

APPENDIX D
BORING LOGS AND WELL COMPLETION DIAGRAMS



BORING NO. **MW-BGC-5A** SHEET **1 OF 1**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,420,246.7 E 12,164,009.4**
 SURFACE ELEVATION **10.41** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
			CL				Firm, black (10YR, 2/1), organic rich CLAY (CL), dry	<p>3/8" Bentonite Chips: 1.0' to 3.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 5.0' bgs</p> <p>No. 2 Clean Silica Sand Filter Pack: 3.0' to 15.0' bgs 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 5.0' to 15.0' bgs</p>
1		3-2 2-3	ML	24			Gray (10YR, 6/1), stiff, clayey SILT (ML), dry	
5	2	4-2 4-5	SP	24			SAME	
		5-8 15-14	SP	24			Gray, hard, fine SAND (SP), wet	
		2-3 12-13	SP	24			SAME	
10	5	10-8 9-8	SP	24			SAME	
15	6	1-1 1-2		24				
							Boring terminated at 15.0' bgs on 11/18/2008.	

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/26/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/18/08** ENDED **11/18/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-5B** SHEET **1 OF 1**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,420,248.1 E 12,164,004.6**
 SURFACE ELEVATION **10.30** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		2-3 3-3	CL	24		Very dark grayish brown (10YR 3/2), stiff, silty CLAY (CL), organic rich, dry	Cement Grout: 0.0' to 19.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 25.0' bgs 3/8" Bentonite Chips: 19.0' to 22.0' bgs No. 2 Clean Silica Sand Filter Pack: 22.0' to 35.0' bgs 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 25.0' to 35.0' bgs	
2		3-3 4-6	CL	2				SAME, poor recovery
5	3	10-10 10-11	CL SP	24		SAME		
4		10-9 11-10	SP	24		Light gray (10YR 7/1) dense, fine SAND (SP), wet at 5.0' SAME, gray (10YR 5/1)		
5		2-3 4-4	SP	24		SAME		
10			SP			SAME		
6		4-1 1-2	SP	24		SAME		
7		2-3 3-4	SP	24		SAME		
8		WOH-1 1-1	CH	24		Gray (10YR 5/1) soft CLAY (CH) Gray (10YR 5/1) stiff, fine SAND (SP)		
9		4-3 4-8	SP	24		SAME		
30			SP			SAME, coarse SAND with trace gravel		
10		2-3 3-7	CL	24		Sandy CLAY (CL)		
35						Boring terminated at 35.0' bgs on 11/19/2008.		

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWN03.GDT_1/26/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/19/08** ENDED **11/19/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-6A** SHEET **1 OF 1**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,420,546.5 E 12,162,135.3**
 SURFACE ELEVATION **15.77** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1	X	1-2	SM	24		[Hatched pattern]	Grayish brown (10YR 5/2) loose, silty SAND (SM)	3/8" Bentonite Chips: 0.0' to 3.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 5.0' bgs No. 2 Clean Silica Sand Filter Pack: 3.0' to 15.0' bgs 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 5.0' to 1.0' bgs
		2-2	CL					
2	X	2-3	CL	24		[Dotted pattern]	SAME	
		2-3	SP					
5	X	3-3	SP	24		[Dotted pattern]	Gray (10YR 5/1) loose, medium SAND (SP), damp	
		2-3	SP					
4	X	5-9	SP	24		[Dotted pattern]	SAME, light gray (10YR 7/1), wet at 5.0'	
		11-11						
5	X	1-5	SP	12		[Dotted pattern]	SAME, yellow (10YR 7/6) SAND (SP)	
		5-6						
10	X		SP			[Dotted pattern]	SAME, light gray (10YR 7/2) SAND (SP)	
								6
5-5								
15							Boring terminated at 15.0' bgs on 11/17/2008.	

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/2609

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/17/08** ENDED **11/17/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-6B** SHEET **1 OF 2**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,420,541.7 E 12,162,133.4**
 SURFACE ELEVATION **15.66** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		2-4 2-3	SC CL	24		Black (10YR 2/1) loose, clayey SAND (SC) organic rich	<p>Cement Grout: 0.0' to 28.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 32.0' bgs 3/8" Bentonite Chips: 28.0' to 30.0' bgs No. 2 Clean Silica Sand Filter Pack: 30.0' to 42.0' bgs 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 32.0' to 42.0' bgs</p>	
2		3-4 4-4	CL SP	24		Gray (10YR 5/1) sandy CLAY (CL), damp SAME		
5	3	3-3 5-9	SP	24		Dark grayish brown (10YR 4/2) fine to medium SAND (SP), damp Very pale brown (10YR 7/3) medium SAND (SP), wet at 5.0'		
4		6-7 9-9	SP	24		SAME; fine to medium		
5		5-4 3-5	SP	24		SAME		
10			SP			SAME, light gray (10YR 7/1)		
15	6	4-4 4-3		24		No Recovery		
20	7	WOH-1 3-3		0		Dark gray (10YR 4/1) fine SAND (SP)		
25	8	3-2 1-5	SP	24		SAME		
30	9	1-1 1-1	SP	24		Light gray (10YR 7/1) very firm, fine to medium SAND (SP); basal 2" coarse sand		
35	10	4-5 8-8	SP	24		Gray (10YR 6/1) fine SAND (SP)		
	11	12-8 7-8	SP	24				

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/26/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/17/08** ENDED **11/17/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-6B** SHEET **2 OF 2**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,420,541.7 E 12,162,133.4**
 SURFACE ELEVATION **15.66** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
12		9-21 27-26	SW SP	24			Gray (10YR 5/1) medium coarse SAND (SW)	
							Light greenish gray (GLE Y1 7/1) fine SAND (SP) Boring terminated at 42.0' bgs on 11/17/2008.	

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/26/09



BORING NO. **MW-BGC-7A** SHEET **1 OF 1**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,419,391.6 E 12,161,625.6**
 SURFACE ELEVATION **14.61** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		1-2 1-2	CL	24		Black (10YR 2/1) firm, organic rich silty CLAY (CL), dry	<p>3/8" Bentonite Chips: 1.0' to 3.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 5.0' bgs No. 2 Clean Silica Sand Filter Pack: 3.0' to 15.0' bgs 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 5.0' to 15.0' bgs</p>	
2		1-1 1-3	CL SP	24		SAME		
5	3	5-4 6-8	SP	24		Light brown (7.5YR 6/3) loose, fine to medium SAND (SP), moist SAME, wet at ~5.0'		
	4	8-9 8-11	SP	24		SAME, gray (GLE Y1 5/1), wet		
	5	1-3 4-3	SP	24		SAME		
			SP			SAME		
15	6	1-4 4-4		24				
Boring terminated at 15.0' bgs on 11/18/2008.								

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/26/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/18/08** ENDED **11/18/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-7B** SHEET **1 OF 2**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,419,386.5 E 12,161,624.9**
 SURFACE ELEVATION **14.47** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		2-2 2-1	ML	12		Black (10YR 2/1) organic rich, firm clayey SILT (ML), dry	<p>Cement Grout: 0.0' to 28.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 32.0' bgs 3/8" Bentonite Chips: 28.0' to 30.0' bgs No. 2 Clean Silica Sand Filter Pack: 30.0' to 42.0' bgs 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 32.0' to 42.0' bgs</p>	
2		1-1 2-2	ML SP	24		SAME Light gray (10YR 7/2) loose, fine to medium SAND (SP)		
5	3	4-5 6-6	SP	24		SAME, wet at 5.0'		
	4	6-12 11-11	SP	24		SAME		
10	5	4-3 4-3	SP	24		Greenish gray (GLE Y1 5/1) loose, fine to medium SAND (SP)		
			SP			SAME		
15	6	WOH-1 1-3		24		Gray (10YR 6/1) very firm, fine to medium SAND (SP)		
			SP			SAME		
20	7	4-5 7-9		24		SAME		
			SP			SAME		
25	8	1-1 3-6		24		SAME		
			SP			SAME		
30	9	3-3 6-6		24		SAME, trace shell fragments		
			SP			SAME		
35	10	2-6 10-17		24		SAME		
			SP			SAME		
	11	1-3 6-8		24		SAME		
			SP			SAME		

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/2609

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/18/08** ENDED **11/18/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-7B** SHEET **2 OF 2**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,419,386.5 E 12,161,624.9**
 SURFACE ELEVATION **14.47** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
12		5-4 3-3	SC	24			Dark greenish gray (GLEY1 4/1) loose, fine SAND (SC) with trace clay and silt	
							Boring terminated at 42.0' bgs on 11/18/2008	

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT 1/26/09



BORING NO. **MW-BGC-8A** SHEET **1 OF 1**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,418,234.1 E 12,162,031.4**
 SURFACE ELEVATION **13.83** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		4-2 2-3	ML	24			Dark brown (10YR 3/2) firm, clayey SILT (ML), organic rich, dry	3/8" Bentonite Chips: 0.0' to 8.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 10.0' bgs No. 2 Clean Silica Sand Filter Pack: 8.0' to 20.0' bgs 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 10.0' to 20.0' bgs
2		2-2 2-2	ML	24			SAME	
5	3	2-3 4-4	ML SP	12			SAME Light gray (10YR 7/1) firm, fine SAND (SP), moist	
4		6-4 5-7	SP	24			SAME, light brown (10YR 7/3)	
5		3-4 6-6	SP	24			Gray (10YR 5/1) firm, fine to medium SAND (SP), wet at 8.0'	
10			SP				SAME, fine SAND	
15	6	1-3 5-7	SP	24			SAME	
20	7	6-11 10-11	SP	24			SAME	
							Boring terminated at 20.0' bgs on 11/19/2008	

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/2609

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/19/08** ENDED **11/19/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-8B**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

SHEET **1** OF **2**

COORDINATES **N 3,418,235.4 E 12,162,024.4**
 SURFACE ELEVATION **13.77** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		3-2 2-2	ML	24			Dark grayish brown (10YR 4/2) firm, clayey SILT (ML), dry	<p>Cement Grout: 0.0' to 28.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 32.0' bgs</p>
2		3-2 2-1	ML	24			SAME, moist	
5	3	2-1 1-3	ML	1			SAME, poor recovery	
4		6-6 6-6	SP	24			Very pale brown (10YR 7/4) firm, fine SAND (SP)	
5		3-3 4-6	SP	12			Gray (10YR 6/1) firm, fine SAND (SP)	
10			SP				SAME	
6		3-3 4-5	SP	24			SAME	
7		3-5 6-7	SP	24			SAME	
8		1-1 1-1	CH	24			Gray (10YR 6/1) soft, CLAY (CH), trace organics	
9		2-2 1-5	SP	24			Gray (10YR 6/1) firm, fine SAND (SP) with 4" interbedded CLAY (CH)	
30			SP				SAME	
10		1-3 6-10	SP	24			SAME, SAND (SP) with 2" clay interbedded	
11		1-1 1-1	SP	24			SAME	

3/8" Bentonite Chips: 28.0' to 31.0' bgs
 No. 2 Clean Silica Sand Filter Pack: 31.0' to 44.0' bgs
 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 34.0' to

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/26/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/19/08** ENDED **11/19/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-8B** SHEET **2 OF 2**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,418,235.4 E 12,162,024.4**
 SURFACE ELEVATION **13.77** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
12		1-3 3-7	SP	24			SAME, fine to medium SAND (SP)	44.0' bgs
13		1-1 1-1	SP CL	24				

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT 1/26/09



BORING NO. **MW-BGC-9A** SHEET **1 OF 1**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,418,055.7 E 12,163,042.2**
 SURFACE ELEVATION **10.95** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1	X	3-3	CL	24		[Diagonal Hatching]	Very dark grayish brown (10YR 3/2) stiff, CLAY (CL) with little silt, organic rich, dry	3/8" Bentonite Chips: 1.0' to 8.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 10.0' bgs No. 2 Clean Silica Sand Filter Pack: 8.0' to 20.0' bgs 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 10.0' to 20.0' bgs
		3-3	CH	24			[Diagonal Hatching]	
2	X	3-2	CH	24		[Diagonal Hatching]	Gray (10YR 6/1) stiff, CLAY (CH), dry	
		4-4	CH	24			[Diagonal Hatching]	
5	X	3-4	CL	24		[Diagonal Hatching]	SAME	
		4-4	CL	24			[Diagonal Hatching]	
4	X	7-1	SP	24		[Dotted]	SAME; wet at 8.0'	
		14-14	SP	24			[Dotted]	SAME
5	X	2-3	SP	24		[Dotted]	SAME	
		3-3	SP	24			[Dotted]	SAME
6	X	1-4	SP	24		[Dotted]	SAME	
		9-10	SP	24			[Dotted]	SAME
7	X	1-2	SP	24		[Dotted]	SAME	
		4-6	SP	24			[Dotted]	SAME
20							Boring terminated at 20.0' bgs on 11/20/2008	

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/26/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/20/08** ENDED **11/20/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-9B** SHEET **1 OF 2**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,418,056.7 E 12,163,034.4**
 SURFACE ELEVATION **11.12** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		1-3 4-5	CL	24		Black (10YR 2/1) stiff, organic rich silty CLAY (CL), dry	<p>Cement Grout: 0.0' to 24.0' bgs</p> <p>2" ID Sch 40 PVC casing: 0.0' to 30.0' bgs</p> <p>3/8" Bentonite Chips: 24.0' to 26.0' bgs</p> <p>No. 2 Clean Silica Sand Filter Pack: 26.0' to 40.0' bgs</p> <p>2" ID Sch 40 PVC 0.010-inch factory slotted screen: 30.0' to 40.0' bgs</p>	
2		2-3 4-5	CH CH	24		SAME Light gray (10YR 7/1) stiff, CLAY (CH), dry		
5	3	3-4 3-4	CH	24		SAME SAME		
4		3-5 7-9	SP SP	24		SAME Light gray (10YR 7/1), very firm, medium SAND (SP), moist		
5		2-1 1-1	SP	24		Gray (10YR 5/1) very loose, fine SAND (SP), wet at 8.0'		
10						SAME, wet		
6		5-6 9-7	SP	24		SAME, wet		
7		2-2 5-9	SP	24		SAME		
8		5-4 3-6	SP	24		Gray (10YR 6/1), wet		
25						Light gray (10YR 7/1), dense, medium to coarse SAND (SW), wet		
9		1-5 16-15	SW	24				
30						Gray (10YR 6/1) loose, fine SAND (SP), wet		
10		6-1 1-4	SP	24				
35						Gray (10YR 5/1) dense, medium SAND (SP)		
11		3-10 15-10	SP	24		Very dark greenish gray (GLE Y1 3/1) dense, fine to medium SAND (SP), wet		

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/26/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/20/08** ENDED **11/20/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-9B** SHEET **2 OF 2**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,418,056.7 E 12,163,034.4**
 SURFACE ELEVATION **11.12** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL	
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID				
							Boring terminated at 40.0' bgs on 11/20/2008		

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/26/09



BORING NO. **MW-BGC-10A** SHEET **1 OF 1**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,417,888.8 E 12,164,015.8**
 SURFACE ELEVATION **10.86** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		2-5 4-5	CL	24			Dark gray (10YR 4/1) stiff, silty CLAY (CL), dry	<p>3/8" Bentonite Chips: 0.0' to 8.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 10.0' bgs</p> <p>No. 2 Clean Silica Sand Filter Pack: 8.0' to 20.0' bgs</p> <p>2" ID Sch 40 PVC 0.010-inch factory slotted screen: 10.0' to 20.0' bgs</p>
2		4-3 4-3	CL	24			SAME	
5	3	4-3 3-2	CH CH	24			SAME	
4		2-2 3-4	CH SP	24			Gray (10YR 6/1) firm, CLAY (CH), moist	
5		1-5 6-4	SP	24			SAME	
10			SP				Gray (10YR 5/1) loose, fine SAND (SP), moist	
15	6	3-4 7-10		24			SAME, wet at 8.0'	
20	7	5-7 7-7	SP	24		SAME, dark gray (10YR 4/1)		
Boring terminated at 20.0' bgs on 11/20/2008								

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/26/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/20/08** ENDED **11/20/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-10B**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

SHEET **1** OF **1**

COORDINATES **N 3,417,887.1 E 12,164,023.2**
 SURFACE ELEVATION **10.54** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		3-2 2-3	CH	24			Gray (10YR 5/1) firm, CLAY (CH) with little silt, dry	
2		2-2 3-3	CH CH	24			SAME	
5	3	3-2 3-3	CH	24			Gray (10YR 6/1) firm, CLAY (CH), moist SAME	
4		3-5 7-7	SP	24			Gray (10YR 6/1) firm, fine SAND (SP), moist	
5		1-3 4-3	SP	6			SAME, wet	
10			SP				SAME	
6		1-1 3-3		24			SAME, gray (10YR 5/1)	
7		1-2 2-6	SP	24			SAME	
8		15-22 25-27	SP	24			Light gray (10YR 7/1) SAND (SP) SAME, gray (10YR 6/1)	
9		1-19 22-25	SP	24			SAME	
10		1-1 1-1	SC	24		Very dark gray (GEY 3/1) very loose, clayey SAND (SC), wet		
35							Boring terminated at 35.0' bgs on 11/21/2008	

Cement Grout: 0.0' to 21.0' bgs
 2" ID Sch 40 PVC casing: 0.0' to 25.0' bgs

3/8" Bentonite Chips: 21.0' to 23.0' bgs

No. 2 Clean Silica Sand Filter Pack: 23.0' to 35.0' bgs
 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 25.0' to 35.0' bgs

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWN03.GDT_1/26/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/21/08** ENDED **11/21/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-11A** SHEET **1 OF 1**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,417,849.2 E 12,164,878.6**
 SURFACE ELEVATION **9.91** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1	1	2-2	CL	24		[Diagonal Hatching]	Light gray (10YR 7/1) firm, CLAY (CL) with little silt, dry	3/8" Bentonite Chips: 0.0' to 8.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 10.0' bgs No. 2 Clean Silica Sand Filter Pack: 8.0' to 20.0' bgs 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 10.0' to 20.0' bgs
		3-3						
2	2	3-5	CL	24		[Diagonal Hatching]	SAME	
		4-4						
5	3	4-3	CH	24		[Diagonal Hatching]	Gray (10YR 5/1) firm, CLAY (CH), moist	
		2-3						
4	4	1-2	CH	24		[Diagonal Hatching]	SAME	
		2-3						
5	5	2-2	SC	24		[Diagonal Hatching]	Gray (10YR 5/1) loose, clayey SAND (SC), moist	
		4-4						
10	5	2-2	SP	24		[Dotted Pattern]	Gray (10YR 5/1) loose, fine SAND (SP), wet at 8.0'	
		4-4						
15	6	1-3	SP	24		[Dotted Pattern]	SAME	
		10-13						
20	7	1-3	SP	24		[Dotted Pattern]	SAME	
		3-8						
Boring terminated at 20.0' bgs on 11/21/2008								

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/26/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/21/08** ENDED **11/21/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-11B**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

SHEET **1 OF 1**

COORDINATES **N 3,417,848.2 E 12,164,884.0**
 SURFACE ELEVATION **9.83** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		2-2 2-2	CL	24		Light gray (10YR 7/1) firm, CLAY (CL) with little silt, dry	Cement Grout: 0.0' to 21.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 25.0' bgs	
2		7-7 7-9	CL	24				SAME
5	3	4-5 4-4	CL	2				SAME
4		1-4 5-9	SC	24				Light gray (10YR 7/1) firm, clayey fine SAND (SC), wet at 7.0'
5		1-2 3-3	SC	2				SAME
10			SP					Gray (10YR 5/1) very firm, fine SAND (SP), wet
15	6	7-8 10-12	SP	24				Gray (10YR 5/1) firm, medium SAND (SP), wet
20	7	5-6 8-5	SP	24				SAME
25	8	1-1 6-10	SP	24				Gray (10YR 5/1) loose, medium to coarse SAND (SW), wet
30	9	1-1 1-3	SW	24				SAME, trace gravel
35	10	1-1 5-6	SC	24		Greenish gray (GLEY2 5/1) firm, fine SAND (SC) with trace clay, wet	3/8" Bentonite Chips: 21.0' to 23.0' bgs	
Boring terminated at 35.0' bgs on 11/21/2008								No. 2 Clean Silica Sand Filter Pack: 23.0' to 35.0' bgs 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 25.0' to 35.0' bgs

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWN03.GDT_1/26/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/21/08** ENDED **11/21/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-12A** SHEET **1 OF 1**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,418,609.0 E 12,165,569.6**
 SURFACE ELEVATION **9.62** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		2-2 1-1	CH	24			Light brownish gray (10YR 6/2) soft, CLAY (CH), moist	<p>3/8" Bentonite Chips: 0.0' to 8.0' bgs 2" ID Sch 40 PVC casing: 0.0' to 10.0' bgs</p>
2		2-3 4-3	CH	24	SAME, dry			
5		4-3 3-2	CH	24	SAME, moist			
4		2-3 4-4	CH SC	24	SAME			
5		1-1 2-3	SP	24	Gray (10YR 6/1) firm, clayey SAND (SC), moist to wet			
10					Gray (10YR 6/1) loose, fine SAND (SP), wet			
			SP		SAME			
6		1-2 3-4		24			No. 2 Clean Silica Sand Filter Pack: 8.0' to 20.0' bgs 2" ID Sch 40 PVC 0.010-inch factory slotted screen: 10.0' to 20.0' bgs	
15			SP		SAME			
7		3-10 9-4		24				
20	Boring terminated at 20.0' bgs on 11/24/2008							

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/2609

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/24/08** ENDED **11/24/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-12B** SHEET **1 OF 2**
 PROJECT **Dominion Power Battlefield**
 LOCATION **Chesapeake, VA**
 PROJECT NO. **3552081210**
 LOGGED BY **B. Grosser**

COORDINATES **N 3,418,605.2 E 12,165,573.9**
 SURFACE ELEVATION **9.62** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		2-2 2-4	CL	24		Brown (10YR 5/3) firm CLAY (CL), dry	Cement Grout: 0.0' to 20.0' bgs	
2		3-4 3-3	CL	6				SAME
5	3	4-4 4-3	CL	24				Gray (10YR 6/1) stiff CLAY (CL), dry
4	4	3-4 5-6	CL SC	18				SAME Gray (10YR 6/1) firm, clayey SAND (SC), moist
10	5	3-6 5-6	SP	24				Light gray (10YR 7/1) firm, fine SAND (SP), wet at 8.0'
			SP					SAME, gray (10YR 5/1)
15	6	1-2 6-11	SP	24				SAME, 1" clay layer at 19.0'
20	7	3-2 2-5	SP	24				SAME, no clay
25	8	1-1 2-3	SP	24				Gray (10YR 6/1) very firm, fine to medium SAND (SP), coarse SAND (SW) at 28.8', wet
30	9	1-1 12-10	SP	24				Gray (10YR 6/1) very dense, medium SAND (SP), wet
35	10	2-10 34-35	SP CH	24				SAME Dark gray (10YR 4/1) CLAY (CH)
			SW			Dark gray (10YR 4/1) fine to medium SAND (SW), wet	2" ID Sch 40 PVC 0.010-inch factory slotted screen: 30.0' to 40.0' bgs	
	11	1-2 7-10		24				

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWN03.GDT_1/2609

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **Track Rig**
 DRILLING STARTED **11/24/08** ENDED **11/24/08**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level (MSL) as surveyed by Site Improvement Assoc., Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-12B** SHEET **2 OF 2**
PROJECT **Dominion Power Battlefield**
LOCATION **Chesapeake, VA**
PROJECT NO. **3552081210**
LOGGED BY **B. Grosser**

COORDINATES **N 3,418,605.2 E 12,165,573.9**
SURFACE ELEVATION **9.62** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL	
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID				
							Boring terminated at 40.0' bgs on 11/24/2008		

ENV2A_BATTLEFIELD LOGS_1210.GPJ LAEWNN03.GDT_1/26/09



BORING NO. **MW-BGC-13** SHEET **1 OF 1**
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Shockley/J. Buchy**

COORDINATES **N 3,418,156.1 E 12,162,509.9**
 SURFACE ELEVATION **11.37** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		4-5 4-4	ML	18		Very dark gray (7.5YR 3/11), clayey SILT (ML), trace sand, trace organic roots, firm, moist	Cement Grout: 0.0' to 1.5' bgs	
2		3-2 4-4		12.1				
5	3	8-8 7-7	SM	24		Light brown gray (5YR 6/2), fine to medium SAND (SM), medium dense, moist SAME, dark greenish gray (GLE Y1 4/10Y) SAME, wet at 7.0'	3/8" Bentonite Chips: 1.5' to 8.0' bgs 2" ID Sch 40 PVC Casing: 0.0' to 10.0' bgs	
4		5-6 10-11	SM	24				
10	5	3-3 7-6	SM	12		SAME, greenish gray (GLE Y1 6/10Y)	No. 2 Clean Silica Sand Filter Pack: 8.0' to 20.0' bgs 2" ID Sch 40 PVC 0.010" factory slotted screen: 10.0' to 20.0' bgs	
6		8-8 10-11	SM	24				
15	8	4-6 13-18	SM	24		SAME		
7		2-6 8-0		24				
20	9	8-11 13-14	SM	24		SAME, fine, silty		
10		5-5 6-10		24				

ENV2A_MW-BGC-13.GPJ LAEWN03.GDT 8/10/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **CME 55**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level as surveyed by Site Improvement Association Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-14** SHEET **1 OF 1**
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Shockley/J. Buchy**

COORDINATES **N 3,418,284.1 E 12,161,724.5**
 SURFACE ELEVATION **14.43** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		2-3 3-2	ML	24			Cement Grout: 0.0' to 5.0' bgs 2" ID Sch 40 PVC Casing: 2.5' to 8.7' bgs 3/8" Bentonite Chips: 5.0' to 6.5' bgs No. 2 Clean Silica Sand Filter Pack: 6.5' to 18.7' bgs 2" ID Sch 40 PVC 0.010" factory slotted screen: 8.7' to 18.7' bgs	
2		3-4 3-3		19				
5	3	2-3 5-5	SM	18				
4		6-6 7-8	SM	24				
5		8-9 9-9	SM	19				
10			SM SM					
15	6	4-6 5-8		24				
20	7	5-7 10-10		19				

ENV2A_MW-BGC-13.GPJ LAEWN03.GDT 8/10/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **CME 55**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level as surveyed by Site Improvement Association Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



BORING NO. **MW-BGC-15** SHEET **1 OF 1**
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Shockley**

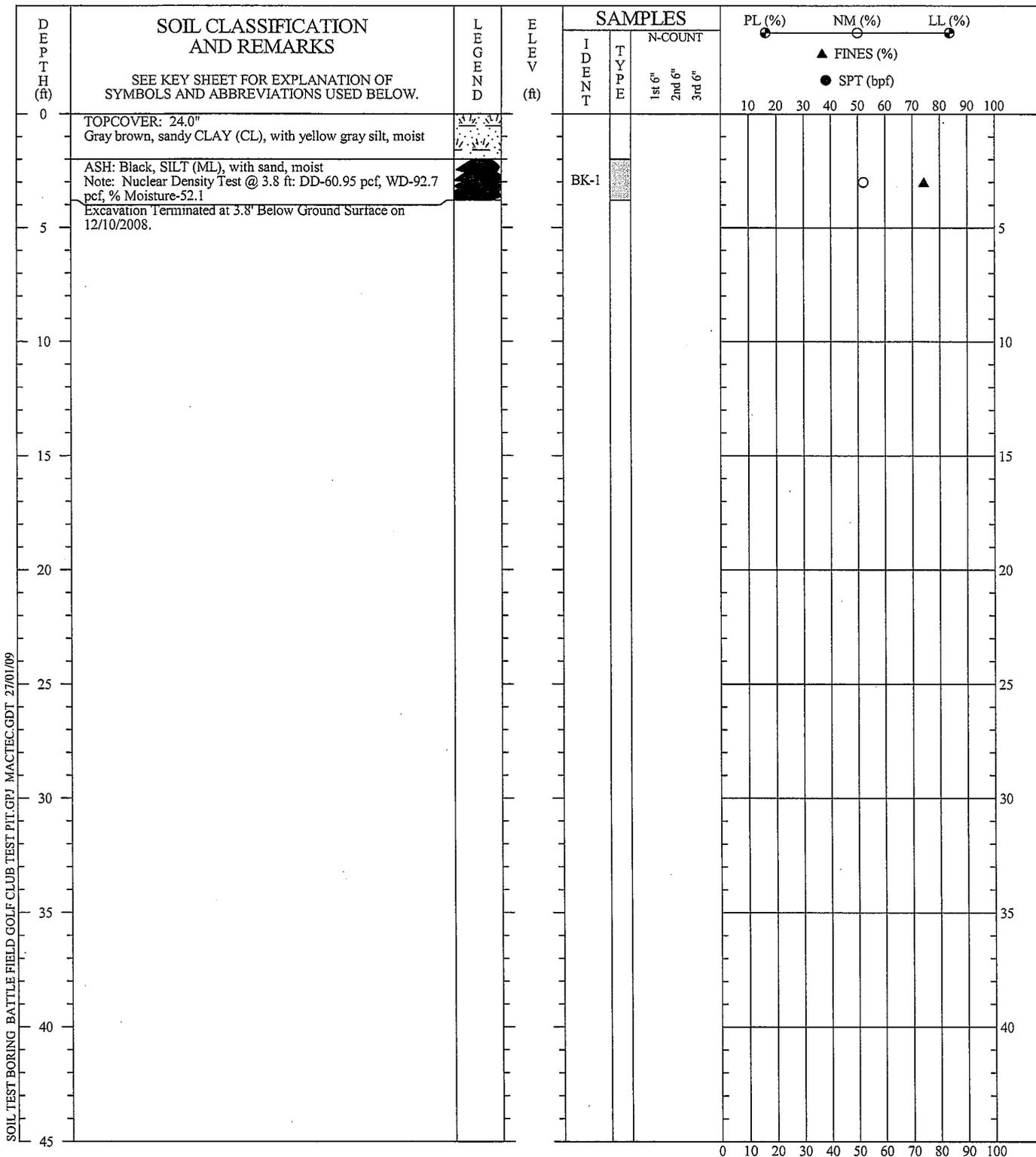
COORDINATES **N 3,418,571.5 E 12,161,995.5**
 SURFACE ELEVATION **9.68** DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
1		2-3 3-4	ML	24				
2		2-2 3-3	SM	18				
5	3	2-1 1-1	SM	19				
	4	2-5 6-9	SM	18				
	5	6-6 9-11	SM	12				
10			SM					
15	6	1-2 3-6		12				

ENV2A_MW-BGC-13.GPJ LAEWN03.GDT 8/10/09

DRILLING CONTRACTOR **Fishburne**
 DRILLING METHOD **6.25" ID HSA**
 DRILLING EQUIPMENT **CME 55**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **Well completed with 10' of pre-packed screen (2" ID inner screen surrounded by 4" ID outer screen with No. 2 clean silica sand in interstitial space). Elevations are relative to Mean Sea Level as surveyed by Site Improvement Association Inc. (SIA).**
 See key sheet for symbols and abbreviations used above.



SOIL TEST BORING BATTLE FIELD GOLF CLUB TEST PIT.GPJ MACTEC.GDT 2/7/01/09

DRILLER: Fishburne Drilling, Inc.
 EQUIPMENT: Deere 310G
 METHOD: Excavation
 HOLE DIA.:
 REMARKS: Recompacted and Covered with Jute Mat
 LOGGED BY: Jason Monk
 CHECKED BY: G. B. G.

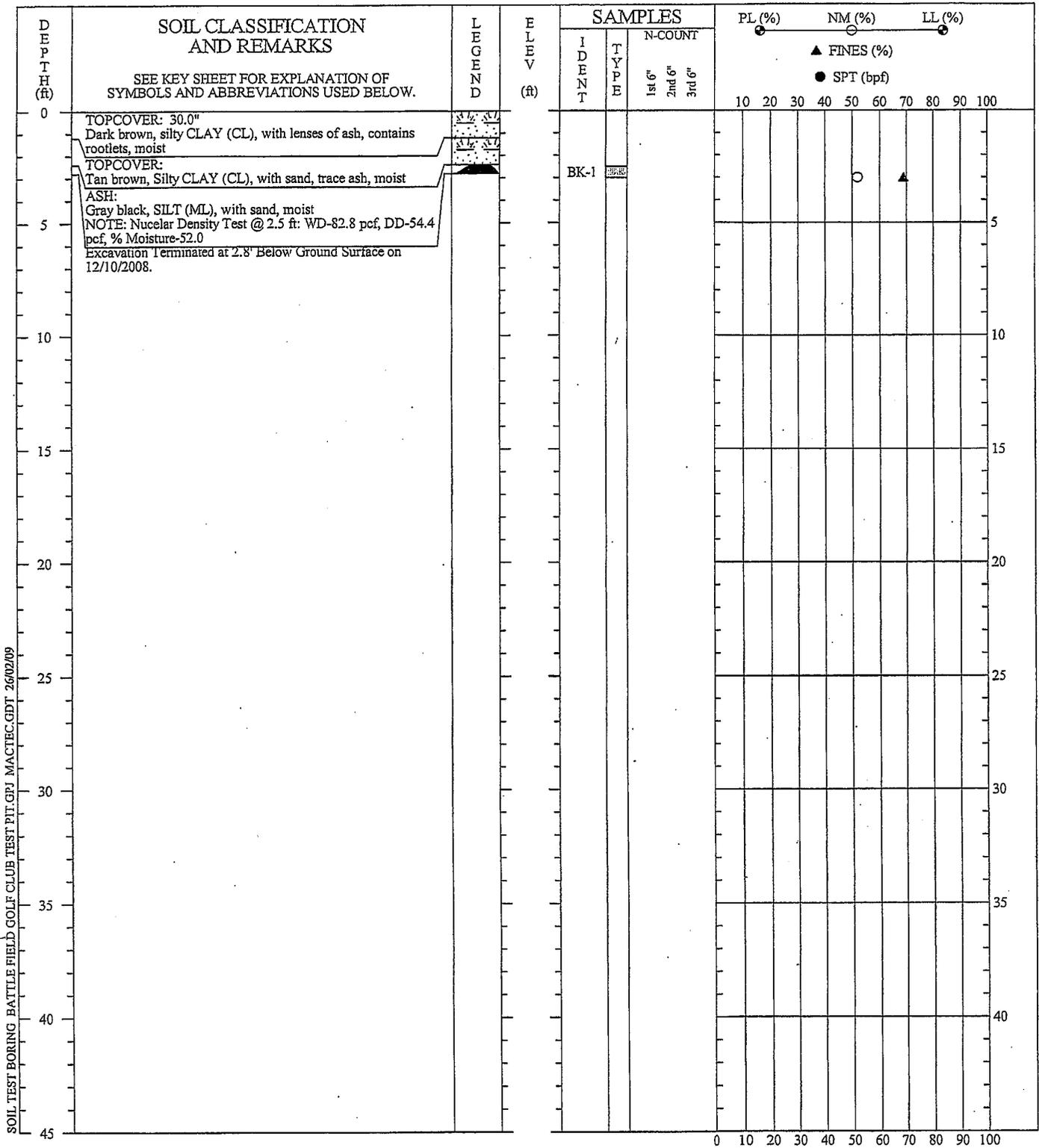
SOIL TEST BORING RECORD

BORING NO.: TP-1
PROJECT: Battle Field Golf Club
LOCATION:
DRILLED: 10 December 2008
PROJECT NO.: 3552-08-1210

PAGE 1 OF 1

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.





SOIL TEST BORING BATTLE FIELD GOLF CLUB TEST PIT.GPJ MACTEC.GDT 26/02/09

DRILLER: Fishburne Drilling, Inc.
EQUIPMENT: Deere 310G
METHOD: Excavation
HOLE DIA.:
REMARKS: Recompacted and Covered with Jute Mat
LOGGED BY: Jason Monk
CHECKED BY: G. B. G.

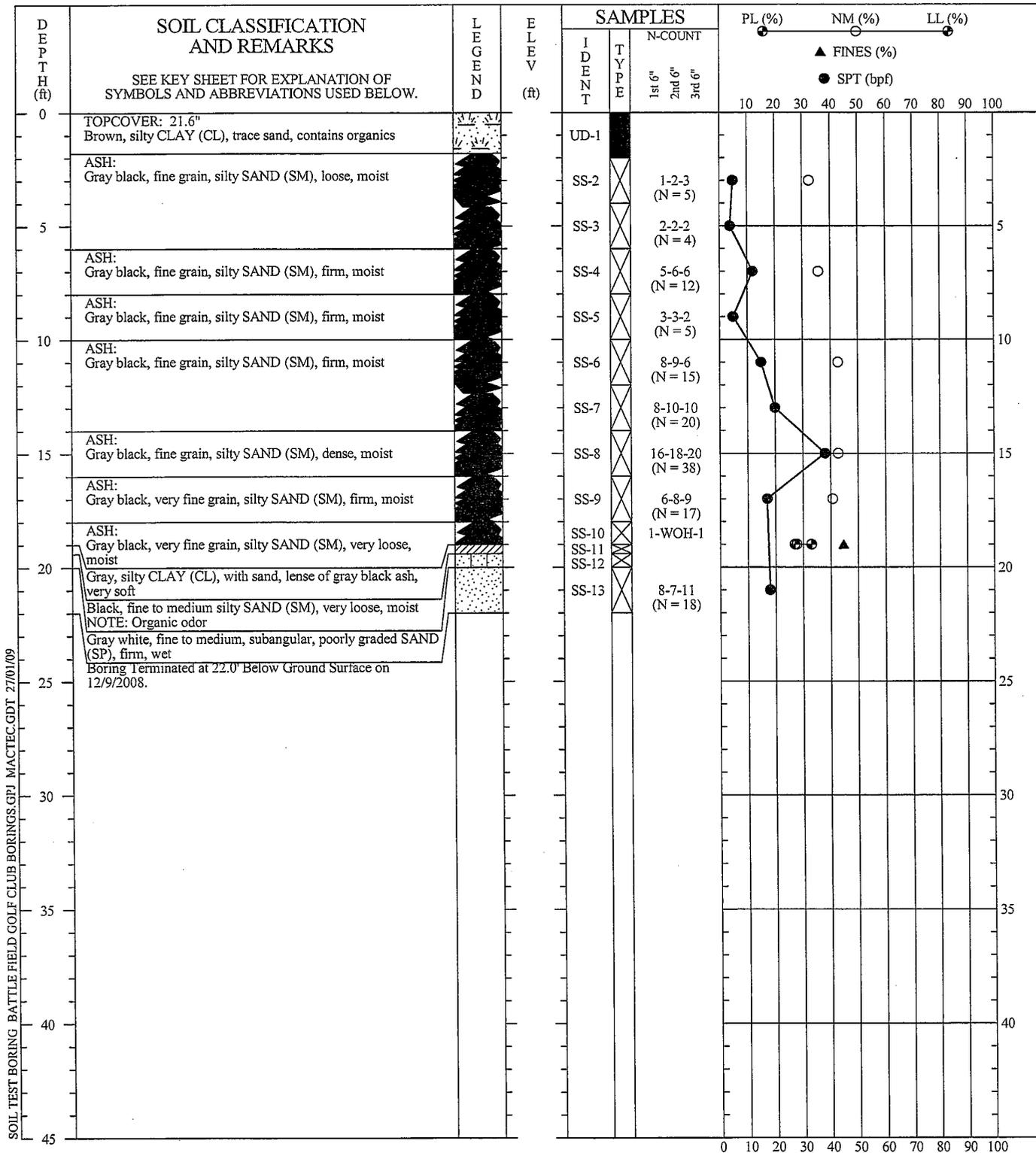
SOIL TEST BORING RECORD

BORING NO.: TP-3
PROJECT: Battle Field Golf Club
LOCATION:
DRILLED: 10 December 2008
PROJECT NO.: 3552-08-1210

PAGE 1 OF 1

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.





SOIL TEST BORING - BATTLE FIELD GOLF CLUB BORINGS.GPJ MACTEC.GDT 27/01/09

DRILLER: Fishburne Drilling, Inc.
 EQUIPMENT: CME 55 ATV
 METHOD: Mud Rotary
 HOLE DIA.:
 REMARKS: Boring backfilled with quick grout
 LOGGED BY: Jason Monk
 CHECKED BY: G.B.G.

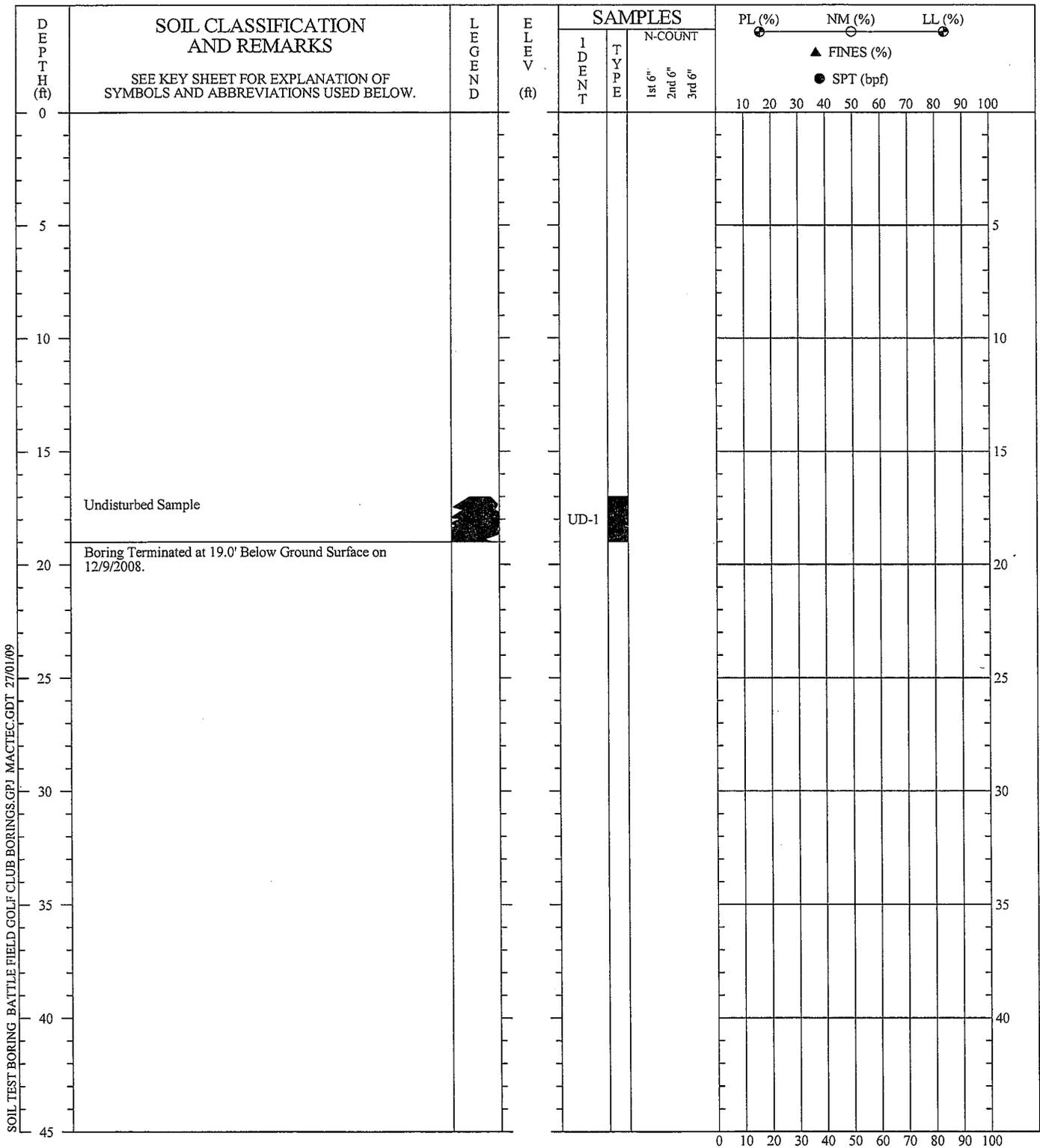
SOIL TEST BORING RECORD

BORING NO.: SB-1
PROJECT: Battle Field Golf Club
LOCATION:
DRILLED: 09 December 2008
PROJECT NO.: 3552-08-1210

PAGE 1 OF 1

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.





SOIL TEST BORING - BATTLE FIELD GOLF CLUB BORINGS.GPJ MACTEC.GDT 27/01/09

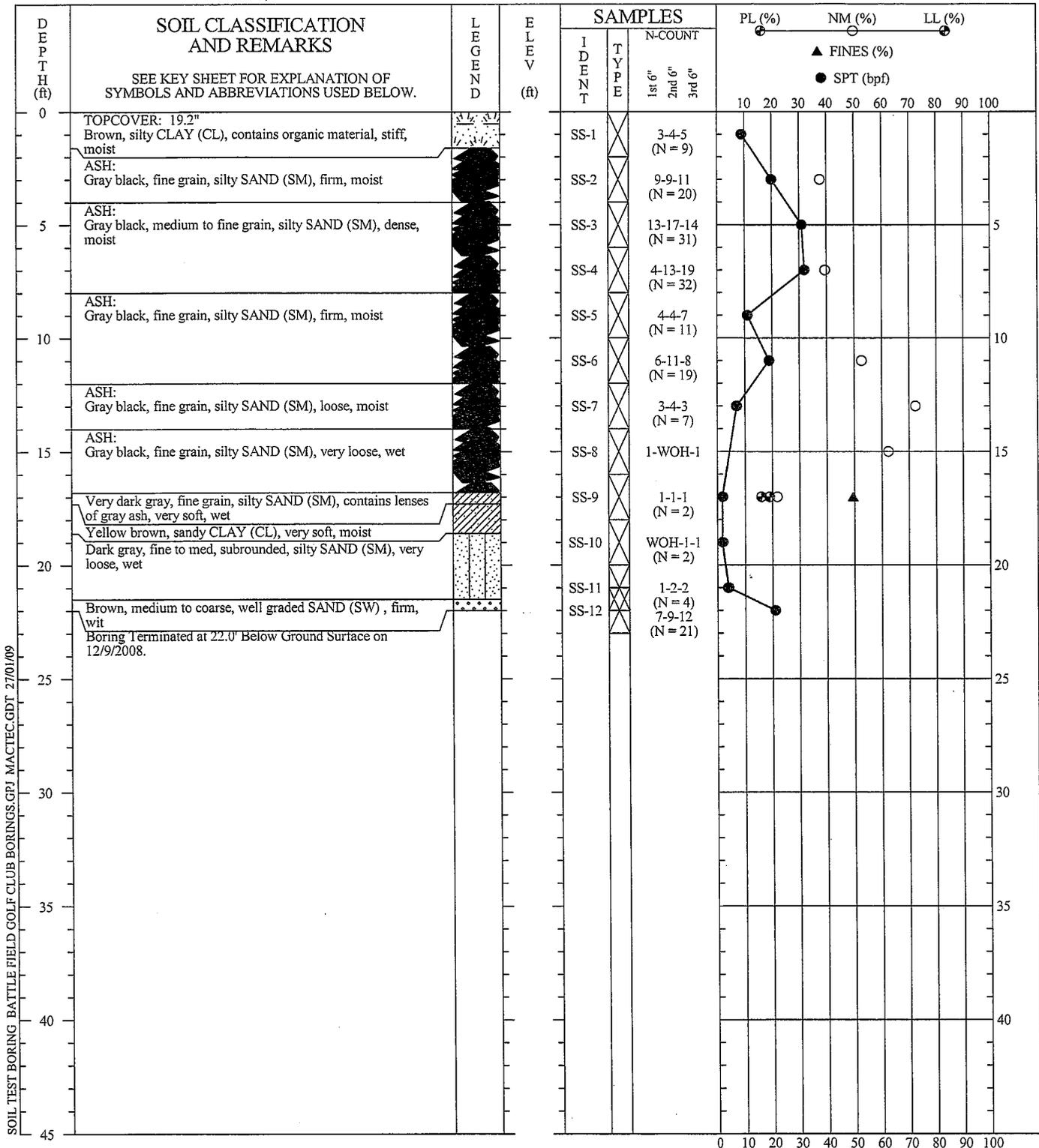
DRILLER: Fishburne Drilling, Inc.
 EQUIPMENT: CME 55 ATV
 METHOD: Mud Rotary
 HOLE DIA.:
 REMARKS: Offset 2 ft from SB-1, Boring backfilled with quick grout
 LOGGED BY: Jason Monk
 CHECKED BY:

SOIL TEST BORING RECORD

BORING NO.: SB-1A
PROJECT: Battle Field Golf Club
LOCATION:
DRILLED: 09 December 2008
PROJECT NO.: 3552-08-1210 **PAGE 1 OF 1**



THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.



SOIL TEST BORING BATTLE FIELD GOLF CLUB BORINGS.GPJ MACTEC.GDT 27/01/09

DRILLER: Fishburne Drilling, Inc.
 EQUIPMENT: CME 55 ATV
 METHOD: Mud Rotary
 HOLE DIA.:
 REMARKS: Boring backfilled with quick grout
 LOGGED BY: Jason Monk
 CHECKED BY:

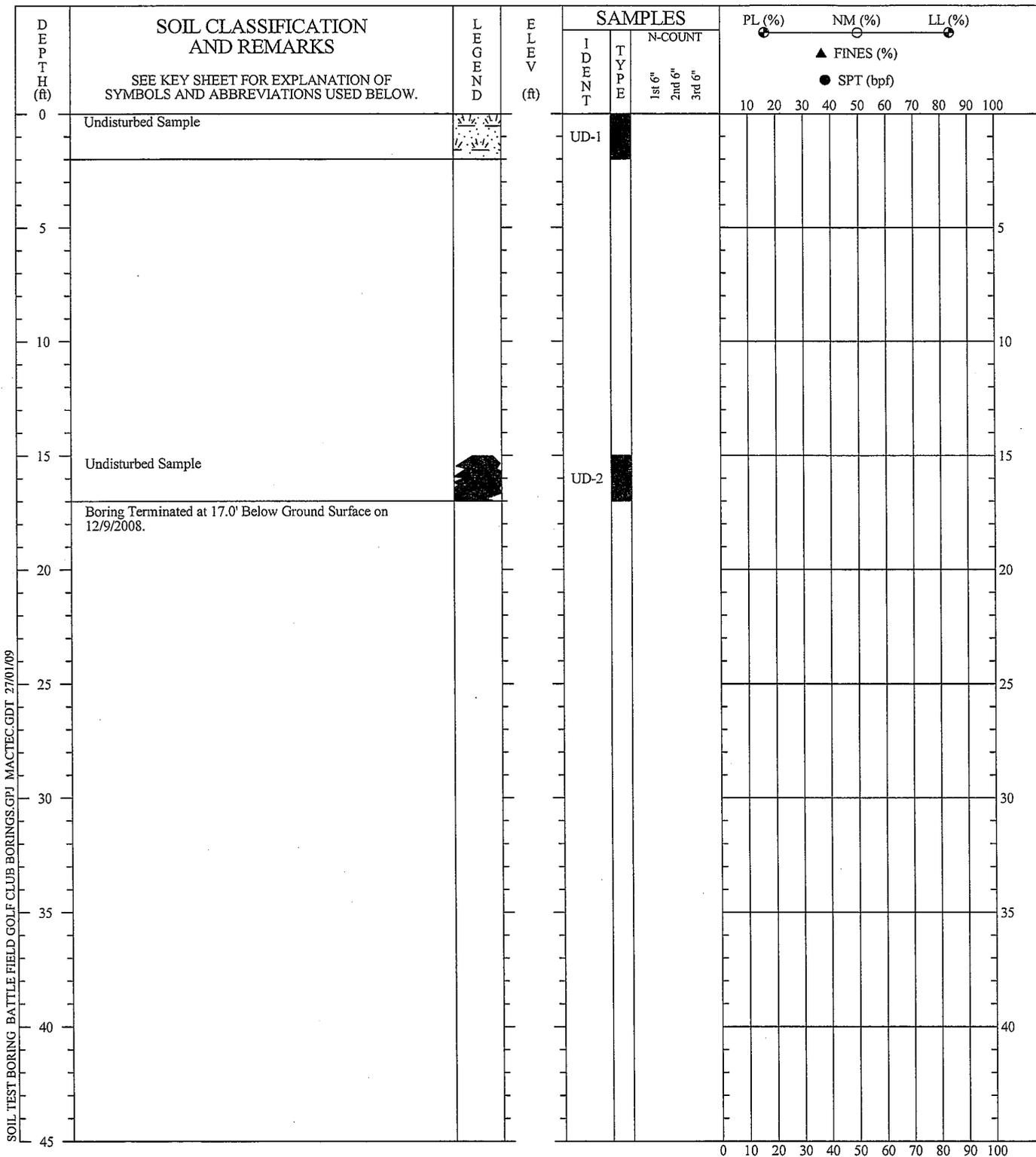
SOIL TEST BORING RECORD

BORING NO.: SB-2
PROJECT: Battle Field Golf Club
LOCATION:
DRILLED: 09 December 2008
PROJECT NO.: 3552-08-1210

PAGE 1 OF 1

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.





SOIL TEST BORING BATTLE FIELD GOLF CLUB BORINGS.GPJ MACTEC.GDT 27/01/09

DRILLER: Fishburne Drilling, Inc.
 EQUIPMENT: CME 55 ATV
 METHOD: Mud Rotary
 HOLE DIA.:
 REMARKS: Offset 3 ft from SB-3, Boring backfilled with quick grout
 LOGGED BY: Jason Monk
 CHECKED BY:

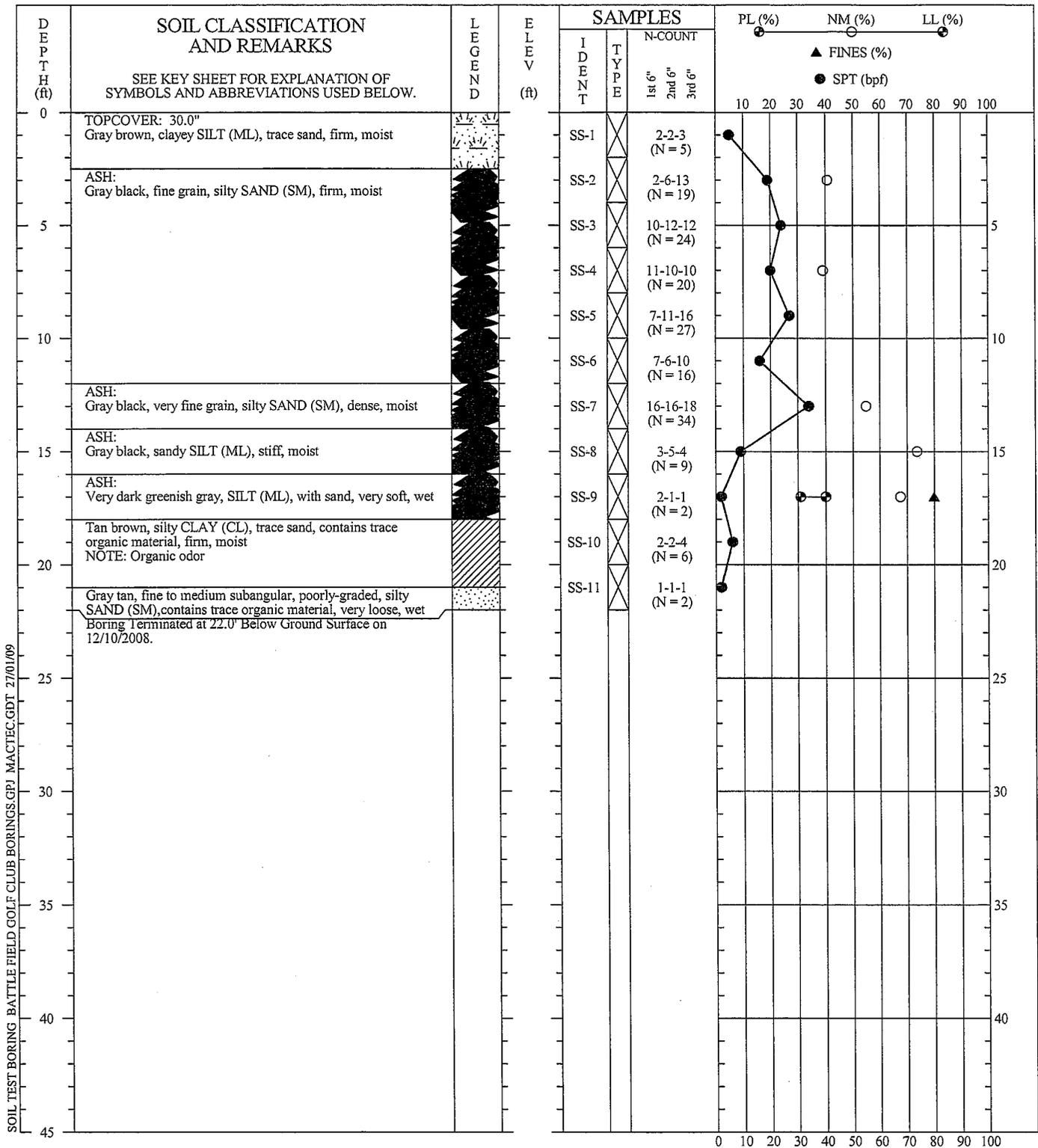
SOIL TEST BORING RECORD

BORING NO.: SB-2A
PROJECT: Battle Field Golf Club
LOCATION:
DRILLED: 09 December 2008
PROJECT NO.: 3552-08-1210

PAGE 1 OF 1

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.





SOIL TEST BORING - BATTLE FIELD GOLF CLUB BORINGS.GPJ MACTEC.GDT 2/7/01/09

DRILLER: Fishburne Drilling, Inc.
 EQUIPMENT: CME 55 ATV
 METHOD: Mud Rotary
 HOLE DIA.:
 REMARKS: Boring backfilled with quick grout
 LOGGED BY: Jason Monk
 CHECKED BY:

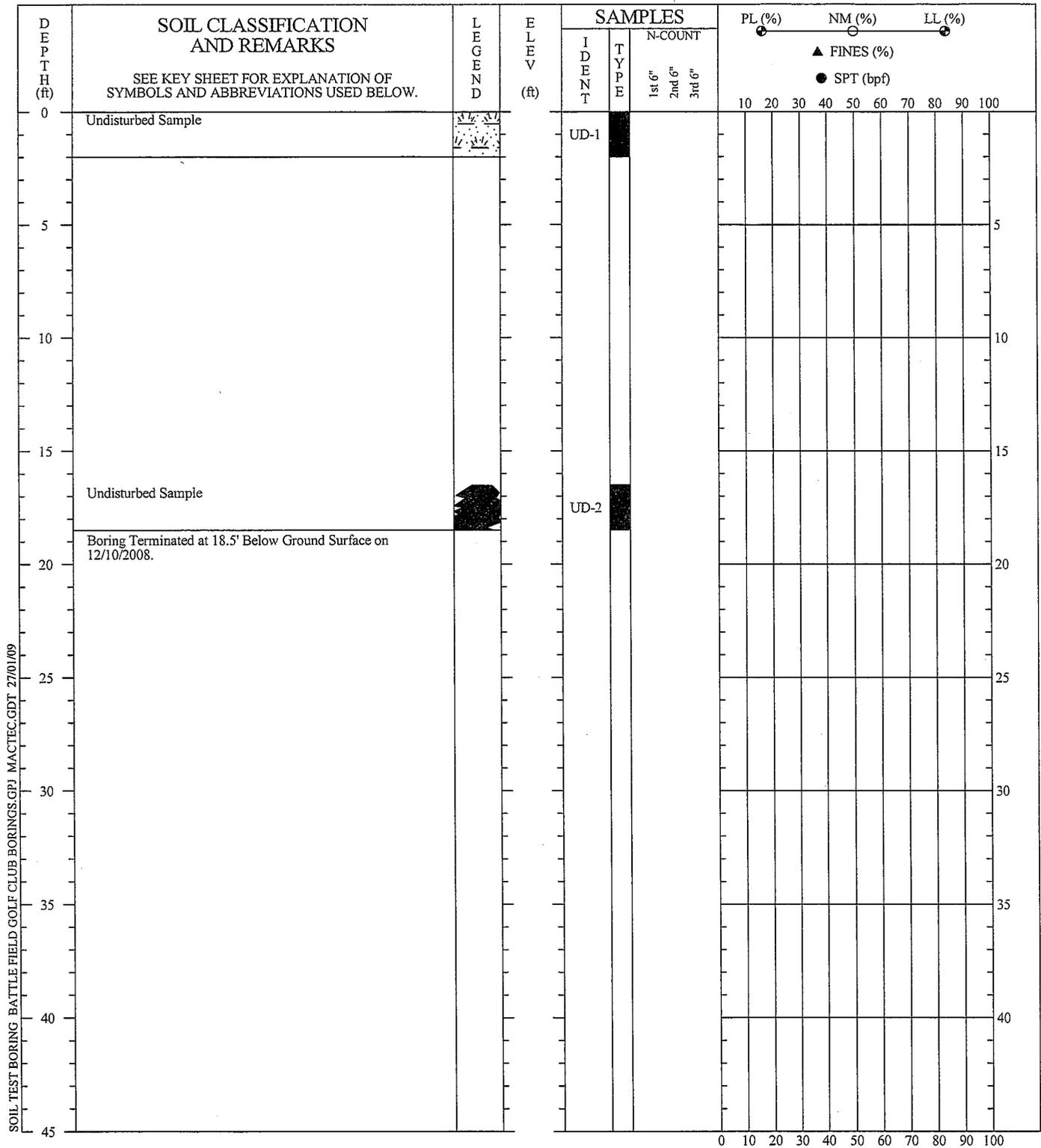
SOIL TEST BORING RECORD

BORING NO.: SB-3
PROJECT: Battle Field Golf Club
LOCATION:
DRILLED: 10 December 2008
PROJECT NO.: 3552-08-1210

PAGE 1 OF 1



THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.



DRILLER: Fishburne Drilling, Inc.
 EQUIPMENT: CME 55 ATV
 METHOD: Mud Rotary
 HOLE DIA.:
 REMARKS: Offset 2 ft from SB-3, Boring backfilled with quick grout
 LOGGED BY: Jason Monk
 CHECKED BY:

SOIL TEST BORING RECORD	
BORING NO.: SB-3A	PROJECT: Battle Field Golf Club
LOCATION:	DRILLED: 10 December 2008
PROJECT NO.: 3552-08-1210	PAGE 1 OF 1

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER. INTERFACES BETWEEN STRATA ARE APPROXIMATE. TRANSITIONS BETWEEN STRATA MAY BE GRADUAL.



BORING NO. **SB-BGC-SB4** SHEET **1 OF 1**
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Buchy**

COORDINATES _____
 SURFACE ELEVATION _____ DATUM _____

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
			SM			[Dotted pattern]	Pale brown, fine silty SAND (SM) with organics	No well installed.
5			SM				SAME	
			SM				SAME with some clay	
			SP				Gray, fine sand (SP)	
							Boring terminated at 8.0' bgs on 6/8/2009.	

ENV2A-SB-4 BGC.GPJ LAEWINN03.GDT 6/30/09

DRILLING CONTRACTOR **Fishburne Drilling**
 DRILLING METHOD **Direct Push**
 DRILLING EQUIPMENT **Geoprobe**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **No ash encountered.**
 See key sheet for symbols and abbreviations used above.



BORING NO. **SB-BGC-SB5** SHEET 1 OF 1
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Buchy**

COORDINATES _____
 SURFACE ELEVATION _____ DATUM _____

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
			SM				Dark brown, fine silty SAND (SM) with organics	No well installed.
			SC				Gray, clayey fine SAND (SC)	
			SP				Gray, fine SAND (SP)	
							Boring terminated at 4.0' bgs on June 8, 2009.	

ENVZA-SB-4 BGC.GPJ LAE1WNN03.GDT 6/30/09

DRILLING CONTRACTOR **Fishburne Drilling**
 DRILLING METHOD **Direct Push**
 DRILLING EQUIPMENT **Geoprobe**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **No ash encountered.**

 See key sheet for symbols and abbreviations used above.



BORING NO. **SB-BGC-SB6** SHEET **1 OF 1**
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Buchy**

COORDINATES _____
 SURFACE ELEVATION _____ DATUM _____

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
			CLS				Dark brown, stiff CLAY (CLS) with fine sand	No well installed.
			SP				Gray, fine to coarse SAND (SP)	
5			SP				Gray, speckled orange, fine to coarse SAND (SP)	
							Boring terminated at 8.0' bgs on June 8, 2009.	

ENV2A_SB-4_BGC-GPJ_1_AEWIN03.GDT 6/30/09

DRILLING CONTRACTOR **Fishburne Drilling**
 DRILLING METHOD **Direct Push**
 DRILLING EQUIPMENT **Geoprobe**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **No ash encountered.**

 See key sheet for symbols and abbreviations used above.



BORING NO. **SB-BGC-SB7** SHEET 1 OF 1
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Buchy**

COORDINATES
 SURFACE ELEVATION DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
			CL-ML			CLAY	Dark brown, silty sandy CLAY (CL-ML), organic matter	No well installed.
5			CL-ML			CLAY	SAME	
			SP			SAND	Gray/orange fine to coarse SAND (SP)	
							Boring terminated at 8.0' bgs on June 8, 2009.	

ENV2A SB-4 BGC.GPJ LAEWINN03.GDT 6/30/09

DRILLING CONTRACTOR **Fishburne Drilling**
 DRILLING METHOD **Direct Push**
 DRILLING EQUIPMENT **Geoprobe**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **No ash encountered.**

 See key sheet for symbols and abbreviations used above.



BORING NO. **SB-BGC-SB8** SHEET **1** OF **1**
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Buchy**

COORDINATES _____
 SURFACE ELEVATION _____ DATUM _____

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
			SP-SM				Dark brown, silty SAND (SP-SM) with clay, organic matter SAME, with clay Gray to dark gray, fine to coarse SAND (SP)	No well installed.
5			SP-SM					
			SP					
							Boring terminated at 8.0' bgs on June 8, 2009.	

BNY2A_SB-4_BGC.GP1_LAEIWIN03.GDT_6/30/09

DRILLING CONTRACTOR **Fishburne Drilling**
 DRILLING METHOD **Direct Push**
 DRILLING EQUIPMENT **Geoprobe**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **No ash encountered.**

 See key sheet for symbols and abbreviations used above.



BORING NO. **SB-BGC-SB9** SHEET **1 OF 1**
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Buchy**

COORDINATES _____
 SURFACE ELEVATION _____ DATUM _____

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
			SM				Dark brown, silty SAND (SM) with clay, organic matter	No well installed.
5			SP				Gray with orange, fine to coarse SAND (SP), wet at 7.0'	
							Boring terminated at 8.0' bgs on June 8, 2009.	

ENV2A SB-4 BGC.GPJ LAEWNN03.GDT 6/30/09

DRILLING CONTRACTOR **Fishburne Drilling**
 DRILLING METHOD **Direct Push**
 DRILLING EQUIPMENT **Geoprobe**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **No ash encountered.**
 See key sheet for symbols and abbreviations used above.



BORING NO. **SB-BGC-SB10** SHEET 1 OF 1
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Buchy**

COORDINATES
 SURFACE ELEVATION DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
			SM			Dotted pattern	Dark brown, silty SAND (SM) with organic matter	No well installed.
							Ash - silty fines, wet	
5			SC			Diagonal hatching	Dark brown, clayey silty SAND (SC)	
							Boring terminated at 8.0' bgs on June 8, 2009.	

ENV2A SB-4 BGC.GPJ LAEWIN03.GDT 6/30/09

DRILLING CONTRACTOR **Fishburne Drilling**
 DRILLING METHOD **Direct Push**
 DRILLING EQUIPMENT **Geoprobe**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **Ash encountered at 1.8' below ground surface.**

 See key sheet for symbols and abbreviations used above.



BORING NO. **SB-BGC-SB11** SHEET **1** OF **1**
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Buchy**

COORDINATES _____
 SURFACE ELEVATION _____ DATUM _____

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
			SM				Dark brown, silty SAND (SM) with organic matter	No well installed.
							Ash -- silty fines; semi-consolidation, dry	
			SC				Black/dark brown, clayey SAND (SC) with trace ash	
5			SC				Brown, clayey fine SAND (SC)	
			SP				Gray, fine SAND (SP)	
							Boring terminated at 8.0' bgs on June 8, 2009.	

ENVZA SB-4 BGC.GPJ LAEWN03.GDT 6/30/09

DRILLING CONTRACTOR **Fishburne Drilling**
 DRILLING METHOD **Direct Push**
 DRILLING EQUIPMENT **Geoprobe**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **Ash encountered at 1.9' below ground surface.**

 See key sheet for symbols and abbreviations used above.



BORING NO. **SB-BGC-SB12** SHEET **1 OF 1**
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Buchy**

COORDINATES
 SURFACE ELEVATION DATUM

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
			SM				Dark brown, silty SAND (SM) with organic matter	No well installed.
							Ash -- fine silty, dry	
			SC				Dark brown, clayey silty SAND (SC)	
5			SC				SAME	
							Boring terminated at 8.0' bgs on June 8, 2009.	

ENVZA SB-4 BGC.GPJ LAEWIN03.GDT 6/30/09

DRILLING CONTRACTOR **Fishburne Drilling**
 DRILLING METHOD **Direct Push**
 DRILLING EQUIPMENT **Geoprobe**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **Ash encountered at 1.75' below ground surface.**

 See key sheet for symbols and abbreviations used above.



BORING NO. **SB-BGC-SB14** SHEET **1** OF **1**
 PROJECT **BATTLEFIELD GOLF COURSE**
 LOCATION **CHESAPEAKE, VA**
 PROJECT NO. **3552-09-1263**
 LOGGED BY **J. Buchy**

COORDINATES _____
 SURFACE ELEVATION _____ DATUM _____

SAMPLE INFORMATION						STRATA	DESCRIPTION	WELL CONSTRUCTION DETAIL
DEPTH FEET	LAB SAMPLE	BLOW COUNTS	USCS	Recovery (inches)	PID			
			SM			[Stippled pattern]	Dark brown, silty SAND (SM) with organic matter	No well installed.
5			SM				SAME, no organics	
			SP				Light gray/orange, fine to coarse SAND (SP), moist	
							Boring terminated at 8.0' bgs on June 8, 2009.	

ENV2A_SB-4_BGC.GPJ_LAEWINN03.GDT_6/30/09

DRILLING CONTRACTOR **Fishburne Drilling**
 DRILLING METHOD **Direct Push**
 DRILLING EQUIPMENT **Geoprobe**
 DRILLING STARTED **6/8/09** ENDED **6/8/09**

REMARKS **No ash encountered.**
 See key sheet for symbols and abbreviations used above.