APPENDIX B

ESI Borehole Logs

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 1 of 3

Project Number: 4423-0220

Hole Number: BH 06

Project: AMS No. 7 ESI

Location: AMS No. 7, Vernon Texas

Coordinates: (N) 7543291.90 (E) 1719524.29

Drilling Contractor: Horizon Drilling

Drill Make and Model / Drilling Method: Longyear BK-81 / HSA

Depth Top of Rock: 76.7'

Depth Casing & Size: NA

Hole Size: 8"

Elevation: 1365.0 (MSL)

Angle from Vert. and Bearing: N/A

Depth Bottom of Hole: 79.0'

Water Level: 21.5' 18.3' (in core) (in open hole)

Fluid & Additives: Mud (100% bentonite)

Date Start: 7/19/00

Date Finish: 7/19/00

Logger: Phil Hammons

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL (Time)	SAMPLE TYPE & NUMBER	SAMPLE % RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION (Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content)
		(0-0.5) 1200	AMS7-BH06-S-00 PID=0.0 chemical	5.0/5.0			SAND WITH SOME SILT (SM), moderate brown (5YR 4/4), v. fine grained, quartoze, 15% silt, dry (Upper surface ft probable AF due to closure activities). PID=0.0
5		(5.0-6.0) 1405	-05 PID=0.0 chemical	5.0/5.0			grades to grayish orange (10YR 7/4) PID=0.0
10		(10.0-11.0') 1415	-10 chemical PID=0.0	5.0/5.0			laminated moderate reddish brown (10R 4/6) and very pale orange (10YR 8/2) PID=0.0
15		(16.0-18.0) 1425	-18 (QA/QC) chemical PID=0.0	5.0/5.0			gradational SAND (SP), moderate reddish brown (10R 3/4, 4/6), v. fine grained, quartoze, no silt PID=0.0
18.3' ▽ (in core)				5.0/5.0			Very silty sand (SM), moderate reddish brown (10R 4/6), very fine grained, quartoze, 30% silt, saturated
20							20.5' grades to silty Sand (SM), light brown (5YR 5/6), 15-20% silt PID=0.0
				3.0/5.0			SANDY CLAY (CL), pale yellowish brown (10YR 6/2), 20% v. fine grained sand, low plasticity, saturated
25							

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 2 of 3
Project Number: 4423-0220
Hole Number: BH 06

Project: AMS No.7 ESI
Location: AMS No.7 Vernon, Texas

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL	SAMPLE TYPE & NUMBER	SAMPLE % RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION (Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content)
							CL (as above) gradational
				5.0/5.0			CLAYEY SAND (SC), light brown (5YR 5/6), v. fine grained, quartzose, 35-40% clay, soft, saturated. PID = Φ.Φ
	30			4.8/5.0			SANDY CLAY (CL), very pale orange (10YR 8/2), 25-30% v. fine grained sand, stiff, abundant calcite nodules (2-3 mm diam.) PID = Φ.Φ
	35			4.0/5.0			Silty SAND (SM), mottled light brown (5YR 5/6) and very pale orange (10YR 8/2), v. fine grained, quartzose, 10-20% silt, soft flowing sand PID = Φ.Φ
	40			2.1/5.0			SAND (SP), light brown (5YR 5/6), v. fine grained, subrounded to subangular, soft, flowing sand PID = Φ.Φ
	45			1.0/5.0			PID = Φ.Φ
	50			1.3/5.0			- grades to rounded grains PID = Φ.Φ
	55						

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 3 of 3
Project Number: 4423-0220
Hole Number: BH06

Project: AMS No.7 ESI
Location: AMS No.7 Vernon, Texas

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL (TIME)	SAMPLE TYPE & NUMBER	SAMPLE % RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION (Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content.)
							SAND (SP) as above
				1.7/5.0			PID = ϕ·ϕ
	60			1.6/5.0			PID = ϕ·ϕ
	65						PID = ϕ·ϕ
				3.0/5.0			SILT (ML), light brown (5YR 6/4), hard
	70						SAND (SP) as above
				2.6/5.0			PID = ϕ·ϕ
	75	75.5-76.5 (1 BLS)	AMS7-BH06-5-76 chemical PID = ϕ·ϕ	3.2/4.0	50 push		Top of Bedrock at 76.7'
							SANDSTONE, moderate reddish brown (10R 4/6), very fine grained, trace silt, faint low angle x-bedding, highly weathered.
							T.D. at 79.0'
	80						

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 1 of 4
Project Number: 4423-0220
Hole Number: BH-07

Project: AMS NO. 7 ESI
Location: AMS No. 7/Vernon TEXAS
Coordinates: (N) 7543371.68 (E) 1719805.76
Drilling Contractor: Horizon Drilling
Drill Make and Model / Drilling Method: Longyear BK-81
Depth Top of Rock: 85.5'
Depth Casing & Size: NA
Hole Size: 8"
Elevation: 1367.0 (MSL)
Angle from Vert. and Bearing: NA
Depth Bottom of Hole: 87.0'
Water Level: 11.3' (in open hole) 10' (in core)
Fluid & Additives: Insta-Vis Liquid Polymer
Date Start: 7/17/00
Date Finish: 7/18/00
Logger: Phil Hammons

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL (Time)	SAMPLE TYPE & NUMBER	SAMPLE % RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION (Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content)
		0-1.5' (1510)	AMST-BH07-S-00 (Chemical) PID=0	3.3/5.0			SAND (SM), moderate reddish brown (10R 4/6), very fine to medium grained, 10% silt, 5% gravel, trace caliche nodules, Artificial Fill, soft. PID = 0.0'
5		5-6' (1520)	-05 (Chemical) PID=0	1.8/5.0			(as above)
							approximate
10		(10-11') (1525)	-10 (Chemical) PID=0	2.0/5.0			SAND (SP), grayish orange (10YR 7/4), medium to coarse grained, subrounded to rounded grains, quartz, saturated at 10.0' in core, soft (AF?)
							SAND with some silt (SM), mottled moderate reddish brown (10R 4/6) and light brown (5YR 5/6), very fine grained, trace medium grained, quartz, 15% silt, soft
15				2.5/5.0			PID = 0.0
							approximate
20				5.0/5.0			CLAYEY SAND (SC), laminated light brown (5YR 5/6) and moderate yellowish brown (10YR 5/4), fine grained, quartz, 35% fines, trace caliche nodules, stiff. PID = 0.0
25							

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 2 of 4
Project Number: 4423-0220
Hole Number: BH-07

Project: AMS No. 7 ESI
Location: AMS No. 7, Vernon Texas

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL	SAMPLE TYPE & NUMBER	SAMPLE % RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION: Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content.
				5.0/5.0			(as above) PID=0.0
	30			5.0/5.0			trace gravel (up to 1" diameter), some caliche nodules and layers PID=0.0
	35			3.8/5.0			SAND with some gravel (SW), moderate yellowish brown (10YR 5/4), fine grained, gravel up to 1.5" diameter, soft (36.0-36.8')
							CLAYEY SAND (SC), laminated pale olive (10Y 6/2) and moderate yellowish brown (10YR 5/4), fine grained, 20% clay, stiff
							approximate
	40			4.0/5.0			SAND with some SILT (SM), mottled light brown (5YR 5/6) and grayish orange (10YR 7/4), v. fine grained, trace clay, flowing sands PID=0.0
							approximate
	45			3.8/5.0			SAND (SP), light brown (5YR 6/4), fine grained, poorly graded, trace silt, quartzose, flowing sands PID=0.0
	50			4.0/5.0			(as above) Core barrel stuck in augers due to flowing sand on 50-55' run. Could not dislodge. Had to pull augers and rods out of hole to dislodge and go back in.
	55						

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 3 of 4
Project Number: 4423-0220
Hole Number: BH-07

Project: AMS No. 7 ESI
Location: Ams No. 7, Vernon, Texas

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL	SAMPLE TYPE & NUMBER	% RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION: Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content.
							Drilled ahead without sampling from 55-65'
							AT 65' added Insta-Vis Liquid Polymer to mud pit to bring up cuttings and flush out HSA. (ACETCO product)
	60						
							From 65'-86', switched from continuous sampling to drive sampling with downhole hammer and 2' spoons (2" diameter)
	65			0.9/2.0'			SAND (SP) as above, flowing sands
				0.7/2.0'			PID=0.0
	70			0.4/2.0			
				1.0/2.0			PID=0.0
				2.0/2.0			
	75			1.3/2.0			SANDY SILT (ML), light brown (5YR 5/6), sand is v. fine grained (30%), trace clay.
				1.0/2.0			SAND (SP) as above PID=0.0
							Drilled ahead without sampling from 79'-83', push 86'
	80						
		84.5'-85.5' (1740)	AMS7-BH07-S-85 (Chemical) PID=0.0	3.0/4.0			SAND (SP) as above
	85						

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 4 of 4
Project Number: 4423-0221
Hole Number: BH-07

Project: AMS No. 7 ESI
Location: AMS No. 7 Vernon, Texas

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL	SAMPLE TYPE & NUMBER	SAMPLE % RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION (Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content)
				3/4			SAND (SP) as above — TOP OF BEDROCK at 85.5'
							SANDSTONE, moderate reddish brown (10R 4/6), silty, hard
							T.D. @ 87.0'
	90						
	95						

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 1 of 3
Project Number: 4423-0220
Hole Number: BH-08

Project: AMS No. 7 EST
Location: AMS No. 7, Vernon Texas
Coordinates: (N) 7543550.53 (E) 1719815.19
Drilling Contractor: Horizon Drilling
Drill Make and Model / Drilling Method: Longyear BK 81 / HSA
Depth Top of Rock: 80.5'
Depth Casing & Size: NA
Hole Size: 8"
Elevation: 1362.5 (msl)
Angle from Vert. and Bearing: N/A
Depth Bottom of Hole: 85.0'
Water Level: 15.0' (in 18.5' in core open hole)
Fluid & Additives: Mud / bentonite (100%)
Date Start: 7/20/00
Date Finish: 7/20/00
Logger: PHL Hammons

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL (TIME)	SAMPLE TYPE & NUMBER / PID	% RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION (Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content.)
		0'-0.5' 7/20/00 (1205)	AMS7-BH08-S-00 chemical PID=0.0	3.0/5.0			SAND (SP), light brown (5YR 5/6), v. fine grained, trace silt dry.
	5	5.0-6.0' 7/20/00 (1250)	S-05 chemical	5.0/5.0			approximate SILTY SAND (SM), mod. reddish brown (10R 4/6), v. fine grained 15% silt, trace gravel (rounded <1" diameter), abundant caliche nodules (2-4" diam.). from 5-15' slight oil odor
	10	10.0-11.0' (1300)	S-10 chemical	5.0/5.0			grades to light brown (5YR 5/6) with some very pale orange (10YR 8/2) mottling
	15	15.0-16.0' (1325)	S-15 chemical	5.0/5.0			trace caliche nodules (2-4 mm)
		14.5-18.5' (1340)	S-18 QNAC chemical	5.0/5.0			silt content increases to 30%
	20		PID=0.0	3.5/5.0			SANDY CLAY (CL), light brown (5YR 5/6), v. fine grained sand (35%), some caliche nodules, low plasticity.
	25						

PID > 2,000 ppm (5-15') PID 2,000 ppm (15-17')
incore 18.5'

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 2 of 3
Project Number: 4423-0220
Hole Number: BH-08

Project: AMS No. 7 ESI
Location: AMS No. 7, Vernon TX.

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL	SAMPLE TYPE & NUMBER	SAMPLE % RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION (Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content.)
			PID 0.0	5.0/5.0			SANDY CLAY (CL) as above. 25-27' - grayish orange (10YR 7/4) with abundant caliche nodules (3-7mm diam). grades to light brown (5YR 5/6) without caliche
	30		PID 0.0	5.0/5.0			30.0-32.2 grayish orange (10YR 7/4), abundant caliche nodules (3-7mm) grades to l. brown (5YR 5/6)
							gradational
	35		PID 0.0	4.0/5.0			SILTY SAND (SM), light brown (5YR 5/6), v. fine grained, quartzose, well rounded, 20% silt, trace clay, soft, flowing sand
	40		PID 0.0	1.3/5.0			
	45		PID 0.0	1.0/5.0			SANDY SILT (ML), mod. orange pink (5YR 8/4), 15% v. fine sand, hard. SAND WITH SOME SILT (SM), l. brown (5YR 5/6), v. fine grained, quartzose, well rounded, 10% silt, flowing sand, soft
	50		PID 0.0	4.1/5.0			
	55						

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 3 of 3
Project Number: 4423-0220
Hole Number: BH-08

Project: AMS No. 7 ESI
Location: AMS No. 7, Vernon Tx

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL	SAMPLE TYPE & NUMBER PID	% RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION (Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content.)
							SAND WITH SOME SILT (SM) as above
			PID 0.0	1.0/5.0			
	60						
			PID 0.6	0.6/5.0			
	65						VERY SANDY SILT, l. brown (5YR 6/4), 40% v. fine gr. sand, stiff.
			PID 0.0	2.2/5.0			SAND (SP), light brown (5YR 6/4), v. fine grained, quartzose, rounded flowing sand.
	70						
			PID 0.0	1.2/5.0			
	75						
		(80.1-80.5') TSD	S-80 (EB) Chemical PID=0.0	1.0/5.0			Top of Bedrock at 80.5'
	80			2.8/5.0			SANDSTONE, Mod. reddish brown, v. fine grained; faint low angle x-bedding, highly weathered
							T.D. at 85' bgs
	85						

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 1 of 4

Project Number: 4423-0220

Hole Number: BH-09

Project: AMS NO. 7 ESI	Location: AMS No. 7, Veron Texas
Coordinates: (N) 7543566.68 (E) 1719814.85	Drilling Contractor: Horizon Drilling / Peterson Drilling
Drill Make and Model / Drilling Method: Gardner-Denver 1500/Mud Rotary; Longyear BK-81/Air Rotary/Mud Rotary	Depth Top of Rock: ~~84'~~ 80.5'
Depth Casing & Size: Isolation Casing 91'/8 5/8" (steel)	Hole Size: 0-95' (12 1/4"); 95'-210' (3 1/4")
Elevation: ~~NR~~ 1362.82 (MSL)	Angle from Vert. and Bearing: Borehole Reamed w/ Drilltech D40K
Depth Bottom of Hole: 210'	
Water Level:	Fluid & Additives: 0-95' - Bentonite Mud; 95-168' - None
Date Start: 7/12/00	Date Finish: 8/03/00
Logger: PHIL HAMMONS	

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL	SAMPLE TYPE & NUMBER	SAMPLE % RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION: Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content.
							Drilled from 0.0' to 88' bgs with 4.25" tricone; logged cuttings (see log of adjacent Borehole BH08 for lithologies)
	10						
	20						▽ approximate depth to groundwater
		N/A	N/A		N/A		
	30						
	40						
	50						

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 2 of 4
Project Number: 4423-022C
Hole Number: BH-09

Project: AMS No. 7 ESI
Location: AMS No. 7, Vernon Texas

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE: INTERVAL	SAMPLE: TYPE & NUMBER	SAMPLE: PID	SAMPLE: % RECOVERY	STANDARD PENETRATION TEST RESULTS: 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION (Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content)
								see log of adjacent Borehole BH08 for lithologies
	60							
	70							
	80	Boreg isolation casing						Top of Bedrock at 80.5' (based on contact encountered in adjacent BH08)
								weathered bedrock
								unweathered bedrock at 84.0' based on drilling change
	90				5.0/5.0	N/A		SANDSTONE, moderate reddish brown (10R 4/6), v. fine grained, quartoze, prominent low angle cross-bedding, hard dry
		91.0'						Reamed pilot (4.25") borehole with 12.25" tricone bit from 0.0' to 98' bgs. Set 8 5/8" steel casing to 91' bgs and grouted in place. Begin Air Coring at 98.0' on 7/19/00
	100							SILTSTONE WITH some sand, moderate reddish brown (10R 4/6), sand is v. fine, rounded (10%), dry, possible water bearing fractures
				0.0	6.5/10	NA		SILTY SANDSTONE, moderate reddish brown (10R 4/6), sand is fine grained, quartoze, 25-30% silt, ~~dry~~, low angle x-l
								approximate
	110				5.7/10	NA		SANDSTONE, pale reddish brown (10R 5/4) with pale olive (10Y 6/2) mottling, v. fine grained, quartz and rock fragments, abundant elongate shale clasts marcas, prominent low angle x-bedding, small (2-10mm) solution cavities, some filled w/ crystals.

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 3 of 4
Project Number: 4423-0220
Hole Number: BH-09

Project: Ams No. 7 EST
Location: Ams No. 7, Vernon Texas

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE: INTERVAL	SAMPLE: ~~TYPE & NUMBER~~ PID	SAMPLE: % RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION: Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content.
							as above
			0.0	5.7/10	NA		SANDY SHALE, pale reddish brown (10R 5/4) with pale olive (10Y 6/2) mottling sand is vi fine grained (20-30%)
							approximate
							SANDSTONE, Pale reddish brown (10R 5/4), v. fine grained, quartoze, low angle x-bedding, moderately cemented.
120			0.0	6.8/10	NA		122'-128' - clayey
130			0.0	8.7/10	NA		131.5-134.0 mottled pale olive (10Y 6/2) with a bundant shale clasts (from 116-138' - loss g ≈ 100 gallons to Fm.)
140			0.0	4.9/10	NA		138.5'-140.2' mottled pale olive (10Y 6/2) with a bundant shale clasts 140.2'-142.9' - weakly cemented
150			0.0	3.0/10	NA		weakly cemented, no noticeable x-bedding
160			0.0	6.0/10	NA		159.2'-160.7' - mottled pale olive (10Y 6/2) with abundant shale clasts 160.7'-164.0' - weakly cemented (from 138-168' loss g ≈ 160 gallons to Fm) Drillers added Instavis liquid Polymer at 168' (Flushed out pit prior to coring)
170				6.0/10	NA		168.0'-170.6' well cemented, abundant solution cavities (1-4mm) prominent x-bedding (low angle)

MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

BOREHOLE LOG

Sheet 4 of 4
Project Number: 4423-0226
Hole Number: BH-09

Project: AMS No. 7 ESI
Location: AMS No. 7, Vernon, Texas

ELEVATION	DEPTH BELOW SURFACE (ft)	SAMPLE INTERVAL	SAMPLE TYPE & NUMBER	SAMPLE % RECOVERY	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SYMBOLIC LOG	SOIL DESCRIPTION (Name, color, grain size, sorting (or gradation), plasticity, weathering, mineralogy, inclusions, angularity, moisture content)
							170.5-171.5 - weakly cemented
			0.7	6.0/10	NA		SILTSTONE, greenish gray (5G6/1), shaley in areas, sand content (5%) weakly cemented
							approximate SHALE, moderate reddish brown (10R4/6) with thin bands of greenish gray (5G4/1)
	180		2.6	6.1/10	NA		178'-180' - soft, wet 180'-181.8' very hard, dry 181.8-184' - alternating soft and hard, ~~dry~~ wet and dry
	190		>2000	4.8/5			moderate reddish brown (10R4/6) with occassional greenish gray (5G4/1) spots, very hard, dry, fractures in areas (possible water bearing).
			>2000	5.0/5.0			
	200		>2000	3.7/5.0			
			NR	2.1/5.0			low battery on PID, lamp will not light
	210		NR	4.4/2.0			T.D. at 210' bgs
	220						
	230						