APPENDIX B

BORING LOGS AND WELL CONSTRUCTION LOGS

BORING LOGS

Boring Log Report Form

Boring No. SI09-GW-S01

Client USACE
Site Location SI09
ESE Field Crew Leader: Rich Hill
Date Start 5-13-98 Finish 5-13-98
Contractor: Graves Services
Boring Depth 10' Diameter 2"
Boring Location See Map

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Josh Torrey
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
							0"-6" SILTY SAND,	SM	Collected Sample 9809 (EFM 28 & 29) from 0-1'
2'							6"-6½' SANDY CLAY (20% SAND), OLIVE (5Y-5/4), SLIGHTLY PLASTIC, FIRM MOIST TO VERY MOIST. PERIODIC COAL LAYERS.	CL	
4'									
6'							6½'-10' - SHALE, LIGHT YELLOWISH BROWN (10YR-6/4), MEDIUM DENSITY, NON-PLASTIC, MOIST.	Rx	
8'									
10'									— BOH = 10'

Rx = Rock

Boring Log Report Form

Boring No. SI09-GW502 Page 1 of 2

Client USACE
Site Location SI09-GW502
ESE Field Crew Leader: Rich Hill
Date Start 5-13-98 Finish 5-13-98
Contractor: Graves Services
Boring Depth 12' Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Josh Toney
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
							0"-6" Asphalt		
2							6"-9' Silty SAND, 30% silt, Brownish Yellow (10YR 6-6) to Grey (10YR-6/1), subangular, poorly graded, non-plastic, moist. wet at 3'.	SM	Collected sample SS01A (EFM 23 #15) from 0-1'
4									
6							9'-10' - CLAY, 10% sand, light greenish grey (GLEY-5BG 7/1), highly plastic, firm, wet.	CH	Collected sample SS01B (EFM 23 #16) from 3-4'
8									
10							10'-12' Shale, Yellowish Brown (10YR-5/6) medium dense, non plastic, moist	Rx	
12									- 12' = EOH

Rx = Rock

Boring Log Report Form

Boring No. SI09-SS02/GW503 Page 1 of 2

Client USACE
Site Location SI-09
ESE Field Crew Leader: Rich Hill
Date Start 5-12-98 Finish 5-12-98
Contractor: Graves Services
Boring Depth 11½' Diameter 2"
Boring Location See Map

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Chuck Graves
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
							0"-4" Asphalt + GRAVEL		
2'							4"-2' - SILTY SAND (30% SILT), BROWNISH YELLOW (10YR-6/6), MEDIUM DENSE, NON-PLASTIC, MOIST	SM	COLLECTED SAMPLE SS02A (EFM 25 #18) FROM 0-1'
4'							2'-10' - SANDY CLAY, 25% SAND GREY (10YR-5/1), MOD. PLASTIC, SOFT, WET AT 3'	CL	▼ WATER @ 3'
6'									COLLECTED SAMPLE SS02B (EFM 25 #18) FROM 3-4'
8'							10'-11.5' - Shale, LIGHT GREY (10YR-7/1), MEDIUM DENSE, NON PLASTIC, WET.	Rock	
10							- BOTT - 11'6"		TD = 11'6"

Boring Log Report Form

Boring No. SIC9-GW S04 Page 1 of 2

Client USACE
Site Location SIC9
ESE Field Crew Leader: Rich Hill
Date Start 5-13-98 Finish 5-13-98
Contractor: Graves Services
Boring Depth 13' Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Josh Toney
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
							0"-4" - ASPHALT		COLLECTED SAMPLE 8807 (EFM 28 + 27) FROM 0-1'
2'							4"-2' - SANDY CLAY (20% SAND), STRONG BROWN (7.5YR-5/8), SLIGHTLY PLASTIC, FIRM, MOIST.	CL	
4'							2'-8' SILTY SAND (10% SILT), GREYISH BROWN (2.5Y-5/2), SUB ANGULAR, POORLY GRADED, MEDIUM DENSE, WET.	SM	
6'									
8'							8'-13' Shale, YELLOWISH BROWN (10YR-5/6), MEDIUM DENSE, NON-PLASTIC, MOIST.	Rx	
10'									
12'									BOH = 13'
14'									

Rx = Rock

Boring Log Report Form

Boring No. SI10-GeoSo1 Page 1 of 2

Client USACE
Site Location SI 10
ESE Field Crew Leader: Rich Hill
Date Start 5-12-98 Finish 5-12-98
Contractor: Graves Services
Boring Depth 13.5' Diameter 2"
Boring Location See Map

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Citwell Green
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
							0"-4" ASPHALT		CONCRETE
2'							4"-2' - SILTY SAND, 30% SILT, BROWNISH YELLOW (10YR-6/8), NON-PLASTIC, FIRM, MOIST.	SM	SAMPLE SS10 (EFM 28 + 49) FROM 0-1'
4'							2'-12 - CLAY, SANDY (25%), Light BROWNISH GREY (2.5Y-6/2), Highly PLASTIC, FIRM, MOIST, COLOR VARIES TO A REDDISH BROWN (5YR-4/4). WET AT 6'.	CL	WATER AT 6'
6'									
8'							12'-13.5' - Shale LIGHT YELLOWISH BROWN (10YR-6/4), NON PLASTIC, MEDIUM DENSE, DRY.	RX	
10'									
12'									
14'							- BOH = 13.5'		

RX = ROCK

Boring Log Report Form

Boring No. SI10-GWSC2 Page 1 of 2

Client USACE
Site Location SI10
ESE Field Crew Leader: Rich Hill
Date Start 5-12-98 Finish 5-12-98
Contractor: Graves Services
Boring Depth 12' Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller CHUCK GOODEN
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
							0"-6" - ASPHALT		CONCRETE
2'							6"-8' - SANDY CLAY (15% SAND), STRONG BROWN TO PALE BROWN (7.5YR-5/6 TO 10YR-6/3) HIGHLY PLASTIC, STIFF, MOIST	CL	SAMPLE SS03A (EFM 28 # 34) + DUP (EFM 28 # 71) FROM 0-1'
4'									
6'							8'-12' - SHALE, BROWN (10YR-5/3) MEDIUM DENSE, NON-PLASTIC, MOIST.	RX	CONCRETE SAMPLE SS03B (EFM 28 # 35) FROM 3-4'
8'									
10'									
12'									- 12' = BGH DRY HOLE DID NOT SET GWSC2

RX = ROCK

Boring Log Report Form

Boring No. SI10-GWS03 Page 1 of 2

Client USACE
Site Location SI10
ESE Field Crew Leader: Rich Hill
Date Start 5-13-98 Finish 5-13-98
Contractor: Graves Services
Boring Depth 8' 10" Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Josh Tavery
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
2' 4' 6' 8' 10'							0"-3" Asphalt 3"-5' - CLAY with some sand, Strong Brown (7.5YR-5/8), med. plastic, firm, sl. moist 5'-8'10" - Shale, Light Yellow Brown (10YR-6/4), medium dense, non plastic ~~moist~~ dry	CL	Concrete sample 9811 (EFM 28 * 50) from 0-1' Bit = 8' 10" Refusal in Shale

Boring Log Report Form

Boring No. SIC-GWS04 Page 1 of 2

Client USACE
Site Location SIC
ESE Field Crew Leader: Rich Hill
Date Start 5-12-98 Finish 5-12-98
Contractor: Graves Services
Boring Depth 12.5' Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Chuck Gordan
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
							0'-1' ASPHALT		Collected Sample SS05A (EFM 28 & 29) from 0-1'
2'							1'-4' - Silty Sand, 35% Silt, Reddish Yellow (7.5YR-6/6), Non Plastic, Firm, Dry.	SM	
4'							4'-7.5' - Shale, Light Brownish Grey (10YR-6/2), Non Plastic, Medium Dense, Dry	RX	Collected Sample SS05B (EFM 28 & 29) from 3-4'
6'							7.5'-8.5' Clay, Strong Brown (7.5YR-5/8) to Reddish Yellow (7.5YR-7/6), Highly Plastic, Firm to Stiff, Moist 15-20% Sand.	CL	
8'									
10'									
12'							8.5'-12.5' - Shale, Light Brownish Grey (10YR-6/2), Non-Plastic, Medium Dense, Dry.	RX	
									- 12.5' = Bott

RX = Rock

Boring Log Report Form

Boring No. SI 10 - SS07 / GWS05

Client USACE
Site Location SI 10
ESE Field Crew Leader: Rich Hill
Date Start 5-12-98 Finish 5-12-98
Contractor: Graves Services
Boring Depth 12' Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller CHUCK GRAVES
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
							0"-6" ASPHALT		CONCRETE
2'							6"-1½' - SILTY SAND, 25% SILT, YELLOWISH RED (5YR-5/6), NON PLASTIC, LOOSE, DRY.	SM	SAMPLE SS07A (REFM 28 #42) FROM 0-1'
4'							1½'-6' - CLAY WITH 20% SAND, OLIVE (5Y-5/4) TO YELLOWISH RED (5YR-5/8), MOD. TO HIGHLY PLASTIC, STIFF, MOIST.	CL	CONCRETE SAMPLE SS07B (REFM 28 # 43) FROM 3-4'
6'									
8'									
							6'-12' - Shale, LIGHT BLUEISH GREY,		
10'									
12'							— BOH = 12'		DRY HOLE. DID NOT SET GWS05

Boring Log Report Form

Boring No. SI10-SS18/GWS06 Page 1 of 2

Client USACE
Site Location SI 10
ESE Field Crew Leader: Rich Hill
Date Start 5-11-98 Finish 5-11-98
Contractor: Graves Services
Boring Depth 16' Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller CHUCK GRAVES
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
							0'-3' - FILL AND ASPHALT	NA	CONCRETE SAMPLE SS13 (EFM 23*52) FROM 0-1'
2'							3'-5 - SANDY CLAY (35% SAND) REDDISH YELLOW (7.5YR 6/6), MOD. PLASTIC, FIRM, MOIST.	CL	
4'							5'-16' - CLAY, HIGHLY PLASTIC, REDDISH YELLOW (7.5YR-6/6), STIFF, MOIST, WITH PERIODIC SHALE BEDS (≈ 20-30%). SHALE IS STIFF, NON PLASTIC AND A LIGHT GREENISH GREY (GLEY-5GY 7/1) TO VERY PALE BROWN (10YR-7/4).	CL/RX	
6'									
8'									
10'									
12'									
14'									
16							- 16' = BOH		- DRY HOLE

RX = ROCK

Boring Log Report Form

Boring No. SI10-GW507 / SS08

Client USACE
Site Location SI 10
ESE Field Crew Leader: Rich Hill
Date Start 5-13-98 Finish 5-13-98
Contractor: Graves Services
Boring Depth 9.5' Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Josh Turney
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
							0'-6" Asphalt		Collected Sample SS08A (EFM28*44) from 0-1'
2'							6"-7' - Sandy Clay, 30% Sand, Vermish Red, 5YR-5/8, Med. plastic, Firm, Moist.	CL	
4'									
6'									Collected Sample SS08B (EFM28*45) from 0-1'
8'							7'-9.5' Shale, Light Yellow Brown (10YR-6/4) Med. Dense, Dry, Non Plastic	RX	
10'									- BCH = 9.5'

Boring Log Report Form

Boring No. SI10-GW508

Client USACE
Site Location SI 10
ESE Field Crew Leader: Rich Hill
Date Start 5-12-98 Finish 5-12-98
Contractor: Graves Services
Boring Depth 10' Diameter 2"
Boring Location See MAP

ESE Project FTMC-SI
ESE Project No. 3196314G
ESE Project Manager William Elliott
Drill Type Geoprobe
Driller Chuck Gowen
Geologist: Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 Inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
							0'-5' Sandy clay, 25% sand, olive brown (2.5Y-6/8), Highly Plastic, Stiff, Moist	CL	
2'									
4'							5'-10' - Shale, Light olive gray (5Y-6/2), Non-Plastic, Loose, Moist.	Rx	
6'									
8'									
10'									- Boh = 10' Dry Hole. Did not set GW508

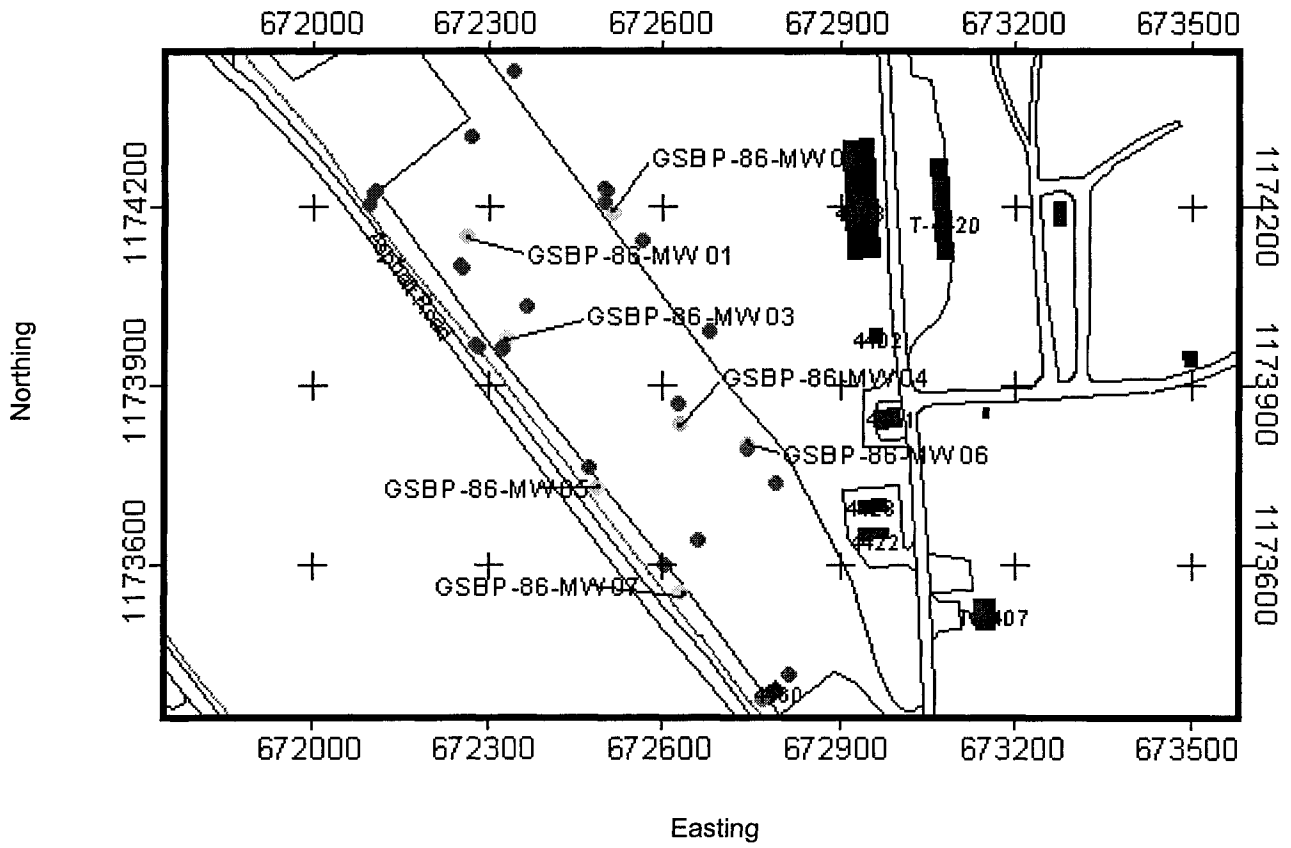
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER GSBP-86-MW01
1. Company name: **IT Corporation**	2. Drill Subcontractor: Miller Drilling	Sheet 1 of 5 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: B-57 Rotary Auger Drill Rig
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoons	8. Hole location: Contractor Laydown Area, Parcel 86 9. Surface elevation (feet above mean sea level): 784.19 10. Date started: 09/29/99 — 11. Date completed: 09/30/99
12. Overburden thickness (feet bgs): >35	15. Depth groundwater encountered (feet bgs): 28
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 9.2 after ~24 hours
14. Total depth of hole (feet bgs): 35	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA					
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	X	X	Chlorinated Pesticides	SVOC	PCB	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
		X		Drew Storm		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: GSBP-86-MW01

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW01

Project: Fort McClellan | Geologist: Drew Storm | Sheet 2 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	cl-ml: Gray, medium wet, stiff CLAY and SILT. Little black weathered angular Gravel, Shale. Overall slight plasticity.	cl-ml		Organic Vapor = 0.0ppm			8 15 15 15	Rec 14"/24" (0-2' bgs)
	1								
	2	cl-ml: Gray to mottled yellowish-orange, wet, soft CLAY and SILT. Slight overall plasticity.	cl-ml		Organic Vapor = 0.0ppm			4 3 4 3	Rec 4"/24" (2-4' bgs)
	3								
780	4	cl-ml: Gray to mottled yellowish-orange, wet, soft CLAY and SILT. Moderate overall plasticity.	cl-ml		Organic Vapor = 0.0ppm			1 1 1 1	Rec 5"/24" (4-6' bgs)
	5								
	6	cl-ml: Yellowish-orange, moist, very stiff CLAY and SILT. No odor. Slight overall plasticity. Trace of brown, dry Shale.	cl-ml		Organic Vapor = 3.2ppm			4 6 11 20	Rec 17"/24" (6-8' bgs)
	7								
	8	sh: Light brown, platy, friable, hard, weathered SHALE.	sh		Organic Vapor = 2.0ppm			7 33 35 50	Rec 8"/24" (8-10' bgs)
775	9								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW01

Project: Fort McClellan | Geologist: Drew Storm | Sheet 3 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10	sh: Light brown, dry weathered SHALE.							Due to hardness of overburden, no split spoon sample was taken. Description taken from hollow stem auger drill cuttings.
	11								
	12								
	13		sh						
770	14								
	15								
	16	sh: Gray, dry, weathered, platy, fissile, hard SHALE.							Unable to push spoon (16'-18').
	17								
	18		sh						
765	19								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW01

Project: Fort McClellan | Geologist: Drew Storm | Sheet 4 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	20	sh: Dry, gray, weathered, fissile, hard, platy SHALE.							Description taken from hollow stem auger drill cuttings.
	21								
	22								
	23								
760	24		sh						
	25								
	26								
	27								
	28								Groundwater encountered at 28-29'
755	29	sh: Saturated, weathered, gray SHALE.							

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW01

Project: Fort McClellan | Geologist: Drew Storm | Sheet 5 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	30								Description from hollow stem auger drill cuttings.
	31								
	32		sh						
	33								
	34								
750									
									Stopped hollow stem auger drilling at 35'. Bottom of borehole at 35'.
	35								

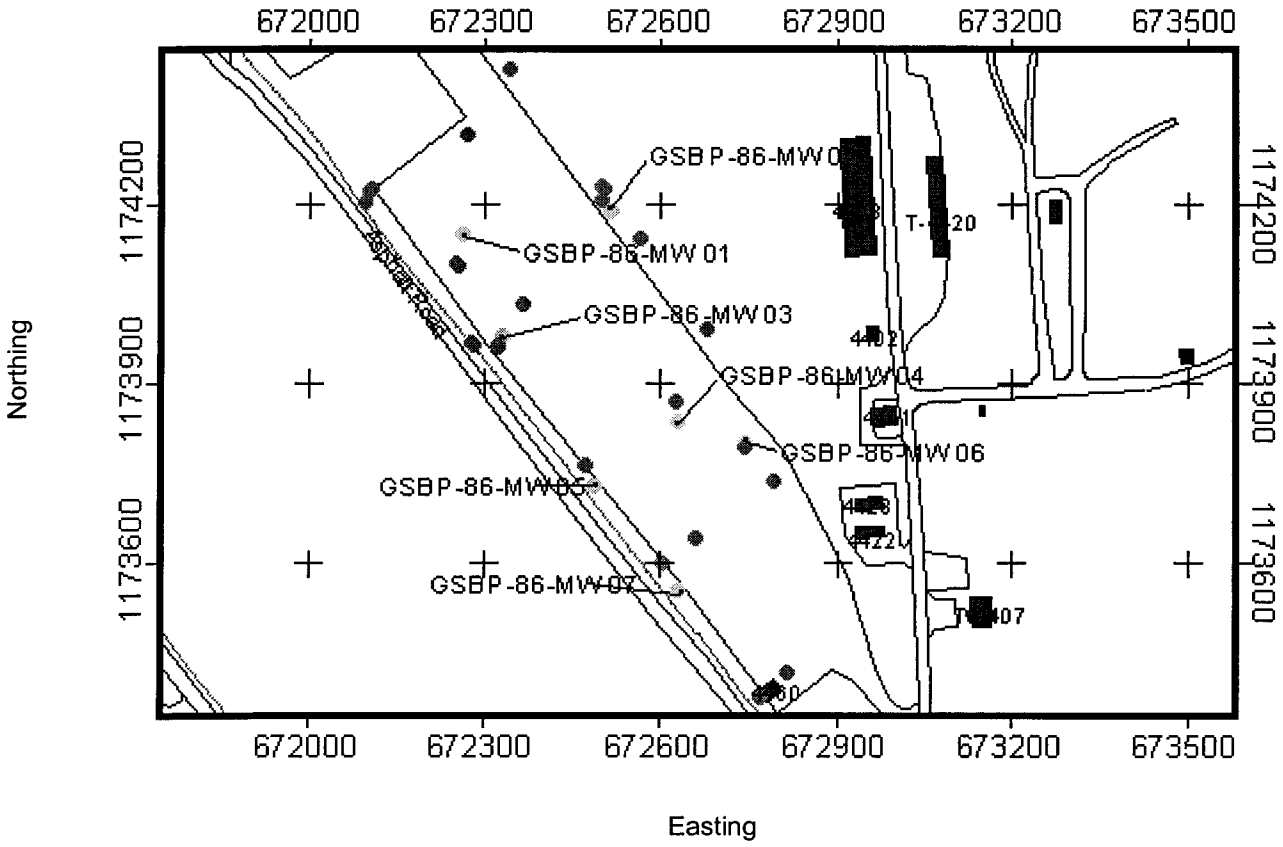
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER GSBP-86-MW02
1. Company name: **IT Corporation**	2. Drill Subcontractor: Miller Drilling	Sheet 1 of 6 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: Mobile B-57
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoon	8. Hole location: Contractor Laydown Area, Parcel 86 9. Surface elevation (feet above mean sea level): 788.34 10. Date started: 10/04/99 — 11. Date completed: 10/04/99
12. Overburden thickness (feet bgs): >45.5	15. Depth groundwater encountered (feet bgs): 35.5
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): NA
14. Total depth of hole (feet bgs): 45.5	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	X					
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	X	X	Chlorinated Pesticides	SVOC	PCB	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
		X		John Hofer		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW02

Project: Fort McClellan | Geologist: John Hofer | Sheet 2 of 6 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	cl: Reddish brown, gravelly sandy CLAY with Tar, moist.	cl		Organic Vapor = 0.0ppm			3 7 9 11	Rec 20"/24" (0-2' bgs)
	1								
		cl: CLAY, brownish gray.	cl						
	2	sh: Weathered SHALE, grayish brown, fissile, very thin bedding. Chert zone 3.5'-3.7'.			Organic Vapor = 3.0ppm				
785	3		sh		Organic Vapor = 0.0ppm				
	4	sh: SHALE, low angle bedding, slightly moist to dry.						14 27 25 27	Rec 24"/24" (4-6' bgs)
	5		sh						
	6	sh: Weathered SHALE, grayish brown, fissile, very thin bedding.						6 15 23 30	Rec 6"/24" (6-8' bgs)
	7		sh		Organic Vapor = 0.0ppm				
780	8	sh: Weathered SHALE, Chert zone 8.9'-9.0' and 9.1'-9.3', dry.						18 32 50/0.5'	Rec 18"/18" (8-9.5' bgs).
	9				Organic Vapor = 0.0ppm				Spoon refusal at 9.5'.

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW02

Project: Fort McClellan | Geologist: John Hofer | Sheet 3 of 6 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10								10
	11		sh						Description from hollow stem auger cuttings. 11
	12								12
	13								13
775									
	14	sh: Weathered SHALE, grayish brown, dry.							Soft drilling. 14
	15		sh						15
	16								16
	17	sh: SHALE, dark gray, hard, dry.							17
	18								18
770									
	19		sh						19

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW02

Project: Fort McClellan | Geologist: John Hofer | Sheet 4 of 6 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	20								20
	21	sh: SHALE, fracture zone 21'-22', dry, large rock chips.	sh						Description from hollow stem auger cuttings. Easy drilling. 21
	22	sh: SHALE, very fine cuttings, gray.							Harder drilling. 22
765	23								23
	24								24
	25		sh						Very hard drilling. 25
	26								26
	27								27
760	28	sh: SHALE, fracture zone, dry.							Easy drilling to 30'. 28
	29								29

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW02

Project: Fort McClellan | Geologist: John Hofer | Sheet 5 of 6 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	30								Very hard
	31								
			sh						
	32								
	33								
755									
	34								
	35								Stopped to see if water enters borehole at 35'.
		sh: SHALE, weathered zone, black, wet.							
	36		sh						
		sh: SHALE, hard, dry.							
	37								
	38								
750			sh						
	39								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW02

Project: Fort McClellan | Geologist: John Hofer | Sheet 6 of 6 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	40	sh: Dry SHALE, dark gray, weathered.							Description from auger cuttings. Soft drilling
	41								
	42								
			sh						
	43								
745									
	44								
	45								Bottom of borehole at 45.5'. (10' below water bearing zone.)

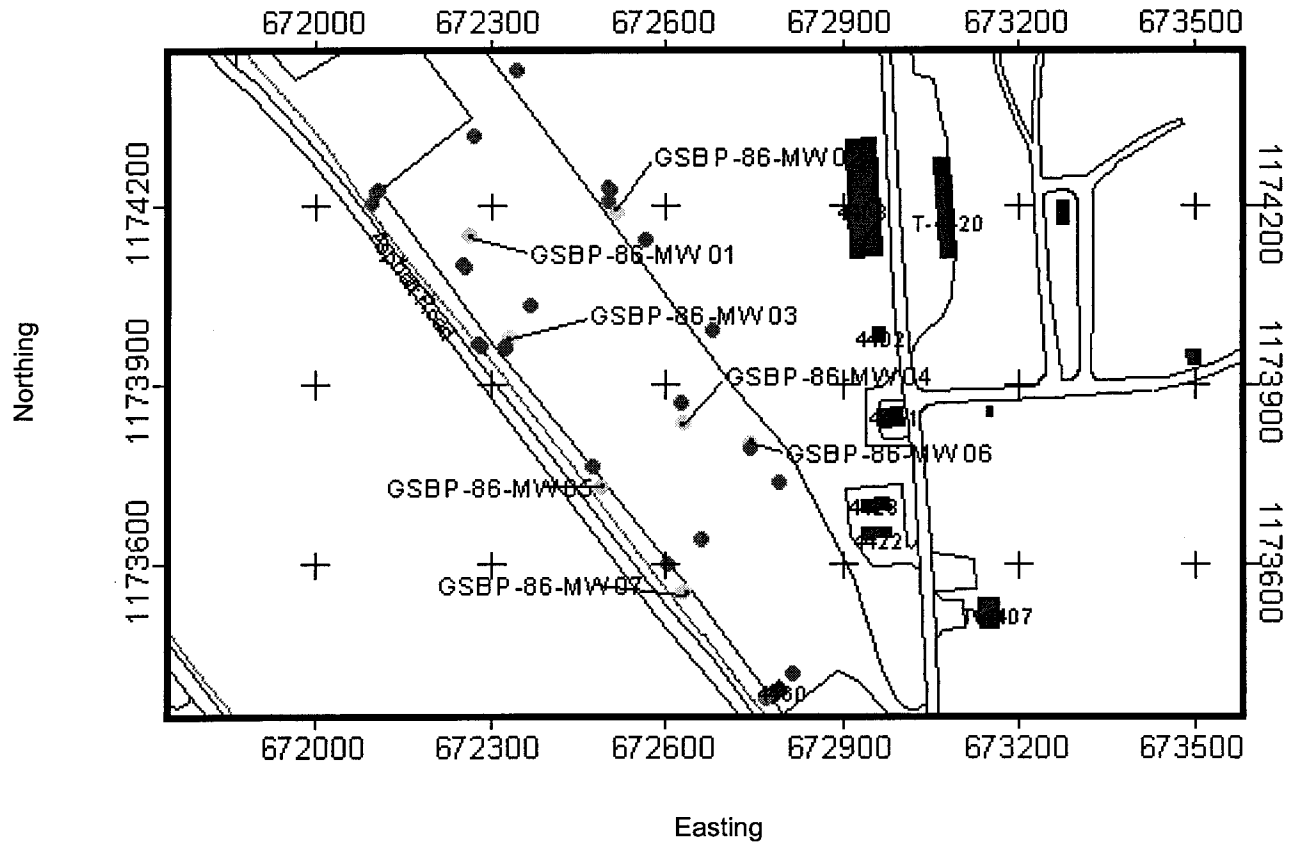
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER GSBP-86-MW03
1. Company name: **IT Corporation**	2. Drill Subcontractor: Miller Drilling	Sheet 1 of 5 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: B-57 Rotary Auger Drill Rig
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoons	8. Hole location: Contractor Laydown Area, Parcel 86 9. Surface elevation (feet above mean sea level): 785.77 10. Date started: 09/29/99 — 11. Date completed: 09/29/99
12. Overburden thickness (feet bgs): >36	15. Depth groundwater encountered (feet bgs): 33
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): ~5.6 after 24 hours
14. Total depth of hole (feet bgs): 36	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA					
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	X	X	Chlorinated Pesticides	SVOC	PCB	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist: Drew Storm		
		X				

LOCATION SKETCH/COMMENTS:



bgs= below ground surface
NA = Not applicable

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW03

Project: Fort McClellan | Geologist: Drew Storm | Sheet 2 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	cl: Mottled yellowish-orange, moist, medium stiff CLAY. Trace of bituminuous Asphalt (0.0'-0.25'), slight overall plasticity.	cl		Organic Vapor = 5.9ppm			7 7 5 7	Rec 20"/24" (0-2' bgs)
785	1								
	2	cl: Red to yellowish-orange, stiff, moist CLAY. Little Silt. Slight overall plasticity.	cl		Organic Vapor = 0.0ppm			5 12 13 15	Rec 18"/24" (2-4' bgs)
	3								
	4	ml: Light brown, moist, soft SILT. Little Clay, yellowish-orange. Slight overall plasticity.	ml		Organic Vapor = 0.0ppm			1 4 7 9	Rec 4"/24" (4-6' bgs)
	5								
780	6	cl: Yellowish-orange, moist, hard CLAY. Little gray Silt. Pinkish-red, extremely weathered, hard fractured Quartzite seam at 8'.	cl		Organic Vapor = 0.0ppm			8 12 28 38	Rec 12"/24" (6-8' bgs)
	7								
	8	cl: CLAY and weathered Quartzite	cl						Split spoon refusal at 8'. Drill hollow stem augers through Clay and weathered Quartzite seam.
	9								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW03

Project: Fort McClellan | Geologist: Drew Storm | Sheet 3 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10	sh: Dry, light brown, platy, friable, hard, weathered SHALE. Trace of moist gray Clay.			Organic Vapor = 0.0ppm			13 26 50/0.4'	Rec 12"/17" (10-11.4' bgs)
775	11		sh						
		sh: Dry, light brown, weathered SHALE (12'-15).							
	12								Description from hollow stem auger drill cuttings.
	13		sh						
	14								
	15	sh: Dry, brown weathered SHALE and fine, angular, residual, weathered Quartzite Gravel.							Unable to push split spoon 15'-17' due to overburden hardness.
770	16								
	17		sh						
	18								
	19								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW03

Project: Fort McClellan | Geologist: Drew Storm | Sheet 4 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	20	sh: Gray, weathered, moist, hard SHALE.							Description from hollow stem auger drill cuttings.
765	21		sh						
	22								
	23	sh: Very moist, hard, gray, weathered SHALE.							
	24								
	25								
760	26								
	27								
	28		sh						
	29								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW03

Project: Fort McClellan | Geologist: Drew Storm | Sheet 5 of 5 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	30								30
755									
	31								31
	32								32
	33	sh: Saturated, dark gray weathered SHALE.							Groundwater encountered at 33'. 33
	34		sh						34
	35								35
750									Bottom of borehole at 36'.
	36								36

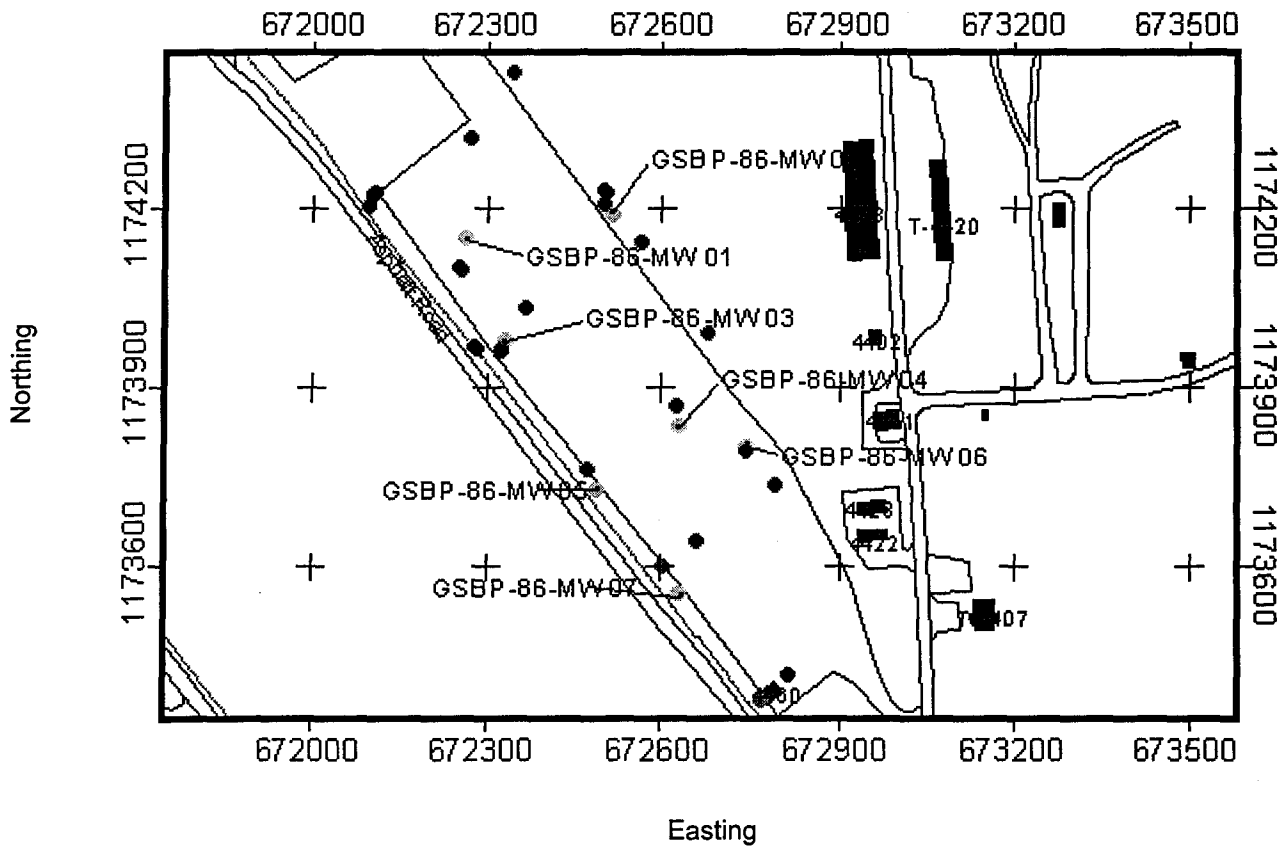
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER GSBP-86-MW04
1. Company name: **IT Corporation**	2. Drill Subcontractor: Miller Drilling	Sheet 1 of 4 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: B-57 Rotary Auger Rig
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoons	8. Hole location: Contractor Laydown Area, parcel 86 9. Surface elevation (feet above mean sea level): 794.75 10. Date started: 09/30/99 — 11. Date completed: 10/01/99
12. Overburden thickness (feet bgs): >30	15. Depth groundwater encountered (feet bgs): 28
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): NA
14. Total depth of hole (feet bgs): 30	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA					
20. Samples for chemical analysis:	**VOC**	**Metals**	**Other (specify)**	**Other (specify)**	**Other (specify)**	**21. Total core recovery:**
	X	X	Chlorinated Pesticides	SVOC	PCB	NA
22. Disposition of hole:	**Backfilled**	**Monitoring well**	**Other (specify)**	Geologist:		
		X		Drew Storm		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW04

Project: Fort McClellan | Geologist: Drew Storm | Sheet 2 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	ml: Wet, grayish brown SILT, little poorly sorted angular, fine to coarse Sand. (Artifical fill).	ml		Organic Vapor = 0.0ppm			6 8 8 6	Rec 20"/24" (0-2' bgs)
	1								
		cl: Gray, wet, soft CLAY (1.5'-2.0'), slight overall plasticity.	cl						
	2	cl: Brown to red and gray stiff, moist CLAY. Trace of wet, soft, gray organic Clay, slight plasticity.	cl		Organic Vapor = 0.0ppm			5 11 6 7	Rec 17"/24" (2-4' bgs)
	3								
	4	cl: Brown, very soft, moist CLAY.	cl		Organic Vapor = 0.0ppm			1 1 2 3	Rec 3"/24" (4-6' bgs)
790	5								
	6	cl-ml: Light brown, stiff, moist SILT and gray, moderate plasticity, wet, soft CLAY. Little poorly sorted, rounded, medium to coarse Sand. Trace of non-regional Coal fragment at 6'.	cl-ml		Organic Vapor = 0.0ppm			6 10 12 19	Rec 24"/24" (6-8' bgs)
	7								
	8	sh: Light brown, dry, hard, friable, weathered SHALE. Little interbedded, wet, gray, soft organic CLAY.	sh		Organic Vapor = 0.0ppm			12 20 38 50/0.4'	Rec 12"/23" (8-9.9' bgs)
	9								
785									

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW04

Project: Fort McClellan | Geologist: Drew Storm | Sheet 3 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10	sh: No recovery from spoon 10'-12'. 10'-15' dry, hard, weathered SHALE.							Description from hollow stem auger drill cuttings. Split spoon refusal at 10'.
	11								
	12								
			sh						
	13								
	14								
780									
	15	sh: Hard, moist, gray weathered SHALE.							
	16								
	17								
	18								
	19								
775									
	20								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW04

Project: Fort McClellan | Geologist: Drew Storm | Sheet 4 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	21								21
	22								22
			sh						
	23								23
	24								24
770									
	25								25
	26								26
	27								27
	28								28 Groundwater encountered at 28' bgs
	29								29
765									Stopped hollow stem auger drilling at 30'. Bottom of borehole at 30'.
	30								30

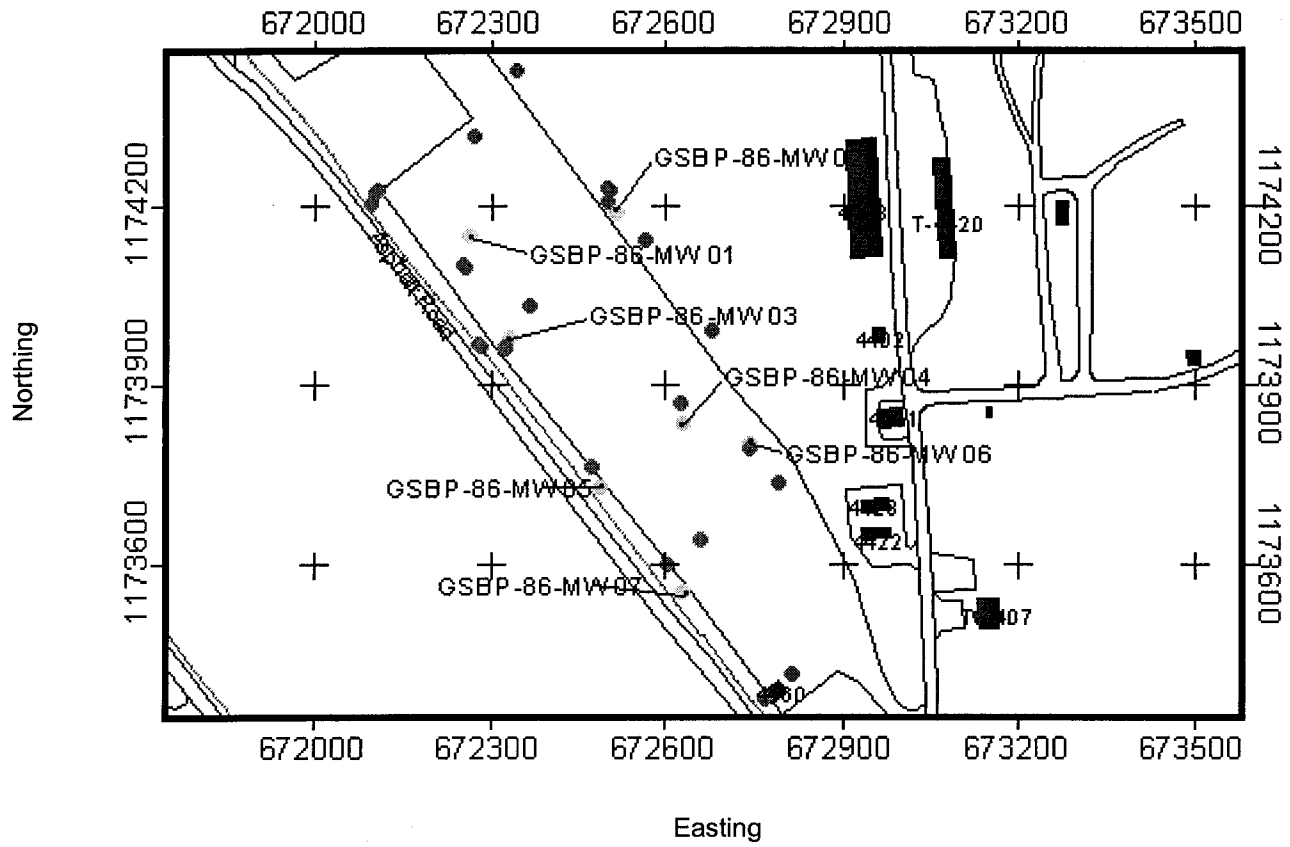
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER GSBP-86-MW05
1. Company name: **IT Corporation**	2. Drill Subcontractor: Miller Drilling	Sheet 1 of 4 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: B-57 Rotary Auger Drill Rig
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoons	8. Hole location: Contractor Laydown Area, Parcel 86 9. Surface elevation (feet above mean sea level): 789.47 10. Date started: 09/29/99 — 11. Date completed: 09/30/99
12. Overburden thickness (feet bgs): >23	15. Depth groundwater encountered (feet bgs): 19
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): ~7.3 after 24 hours
14. Total depth of hole (feet bgs): 23	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA					
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	X	X	Chlorinated Pesticides	SVOC	PCB	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
		X		Drew Storm		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: GSBP-86-MW05

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW05

Project: Fort McClellan | Geologist: Drew Storm | Sheet 2 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	pt: Brown Organics.	pt		Organic Vapor = 0.0ppm			7 16 17 22	Rec 22"/24" (0-2' bgs)
	1	ml: Yellowish-orange, dry, very stiff SILT. Trace of non-residual Coal fragments.	ml						
	2	cl-ml: Yellowish-orange, moist, very stiff SILT and CLAY. Some organics (trace Roots). Slight overall plasticity.	cl-ml		Organic Vapor = 0.0ppm			11 19 14 18	Rec 4"/24" (2-4' bgs)
	3								
	4	ml: Yellowish-orange, dry, very stiff SILT. Little Clay. Trace of Organics (trace Rocks). Slight overall plasticity.	ml		Organic Vapor = 0.0ppm			4 8 8 18	Rec 7"/24" (4-6' bgs)
785									
	5								
	6	ml: Yellowish-orange, dry, hard, SILT.	ml		Organic Vapor = 0.0ppm			17 13 16 18	Rec 24"/24" (6-8' bgs)
	7	sh: Light-brown, friable, moist platy, weathered SHALE	sh						
	8	sh: Light-brown, friable, moist platy, weathered SHALE. Trace of gray, wet Clay. 3 cm. x 3 cm. Quartzite fragment at 8'.	sh		Organic Vapor = 0.0ppm			5 9 18 22	Rec 24"/24" (8-10' bgs)
	9								
780									

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW05

Project: Fort McClellan | Geologist: Drew Storm | Sheet 3 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10	sh: Light-brown, friable, hard, moist, platy, weathered SHALE. Trace of moist gray Clay.			Organic Vapor = 0.0ppm			15 36 40 50/0.4'	Rec 18"/23" (10-11.9' bgs)
	11		sh						
	12	sh: Light-brown, hard, moist, platy, weathered SHALE.							Descriptions from hollow stem auger drill cuttings.
	13		sh						
	14								
775									
	15	sh: Gray, moist, fissile, hard, weathered SHALE.							Unable to push split spoon 15'-17' due to overburden hardness.
	16								
	17		sh						
	18								
	19	sh: Wet, gray weathered, fissile hard SHALE.							Groundwater encountered at 19' bgs.
770									

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW05

Project: Fort McClellan

Geologist: Drew Storm

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	20								20
	21		sh						21
	22								22
	23								Stopped hollow stem auger drilling at 23'. Bottom of borehole at 23'. 23

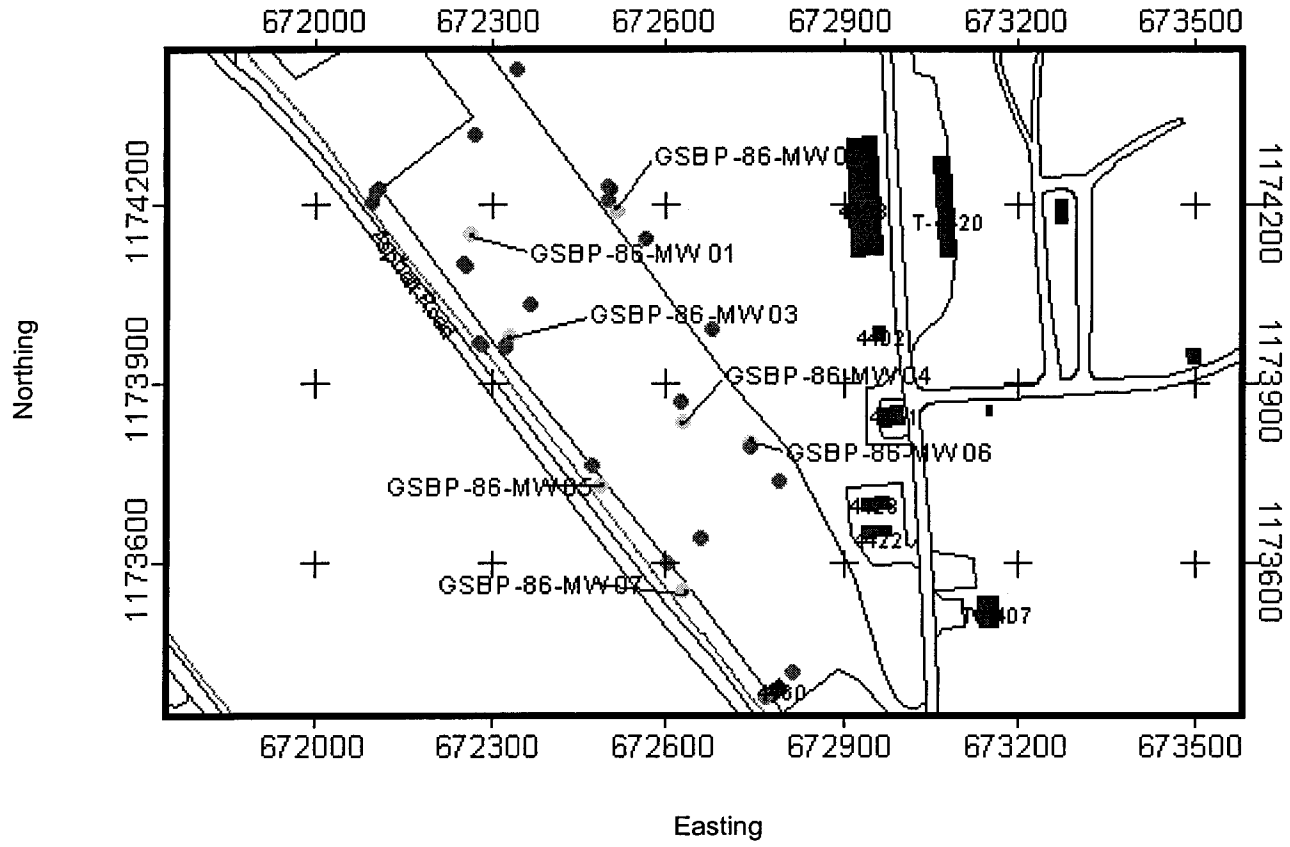
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER GSBP-86-MW06
1. Company name: **IT Corporation**	2. Drill Subcontractor: Miller Drilling	Sheet 1 of 4 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: B-57 Rotary Auger Drill Rig
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25 HSA, 2"x24" Split Spoons	8. Hole location: Contractor Laydown Area, Parcel 86 9. Surface elevation (feet above mean sea level): 796.32 10. Date started: 09/28/99 — 11. Date completed: 09/30/99
12. Overburden thickness (feet bgs): >23.5	15. Depth groundwater encountered (feet bgs): 19
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 8.2' after ~24 hours
14. Total depth of hole (feet bgs): 23.5	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA					
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	X	X	Chlorinated Pesticides	SVOC	PCB	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
		X		Drew Storm		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW06

Project: Fort McClellan | Geologist: Drew Storm | Sheet 2 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	cl: Light brown, medium stiff, moist CLAY. Overall moderate plasticity. Trace of crushed Sandstone fill.	cl		Organic Vapor = 0.0ppm			5 6 9 6	Rec 14"/24" (0-2' bgs)
795	1								
	2	cl-ml: Red to mottled yellowish orange, moist, medium stiff SILT and CLAY, slight overall plasticity.	cl-ml		Organic Vapor = 0.0ppm			8 6 10 15	Rec 24"/24" (2-4' bgs)
	3								
	4	cl-ml: Brownish-red, moist, soft, SILT and CLAY, slight overall plasticity.	cl-ml		Organic Vapor = 0.0ppm			1 3 4 6	Rec 8"/24" (4-6' bgs)
	5								
	6	cl-ml: Brownish-red to mottled yellowish-orange, very stiff, moist SILT and CLAY. Slight trace of overall plasticity, trace of gray, wet, Organic Clay. Trace of weathered, very, angular, fine Sandstone Gravel.	cl-ml		Organic Vapor = 0.0ppm			9 12 20 22	Rec 20"/24" (6-8' bgs)
790	7								
	8	sh: Light brown, dry, platy, friable, weathered SHALE.	sh		Organic Vapor = 0.0ppm			13 13 22 50	Rec 16"/24" (8-10' bgs)
	9								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW06

Project: Fort McClellan | Geologist: Drew Storm | Sheet 3 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10	sh: Light brown, dry, weathered SHALE.							Due to hardness of overburden no sample from 10'-12'. Description from hollow stem auger drill cuttings.
785	11								
	12		sh						
	13								
	14								
	15	sh: Gray, dry, weathered, hard, fissile, platy SHALE.							Unable to push spoon sample 15'-17'.
780	16								
	17		sh						
	18								
	19	sh: Wet, dark gray, weathered SHALE.							Groundwater encountered at 19'.

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW06

Project: Fort McClellan | Geologist: Drew Storm | Sheet 4 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	20								Description from hollow stem auger drill cuttings.
	21								
775			sh						
	22								
	23								Stopped hollow stem auger drilling at 23.5' Bottom of borehole at 23.5'.

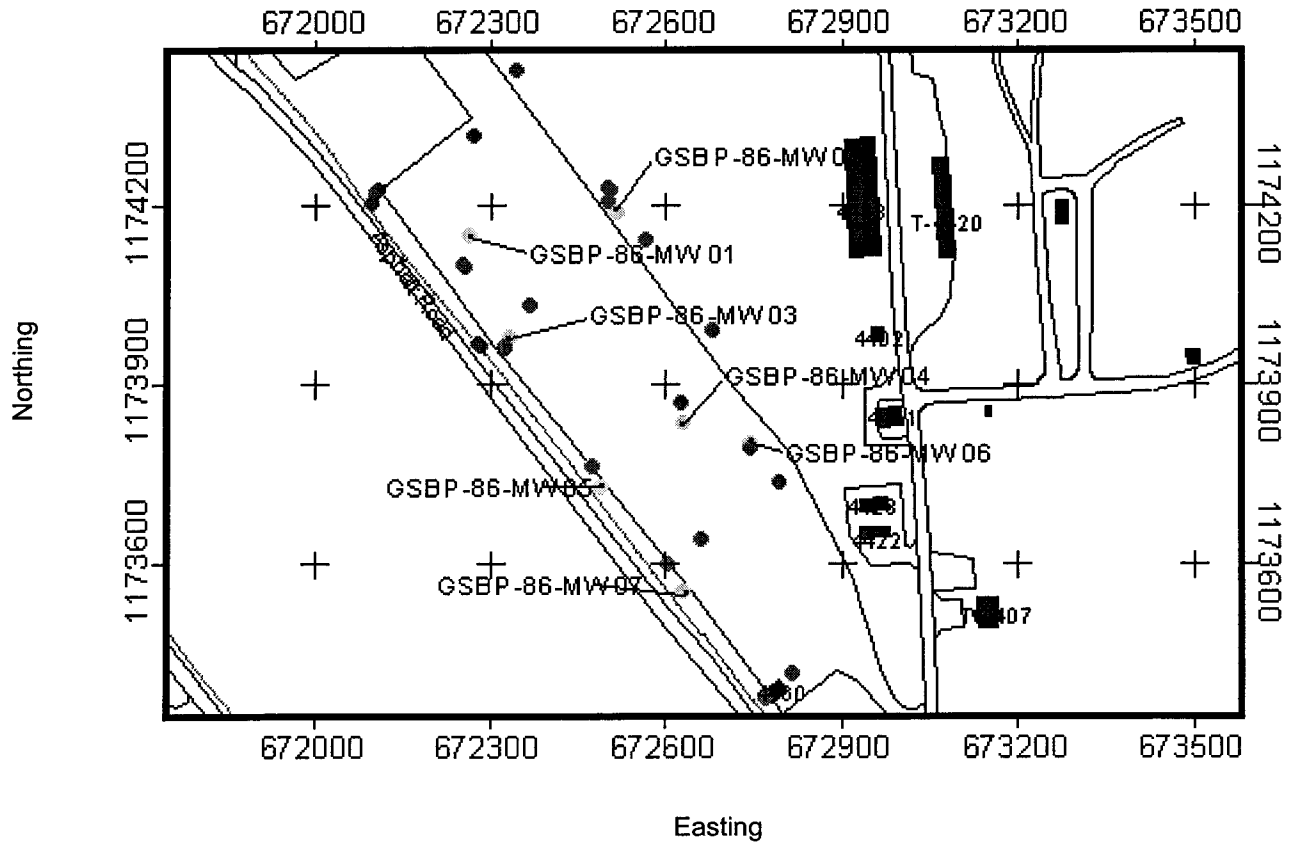
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER GSBP-86-MW07
1. Company name: **IT Corporation**	2. Drill Subcontractor: Miller Drilling	Sheet 1 of 4 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: B-57 Rotary Auger Drill Rig
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoons	8. Hole location: Contractor Laydown Area, Parcel 86 9. Surface elevation (feet above mean sea level): 792.23 10. Date started: 09/30/99 — 11. Date completed: 10/01/99
12. Overburden thickness (feet bgs): >23	15. Depth groundwater encountered (feet bgs): 19
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): ~ 15 after 20 minutes
14. Total depth of hole (feet bgs): 23	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA					
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	X	X	Chlorinated Pesticides	SVOC	PCB	NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
		X		Drew Storm		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: GSBP-86-MW07

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW07

Project: Fort McClellan | Geologist: Drew Storm | Sheet 2 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	pt: Organic, dark brown, moist HUMUS.	pt		Organic Vapor = 0.0ppm			2 3 5 6	Rec 19"/24" (0-2' bgs)
	1	cl: Yellowish-orange, soft, moist CLAY, overall slight plasticity.	cl						
	2	cl: Yellowish-orange, moist, stiff CLAY. Some Silt. Little pinkish-white, weathered angular, fine Gravel, residual, Quartzite. Light brown, friable, Shale in shoe.	cl		Organic Vapor = 0.0ppm			6 10 14 15	Rec 22"/24" (2-4' bgs)
	3								
	4	cl-ml: Light brown, moist, stiff SILT and yellowish-orange, moist, stiff, slightly plastic CLAY. Little brown, friable, moist, platy, weathered Shale.	cl-ml		Organic Vapor = 0.0ppm			3 5 11 13	Rec 18"/24" (4-6' bgs)
790	5								
	6	sh: Light brown, friable, dry, hard, weathered SHALE. Little of interbedded, wet gray soft Organic Clay (1/8" in thickness).	sh		Organic Vapor = 0.0ppm			19 20 50/0.4'	Rec 10"/17" (6-7.4' bgs)
	7	sh: Dry, hard, weathered, light brown SHALE.							
	8								Spoon refusal at 8'. Unable to push split-spoon 8'-10'. Description from hollow stem auger drill cuttings.
	9		sh						
785									

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW07

Project: Fort McClellan | Geologist: Drew Storm | Sheet 3 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10	sh: Dry, hard, weathered, light brown SHALE.							Description from hollow stem auger drill cuttings.
	11								
	12		sh						
	13								
	14								
780	15	sh: Moist, hard, gray fissile, weathered SHALE.							Unable to push split spoon 15'-17' due to hardness.
	16								
	17		sh						
	18								
	19	sh: Saturated, gray weathered SHALE.							Groundwater encountered at 19'.
775									

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-86-MW07

Project: Fort McClellan

Geologist: Drew Storm

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	20								20
	21		sh						21
	22								22
	23								Stopped hollow stem auger drilling at 23'. Bottom of borehole at 23'. 23

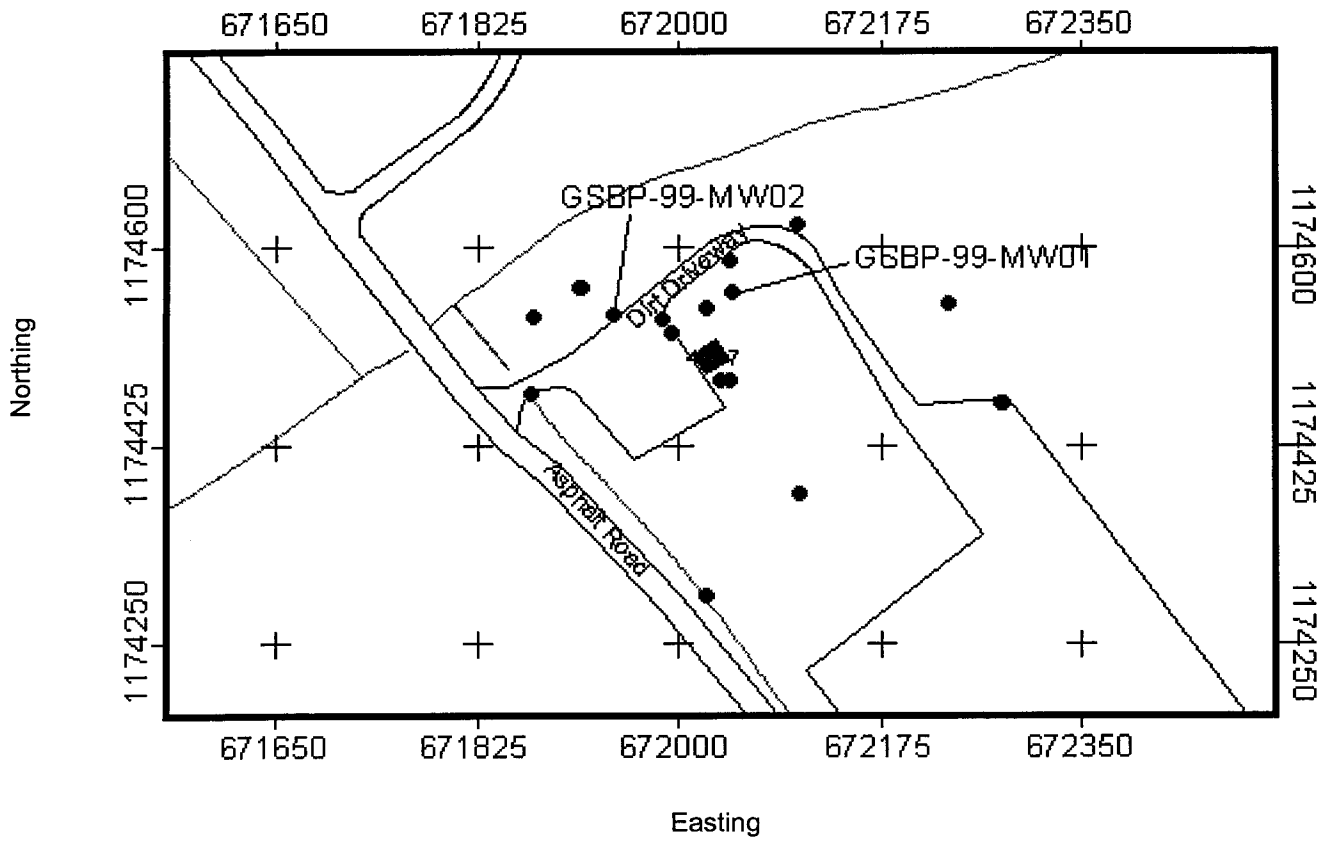
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER GSBP-99-MW01
1. Company name: **IT Corporation**	2. Drill Subcontractor: MILLER DRILLING	Sheet 1 of 3 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: Mobile B-57
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoons	8. Hole location: Former Tar Plant, Bldg S-4437, Parcel 99 9. Surface elevation (feet above mean sea level): 776.52 10. Date started: 10/05/99 — 11. Date completed: 10/05/99
12. Overburden thickness (feet bgs): >13	15. Depth groundwater encountered (feet bgs): 3
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): NA
14. Total depth of hole (feet bgs): 13	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA					
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	X	X	SVOCs	PCBs		NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
		X		JOHN HOFER		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: GSBP-99-MW01

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-99-MW01

Project: Fort McClellan | Geologist: JOHN HOFER | Sheet 2 of 3 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	fill: Orange, gravely SAND, medium with Tar, dry, Quartzite.	fill		Organic Vapor = 198ppm			16 15 8 8	Rec 12"/24" (0-2' bgs)
	1	sm: Brownish gray, fine SAND, some Silt, slightly moist, burnt Wood at 2.1', saturated at 3', root zone from 2.6'.	sm		Organic Vapor = 5.8ppm				
	2				Organic Vapor = 0.0ppm			3 3 5 5	Rec 21"/24" (2-4' bgs)
775	3				Organic Vapor = 0.0ppm				
	4	gp: Olive gray, coarse GRAVEL with Sand, medium coarse, Quartzite Chert Gravel.	gp		Organic Vapor = 0.0ppm			4 10 20 50/0.1'	Rec 16"/19" (4-1.6' bgs)
	5				Organic Vapor = 0.0ppm				
	6	sw: SAND, medium grained gray, saturated.	sw						
	7	ml: Brown SILT with weathered SHALE, no plasticity, dry, relict high angle bedding.	ml		Organic Vapor = 0.0ppm			8 18 20 20	Rec 20"/24" (7-9' bgs)
770	8				Organic Vapor = 0.0ppm				
	9	sh: Weathered SHALE, brown, fissile, thin bedded.						18 20 40 50/5	Rec 12"/23" (9-11' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-99-MW01

Project: Fort McClellan

Geologist: JOHN HOFER

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10								10
	11		sh						11
	12								12
765	13								Bottom of borehole at 13'. 13

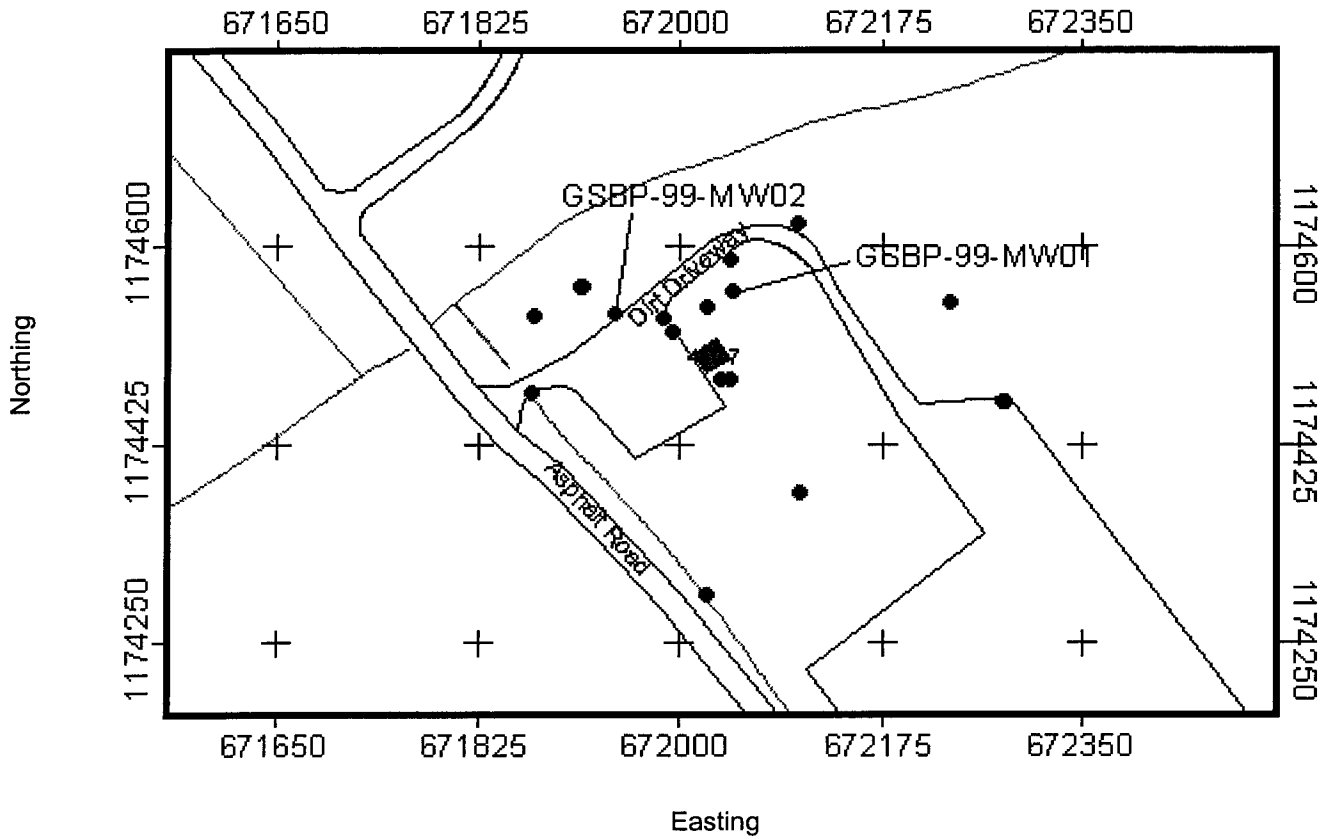
HTRW DRILLING LOG

District: **Mobile USACE**		HOLE NUMBER GSBP-99-MW02
1. Company name: **IT Corporation**	2. Drill Subcontractor: MILLER DRILLING	Sheet 1 of 4 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Ron Gerrish	6. Mfr. designation of drill: Mobile B-57
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoons	8. Hole location: Former Tar Plant, Bldg S-4437, Parcel 99 9. Surface elevation (feet above mean sea level): 778.18 10. Date started: 10/04/99 — 11. Date completed: 10/04/99
12. Overburden thickness (feet bgs): >20	15. Depth groundwater encountered (feet bgs): 9
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): NA
14. Total depth of hole (feet bgs): 20	17. Other water level measurements (specify): NA

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA		
	NA					
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	X	X	SVOCs	PCBs		NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
		X		JOHN HOFER		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: GSBP-99-MW02

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-99-MW02

Project: Fort McClellan | Geologist: JOHN HOFER | Sheet 2 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	0	sm: Brown SAND with Silt and fine Gravel.	sm		Organic Vapor = 0.0ppm			13 10 10 12	Rec 22"/24" (0-2' bgs)
		cl: Brownish red CLAY with Chert.	cl						
		fill: Asphalt-like material.	fill						
	1	ml: Olive gray SILT with trace Clay.	ml						
		sw: Olive green fine SAND with fine Gravel. Moist.							
	2		sw					8 10 12 20	Rec 24"/24" (2-4' bgs)
		sp: Yellowish-green SAND, medium to coarse grained, 1" to 2" diameter Sandstone and Chert fragments throughout. Subrounded to subangular, wet.			Organic Vapor = 0.0ppm				
	3		sp						
775					Organic Vapor = 0.0ppm				
	4	gp: GRAVEL with some Sand and Clay, Chert and Sandstone.						2 10 10 33	(4-6' bgs)
	5								
			gp		Organic Vapor = 0.0ppm				
	6							30 28 10 18	(6-8' bgs)
					Organic Vapor = 0.0ppm				
	7	ml: Brown SILT with some Clay. High angle bedding, slightly moist.							
	8		ml					3 3 3 3	(8-10' bgs)
770					Organic Vapor = 0.0ppm				
	9	cl: Blue-gray CLAY, some Silt, Iron concretions, saturated at SILT/CLAY contact, medium plasticity, medium stiff.							
			cl						

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-99-MW02

Project: Fort McClellan | Geologist: JOHN HOFER | Sheet 3 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	10				Organic Vapor = 0.0ppm				
		sp: Brown, fine to medium SAND, saturated.	sp						
		sh: Blue-gray weathered SHALE, fissle, high angle bedding, thin Quartz veins.	sh					10 50/0.5'	Spoon Refusal at 11'. Descriptions from auger cuttings 10.9'-20'.
	11	sh: Dark gray to black weathered SHALE, wet.							
	12								
	13								
765									
	14								
	15								
			sh						
	16								
	17								
	18								
760									
	19								
									Bottom of borehole at 20'.

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-99-MW02

Project: Fort McClellan

Geologist: JOHN HOFER

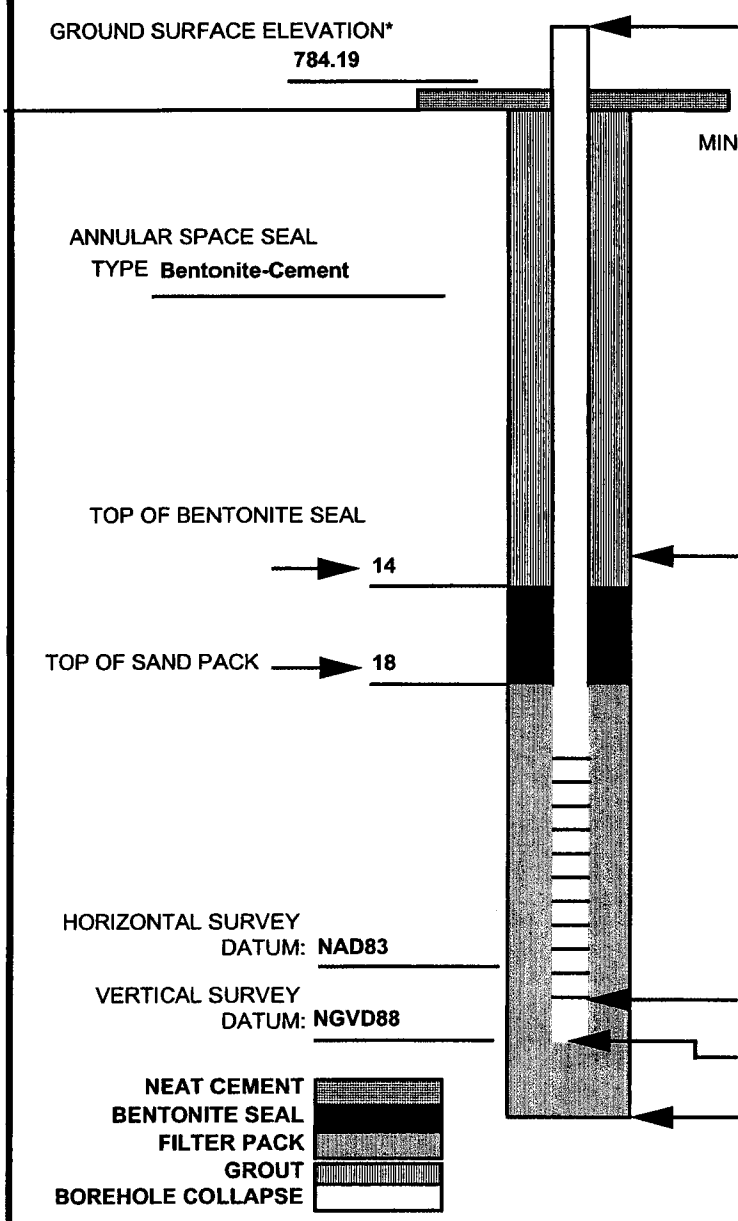
Sheet 4 of 4 sheets

Elev. (a)	Depth (b)	Description of Materials (c)	USCS / Lithology	Graphic	Field screening results (d)	Geotech sample or core box no. (e)	Analytical sample no. (f)	Blow counts (g)	Remarks (h)
	20								20

WELL CONSTRUCTION LOGS

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan	**WELL NO:** GSBP-86-MW01
LOCATION Anniston, AL	**DRILLING METHOD:** Hollow Stem Auger
CLIENT: USACE Mobile District	**INSTALLATION DATE** 09/28/99
CONTRACTOR Miller Drilling	**NORTHING:** 1174145.31
DRILLER: Ron Gerrish	**EASTING:** 672261.34
IT FIELD REPRESENTATIVE: Drew Storm	**JOB NO:** 796887



GROUND SURFACE ELEVATION* 784.19

TOP of WELL CASING or RISER PIPE EL* 783.99 STICKUP N/A

TYPE of SURFACE SEAL Concrete

MINIMUM THICKNESS of SURFACE SEAL 4 inches

ANNULAR SPACE SEAL TYPE Bentonite-Cement

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 40

INSIDE DIAMETER of RISER (inches) 2

TOP OF BENTONITE SEAL 14

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

TOP OF SAND PACK 18

TOP OF SCREENED INTERVAL EL* 764.19 DEPTH 20

TYPE of SCREEN MATERIAL PVC SCH 40

SLOT SIZE (inches) 0.010

INSIDE DIAMETER (inches) 2

TYPE of SAND PACK AROUND SCREEN Sand No 1

HORIZONTAL SURVEY DATUM: NAD83

VERTICAL SURVEY DATUM: NGVD88

BOTTOM of SCREENED INTERVAL EL* 749.19 DEPTH 35

BOTTOM of SUMP and WELL EL* 749.19 DEPTH 35

BOTTOM of BOREHOLE EL* 749.19 DEPTH 35

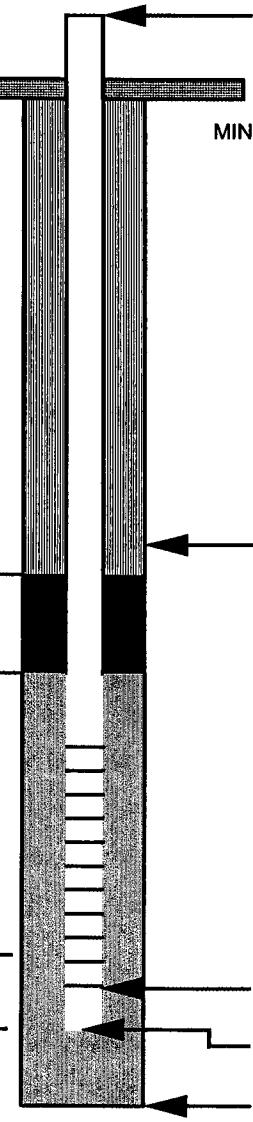
NEAT CEMENT
BENTONITE SEAL
FILTER PACK
GROUT
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.

All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan	**WELL NO:** GSBP-86-MW02
LOCATION Anniston, AL	**DRILLING METHOD:** Hollow Stem Auger
CLIENT: USACE Mobile District	**INSTALLATION DATE** 10/04/99
CONTRACTOR Miller Drilling	**NORTHING:** 1174182.99
DRILLER: Ron Gerrish	**EASTING:** 672514.18
IT FIELD REPRESENTATIVE: John Hofer	**JOB NO:** 796887



GROUND SURFACE ELEVATION*
788.34

TOP of WELL CASING or RISER PIPE
EL* 787.76 STICKUP N/A

TYPE of SURFACE SEAL Concrete

MINIMUM THICKNESS of SURFACE SEAL 4 inches

ANNULAR SPACE SEAL
TYPE Bentonite-Cement

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 40

INSIDE DIAMETER of RISER (inches) 2

TOP OF BENTONITE SEAL
24.5

APPROXIMATE DIAMETER of BOREHOLE (inches) 7

TOP OF SAND PACK 27.9

TOP OF SCREENED INTERVAL
EL* 758.34 DEPTH 30

TYPE of SCREEN MATERIAL PVC SCH 40

SLOT SIZE (inches) 0.010

INSIDE DIAMETER (inches) 2

TYPE of SAND PACK AROUND SCREEN Sand No 1

HORIZONTAL SURVEY DATUM: NAD83

VERTICAL SURVEY DATUM: NGVD88

BOTTOM of SCREENED INTERVAL
EL* 743.34 DEPTH 45

BOTTOM of SUMP and WELL
EL* 742.84 DEPTH 45.5

BOTTOM of BOREHOLE
EL* 742.84 DEPTH 45.5

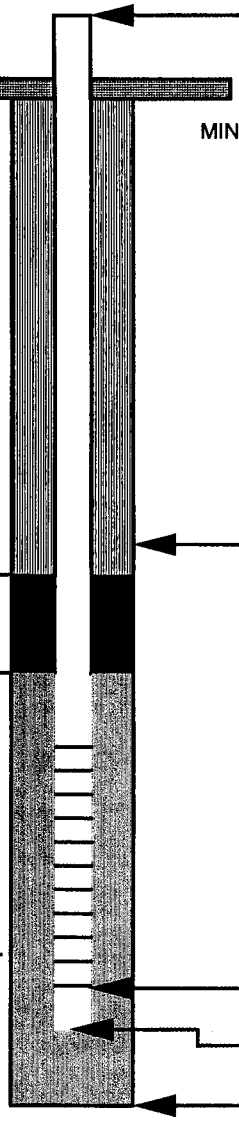
NEAT CEMENT
BENTONITE SEAL
FILTER PACK
GROUT
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.

All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan	**WELL NO:** GSBP-86-MW03
LOCATION Anniston, AL	**DRILLING METHOD:** Hollow Stem Auger
CLIENT: USACE Mobile District	**INSTALLATION DATE** 09/29/99
CONTRACTOR Miller Drilling	**NORTHING:** 1173971.52
DRILLER: Ron Gerrish	**EASTING:** 672330.54
IT FIELD REPRESENTATIVE: Drew Storm	**JOB NO:** 796887



GROUND SURFACE ELEVATION*
785.77

TOP of WELL CASING or RISER PIPE
EL* 785.57 STICKUP N/A

TYPE of SURFACE SEAL Concrete

MINIMUM THICKNESS of SURFACE SEAL 4 inches

ANNULAR SPACE SEAL
TYPE Bentonite-Cement

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 40

INSIDE DIAMETER of RISER (inches) 2

TOP OF BENTONITE SEAL
16.5

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

TOP OF SAND PACK 19

TOP OF SCREENED INTERVAL
EL* 764.77 DEPTH 21

TYPE of SCREEN MATERIAL PVC SCH 40

SLOT SIZE (inches) 0.010

INSIDE DIAMETER (inches) 2

TYPE of SAND PACK AROUND SCREEN Sand No 1

HORIZONTAL SURVEY DATUM: NAD83

VERTICAL SURVEY DATUM: NGVD88

BOTTOM of SCREENED INTERVAL
EL* 749.77 DEPTH 36

BOTTOM of SUMP and WELL
EL* 749.77 DEPTH 36

BOTTOM of BOREHOLE
EL* 749.77 DEPTH 36

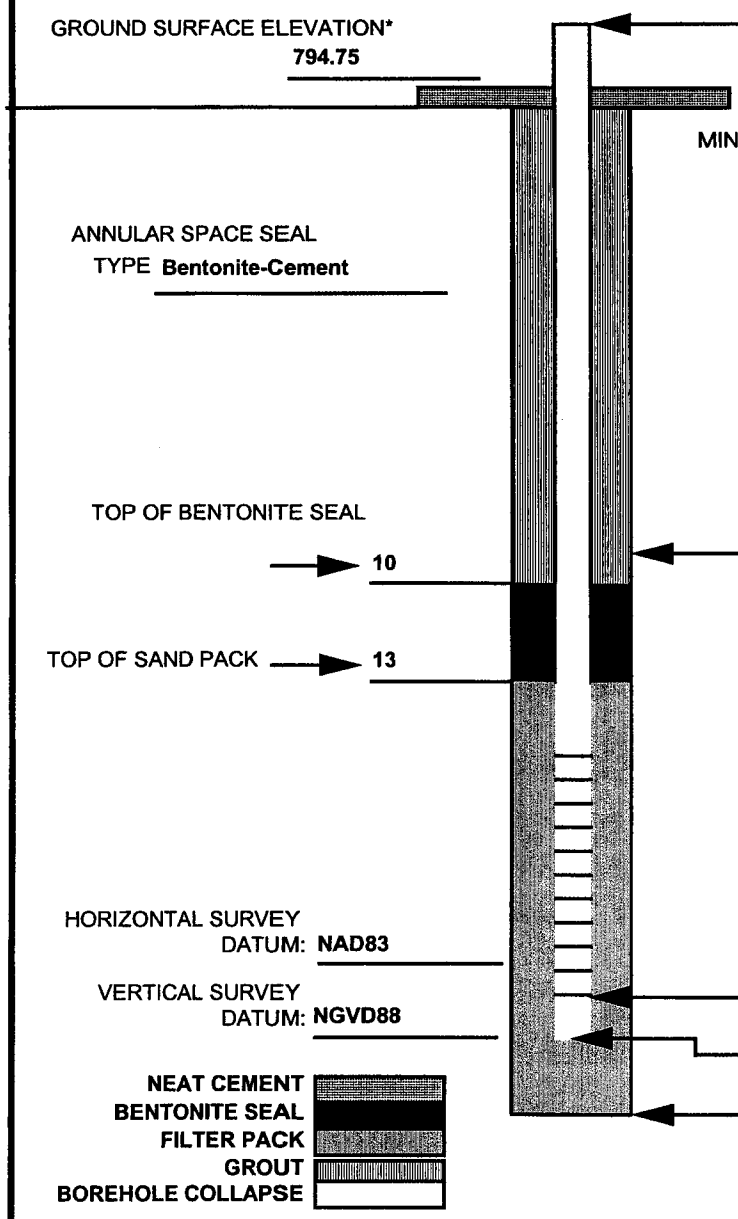
NEAT CEMENT
BENTONITE SEAL
FILTER PACK
GROUT
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.

All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan	**WELL NO:** GSBP-86-MW04
LOCATION Anniston, AL	**DRILLING METHOD:** Hollow Stem Auger
CLIENT: USACE Mobile District	**INSTALLATION DATE** 09/30/99
CONTRACTOR Miller Drilling	**NORTHING:** 1173831.74
DRILLER: Ron Gerrish	**EASTING:** 672630.8
IT FIELD REPRESENTATIVE: Drew Storm	**JOB NO:** 796887



GROUND SURFACE ELEVATION* 794.75

TOP of WELL CASING or RISER PIPE
EL* 794.1 STICKUP N/A

TYPE of SURFACE SEAL Concrete

MINIMUM THICKNESS of SURFACE SEAL 4 inches

ANNULAR SPACE SEAL
TYPE Bentonite-Cement

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 40

INSIDE DIAMETER of RISER (inches) 2

TOP OF BENTONITE SEAL 10

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

TOP OF SAND PACK 13

TOP OF SCREENED INTERVAL
EL* 779.75 DEPTH 15

TYPE of SCREEN MATERIAL PVC SCH 40

SLOT SIZE (inches) 0.010

INSIDE DIAMETER (inches) 2

TYPE of SAND PACK AROUND SCREEN Sand No 1

HORIZONTAL SURVEY DATUM: NAD83

VERTICAL SURVEY DATUM: NGVD88

BOTTOM of SCREENED INTERVAL
EL* 764.75 DEPTH 30

BOTTOM of SUMP and WELL
EL* 764.75 DEPTH 30

BOTTOM of BOREHOLE
EL* 764.75 DEPTH 30

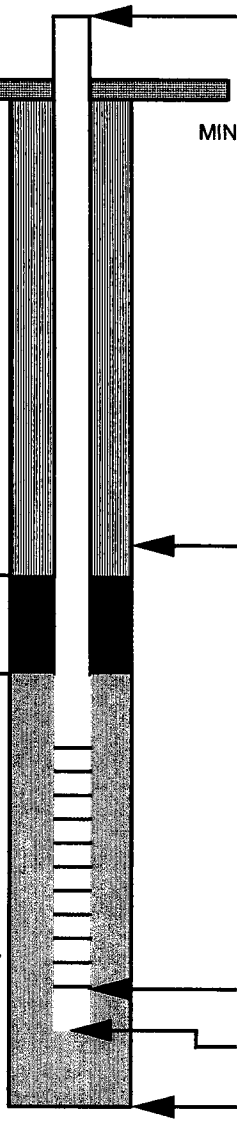
NEAT CEMENT
BENTONITE SEAL
FILTER PACK
GROUT
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.

All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan	**WELL NO:** GSBP-86-MW05
LOCATION Anniston, AL	**DRILLING METHOD:** Hollow Stem Auger
CLIENT: USACE Mobile District	**INSTALLATION DATE** 09/29/99
CONTRACTOR Miller Drilling	**NORTHING:** 1173725.2
DRILLER: Ron Gerrish	**EASTING:** 672489.49
IT FIELD REPRESENTATIVE: Drew Storm	**JOB NO:** 796887



GROUND SURFACE ELEVATION*
789.47

TOP of WELL CASING or RISER PIPE
EL* 792.19 STICKUP 2.72

TYPE of SURFACE SEAL Concrete

MINIMUM THICKNESS of SURFACE SEAL 4 inches

ANNULAR SPACE SEAL
TYPE Bentonite-Cement

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 40

INSIDE DIAMETER of RISER (inches) 2

TOP OF BENTONITE SEAL → 3.5

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

TOP OF SAND PACK → 6

TOP OF SCREENED INTERVAL
EL* 781.47 DEPTH 8

TYPE of SCREEN MATERIAL PVC SCH 40

SLOT SIZE (inches) 0.010

INSIDE DIAMETER (inches) 2

TYPE of SAND PACK AROUND SCREEN Sand No 1

HORIZONTAL SURVEY DATUM: NAD83

VERTICAL SURVEY DATUM: NGVD88

BOTTOM of SCREENED INTERVAL
EL* 766.47 DEPTH 23

BOTTOM of SUMP and WELL
EL* 766.47 DEPTH 23

BOTTOM of BOREHOLE
EL* 766.47 DEPTH 23

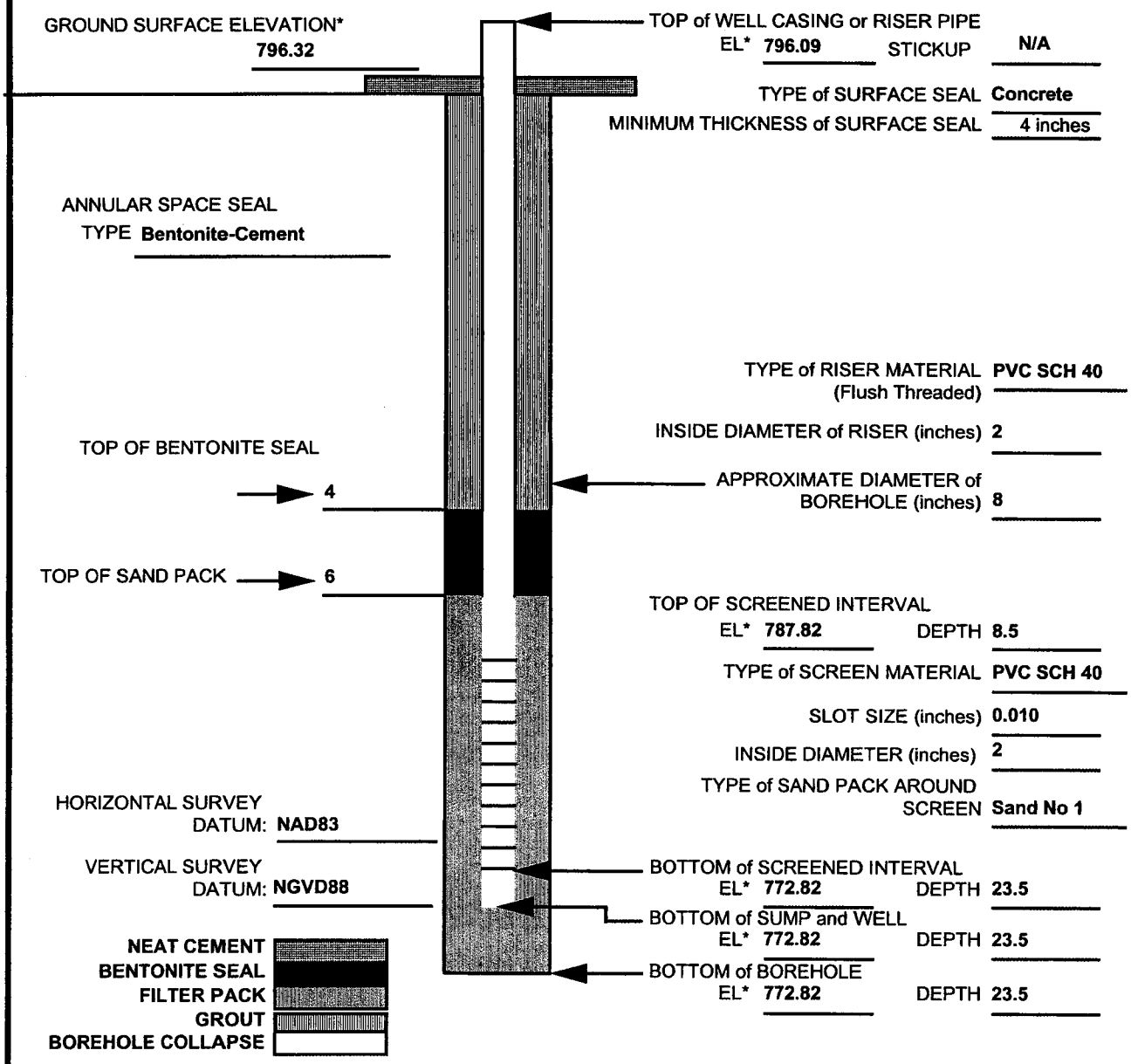
NEAT CEMENT
BENTONITE SEAL
FILTER PACK
GROUT
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.

All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan	**WELL NO:** GSBP-86-MW06
LOCATION Anniston, AL	**DRILLING METHOD:** Hollow Stem Auger
CLIENT: USACE Mobile District	**INSTALLATION DATE** 09/20/99
CONTRACTOR Miller Drilling	**NORTHING:** 1173797.64
DRILLER: Ron Gerrish	**EASTING:** 672742.19
IT FIELD REPRESENTATIVE: Drew Storm	**JOB NO:** 796887

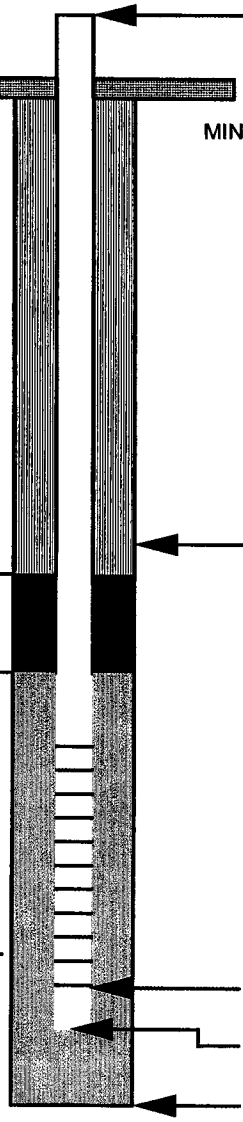


*All elevations (EL) are referenced to MSL.

All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan	**WELL NO:** GSBP-86-MW07
LOCATION Anniston, AL	**DRILLING METHOD:** Hollow Stem Auger
CLIENT: USACE Mobile District	**INSTALLATION DATE** 09/30/99
CONTRACTOR Miller Drilling	**NORTHING:** 1173546.43
DRILLER: Ron Gerrish	**EASTING:** 672631.31
IT FIELD REPRESENTATIVE: Drew Storm	**JOB NO:** 796887



GROUND SURFACE ELEVATION*
792.23

TOP of WELL CASING or RISER PIPE
EL* 794.78 STICKUP 2.55

TYPE of SURFACE SEAL Concrete

MINIMUM THICKNESS of SURFACE SEAL 4 inches

ANNULAR SPACE SEAL
TYPE Bentonite-Cement

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 40

INSIDE DIAMETER of RISER (inches) 2

TOP OF BENTONITE SEAL
3.5

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

TOP OF SAND PACK 6.0

TOP OF SCREENED INTERVAL
EL* 784.23 DEPTH 8.0

TYPE of SCREEN MATERIAL PVC SCH 40

SLOT SIZE (inches) 0.010

INSIDE DIAMETER (inches) 2

TYPE of SAND PACK AROUND SCREEN Sand No 1

HORIZONTAL SURVEY DATUM: NAD83

VERTICAL SURVEY DATUM: NGVD88

BOTTOM of SCREENED INTERVAL
EL* 769.23 DEPTH 23

BOTTOM of SUMP and WELL
EL* 769.23 DEPTH 23

BOTTOM of BOREHOLE
EL* 769.23 DEPTH 23

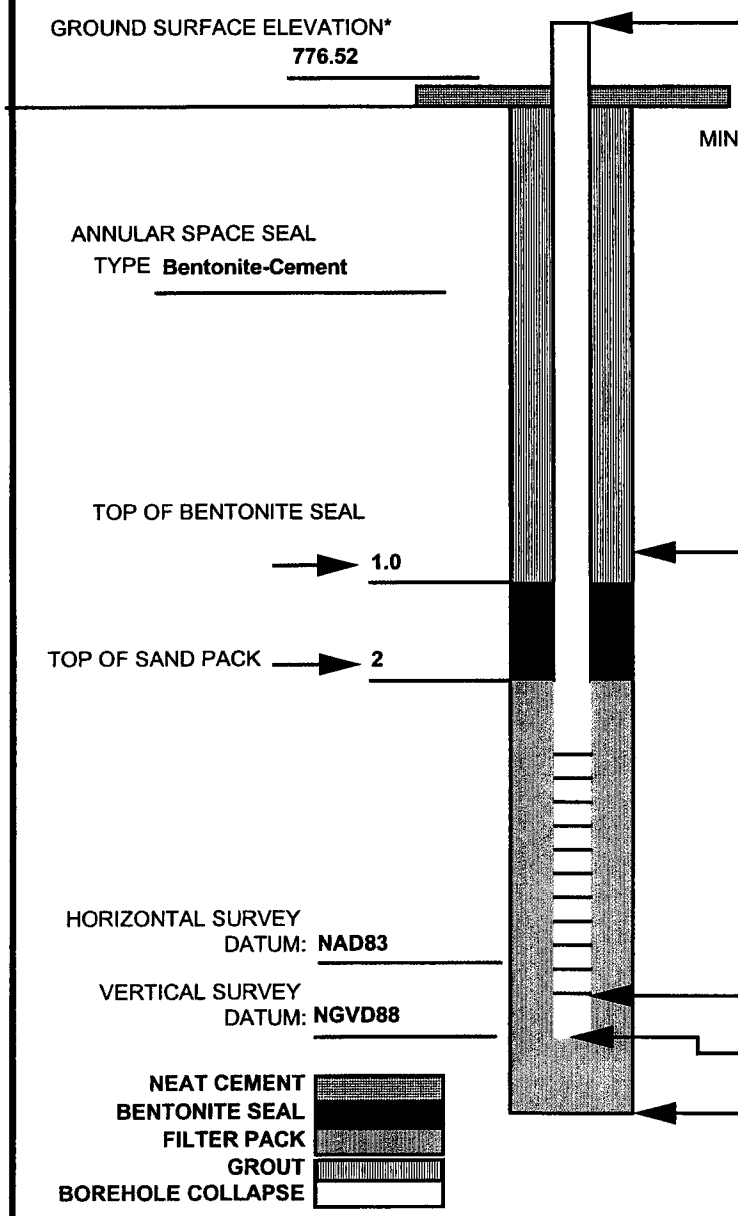
NEAT CEMENT
BENTONITE SEAL
FILTER PACK
GROUT
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.

All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan	WELL NO: GSBP-99-MW01
LOCATION Anniston, AL	DRILLING METHOD: Hollow Stem Auger
CLIENT: USACE Mobile District	INSTALLATION DATE 10/05/99
CONTRACTOR MILLER DRILLING	NORTHING: 1174556.29
DRILLER: RON GERRISH	EASTING: 672043.82
IT FIELD REPRESENTATIVE: JOHN HOFER	JOB NO: 796887



GROUND SURFACE ELEVATION* 776.52

TOP of WELL CASING or RISER PIPE EL* 778.41 STICKUP 1.89

TYPE of SURFACE SEAL Concrete

MINIMUM THICKNESS of SURFACE SEAL 4 inches

ANNULAR SPACE SEAL TYPE Bentonite-Cement

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 40

INSIDE DIAMETER of RISER (inches) 2

TOP OF BENTONITE SEAL 1.0

APPROXIMATE DIAMETER of BOREHOLE (inches) 7

TOP OF SAND PACK 2

TOP OF SCREENED INTERVAL EL* 773.92 DEPTH 2.6

TYPE of SCREEN MATERIAL PVC SCH 40

SLOT SIZE (inches) 0.010

INSIDE DIAMETER (inches) 2

TYPE of SAND PACK AROUND SCREEN Sand No 1

HORIZONTAL SURVEY DATUM: NAD83

VERTICAL SURVEY DATUM: NGVD88

BOTTOM of SCREENED INTERVAL EL* 763.92 DEPTH 12.6

BOTTOM of SUMP and WELL EL* 763.52 DEPTH 13

BOTTOM of BOREHOLE EL* 763.52 DEPTH 13

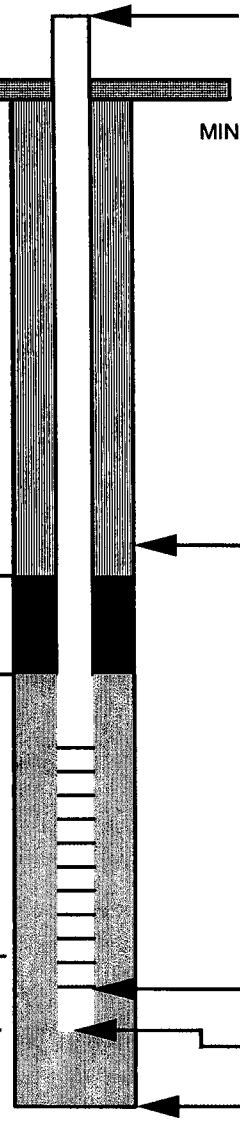
NEAT CEMENT
BENTONITE SEAL
FILTER PACK
GROUT
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.

All depths and heights are given in feet and are referenced to the ground surface.

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan	WELL NO: GSBP-99-MW02
LOCATION Anniston, AL	DRILLING METHOD: Hollow Stem Auger
CLIENT: USACE Mobile District	INSTALLATION DATE 10/04/99
CONTRACTOR MILLER DRILLING	NORTHING: 1174537.54
DRILLER: RON GERRISH	EASTING: 671943.75
IT FIELD REPRESENTATIVE: JOHN HOFER	JOB NO: 796887



GROUND SURFACE ELEVATION* 778.18

TOP of WELL CASING or RISER PIPE EL* 777.86 STICKUP N/A

TYPE of SURFACE SEAL Concrete

MINIMUM THICKNESS of SURFACE SEAL 4 inches

ANNULAR SPACE SEAL TYPE Bentonite-Cement

TYPE of RISER MATERIAL (Flush Threaded) PVC SCH 40

INSIDE DIAMETER of RISER (inches) 2

TOP OF BENTONITE SEAL 2

APPROXIMATE DIAMETER of BOREHOLE (inches) 7

TOP OF SAND PACK 3

TOP OF SCREENED INTERVAL EL* 773.68 DEPTH 4.5

TYPE of SCREEN MATERIAL PVC SCH 40

SLOT SIZE (inches) 0.010

INSIDE DIAMETER (inches) 2

TYPE of SAND PACK AROUND SCREEN Sand No 1

HORIZONTAL SURVEY DATUM: NAD83

VERTICAL SURVEY DATUM: NGVD88

BOTTOM of SCREENED INTERVAL EL* 758.68 DEPTH 19.5

BOTTOM of SUMP and WELL EL* 758.18 DEPTH 20

BOTTOM of BOREHOLE EL* 758.18 DEPTH 20

NEAT CEMENT
BENTONITE SEAL
FILTER PACK
GROUT
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.

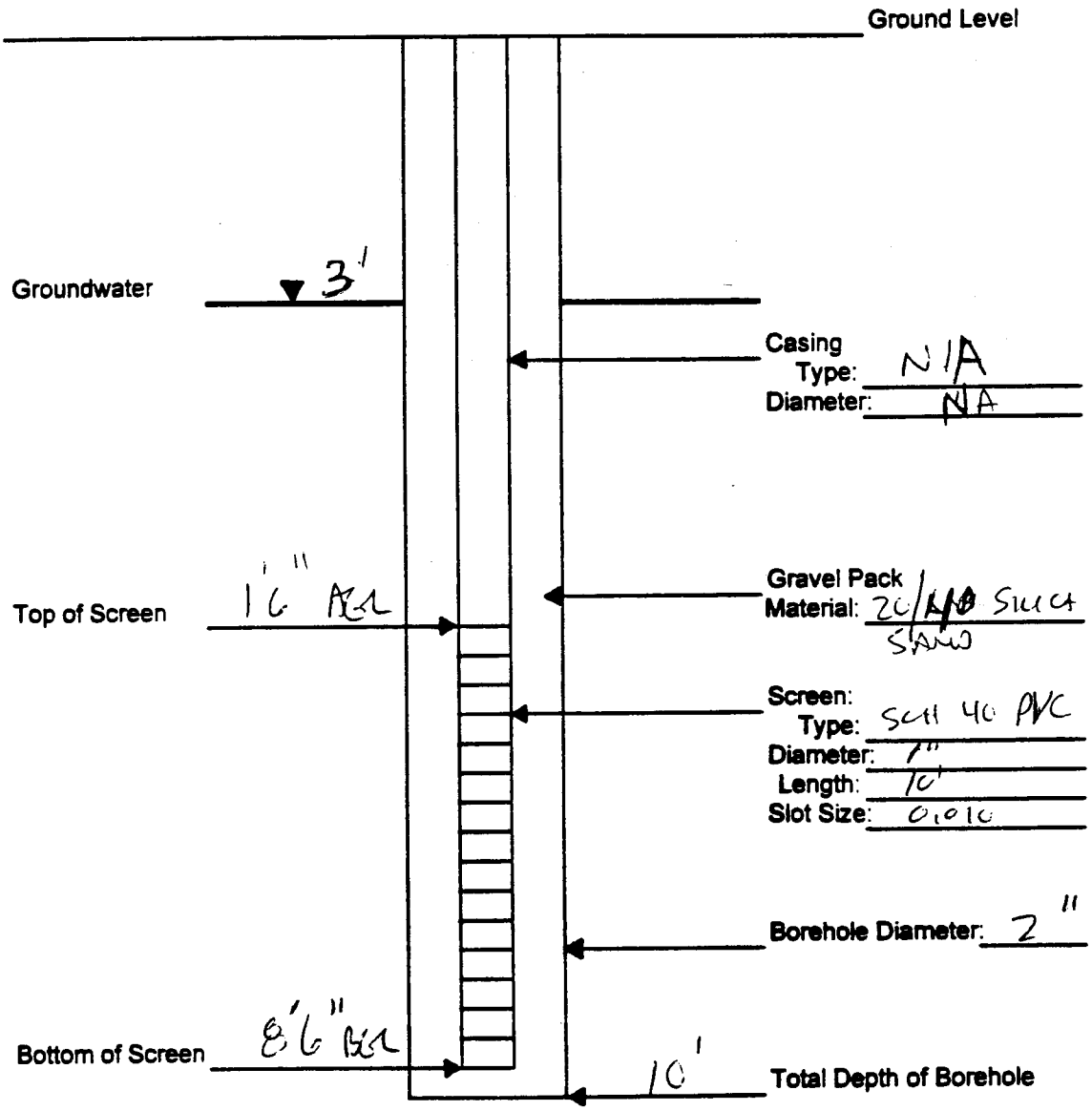
All depths and heights are given in feet and are referenced to the ground surface.

Temporary Monitor Well Construction Log

Well ID:	SI09 - GW Sol	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-13-98
Driller's Name:	JOSH TURNEY	Finish Date/Time:	5-13-98

Comments: SET GW SOL TO 8'6". Refusal AT 10' IN SHALE

Depths are in Reference to Ground Level

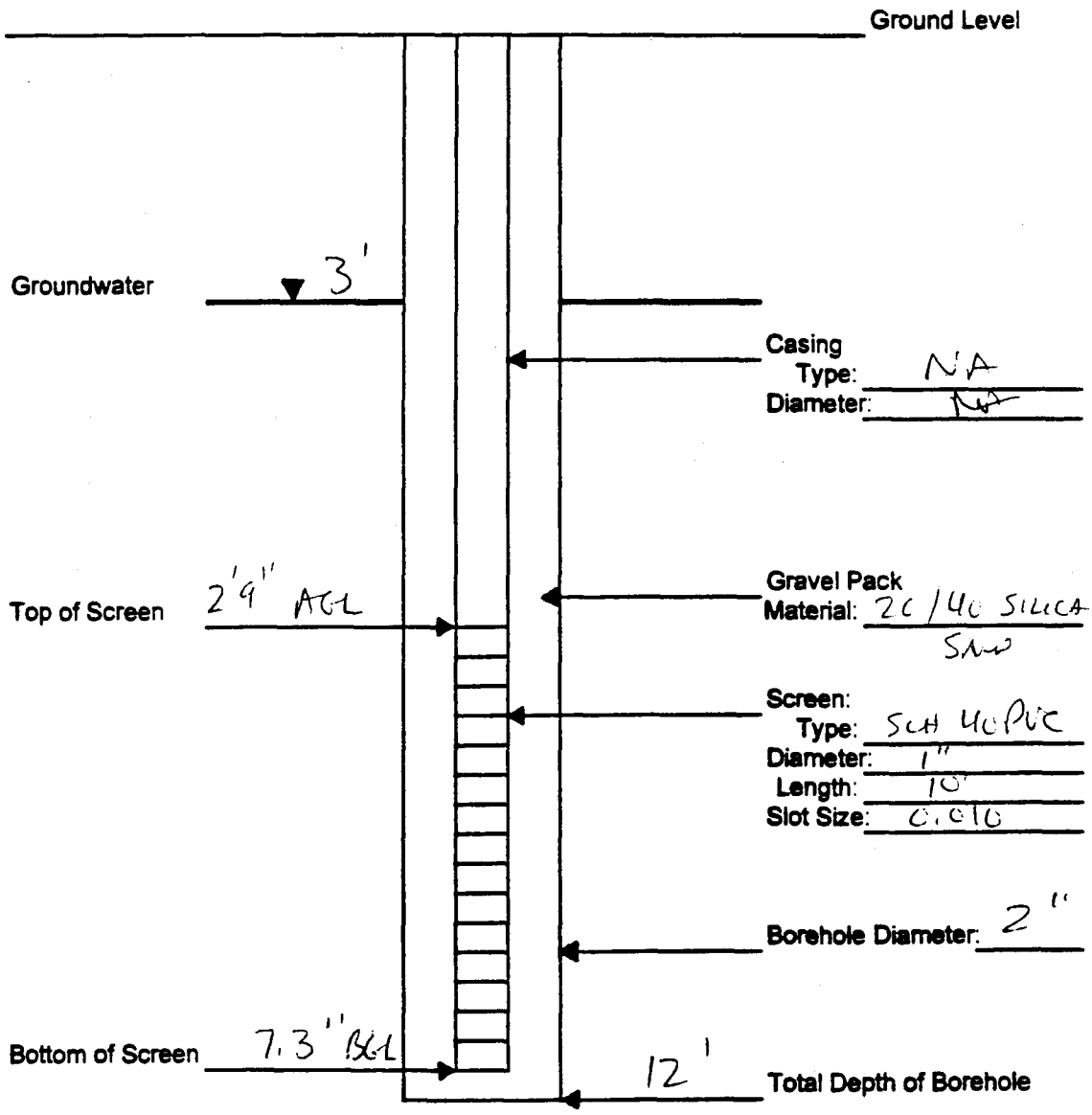


Temporary Monitor Well Construction Log

Well ID:	SIC9 - GW502	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-13-98
Driller's Name:	JOSH TONEY	Finish Date/Time:	5-13-98

Comments: SET GW502 TO 7'3". GOT REFUSAL @ 12' BGL IN SITUE. HOLE CAVED IN TO 7'3"

Depths are in Reference to Ground Level

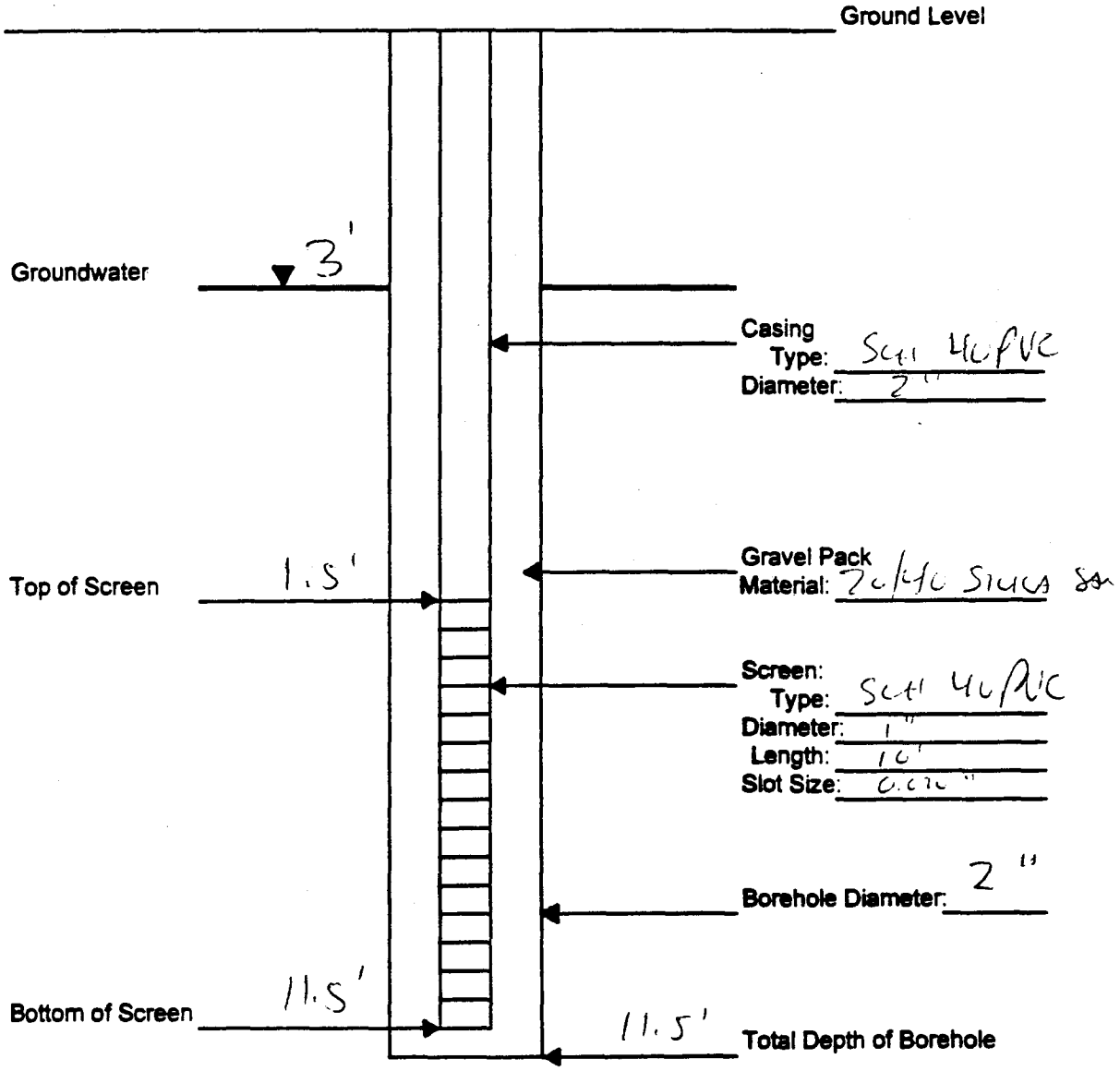


Temporary Monitor Well Construction Log

Well ID:	SI09-GW503	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GEOVES	Start Date/Time:	5-12-98
Driller's Name:	CHUCK GOUPON	Finish Date/Time:	5-12-98

Comments: SET GW503 TO 11.5'. WATER @ 3'

Depths are in Reference to Ground Level

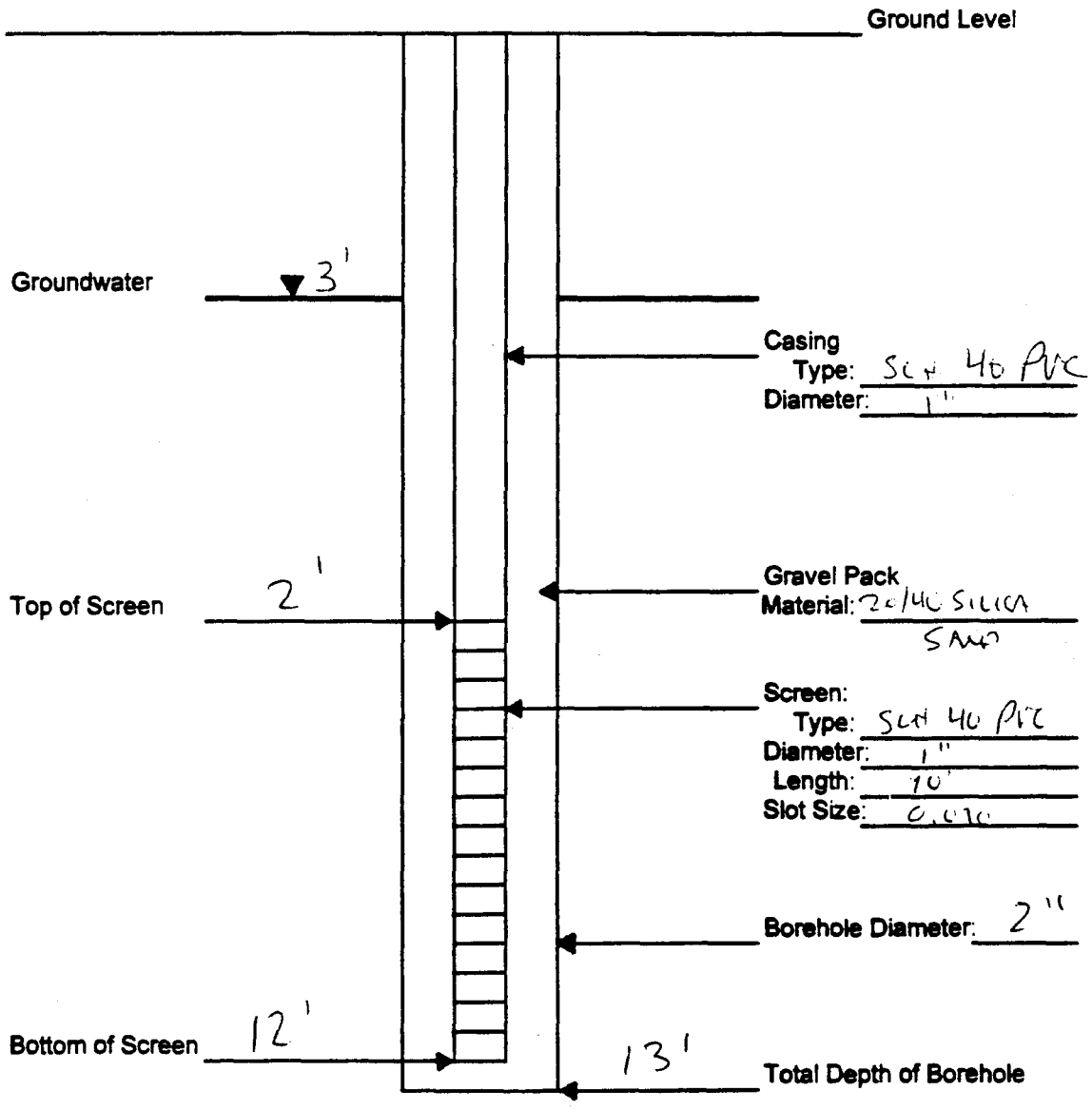


Temporary Monitor Well Construction Log

Well ID:	SILQ-GW SU4	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-13-98
Driller's Name:	JOSH TONEY	Finish Date/Time:	5-13-98

Comments: SET GW SU4 TO 12'. GOT REFUSAL AT 13' IN SILTE.

Depths are in Reference to Ground Level

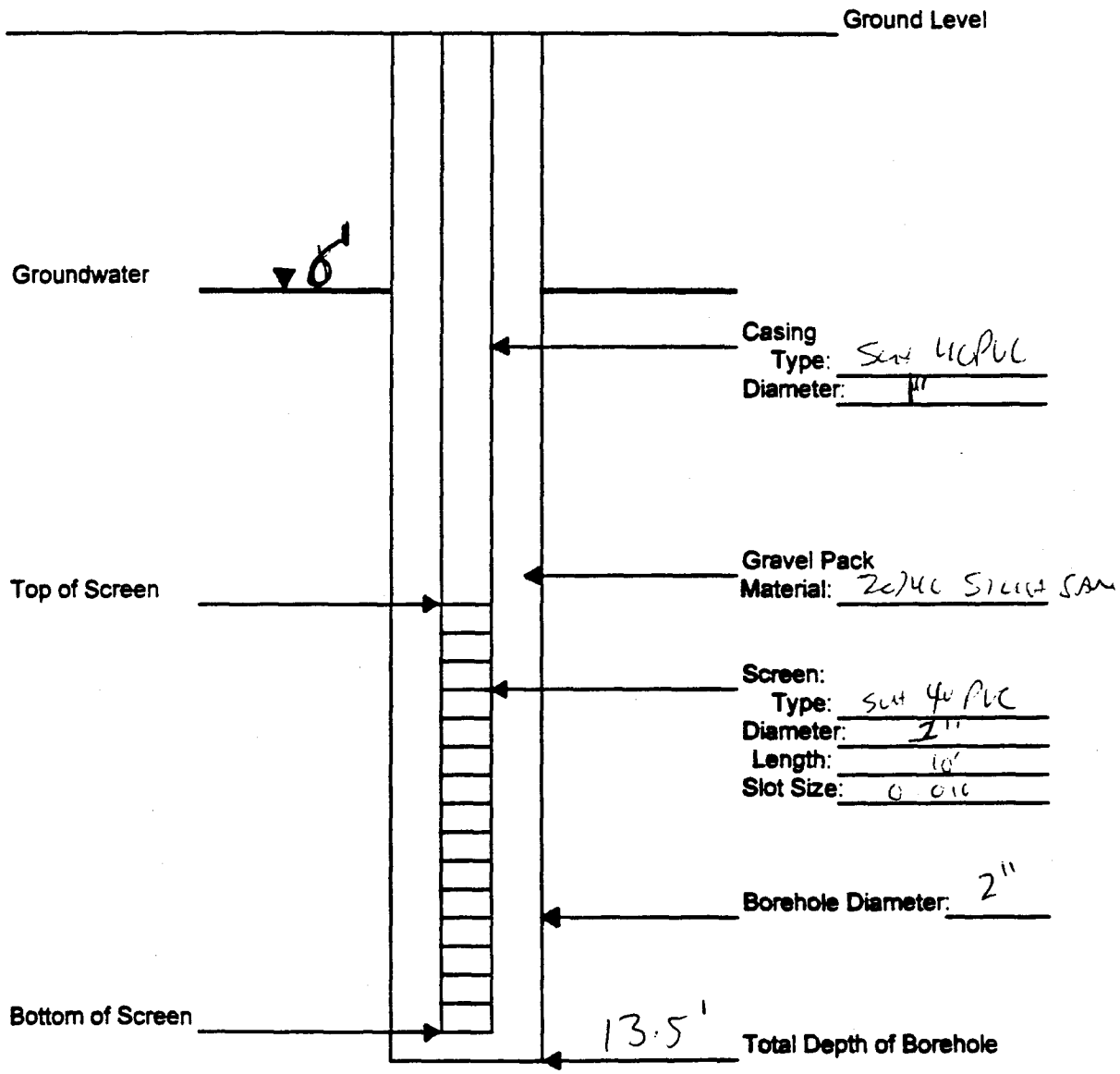


Temporary Monitor Well Construction Log

Well ID:	SI10-GW SC1	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-12-98
Driller's Name:	CHUCK GOLDEN	Finish Date/Time:	5-12-98

Comments: SET GW SC1 TO 12'8" BGL.

Depths are in Reference to Ground Level



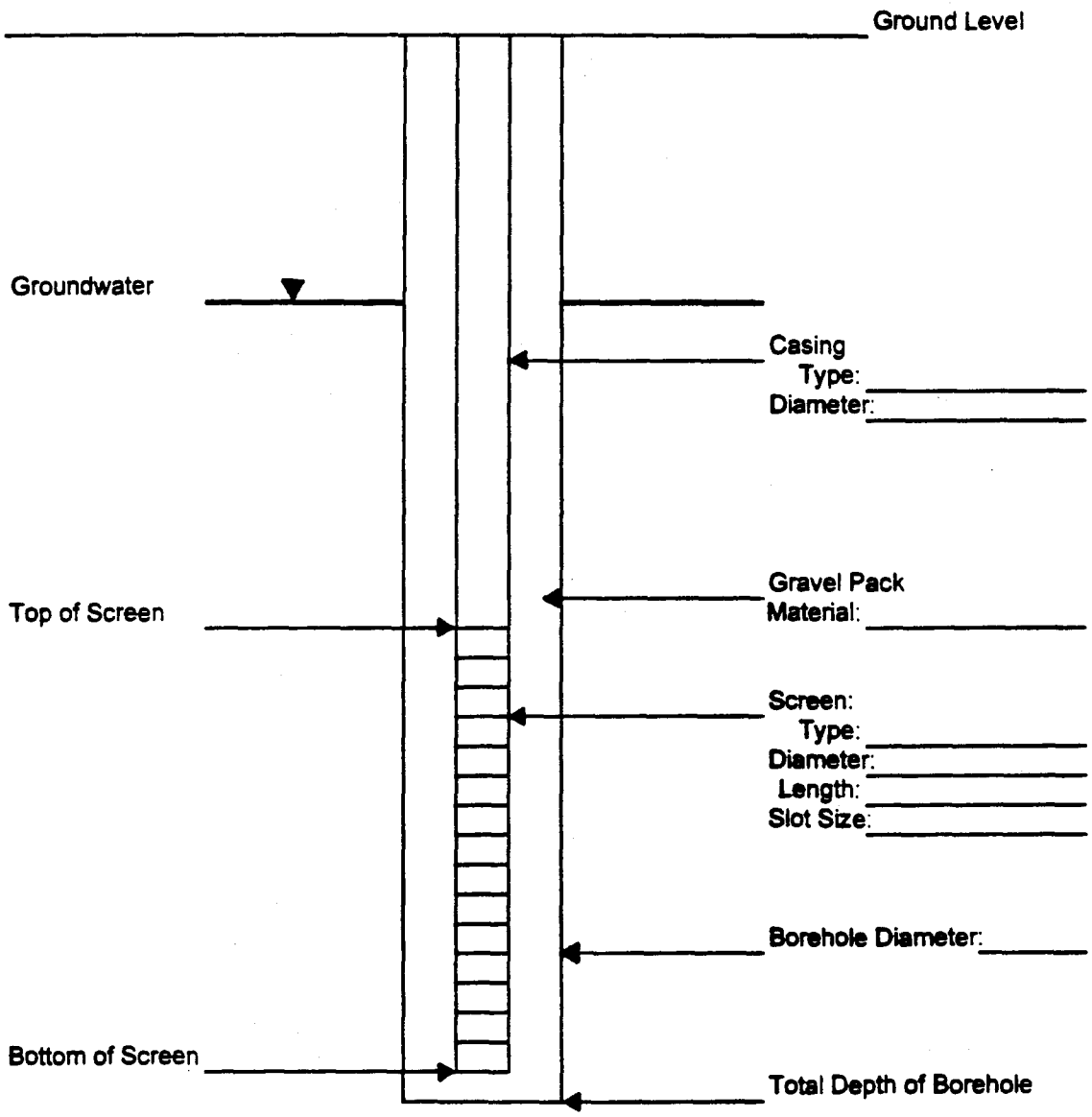
Temporary Monitor Well Construction Log

Well ID:	SIC-GW-S02	Project #:	3196314G
Logged By:	MAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-12-98
Driller's Name:	CHUCK COOPER	Finish Date/Time:	DID NOT SET

Comments: REFUSAL AT 12' IN DRY SHALE. DRY HOLE DID NOT SET GROUT

Depths are in Reference to Ground Level

NA



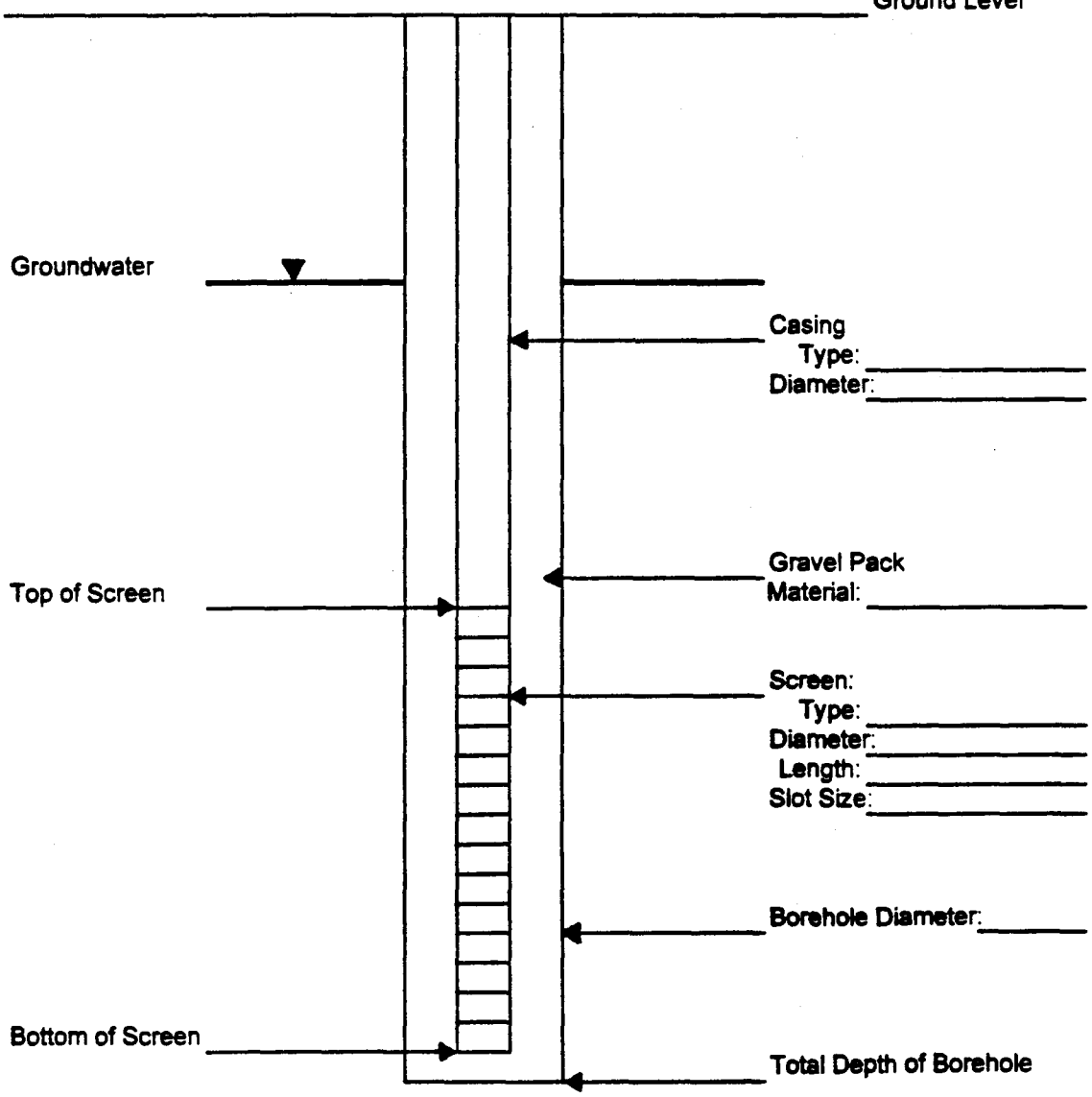
Temporary Monitor Well Construction Log

Well ID:	SI10-GWS03	Project #:	3196314G
Logged By:	RMH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-13-93
Driller's Name:	JOSH TURNEY	Finish Date/Time:	DID NOT SET

Comments: DRY HOLE Refusal @ 8'10" in Shale. DID NOT SET.

Depths are in Reference to Ground Level

NA



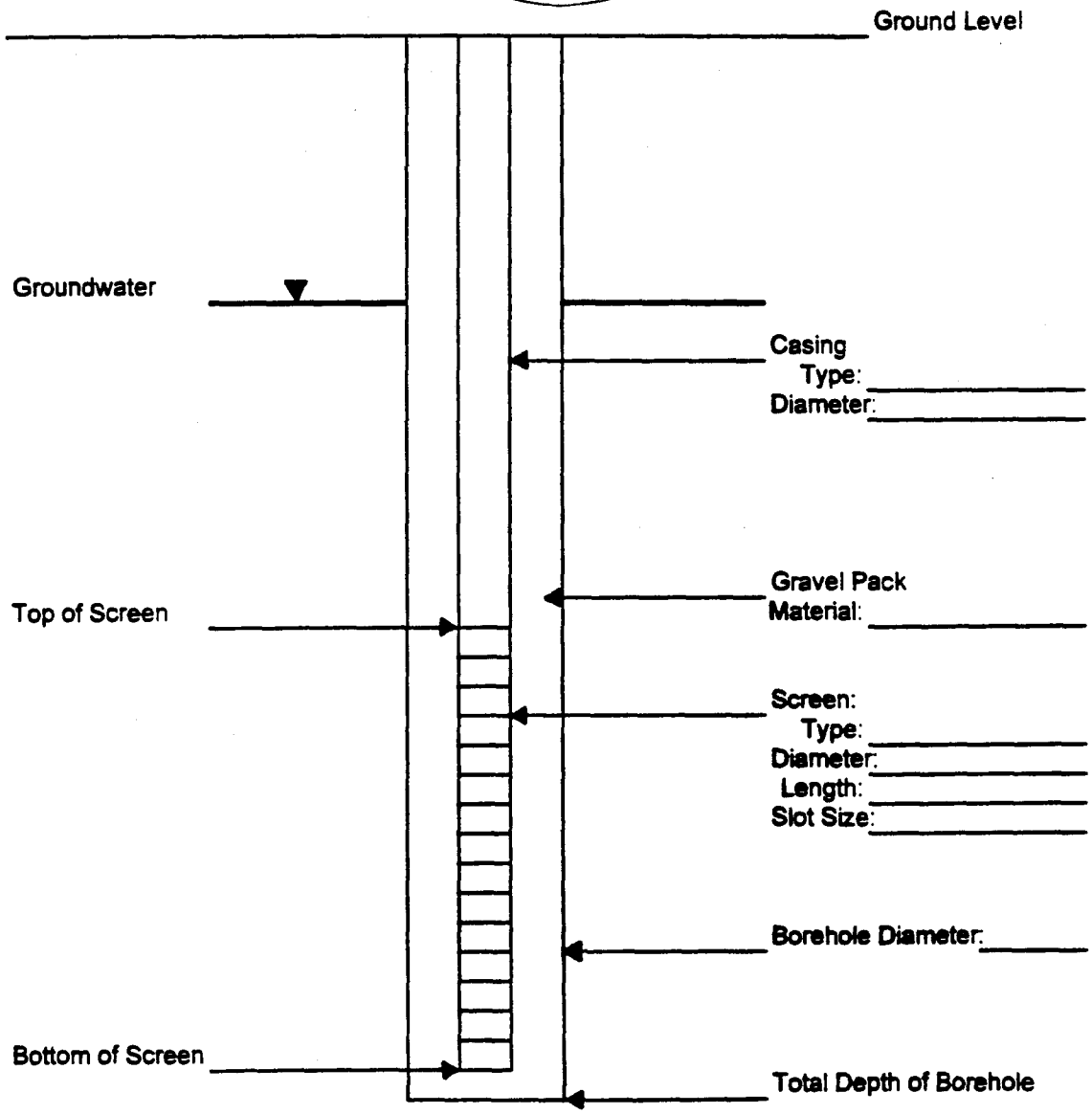
Temporary Monitor Well Construction Log

Well ID:	SIC GWSC4	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-12-98
Driller's Name:	CHUCK BOGDEN	Finish Date/Time:	DID NOT SET

Comments: DID NOT SET GWSC4. REFUSAL AT 12.5' IN DRY SHALE. DRY HOLE

Depths are in Reference to Ground Level

NA



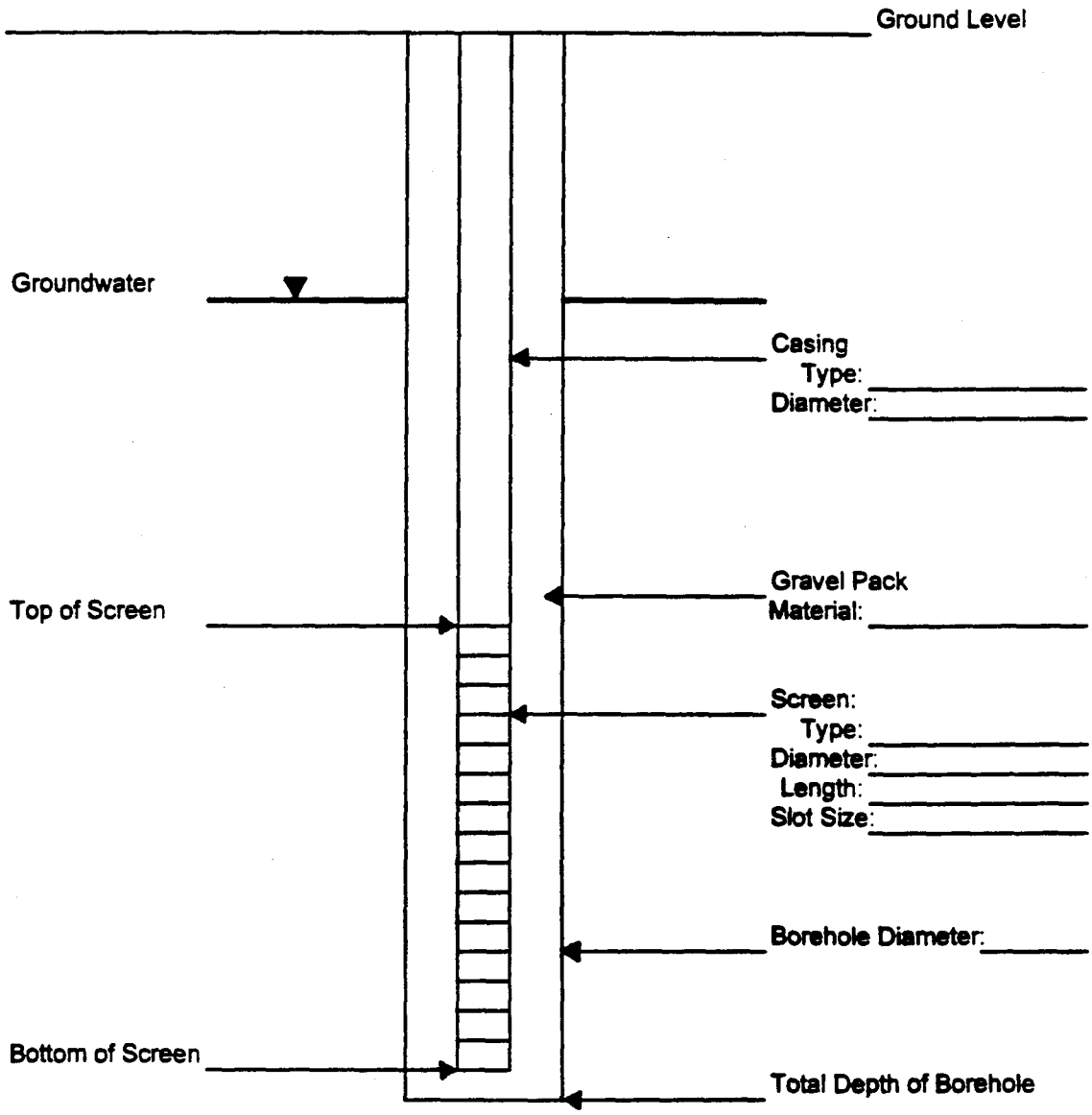
Temporary Monitor Well Construction Log

Well ID:	SI10-SS07/GWS05	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	CHARLIE GOODEN	Start Date/Time:	5-12-98
Driller's Name:	GRAVES	Finish Date/Time:	DID NOT SET

Comments: DID NOT SET GWS05. DRY HOLE. REFUSAL AT 12' IN DRY SHALE.

Depths are in Reference to Ground Level

MA



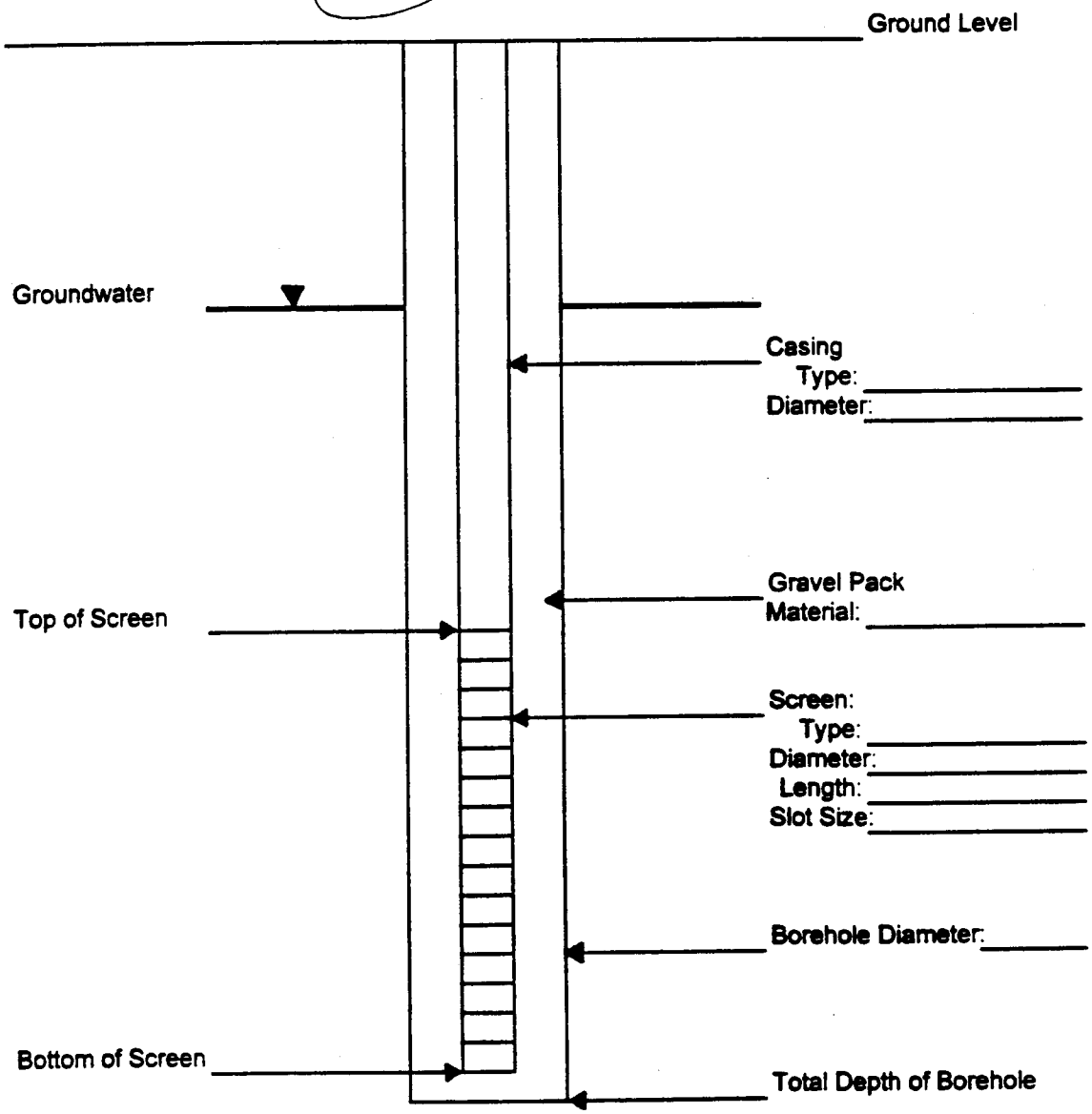
Temporary Monitor Well Construction Log

Well ID:	SIU-GW S06	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-11-98
Driller's Name:	CHUCK GOWAN	Finish Date/Time:	DID NOT SET

Comments: DID NOT SET GWS06 - REFUSAL AT 16' - DRY HOLE

Depths are in Reference to Ground Level

NA

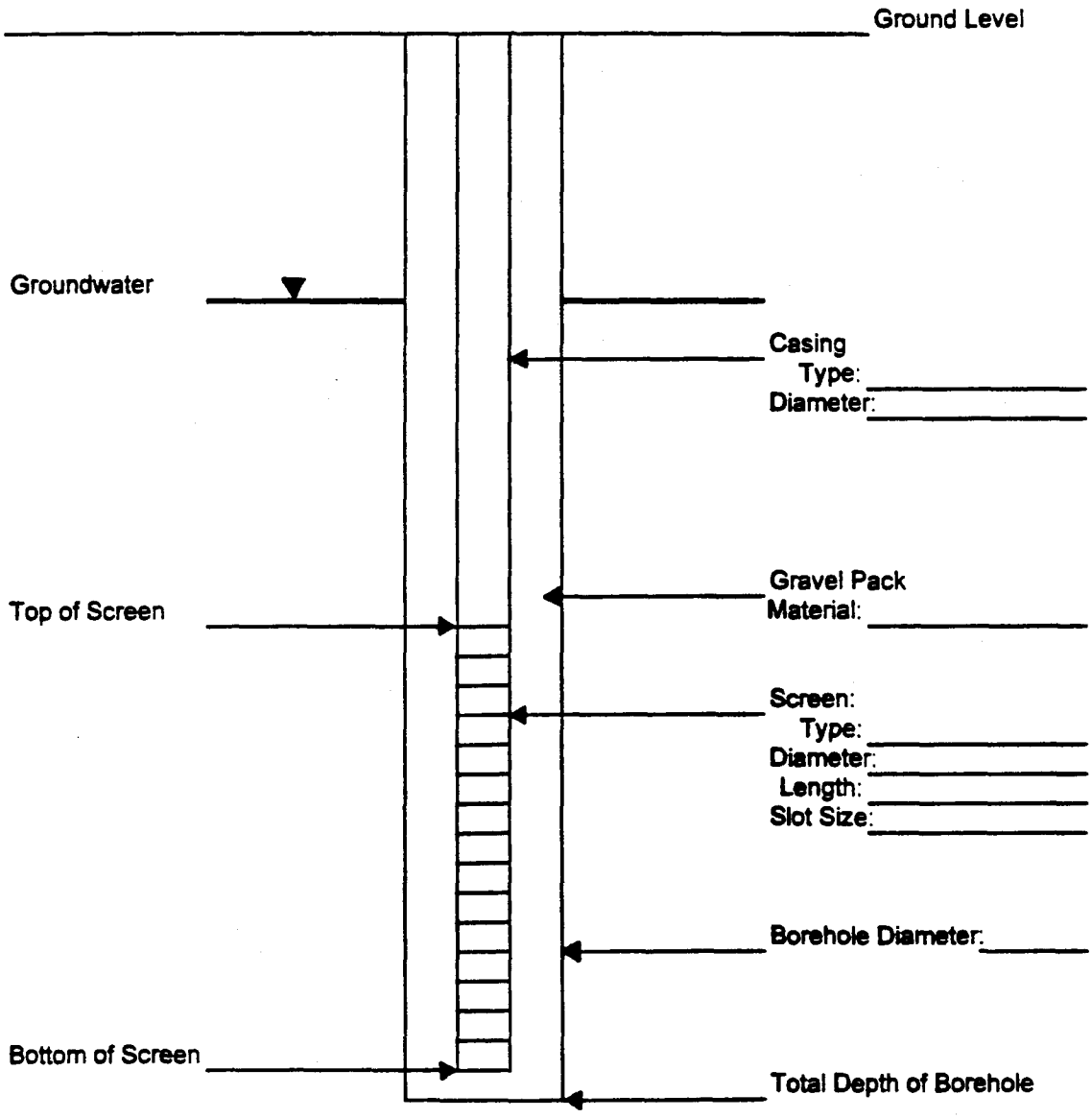


Temporary Monitor Well Construction Log

Well ID:	SITE-GWSC7	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	3-13-98
Driller's Name:	JOSH TINZY	Finish Date/Time:	DID NOT SET
Comments:	DID NOT set. Refusal @ 9'5" in Shale		

Depths are in Reference to Ground Level

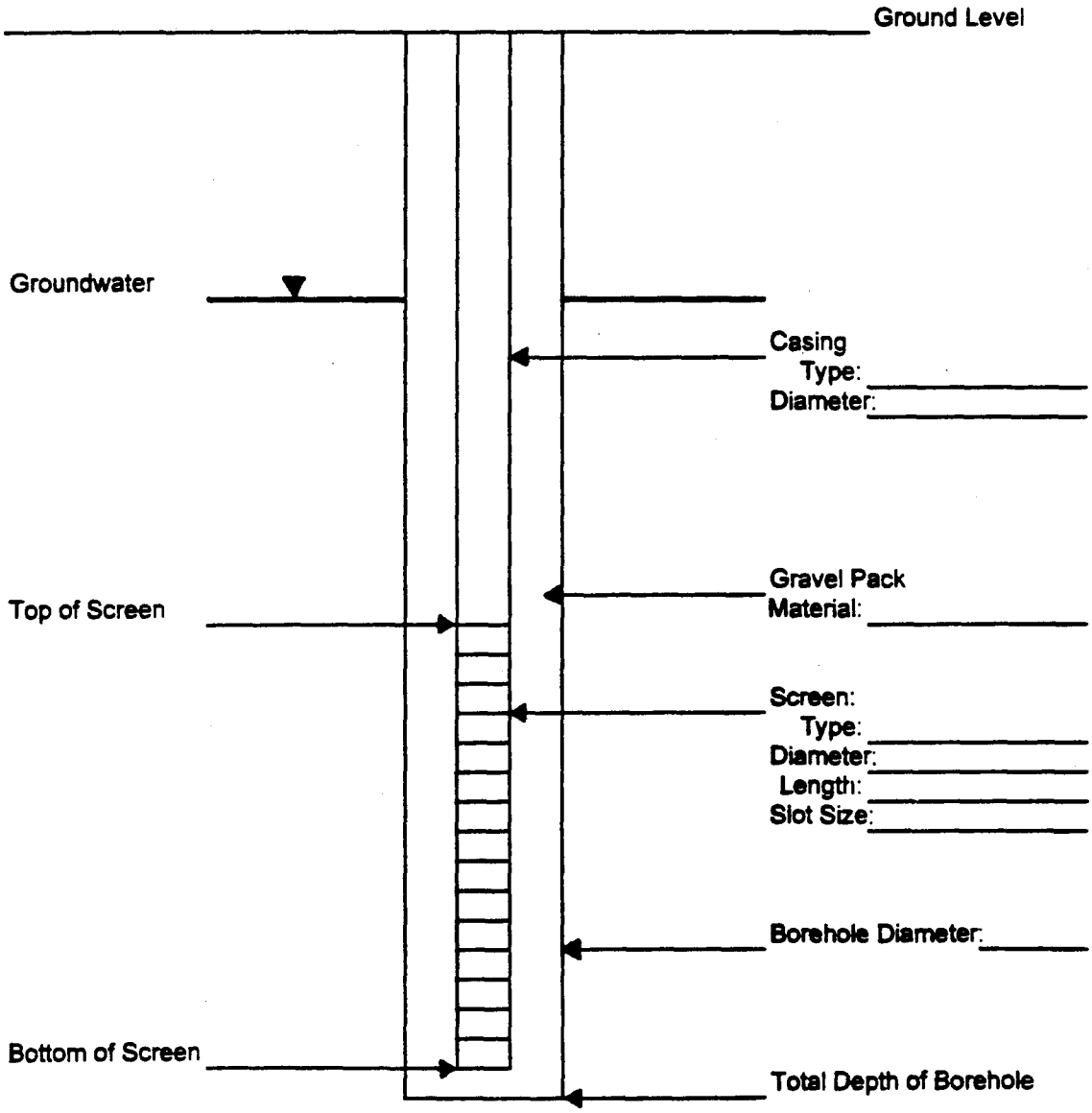
NA



Temporary Monitor Well Construction Log

Well ID:	SI10-GWS08	Project #:	3196314G
Logged By:	RAH	Client:	USACE
Drilling Contractor:	GRAVES	Start Date/Time:	5-12-98
Driller's Name:	CHUCK GOODEW	Finish Date/Time:	5-12-98

Comments: DID NOT SET. REFUSAL @ 10' IN ARRY SHALE.

Depths are in Reference to Ground Level

NA