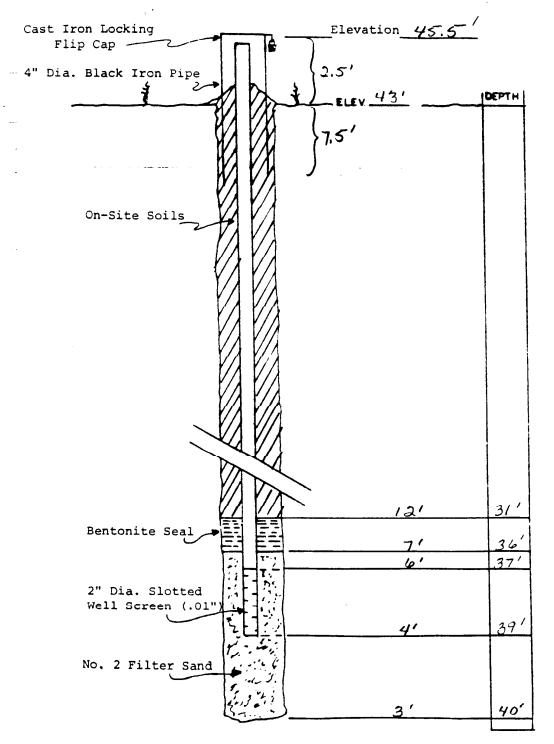
CIIONI: ARMY CORPS OF ENGINEERS, NED

Aberjona River, Wells G&H

Project: Woburn MA

DACW-33-85-D-001: D.O.#0003

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ARERINA PULL BROSET NO	DACN-33-85- D-0011
ABERIONA RIVER PROJECT NO Site MELLS GAM, MARUP MA	Page 1 of 2 Pages
Hole No. FD-85-31 Diam. (Casing) 4	Boring Started 11/9/35
Co-ordinates: N 555 E DRAWING	Boring Completed 11/9/85
Drilled by CAMBRIDGE + BOYER	Report Submitted
Purpose of Exploration PEZOMETER	METALLATION
12	
Elevation Top of Hole	Casing Left in Place TOTALIO Feel
	En ur zi -
Elevation Bottom of HoleM.3.L.	SEE FD-85-26 FOR SULLUL
Total Rock Drilled Feet	
Total pepth of Hole 40 Feet	
Core Recovered\$	
Core RecoveredFt.;Dianin.	
Soil SamelesIn. DianNo.	_
Soil SamplesIn. DiamNo.	We ter Table Dooth O.4/
Depth He thad of Brilling From To and Type of Bit Used	I FOCK
0 40 4" IN PUSER	Ground Nater teck of Page
HYDRANTHIST V: CO DURING	Boring Location SketchBock of Page
AL DRILLING	Overturden RecordPage
	Rock Brilling
	hø
Present to PAUL FISHER	
	46 364
Multidly ATLANTIL TESTIA	<u> </u>

			PIEZ	OMETER INST	ALLATION REI	PORT		
<u> </u>							- /	
PROJEC	T: ABERJU	NA R.	Wo A	van, MI	# DATE.	11/	19/85	
LOCATI	ON (STA):	SEE ORAN	0 1 20 0	FFSET FROM ENTER LINE:			PIEZ NO.: ∈	D-85-31
1		5201130		DEDTH		RISE	R PIPE ,,	<u> </u>
PIEZ T	IP SET IN	ne same		SOIL	F10-85	-26		○ ''
				· ·	E NO.: >5-	9 BURI	NG DIAM:	8
	F PROTECTIO	ATION: =			<u> </u>			
FOR PI	EZ:	#" \$ X	10'2	ono F	PPE VE	INT: \angle	OCK CAI	5
GROUND	ELEV.:	43'		ELEV. TOP OF RISER:	45.5'	ELEV PIEZ	TIP: 4	
FILTER	: #Z	SAND	FROM	ELEV:	3	TO	ELEV:	7′
SEAL:	3/8 Pec	TONITE	FROM	ELEV:	フ′	ТО	ELEV: /	
INSTAL	LED BY: 🤇	AMBRIOG	e + 1	12	ONTRACT O.: D. o.	# 3 FC	REMAN:	HEN
	F INSTALLAT	TION: //	19/8	15	DATE OF OBS	SERVATION	S: ///9	185
METHOD	OF G PIEZ.:	FALLING	Hean	TEST				
	ELAPSED	DEPTH. TO	PEAD	ELAPSED	DEPTH TO		ELAPSED	DEPTH TO
TIME	TIME MINUTES	WATER FEET	TIME	TIME MINUTES	WATER FEET	TIME	TIME MINUTES	WATER FEET
1605		210	1622	7	193		11110123	I LE I
16 19	0	.30	1623	4	2.06			
	<i>'</i> K	.75	1624	5	2.10	:		
1620	- 1	1.48						
1621	2	1.37		:				
REMARK	S: 2.5	STICK	م رن			<u>•</u>		<u></u>
		· · · · · · · · · · · · · · · · · · ·				-		

INSPECTOR



OBSERVATION WELL INSTALLATION DETAIL

ARMY CORPS OF ENGINEERS, NED

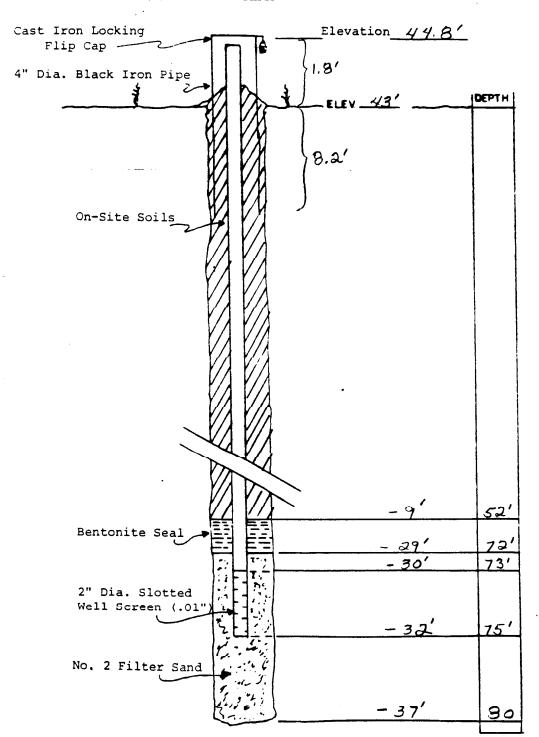
Aberjona River, Wells G&H

Project: Woburn MA

DACW-33-85-D-0011

Profest Me. D.O.#0003

Well Ma FD85-26



ASERJONA RUER PROJECT I	DACW-33-85-D-0011 NO. <u>D. O. 3</u> Page 1 of <u>5</u> Pages
Hole No. FD-85-26 Dism. (Casing) 4 Co-ordinates: N SEE E ORGANING	Boring Started 19/31/45
Drilled by CAMBRIDGE - BOYER	Report Submitted
Purpose of Exploration Sour SAMPLIN	16 + PREDMETER INSTALLATION
Elevetian Top of Hole 43' M.S.L.	Casing Left in Place TOTAL 10 Fact
Total Overburden Drilled 80 Feet	
Elevation Top of RockM.S.L.	
Elevation Bottom of Hole M.S.L.	
Total Rock Brilled Feet	
Total Depth of Hole	
Core Recovered	
Core RecoveredFt.:Di min.	
Soil Samples	Water Table Deeth 0.3'
Queth Mathad of Brilling	
Death Method of Drilling From To and Type of Bit Used	18003
0 80 9" DRIVEN CASING, WASH	Ground Water Sack of Page
when 3 % down 5,-	Boring Location SketchBock of Page
HYDRANT WATER USED	Overturden Record
DURING ALL DRIVENCE	Rock DrillingPage
	^p
Preserved by FAUL FIGHER	
MINISTER DE ATLANTIC TESTING	LAB

FIELD LC Elevation To Total Overbu Elevation To Total Rock Elevation B Total Depth Core Recover Soil Sample	p of Boring priden Drille p of Rock Drilled ottom of Boring red red	VISION ST BORIN 43 d 32 oring 5 No. Box	Boring No. FD-85-20esig. 20 G Co-ordinates: N Suck. M.S.L. Hemmer Wt. 140 Feet Hammer Drop 32 M.S.L. Casing Left 4" Feet Bubsurfees Water 7 M.S.L. Obs. Well 2" Feet Drilled By 400 Mfg. Dec. Drill 780 am. 17No. Clessification By:	Boring Started 10 31 85
DEPTH	CORE/SAI	MPLE BLOWS ER FT.	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIA
10 - 11.6 - 165 - 165 - 17.5	55-3 H 55-4 H 55-5 H	10 25 1	roller wash to sample a depen	mf sand, waan's suit; wat an prime chance. Tan mf Sand, chan, to tan mf Sand, chan, to
GENERAL	- REMARI	(Sı		

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NED FORM 58 (Test)

Boring No. Fh-85-16

S					Wei	S G+H Boring No.	Page Z	
	· Woe	,				F10	-85-26 01 3	!
-	DEPTH	1			BLOWB PERFT CORE REG'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS	İ
=								!
	26 J	55-6	1%	10	3	Pounding in 4' sabus	l	
						rolar wash	isostaminains in hotel	
	31.5	55 -7	,,	100	333)	SUMMON SOULS (55-3)	:
					•	/		
	35_				`	` \		:,
	35 36.5	S5-8	.,	75	323		Gradal soils (55-4.5)	_
				.		casing to 40', not		
- -	10	-			· l	wostsed		
	45	<u>s</u> -9	"	∞	وړه	fourding in 4" cacino	50mila sals (55-3)	
						5' crayarrants - 37/3		
						houser wosh to sampling depth		
	46.5	55-10	:/	100	2, ,		Semeral (vels 1)	
		.				•		že,
	50-				479			261
•	51.5	25-11	1	40	79		FMC graver, WHILE CONF SONA	•
						END_11/1/55		
		5-12	11	25	910	31ART 11/5/85	SAME AS 35-11	-
	1 = 1				.			
	b = 1					Ena 11/5/85		-
	61.5	5-13	"	25 4	P _{12,1}	START 11/8/05	SAME AS 53-11	•
	65		_	1.				
	66.5	5-14	7 2	0	3,		SAME A3 55-11	
-								

58A(Test)

Boring No FD-85-26

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311	F /4	SERJ	ONF	- /7	-		Round M				Page 3	:
	<u>l</u>	60	VRN	r	14		,=,	0-9	35 - 2	26	01 3	<u> </u>
	DEPTH	COR NQ	SIZE	MPLE PEI DEPTH CO RANGE RE	Āε		NG AND CO				MATER IALS	
	70.0 71.5	75-15	1%	10 10	98				FC GRAVEL,	LITE FAC	EL FRALTION 263' SANO, TRACE	
	75.0	5 3-16 55-17	"	10 100,	`	ACCHACE	: Wirn 376		FAC SAN	SOMECONO GY/BA	BEC, LITTLE	
-	milmilm	•					E Exac	CATION				
	Lunlul											24.
	utuulu								•			•
	luuluu									·		

TIM 58A(Test)

Boring No. FD-85-26

			PIEZ	OMETER INST	ALLATION REP	ORT_		
PROJECT	I: ABERIO	NA R	WOBUR	NA	DATE.	///	0/85	
LOCATIO	ON (STA):	SEE ORAN	0 2 2411	FFSET FROM ENTER LINE:			PIEZ NO.:A)-85-ZC
PIEZ TY	YPE: 2"			// DEPTH OF PI SOIL		RISE DIAM	R PIPE	
PIEZ TI	IP SET IN TYPE):	env. Some C	Some 2	SOIL SAMPL میکرورون	E NO.: 55-	/ G BORI	NG DIAM:	4"
į		•	41		nc + 3 %			- 1
TYPE OF	FPROTECTIO	N .	,	ELEV. TOP			OCK CA	+0
GROUND	ELEV.:	43'		ELEV. TOP OF RISER:	44.8	ELEV	TIP: - 3	
FILTER	: #Z 5	TAND	FROM	ELEV:	-37	TO	ELEV: —	29
SEAL:	BENTONT	R SLUAR	FROM T	ELEV:	- 29	TO	ELEV: —	9
INSTAL	LED BY:	MARINE	+ 60	yen N	ONTRACT	3 F0	REMAN:	HAR
	F INSTALLAT	TION: /	1/8	105	DATE OF OBS	ERVATION	s: /1/9	185
METHOD TESTIN	G PIEZ.:	FALL.	NG 1		TEST			
TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET
1601		210						:
1612	0	.97			;			
	1/2	2,00						1

REMARKS:	1.8 RISER STICKUP	
	- 2 ft screen (not longer because of fill)	

2.10

TITHER



OBSERVATION WELL INSTALLATION DETAIL

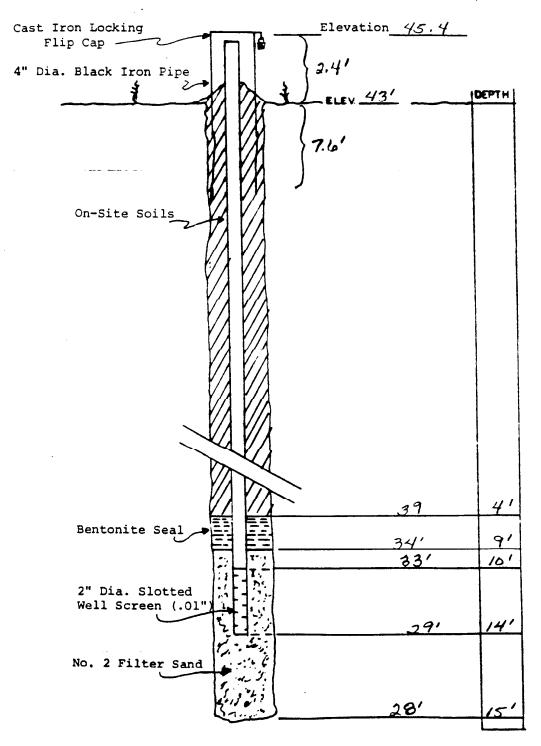
ARMY CORPS OF ENGINEERS, NED

Aberjona River, Wells G&H

Project: Woburn MA

DACW-33-85-D-0011 D.O.#0003

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14	SERJONA RIVER PROJECT	NO. DO =3	
51te	VELLE G+H, WOWAN, MA	. Page 1 of 2 Pages	
Hole No.	FD-85-2 Dim. (Casing) 4"	Boring Started 10/2	9/05
Co-ordin	ates: N SEE E DRAWING	Boring Completed 10/29	195
Orilled	DAVIS THAWKINS	Report Submitted	
Purpose	of Exploration	INSTALLATION	
	Top of Hole 43 N.S.L.	Casing Laft in Place	TL 10' FO
Elevation Elevation	Top of Rock	Sec FD-85-20 Fo	R Soil Loc
Total Des	th of hole		
Core Reco	vered Ft.; Di m in. I oo No NO in. Di m No.		
	lesIn. Sign Re.	Weter Table Dooth 0.251	,
Deeth	Method of Brilling	1 8 9 GX	
From To		Ground Water	Sect of Para
	HYDRANT WATER USED DURING	Boring Location Statch	
	ALL DRILLING	Overterden Record	
		Rock Brilling	
-			^ %p
			Pops
<u> </u>	Preserve to FAUL FISHER Plate Sale		
)	SINITED IN ALANTIC TESTING	4.1.5	24

<u> </u>			PIEZ	OMETER INST	ALLATION REP	ORT		
PROJECT	: ABRY	ONAR	6/0	BURN	DATE.	10/	27/85	
	ON (STA):	- 1	0	FFSET FROM ENTER LINE:			PIEZ NO.: F	D-85-21
PIEZ T	YPE: 2"	\$ 5cott	En d	DEPTH OIO OF PI	EZ: / 4	DIAM	R PIPE : 4"	
	IP SET IN TYPE): ८.	me Sano		SOIL SAMPL	FO-85-Z E NO.: ≤-7		NG DIAM: E	3 "
	OF INSTAL	LATION: 4	"10	AUGER)			
FOR PI	F PROTECTION FROM PROTECTION FOR PRO		CON		VEVE	NT: 1	OCK CAR	a
GROUND	ELEV.:	43'		ELEV. TOP OF RISER:	45.4	PIEZ	TIP: 29	'
FILTER	====	SANO	FROM	ELEV:	28'	ТО	ELEV: 3	<u> </u>
SEAL:	3/A PELT	ONTE	FROM	ELEV:	34'			9'
INSTAL	LED BY: Z	DAVIS T	HAW	tins 1	ONTRACT DAG		REMAN:	MER
	F INSTALLA	TION: / ø	1291	85	DATE OF OBS	ERVATION	S: 10/30	185
METHOD TESTIN	G PIEZ.: /	FALLING	- He		5 7		, ,	I DEDIU TO
TIME	ELAPSED TIME MINUTES	DEPTH, TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET
905		2,65						
7915	0	0					<u> </u>	
	1/2	1 2.61						
0916		2.63						
0917	て	2.65		• • • • • • • • • • • • • • • • • • • •		1		:
REMARK	s: - 2	- 2'	Jerk	ENS USE	eo FOR I	PIEZO		· · · · · · · · · · · · · · · · · · ·
:	- 2,4	A RISER	577	CKUP				
								
-				<u> </u>				
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INSPECTOR



OBSERVATION WELL INSTALLATION DETAIL

ARMY CORPS OF ENGINEERS, NED

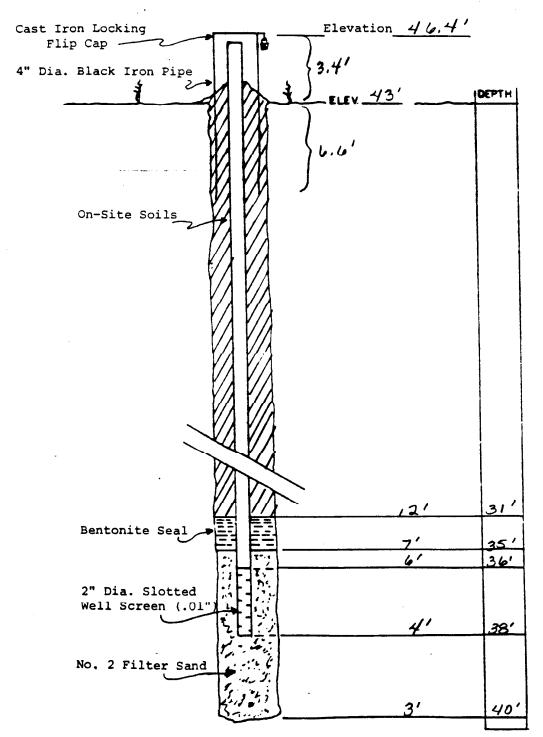
Aberjona River, Wells G&H

Project: Woburn MA

DACW-33-85-D-0011 D.O.#0003

Well me FD85- 22

Cluster No. S-96



CORPS OF ENGINEERS, U. S. ARMY NEW ENGLAND DIVISION FOUNDATION AND MATERIALS BRANCH FIELD LOG OF TEST BORING

Site Were Et it, Weren MA	DACN-33-85-D-0011). D.0, =3 Page 1 of 2 Pages
Hole No. FD-85-22 Diam. (Casing) 4" Co-ordinates: N SEE E DRAWING	Boring Started $\frac{10/29/85}{800000000000000000000000000000000000$
Drilled by Davis & HANKING	Report Submitted
Purpose of Exploration	INSTALATION
Elevation Top of Holo <u>43</u> M.S.L.	Casing Left in Place / OTAL 10 Fee
Total Overburden Drilled	SEC FO-85-21 FOR SUIL LOG
Core Recovered	Weter Table Dooth
Dooth Hothod of Brilling From To and Type of Bit Used 0 40 4"10 AUGER HADRANT WATER USED DERING ALL ORILLING	Bround Water Back of Page Boring Location Skatch Back of Page Overtarden Record Page Reck Brilling Page
Preserved by PAUL FISHER Floid Bala	
ANDITION & ATLANTIC TESTING	LAB

*** *** *** *** ***

PIEZOMETER	INSTALLATION	REPORT
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i		IONA RI	U	HOBURN FFSET FROM	DATE	10/		
LOCATIO	N (STA):	SEE DRA	WING C	ENTER LINE:		DICE	PIEZ NO.: F	D-85-22
PIEZ TY	PF: 2"9	5 Scott	-80 .6	DEPTH	EZ: 39	DIAM	R PIPE =	<i>"</i>
PIEZ TI	P SET IN	Squis	_	2015	<i>FD-8</i> 3 E NO.: <i>5</i> 5	-20	NG DIAM:	3"
METHOD	OF INSTALL	ATION:	1"70	AUGER				
TYPE OF	PROTECTIO	N						<u> </u>
FOR PIE	Z:/-	AX,		. حررگرر ELEV. TOP		NT: <	OUR CA	./
GROUND	ELEV.:	43		OF RISER:	46.4	PIEZ	TIP:	
FILTER:	# 2	SAND	FROM	ELEV:	3'	TO	ELEV:	z ′
SEAL: 3	DEL TO	NITE	FROM	ELEV:	7'	TO		<u>z</u>
				C	ONTRACI ONE		- D-001	
INSTALL	ED BY: 1	JAUIS Y	MAN	IKINS N	0.: D.o. =	-3 FU	REMAN: 75	HER
	INSTALLAT	ION: 10	1291	85	DATE OF OBS	ERVATION	s: 10/30	185
METHOD	OF S PIEZ.:	FALL	NG /	HEAD TA			,	,
	ELAPSED	DEPTH TO		ELAPSED	DEPTH TO		ELAPSED	DEPTH
)TIME	TIME MINUTES	WATER FEET	TIME	TIME MINUTES	WATER FEET	TIME	TIME MINUTES	WATER FEET
0904		3.58	0913	ے ۔	3.58			
07/0	0	0						
<u></u>	16	2.97						
0911	/	3.44			_	:		
09/2	2.	3.56	1					
REMARKS		3.4′	0			·		
				STICKUE				
· · · · · · · · · · · · · · · · · · ·	Z' SCKE	EN USE						
		· 						
						· · · · · · · · · · · · · · · · · · ·		
						<u>.</u>	·	

INSPECTOR



DACW-33-85-D-0011

OBSERVATION WELL INSTALLATION DETAIL

ARMY CORPS OF ENGINEERS, NED

Project We. D.O.#0003

Aberjona River, Wells G&H

Well as FD85- 20

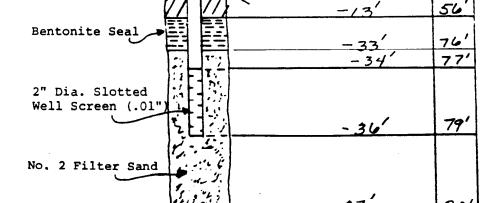
Cluster No. S- 96

Cast Iron Locking
Flip Cap

4" Dia. Black Iron Pipe

On-Site Soils

On-Site Soils



FD-85-20

CORPS OF ENGINEERS, U. S. ARMY NEW ENGLAND DIVISION FOUNDATION AND MATERIALS BRANCH FIELD LOG OF TEST BORING

Site Aberjane Diver, Wohurn MA	Page 1 of 5 Pages
Hole No. <u>FD-85-20</u> Diam. (Casing) <u>4"</u>	Boring Started <u>24 Oct 85</u>
Co-ordinates: N seeskolch E	Boring Completed 10/28/95
Orilled by Davis and Hawkins (ATL)	Report Submitted
monitor contaminant plume of EP	presented site
Elevation Top of Hole 43' Total Overburden Drilled :80' Feet Elevation Top of Rock M.S.L. Elevation Bottom of Hole -37 M.S.L. Total Rock Drilled O Feet	Casing Left in Place 10 Feet
Total Depth of Hole	Water Table Depth -0.06'
Beeth Method of Brilling From To and Type of Bit Used O' 80.04" chiven casing weekednest using 376" Theome roller bit HYDRANT WATER 1/2 ED OVRING Are DAILLING	Bround Water Back of Page _/ Boring Location Sketch Page Overtures Record Page Rock Brilling Page Page Page Page
Present to TA Beddoe Flore to the State Sumitted to Atlantic Testing Lab	is, 1+d.

WED PEC 43 121

NEW E	OF ENGIN	VISION		-	Diem. (Cosing)
		ST BORING			
Elevation To	p of Boring	43			Soring Startes <u>24 9c+</u>
		<u> </u>	M.S.L. Cosing	1 0 10 <u> </u>	Boring Completed 10/2
Elevation To Total Rock I				erfoce Water E	
Elevation Bo	ottom of Bo	ring = 37	4.8.L. Obs. V	1011 <u>Z"</u>	
		80			us & HANSINS
		% No. Bozes			D FILLED
		Fi Dian In. Dian		•	D. FISHER D. FISHER
		in. Die i			T. BEDOOL
			,	itrication by _	
DEPTH	CORE/SAN	APLE BLOWS PER FT. CORE	SAMPLING AND CO	RING	CLASSIFICATION OF MATE
0.5	NO. SIZE	ASSET RECAY	OPERATIONS	2/2/2	
1.5	S-1 1%	work us	driven casing wa	roller bit	peart, wet, loose OM-OL no recovery in split spear molecules sample as by chapt
					- change @ 201
=					
50	:				Obel with our Shirms of
	Sa 13/8	80% 59 11 ·			grey with ron staining con wet; loose (3/)
-					THE CONTOUNING
] .				
10.0					
-	5-3 1%	100% 3 4 4			similer soils - (Sp)
11.5	3 / //8	+			
	1 .				·
]				
12.0	54 1%	651			SAME AS 5-3
10.5	77 1/8				trace conteminant
	‡				
	3				
29.9	1	100 11			Similar soils CSP)
21.5	5-5 1%	100 1			Charamaters sout
	3				
	d	1 1 1			
GENERAL	REMARK	 S:			1
conton	m i 9 sus	peded 1,2 th	ens dichloroothy ien	4	
l				•	1

NED FORM 7158(Test)

Boring No. FD-85-20

Sile		- ;-	13.	6437	Boring No. =D-85-20	Pageaf
DEPTH	COR	E/SA	MPLE DEPTH	BLOWS PERFT CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIAL
	55 -6	13	eac.	235		+ MIR CONTACTION
30.0				->e0		Similar Soils (SA)
31.6	55- 7	1%	100%		- .	36(3)
35.0	443	13/9	2004	127/2		Similar Sol Is (3P)
	-					-change @ 39'
400 — 41.5 —	55 9	138	100%	3 5 5		Similar soils (SP)
150	:					- change & 43'
762	55-10	170	100%	³ 55	·	similar soils (SD) glay again
580		3,1		3 ,	· change	similar soils (SP) to 51.0
57.6 =	SS-11	178	50%	<u> </u>	end of explorations 10/24/35 esize weter level @ surface at start of explorations 10/05/86	PRAVEL, gray, moist, loase (SW)
55.9 55.5	55-IZ	13%	50%	3, 3,		grey o'mf SAND, and fines the the to
						-denge @ 59.5
	55-1 3	13/6	402	109	,	group of AND, trace And BAVEL, there sict, unet looks (SD)
	45-H	, 5/2	50%	39 ₁₅₇	chance	similar soils to late !
67.5	ח מ	1 /3	~ VIO		266.70	the brown of sand, loses maint 170 talso

D. FORM 58A(Test)

Boring No. FD-85-20

Sile A SOLION	ن√ر د	١٥٢	· , "入	ين ج ن (rr NA	Boring N FD	10. -85-20			Page 3
DEPTH			MPLE	BLOWS PERFT	SAMPL	NG AND CO		CLASSIFIC	ATION OF	MATERIAL
62 5			REC	MEG V						
70.0	3. · ē	183	40G	76 B 17		Ento	Waelse	brown cated there SILT, wat somewh	SAVO, son iton sta	MEDYONES
						STARY	10/25/85 10/28/85	735 Posie		
75.0	55-16		0%	. Congre	10/454	SAMPL	=	CMF Samo	+ GRAVI	e, ume
765				codes			-	COBLE, C	R,	
800					Enn Op	Explus	ATION			
							•			
							•			
	·									
			7							
									.*	

D.FORM 58A(Test)

Boring No. FDr 85-20

			PIEZO	METER INSTA	LLATION REPO	ORT		
PROJECT:	Abor ma	12.00	Woo	VAN, MA	DATE.	10/24/	45-	
		e e Woodah			-		PIEZ NO.: F	D-85-20
					z: 79'	RISE	R PIPE _	
PIEZ TI	SET IN	<u> </u>	,	OF PIE	NO.: 5 5 -/		•	1"
;								
METHOD (DRIVEN CA	
FOR PIE	<u>Z:</u>	10'Long	X A	PRE ELEV. TOP	VE	NT: Z	OCK CAP	
GROUND I	ELEV.: 4	4,	1	OF RISER:	46	PIEZ	TIP: - 3	36_
FILTER:	#2 5	ANO	FROM	ELEV:	<u> -37 '</u>	TO	ELEV: -	33 [′]
SEAL: Ź	BENTONITE	E SLURRY	FROM	ELEV: -	- 33		ELEV: -/	3
INSTALL	ED BY: Na	wise How	line 11		ONTRACT CACU		REMAN: FSSA	HEN.
	INSTALLAT		1	/ 85	DATE OF OBS			1/85
METHOD	ΩE	ALLING			0		70/30	700
	ELAPSED	DEPTH TO		ELAPSED	DEPTH TO		ELAPSED	DEPTH
TIME	TIME MINUTES	WATER FEET	TIME	TIME MINUTES	WATER FEET	TIME	TIME MINUTES	WATE
906		294	0922	3	2.94			:
7919	Q	0			:			•
· ///	ル	2.84				<u> </u>		•
	,			<u> </u>		1		1
0920		2,90	<u> </u>	<u>:</u>				
0721		2.93		<u> </u>	<u> </u>		<u> </u>	<u> </u>
		SCREEN U						
1	→ 3.0	RISER :	57165	40				
							•	•

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OBSERVATION WELL INSTALLATION DETAIL

ARMY CORPS OF ENGINEERS, NED

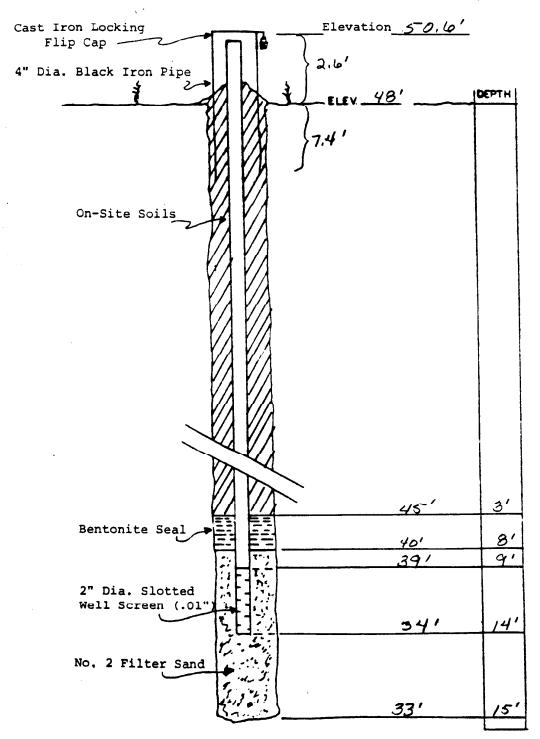
Aberjona River, Wells G&H

Project: Woburn MA

DACW-33-85-D-0011 D.O.#0003

Well We. FD85- 34

Cluster No. S-97



			PIEZ	OMETER INST	ALLATION REP	ORT		
PROJECT	: ARER	uns K	2 6/0	BURN M	DATE.	21/	11/85	
OCATIO			0	FFSET FROM ENTER LINE:			PIEZ NO.: F	D-85-34
				DEPTH		RISE	R PIPE	"
PIEZ TI	IP SET IN	LONG SLOT		SOIL	FO-85-	32		8"
				_	E NO.: 55-	4 DUNI	NG DIAM.	
TYPE OF	OF INSTALL PROTECTION	M		Asses				
FOR PIE	Z: /	4 × /	0'20	ELEV. TOP	EVE	NT: Z	OCX CA	
SROUND	ELEV.:	48		OF RISER:	50.6	PIEZ	TIP: 3	7
FILTER:	72	SAND	FROM	ELEV: 3	3'	то	ELEV: 4	<u> </u>
SEAL:	3/2 PM	TONITE	FROM	ELEV:	10'	TO	ELEV: 4	5'
INSTALL	ED BY:	IMBRIDG	7	/3	ONTRACT O.: かみ #	3 F0	REMAN:	SHER
	INSTALLAT		11/8		DATE OF OBS	ERVATION	is: 11/11	195
METHOD		Fau, No		OD TEST			",	
TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET
		7.00	1513	3	7.00			:
15	0	.91		!				·
	1/2	658		* 1				†
516	1	592				-		
1517	2	6.78		:				:
		. 0. 15	1	.	•		<u>* · · · · · · · · · · · · · · · · · · ·</u>	
REMARK								
	2.6	RISER	י אדוך נ	YUR				
								
	·							
							•	
-								

F13145



DBSERVATION WELL INSTALLATION DETAIL

DACW-33-85-D-0011 ARMY CORPS OF ENGINEERS, NED D.O.#0003 Aberjona River, Wells G&H FD85- 33 / 0 | 0 6 1: Woburn MA Cluster No. S- 97 Cast Iron Locking Elevation 5/./ Flip Cap -4" Dia. Black Iron Pipe DEPTH On-Site Soils Bentonite Seal 2" Dia. Slotted Well Screen (.01" No. 2 Filter Sand

CLUSTER 5-97

FD-85-33

CORPS OF ENGINEERS, U. S. ARMY NEW ENGLAND DIVISION FOUNDATION AND MATERIALS BRANCH FIELD LOG OF TEST BORING

1 1	THE STATE
SITE WELLS 5+H, WOBURN MA	DACN-33-85-D-0011 NOD.O. #3
	Page 1 of <u>1</u> Pages
Hole No. FD-85-33 Diam. (Casing)	Boring Started 11/11/85
Co-ordinates: N SEE E CHANING	Baring Campleted 11/11/85
Orilled by CAMBRIDGE + BOYER	Report Submitted
Purpose of Exploration	NO PIEZOMBIER INSTALLATION
Elevation Top of Hole 48 N.S.L.	Casing Laft in Place TOTAL 10
Total Overburden Orilled :26.5 Feet	
Elevation Top of Rock	Se There as a
Elevation Bottom of Hele 21, 5 N.S.L.	SE FO-85-32 FOR TOTAL SOIL
Total Rock Brilled Feet	
Total Booth of Hole	
Care Recovered	
core RecoveredFt.;Dianin.	
doil SamplesIn. Diam No.	201/
	Water Table Dee th 3.21
Gooth Mothod of Brilling From To and Type of Sit Used	1963
0 265 4"IO - 8"00 Avers	Bround Water Back of Page
HYDROAT WATER USED DRIVE	Boring Location SketchBock of Page
ALL DRIVING	Overtainten RecordPage
	Rock BrillingPage _
	1he
Property Park France	
Provered by Area From LA	Gr Ma

	Site	ABO						[6	Boring No.	- 35	 33	Page of _	2
		DEPTH	BUR) COR	E/SA	MPLE	SLOWS PERFT	1		ATIONS		CLASSIFICATI		
		25.0	55.2	唐	Bec 201	245	Evo	ON	EXPLORAT	7eV	SANOT GRI SAM & As	WBL TR. SA 55-1	-7
	-		•			•	·	•	• .				
(* j) [1						•	·				

D. FORM 58A(Test)

Boring No. FD-85-33

the state of the s

U.S. CORPS OF E NEW ENGLAN FIELD LOG OF Elevation Top of Botton Overburden De Elevation Top of Rotton Total Rock Drilled.	TEST BORING AS COLUMN AS C	Boring No.FD-85-33 Desig. Co-ordinates: N_SEE	Boring Completed 11/11/85
Total Depth of Boricovered Core Recovered Soil Samples Soil Samples		as Mfg. Dec. Dri II	PAUL FISHER CLASSIFICATION OF MATERIALS
5	13/6 307, 1737,4	4"IOX8" OD AUGER	EMC SAND & PC BRAVEL TR SILT, TAN 4 BR

NED FORM 58 (Test)

ţ

Boring No. ED-85-33

	PIEZOMETER INSTALLATION REPORT									
	PROJEC	T: ABERIX	NA P.	WOBUR	r, MA	DATE.	11/	11/85		
	1			U	FFSET FROM ENTER LINE:		······································	PIEZ NO +F	D-85-33	
	-				DEPTH O10" OF PI		, RISE	R PIPE	1	
	PIEZ T	TIP SET IN			SOIL				9"	
						E NO.:55-2		NG DIAM: 2	<u> </u>	
	TYPE C	OF PROTECTION	ON			D AUGE				
	FOR PI	EZ: 4	" X X	OLON	ELEV. TOP	E VE	NT: ∠ ELEV	OCK CA		
	GROUNE	ELEV.:	48		OF RISER:	51.1'	PIEZ	TIP: Z	3′	
-	FILTER	1: #2	SAND	FROM	ELEV: Z	1.5	T0	ELEV: Z	6'	
	SEAL:	3/8 Per	TUNITA	FROM		26'	TO	ELEV: ろ	/ '	
	INSTAL	LED BY:	AMBRID	me p	Bayer N	ONTRACT O.: <i>D.O.</i> J	≠ 3 F0	REMAN:	HER	
		F INSTALLAT		111/8	•	DATE OF OBS		,	1/85	
	METHOE	OF IG PIEZ.:			AD TES		ERVATION	· ///	705	
	TIME	ELAPSED TIME MINUTES	DEPTH :TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	TIME	ELAPSED TIME MINUTES	DEPTH TO WATER FEET	
			6.31	1508	3	621			1	
	1505	0	9	1507	4	6.27			,	
		12	413	150	5	6.29			t i	
	1506	,	537	1512	7	6.31		7 · · · · · · · · · · · · · · · · · · ·	t :	
/	507	7.	6.10						:	
	REMARK	ςς:							<u> </u>	
			RISER	5	~					
			KORK	STICK						
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)					_	_			

T3HER INSPECTOR



OBSERVATION WELL INSTALLATION DETAIL

ARMY CORPS OF ENGINEERS, NED

Aberjona River, Wells G&H

FD85- 32

● € 8: Woburn MA Cluster No. S- 97 Elevation 50.8 Cast Iron Locking Flip Cap -2.8' 4" Dia. Black Iron Pipe DEPTH 7.2' On-Site Soils Bentonite Seal Rubber Seal -2" Dia. Slotted Well Screen (.01" 43.5 Rock

CORPS OF ENGINEERS, U. S. ARMY NEW ENGLAND DIVISION FOUNDATION AND MATERIALS BRANCH FIELD LOG OF TEST BORING

ABERJONA RIVER, PROJECT SITE WELLS STH, WOBURN, MA	DACW-33-35-D-0011 NO. <u>D.O. #3</u> Page 1 of <u>4</u> Pages
Hole No. <u>FO-85-32</u> Diam. (Casing) 4"	
Co-ordinates: N SEE E DAAWING	Boring Completed /////85
Orilled by CAMBRIDGE + BOYER	Report Submitted
Purpose of Exploration	NO + PREZOMETER WSTALLATION
Elevation Top of Hole 4B M.S.L.	Casing Left in Place 7070 10 Fee
Total Overburden Drilled 33.5 Feet	
Elevation Top of Rock 14-5 M.S.L.	
Elevation Sotton of Hole 4 M.S.L.	
Total Rock Brilled 10.5 Feet Total Beeth of Hole 44 Feet	
Core Recovered	
Core RecoveredFt.;Dienin.	
Soil Samples 13/5 In. Diam. 8 No.	
Soil SamplesIn. Dign No.	Weter Table Deeth 3.10
Depth Method of Drilling From To and Type of Bit Used	1 SHEEK
0 33,5 4"IOX A"OD AVSER	Ground Water Back of Page
HIDRANT WATER USED DURIN	
ALL DRILLING	Overtunden RecordPage
335 44. 7" IO CORE BARREL	Reck Brilling
Preserved by PAUL FISHER Plaid Blue Substituted by ATLANTIC TESTING	s Lan

U.S. ARMY CORPS OF ENGINEERS NEW ENGLAND DIVISION FIELD LOG OF TEST BOR	Boring No. <u>FD-85-32</u> Desig32	Boring No.FD-85-32 Desig. 32 Diam. (Cosing) 4 Co-ordinates: N SEL DANING E			
Elevation Top of Boring Total Overburden Orilled Elevation Top of Rock Total Rock Drilled	Hammer Wt. 140 3.5 Feet Hammer Drop 3 4.5 M.S.L. Casing Left 4 Do.5 Feet Subserface Water M.S.L. Obs. Well 2" Drilled By Casing Left 1 Draws 1 Diam. 2 in. Classification By:	Boring Completed 1/1//33			
DEPTH CORE/SAMPLE BLOW PER F	OPERATIONS	CLASSIFICATION OF MATERIALS			
5.0 - : /3 Rec 22.	5,2	EM SAND, SINE TOD SOIL, POST MATTER BY THE TAN CONTEMINANTS NOTED ST NUS THE SAND, TAN (SA) CONTAMINANTS SANDENN AME SAND, BY TAN (SA) TAN + BY TA CORDUB CONTAMINANTS SAME AS SS-3 'LONG AMINANTS			
GENERAL REMARKS:	5 20 V	SAINE AS SS-3 CONTAMINANTS			

NED FORM 58 (Test)

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Boring No. <u>FD-85-32</u>

Sile	ACE	R 100	//1	R		Boring No.	Page Z
	ما الما				7	FO-35-	32 01 - 2
0	EPTH	COR	E/SAI	MPLE	BLOWS OF R FT	SAMPLING AND CORING	
	25.0	NQ	SIZE		CORT	OPERATIONS	CLASSIFICATION OF MATERIALS
	265	55-6	1%	Rec 452	15 45,00	A"IO fuger	SAME AS 55-3 Co-AMINANTS
				7 - 7			BASIALE CHAME 223°
						/	
	30.00 -	557	"	30%	40-124		GRAVELLY FALL SAND, LITTLE SILT, CONTAMINANTS
	_	55.8				1	WHSH SAMPLE, SAND, SILT +
	33.5 34.0	23.0	WA	545	HINDLE	100 0= BEOROUR	ROLK CUTTINGS
	_=				430	NX (25/400 × 2° IO) GRE	GRANITE ROLK (RQD =)
	· =		z"			BARREL (5' LONG)	28"/60"). NOTED 3" VOID @ 37.5".
				}			
	39.0 ⁻	<u>.</u>					1 20 /0
			z		64"		CONT. BEDROCK (ROD 3) 22"/60") NOTED 3" VOIOS
					40		40'
	44.0	1	l			- 20'	1
	77.5		<u> </u>	├		ENO UE EXPLORATION	
			-			ENO DE EXPLORATION	
			:			ENO UE EXPLORATION	
			•			ENO UE EXPLORATION	
						ENO UE EXPLORATION	,
						ENO UE EXPLORATION	
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						ENO UE EXPLORATION	
						ENO UE EXPLORATION	

			PIEZ	OMETER INST	ALLATION REP	ORT			
PROJ	ECT: AGERS	ONA P.	NoBU	an	DATE.	11/	1/85		
	TION (STA):	_	01	FFSE1 FROM		_	PIEZ NO.: F	D-85-32	
	TYPE: 2"9			DEPTH		FISER DIAM:	PIPE	, //	
PIEZ	TIP SET IN	_		SOIL	E NO.: Come			7"	
	OD OF INSTALL						_	ROEL	
TYPE	OF PROTECTIO			LONG F.	\sim		CCK CA		
	IND ELEV.:	ELEV PIEZ		4.5					
	1/	43'	FROM	OF RISER:	50.8	TO 8			
FILT					5 T 11	_		.5	
	: 3/9 FELT	•		C	ONTRACT			<u>- </u>	
	ALLED BY:			/	0.: D.a,		,	HER	
METH	OF INSTALLAT	rion: //	///	85 , ,	DATE OF OBS	ERVATION:	: ////	/85	
TEST	ING PIEZ.: ELAPSED	I DEPTH: TO	16 /	ELAPSED	DEPTH TO		ELAPSED	DEPTH TO	
) TIM		WATER FEET	TIME	TIME MINUTES	WATER FEET	TIME	TIME MINUTES	WATER FEET	
		5.90	1501	10	2.39	1942	4HAS 5 MIN	5.69	
145	1 0	0	1513	22	4,44	0642	15HR 51mm	5.62	
145	2 /	12	15 25	34	5.13	Possi	BLE PAIN	CHARGE	
45	3 2	· .3Z	1551	60	5.61				
145	6 5	1.75	1651	120	5.74			· ;	
REM	ARKS: 5	(+Z'	SCRE	En/ 11	V ROUK				
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SECTION 9

OTHER RECORDS TAKEN

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Sustaining Member-N.Y.S. Society of Professional Engineers

September 27, 1985

Box 29 Canton, N.Y. 13617 (315) 386-4578

> Box 356 Cicero, N.Y. 13039 (315) 699-5281

U.S. Army Corps of Engineers 424 Trapelo Road Waltham, Mass. 02254-9149

Attn: James Blair

Building 117 South

Re: Woburn, Mass.

ATL Project No. CD002-9-85 Delivery Order No. 0003

Gentlemen:

Mechanical analyses were performed on samples of Type No. 2, 3 and 4 silica sand at our laboratory. Test results are as follows:

PERCENT PASSING

Sieve Size	:	Type No. 2	Type	Type No. 4
1/4" (0.25")		100	100	100
#10 (0.787")		100	100	99
#20 (.0331")		90	55	11
#40 (.0165")		4.4	1.7	0.5
#80 (.0070")		0	0	0
#200 (a0029")		0	0 -	Ó

Based on the above sieve analyses, it appears that the material is predominantly coarser than the 0.010 inch particle size. We intend to use Type No. 3 silica sand on this job. See attached grain size distribution graph.

Please feel free to contact our office should you have any questions.

Respectfully submitted,

Judy Ames, CET

JA/amf

TESTING • INSPECTION • SUBSURFACE EXPLORATION

