KAFB-2601 to KAFB-2602
and
KAFB-2622 to KAFB-2624

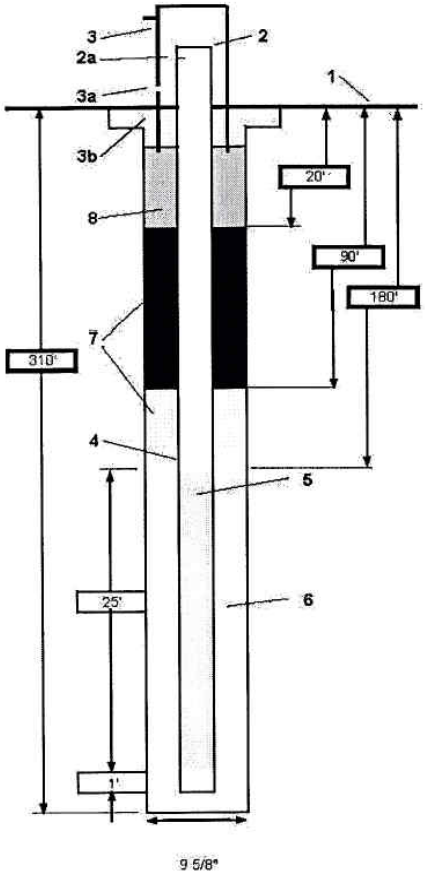
Figure 4-10. Well Construction Diagram: KAFB 26-01

CH2MHILL

PROJECT NUMBER	WELL NUMBER		
146631.02.PG.WI	KAFB-2601	SHEET 1	OF 1

WELL COMPLETION DIAGRAM

PROJECT: KAFB TCE abatement and perched water exploration — LOCATION: North cell of former sewage lagoons
DRILLING CONTRACTOR: Water Development Corp.
DRILLING METHOD AND EQUIPMENT USED: Failing Star 30K ARCH, mill bit
WATER LEVEL: N/A (Dry) — START: 1/31/2002 — END: 2/6/2002 — LOGGER: C. Salazar



1- Ground elevation at well	5355.38 ft amsl NAD 27 Survey
2- Top of casing elevation	5357.87 ft amsl NAD 27 Survey
a) vent hole?	NA
3- Wellhead protection cover type	Steel 8" dia, aprox. 3' high, locking cap
a) weep hole?	NA
b) concrete pad dimensions	3' x 3' + 4 concrete filled bumper posts
4- Dia./type of well casing	4" Sched 80 threaded PVC
5- Type/slot size of screen	4" Sched 80 threaded PVC 0.010" slot
6- Type screen filter	10-20 size sand, Colorado Silica 175' to 215' bgs
7- Type of seal	Bentonite slurry, 20 to 90' bgs Hydrated Bentonite chips 90'-175' bgs
8- Surface Seal	
a) Grout mix used	Portland cement
b) Method of placement	Drive casing pour
c) Vol. of well casing grout	
Development method	Bail, surge and pump
Development time	0 day bailing, 0 hr pumping
Estimated purge volume	0 Gal. bailed, 0 Gal. Pumped

Comments: 12" sump below screen.
Bentonite chip backfill from 215' to 305'

Illustration not to scale.

CH2MHILL

PROJECT NUMBER	BORING NUMBER	SHEET	OF
146631.02.DG.WI	WP-26-01	1	6

SOIL BORING LOG

PROJECT KAFB TCE abatement + perched water exploration LOCATION North cell of abandoned sewage

ELEVATION _____ DRILLING CONTRACTOR WDC

DRILLING METHOD AND EQUIPMENT Casing/hammer, air rotary

WATER LEVELS 203.8' START 1/31/02 FINISH 2/5/02 LOGGER C. Salazar

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
	5				Silty Sand, SM, light brown, moist unsaturated, loose, fine grained	2 PM
10						
	15				Clayey SC Silty Sand, SM, light brown, moist, unsaturated, loose, to 1-2 cm gravel, 10% clay balls	
20	20				same as 15'	
	25				Clay CL, light brown moist unsaturated, cohesive, stiff	
30						
	32				same as 15'	
40	40				Sandy Clay w/gravel, CL, light brown, moist unsaturated, loose, fine grained angular quartz gravel 5 to 10 mm.	
50					Same as 40'	
60					Silty Sand, SM, light brown, moist unsaturated, loose fine grained	430 PM

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CH2MHILL

PROJECT NUMBER	BORING NUMBER	SHEET	OF
146631.02.PG.WI	WP-26-01	2	6

SOIL BORING LOG

PROJECT KAFB TCE abatement + perched water exploration LOCATION N. cell of former sewage la

ELEVATION _____ DRILLING CONTRACTOR WDC

DRILLING METHOD AND EQUIPMENT Casing hammer, air rotary

WATER LEVELS 203.8' START 1/31/02 FINISH 2/5/02 LOGGER C. Salazar

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
60						
	65	cuttings			Silty Sand with some gravel, GM, light brown moist unsaturated, loose, fine grained, 10% gravel of 10 to 20 mm size. angular quartz.	
70					Gravel, sand, silt, clay mixture, GM, light brown, moist unsaturated, loose, fine grained sand + silt, 10% clay balls soft, 25% gravel of 10 to 20 mm size, angular qtz.	
80					Sand, clay, gravel mixture GM, light brown moist, unsaturated, loose, fine to coarse grained, 10% clay, 10% gravel <1 cm.	
90	90				Same as 80'	
	95				Gravel, GM, angular, subangular qtz + basalt <10 mm same as 80	
100					Clay, CL, light brown, moist silt	end of day. 520 PM
	105				Silty Sand, SM, light brown, moist, loose, fine to coarse grained, 20% 2 mm quartz gravel	
110					Same as 105'	
120					Same as 105'	

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CH2MHILL

PROJECT NUMBER	BORING NUMBER		
146631.02.PG.WI	WP-26-01	SHEET 3	OF 6

SOIL BORING LOG

PROJECT KAFB TCE abatement/perched water LOCATION N. cell of former sewage lagoon
ELEVATION _____ DRILLING CONTRACTOR WDC
DRILLING METHOD AND EQUIPMENT Casing/hammer, air rotary
WATER LEVELS 203.8' START 1/31/02 FINISH 2/5/02 LOGGER C. Salazar

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
120						
					same as 105'	
130						
140					Same as 105'	
					same as 105'	
	147				Gravelly Silty Sand light brown, moist, loose, fine to coarse gravel - plag, qtz, basalt <5 mm 15%	
	148				same as 105'	
150						
160					same as 105'	
170	170.5	SS	2	72	~~Clayey Sand~~ Sandy Clay, CL, light brown 5YR 5/6, moist unsaturated, 20% fine to coarse grained sand, 20% 2-5mm gravel angular qtz, plag, basalt and subangular hard + dense	.4 ppm VOC
180						

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CH2MHILL

PROJECT NUMBER	BORING NUMBER	SHEET	OF
146631.02.PG.WF	WP-26-01	4	6

SOIL BORING LOG

PROJECT KAFB TCE abatement / perched water LOCATION N. cell of former sewage lag
ELEVATION _____ DRILLING CONTRACTOR WDC
DRILLING METHOD AND EQUIPMENT casing / hammer, air rotary
WATER LEVELS 203.8' START 1/31/02 FINISH 2/5/02 LOGGER C. Salazar

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
180	180	SS	2	82	Silty Sand, SM, light brown 5YR 5/6, very moist partially saturated, fine grained, 5% coarse grained, dense	
190	190.2	SS	2	62	Clayey Silty Sand, SC, light brown 5YR 5/6, moist, fine grained, stiff hard clay (35%), dense sand, biotite flakes, qtz coarse sand (2%),	distinct 4 inch clay layer within this split spoon.
200	200	SS	2	52	Clay, CL, light brown 5YR 5/6, moist (top 1 ft 8 inches) wet saturated (bottom 4 inches), stiff (top), soft (bottom).	bottom 4 inches of SS. are saturated
210	210.5	SS	2	47	Clay, CL, light brown 5YR 5/6, wet saturated, soft	25 gallons of water added
220	220	SS	1	52	Top 6 inches: same as 210'. Mid 8 inches: blank. Bottom 6 inches: Poorly graded sand, SP, light brown 5YR 5/6, very moist, fine to medium grained,	20 gallons of water added raw clay 2/3/02. 224' water is dripping out
230	230	SS	2	54	Sandy Clay, CL, moderate yellowish brown 10YR 5/4, moist, 20% fine grained sand, soft clay	
240						35 gallons of water added

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CH2MHILL

PROJECT NUMBER	BORING NUMBER	SHEET	OF
146631.02.PG.WF	WP-26-01	5	6

SOIL BORING LOG

PROJECT KAFB TCE abatement /perched water LOCATION N. cell of former sewage la

ELEVATION _____ DRILLING CONTRACTOR WDC

DRILLING METHOD AND EQUIPMENT Casing/hammer, air rotary

WATER LEVELS 203.8' START 1/31/02 FINISH 2/5/02 LOGGER C. Salazar

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
240	240	SS	2	38	Poorly graded Sand, SP, moderate yellowish brown 10YR 5/4, wet saturated, loose, fine to coarse grained, qtz, plag, basalt	
250	250	SS	2	42	Clayey Sand, SC, moderate yellowish brown 10YR 5/4, wet saturated, loose, fine to coarse grained sand, 40% clay, qtz, basalt	5 or 6 gallons H_2O added
260	260	SS	2	35	Poorly graded ~~Clayey~~ Sand, SP, dark yellowish brown 10YR 4/2, wet saturated, loose, fine to coarse grained sand, 10% clay, qtz, basalt, plag	40 gallons added
270	270	SS	2	30	Silty Sand SM, dark yellowish brown 10YR 4/2, wet saturated, loose, fine to coarse grained	32 gallons added
280	280	SS	2	20	Poorly graded Sand, SP, dark yellowish brown 10YR 4/2, wet saturated, loose, fine to coarse grained sand	18 gallons added
290	290	SS	2	22	Well graded Sand, SW, ~~moderate~~ dark yellowish brown, 10YR 4/2, wet saturated, loose, fine to coarse grained with 5% 1 cm subangular basalt gravel	35 gallons added

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CH2MHILL

PROJECT NUMBER	BORING NUMBER	SHEET	OF
146631.02.PGWI	WP-26-01	6	6

SOIL BORING LOG

PROJECT KAFB TCE abatement / perched water LOCATION N. cell of former sewage lagoon

ELEVATION _____ DRILLING CONTRACTOR WDC

DRILLING METHOD AND EQUIPMENT Casing / hammer, air rotary

WATER LEVELS 203.8' START 1/31/02 FINISH 2/5/02 LOGGER C. Salazar

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE NUMBER AND TYPE	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
300	300	SS	2	20	Poorly graded sand, SP dark yellowish brown 10YR 4/2 wet, saturated loose, coarse grained, 2% subangular 1-2 cm gravel, basalt, qtz, plag.	50 gallons added
310	310	SS	2	15	Silty sand, SM, moderate yellowish brown, 10YR 5/4 wet saturated, loose, fine to coarse grained, 35% silt, 2% subangular basalt 1cm gravel.	40 gallons added

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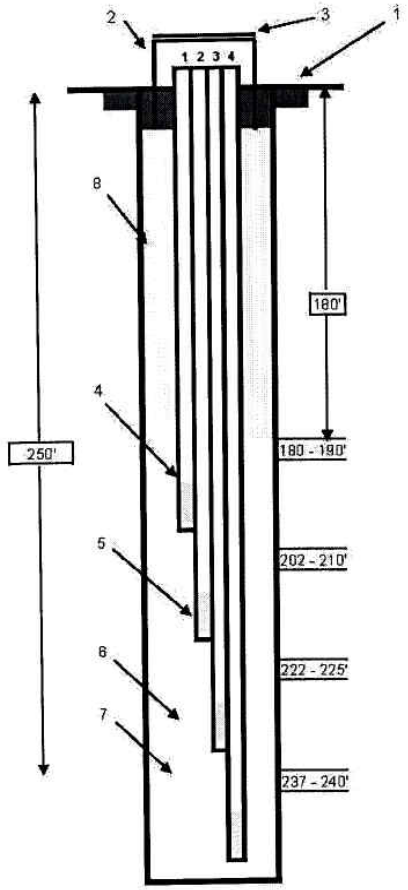
Figure 4-11. Well Construction Diagram: KAFB 26-02

CH2MHILL

PROJECT NUMBER	WELL NUMBER		
146631.02.PG.WI	KAFB-2602	SHEET 1	OF 1

WELL COMPLETION DIAGRAM

PROJECT: KAFB TCE Abatement LOCATION: Northern Cell of the Abandoned Sewage lagoons
DRILLING CONTRACTOR: Water Development Corp. / Ryan Renyolds
DRILLING METHOD AND EQUIPMENT USED: Casing Hammer - Air Rotary
WATER LEVEL: N/A (Dry) START: 4/5/2002 END: 4/9/2002 LOGGER: D.BossWalker/ABQ



1- Ground elevation at well	5355.25 ft amsl NAD 27 Survey
2- Top of casing elevation	5357.42 ft amsl NAD 27 Survey
a) vent hole?	NA
3- Wellhead protection cover type	Steel 8" dia, aprox. 3' high, locking cap
a) weep hole?	NA
b) concrete pad dimensions	3' x 3' + 4 concrete filled bumper posts
4- Dia./type of well casing	4 x 1.0" Sched 80 threaded PVC
5- Type/slot size of screen	4 x 1.0" Sched 80 threaded PVC 0.010" slot
6- Type screen filter	10-20 size sand, Colorado Silica
7- Type of seal	Bentonite Chips
8- Surface Seal	
a) Grout mix used	Volclay
b) Method of placement	Drive casing pour
c) Vol. of well casing grout	
Development method	NA
Development time	NA
Estimated purge volume	NA
Comments	3" sump below bottom of deepest screen
9- Screen Intervals	A 195 - 197'
	B 215 - 217'
	C 230 - 232'
	D 245 - 247'

CH2MHILL	PROJECT NUMBER 146631.02.PG.WI	BORING NUMBER WP 26-02 SHEET 1 OF 6
	SOIL BORING LOG	

PROJECT : KAFB TCE Abatement LOCATION : Northern cell of Abandoned Sewage Lagoons
ELEVATION : DRILLING CONTRACTOR : WDC Exploration, Ryan Renyolds
DRILLING METHOD AND EQUIPMENT USED : Star 30K, Casing Hammer Air Rotary
WATER LEVELS : START : 04/05/2002 END: 04/09/02 LOGGER : D.L.V. Boss-Walker

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	SAMPLE #/TYPE	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Headspace Analysis Time
0	5	Cuttings			Silty Sand, SM, light brown, moist, loose, fine grained	
10	15	Cuttings			Clayey Sand, SC, light brown, moist, unsaturated, 10% clay clasts < 20mm	
20	25	Cuttings			Clay, CL, light brown, moist, unsaturated, cohesive	
30	35	Cuttings			As Above for 25ft	
40	45	Cuttings			Sandy Clay w/ Gravel, CL, light brown, moist. Loose, fine grained angular gravel <10mm	0.7ppm
50 55		Cuttings			As Above for 45 ft	

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CH2MHILL	PROJECT NUMBER 146631.02.PG.WI	BORING NUMBER WP 26-02 SHEET 2 OF 6
	SOIL BORING LOG	

PROJECT : KAFB TCE Abatement LOCATION : Northern cell of Abandoned Sewage Lagoons
ELEVATION : DRILLING CONTRACTOR : WDC Exploration, Ryan Reynolds
DRILLING METHOD AND EQUIPMENT USED : Star 30k, Casing Hammer Air Rotary
WATER LEVELS : START : 04/05/2002 END: 04/09/02 LOGGER : D.L.V. Boss-Walker

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	SAMPLE #/TYPE	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Headspace Analysis Time
60	65	cuttings			Silty Sand w/ Gravel, SM, light brown, moist, unsaturated, loose, fine grained 10% gravel	
70	75				As above for 65 ft	
80	85	cuttings			Gravelly Clay, GC, brown, moist, clay clasts < 20mm, 5% gravel, fine, angular	
90	95	cuttings			As above for 85ft	
100	105	cuttings			Silty Sand, SM, light brown, moist, loose, fine to coarse grained	
110	115	Cuttings			As Above for 105ft	

SBL_TCE_WP_26-02.xls

CH2MHILL	PROJECT NUMBER 146631.02.PG.WI	BORING NUMBER WP 26-02 SHEET 3 OF 6
	SOIL BORING LOG	

PROJECT : KAFB TCE Abatement LOCATION : Northern cell of Abandoned Sewage Lagoons
ELEVATION : DRILLING CONTRACTOR : WDC Exploration, Ryan Reynolds
DRILLING METHOD AND EQUIPMENT USED : Star 30k, Casing Hammer Air Rotary
WATER LEVELS : START : 04/05/2002 04/09/2002 LOGGER : D.L.V. Boss-Walker

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	SAMPLE #/TYPE	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm Headspace Analysis Time
120	125	cuttings			As Above for 105ft	
130	135	cuttings			As Above for 105ft	
140	145	cuttings			Silty Sand w/Clay, SM, light brown, moist, loose, fine grained, clay clasts <10mm	
150	150 155	Cuttings			As Above for 145ft	
160	165	cuttings			As Above for 145ft	
170	175	cuttings			Silty Sand, SM, light brown, dry, fine to medium grained	

SBL_TCE_WP_26-02.xls

CH2MHILL	PROJECT NUMBER 146631.02.PG.WI	BORING NUMBER WP 26-02 SHEET 4 OF 6

SOIL BORING LOG

PROJECT : KAFB TCE Abatement LOCATION : Northern cell of Abandoned Sewage Lagoons
ELEVATION : DRILLING CONTRACTOR : WDC Exploration, Ryan Reynolds
DRILLING METHOD AND EQUIPMENT USED : Star 30k, Casing Hammer Air Rotary
WATER LEVELS : START : 04/05/2002 04/09/2002 LOGGER : D.L.V. Boss-Walker

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	SAMPLE #/TYPE	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Headspace Analysis Time
180	180	SS	1.5	8,14,9	Clayey Silty Sand, SC, light brown, moist, fine grained, medium density	35.0ppm
190	190	SS	1.5	9,17,16	Silty Ckay, light brown, moist, medium	0.0ppm
200	200	SS	1.5	7,10,8	As above for 190ft	
210	210	SS	1.5	3,8,13	Clay, CL, brown, moist, saturated bottom third	Sample rod was wet to approx half way up - 5ft.
220	220	SS	1.5	15,18,25	TOP 12in - As above for 210ft BOTTOM 6in - Sandy Clay, SC, dark brown, moist, 10% sand, fine grained	2 Distinct Layers, top 12 inches and bottom 6 inches - 35.0 ppm
230	230	SS	1.5	7,14,19	Sandy Clay, CL, brown, moist, stiff, 10% sand	1.4ppm

SBL_TCE_WP_26-02.xls

CH2MHILL	PROJECT NUMBER 146631.02.PG.WI	BORING NUMBER WP 26-02 SHEET 5 OF 6
	SOIL BORING LOG	

PROJECT : KAFB TCE Abatement LOCATION : Northern cell of Abandoned Sewage Lagoons
ELEVATION : DRILLING CONTRACTOR : WDC Exploration, Ryan Reynolds
DRILLING METHOD AND EQUIPMENT USED : Star 30k, Casing Hammer Air Rotary
WATER LEVELS : START : 04/05/2002 04/09/2002 LOGGER : D.L.V. Boss-Walker

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	SAMPLE #/TYPE	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Headspace Analysis Time
240	240	SS	1.5	3,8,10	TOP 3in - As above for 230ft BOTTOM 15in - Poorly Graded Sand, SP, yellow brown, moist, medium density, fine grained	2 distinct layers - Top 3 inches, Bottom 15 inches, 0.7ppm
250	250	SS	1.5	5,9,14	TOP 3in - As above for 230ft BOTTOM 15in - Clay, CL, brown, moist, saturated	2 distinct layers -Top 3 inches, Bottom 12 inches
260	260	SS	1.5	3,5,8	Poorly Graded Sand, SP, light brown, dry, loose, fine grained	0.5ppm
270	26-Sep	SS	1.5	3,7,11	Clayey Sand, SP, brown. Moist, moderate density, fine to coarse sand	Poor return 330ppm
280	280	SS	1.5	8,9,14	Silty Sand, SM, Dark, brown, dry, medium density	0.7ppm
290	290	Cuttings			As above for 280ft	

SBL_TCE_WP_26-02.xls

CH2MHILL	PROJECT NUMBER	BORING NUMBER	
	146631.02.PG.WI	WP 26-02	SHEET 6 OF 6
	SOIL BORING LOG		

PROJECT : KAFB TCE Abatement LOCATION : Northern cell of Abandoned Sewage Lagoons
ELEVATION : DRILLING CONTRACTOR : WDC Exploration, Ryan Reynolds
DRILLING METHOD AND EQUIPMENT USED : Star 30k, Casing Hammer Air Rotary
WATER LEVELS : START : 04/05/2002 04/09/2002 LOGGER : D.L.V. Boss-Walker

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	SAMPLE #/TYPE	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION. OVM (ppm): Headspace Analysis Time
300	300	Cuttings			As above for 280ft	

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AR 2961

Southwest Geophysical Services, Inc.

GEOPHYSICAL WELL LOG:	PERM. DATUM: GROUND LEVEL	OTHER SERVICES:
Gamma Ray/Neutron	LOG MEASURED FROM: G. L.	
	ELEVATION:	

COMPANY: Kirtland Air Force Base
PROJECT/FIELD: TCE
WELL: WP2602
LOCATION: SEC: T: R:
NORTH= EAST=
COUNTY: Bernalillo STATE: New Mexico

ELEVATION KB:
DF:
GL:

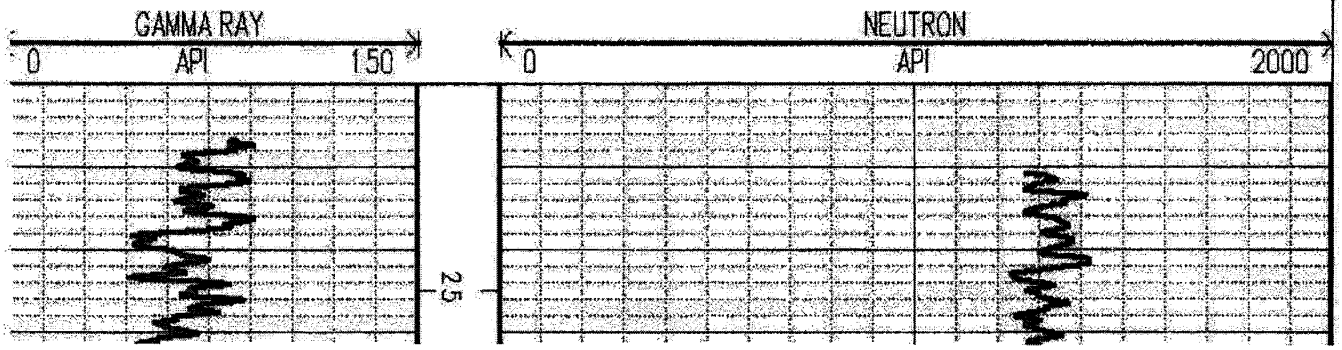
COMPANY: Kirtland Air Force Base
WELL: WP2602

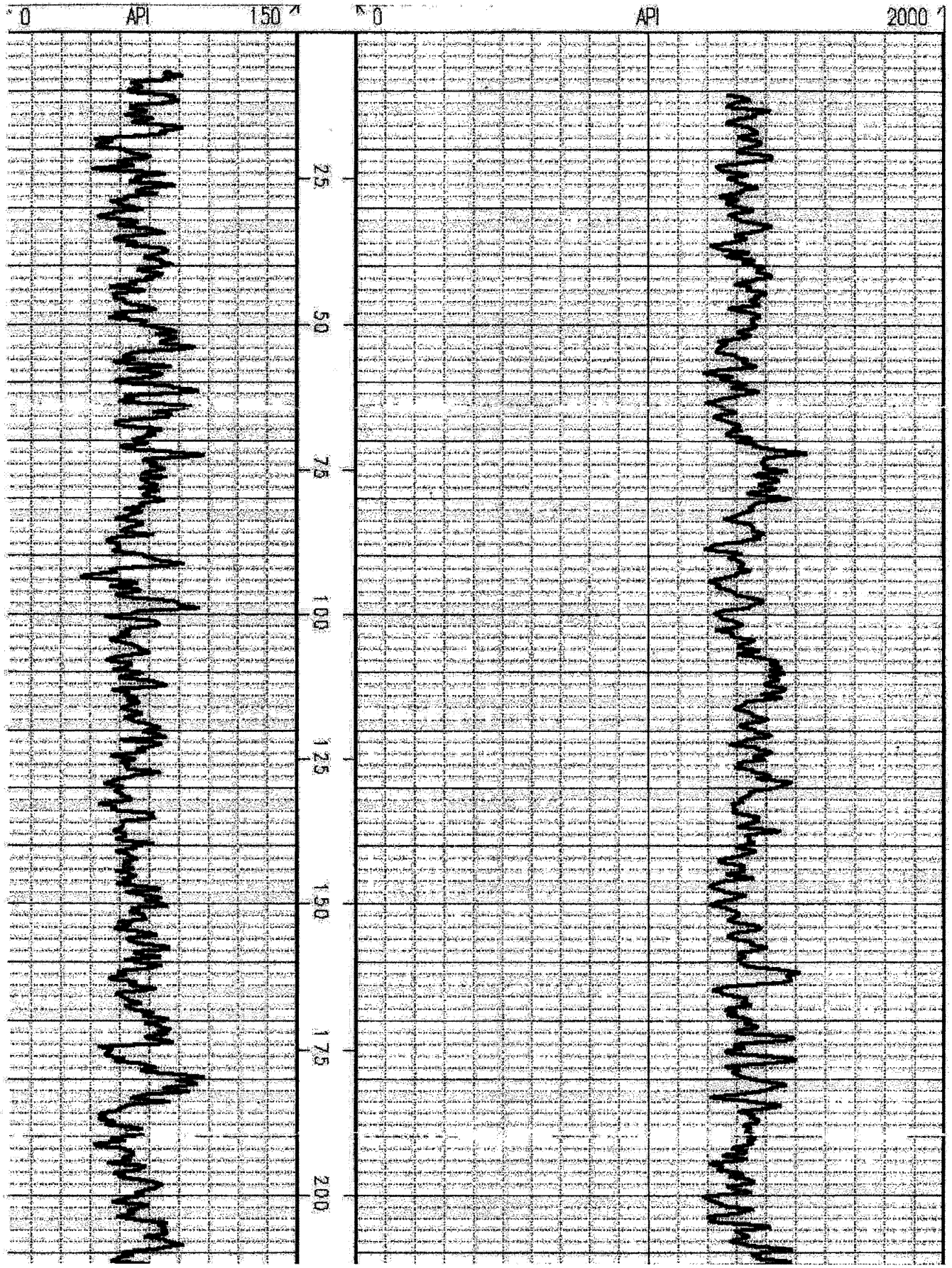
	RUN NO.1:		RUN NO.1:
DATE	4/09/2002	FLUID LEVEL	None
DEPTH DRILLER	300 ft.	FLUID NATURE	
DEPTH LOGGER	300 ft.	FLUID VISCOSITY	
BOTTOM LOGGED	301 ft.	FL. RESISTIVITY	
TOP LOGGED INT.	Surface	FL. RES. @ B.H.T.	
CASING LEVEL	0–300 ft.	CIRCULATION TEMP.	
CASING SIZE	8 1/2" I.D.	BOT HOLE TEMP.	
CASING SIZE	9 5/8" O.D.	TOOL #	Combo
BIT SIZE		LOGGED BY:	A.Henderson
BIT SIZE		WITNESSED BY:	D.Walker

REMARKS:

THANK YOU

(\acq\wp2602.cp2) SOUTHWEST GEOPHYSICAL SERVICES, INC.

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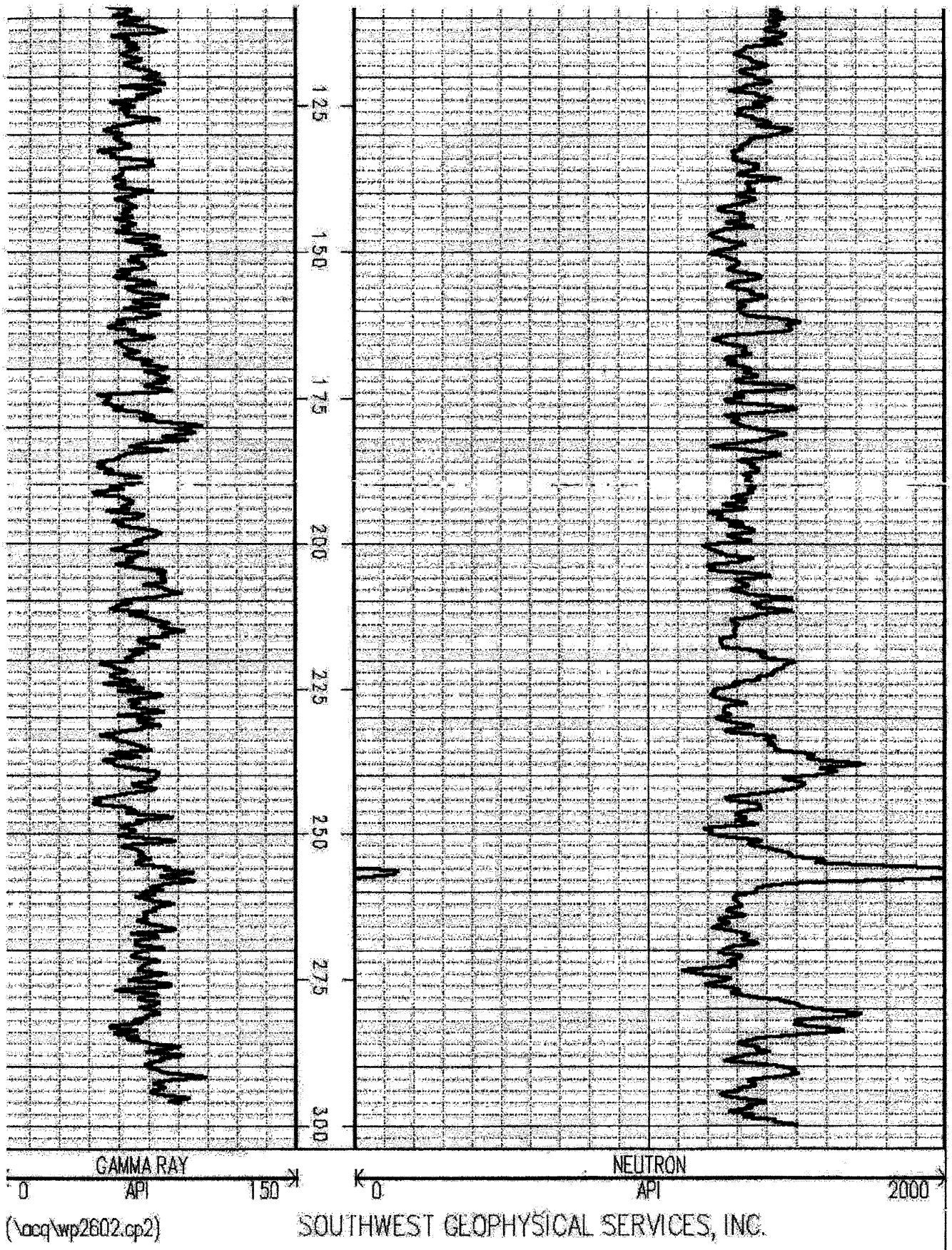
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API
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NEUTRON
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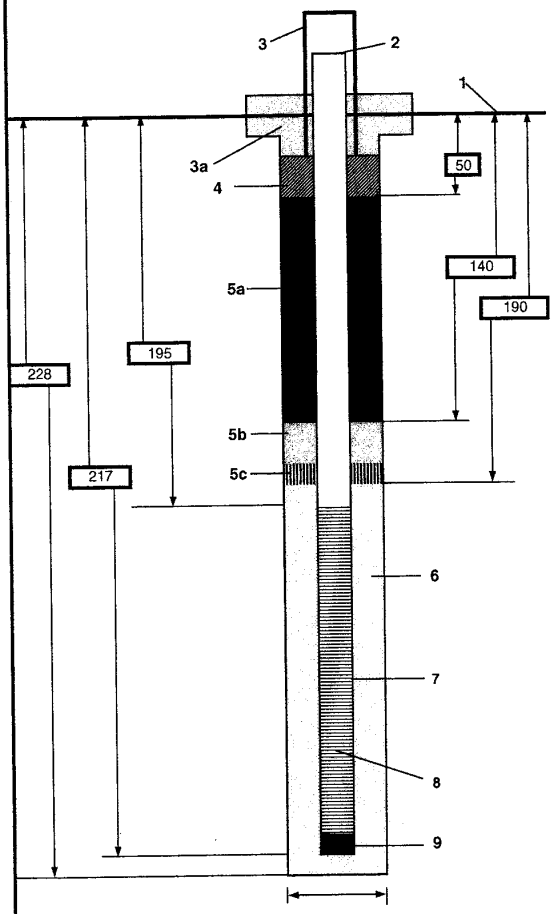
SOUTHWEST GEOPHYSICAL SERVICES, INC.

MWH	PROJECT NUMBER 3970009	WELL NUMBER KAFB-2622	SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT NAME: WP-26		WELL COMPLETION DATE:	12/2/2004
DRILLING CONTRACTOR: WDC Inc.		EASTING (X):	406,118.39
DRILLING METHOD/EQUIP: Air Rotary, STAR 50K CH		NORTHING (Y):	1,469,293.78
DRILLING START DATE: 12/01/04		BOREHOLE DEPTH:	228'
LOGGER : C. M. Timm		CASING DEPTH:	217'



Well diameter
0 - 228': 9 5/8"

Diagram is not to scale

1- Concrete slab elevation		5353.79'
2- Top of casing elevation		5355.47'
3- Wellhead protection cover type		
a) Concrete pad dimensions		4'x4'
4- Surface Seal		
a) Grout mix used		Cement/Bentonite Slurry
b) Method of placement		Tremie
5- Type of seal	a.	Bentonite Slurry
	b.	Bentonite Chips
	c.	Sugar Sand (~2')
6- Type screen filter		10/20 Silica Sand
7- Diameter/type of well casing		4' Schedule 80 PVC
8- Type/slot size of screen		0.10 Slot Sch. 80 PVC
9- Sump		2' Sump
Development method		swab and bail
Development time		3 hours
Purged volume		260 gallons

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Field Boring Log

Facility/Project Name	WP-26	**Boring No.**	KAFB-2622
Location		**Project No.**	3970009

Drilling Co	WDC Exploration & Wells	Northing:	Easting:
Driller's Name	M. Green		
Drill Rig	STAR 50K	Ground Surface Elevation (ft):	
Drill Method	Air Rotary	Measuring Point elevation (ft): (top of PVC casing)	
Logged By	Chris Timm	Borehole Diameter:	9 5/8"
Water Level Below TOC (ft):	198 Date Measured: 12/8/2004	Borehole Depth:	228

Depth (feet)	Grain Size % Gravel	% Sand	% Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
0	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, pink, 7.5 YR 8/3
5	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, pink, 7.5 YR 8/3
10	0	20	80		Cuttings		ML	SLSD	Fine sandy silt, light brown, 7.5 YR 6/3
15	25	25	50		Cuttings		ML	SDGR	Fine silty sand with coarse gravels, subangular, poorly sorted, (<1"), light brown, 7.5 YR 6/3
20	0	30	70		Cuttings		ML	SLSD	Fine silty sand, minor gravel (<1%), light brown, 7.5 YR 4/4
25	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt, no gravel, light brown 7.5 YR 6/4
30	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt, no gravel, light brown 7.5 YR 6/4
35	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt, no gravel, light brown 7.5 YR 6/4
40	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt, no gravel, light brown 7.5 YR 6/4
45	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt, no gravel, light brown 7.5 YR 6/4
50	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt, no gravel, light brown 7.5 YR 6/4

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Depth (feet)	Grain Size % Gravel	Grain Size % Sand	Grain Size % Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
55	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt, no gravel, light brown 7.5 YR 6/4
60	5	15	80		Cuttings		ML	SLSD	Fine silty sand with gravel (very coarse, 1/2" - 1", poorly sorted, subrounded), brown, 7.5 YR 5/4
65	0	20	80		Cuttings		ML	SLSD	Fine silty sand, no gravels, brown, 7.5 YR 5/4
70	5	15	80		Cuttings		ML	SLSD	Fine silty sand with gravel (very coarse, 1/2" - 1", poorly sorted, subangular), brown, 7.5 YR 5/4
75	0	50	50		Cuttings		ML	SLSD	Coarse sand and silt, brown, 7.5 YR 5/4
80	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 4/4
85	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 4/4
90	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 4/4
95	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 4/4
100	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 4/4
105	0	40	60		Cuttings		ML	SLSD	Micaceous coarse sand with silt, brown, 7.5 YR 5/4
110	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, brown, 7.5 YR 5/4
115	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, brown, 7.5 YR 5/4

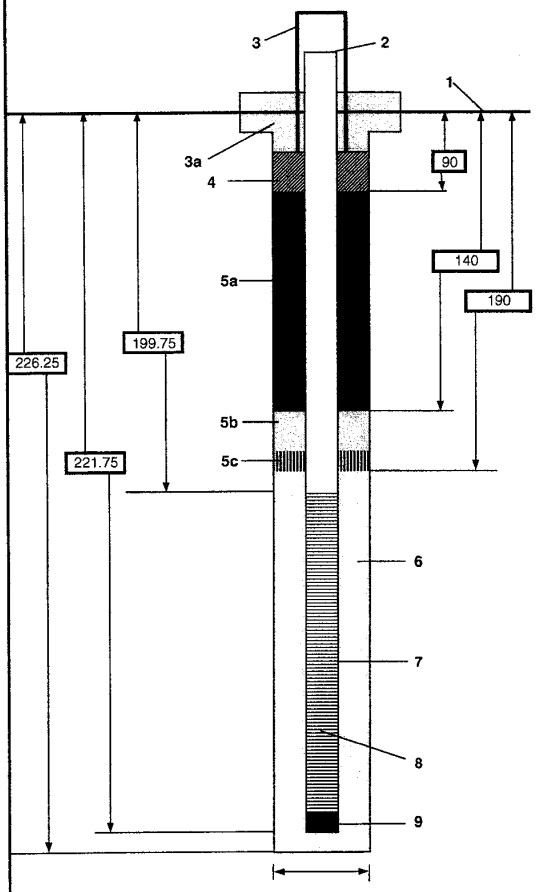
Depth (feet)	Grain Size % Gravel	Grain Size % Sand	Grain Size % Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
120	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, brown, 7.5 YR 5/4
125	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, brown, 7.5 YR 5/4
130	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, brown, 7.5 YR 5/4
135	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, brown, 7.5 YR 5/4
140	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, brown, 7.5 YR 5/4
145	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, brown, 7.5 YR 5/4
150	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, minor clay (light pilling), brown, 7.5 YR 4/4
155	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, minor clay (light pilling), brown, 7.5 YR 4/4
160	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, minor clay (light pilling), brown, 7.5 YR 4/4
165	0	20	80		Cuttings		ML	SDSL	Fine sandy silt, less clay than above, brown, 7.5 YR 4/4
170	0	10	90		Cuttings		ML	SDSL	Fine sandy silt, increased clay, pilling, slightly plastic, brown, 7.5 YR 5/4
175	0	10	90		Cuttings		ML	SDSL	Fine sandy silt, increased clay, pilling, slightly plastic, brown, 7.5 YR 5/4
180	0	20	80		Cuttings		ML	SDSL	Fine sandy silt with minor clay, less pilling, brown, 7.5 YR 4/4

Depth (feet)	Grain Size % Gravel	Grain Size % Sand	Grain Size % Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
185	0	20	80		Cuttings		ML	SDSL	Fine sandy silt with minor clay, less pilling, brown, 7.5 YR 4/4
190	0	20	80		Cuttings		ML	SDSL	Fine sandy silt with minor clay, less pilling, lightly moist, brown, 7.5 YR 4/4
195	0	10	90		Cuttings		ML	SDSL	Wet sandy silty clay with minor gravels (<1%), brown, 7.5 YR 4/4
200	0	40	60		Cuttings		ML	SDSL	Very coarse sand with silt and clay (200-202), saturated, decreasing sand 202-205, brown, 7.5 YR 4.4
205	0	15	85		Cuttings		CL	SDCL	Very wet sticky clays with sand and silt, brown, 7.5 YR 4.4
210	0	15	85		Cuttings		CL	SDCL	Very wet sticky clays with sand and silt, brown, 7.5 YR 4.4
215	0	10	90		Cuttings		CL	SDCL	Tight silty sandy clay, less moist that above, brown, 7.5 YR 5/4
220	0	10	90		Cuttings		CL	SDCL	Tight dry silty sandy clay, brown, 7.5 YR 5/3
225	0	10	90		Cuttings		CL	SDCL	Tight dry silty sandy clay, brown, 7.5 YR 5/3
230									TD=228'
235									
240									
245									

MWH	PROJECT NUMBER	WELL NUMBER	
	3970009	KAFB-2623	SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT NAME: WP-26		WELL COMPLETION DATE:	12/30/2004
DRILLING CONTRACTOR: WDC Inc.		EASTING (X):	407,410.57
DRILLING METHOD/EQUIP: Air Rotary STAR 50K CH		NORTHING (Y):	1,469,400.92
DRILLING START DATE: 11/23/04		BOREHOLE DEPTH:	300'
LOGGER : C. M Timm		CASING DEPTH:	221.75'



Well diameter
0 - 300' Total Depth: 9 5/8"

Diagram is not to scale

1- Concrete slab elevation		5362.6'
2- Top of casing elevation		5364.81'
3- Wellhead protection cover type		
a) Concrete pad dimensions		4'x4'
4- Surface Seal		
a) Grout mix used		Bentonitne/Cement Slurry
b) Method of placement		Tremie
5- Type of seal	a.	Bentonite Slurry
	b.	Bentonite Chips
	c.	Sugar Sand (~2')
6- Type screen filter		10/20 Silica Sand
7- Diameter/type of well casing		4' SCH. 80 PVC
8- Type/slot size of screen		0.10 slot sch. 80 PVC (20 ')
9- Sump		2' Sch. 80 PVC
Development method		swab and bail
Development time		30 minutes
Estimated purge volume		2.5 gallons

Comments: Total depth of borehole is 300'. Borehole was backfilled with bentonite chips to a depth of 226.25'. Well is dry. Swabbed screen and bailed water from sump.

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Field Boring Log

Facility/Project Name	WP-26	**Boring No.**	KAFB-2623
Location		**Project No.**	3970009

Drilling Co	WDC Exploration & Wells	Northing:	Easting:
Driller's Name	M. Green		
Drill Rig	STAR 50K	Ground Surface Elevation (ft):	
Drill Method	Air Rotary	Measuring Point elevation (ft): (top of PVC casing)	
Logged By	Chris Timm	Borehole Diameter:	9 5/8"
Water Level Below TOC (ft):	N/A Date Measured: N/A	Borehole Depth:	300

Depth (feet)	Grain Size % Gravel	% Sand	% Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
0	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, light brown, 7.5 YR 6/3
5	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, light brown, 7.5 YR 6/3
10	0	30	70		Cuttings		ML	SLSD	Fine silty sand with minor (<1%) gravel, coarser than above, brown, 7.5 YR 5/4
15	0	30	70		Cuttings		ML	SLSD	Fine silty sand with minor (<1%) gravel, coarser than above, brown, 7.5 YR 5/4
20	0	40	60		Cuttings		ML	SDSL	Very coarse sand with silt, no gravels, brown, 7.5 YR 4/4
25	0	40	60		Cuttings		ML	SDSL	Very coarse sand with silt, no gravels, brown, 7.5 YR 4/4
30	0	60	40		Cuttings		ML	SDSL	Very course sand with silt (increased coarse sands from above), brown, 7.5 YR 4/4
35	0	60	40		Cuttings		ML	SDSL	Very course sand with silt (increased coarse sands from above), brown, 7.5YR 4/4
40	0	20	80		Cuttings		ML	SDSL	Fine silty sand, no gravels, light brown, 7.5 YR 6/4
45	0	20	80		Cuttings		ML	SDSL	Fine silty sand, no gravels, light brown, 7.5 YR 6/4
50	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 5/4

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Depth (feet)	Grain Size % Gravel	Grain Size % Sand	Grain Size % Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
55	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 5/4
60	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 5/4
65	0	40	60		Cuttings		ML	SDSL	Very coarse sand with silt, minor gravel (<1%) ~1" subangular nodules, brown, 7.5 YR 5/4
70	0	20	80		Cuttings		ML	SDSL	Fine silty sand, no gravels, micaceous, brown, 7.5 YR 5/4
75	0	30	70		Cuttings		ML	SDSL	Silty sand (slightly coarser than above) very micaceous, brown, 7.5 YR 5/4
80	0	20	80		Cuttings		ML	SDSL	Fine sand with silt and clay (slight pilling), 7.5 YR 4/4
85	0	20	80		Cuttings		ML	SDSL	Fine sand with silt and clay (slight pilling), 7.5 YR 4/4
90	0	20	80		Cuttings		ML	SDSL	Fine sand with silt and clay (slight pilling), 7.5 YR 4/4
95	0	20	80		Cuttings		ML	SDSL	Fine sand with silt and clay (slight pilling), 7.5 YR 4/4
100	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, 7.5 YR 4/4
105	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, 7.5 YR 4/4
110	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, 7.5 YR 4/4
115	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, 7.5 YR 4/4

Depth (feet)	Grain Size % Gravel	% Sand	% Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
120	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 5/4
125	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 5/4
130	0	20	80		Cuttings		ML	SLSD	Fine (coarser than above) sandy silty, brown, 7.5 YR 5/4
135	0	20	80		Cuttings		ML	SLSD	Fine sandy silty, brown, 7.5 YR 5/4
140	0	20	80		Cuttings		ML	SLSD	Fine sandy silty, brown, 7.5 YR 5/4
145	0	20	80		Cuttings		ML	SLSD	Fine sandy silty, brown, 7.5 YR 5/4
150	0	20	80		Cuttings		ML	SLSD	Fine sandy silty, brown, 7.5 YR 5/4
155	0	20	80		Cuttings		ML	SLSD	Fine sandy silty, brown, 7.5 YR 5/4
160	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt with minor clay, brown, 7.5 YR 4/4
165	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt with minor clay, brown, 7.5 YR 4/4
170	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt with minor clay, brown, 7.5 YR 4/4
175	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt with minor clay, brown, 7.5 YR 4/4
180	0	30	70		Cuttings		ML	SDSL	Fine silty sand (coarser than above), brown, 7.5 YR 4/4

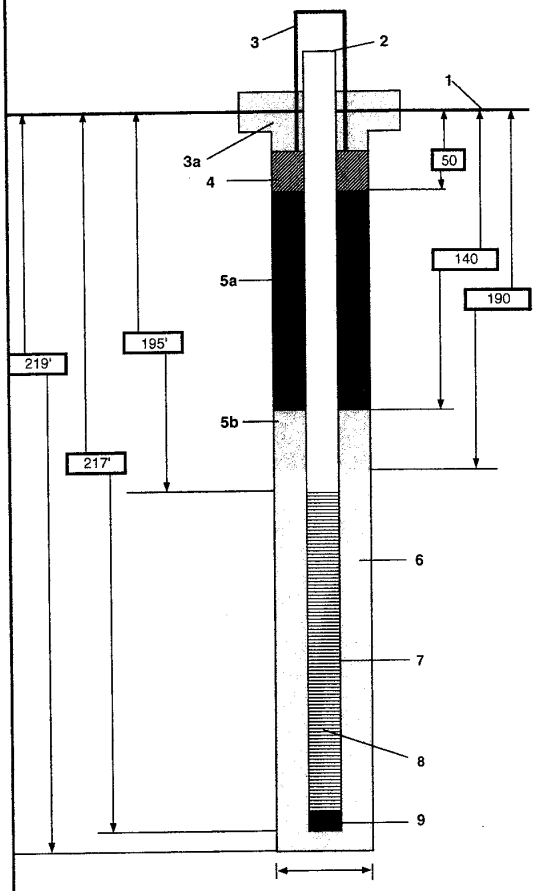
Depth (feet)	Grain Size % Gravel	Grain Size % Sand	Grain Size % Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
185	0	30	70		Cuttings		ML	SDSL	Fine silty sand (coarser than above), brown, 7.5 YR 4/4
190	0	40	60		Cuttings		ML	SDSL	Silty sand, little-no clays, sands are coarser than above, brown, 7.5 YR 5/4
195	0	40	60		Cuttings		ML	SDSL	Silty sand, little-no clays, brown, 7.5 YR 5/4
200	0	30	70		Cuttings		ML	SDSL	Silty sand with clays (minor pilling), moist, brown, 7.5 YR 5/4
205	0	30	70		Cuttings		ML	SDSL	Silty sand with clays (minor pilling), moist, brown, 7.5 YR 5/4
210	0	30	70		Cuttings		CL	SDCL	Tight clays, no cuttings returned, WDC add water to flush cuttings 210-220
215	0	30	70		Cuttings		CL	SDCL	Tight clays, no cuttings returned, WDC add water to flush cuttings 210-220
220	0	10	90		Cuttings		CL	SDCL	Tight dry clays (some caliche nodules), minor sand (fine grained), light brown, 7.5 YR 6/4
225	0	10	90		Cuttings		CL	SDCL	Tight dry clays (some caliche nodules), minor sand (fine grained), light brown, 7.5 YR 6/4
230	0	10	90		Cuttings		CL	SDCL	Tight dry clays (some caliche nodules), minor sand (fine grained), light brown, 7.5 YR 6/4
235	0	10	90		Cuttings		CL	SDCL	Tight dry clays (some caliche nodules), minor sand (fine grained), light brown, 7.5 YR 6/4
240	0	10	90		Cuttings		CL	SDCL	Very tight dry clays, light brown, 7.5 YR 6/4
245	0	10	90		Cuttings		CL	SDCL	Very tight dry clays, light brown, 7.5 YR 6/4

Depth (feet)	Grain Size % Gravel	% Sand	% Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
250	0	10	90		Cuttings		CL	SDCL	Very tight dry clays, light brown, 7.5 YR 6/4
255	0	10	90		Cuttings		CL	SDCL	Very tight dry clays, light brown, 7.5 YR 6/4
260	0	15	85		Cuttings		CL	SDCL	Clay with sand silt (minor coarse angular sand), light brown, 7.5 YR 6/4
265	0	15	85		Cuttings		CL	SDCL	Clay with sand silt (minor coarse angular sand), light brown, 7.5 YR 6/4
270	0	10	90		Cuttings		CL	SDCL	Very tight clays with sand and silt (finer that above)
275	0	10	90		Cuttings		CL	SDCL	Very tight clays with sand and silt
280	0	10	90		Cuttings		CL	SDCL	Very tight clays with sand and silt
285	0	10	90		Cuttings		CL	SDCL	Very tight clays with sand and silt
290	0	10	90		Cuttings		CL	SDCL	Very tight clays with sand and silt
295	0	10	90		Cuttings		CL	SDCL	Very tight clays with sand and silt
300									TD
305									
310									

MWH	PROJECT NUMBER 3970009	WELL NUMBER KAFB-2624	SHEET 1 OF 1

WELL COMPLETION DIAGRAM

PROJECT NAME: WP-26		WELL COMPLETION DATE:	9/27/2005
DRILLING CONTRACTOR: WDC Inc.		EASTING (X):	406,924.18
DRILLING METHOD/EQUIP: Air Rotary STAR 50K CH		NORTHING (Y):	1,468,917.72
DRILLING START DATE: 09/20/04		BOREHOLE DEPTH:	219'
LOGGER : C. M Timm		CASING DEPTH:	217'



Well diameter: 9 5/8"
Total Depth: 219"

Diagram is not to scale

1- Concrete slab elevation	5356.88
2- Top of casing elevation	5359.6
3- Wellhead protection cover type	
a) Concrete pad dimensions	4'x4'
4- Surface Seal	
a) Grout mix used	Bentonitne/Cement Slurry
b) Method of placement	Tremie
5- Type of seal	a. Bentonite Slurry b. Bentonite Chips
6- Type screen filter	10/20 Silica Sand
7- Diameter/type of well casing	4' SCH. 80 PVC
8- Type/slot size of screen	0.10 slot sch. 80 PVC (20 ')
9- Sump	2' Sch. 80 PVC
Development method	swab, bail and pump
Development time	8 hours
Estimated purge volume	15 gallons

Comments: Approximately 44 gallons of perched groundwater bailed from well during construction. Perched aquifer in this location very slow to recover, behaves like KAFB-0506.

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MWH

Field Boring Log

Facility/Project Name	WP-26	**Boring No.**	KAFB-2624
Location	WP-26 Former Sewage Lagoons (adjacent to KAFB-0505)	**Project No.**	3970009

Drilling Co	WDC Exploration & Wells	Northing: 1,468,917.72	Easting: 406,924.18
Driller's Name	Bennie Bloodworth		
Drill Rig	STAR 50K	Ground Surface Elevation (ft):	5,356.00
Drill Method	Air Rotary	Measuring Point elevation (ft): (top of PVC casing)	5,359.60
Logged By	Chris Timm	Borehole Diameter:	9 5/8"
Water Level Below TOC (ft):	207.5 Date Measured: 10/3/2005	Borehole Depth:	219

Depth (feet)	Grain Size % Gravel	% Sand	% Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
0	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, light brown, 7.5 YR 6/3
5	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, light brown, 7.5 YR 6/3
10	0	30	70		Cuttings		ML	SLSD	Fine silty sand with minor (<1%) gravel, coarser than above, brown, 7.5 YR 5/4
15	0	30	70		Cuttings		ML	SLSD	Fine silty sand with minor (<1%) gravel, coarser than above, brown, 7.5 YR 5/4
20	0	40	60		Cuttings		ML	SDSL	Very coarse sand with silt, no gravels, brown, 7.5 YR 4/4
25	0	40	60		Cuttings		ML	SDSL	Very coarse sand with silt, no gravels, brown, 7.5 YR 4/4
30	0	60	40		Cuttings		ML	SDSL	Very course sand with silt (increased coarse sands from above), brown, 7.5 YR 4/4
35	0	60	40		Cuttings		ML	SDSL	Very course sand with silt (increased coarse sands from above), brown, 7.5YR 4/4
40	0	20	80		Cuttings		ML	SDSL	Fine silty sand, no gravels, light brown, 7.5 YR 6/4
45	0	20	80		Cuttings		ML	SDSL	Fine silty sand, no gravels, light brown, 7.5 YR 6/4
50	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 5/4

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Depth (feet)	Grain Size % Gravel	% Sand	% Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
55	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 5/4
60	0	10	90		Cuttings		ML	SLSD	Very coarse sand with silt, minor gravel (<1%) ~1" subangular nodules, brown, 7.5 YR 5/4
65	0	40	60		Cuttings		ML	SDSL	Very coarse sand with silt, minor gravel (<1%) ~1" subangular nodules, brown, 7.5 YR 5/4
70	0	20	80		Cuttings		ML	SDSL	Fine silty sand, no gravels, micaceous, brown, 7.5 YR 5/4
75	0	30	70		Cuttings		ML	SDSL	Silty sand (slightly coarser than above) very micaceous, brown, 7.5 YR 5/4
80	0	20	80		Cuttings		ML	SDSL	Fine sand with silt and clay (slight pilling), 7.5 YR 4/4
85	0	20	80		Cuttings		ML	SDSL	Fine sand with silt and clay (slight pilling), 7.5 YR 4/4
90	0	20	80		Cuttings		ML	SDSL	Fine sand with silt and clay (slight pilling), 7.5 YR 4/4
95	0	20	80		Cuttings		ML	SDSL	Very fine sandy silt, 7.5 YR 4/4
100	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, 7.5 YR 4/4
105	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, 7.5 YR 4/4
110	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, 7.5 YR 4/4
115	0	10	90		Cuttings		ML	SDSL	Very fine sandy silt, 7.5 YR 4/4

Depth (feet)	Grain Size % Gravel	Grain Size % Sand	Grain Size % Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
120	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 5/4
125	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt, brown, 7.5 YR 5/4
130	0	20	80		Cuttings		ML	SLSD	Fine (coarser than above) sandy silty, brown, 7.5 YR 5/4
135	0	20	80		Cuttings		ML	SLSD	Fine sandy silty, brown, 7.5 YR 5/4
140	0	20	80		Cuttings		ML	SLSD	Fine sandy silty, brown, 7.5 YR 5/4
145	0	20	80		Cuttings		ML	SLSD	Very fine sandy silt with minor clay, brown, 7.5 YR 4/4
150	0	20	80		Cuttings		ML	SLSD	Fine sandy silty, brown, 7.5 YR 5/4
155	0	20	80		Cuttings		ML	SLSD	Fine sandy silty, brown, 7.5 YR 5/4
160	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt with minor clay, brown, 7.5 YR 4/4
165	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt with minor clay, brown, 7.5 YR 4/4
170	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt with minor clay, brown, 7.5 YR 4/4
175	0	10	90		Cuttings		ML	SLSD	Very fine sandy silt with minor clay, brown, 7.5 YR 4/4
180	0	30	70		Cuttings		ML	SDSL	Fine silty sand (coarser than above), brown, 7.5 YR 4/4

Depth (feet)	Grain Size % Gravel	% Sand	% Fines	Blows (6 inches)	Sample Type	Sample Recovery	USCS/ASTM Classification	Lith. Code (ERPIMS)	Lithologic Description
185	0	30	70		Cuttings		ML	SDSL	Fine silty sand (coarser than above), brown, 7.5 YR 4/4
190	0	40	60		Cuttings		ML	SDSL	Silty sand, little-no clays, sands are coarser than above, brown, 7.5 YR 5/4 slightly moist.
195	0	40	60		Cuttings		ML	SDSL	Silty sand with clays (minor pilling), brown, 7.5 YR 5/4, very moist at approximately 198' bgs.
200	0	30	70		Cuttings		ML	SDSL	Silty sand with clays (balls up), moist, brown, 7.5 YR 5/4
205	0	30	70		Cuttings		ML	SDSL	Silty sand with clays (minor pilling), moist, brown, 7.5 YR 5/4
210	0	30	70		Cuttings		CL	SDCL	Tight clays, no cuttings returned, WDC add water to flush cuttings 210-215
215	0	30	70		Cuttings		CL	SDCL	Tight clays, no cuttings returned, WDC add water to flush cuttings 210-219. Total depth of borehole is 219 ft bgs.
220									
225									
230									
235									
240									
245									