APPENDIX B

BORING LOGS AND WELL CONSTRUCTION LOGS

BORING LOGS

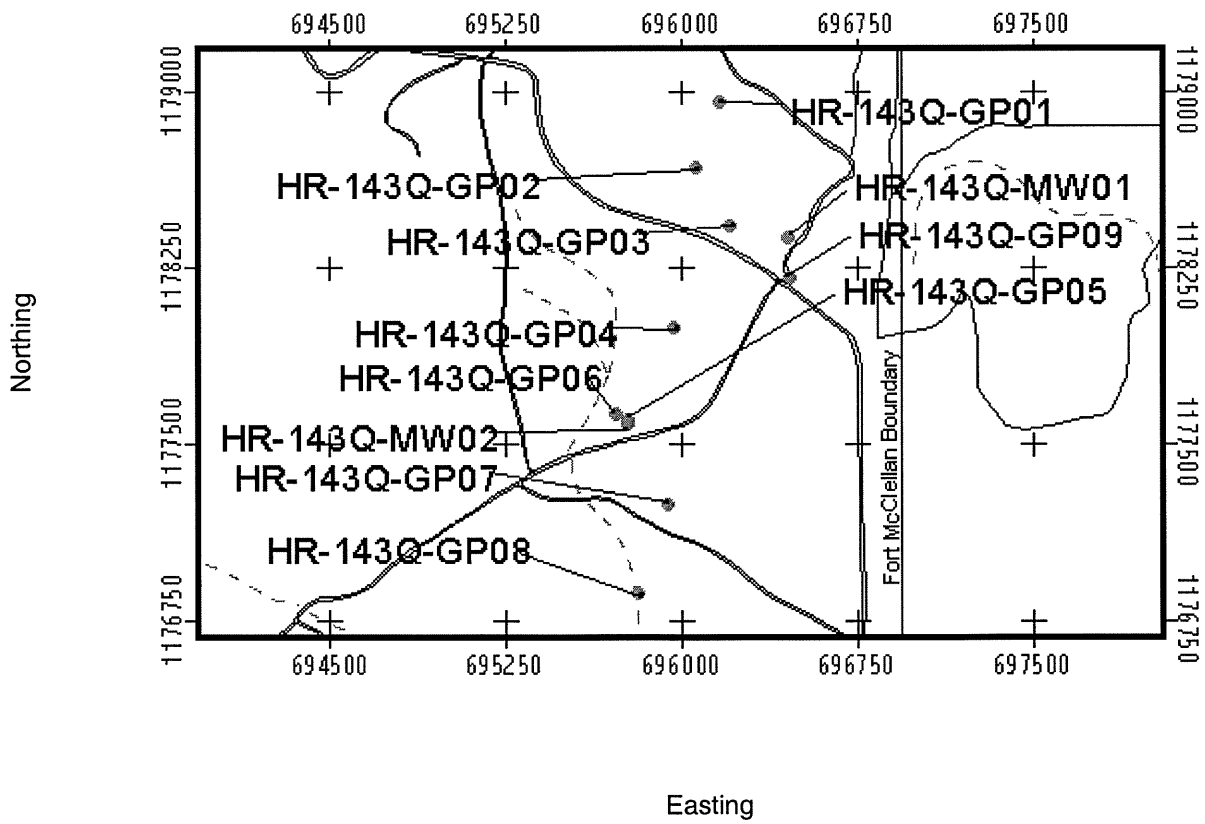
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-143Q-GP01
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Reginald Goins/Jeff Alexander	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Range, Choccolocco Corridor, Parcel 143Q
	9. Surface elevation (feet above mean sea level): 846.31
	10. Date started: 08/07/02 / 11. Date completed: 08/07/02
12. Overburden thickness (feet bgs): >4	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 4	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Kyle Wilson		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-GP01

Project: Fort McClellan | Geologist: Kyle Wilson | Sheet 2 of 2 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: Light brown to dark gray, soft, slightly moist CLAY and SILT, some coarse to fine Sand.	cl-ml		Organic Vapor = 0ppm		QH0001		Boring hand augered.
845	1	cl: Reddish brown, medium stiff, slightly moist CLAY, some silt, little coarse to fine Sand.			Organic Vapor = 0ppm				
	2		cl		Organic Vapor = 0ppm				
	3				Organic Vapor = 0ppm		QH0002		
	4								Bottom of borehole at 4' bgs

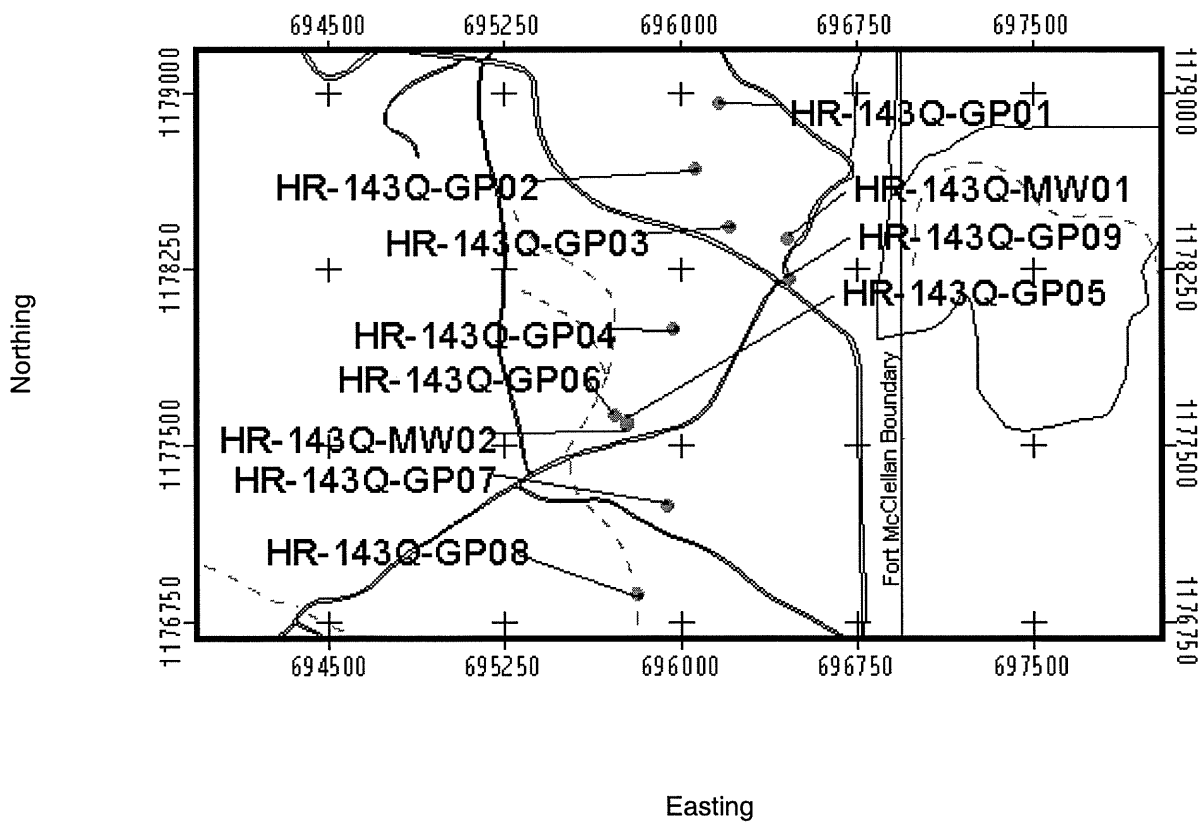
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-143Q-GP02
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Reginald Goins/Jeff Alexander	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Range, Choccolocco Corridor, Parcel 143Q
	9. Surface elevation (feet above mean sea level): 873.32
	10. Date started: 08/08/02 / 11. Date completed: 08/08/02
12. Overburden thickness (feet bgs): >4	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 4	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Kyle Wilson		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-GP02

Project: Fort McClellan | Geologist: Kyle Wilson | Sheet 2 of 2 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: Yellowish orange, loose, dry CLAY and SILT, little fine to coarse Sand, trace Gravel.	cl-ml		Organic Vapor = 0ppm		QH0003		Boring hand augered.
	1	cl: Light brown, medium stiff, slightly moist CLAY, some Silt, little Sand.	cl		Organic Vapor = 0ppm				
	2				Organic Vapor = 0ppm				
870	3				Organic Vapor = 0ppm		QH0004		
	4								Bottom of borehole at 4' bgs

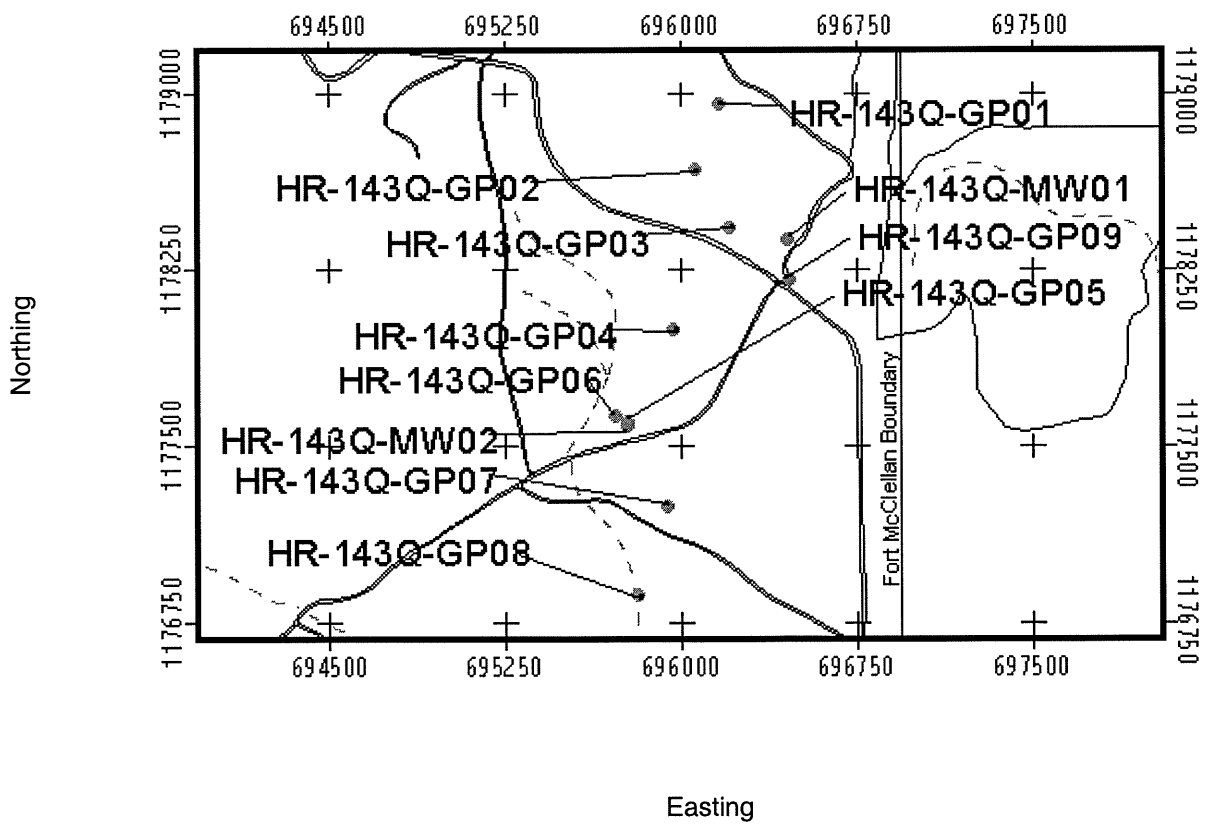
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-143Q-GP03
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Reginald Goins/Jeff Alexander	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Range, Choccolocco Corridor, Parcel 143Q
	9. Surface elevation (feet above mean sea level): 846.21
	10. Date started: 08/08/02 / 11. Date completed: 08/08/02
12. Overburden thickness (feet bgs): >4	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 4	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Kyle Wilson		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-GP03

Project: Fort McClellan | Geologist: Kyle Wilson | Sheet 2 of 2 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: Yellowish orange, soft, dry SILT, some Clay, little fine to medium Sand.	ml		Organic Vapor = 0ppm		QH0005		Boring hand augered.
845	1	cl-ml: Light brown, medium stiff, slightly moist CLAY and SILT, little fine to medium Sand.	cl-ml		Organic Vapor = 0ppm				
	2				Organic Vapor = 0ppm				
	3	cl: Reddish brown, medium stiff, slightly moist CLAY, some Silt, little fine to medium Sand.	cl		Organic Vapor = 0ppm		QH0006		
	4								Bottom of borehole at 4' bgs

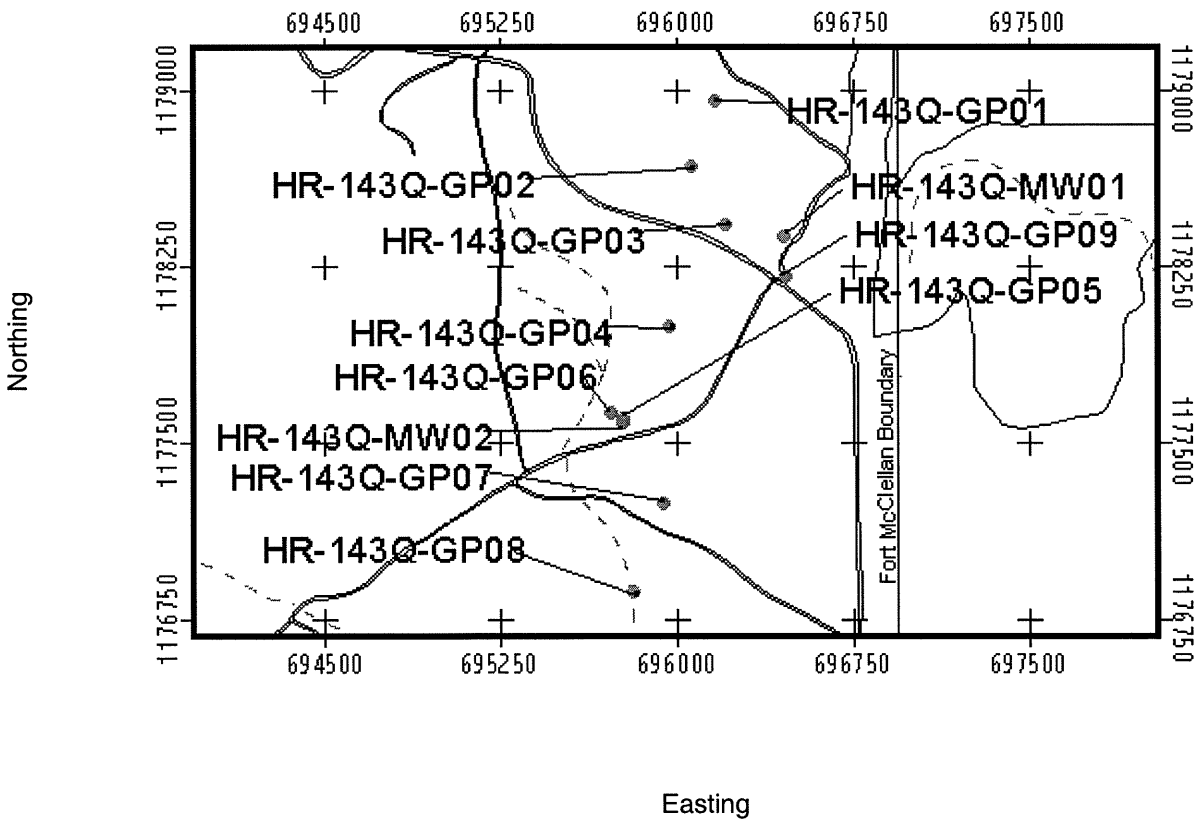
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-143Q-GP04
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Reginald Goins/Jeff Alexander	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Range, Choccolocco Corridor, Parcel 143Q
	9. Surface elevation (feet above mean sea level): 849.23
	10. Date started: 08/07/02 / 11. Date completed: 08/07/02
12. Overburden thickness (feet bgs): >1	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 1	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	Yes	Yes	SVOCs, Pesticides	Herbicides	Explosives	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Kyle Wilson		

LOCATION SKETCH/COMMENTS:



HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-GP04

Project: Fort McClellan | Geologist: Kyle Wilson | Sheet 2 of 2 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: Light brown, loose, dry CLAY and SILT, some coarse to fine Sand.	cl-ml		Organic Vapor = 0ppm		QH0007 QH0008		Boring hand augered 0
	1								Bottom of borehole at 1' bgs 1

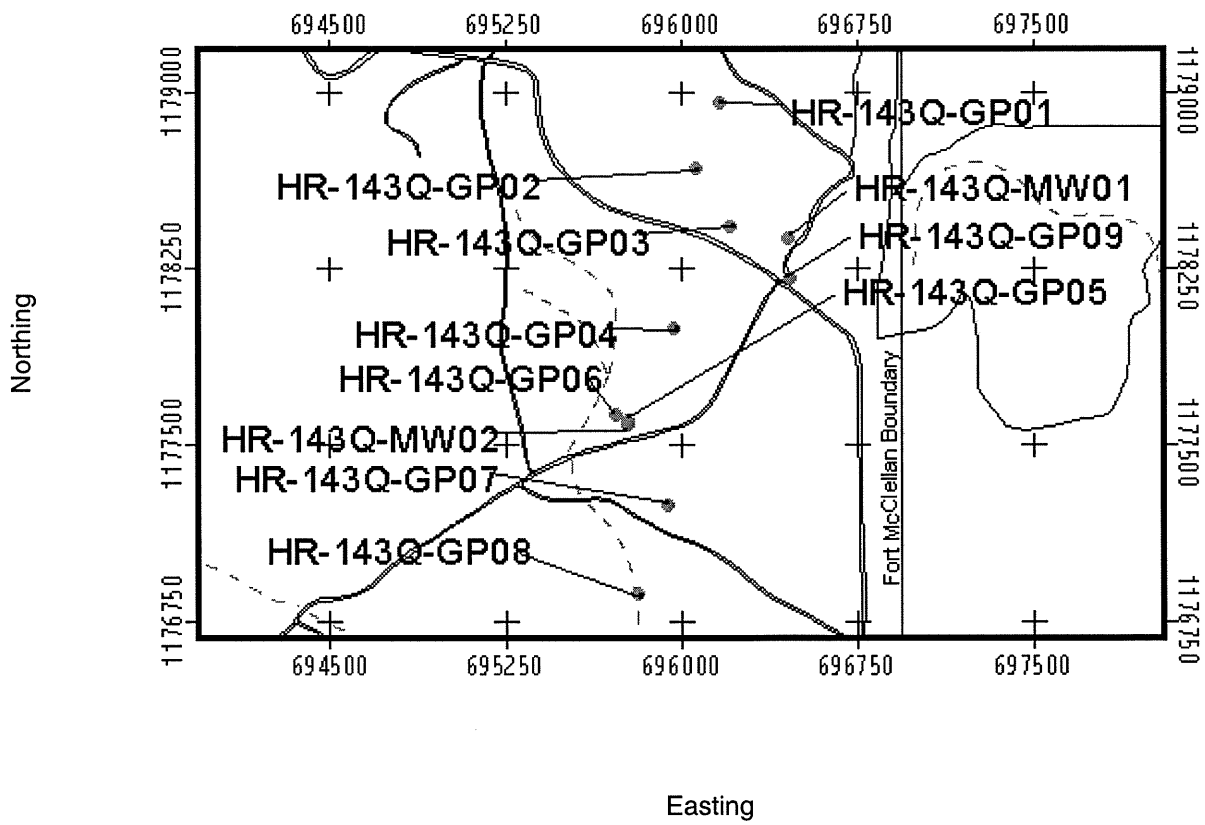
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-143Q-GP05
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Reginald Goins/Jeff Alexander	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Range, Choccolocco Corridor, Parcel 143Q
	9. Surface elevation (feet above mean sea level): 845.34
	10. Date started: 08/07/02 / 11. Date completed: 08/07/02
12. Overburden thickness (feet bgs): >1	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 1	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Kyle Wilson		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: HR-143Q-GP05

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-GP05

Project: Fort McClellan | Geologist: Kyle Wilson | Sheet 2 of 2 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)
845	0	cl-ml: Light brown, loose, dry CLAY and SILT, some coarse to fine Sand.	cl-ml		Organic Vapor = 0ppm		QH0009		Boring hand augered.
	1								Bottom of borehole at 1' bgs

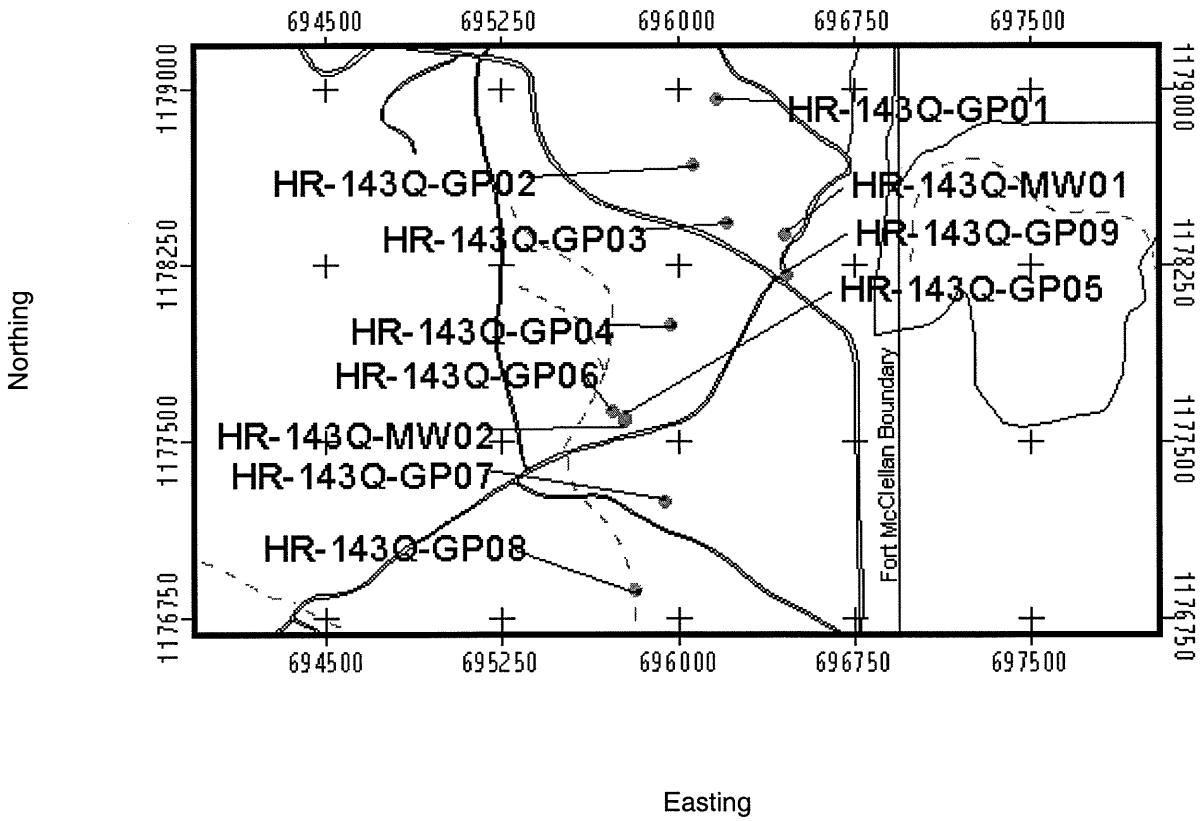
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-143Q-GP06
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Reginald Goins/Jeff Alexander	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Range, Choccolocco Corridor, Parcel 143Q
	9. Surface elevation (feet above mean sea level): 835.01
	10. Date started: 08/07/02 / 11. Date completed: 08/07/02
12. Overburden thickness (feet bgs): >1	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 1	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Kyle Wilson		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: HR-143Q-GP06

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-GP06

Project: Fort McClellan | Geologist: Kyle Wilson | Sheet 2 of 2 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)
835	0	cl-ml: Light brown, loose, dry CLAY and SILT, some coarse to fine Sand, little Gravel.	cl-ml		Organic Vapor = 0ppm		QH0010		Boring hand augered.
	1								Bottom of borehole at 1' bgs

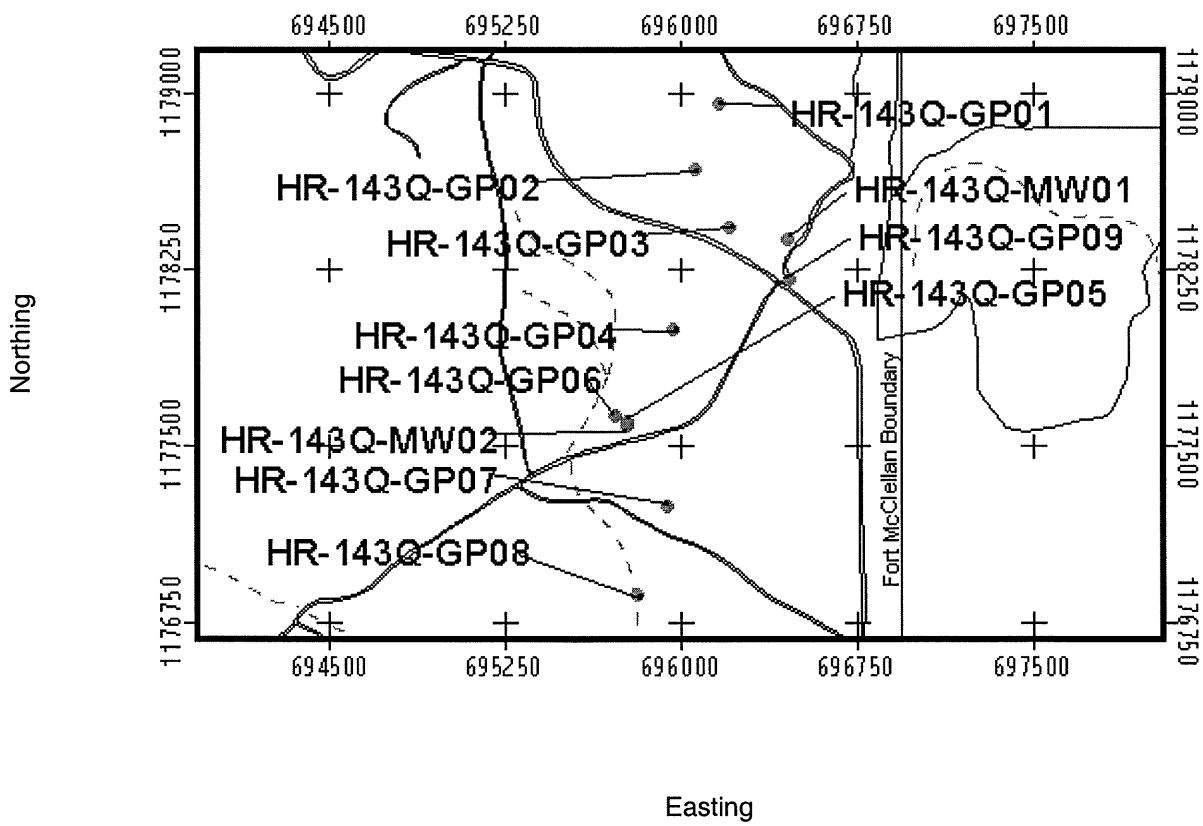
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-143Q-GP07
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Reginald Goins/Jeff Alexander	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Range, Choccolocco Corridor, Parcel 143Q
	9. Surface elevation (feet above mean sea level): 816.54
	10. Date started: 08/08/02 / 11. Date completed: 08/08/02
12. Overburden thickness (feet bgs): >3.5	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 3.5	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Kyle Wilson		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: HR-143Q-GP07

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-GP07

Project: Fort McClellan | Geologist: Kyle Wilson | Sheet 2 of 2 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: Yellowish orange, soft, dry SILT, some Clay, little fine Sand.	ml		Organic Vapor = 0ppm		QH0011		Boring hand augered.
	1	cl-ml: Yellowish orange, medium stiff, dry CLAY and SILT, some Sand, trace Gravel.	cl-ml		Organic Vapor = 0ppm				
815									
	2				Organic Vapor = 0ppm				
	3				Organic Vapor = 0ppm		QH0012		Hand auger refusal at 3.5' bgs Bottom of borehole at 3.5'

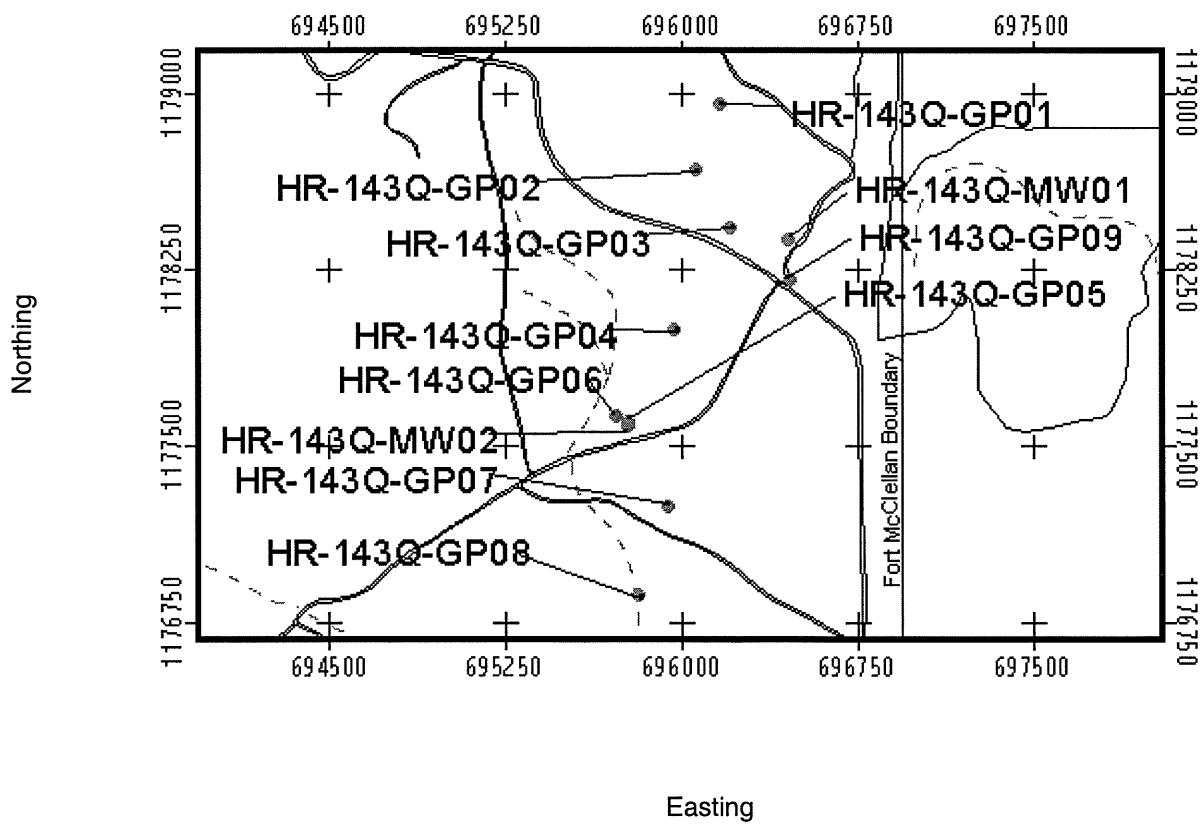
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-143Q-GP08
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Reginald Goins/Jeff Alexander	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Range, Choccolocco Corridor, Parcel 143Q
	9. Surface elevation (feet above mean sea level): 797.82
	10. Date started: 08/08/02 / 11. Date completed: 08/08/02
12. Overburden thickness (feet bgs): >4	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 4	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Kyle Wilson		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: HR-143Q-GP08

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-GP08

Project: Fort McClellan | Geologist: Kyle Wilson | Sheet 2 of 2 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	ol: Brown to light gray, loose, dry, organic rich SILT and CLAY, little Sand.	ol		Organic Vapor = 0ppm		QH0013		Boring hand augered.
	1	ml: Brown, loose, dry SILT, some Clay, little Sand.	ml		Organic Vapor = 0ppm				
	2	cl: Light brown, medium stiff, slightly moist CLAY, some Silt, little Sand, trace Gravel.	cl		Organic Vapor = 0ppm				
795	3				Organic Vapor = 0ppm		QH0014		
	4								Bottom of borehole at 4' bgs

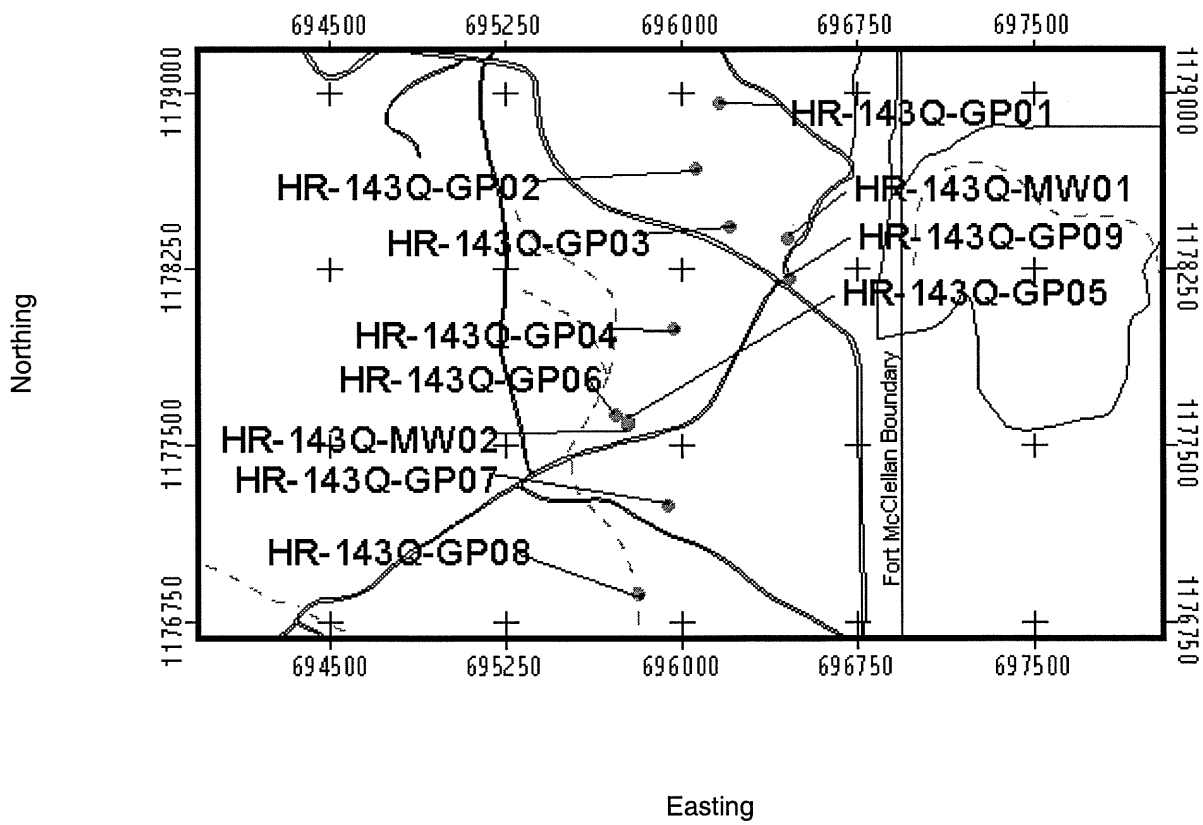
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-143Q-GP09
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: N/A	Sheet 1 of 2 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Reginald Goins/Jeff Alexander	6. Mfr. designation of drill: Hand Auger
7. Sizes and types of drilling and sampling equipment: Hand Auger	8. Hole location: Range, Choccolocco Corridor, Parcel 143Q
	9. Surface elevation (feet above mean sea level): 821.11
	10. Date started: 08/07/02 / 11. Date completed: 08/07/02
12. Overburden thickness (feet bgs): >4	15. Depth groundwater encountered (feet bgs): N/A
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): N/A
14. Total depth of hole (feet bgs): 4	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	Cuttings	N/A	N/A	Kyle Wilson		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: HR-143Q-GP09

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-GP09

Project: Fort McClellan | Geologist: Kyle Wilson | Sheet 2 of 2 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: Light brown, stiff, dry CLAY and SILT, some coarse to fine Sand, little Gravel.	cl-ml		Organic Vapor = 0ppm		QH0015		Boring hand augered.
820	1	cl-ml: Reddish brown, medium stiff, slightly moist CLAY and SILT, some coarse to fine Sand.	cl-ml		Organic Vapor = 0ppm				
	2				Organic Vapor = 0ppm				
	3				Organic Vapor = 0ppm		QH0016		
	4								Bottom of borehole at 4' bgs

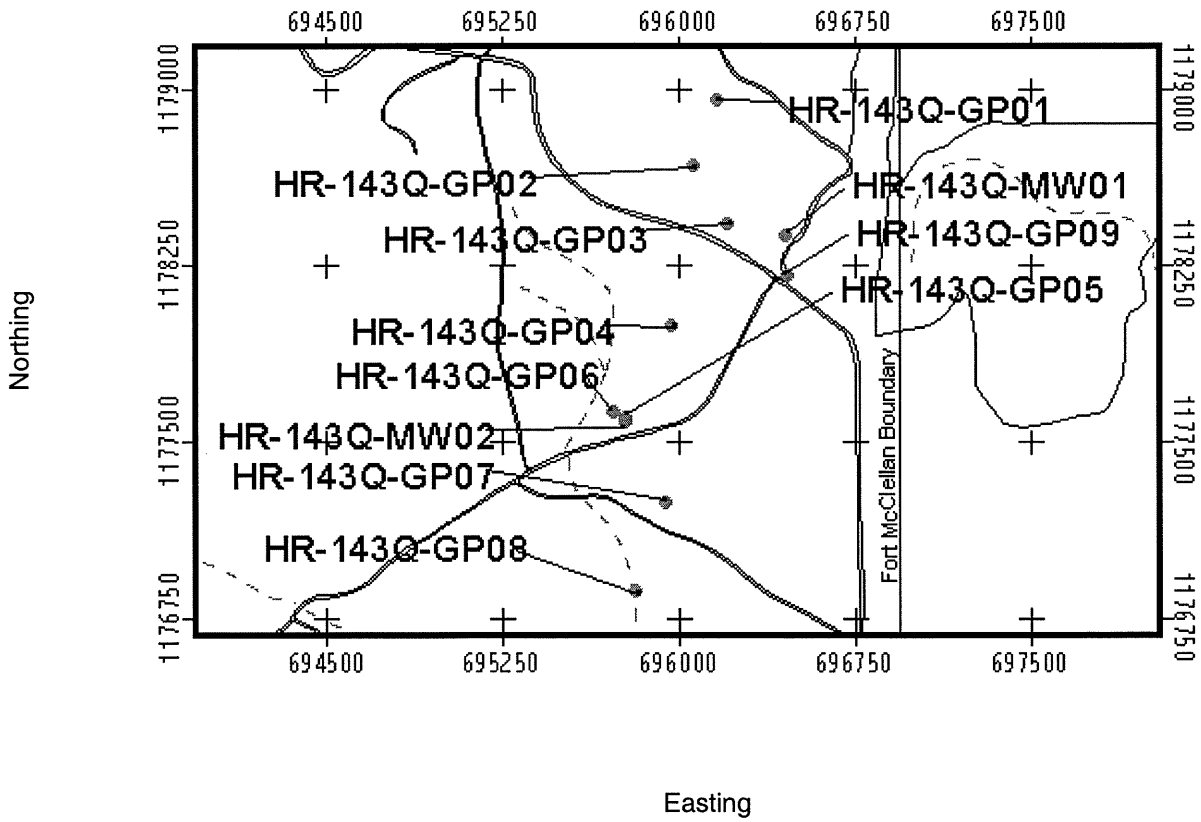
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-143Q-MW01
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: Miller Drilling Company	Sheet 1 of 7 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Reginald Goins/Jeff Alexander/Glen Bilbrey	6. Mfr. designation of drill: Hand Auger/CME-750X
7. Sizes and types of drilling and sampling equipment: Hand Auger, Hollow Stem Auger HSA- 5' x 4.25" ID Augers, 2' x 2" Steel Split Spoons	8. Hole location: Range, Choccolocco Corridor, Parcel 143Q 9. Surface elevation (feet above mean sea level): 825.98 10. Date started: 07/30/02 — 11. Date completed: 08/07/02
12. Overburden thickness (feet bgs): >58	15. Depth groundwater encountered (feet bgs): 53
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 19.2 ~36 hours
14. Total depth of hole (feet bgs): 58	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	N/A	2" Permanent	N/A	Kyle Wilson/Mark Shoemaker		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: HR-143Q-MW01

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-MW01

Project: Fort McClellan | Geologist: Kyle Wilson/Mark Shoemaker | Sheet 2 of 7 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 CLAY, some Silt, little Gravel, dry, medium stiff.	cl		Organic Vapor = 0ppm		QH0017	2 2 3 6	Rec 1.2'/2.0' (0-2' bgs)
825	1								
		NA: No recovery.	NA						
	2	cl: Light brown CLAY, some Silt, increasing Gravel with depth, dry, medium stiff.	cl		Organic Vapor = 0ppm			5 10 15 20	Rec 2.0'/2.0' (2-4' bgs)
	3						QH0018		Hand auger terminated at 4' bgs
	4	cl: Dark reddish brown CLAY, little Sand, very stiff, dry.	cl		Organic Vapor = 0ppm			22 24 26 28	Rec 2.0'/2.0' (4-6' bgs)
	5								
820	6	cl: Dark reddish brown CLAY, little Sand, hard, dry.	cl		Organic Vapor = 0ppm			45 45 50 50	Rec 2.0'/2.0' (6-8' bgs)
	7								
	8	cl: Dark reddish brown CLAY, little Sand, medium stiff, moist.	cl		Organic Vapor = 0ppm			2 2 6 7	Rec 2.0'/2.0' (8-10' bgs)
	9								
	10								

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-MW01

Project: Fort McClellan | Geologist: Kyle Wilson/Mark Shoemaker | Sheet 3 of 7 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)
		cl: Dark reddish brown CLAY, little Sand, medium stiff, moist.			Organic Vapor = 0ppm			2 5 7 11	Rec 2.0'/2.0' (10-12' bgs)
815	11		cl						
	12	NA: No sample collected for lithologic description.							
	13		NA						
	14								
	15	cl: Light brown to light reddish brown CLAY, little Sand, medium stiff, moist.			Organic Vapor = 0ppm			3 4 4 8	Rec 2.0'/2.0' (15-17' bgs)
810	16		cl						
	17	NA: No sample collected for lithologic description.							
	18		NA						
	19								
	20	cl: Light brown to light reddish brown CLAY,			Organic			3 7 9	Rec 2.0'/2.0' (20-22' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-MW01

Project: Fort McClellan | Geologist: Kyle Wilson/Mark Shoemaker | Sheet 4 of 7 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)
		little coarse Sand, trace fine Gravel.			Vapor = 0ppm			12	
805	21		cl						
	22	NA: No sample collected for lithologic description.							
	23		NA						
	24								
	25	cl: Light brown to light reddish brown CLAY, little Sand, moist, stiff.			Organic Vapor = 0ppm			4 9 12 14	Rec 2.0'/2.0' (25-27' bgs)
800	26		cl						
	27	NA: No sample collected for lithologic description.							
	28		NA						
	29								
	30	cl: Light brown to light reddish brown CLAY, little Sand, moist, stiff.			Organic Vapor			5 7 9 13	Rec 2.0'/2.0' (30-32' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-MW01

Project: Fort McClellan | Geologist: Kyle Wilson/Mark Shoemaker | Sheet 5 of 7 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)
					= 0ppm				
795	31		cl						
	32	NA: No sample collected for lithologic description.							
	33		NA						
	34								
	35	cl: Light brown to light reddish brown CLAY with thin gravelly zones, wet around the edges.			Organic Vapor = 0ppm			3 7 9 10	Rec 2.0'/2.0' (35-37' bgs)
790	36		cl						
	37	NA: No sample collected for lithologic description.							
	38		NA		Organic Vapor = 0ppm				
	39								
	40	cl: Light brown CLAY, little Sand, moist, medium stiff, plastic texture.			Organic Vapor = 0ppm			3 7 9 10	Rec 2.0'/2.0' (40-42' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-MW01

Project: Fort McClellan | Geologist: Kyle Wilson/Mark Shoemaker | Sheet 6 of 7 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)
785	41		cl						
	42	NA: No sample collected for lithologic description.							
	43		NA						
	44								
	45	cl: Light brown CLAY, little Sand, moist, medium stiff, plastic texture.			Organic Vapor = 0ppm			5 10 13 15	Rec 2.0'/2.0' (45-47' bgs)
780	46		cl						
	47	NA: No sample collected for lithologic description.							
	48		NA						
	49								
	50	cl: Light brown CLAY, little Sand, moist, medium stiff, plastic texture, increasing Sand and Gravel with depth.			Organic Vapor = 0ppm			3 7 10 13	Rec 2.0'/2.0' (50-52' bgs)

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-MW01

Project: Fort McClellan | Geologist: Kyle Wilson/Mark Shoemaker | Sheet 7 of 7 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)
775	51		cl						
	52	NA: No sample collected for lithologic description.							
	53		NA						Groundwater encountered at 53' bgs
	54								
	55	cl: Light brown CLAY, little Sand, moist, medium stiff, plastic texture, increasing Sand and Gravel, Quartzite at bottom.			Organic Vapor = 0ppm			3 7 10 50/0.5'	Rec 2.0'/2.0' (55-57' bgs)
770	56		cl						
	57	NA: No sample collected for lithologic description.							
	58		NA						Monitoring well set at 58' bgs Auger refusal at 58' bgs Bottom of borehole at 58' bgs

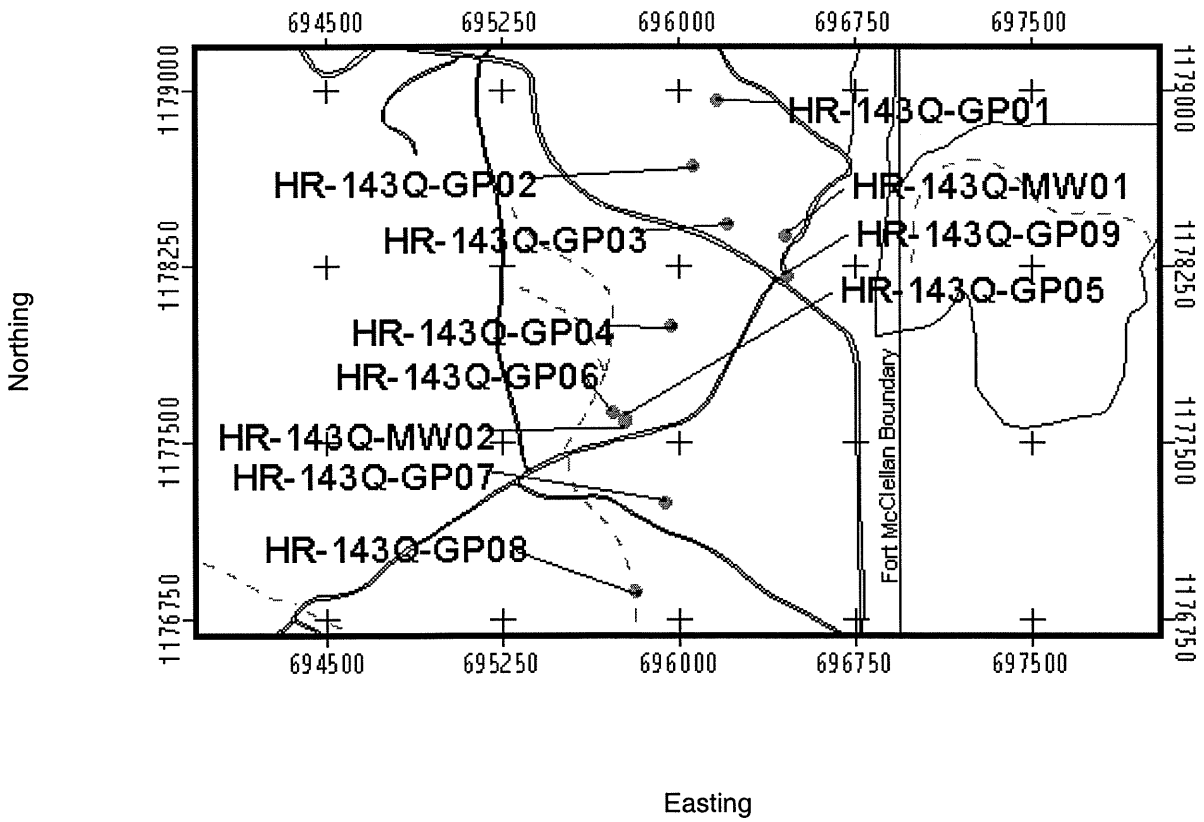
HTRW DRILLING LOG

District: **Mobile USACE**		**HOLE NUMBER** HR-143Q-MW02
1. Company name: **Shaw Environmental, Inc.**	2. Drill Subcontractor: Miller Drilling Company	Sheet 1 of 5 sheets

3. Project: Fort McClellan	4. Location: **Calhoun County, Alabama**
5. Name of driller: Reginald Goins/Jeff Alexander/Glen Bilbrey	6. Mfr. designation of drill: Hand Auger/CME-750X
7. Sizes and types of drilling and sampling equipment: Hand Auger, Hollow Stem Auger HSA- 5' x 4.25" ID Augers, 2' x 2" Steel Split Spoons	8. Hole location: Range, Choccolocco Corridor, Parcel 143Q 9. Surface elevation (feet above mean sea level): 825.14 10. Date started: 07/29/02 — 11. Date completed: 08/07/02
12. Overburden thickness (feet bgs): >40	15. Depth groundwater encountered (feet bgs): 30
13. Depth drilled into rock (feet bgs): 0	16. Depth to water and elapsed time after drilling completed (feet bgs): 23.7 ~18 hours
14. Total depth of hole (feet bgs): 40	17. Other water level measurements (specify): N/A

18. Geotechnical samples:	Collected:	Disturbed:	Undisturbed:	19. Total no. of core boxes: N/A		
	N/A	N/A	N/A			
20. Samples for chemical analysis:	VOC	Metals	Other (specify)	Other (specify)	Other (specify)	21. Total core recovery:
	N/A	Yes	Explosives	N/A	N/A	N/A
22. Disposition of hole:	Backfilled	Monitoring well	Other (specify)	Geologist:		
	N/A	2" Permanent	N/A	Kyle Wilson/Mark Shoemaker		

LOCATION SKETCH/COMMENTS:



Project: Fort McClellan

bgs= below ground surface
NA = Not applicable

Hole no.: HR-143Q-MW02

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-MW02

Project: Fort McClellan | Geologist: Kyle Wilson/Mark Shoemaker | 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)
825	0	cl: Light brown CLAY, some Silt, trace Gravel, dry, medium stiff.	cl		Organic Vapor = 0ppm		QH0019 QH0020	1 2 4 6	Rec 1.0'/2.0' (0-2' bgs)
	1	NA: No recovery.	NA						
	2	gc: Light brown CLAY, some Sand and quartzite Gravel, dry, stiff.	gc		Organic Vapor = 0ppm			5 8 10 20	Rec 1.4'/2.0' (2-4' bgs)
	3	NA: No recovery.	NA				QH0021 MS/MSD		Hand auger terminated at 4' bgs
	4	gc: Light brown CLAY, some Sand and quartzite Gravel, dry, stiff.	gc		Organic Vapor = 0ppm			15 25 35 27	Rec 1.6'/2.0' (4-6' bgs)
820	5	NA: No recovery.	NA						
	6	gc: Light brown CLAY, some Sand and quartzite Gravel, dry, stiff.	gc		Organic Vapor = 0ppm			35 30 45 43	Rec 2.0'/2.0' (6-8' bgs)
	7								
	8	gc: Light brown to reddish brown, coarse SAND and quartzite GRAVEL, some Clay, dry, hard.	gc		Organic Vapor = 0ppm			55 50 40 45	Rec 1.8'/2.0' (8-10' bgs)
	9								
	10	NA: No recovery.	NA						

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-MW02

Project: Fort McClellan | Geologist: Kyle Wilson/Mark Shoemaker | 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)
815		cl: Light reddish brown CLAY, little Sand and quartzite Gravel, moist, medium stiff.	cl		Organic Vapor = 0ppm			2 4 13 5	Rec 2.0'/2.0' (10-12' bgs)
	11								11
	12	NA: No sample collected for lithologic description.	NA						12
	13								13
	14								14
	15	cl: Light reddish brown CLAY, little Sand, stiff.	cl		Organic Vapor = 0ppm			3 8 10 15	Rec 2.0'/2.0' (15-17' bgs) 15
810									
	16								16
	17	NA: No sample collected for lithologic description.	NA						17
	18								18
	19								19
	20	cl: Light reddish brown CLAY, little Sand,			Organic			3 2 4 6	Rec 2.0'/2.0' (20-22' bgs) 20
805									

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-MW02

Project: Fort McClellan | Geologist: Kyle Wilson/Mark Shoemaker | 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)
		streaks of yellowish orange Silt, stiff.			Vapor = 0ppm				Easy to drive spoon, but difficult to auger
	21		cl						
	22	NA: No sample collected for lithologic description.							
	23		NA						
	24								
800	25	cl: Light reddish brown CLAY, little Sand, streaks of yellowish orange Silt, soft, moist.			Organic Vapor = 0ppm			3 3 4 5	Rec 2.0'/2.0' (25-27' bgs)
	26		cl						
	27	NA: No sample collected for lithologic description.							
	28		NA						
	29								
795	30	cl: Light reddish brown CLAY, little Sand, streaks of yellowish orange Silt, soft, wet.			Organic Vapor			2 4 4 5	Rec 2.0'/2.0' (30-32' bgs) Groundwater encountered at

HTRW DRILLING LOG (Continuation Sheet)

HOLE NUMBER: HR-143Q-MW02

Project: Fort McClellan | Geologist: Kyle Wilson/Mark Shoemaker | 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)
					= 0ppm				30' bgs
	31		cl						
	32	NA: No sample collected for lithologic description.							
	33		NA						
	34								
	35	cl: Light reddish brown CLAY, little Sand, streaks of yellowish orange Silt, soft, wet.			Organic Vapor = 0ppm			2 3 4 5	Rec 2.0'/2.0' (35-37' bgs)
790	36		cl						
	37	NA: No sample collected for lithologic description.							
	38		NA						
	39								
	40								Monitoring well set at 40' bgs Boring terminated at 40' bgs Bottom of borehole at 40' bgs

WELL CONSTRUCTION LOGS

MONITORING WELL INSTALLATION DETAIL

PROJECT: Fort McClellan
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Miller Drilling Company
DRILLER: Glen Bilbrey
SHAW FIELD REPRESENTATIVE: Mark Shoemaker

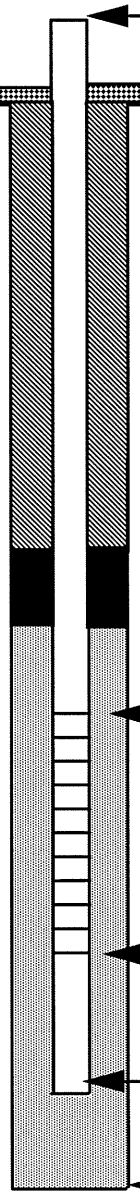
WELL NO: HR-143Q-MW01
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 06-AUG-02
NORTHING: 1178589.85
EASTING: 696433.77
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 825.98

TOP of WELL CASING or RISER PIPE
EL* 827.98 STICKUP 2.00

SURFACE SEAL
TYPE of SURFACE SEAL: Concrete
MINIMUM THICKNESS: 4 inches

ANNULAR SPACE SEAL TYPE
Grout



APPROXIMATE DIAMETER of BOREHOLE (inches) 8

TOP OF SEAL
SEAL MATERIAL: Bentonite
SEAL START DEPTH: 28.7

FILTER PACK
TYPE of SAND PACK AROUND SCREEN: Sand No 1
TOP OF SAND PACK: 32

CASING
TYPE of RISER MATERIAL (Flush Threaded): PVC SCH 40
INSIDE DIAMETER of RISER (inches): 2

SCREEN
TYPE of SCREEN MATERIAL: PVC SCH 40
SLOT SIZE (inches): 0.010
INSIDE DIAMETER (inches): 2

TOP OF SCREENED INTERVAL
EL* 787.98 DEPTH 38

BOTTOM of SCREENED INTERVAL
EL* 767.98 DEPTH 58

BOTTOM of SUMP and WELL
EL* 767.98 DEPTH 58

BOTTOM of BOREHOLE
EL* 767.98 DEPTH 58

NEAT CEMENT
GROUT
BENTONITE SEAL
FILTER PACK
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
LOCATION: Anniston, AL
CLIENT: USACE Mobile District
CONTRACTOR: Miller Drilling Company
DRILLER: Glen Bilbrey
SHAW FIELD REPRESENTATIVE: Mark Shoemaker

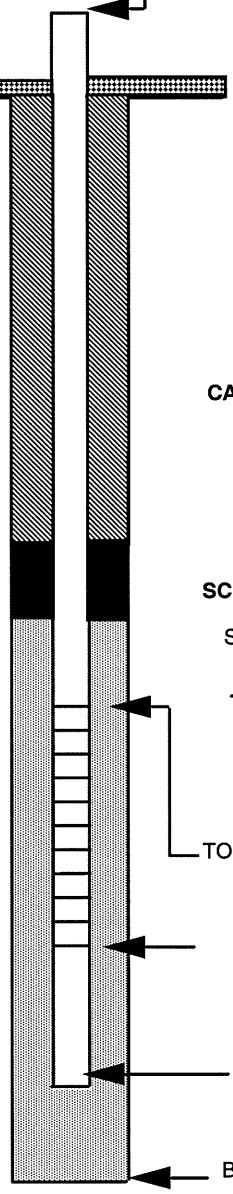
WELL NO: HR-143Q-MW02
DRILLING METHOD: Hollow Stem Auger
INSTALLATION DATE: 30-JUL-02
NORTHING: 1177855.88
EASTING: 695810.44
HORIZONTAL SURVEY DATUM: NAD83
VERTICAL SURVEY DATUM: NAVD88
JOB NO: 796887

GROUND SURFACE ELEVATION* 825.14

TOP of WELL CASING or RISER PIPE
EL* 827.22 STICKUP 2.08

SURFACE SEAL
TYPE of SURFACE SEAL: Concrete
MINIMUM THICKNESS: 4 inches

ANNULAR SPACE SEAL TYPE
Grout



CASING
TYPE of RISER MATERIAL (Flush Threaded): PVC SCH 40
INSIDE DIAMETER of RISER (inches): 2

APPROXIMATE DIAMETER of BOREHOLE (inches) 8

TOP OF SEAL
SEAL MATERIAL: Bentonite
SEAL START DEPTH: 17.5

SCREEN
TYPE of SCREEN MATERIAL: PVC SCH 40
SLOT SIZE (inches): 0.010
INSIDE DIAMETER (inches): 2

FILTER PACK
TYPE of SAND PACK AROUND SCREEN: Sand No 1
TOP OF SAND PACK: 20.8

TOP OF SCREENED INTERVAL
EL* 800.14 DEPTH 25

BOTTOM of SCREENED INTERVAL
EL* 785.14 DEPTH 40

BOTTOM of SUMP and WELL
EL* 785.14 DEPTH 40

BOTTOM of BOREHOLE
EL* 785.14 DEPTH 40

NEAT CEMENT
GROUT
BENTONITE SEAL
FILTER PACK
BOREHOLE COLLAPSE

*All elevations (EL) are referenced to MSL.
All depths and heights are given in feet and are referenced to the ground surface.