

APPENDIX B

BORING LOGS AND WELL CONSTRUCTION LOGS

BORING LOGS

HTRW DRILLING LOGDistrict: **Mobile USACE****HOLE NUMBER**

GSBP-158-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: **Barry Martin/Ken Gobell**6. Mfr. designation of drill: **Ingersall Rand A-300/ CME 550X**7. Sizes and types of drilling and sampling equipment:
Hollow Stem Auger8. Hole location: **Groundscar South of Confidence Course, Parcel 158**

4.25" HSA, 2"x24" split spoons

9. Surface elevation (feet above mean sea level): **874.02**

4" HSA

10. Date started: **10/19/99**11. Date completed: **10/21/99**12. Overburden thickness (feet bgs): **37.5**15. Depth groundwater encountered (feet bgs): **None encountered**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): **37.5**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:

NA

22. Disposition of hole:

Backfilled

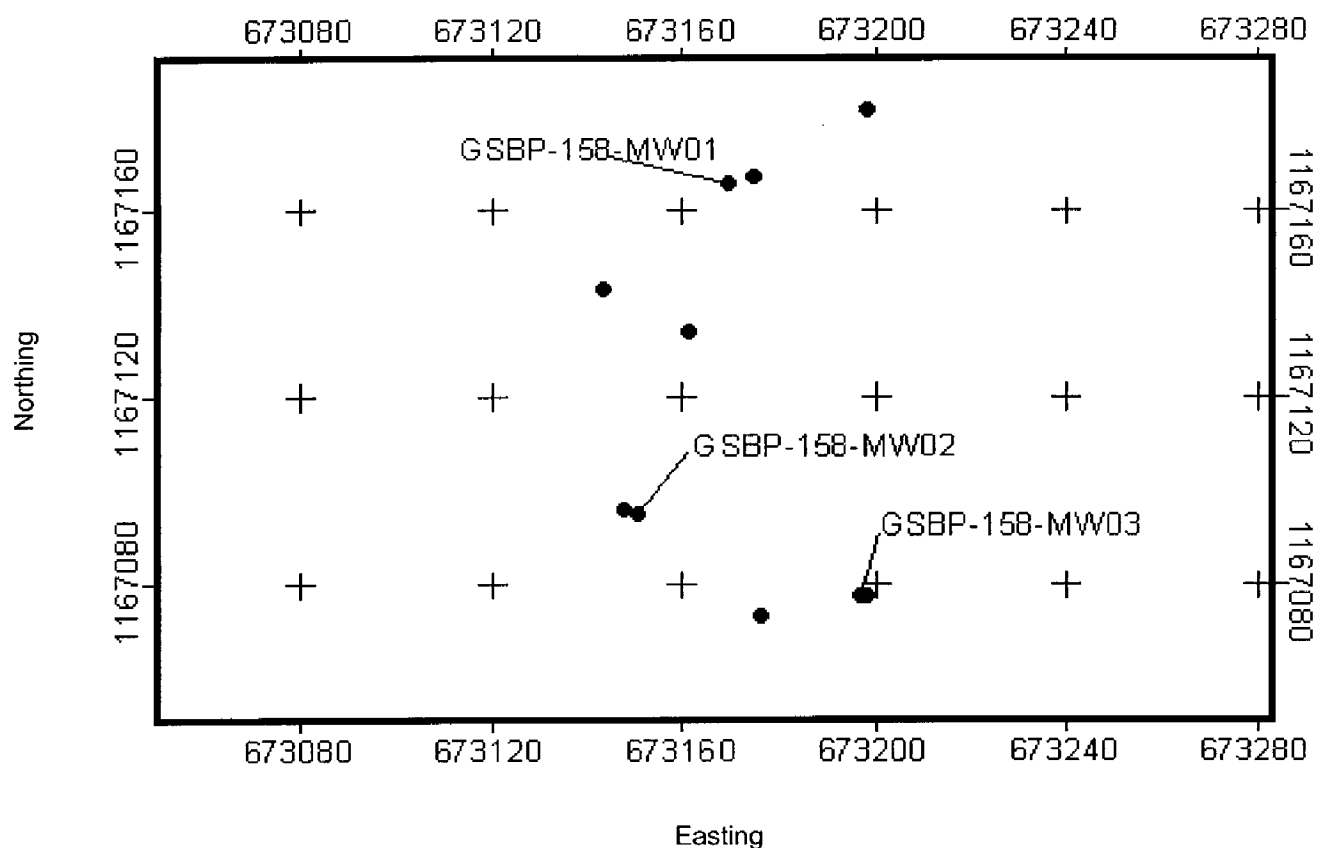
Monitoring well

Other (specify)

Geologist:

X

JOHN HOFER

LOCATION SKETCH/COMMENTS:Project: **Fort McClellan**bgs= below ground surface
NA = Not applicableHole no.: **GSBP-158-MW01**

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-158-MW01

Project: Fort McClellan

Geologist: JOHN HOFER

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	0	sm: Light brown fine SAND with Quartzite Gravel and Chert. Dry.			Organic Vapor = 0ppm			18 13 4 9	Rec 1.4'/2.0'
1	1		sm						
2	2	NA: No recovery.			Organic Vapor = 0ppm				
3	3								
870	4		NA						
5	5	sp: Interlayered medium to coarse SAND and dark red sandy CLAY with Quartz. Layering 3" to 6", dry, 1.5" diameter Sandstone fragment at 6.2', weakly cemented.			Organic Vapor = 0ppm			13 19 32 38	Rec 1.8'/2.0'
6	6		sp						
7	7	NA: No recovery.			Organic Vapor = 0ppm				
8	8								
865	9		NA						

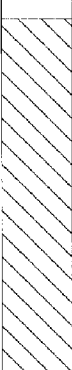
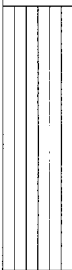
HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-158-MW01

Project: Fort McClellan

Geologist: JOHN HOFER

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	cl: Red, yellow and gray mottled CLAY, some Silt, hard. Dry, high angle to near vertical bedding from 11.5', low plasticity.			Organic Vapor = 0ppm			13 20 33 42	Rec 1.8'/2.0'
	11		cl						
	12	NA: No recovery.			Organic Vapor = 0ppm				
	13		NA						
860	14								
	15	ml: Light reddish yellow SILT, purplish gray mottling, hard, fissile. Dry, high angle bedding.						15 28 50/0.5'	Rec 1.4'/1.5'
	16		ml						
	17	NA: No recovery.							Description from auger cuttings 16.5'-25.0'.
	18								
855	19		NA						

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-158-MW01

Project: Fort McClellan

Geologist: JOHN HOFER

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								
	21	ml: Red, dry SILT.							
	22								
	23				Organic Vapor = 0ppm				
850	24		ml						
	25				Organic Vapor = 0ppm			21 50/0.4	Rec 0.91'/0.91'
	26	mdst: Small MUDSTONE/SILTSTONE fragments in cuttings.							Description from auger cuttings 25.9'-37.5', hard drilling.
	27								
	28		mdst						
845	29	mdst: Weathered, dark olive green MUDSTONE/SILTSTONE.							

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-158-MW01

Project: Fort McClellan

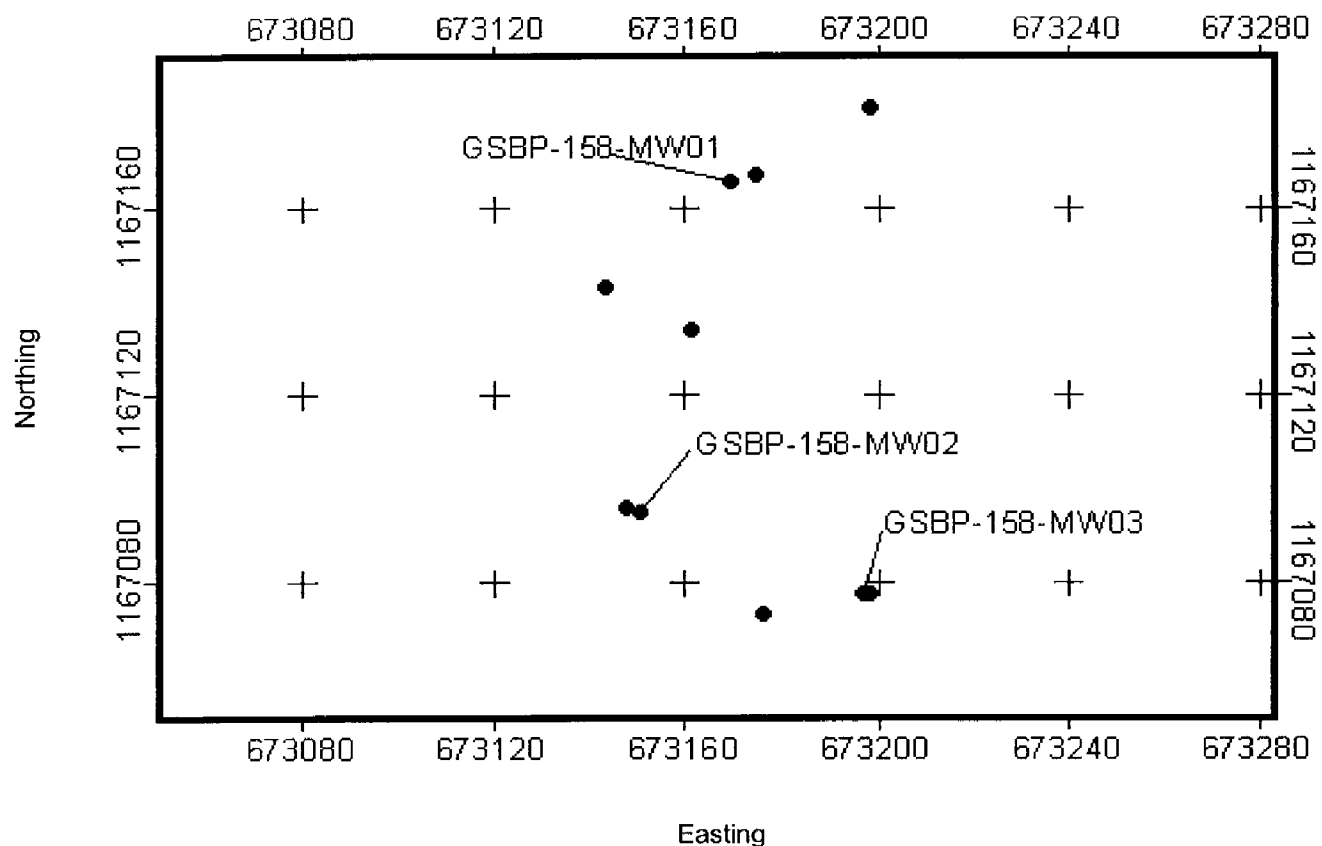
Geologist: JOHN HOFER

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)
840	30								
	31								
	32								
	33		mdst						Very hard, dry drilling.
	34								
	35								
	36								Very hard, dry drilling.
	37								Auger refusal 37.5. Bottom of borehole at 37.5'.

HTRW DRILLING LOG		District: Mobile USACE		HOLE NUMBER GSBP-158-MW02	
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: Barry Martin		6. Mfr. designation of drill: Ingersoll Rand A-300			
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" HSA, 2"x24" Split Spoon		8. Hole location: Groundscar South of Confidence Course, Parcel 158			
		9. Surface elevation (feet above mean sea level): 874.87			
		10. Date started: 10/20/99	11. Date completed: 10/20/99		
12. Overburden thickness (feet bgs): 32		15. Depth groundwater encountered (feet bgs): none encountered			
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): 32		17. Other water level measurements (specify): NA			
18. Geotechnical samples:	Collected: NA	Disturbed:	Undisturbed:	19. Total no. of core boxes: NA	
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	21. Total core recovery: NA
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist: JOHN HOFER	
		X			

LOCATION SKETCH/COMMENTS:



Project: **Fort McClellan**

bgs= below ground surface
NA = Not applicable

Hole no.: **GSBP-158-MW02**

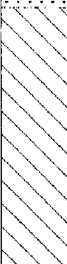
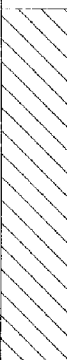
HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-158-MW02

Project: Fort McClellan

Geologist: JOHN HOFER

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	sp: Yellowish brown, fine SAND, abundant Silt and Gravel.	sp		Organic Vapor = 0ppm			18 5 11 16	Rec 1.7'/2.0'
	1	cl: Dark red CLAY with fine Sand.	cl						
	2	NA: No recovery.	NA		Organic Vapor = 0ppm				
	3								
	4								
870	5	cl: Dark red CLAY with fine Sand, some reddish yellow mottling. Dry, hard, nonplastic.	cl		Organic Vapor = 0ppm			14 22 37 42	Rec 1.6'/2.0'
	6								
	7	NA: No recovery.	NA		Organic Vapor = 0ppm				
	8								
	9								

(Continuation Sheet)

HOLE NUMBER: GSBP-158-MW02

Project: Fort McClellan

Geologist: JOHN HOFER

Sheet 4 of 5 sheets

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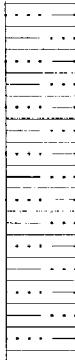
HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-158-MW02

Project: Fort McClellan

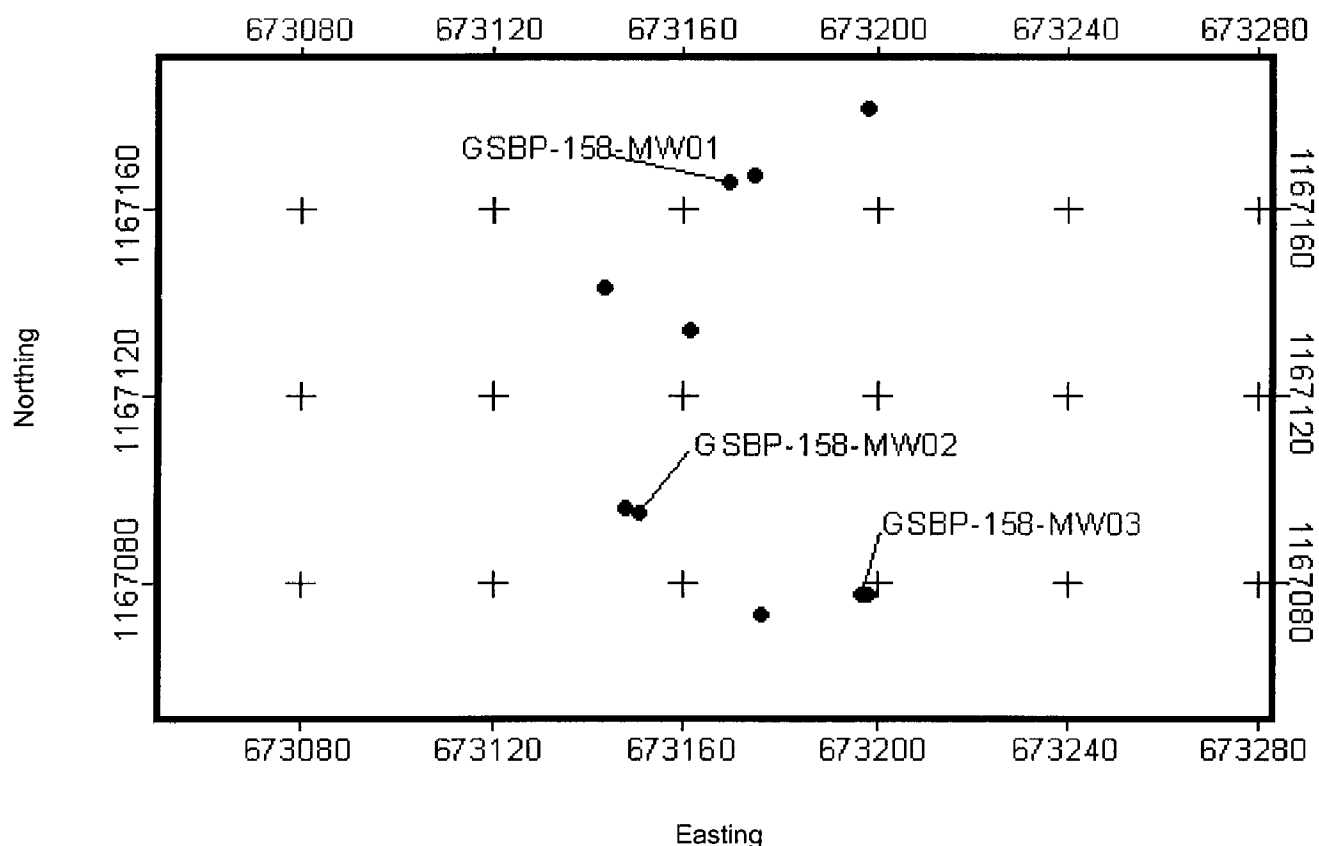
Geologist: JOHN HOFER

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								
	31								
	32								Auger refusal at 32.0'. Bottom of borehole at 32.0'.

HTRW DRILLING LOG		District: Mobile USACE		HOLE NUMBER GSBP-158-MW03	
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: Barry Martin			6. Mfr. designation of drill: Ingersall Rand A-300		
7. Sizes and types of drilling and sampling equipment: Hollow Stem Auger 4.25" ID HSA, 2"x24" split spoons			8. Hole location: Groundscar South of Confidence Course, Parcel 158		
			9. Surface elevation (feet above mean sea level): 873.56		
			10. Date started: 10/19/99 11. Date completed: 10/20/99		
12. Overburden thickness (feet bgs): 46			15. Depth groundwater encountered (feet bgs): None encountered		
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): 46			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)
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:	
		X		JOHN HOFER	
21. Total core recovery: NA					

LOCATION SKETCH/COMMENTS:



Project: **Fort McClellan**

bgs= below ground surface
NA = Not applicable

Hole no.: **GSBP-158-MW03**

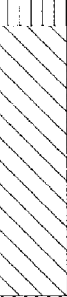
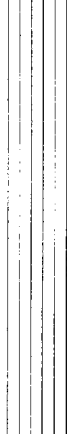
HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-158-MW03

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	ml: Brown SILT, sandy with 1" diameter Sandstone. cl: Dark red CLAY, some Sand and Silt. Moist	ml		Organic Vapor = 0ppm			20 8 13 29	Rec 1.6'/2.0'
	1		cl						
	2	sp: Yellow, medium grained SAND, angular. Moist. NA: No recovery.	sp		Organic Vapor = 0ppm				
	3		NA						
870	4	ss: SANDSTONE (Rock Fill).	ss		Organic Vapor = 0ppm				
	5	ml: Red SILT.							
	6								
	7								
	8		ml						
865									
	9								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-158-MW03

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	ml: Reddish brown, yellow, olive green mottled SILT with weathered SILTSTONE, hard, near vertical, thin bedding, dry, fissile	ml		Organic Vapor = 0ppm			16 50/0.3'	Rec 0.75'/0.75'
	11	NA: No recovery.							
	12								
	13								
860			NA						
	14								
	15	ml: Reddish brown, yellow, olive green mottled SILT with weathered SILTSTONE, hard, near vertical, thin bedding, dry, fissile			Organic Vapor = 0ppm			12 31 50/0.3'	Rec 1.2'/1.3'
	16	ml: Dry, red SILT.	ml						Descriptions from auger cuttings 16.3'-46.0'.
	17								
	18								
855									
	19								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-158-MW03

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									
21									
22			ml						Hard to very hard drilling.
23									
850									
24		ml: Red, dry, SILT, some weathered Siltstone/Shale fragments.							
25									
26									
27			ml						
28									
845									
29		ml: Red, dry, SILT.	ml						Very hard drilling.

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: GSBP-158-MW03

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									
41									
42		sltst: Dry, brown cuttings, weathered SILTSTONE.							Very hard drilling.
43									
830									
44			sltst						
45									
46									Auger refusal 46.0'. Bottom of borehole at 46.0'.

Boring Log Report Form

Boring No. SI16-GWS01

Page 1 of 2

Client USACE

Site Location SI16

ESE Field Crew Leader Rich Hill

Date Start 5-8-98 Finish 5-8-98

Contractor: Graves Services

Boring Depth 32' 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'-3'							0'-3' SANDY SILT, 30% SAND - SUBMITTAN TO BROWN, NON-PLASTIC, FIRM, SLIGHTLY MOIST.	SM	0'-16' Cased 16'-32' Silted Rod
3'-6'							3'-6' SANDY CLAY, 40% SUBANGULAR SUBROUND SAND, DARK RED BROWN TO YELLOWISH ORANGE, STIFF, MOIST, LOW PLASTICITY	CL	
6'-32'							6'-32' SANDY CLAY WITH GRAVEL, 30% SUBANGULAR SAND, 20% QUARTZ GRAVEL - POORLY GRADED, FIRM, MODERATELY PLASTIC, MOIST, RED BROWN TO ORANGE.	CL/GC	
32'									- REFUSAL AT 32' IN SANDY CLAY. ALSO

32'

32' = B.O.H.

DRY AT 32'

Boring Log Report Form

Boring No. SILG - Gw 502

Page 1 of 2

Client USACE
 Site Location SILG
 ESE Field Crew Leader Rich Hill
 Date Start 5-8-98 Finish 5-8-98
 Contractor Graves Services
 Boring Depth 22' 1" Diameter 2"
 Boring Location See MAP.

ESE Project FTMC-SI
 ESE Project No. 3196314G
 ESE Project Manager William Elliott
 Drill Type Geoprobe
 Driller JOHN T. NEY
 Geologist Rich Hill

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
0'							0'-4.5' - SANDY SILT, 25% SAND, SUBANGULAR TO SUBROUND, FIRM, NON-PLASTIC, SLIGHTLY MOIST.	SM	
4'							4.5'-8' - SANDY CLAY, 35-40% SAND, SUBANGULAR TO SUBROUND, DARK RED BROWN TO YELLOWISH RED, LOW PLASTICITY, STIFF, MOIST.	CL	
8'							8'-22' 1" - SANDY CLAY (75% SAND) WITH GRAVEL (25%), POORLY GRAINED, FIRM, MODERATELY PLASTIC, DARK RED BROWN TO BROWN, MOIST.	CL w/GR	
12'									
16'									
20'									
22'							- BtH = 22' 1"		- Refusal @ 22' 1" IN SANDY CLAY. DRY @ 22' 1".

Boring Log Report Form

Boring No. 5116-GWS 03

Page 1 of 2

Client USACE

ESE Project FTMC-SI

Site Location SI 16

ESE Project No. 3196314G

ESE Field Crew Leader: Rich Hill

ESE Project Manager William Elliott

Date Start 5-8-98

Finish 5-8-95

Drill Type Geoprobe

Contractor: Graves Services

Driller JUST TONEY

Boring Depth 10' 10"

Diameter 2.4

Geologist: Rich Hill

Boring Location

See Map

Depth (ft)	Sample Interval	Sample #	Sample Type	Blows per 6 inches	Soil Headspace	Breathing Zone	DESCRIPTION	USCS Classification	REMARKS
2							0'-10' - SANDY CLAY, 30% SAND DARK RED BROWN; MODERATELY PLASTIC, STIFF, MOIST, PERIODIC QUARTZ Boulders.	CL	COLLECTED SAMPLE 9905 (EFM 18*42) + DURA (EFM 18*88) FROM 0-1'
4									
6									
8									
10							- BOLT = 10' 10"		DID NOT SET. DRY HOLE REFUSAL @ 10' 10"

WELL CONSTRUCTION LOGS

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan, SAD TERC

LOCATION Anniston, AL

CLIENT: USACE Mobile District

CONTRACTOR MILLER DRILLING

DRILLER: KEN GOBELL

IT FIELD REPRESENTATIVE: JOHN HOFER

WELL NO: GSBP-158-MW01

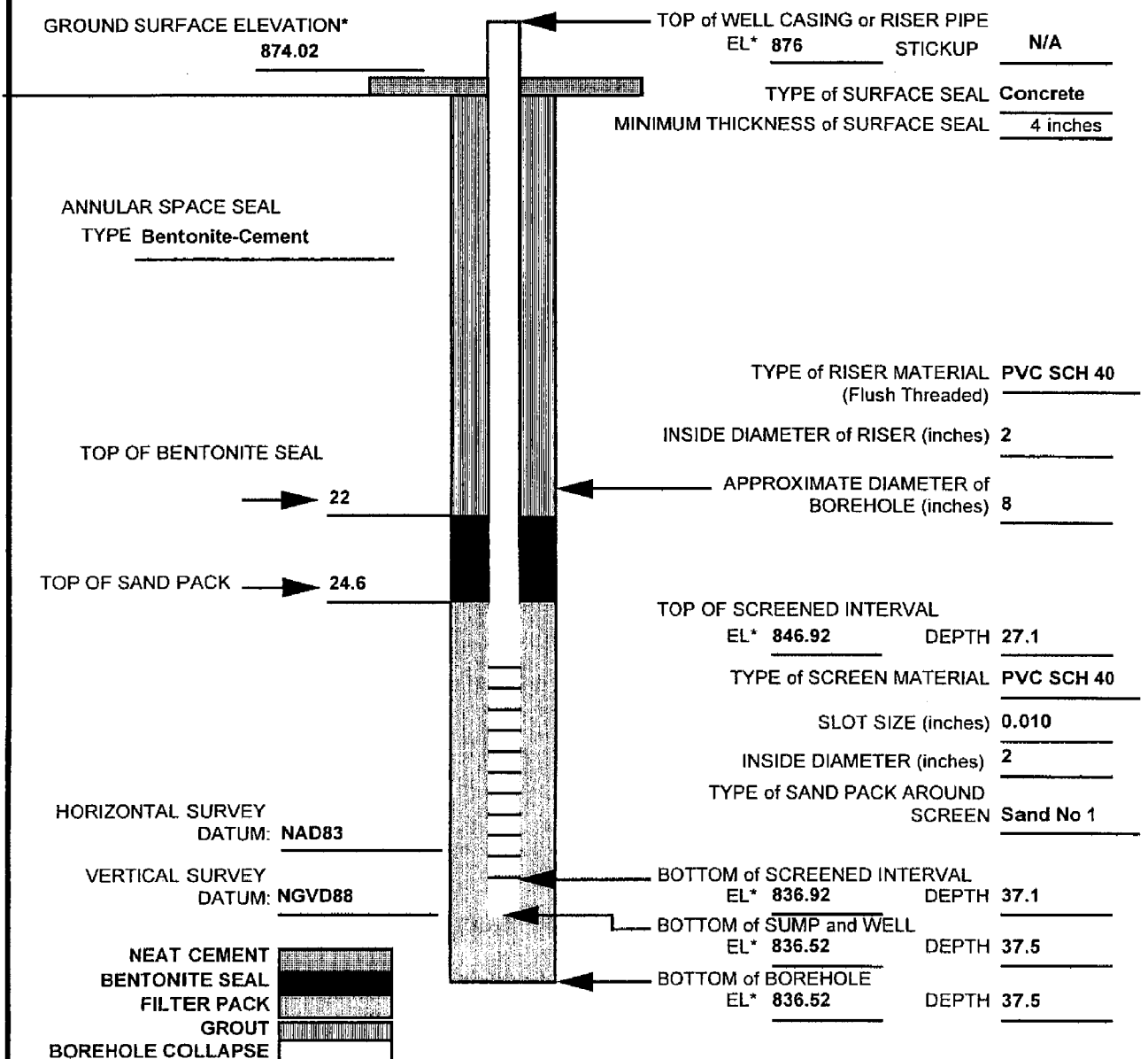
DRILLING METHOD:
Hollow Stem Auger

INSTALLATION DATE 10/21/99

NORTHING: 1167165.08

EASTING: 673169.13

JOB NO: 774645A



*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, SAD TERC

LOCATION: Anniston, AL

CLIENT: USACE Mobile District

CONTRACTOR: MILLER DRILLING

DRILLER: KEN GOBELL

IT FIELD REPRESENTATIVE: JOHN HOFER

WELL NO: GSBP-158-MW02

DRILLING METHOD:

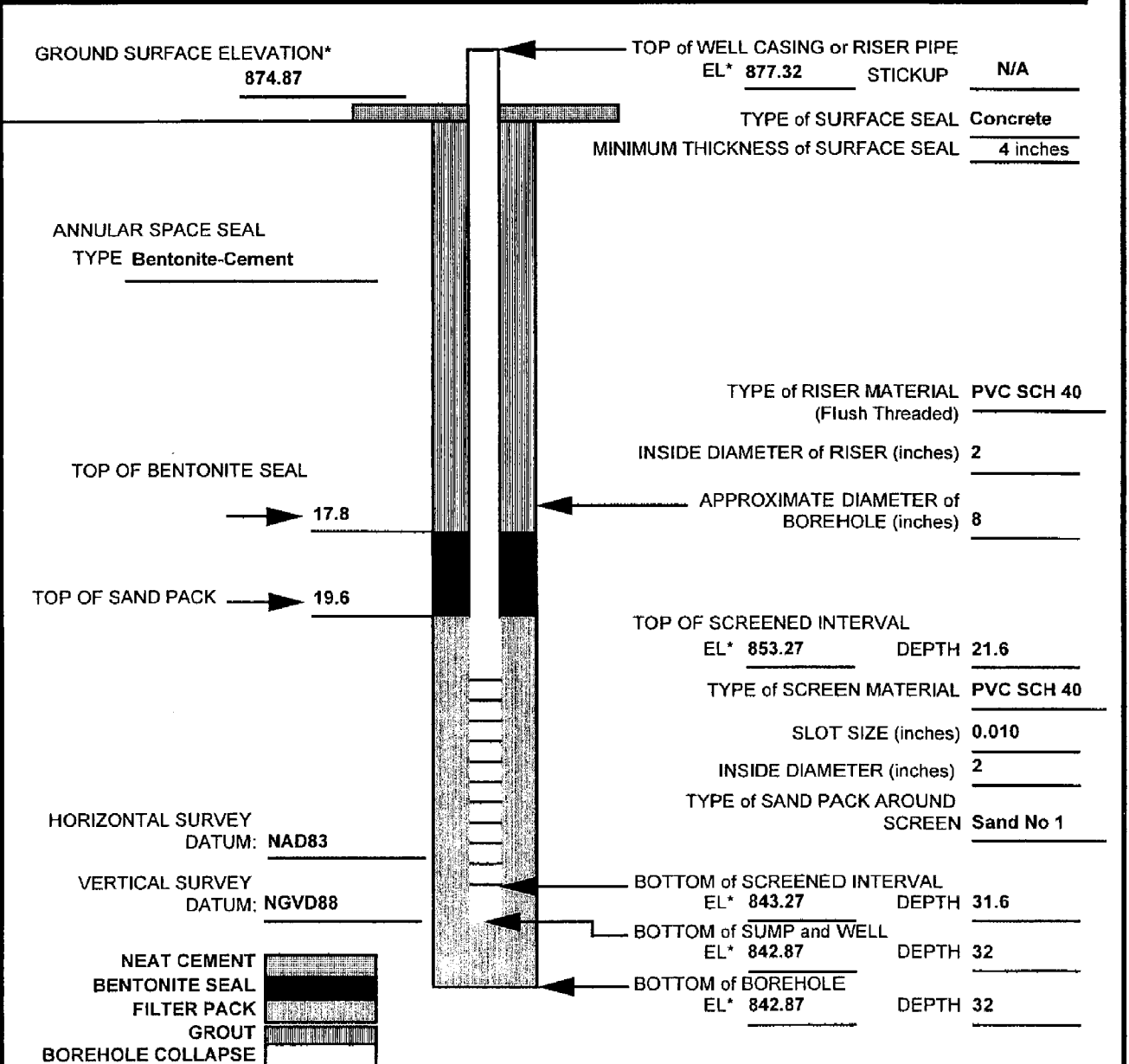
Hollow Stem Auger

INSTALLATION DATE: 10/20/99

NORTHING: 1167094.33

EASTING: 673150.59

JOB NO: 774645A



*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, SAD TERC

LOCATION: Anniston, AL

CLIENT: USACE Mobile District

CONTRACTOR: MILLER DRILLING

DRILLER: BARRY MARTIN

IT FIELD REPRESENTATIVE: JOHN HOFER

WELL NO: GSBP-158-MW03

DRILLING METHOD:

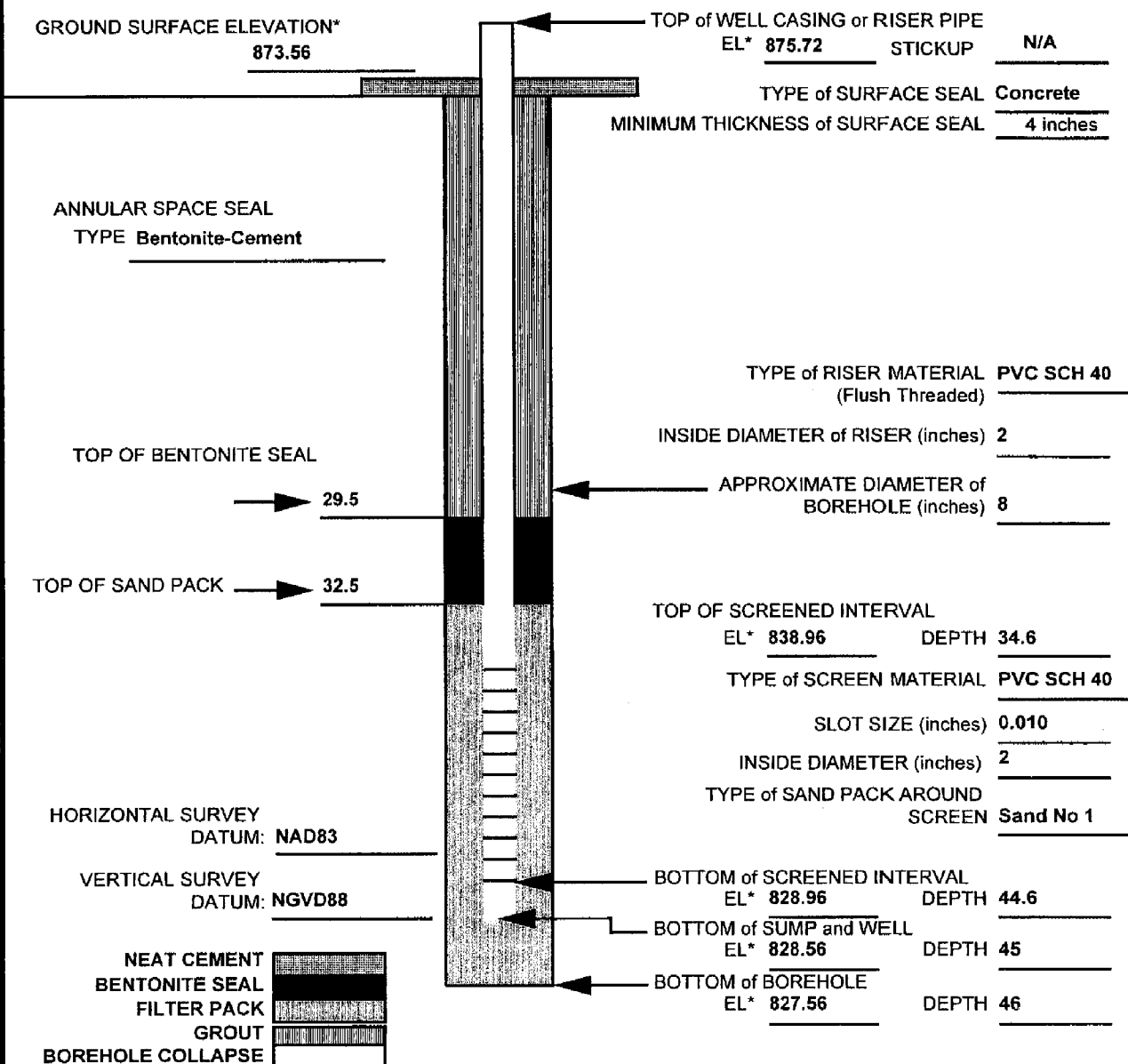
Hollow Stem Auger

INSTALLATION DATE: 10/20/99

NORTHING: 1167076.73

EASTING: 673196.88

JOB NO: 774645A



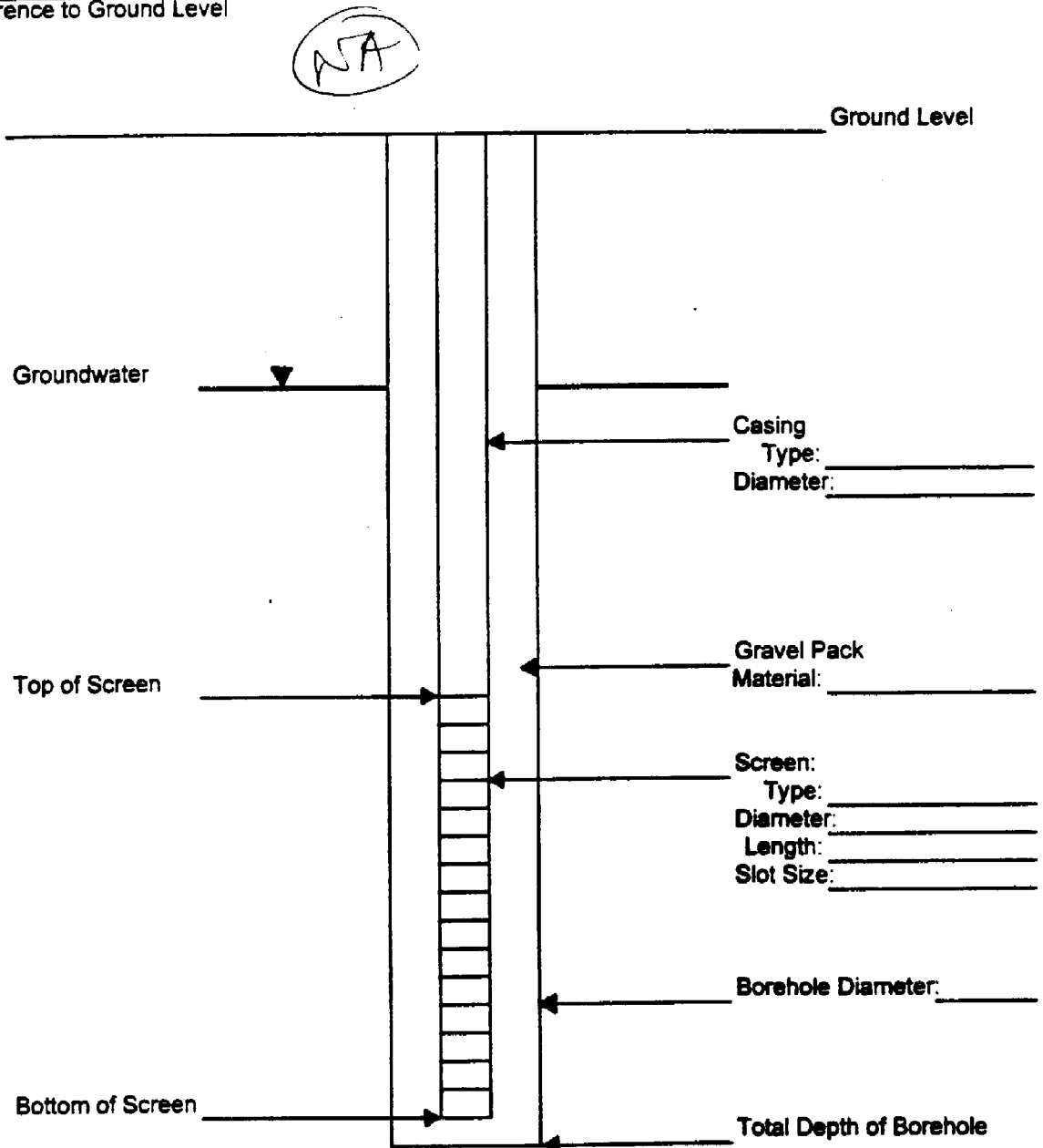
*All elevations (EL) are referenced to MSL.

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

Temporary Monitor Well Construction Log

Well ID: SIL6-GW501 Project #: 3196314G
Logged By: PA HILL Client: USACE
Drilling Contractor: GRAVES Start Date/Time: 5-8-98 1100
Driller's Name: JOSH TONEY Finish Date/Time: DID NOT SET
Comments: DID NOT SET GWS POINT. DRY HOLE REFUSAL AT 32' BGL

Depths are in Reference to Ground Level

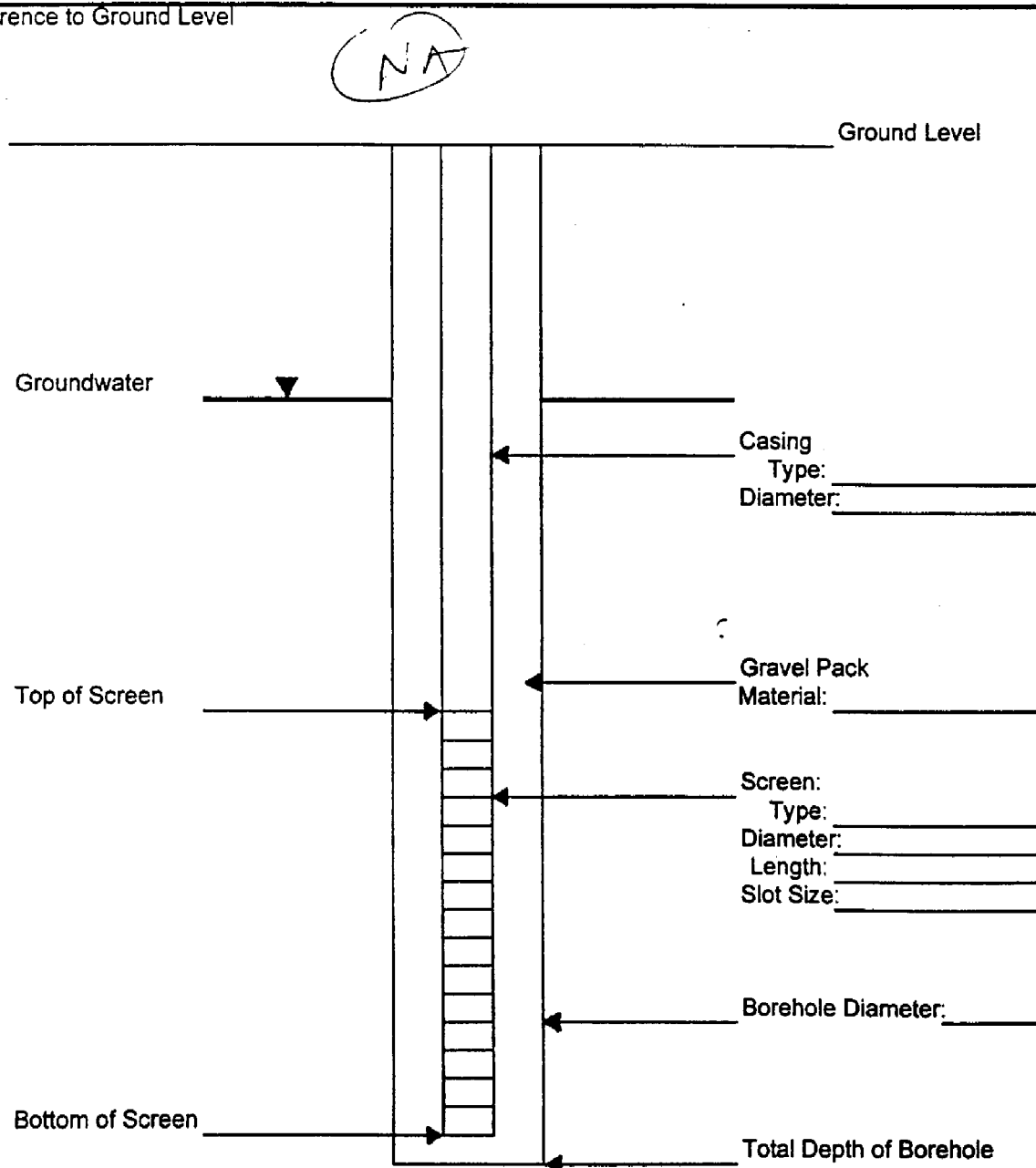


B 2 of 2

Temporary Monitor Well Construction Log

Well ID: SI16 - GWS02 Project #: 3196314G
Logged By: R. A. Hill Client: USACE
Drilling Contractor: GRAVES Start Date/Time: 5-8-98 1452
Driller's Name: Jose Toney Finish Date/Time: Did Not Set
Comments: DID NOT SET GWS02. DRY HOLE. REFUSE
AT 22' 1" BGL.

Depths are in Reference to Ground Level



Temporary Monitor Well Construction Log

Well ID: SZ16-CW50.3
Logged By: RAT
Drilling Contractor: GENES
Driller's Name: JOSH TANEY
Comments: DID NOT SET. REFUSAL AT 10' 10". DRY HOLE.

Project #: 3196314G
Client: USACE
Start Date/Time: 5-8-98 1430
Finish Date/Time: DID NOT SET

Depths are in Reference to Ground Level

