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Appendix A

Soil Boring Logs

PHASE II ESA BORING LOGS



Test Boring Report

BORING NO. REC-1 B-1
PAGE 1 OF 1

PROJECT: Phase II ESA - Shakespeare
CLIENT: Shakespeare
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 3040

PROJECT NO: 60313892
LOCATION: Newberry, SC
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 01/28/14
DATE FINISH: 01/28/14
DRILLER: M. Gonzalez
OVERSIGHT: C. Suddeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD		CASING INSTALL	TEMP / PERM
			HOLE DIA.		CASING DIA.	CASING TYPE
			TOTAL DEPTH		CASING DEPTH	GROUT TYPE
			SAMPLING		HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION: USCS	
5.0	↑				SILTY SAND (SM), tan to brown, fill, fine grained, well graded, damp	
	0.6 ↓					
	↑ 0.6					
	0.4 ↓				SILTY SAND (SM), red fill, red to tan, fine grained, well graded, damp	
10.0	↑ 0.4				SANDY SILT (ML), fill, red to tan, medium stiff, some fine sand, damp	
	0.4 ↓					
	↑ 0.3				SANDY SILT (ML), Saprolite, tan, medium stiff, little fine sand, damp	
	0.3 ↓				SANDY SILT (ML), Saprolite, as above, except moist to wet	
15.0				Boring terminated at 15 ft		
20.0						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			



Test Boring Report

BORING NO. REC-2 B-3
PAGE 1 OF 1

PROJECT: Phase II ESA - Shakespeare
CLIENT: Shakespeare
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 8040

PROJECT NO: 60313892
LOCATION: Newberry, SC
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 01/31/14
DATE FINISH: 01/31/14
DRILLER: M. Gonzalez
OVERSIGHT: C. Suddeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					SOIL CLASSIFICATION: USCS
	5.9				SAND (SW), Fill, brown, fine to medium grained, well graded, dry
	1.0				SANDY SILT (ML), Fill, tan, medium stiff, some fine sand, damp
5.0	0.7				
	0.4				SANDY SILT (ML), saprolite, tan to gray, medium stiff, little fine sand, damp, refusal at 7 ft.
					Boring terminated at 7 ft.
10.0					
15.0					
20.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. REC-5C B-11
PAGE 1 OF 1

PROJECT: Phase # ESA - Shakespeare
CLIENT: Shakespeare
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 8040

PROJECT NO: 60313892
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 01/31/14
DATE FINISH: 01/31/14
DRILLER: M. Gozales
OVERSIGHT: C. Suddeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS SOIL CLASSIFICATION: USCS
					CONCRETE
					SAND (SW), Fill, brown, fine to medium grained, well graded, few clay, wet
					SILTY SAND (SM), Fill, fine to medium grained, well graded, damp.
5.0					SAND (SW), Fill, dark gray, fine to medium grained, well graded, wet.
					SILTY SAND (SM), Fill, tan to gray, well graded, trace clay, moist
10.0					SANDY SILT (ML), Fill, tan to gray, medium stiff, trace clay, moist.
					SANDY SILT (ML), Fill, as above
15.0					Boring terminated at 15 ft
20.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. TMW-1
PAGE 1 OF 2

PROJECT: Phase II ESA - Shakespeare
CLIENT: Shakespeare
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 8040

PROJECT NO: 60313 892
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 01/28/14
DATE FINISH: 01/30/14
DRILLER: M. Gonzalez
OVERSIGHT: C. Swobeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					SOIL CLASSIFICATION: USCS
	0.3				SAND (SW), fill, brown, fine to medium grained, well graded, damp.
	0.2				SILTY SAND (SM), fill, tan to red, fine grained dense, well graded, damp.
5.0	0.2				
	0.2				
	0.5				CLAYEY SAND (SC), fill, dark gray, fine to medium grained, roots, well graded, little silt, moist
	0.3				Partially weathered rock, hard, gray, igneous texture, dry.
10.0	0.2				SANDY SILT (ML), fill, tan to red, medium stiff, some fine sand, moist
	0.7				Partially weathered rock
	0.3				SAND (SW), fill, fine to medium grained, well graded, saturated
15.0	0.2				CLAYEY SAND (SC), fill, tan to gray, little silt, fine grained, well graded, moist
	0.2				
	0.3				SILTY SAND (SM), fill, tan to gray, fine grained, well graded, wet
20.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. TMW-2
 PAGE 1 OF 2

PROJECT: Phase II ESA - Shakespeare
 CLIENT: Shakespeare
 CONTRACTOR: AE Drilling
 EQUIPMENT: Geoprobe 8040

PROJECT NO: 60313892
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 01/28/14
 DATE FINISH: 01/30/14
 DRILLER: M. Gonzales
 OVERSIGHT: C. Suddeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					SOIL CLASSIFICATION: USCS
	↑ 0.0				SAND (SP), Fill, fine grained, poorly graded, damp
	↓				
	↑ 0.0				SANDY SILT (ML), Fill, red to tan, medium stiff, some fine sand, plant roots, damp.
	↓				
5.0	↑ 0.1				SANDY SILT (ML), as above.
	↓				
	↑ 0.0				SAND (SP), Fill, brown, fine grained, poorly graded, damp.
	↓				
10.0	↑ 0.0				SANDY SILT (ML), Fill, tan, medium stiff, some fine sand, moist
	↓				
	↑ 0.0				SILTY SAND (SM), Fill, fine grained, well graded, moist.
	↓				
15.0	↑ 0.0				SILTY SAND (SM), Saprolite, gray, fine grained, some silt, moist
	↓				
	↑ 0.0				
	↓				
20.0	↑				

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

(MW-4)
TMW-3 (MW)

AECOM				Test Boring Report				BORING NO. <u>REL-3 B-7</u>	
				PAGE <u>1</u> OF <u>2</u>		PROJECT NO: <u>60313892</u>		LOCATION: <u>Newberry, SC</u>	
PROJECT: <u>Phase II ESA - Shakespeare</u>				CLIENT: <u>Shakespeare</u>		CONTRACTOR: <u>AE Drilling</u>		ELEVATION: _____	
EQUIPMENT: <u>Geoprobe 3040</u>				DRILLING INFORMATION		NORTHING: _____		EASTING: _____	
GROUNDWATER		DRILL METHOD		CASING INSTALL		TEMP / PERM		DATE START: <u>01/27/14</u>	
DATE	HRS AFTER COMP	WATER	HOLE DIA.	CASING DIA.	CASING TYPE			DATE FINISH: <u>01/27/14</u>	
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE			DRILLER: <u>M. Gonzales</u>	
			SAMPLING	HAMMER WT	HAMMER FALL			OVERSIGHT: <u>C. Suddeth</u>	
DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS				
					SOIL CLASSIFICATION: USCS				
	↑ 0.0				SANDY SILT (ML), fill, tan to red, stiff, some fine grained sand, damp.				
	↓								
	↑								
	0.0								
5.0	↓				SANDY SILT (ML), ^{fill} tan to red, stiff, some fine grained sand, trace clay, plant roots, moist				
	↑								
	0.0								
	↓								
	X								
	0.0								
	↓				SILTY SAND (SM), fill, dark gray, fine grained, little silt, trace clay, plant roots, moist				
	↑								
	0.7								
10.0	↓				SILTY SAND (SM), fill, as above except wet				
	↑								
	0.9								
	↓								
	↑				SILTY SAND (SM), fill, tan to gray, fine grained, trace clay, well graded, moist.				
	0.3								
	↓				SAND (SW), fill, tan, fine to medium grained, well graded, wet				
15.0	↑								
	0.1				SANDY SILT (ML), Saprolite, tan, medium stiff, some fine sand, saturated, occasional granitic texture				
	↓								
	X								
	0.1								
	↓								
20.0									
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES			
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD	WHILE DRILLING		
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE	NOT ENCOUNTERED		
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR	NOT READ		
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR	NO RECOVERY		
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%				
		31+	HARD						



Test Boring Report

BORING NO. TMW-4
PAGE 1 OF 2

PROJECT: Phase II ESA - Shakespeare
CLIENT: Shakespeare
CONTRACTOR: A&E Drilling
EQUIPMENT: Geoprobe 8040

PROJECT NO: 60313892
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 01/27/13
DATE FINISH: 01/28/13
DRILLER: M. Gonzales
OVERSIGHT: C. Suddeth

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS AFTER COMP	WATER	DRILL METHOD			CASING INSTALL	TEMP / PERM	
			HOLE DIA.			CASING DIA.	CASING TYPE	
			TOTAL DEPTH			CASING DEPTH	GROUT TYPE	
			SAMPLING			HAMMER WT	HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					(Fill)	SOIL CLASSIFICATION: USCS
	↑				SAND (SP), brown, medium grained, poorly graded, damp	
	0.1				SAND (sw), ^{tan to red} fill, fine to medium grained, well graded, dry few clay, damp.	
	↓					
	0.1					
5.0	↑				CLAYEY SAND (SC), brown, fine to coarse grained, well graded, moist	
	1.0					
	↓				CLAYEY SAND (SC) (Fill), dark gray, fine to medium grained, well graded, soft, wet, plant roots	
	0.3					
10.0	↓				SAND (sw), fill, tan to gray, fine to medium grained, well graded, damp	
	0.4					
	↓					
	0.3					
	↓					
	0.2					
15.0	↓				SILTY SAND (SM), Saprolite, tan to gray, fine to medium grained, well graded, moist, few clay	
	0.3					
	↓					
	0.2					
20.0	↓					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. TMW-4
PAGE 2 OF 2

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS		
20.0	↑ 0.2				Sandy silt (ML), ^{Saprolite} tan to red, stiff, some very fine grained sand, damp to moist.		
	↓ 0.2						
25.0	↓ 0.4				SANDY SILT (ML), Saprolite, tan, stiff, some very fine grained sand, granitic texture, moist to wet.		
	↑ 0.4						
30.0	↓				Boring terminated at 30 ft.		
35.0							
40.0							
45.0							
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS		NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%	
		31+	HARD				

(NW-6)
T10W-5 (NW6)

AECOM **Test Boring Report** BORING NO. REC-10 B-16
PAGE 1 OF 2

PROJECT: Phase II ESA-Shakespeare PROJECT NO: 60313092
 CLIENT: Shakespeare LOCATION: _____
 CONTRACTOR: AE Drilling ELEVATION: _____
 EQUIPMENT: Geoprobe 8040 NORTHING: _____
 EASTING: _____

GROUNDWATER			DRILLING INFORMATION				DATE	
DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM	DATE START:	DATE FINISH:	
			HOLE DIA.	CASING DIA.	CASING TYPE	<u>01/31/14</u>	<u>01/31/14</u>	
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE	DRILLER: <u>M. Gonzales</u>		
			SAMPLING	HAMMER WT	HAMMER FALL	OVERSIGHT: <u>C. Suddeth</u>		

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION: USCS	REMARKS
	2.1				SAND (SW), Fill, brown, fine to medium grained, well graded, damp	
	2.1				CLAYEY SAND (SC), Fill, brown, fine to medium grained, well graded, damp	
	1.6				SAND (SW), Fill, dark gray, fine to medium grained, well graded, damp	
	↑				SANDY SILT (ML), Fill, medium stiff, little fine sand, damp	
	10.4					
	↓					
5.0	↑				SANDY SILT (ML), Fill, as above	
	22.9					
	↓					
	↑					
	17.9					
	↓				Plant material and pine bark at 9.5 ft	
10.0	↑				SANDY SILT (ML), Fill, tan to brown, soft to medium stiff, moist.	
	8.6					
	↓					
	19.1				SAND (SW), Fill, fine to medium grained, plant roots, wet	
	↑				CLAYEY SILT (MH), Fill, red to gray, stiff, damp to moist.	
	19.4					
	↓					
15.0	↑				SAND (SW), Fill, tan, fine to medium grained, trace silt, well graded, wet.	
	15.3					
	↓					
	17.9					
	↓					
	13.8				SANDY SILT (ML), Fill, tan tan to gray, medium stiff, little fine sand, wet	
	↓					
20.0						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

TMW-6

AECOM				Test Boring Report				BORING NO. <u>REC-SA B-9</u>	
								PAGE <u>1</u> OF <u>2</u>	
PROJECT: <u>Phase # ESA-Shakespeare</u>						PROJECT NO: <u>60313892</u>			
CLIENT: <u>Shakespeare</u>						LOCATION: _____			
CONTRACTOR: <u>AE Drilling</u>						ELEVATION: _____			
EQUIPMENT: <u>Geoprobe 8040</u>						NORTHING: _____			
GROUNDWATER			DRILLING INFORMATION						
DATE	HRS AFTER COMP	WATER	DRILL METHOD			CASING INSTALL		TEMP / PERM	
			HOLE DIA.			CASING DIA.		CASING TYPE	
			TOTAL DEPTH			CASING DEPTH		GROUT TYPE	
			SAMPLING			HAMMER WT		HAMMER FALL	
						DATE START: <u>01/31/14</u>			
						DATE FINISH: <u>01/31/14</u>			
						DRILLER: <u>M. Gonzalez</u>			
						OVERSIGHT: <u>C. Subletch</u>			
DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS				
					SOIL CLASSIFICATION: USCS				
	↑				CONCRETE				
	0.0				SAND (SW), fill, brown, fine to medium grained, well graded, damp.				
	↓								
	↑				SANDY SILT (ML), fill, red, medium stiff, little fine sand, damp.				
	0.0								
	↓								
	↑				SAND (SP), fill, brown, fine grained, poorly graded, moist.				
	0.0								
5.0	↓				SANDY SILT (ML), fill, red to tan, medium stiff, little fine sand, damp				
	↑								
	0.0								
	↓				SANDY SILT (ML), Saprolite, red to tan, medium stiff, little fine sand, granitic texture, moist				
10.0	↑								
	0.0								
	↓								
	↑				wet at 13 ft.				
	0.0								
	↓								
15.0	↑				SANDY SILT (ML), Saprolite, tan to brown, little fine sand, granitic texture, saturated.				
	0.1								
	↓								
	↑								
	0.0								
	↓								
20.0									
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS		NOTES		
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY	50-100%	WD WHILE DRILLING	
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME	30-45%	NE NOT ENCOUNTERED	
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE	15-25%	UR NOT READ	
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW	5-10%	NR NO RECOVERY	
50+	VERY DENSE	16-30	VERY STIFF			TRACE	<5%		
		31+	HARD						

(MW-2)



Test Boring Report

BORING NO. TMW-7 (MW 2)
PAGE 1 OF 2

PROJECT: Phase II ESA - Shakespeare
CLIENT: Shakespeare
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 8040

PROJECT NO: 60313892
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 02/01/14
DATE FINISH: 02/01/14
DRILLER: M. Gonzales
OVERSIGHT: C. Suddeth

GROUNDWATER DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	HOLE DIA.	CASING INSTALL	TEMP / PERM
					CASING DIA.	CASING TYPE
				TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING		HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS SOIL CLASSIFICATION: USCS
	↑ 0.0				SANDY SILT (ML), Fill, tan, soft, some fine sand, dry.
	↓				
	↑ 0.0				SANDY SILT (ML), Saprolite, tan to gray, soft, some fine sand, granitic texture, damp.
	↓				
5.0	↑ 0.1				SANDY SILT (ML), Saprolite, as above, moist at 8 ft.
	↓				
	↑ 0.0				SANDY SILT (ML), Saprolite, tan, soft, granitic, little fine sand, wet to saturated.
	↓				
	↑ 0.0				SANDY SILT (ML), Saprolite, as above.
	↓				
15.0	↑ 0.0				
	↓				
	↑ 0.0				
	↓				
20.0	↑ 0.0				
	↓				

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100%
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45%
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25%
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10%
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 60318302
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 4/8/14
DATE FINISH: 4/8/14
DRILLER: M. Gonzalez
OVERSIGHT: C. Suddeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	HOLE DIA	CASING INSTALL	TEMP / PERM

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE
	0.0			
	0.0			
5.0				
	0.0			
	0.0			
10.0				
	0.0			
	0.0			
15.0				
	0.0			
	0.0			
20.0				

FIELD CLASSIFICATION AND REMARKS

SOIL CLASSIFICATION: USCS

SANDY SILT (Fill), gray, medium stiff, no chemical odor, damp.
(NL)
SANDY SILT (saprolite), tan to red, medium stiff, little fine to medium sand, no chemical odor, damp

SANDY SILT (ML), saprolite, tan to red, medium stiff, little fine to medium sand, no chemical odor damp

SANDY SILT (ML), saprolite, gray to pink, soft, little fine to medium sand, granitic texture, wet to saturated, no chemical odor (12-13)

SILT (SW), white, very fine to medium grained, well graded, no chemical odor, saturated.

SANDY SILT (ML), saprolite, gray to tan, soft, little fine to medium sand, granitic texture, no chemical odor, saturated.

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	15-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. TMW-9PAGE 2 OF 2

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS		
					ML		
20.0	0.0				SANDY SILT (ML), Saprolite, gray to tan, soft, little fine to medium sand, no chemical odor, saturated		
	0.0						
25.0	0.0				boring terminated at 25 ft		
30.0							
35.0							
40.0							
45.0							

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. TMW-12
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry, SC
CLIENT: _____
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 8040 DT

PROJECT NO: _____
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 4/8/14
DATE FINISH: 4/8/14
DRILLER: M. Gonzalez
OVERSIGHT: C. Sibley

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	SOIL CLASSIFICATION: USCS
	0.0				SAND (SP), light brown, fine to medium grained, well graded, no chemical odor, damp	(Fill)
	0.0					
5.0	0.0				SANDY SILT (ML), fill, red to tan, stiff, few fine sand, no chemical odor, damp	
	0.0					
	0.0				SANDY SILT (ML), Saprolite, tan, medium stiff, little fine to medium sand, no chemical odor, moist	
10.0	0.0				SANDY SILT (ML), Saprolite, tan to gray, medium stiff, little fine to medium sand, no chemical odor, moist	
	0.0					
	0.0				SANDY SILT (ML), Saprolite, as above with a granitic texture	
15.0	0.0					
	0.0					
	0.0					
20.0	0.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

(MW-8)



Test Boring Report

BORING NO. TMW-13 (MW8)
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: _____
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 8040 DT

PROJECT NO: _____
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 4/9/14
DATE FINISH: 4/9/14
DRILLER: M. Gonzales
OVERSIGHT: C. Suddeth

GROUNDWATER			DRILLING INFORMATION			
DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM	
			HOLE DIA.	CASING DIA.	CASING TYPE	
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE	
			SAMPLING	HAMMER WT	HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION: USCS	
	0.0				SAND (SW) Fill, light brown, fine to medium grained, well graded, no chemical odor, moist	
	0.0				SANDY SILT (ML), fill, red, stiff, little fine sand, few clay, no chemical odor, damp	
	0.0				SAND (SW), fill, light brown, fine to medium grained, well graded, no chemical odor, damp	
5.0	0.5				SANDY SILT (ML), fill, red to gray, mottled, stiff, little fine sand, few clay, slightly plastic, no chemical odor, damp	
	4.8				SAND (SW), fill, gray, fine to medium grained, well graded, slight degraded chemical odor, damp	
	0.0				SANDY SILT (ML), fill, red to tan, mottled, stiff, little fine sand, few clay, slightly plastic, no chemical odor, damp	
10.0	0.0					
	0.1					
	0.3				SANDY SILT (ML), Saprolite, red to tan, medium stiff, little fine sand, no chemical odor, moist.	
15.0	0.4				Wet at 14 ft	
	1.0				SANDY SILT (ML), Saprolite, tan, soft, little fine sand, no chemical odor, saturated	
	3.2					
	3.6					
20.0	2.7					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. TMW-14
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO: _____
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 4/9/14
DATE FINISH: 4/9/14
DRILLER: M. Gonzalez
OVERSIGHT: C. Subbath

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	HOLE DIA.	CASING INSTALL	CASING DIA.	TEMP / PERM	CASING TYPE	TOTAL DEPTH	CASING DEPTH	GROUT TYPE	SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
0.1					SAND (SW), fill, brown, fine to medium grained, few clay, well graded, no chemical odor, moist
5.7				SANDY SILT (ML), fill, light red, stiff, little fine to coarse sand, slight chemical odor, damp	
1.4					SAND (SW), fill, brown, fine to medium grained, few clay, well graded, slight chemical odor, damp
8.0					
0.0					SANDY SILT (ML), fill, tan, stiff, little fine sand, plant roots, no chemical odor, damp
0.0					
0.0					SANDY SILT (ML), fill, as above
0.0					
0.0					SANDY SILT (ML), Saprolite light red to tan, soft to medium stiff, micaceous, no chemical odor, saturated at 16 ft.
0.0					
0.0					
0.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			



Test Boring Report

BORING NO. TMW-15
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: _____
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 8040 DT

PROJECT NO: _____
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 4/9/14
DATE FINISH: 4/9/14
DRILLER: M. Gonzales
OVERSIGHT: C. Suddeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
	0.3				SAND AND GRAVEL (SW), fill, fine grained to cobble size, well graded, no chemical odor, damp.
	0.3				SANDY SILT (ML), fill, light red, stiff, little fine to medium sand, no chemical odor, damp.
	0.0				SAND (SW), fill, brown, fine to medium grained, few clay, no chemical odor, damp
5.0					
	0.4				SAND (SW), fill, dark gray, fine to medium grained, few clay, well graded, no chemical odor, moist
	0.2				
10.0					
	0.3				SAND (SW), as above, saturated
	0.4				SANDY SILT (ML), ^{sublithite} light red, soft, little fine to medium sand, micaceous, no chemical odor, saturated
15.0					
	0.0				SANDY SILT (ML), ^{sublithite} tan, soft, little fine sand, micaceous, no chemical odor, saturated
	0.0				
20.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

(MW-7)

AECOM

Test Boring Report

BORING NO. TMW-16 (MW7)
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 60318382
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 4/11/14
DATE FINISH: 4/11/14
DRILLER: _____
OVERSIGHT: C. Subbath

GROUNDWATER			DRILLING INFORMATION			
DATE	HRS AFTER COMP	WATER	DRILL METHOD		CASING INSTALL	TEMP / PERM
			HOLE DIA.		CASING DIA.	CASING TYPE
			TOTAL DEPTH		CASING DEPTH	GROUT TYPE
			SAMPLING		HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS SOIL CLASSIFICATION: USCS
	116				
	0.3				
	0.4				
5.0	116				SAND (sw), Fill, brown, fine to medium grained, low clay, well graded, damp
	0.3				
	0.4				SANDY SILT (ML), Fill, red to tan, stiff, little fine sand, roots at 8 ft, no chemical odor, damp
10.0	1.5				SANDY SILT (ML), Saprolite, tan to gray, medium stiff, little fine sand, granitic texture, no chemical odor, moist
	0.0				
	0.0				
	0.0				
15.0	0.0				SANDY SILT (ML), Saprolite, as above except saturated
	0.1				
	0.2				
	0.2				
20.0	0.2				

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-3	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

(MW-9)

AECOM **Test Boring Report** BORING NO. TMW-17 (MW9)
 PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry PROJECT NO: _____
 CLIENT: _____ LOCATION: _____
 CONTRACTOR: AE Drilling ELEVATION: _____
 EQUIPMENT: Geoprobe 8040 DT NORTHING: _____

GROUNDWATER			DRILLING INFORMATION				EASTING: _____	
DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM	DATE START:	DATE FINISH:	
			HOLE DIA.	CASING DIA.	CASING TYPE	<u>4/14/14</u>	<u>4/14/14</u>	
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE	DRILLER: <u>M. Gonzalez</u>		
			SAMPLING	HAMMER WT	HAMMER FALL	OVERSIGHT: <u>C. Suddeth</u>		

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION: USCS	
5.0					SAND (SW), brown, fill, fine to medium grained, well graded, no chemical odor, damp	
					SANDY SILT (ML), fill, stiff, red, little fine sand, no chemical odor, damp	
	0.0				CLAYEY SAND (SC), fill, brown, fine to medium grained, well graded, little clay, vegetation at 6 ft, no chemical odor, damp	
	0.0				SAND (SW), fill, fine to medium grained, well graded, no chemical odor, damp, plant roots	
	0.2				SILTY CLAY (CL), fill, stiff, slightly plastic, few medium sand, little silt, no chemical odor, damp	
10.0						
	0.0					
	0.0					
	0.0					
	0.0				SANDY SILT (ML), ^{red to gray} saprolite, medium stiff, little fine sand, no chemical odor, moist.	
15.0						
	0.0					
	0.0					
	0.0				SANDY SILT (ML), saprolite, light red to gray, soft, little fine sand, no chemical odor, wet at 17 ft.	
	0.0					
20.0						
	0.3					
	1.5					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. TMMW-19
 PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
 CLIENT: Phillips
 CONTRACTOR: AE Drilling
 EQUIPMENT: Geoprobe

PROJECT NO: 6051838C
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 4/14/14
 DATE FINISH: 4/14/14
 DRILLER: _____
 OVERSIGHT: C. Suddeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS SOIL CLASSIFICATION: USCS
					SAND (SW), Fill, brown, fine to medium grained, little clay, well graded, no chemical odor, damp
		0.5			SAND AND GRAVEL (SW), Fill, white, fine grained to gravel, no chemical odor, dry
		5.0			SANDY SILT (ML), Fill, red, medium stiff, little fine to medium sand, no chemical odor, moist
5.0					
		0.4			
		0.8			
		0.1			CLAYEY SAND (SC), Fill, brown, fine to medium grained, little clay, well graded, degraded chemical odor at 8 ft.
10.0					
		0.3			SAND (SW), Fill, gray, fine to medium grained, well graded, degraded chemical or sewer odor, saturated, plant roots.
		0.4			
		0.6			
		0.7			
15.0					
		0.4 0.3			CLAYEY SAND (SC), Fill, gray fine to medium grained, well graded, moist
		0.3			
		0.3			
		0.4			SAND (SW), Fill, tan, fine to medium grained, plant roots, well graded, no chemical odor, saturated
20.0					
		0.3			SANDY SILT (ML), Saprolite, tan, stiff, little fine sand, no chemical odor, saturated

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

SI BORING LOGS



Test Boring Report

BORING NO. B-20
PAGE 1 OF 1

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Phillips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 60318382
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 5/20/14
DATE FINISH: 5/20/14
DRILLER: G. Winbourn
OVERSIGHT: C. Suddeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COVP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color red SAMPLE NUMBER ppm	SAMPLE DEPTH RANGE
	0.0		ND	
5.0	0.0		ND	
	0.0		ND	
10.0	0.0		ND	
	1.8		ND	
	0.0		ND	
	0.0		ND	
	0.0		ND	
15.0	0.0		ND	
20.0				

FIELD CLASSIFICATION AND REMARKS

SOIL CLASSIFICATION: USCS

SAND (SW) Fill, brown, fine to medium grained, well graded, damp

B-20-2 SANDY SILT (ML), Fill, red, stiff, little fine sand, no chemical odor, damp.

CLAYEY SAND (SC), Fill, brown, fine to medium grained, well graded, no chemical odor, damp.

B-20-11 CLAYEY SAND (SC), Fill, tan to brown, fine to medium grained, well graded, no chemical odor, damp.

B-20-15 Boring terminated at 15 ft

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			



Test Boring Report

BORING NO B 24
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 60318382
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 5/20/14
DATE FINISH: 5/20/14
DRILLER: G. Winbourn
OVERSIGHT: C. Suddeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	PCE Lab. # NUMBER (ppm)	SAMPLE DEPTH RANGE
	4.3			
	1.2			
	1.0		0.0	
	5.7		0.0	
	3.5		B-24-4 1845	
50	1.0		0.0	
	7.3			
	9.1		0.5	
	2.1		B-24-8 1855	
100	3.0		0.2	
	0.6			
	1.7		0.0	
	1.4			
	0.6		0.5	
150	0.1			
	4.2		1.0	
	2.2			
	1.1			
	3.5			
200	0.6			

FIELD CLASSIFICATION AND REMARKS

SOIL CLASSIFICATION: USCS

SANDY SILT (ML), Fill, red to gray, stiff, little fine sand, damp.

CLAYEY SAND (SC), Fill, fine to medium grained, little clay, well graded, damp

SAND (SW), Fill, dark gray, fine to medium grained, well graded, moist.

CLAYEY SAND (SC), Fill, tan, fine to medium grained, well graded, moist.
wet to saturated at 12 ft.

SANDY SILT (ML), Saprolite, tan to gray, medium stiff, little fine sand, saturated

SANDY SILT (ML) Saprolite, as above.

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-3	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

Test Boring Report

BORING NO. B-26
PAGE 1 OF 2

PROJECT: Source Area Invest. - Sharkesport Newberry
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 6620

PROJECT NO: 60318382
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 5/22/14
DATE FINISH: 11
DRILLER: C. Winbourn
OVERSIGHT: S. Cross

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS SOIL CLASSIFICATION:
0.4					(SP) POORLY GRADED SAND - Pale brown, moist, mostly med to fine sand, red dense
0.8				0.0	(SC) CLAYEY SAND - Reddish brown, mostly med to fine sand, few chy, trace silt, stiff
0.2				0.0	
1.0				0.0	similar to above
1.3				0.0	similar to above
2.1				0.0	
1.7				0.0	similar to above except pale brown on
1.0				0.0	
2.5				0.0	(SM-SP) SILTY SAND TO POORLY GRADED SAND Gray to greenish gray, mostly med sand, little silt, few chy, dense, dry to moist
1.6				0.0	
1.1				0.5	(OM-SC) SILTY TO CLAYEY SAND - Brown, mostly med to fine sand, dense, dry to moist, little silt, few chy, dense, dry
0.8				0.5	
0.5				0.5	(SM-SC) SILTY TO CLAYEY SAND - Pale yellow to reddish yellow to light gray (mottled), mostly fine sand, little silt, few chy dense, dry to moist
0.5				0.5	
0.4					similar to above except increasing sand less clay moist
0.7					
1.0					
1.3					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. B-27
 PAGE 1 OF 2

PROJECT: Source Investigation - Shakespace Newberry
 CLIENT: Philips
 CONTRACTOR: AE Drilling
 EQUIPMENT: Geoprobe 6620

PROJECT NO: 60318382
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 5/22/14
 DATE FINISH: .
 DRILLER: G. Wimbourn
 OVERSIGHT: S. [unclear]

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS SOIL CLASSIFICATION:
50	1.0				(SP) Poorly Graded Sand yellowish red, mostly med to fine sand, few clay, (SM-SC) SILTY TO CLAYEY SAND red to reddish brown to yellowish brown, mostly fine sand, little silt, little clay, dry, dense B-27-4 B-27-5 B-27-6
	1.0		1.0		
	0.1				
	1.0		1.0		
	0.2		1.5		
	0.3		1.5		
	0.0		1.5		
	0.4		0.25	B-27-8	
10	0.0		1.25		(SP) Poorly Graded sand, gray, mostly med sand, few silt (SC) CLAYEY SAND gray to pale brown, mostly fine sand, little to few clay, silt, dense (SP-SC) Poorly Graded SAND - red to yellowish red, mostly med to fine sand, few clay, dense, dry B-27-8
	0.3		ND		
	2.0		1.5		
	0.1		0.5		
	0.8		2.30		
	0.6		2.30		
15	5.0		2.75	B-27-14	(SM) SILTY SAND yellowish red, to pale yellow, mostly med to fine sand, little silt, trace clay, trace mica, (redist granitic structure w/ depth) similar to above B-27-14
	4.5				
	1.6				
	0.4				
	0.3		1.0		
	0.1				
20	0.1				similar to above

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			



Test Boring Report

BORING NO. B-27a

PAGE 2 OF 2

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	Mitsubishi Pilot BLOWS PER 6 INCHES	Color SAMPLE NUMBER TCC	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0	0.0				Similar to above except pink red to light gray to pale brown
	1.8				
	0.2		0.5		
	1.0				
25.0	0.3		NO	B-27-5	similar to above, wet, soft
30.0					
35.0					
40.0					
45.0					
50.0					
55.0					
60.0					
65.0					
70.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			



Test Boring Report

BORING NO. B-29
 PAGE 1 OF 2

PROJECT: Source Investigation - Shakespeare Newberry
 CLIENT: Philips
 CONTRACTOR: AE Drilling
 EQUIPMENT: Geoprobe 6570

PROJECT NO: 60318382
 LOCATION: Main Bldg
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 5/22/04
 DATE FINISH: 11
 DRILLER: G. Nimbom
 OVERSIGHT: S. Cross

GROUNDWATER			DRILLING INFORMATION				FIELD CLASSIFICATION AND REMARKS	
DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM	SOIL CLASSIFICATION:		
			HOLE DIA.	CASING DIA.	CASING TYPE			
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE			
			SAMPLING	HAMMER WT	HAMMER FALL			
DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS			
5	1.5				(SP) Poorly Graded Sand brown to pale red, mostly sandy, med dense, dry			
	1.5		0.5		SC-SM SILTY TO CLAYEY SAND yellowish red to gray (mottled) mostly fine sand, little clay, little silt, dense			
	1.1		0.5					
	1.1				(SC-SM) SILTY TO CLAYEY SAND			
	0.4		1.0	B-28-6	similar to above			
	0.7							
	1.0		1.25					
10	0.9				(SM) SILTY SAND pale brown to pale red, mostly med to fine sand, some silt, trace clay, med dense			
	0.6		2.0	B-28-10				
	0.4							
	0.5		1.0		similar to above			
	2.1							
15	0.6		2.0	B-28-14				
	0.4				similar to above			
	3.5		2.5					
	2.7							
20	0.1				(SM-SF) POORLY GRADED SAND WITH SILT yellowish red to pale yellow, mostly med to fine sand, few silt, dense, wet			
	0.4		2.0					
	0.3							

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. B-28
PAGE 2 OF 2

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	Mitsubishi Pilot BLOWS PER 6 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS			
15.0	1.3		7cc		(5.4) SILTY SAND Pale yellow to pale brown, mostly fine sand, some silt, loose, wet similar to above			
20.0	0.6							
	1.1		1.75	B-26-22				
	0.4							
25.0	0.2		NO					
30.0					<hr/>			
35.0								
40.0								
45.0								
50.0								
55.0								
60.0								
65.0								
70.0								
75.0								
80.0								
85.0								
90.0								
95.0								
100.0								
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS		NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100%	WD	WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45%	NE	NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25%	UR	NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10%	NR	NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%		
		31+	HARD					



Test Boring Report

BORING NO. B-29
PAGE 1 OF 2

PROJECT: Source Investigation - Newberry
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 6620

PROJECT NO: 6038382
LOCATION: Newberry, SC
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 5/23/14
DATE FINISH: "
DRILLER: G. Winbourn
OVERSIGHT: SR

GROUNDWATER			DRILLING INFORMATION				
DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM		
			HOLE DIA.	CASING DIA.	CASING TYPE		
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE		
			SAMPLING	HAMMER WT	HAMMER FALL		

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	COLOR SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					Soil Classification	Remarks
50	0.3				(SP) Poorly graded sand. reddish yellow yellowish red, mostly med to fine sand, few clay, loose	
	0		NO			
	0		NO	B-29-4	(SC) CLAYEY silty sand red to gray to pale brown mostly fine sand, little clay, few silt, dense	
	0		NO			
	0		NO		similar to above	
10	0.1		NO			
	0.1		NO			
	0.4					
	0.5		0.2	B-29-10	similar to above except olive green	
	0.5					
15	0.9		NO			
	1.2				(SP-SM) Poorly graded sand with yellowish red silt mostly med to fine sand, little clay, few silt, dense moist	
	0.5		2.5	B-29-14		
	0.9		3.0		(SM) silty sand pale brown to pale red (mottled), mostly med to fine sand, little silt, trace clay, trace mica, moist, med dense	
	1.2					
20	0.9		>3.0	B-29-18		
	3.1					
	2.0				similar to above	
	1.2				Relet granitic structure evident (dark light colored grain size's)	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			



Test Boring Report

BORING NO. B-30
 PAGE 2 OF 2

PROJECT: Source Investigation - Shakespear Newbery
 CLIENT: Phillips
 CONTRACTOR: AE Drilling
 EQUIPMENT: Geoprobe 6620

PROJECT NO: 60318382
 LOCATION: Main Bldg
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 5/23/14
 DATE FINISH: 11
 DRILLER: C. Wimbrown
 OVERSIGHT: S. Ross

GROUNDWATER			DRILLING INFORMATION				FIELD CLASSIFICATION AND REMARKS
DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM	SOIL CLASSIFICATION:	
			HOLE DIA.	CASING DIA.	CASING TYPE		
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE		
			SAMPLING	HAMMER WT	HAMMER FALL		
DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE			
5	2.1		7cc		(SP) POORLY GRADED SAND pale yellow mostly med sand, few silt, trace clay		
	0.9		ND		(SC) CLAYEY SAND Red to reddish brown, mostly med to fine sand, little clay, dense trace silt, dense, dry		
	1.3						
	0.9		ND				
	0.8						
	7.0		0.2		similar to above		
	2.8						
10	2.7		ND		similar to above except grayish brown with few clay, trace silt		
	1.6						
	1.0		2.0		(SC) CLAYEY SAND light brown to reddish brown, mostly med to fine sand, little clay, trace silt, dense, dry		
	1.2						
	1.1		1.0		(ML-CL) SILTY CLAY Pale brown to reddish brown (mottled) mostly silt, little clay, trace fine sand, stiff, dry		
15	1.2						
	1.0		1.75		(SM) SILTY SAND Pale yellow to yellow reddish yellow to gray (mottled), mostly fine sand, little silt, few to trace clay, dry dense		
	0.7						
	1.8						
	0.2		>3.0				
20	0.1				similar to above except moist to wet, med stiff		
	0.1						
	0.1						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. B-22
PAGE 1 OF 2

PROJECT: AECOM - Source Investigation
CLIENT: Shaleco, Inc. - Philips
CONTRACTOR: HE Drilling
EQUIPMENT: Geoprobe 6620

PROJECT NO: 00310302
LOCATION: Main Bldg
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 5/22/14
DATE FINISH: 11'
DRILLER: A. Nubauer
OVERSIGHT: S. Ross

GROUNDWATER **DRILLING INFORMATION**

DATE	HRS AFTER COMP	WATER	DRILL METHOD	HOLE DIA.	CASING INSTALL	CASING DIA.	TEMP / PERM	CASING TYPE	GROUT TYPE	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					USCS	REMARKS
2.8					(SP) POORLY GRADED SAND	pale red to pink yellow, mostly med to fine sand, few silt, med dense.
0.9			ND	B-32-3	(SM-SC) SILTY TO CLAYEY SAND	pale yellowish red to red to pale brown, mostly med to fine sand, some silt, little clay, dry dense
1.0			ND			
0.3			ND			
2.0			ND	B-32-7		similar to above except less sand, more silt
6.6			ND			
1.1			ND		(SP) POORLY GRADED SAND	dk gray to olive gray, mostly med to fine sand, few silt, dry, med dense
1.8			ND			
2.7			ND	B-32-11	(SC) CLAYEY SAND	pale brown to reddish brown mostly med to fine sand, little clay, few silt, dense, dry
5.8			ND			
4.1			ND			
1.2			ND			similar to above except grades to silty sand (SM)
0.6			ND		(SM) SILTY SAND	pale red to pale brown to pale green mostly fine sand, little silt, few clay, soft, moist
2.4			ND			
0.7			ND			similar to above
0.3			ND			
0.9			ND			
0.0			ND			similar to above with relict granitic structure evident, wet
0.0			ND			

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	COLOR SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0	EB		252		<p>(SM) SILTY SAND Pale brown to pale red (mottled) mostly med to fine sand, some silt, trace clay, wet, soft</p> <p>(SP-SM) POORLY GRADED SAND WITH SILT pale brown mostly med to fine sand, little to few silt, trace clay, trace mica, soft, wet</p>
	0.0				
	0.2				
	0.2				
	0.3		ND		
25.0					Boring Terminated @ 25'
30.0					
35.0					
40.0					
45.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			



Test Boring Report

BORING NO. 8-33
 PAGE 1 OF 2

PROJECT: Source Investigation
 CLIENT: Shakespeare Phillips
 CONTRACTOR: AE Drilling
 EQUIPMENT: Geoprobe 6620

PROJECT NO: 6031838E
 LOCATION: Outside Main Bldg
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 5/29/14
 DATE FINISH: 11
 DRILLER: G. Winbown
 OVERSIGHT: S. Ross

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE
			<u>Tec</u>	

FIELD CLASSIFICATION AND REMARKS

SOIL CLASSIFICATION:

				<u>Topsoil</u>
	<u>1.1</u>			
	<u>0.6</u>		<u>ND</u>	<u>(2) CLAYEY SAND red to pink red to light brown</u>
	<u>0.4</u>			
	<u>0.1</u>		<u>ND</u>	
<u>5</u>	<u>1.1</u>			<u>similar to above</u>
	<u>1.5</u>		<u>ND</u>	<u>B-33-6</u>
	<u>0.4</u>			
	<u>1.0</u>		<u>ND</u>	
	<u>0.2</u>			<u>(3m) SILTY SAND Gray, mostly med to fine sand, some silt, trace clay, (trace organic material (bark, etc) @ 9.0'), med dense, moist</u>
<u>10</u>	<u>1.1</u>		<u>ND</u>	
	<u>2.7</u>		<u>ND</u>	<u>B-33-12</u>
	<u>0.3</u>			
	<u>0.7</u>		<u>ND</u>	<u>(5-8m) CLAYEY TO SILTY SAND, Gray to pink red (mottled)</u>
<u>15</u>	<u>0.7</u>		<u>ND</u>	<u>B-33-15</u>
	<u>0.0</u>		<u>ND</u>	
	<u>0.0</u>			
	<u>0.0</u>			
	<u>0.0</u>			<u>(5m) SILTY SAND Gray to light gray, mostly med to fine sand, some silt, few clay, med dense, wet</u>
<u>20</u>	<u>0.5</u>		<u>ND</u>	<u>light greenish gray</u>
				<u>similar to above except trace mica</u>

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. B-34
 PAGE 1 OF 2

PROJECT: Source Investigation
 CLIENT: Shakespeare - Phillips
 CONTRACTOR: AE Drilling
 EQUIPMENT: Geoprobe 6610

PROJECT NO: 60318582
 LOCATION: Pale Windows Bldg
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 5/25/14
 DATE FINISH: "
 DRILLER: G. Wimbrown
 OVERSIGHT: S. Goss

GROUNDWATER			DRILLING INFORMATION						
DATE	HRS	WATER	METHOD			CASING		TEMP / PERM	
			HOLE DIA.			CASING DIA.		CASING TYPE	
			DEPTH			CASING DEPTH		GROUT TYPE	
			SAMPLING			HAMMER WT		HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
0		1	Te	1-3	(sc-sm) Concrete	
1.2		ND		B-34-2	mostly med to fine sand, little silt, few clay, dense, dry	
1.0		ND				
5.0					No recovery	
10.0				B-34-10	(sc-sm) CLAYEY TO SILTY SAND	
					reddish yellow, mostly med sand, little clay, few silt, med dense	
				B-34-13		
					similar to above	
15.0					(sm) SILTY SAND	
					reddish yellow, mostly med to fine sand, with some silt, few clay, trace mica, wet, med dense. Streaks of dk brown through this interval appeared to be weathered zones of mica	
20.0						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. B-34
 PAGE 2 OF 2

PROJECT: Source Investigation
 CLIENT: Shakespeare - Philips
 CONTRACTOR: AE Drilling
 EQUIPMENT: Geoprobe 6610

PROJECT NO: _____
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: _____
 DATE FINISH: _____
 DRILLER: _____
 OVERSIGHT: _____

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE
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FIELD CLASSIFICATION AND REMARKS

SOIL CLASSIFICATION: USCS

25 6.0	0.7			<u>(SM) SILTY SAND</u> Pale brown, mostly med to fine sand, some silt, trace clay, trace mica, wet, soft (black, pale brown)
	0.5			
	0.0			
	0.8			
30 10.0	0.4			<u>(SM) SILTY SAND</u> Pale brown, mostly med (white, ^{folded} black) sand, little silt, red dinge, moist
35 15.0				
40 20.0				

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. B-35
 PAGE 1 OF 2

PROJECT: Source Investigation
 CLIENT: Skidmore - Newberry
 CONTRACTOR: AE Drilling
 EQUIPMENT: Geoprobe 2610

PROJECT NO: 60318572
 LOCATION: Pole Window Bldg
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 5/28/14
 DATE FINISH: "
 DRILLER: S. Ross
 OVERSIGHT: G. Winborn

GROUNDWATER			DRILLING INFORMATION			
DATE	HRS AFTER COMP	WATER	DRILL METHOD		CASING INSTALL	TEMP / PERM
			HOLE DIA.		CASING DIA.	CASING TYPE
			TOTAL DEPTH		CASING DEPTH	GROUT TYPE
			SAMPLING		HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	COLOR SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
			<u>TC</u>		SOIL CLASSIFICATION: USCS
	<u>P</u>				<u>Concrete</u>
	<u>P</u>		<u>ND</u>		<u>(S-SM) CLAYEY TO SILTY SAND</u> yellowish brown, mostly med to fine sand, little silt, few clay, med dense
	<u>0</u>				
	<u>-</u>		<u>ND</u>		
	<u>-</u>				
5.0	<u>0.0</u>		<u>ND</u>	<u>B-35-6</u>	<u>similar to above</u>
	<u>0.1</u>				
	<u>0.1</u>		<u>ND</u>		
	<u>0.5</u>				
10.0	<u>0.0</u>		<u>ND</u>	<u>B-35-11</u>	<u>(SM) SILTY SAND</u> reddish yellow, mostly med sand, little silt, moist, med dense
	<u>0.4</u>				
	<u>0</u>		<u>ND</u>		
	<u>0</u>		<u>ND</u>	<u>B-35-14</u>	<u>similar to above</u>
	<u>0</u>				
15.0	<u>0</u>		<u>NP</u>		<u>(SM) SALTY SAND</u> reddish yellow, mostly med to fine sand, some silt, few clay, trace mica, wet, med dense. Streaks of dk brown (s-sm) through this interval appears to be weathered zones of mica.
	<u>0</u>				
	<u>0</u>				
	<u>0</u>				
20.0	<u>0</u>				

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. B-36
PAGE 1 OF

PROJECT: Source Investigation
CLIENT: Shakespeare - Philips
CONTRACTOR: AE Drilling
EQUIPMENT: Geogacube 662D

PROJECT NO: 60313382
LOCATION: Pole Winder Bldg
ELEVATION:
NORTHING:
EASTING:
DATE START: 5/20/14
DATE FINISH: 11
DRILLER: G. Winborn
OVERSIGHT: S. Ross

GROUNDWATER DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	COLOR SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	SOIL CLASSIFICATION: USCS
	0		ND		(SP) Poorly Graded Sand yellowish red, mostly med to fine sand, few silt, dry, med dense	
	0		ND		(SM) SILTY SAND Brown to gray brown, mostly med to fine sand, some silt, dense	
	0		ND		(SC) CLAYEY SAND yellowish red to pale yellow, mostly med to fine sand, little clay, dense dry	
5.0	0		ND		(SM) SILTY SAND Pale yellow to mostly reddish yellow, mostly med to fine sand, some silt, med dense	
	0		ND		(SC) CLAYEY SAND Red to reddish yellow to yellowish brown, mostly med to fine sand, some clay, dense, moist	
	0		ND			
	0		ND			
10.0	0.4		ND	B-36-11	(SM-SC) SILTY TO CLAYEY SAND pale red to yellowish red to pale yellow (mottled), mostly med to fine sand, little clay, med dense moist	
	0		ND			
	0		ND	B-36-14		
15.0	0.2		ND		(SM) SILTY SAND Pale brown to yellowish red, mostly med to fine sand, med dense, wet	
	0.5					
	0.1					
	0					
20.0	0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. B-45
PAGE 1 OF 2

PROJECT: Source Investigation
CLIENT: Shakerpeacer Newberry
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 6610

PROJECT NO: 60319372.5
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 6/5/14
DATE FINISH: _____
DRILLER: _____
OVERSIGHT: _____

GROUNDWATER			DRILLING INFORMATION			
DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM	
			HOLE DIA.	CASING DIA.	CASING TYPE	
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE	
			SAMPLING	HAMMER WT	HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color SAMPLE NUMBER <u>Tee</u>	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					USCS	REMARKS
0.2					(SP) POORLY GRADED SAND	
0.1			ND		(SC) CLAYEY SAND red to pink red, mostly red to fine sand, little clay, few silt, dense	
0.1			ND		Crushed gravel	
5.0			ND		(ML-CL) SILTY CLAY brown to reddish brown to red (mottled), mostly silt, little to fair clay, few fine sand, dry, dense	
			ND	B-45-6 (1436)		
			ND		similar to above	
10.0			< 0.5	B-45-70 (1440)	(SP) POORLY GRADED SAND, gray to grayish brown, mostly red to fine sand, few silt, med. dense, moist	
			< 0.5	B-45-72 (1447)	(ML-CL) SILTY CLAY olive gray, mostly silt, some clay, few to trace fine sand, moist	
15.0			ND		(ML) SILT WITH SAND yellowish orange to pale yellow, mottled, mostly silt, some to little fine sand, trace mica, moist, med. stiff	
			0.6			
			0.1		(SM) SILTY SAND light brown to light reddish brown with small areas of dark brown or white, mostly silt, occasional little fine sand, moist to wet, med dense	
20.0			0.5			

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			

Test Boring Report

BORING NO. TMW-19
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Phillips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 60318382
LOCATION: _____
ELEVATION: _____
DATE START: 5/19/14
DATE FINISH: 5/19/14
DRILLER: G. W. N. Bourn
PREPARED BY: C. Suddeth

GROUND WATER		DEPTH TO:		CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE	
					SIZE ID	
					HAMMER WT	
					HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					SANDY SILT (ML), Fill, brown to red, medium stiff, little fine sand, no chemical odor, damp
50					SAND (SW), Fill, fine to medium grained, well graded, no chemical odor, plant material, wet
					SANDY SILT (ML), Saprolite, tan to red, medium stiff, little fine sand, no chemical odor, damp
					SANDY SILT (ML), Saprolite, tan, medium stiff to soft, little fine sand, no chemical odor, damp
100					moist at 11 ft
					SILT (ML), Saprolite, tan to gray, soft, few fine sand, ^{granitic texture} no chemical odor, saturated.
15.0					SANDY SILT (ML), Saprolite, as above.
20.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	15-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					SANDY SILT (ML), Saprolite, tan to gray, soft to medium stiff, little fine sand, granitic texture, no chemical odor
0.0					
2.8					
25.0				SANDY SILT (ML), Saprolite, tan to gray, medium stiff to stiff, little fine sand, granitic texture, no chemical odor, wet to saturated (less visible water in core)	
2.7					
1.1					
30.0					Boring terminated at 28 ft Screen 17-27
40.0					
45.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	15-30	VERY STIFF			TRACE <5%
		31+	HARD			



Test Boring Report

BORING NO. TMW-20
PAGE 1 OF 2PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: GeofrobePROJECT NO: 60318382
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 5/19/14
DATE FINISH: 5/19/14
DRILLER: G. Winbourn
OVERSIGHT: C. Sudeath**GROUNDWATER****DRILLING INFORMATION**

DATE	HRS AFTER COMP	WATER	DRIL. METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color per SAMPLE NUMBER PER PCE (ppm)	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
SOIL CLASSIFICATION: USCS					

5.0	0.0		0.0	TMW-20-2 1735	SANDY SILT (ML), Fill, red, medium stiff, little fine sand, no chemical odor, damp.
	0.0		0.0		
	0.0		0.0		
	0.0		0.0		
	0.0		0.0		
10.0	0.0		0.0	TMW-20-8 1745	SAND (SW) Fill, gray, fine to medium grained, well graded, damp
	0.0		0.0		
	0.0		0.0		
	0.0		0.0		
	0.0		0.0		
15.0	0.4		0.0	TMW-20-14 1755	SANDY SILT (ML) Fill, red, stiff, little fine sand, no chemical odor, damp
	0.0		0.0		
	0.0		0.0		
	0.0		0.0		
	0.0		0.0		
20.0	0.0		0.0		SANDY SILT (ML), Saprolite, tan to gray, medium stiff, few fine sand, granitic texture, moist
	0.0		0.0		
	0.0		0.0		
	0.0		0.0		
	0.0		0.0		

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS			
20.0					SANDY SILT (ML), Saprolite, Bn, soft, little fine sand, no chemical odor, saturated. Boring terminated at 25 ft. Screen 15-25			
25.0								
30.0								
35.0								
40.0								
45.0								
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS		NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100%	WD	WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45%	NE	NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-3	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25%	UR	NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10%	NR	NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%		
		31+	HARD					



Test Boring Report

BORING NO. TMW-21
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 60318382
LOCATION: Main Bldg
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 5/21/14
DATE FINISH: 5/21/14
DRILLER: G. Winbourn
OVERSIGHT: C. Suddeth

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS AFTER COMP	WATER	DRILL METHOD		CASING INSTALL		TEMP / PERM	
			HOLE DIA.		CASING DIA.		CASING TYPE	
			TOTAL DEPTH		CASING DEPTH		GROUT TYPE	
			SAMPLING		HAMMER WT		HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	DRILL METHOD	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION	REMARKS
					CONCRETE	
	0.6				SAND (SW), Fill, tan, fine to medium grained, well graded, damp.	
	0.3				SANDY SILT (ML), Fill, red, stiff, little fine sand, damp.	
	1.0		ND			
	0.7		ND			
	0.6		ND	TMW-21-1520		
	0.6		ND			
	0.6		ND		SAND (SW), Fill, brown, fine to medium grained, well graded, damp.	
	0.8		ND		SANDY SILT (ML), Fill, red, stiff, little fine sand, damp.	
	1.1					
	3.2		2.0	TMW-21-1530	NO SAND (SW), Fill, brown, fine to medium grained, well graded, moist.	
	1.6					
	1.2		ND		SANDY SILT (ML), tan light, tan, medium stiff, little fine sand, wet at 15 ft.	
	1.8		ND			
	0.8		ND	TMW-21-1540		
	3.4					
	2.5		1.0			
	3.6					
	5.6		1.5			
	2.9					
	3.8					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-3	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			



Test Boring Report

BORING NO. TMW-22
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Phillips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 60318382
LOCATION: Main Bldg
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 5/21/14
DATE FINISH: 5/21/14
DRILLER: G. Winbourn
OVERSIGHT: C. Suddeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			<u>DPT</u>	<u>Y</u>	<u>Perm</u>
			HOLE DIA	CASING DIA	CASING TYPE
			<u>2"</u>	<u>1"</u>	<u>PTC</u>
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			<u>25</u>		
			SAMPLING	HAMMER WT	HAMMER FALL
			<u>None</u>		

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	PCF SAMPLE NUMBER (PPM)	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					SOIL CLASSIFICATION: USCS
	<u>0.2</u>				<u>CONCRETE</u>
	<u>0.3</u>		<u>ND</u>		<u>SANDY SILT (ML) Fill, red, medium stiff, little fine sand, damp.</u>
	<u>0.4</u>		<u>ND</u>		
	<u>0.3</u>		<u>ND</u>		
	<u>0.2</u>		<u>ND</u>	<u>TMW-22-4</u>	
	<u>0.4</u>		<u>ND</u>	<u>1800</u>	
	<u>0.6</u>		<u>ND</u>		
	<u>2.4</u>		<u>0.2</u>		<u>SAND (SW), Fill, brown, fine to medium grained, well graded, damp.</u>
	<u>1.1</u>		<u>0.2</u>	<u>TMW-22-8</u>	
	<u>1.1</u>		<u>ND</u>	<u>1805</u>	<u>SANDY SILT (ML), Fill, tan to red, stiff, little fine sand, damp.</u>
	<u>0.8</u>		<u>ND</u>		
	<u>5.3</u>		<u>0.2</u>		<u>SANDY SILT (ML), Saprolite, tan to red, medium stiff, granitic texture, little fine sand, moist.</u>
	<u>4.3</u>		<u>0.2</u>	<u>TMW-22-12</u>	
	<u>2.1</u>		<u>0.1</u>	<u>1810</u>	
	<u>2.3</u>		<u>0.1</u>		<u>WET at 15 ft.</u>
	<u>2.6</u>		<u>0.5</u>		<u>SANDY SILT (ML), Saprolite, tan, soft, little fine sand, granitic texture, saturated.</u>
	<u>2.9</u>		<u>0.5</u>		
	<u>3.6</u>		<u>1.75</u>		
	<u>2.8</u>		<u>1.75</u>		
	<u>2.8</u>		<u>1.75</u>		

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

TMW 23

AECOM **Test Boring Report** BORING NO. B-31/TMW-23
 PAGE 1 OF 2

PROJECT: Source Investigation - Shakespear PROJECT NO: 60317882.5
 CLIENT: Philip LOCATION: Thin Bldg
 CONTRACTOR: AE Drilling ELEVATION: _____
 EQUIPMENT: Geoprobe 6620 NORTHING: _____

GROUNDWATER			DRILLING INFORMATION			
DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM	
			HOLE DIA.	CASING DIA.	CASING TYPE	
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE	
			SAMPLING	HAMMER WT	HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION: USCS	REMARKS
2.6			Te		(SC) POORLY GRADED SAND, yellowish sand, mostly med sand, trace silt	
2.8			ND		(SC-SM) CLAYEY TO SILTY SAND reddish brown, Red to reddish brown, mostly fine sand, little silt, little to few clay, dry, dense	
0			ND	B-31-4	(SA) POORLY GRADED SAND gray to grayish brown, Mostly med to fine sand, few silt, trace organics (black, etc).	
0.7			ND		(SM) SILTY SAND yellowish brown to pale brown, mostly fine sand, little silt, few clay, dry	
1.0			ND			
1.1			ND			
0.0						
3.1			ND	B-31-10	similar to above except increasing clay, dense	
1.0						
0.6			ND		similar to above - transitioning w/ more clay	
0.5			0.2			
0.8			ND	B-31-14	(SC-SM) CLAYEY TO SILTY SAND Red to yellowish brown (mottled), mostly fine sand, little clay, little silt, dense, dry	
0.9			0.2		similar to above except less clay (sm), pale brown to pale reddish brown	
3.7			ND		(SM) SILTY SAND yellowish red to pale brown to pale red, mostly fine sand, little silt, moist, med dense, trace mica	
0.7					Increasing moisture w/ depth	
0.0						
0.0						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			

Test Boring Report

BORING NO. TMW24
PAGE 1 OF 2

PROJECT: Source Investigation
CLIENT: Shakespeare Newberry
CONTRACTOR: A/E Drilling
EQUIPMENT: Geoprobe 66

PROJECT NO: 60318382
LOCATION: Pole Under Bldg
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 5/20/14
DATE FINISH: _____
DRILLER: G. Nimbauer
OVERSIGHT: S. Perry

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS AFTER COMP	WATER	DRILL METHOD	HOLE DIA.	CASING INSTALL	TEMP / PERM		
			<u>PPT</u>	<u>3"</u>	<u>PVC</u>	<u>Pcm</u>		

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	
	0				<u>(ML) silt with SAND, pale red to pale brown, mostly silt, 1/2 fine sand, trace clay, trace mica</u>	
	0				<u>(SP) poorly GRADED SAND</u> dk brown to gray, mostly fine sand (thin - 1-2" layer)	
	0				<u>(SC) CLAYEY SAND</u> brown to pale red to reddish brown, mostly med to fine sand, little clay, few silt, dense, dry	
	0				<u>(SC-SM) CLAYEY TO SILTY SAND</u> brown to pale brown, mostly fine sand, 1/2 clay, few silt, dense, dry	
5	0				<u>(SC) CLAYEY SAND</u> pale red red to pale yellow (mottled) mostly med to fine sand, some clay, few silt, dense, dry	
	0				similar to above	
	0				<u>(SM) SILTY SAND</u> pale red to pale yellow, mostly fine sand, some silt, trace clay, most med dense similar to above except trace cs sand,	
10	0				similar to above, mottled color variations suggest relict rock structure	
	0					
	0					
	0					
	0					
15	0					
	0					
	0					
	0					
	0					
20	0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. 744W-25
8-22
 PAGE 1 OF 2

PROJECT: Source Investigation
 CLIENT: Shakespeare-Newberry
 CONTRACTOR: GE Drilling
 EQUIPMENT: Geoprobe 6610

PROJECT NO: 60318382
 LOCATION: Pole Windsor
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 5/27/14
 DATE FINISH: 11
 DRILLER: G. Nimbouren
 OVERSIGHT: Schroy

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	HOLE DIA.	CASING INSTALL	TEMP / PERM
			DPT	3"	1	Perm
			TOTAL DEPTH	25		CASING TYPE 1"
			SAMPLING			GROUT TYPE
					HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	SOIL CLASSIFICATION:
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	0		Te		(SC) CLAYEY SAND yellowish red, mostly med to fine sand, little clay, so few silt, dry, dense similar to above except (SC-SM) CLAYEY TO SILTY SAND	
	0				(SP-SM) POORLY GRADED SAND WITH SILT Brown to pale brown, mostly med to fine sand, few silt, trace clay, dry	
	0				(SC) CLAYEY SAND yellowish red to reddish brown (mottled), mostly med to fine sand, some clay, few silt, dry, dense	
5	0				(SM) SILTY CLAY (SC-SM) STIFF CLAYEY TO SILTY SAND similar to above except more silt.	
	0.1					
	0.2					
	0.0					
10	0.5					
	0.0					
	0.0					
	0				(SM) SILTY SAND reddish yellow, mostly med to fine sand (white + dark gray med grains), some reddish yellow silt, med dense, moist	
15	0				similar to above except pale brown to reddish yellow silt + fine sands with white to gray ss sand.	
	0				similar to above w/ alternating layers of pale brown, yellowish brown, reddish yellow silts w/ white to trace mica, med dense, wet	
20	0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. TMW-26
PAGE 1 OF 2PROJECT: Source Investigation
CLIENT: Shalespear - Newberry
CONTRACTOR: AB Drilling
EQUIPMENT: Copco 4620PROJECT NO: 60318382
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 5/30/14
DATE FINISH: 11
DRILLER: Christopher M. Conroy
OVERSIGHT: S. Day

GROUNDWATER DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	HOLE DIA.	CASING INSTALL	CASING DIA.	TEMP / PERM	CASING TYPE

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					SOIL CLASSIFICATION: USCS
	0.0				<u>TOPSOIL - Black, mostly med sand, trace silt</u>
	0				<u>(SC) CLAYEY SAND</u> red to reddish brown, mostly med to fine sand, some clay little clay, few silt, dry dense, dry
	0				
	0				
	0				
5.0	0.0				similar to above except moist, med. dense
	0.0				
	0.0				similar to above except dense
	2.0				<u>(SP) POORLY GRADED SAND</u> , Grayish brown, mostly med to fine sand, trace silt, trace organics
	1.7				
10.0	0.5				<u>(SM) SILTY SAND</u> pale brown, mostly med to fine sand, some silt, trace clay, moist
	0				
	0				<u>(CL) LEAN CLAY</u> , red to yellowish red to pale yellow mostly clay, few fine sand, few silt, dry, stiff
	0				
	0				
15.0	0.1				<u>(SC) CLAYEY SAND</u> pale brown to light gray, mostly med to fine sand, little clay few silt
	0.0				similar to above, except moist
	0.0				
	0.0				<u>(SM) SILTY SAND</u> , pale brown to with intermittent zones of pale green gray, pale red, reddish brown, mostly fine sand, some silty, few clay, moist to wet, med dense
	0.0				
20.0	0.0				

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			



Test Boring Report

BORING NO. TMW-27
PAGE 1 OF 2

PROJECT: Source Investigation
CLIENT: Shakespeare Nursery
CONTRACTOR: AE Drilling
EQUIPMENT: Cooprobe 66

PROJECT NO: 60318382
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 5/30/14
DATE FINISH: '
DRILLER: M. Gonzalez
OVERSIGHT: S Ross

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	ORGANIC VAPOR SCREENING (PPM)	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					SOIL CLASSIFICATION: USCS
	0.1				TOPSOIL
	0.1				(SC) CLAYEY SAND reddish brown, mostly med to fine sand, some clay , few little clay, few silt, dry, dense
	0.1				
	0.0				
5.0	0.1				similar to above except moist
	0.0				
	0.0				similar to above except some clay
	0.6				
	0.0				(SP) POORLY GRADED SAND pale brown to gray brown, mostly med sand, few silt, med med. dense, dry
10.0	0.0				(SM) SILTY SAND pale brown to grayish brown (moist) mostly med to fine sand, some silt, few clay, moist, med dense
	0				similar to above except pale yellowish brown
	0				(SC-SM) CLAYEY TO SILTY SAND pale brown to pale yellow (moist), mostly fine med to fine sand, little clay, little silt, med dense, moist
15.0	0				
	0				
	0				(SM) SILTY SAND pale yellowish brown to pale yellow, mostly med to fine sand, some silt, few clay, med dense, moist
	0				
20.0	0				

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			



Test Boring Report

BORING NO. TMW-28
 PAGE 1 OF 2

PROJECT: Source Investigation
 CLIENT: Stokesware Newbury
 CONTRACTOR: A.E. Drilling
 EQUIPMENT: Geoprobe 6620

PROJECT NO: 60318382
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 5/30/14
 DATE FINISH: 11
 DRILLER: _____
 OVERSIGHT: S. Ross

GROUNDWATER			DRILLING INFORMATION			
DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM	
			HOLE DIA.	CASING DIA.	CASING TYPE	
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE	
			SAMPLING	HAMMER WT	HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS SOIL CLASSIFICATION:
5	0				<p><u>Gravel</u> (SP-SM) <u>POORLY GRADED SAND WITH SILT</u> yellowish brown, mostly med to fine sand, some at little silt, few to trace clay <u>med (MC) CLAYEY SILT</u> pale red to yellowish red to yellowish brown (mottled), mostly silt, at few clay, few med to fine sand, dense, dry</p> <p>similar to above except moist below 9.0'</p>
	0				
	0				
	0.1				
	0				
	0				
	0.2				
	0				
10	0.2				<p>(SM) <u>SILTY SAND</u> reddish yellow to pale brown, mostly med to fine sand, some silt, few clay, moist, med dense (pale red to reddish yellow speckled / gray / gray speckled matrix w/ gray speckled appearance)</p> <p>similar to above</p> <p>similar to above except wet</p>
	0				
	0				
	0				
	0				
	0				
15	0.1				<p>similar to above</p> <p>similar to above</p>
	0				
	0				
	0				
	0				
20	0.1				<p>similar to above</p>

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			

Test Boring Report

BORING NO. Trw-29

PAGE 1 OF 1

PROJECT: Source Investigation
 CLIENT: Philips - Neuberger
 CONTRACTOR: AE Drilling
 EQUIPMENT: Geoprobe 6610

PROJECT NO: 60318382
 LOCATION: Main Bldg
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 6/2/2014
 DATE FINISH: 6/3/2014
 DRILLER: C. Winbourne
 OVERSIGHT: SCZ

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS AFTER COMP	WATER	DRILL METHOD	HOLE DIA.	CASING INSTALL	TEMP / PERM	SAMPLING	
			<u>OPT</u>	<u>3.1</u>				
					CASING DIA. <u>1"</u>	CASING TYPE <u>PC</u>		
					CASING DEPTH	GROUT TYPE		
					HAMMER WT	HAMMER FALL		

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLER NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	
	<u>0</u>				<p><u>(SC)</u> <u>CLAYEY SAND</u> Brown to pale reddish to yellowish red, mostly med to fine sand, dry, dense similar to above except yellowish brown to reddish yellow (mottled)</p> <p><u>(ML-CL)</u> <u>SILTY CLAY</u> yellowish red to gray (mottled). (SC) mostly silt, some clay, little med (white to gray) sand, dense clay</p> <hr/> <p><u>(ML-SM)</u> <u>SILT TO SILTY SAND</u> red to yellowish red, mostly med to fine sand, some silt, dense, dry</p> <hr/> <p><u>(SM)</u> <u>SALTY SAND</u> yellowish red to yellow, mostly med to fine sand, little silt, med dense, net</p> <hr/> <p>Boring Refusal @ 13.0</p>	
	<u>0</u>		<u>ND</u>			
	<u>0</u>		<u>ND</u>			
	<u>0</u>		<u>ND</u>			
	<u>0</u>		<u>ND</u>			
<u>5</u>	<u>0</u>		<u>ND</u>			
	<u>0.1</u>		<u>ND</u>			
	<u>0.0</u>		<u>ND</u>			
	<u>0.2</u>		<u>ND</u>			
	<u>0.4</u>		<u>ND</u>			
<u>10</u>	<u>0.2</u>		<u>ND</u>			
	<u>0.1</u>		<u>ND</u>			
	<u>0.5</u>		<u>ND</u>			
	<u>0.0</u>		<u>ND</u>			

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			

TMW-30



Test Boring Report

BORING NO. B-38/TMW
PAGE 1 OF 2

PROJECT: Source Investigation
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 6610

PROJECT NO: 60318332
LOCATION: Main Bldg
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 6/3/2013
DATE FINISH: 11
DRILLER: M. Bonzke
OVERSIGHT: SRoss

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	SOIL CLASSIFICATION:
5	9.1		Red		(SP) Poorly Graded sand reddish yellow, mostly med to fine sand, med dense, dry	
	0.3			0.2	(SC) CLAYEY SAND reddish yellow to reddish brown, mostly med to fine sand, little clay, dense, dry	
	0.1					
	0.0			1.0	B-38-4 (SP) POORLY GRADED SAND gray to pale brown, mostly med to fine sand, trace silt, dry	
	-					
	0.1			0.2	(ML) SILT WITH SAND yellowish brown to pale red, mostly silt some med to fine sand, with some silt trace clay	
	0.4					
	0.0			1.0	B-38-8 similar to above	
	0.1					
10	0.1			0.5		
	1.7				(SM) SILTY SAND pale red to pale brown to pale yellow, mostly med sandy some silt, few clay, trace mica, moist	
	1.1			1.0	B-38-12	
	0.4					
	1.1			1.5		
15	0.4					
	0.4			1.25	similar to above except wet	
	0.5					
	0.3					
	0.3				(SP-sm) Poorly Graded sand with silt yellowish brown to pale brown, mostly med to fine sand, few cs sandy, trace mica, few silt, trace clay, moist, med dense	
20	0.9			ND		

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

TMW 31

AECOM

Test Boring Report

BORING NO. B-39/SMU
PAGE 1 OF 1

PROJECT: Source Investigation - Newberry
CLIENT: Shakespeare - Phillips
CONTRACTOR: A.E. Drilling
EQUIPMENT: Geoprobe 6610

PROJECT NO: 60817382
LOCATION: Main Bldg
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 6/3/14
DATE FINISH: _____
DRILLER: M. Coneske
OVERSIGHT: S. Ross

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS SOIL CLASSIFICATION:
	1.6		700		<u>(SC) CLAYEY SAND</u> reddish yellow mostly med to fine sand, some little clay, few silt, clay, dense
	2.7		ND		
	1.0				
	2.3		ND	B-39-4 (1540)	similar to above
5	0.1		ND	B-39-6 (1545)	
	1.3		ND	B-39-8 (1550)	
	0.1				<u>(SC-SM) CLAYEY TO SILTY SAND</u> pale brown to pale yellow, mostly fine sandy, some clay, some silt, moist, med dense,
	0.5		ND		
	0.0		ND		
10	0.0		ND		<u>(SP-SM) POORLY GRADED SAND WITH SILT</u> brown to pink brown, mostly with occasional dark brown areas (1-2 cm in diameter), mostly med to fine sand, little silt, trace clay, trace mica, too moist, dense
	0.0		ND		
	0.5		ND		
	0.0		ND		similar to above except color scheme has a speckled appearance with brown matrix and occasional small (1-2 cm) areas of white or dark brown, trace cs gtz sand, trace mica, wet, dense
	0.0		ND		
	0.0		ND		
	0.0		ND		
	0.0		ND		
15	0.0		ND		
	0.4				
20					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

TMU 32



Test Boring Report

BORING NO. B-43/TMU-32
PAGE 1 OF 2

PROJECT: Source Investigation
CLIENT: Phillips - Newberry, SC
CONTRACTOR: AED Drilling
EQUIPMENT: Geoprobe 6620

PROJECT NO: 60318382
LOCATION: Pole Under Blvd
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 6/8/14
DATE FINISH: 11
DRILLER: M. Gonzalez
OVERSIGHT: 96299

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SoLo SAMPLE NUMBER Tec	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
0.1					(SM) SILTY SAND pole red to yellowish red, mostly med to fine sand, little silt, med. dense, dry
0.9			ND	8-43-2 (1025)	
0			NO		
0			NO		
5					(MLCL) SILTY CLAY pole brown to reddish brown, mostly silt, little clay, trace sand, dry, stiff
0.5			NO		
0.0			NO		
0.0			NO		
10					(SC) CLAYEY SAND pole red to yellowish red, (moist) mostly med to fine sand, little clay, dense, moist
0.0			NO	8-43-10 (1043)	
0.0			NO		
0.0			NO		
15					(SM) SILTY SAND pole red to yellowish red to yellowish brown, mostly med to fine sand, few silt, wet
0.0			NO	8-43-14 (1048)	
0.0			NO		
0.0			NO		

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

TMW 33

AECOM

Test Boring Report

BORING NO. B-44 / 744
PAGE 1 OF 2

PROJECT: Source Investigation
CLIENT: ~~AE Drilling~~ Shakespeare - Newberry
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe 6610

PROJECT NO: 60317372.5
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 6/5/14
DATE FINISH: 11
DRILLER: M. Gonzalez
OVERSIGHT: S. Ross

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Color SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
0	0		122		Concrete
0			ND		(SP) POORLY GRADED SAND Yellowish brown to yellowish red, mostly med to fine sand, trace silt
0.3					
0.1			ND		
5					(SM) SILTY SAND Pale brown to reddish brown, mostly med to fine sand, some silt, med dense, moist
0			ND		
0			< 0.5		
0			B-44-8 (1225)		
10					(SC) CLAYEY SAND pale red to yellowish red, mostly med to fine sand, little clay, med dense, moist
0			ND		
0			ND		
0			40.5		
15					similar to above
0			B-44-14 (1230)		
0.3			ND		
0.2			ND		
20					(SM) SILTY SAND Pale red to reddish brown, mostly med to fine sand, few silt, wet
0.2					
0.1					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

EI SOIL BORING LOGS

Test Boring Report

BORING NO. TMW-42
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Philips
CONTRACTOR: A.E. Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 6084308
LOCATION: Dickert Prop
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 7/23/14
DATE FINISH: 7/23/14
DRILLER: B. Burnette
OVERSIGHT: C. Suddeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	HOLE DIA.	CASING INSTALL	TEMP / PERM

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE
	0.0			
	0.0			
5.0				
	0.0			
	0.0			
10.0				
	0.0			
	0.0			
15.0				
	0.2			
	0.4			
20.0				

FIELD CLASSIFICATION AND REMARKS
SOIL CLASSIFICATION: USCS

SANDY SILT (ML), Saprolite, red to yellow, stiff, little fine sand, damp.

SANDY SILT (ML), Saprolite, brownish yellow, medium stiff, little fine sand, moist.

SANDY SILT (ML), Saprolite, brownish yellow, soft, little fine sand, saturated.

SANDY SILT (ML), Saprolite, pale yellow, soft, little fine sand, granitic texture, saturated.

SANDY SILT (ML), Saprolite, pale yellow to gray, soft, little fine to medium sand, granitic texture, saturated.

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-3	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

Test Boring Report

BORING NO. TMW-43
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO. 60828303
LOCATION: Dickert Proj
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 7/23/14
DATE FINISH: 7/23/14
DRILLER: B. Burnette
OVERSIGHT: C. Suddeth

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS AFTER COMP	WATER	DRILL METHOD		CASING INSTALL		TEMP / PERM	
			HOLE DIA.		CASING DIA.		CASING TYPE	
			TOTAL DEPTH		CASING DEPTH		GROUT TYPE	
			SAMPLING		HAMMER WT		HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION: USCS	
5.0	0.0				SILT (SM), Saprolite, light yellowish brown, fine grained, little silt, well graded, damp	
	0.0				SANDY SILT (ML), Saprolite, reddish yellow to very pale brown, few clay, stiff, little fine to medium sand, damp	
	0.0				SILT (ML), Saprolite, red to brownish yellow, medium stiff, few fine sand, damp	
	0.0				moist at 10 ft.	
	0.0				SANDY SILT (ML), Saprolite, brownish yellow to gray, soft, little fine sand, granitic texture, saturated,	
15.0	0.0				SANDY SILT (ML), Saprolite, yellow to gray, as above.	
	0.0					
	0.0					
20.0	0.0					
	0.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS		
20.0	0.3				SANDY SILT (ML), Saprolite, yellow to gray, soft, little fine sand, granitic texture, saturated.		
	0.5						
25.0	1.0				SANDY SILT (ML), Saprolite, as above		
	0.6						
	0.2						
	0.4						
	1.2						
	0.4						
	0.5						
	0.3						
	0.3						
	0.3						
30.0					Boring terminated at 35 ft.		
35.0					Boring terminated at 35 ft.		
40.0					Boring terminated at 35 ft.		
45.0					Boring terminated at 35 ft.		

BLOWS/FT	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	18-30	VERY STIFF		TRACE <5%	
		3'+	HARD			



Test Boring Report

BORING NO. TMW-34
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Phillips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 60928308
LOCATION: Ringer Prop
ELEVATION: _____
DATE START: 7/18/14
DATE FINISH: 7/18/14
DRILLER: _____
PREPARED BY: C. Suddeth

GROUND WATER		DEPTH TO:			CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOT'OM OF CASING	BOTTOM OF HOLE	TYPE		
					SIZE ID		
					HAMMER WT		
					HAMMER FALL		

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
0.0					SANDY SILT (ML), brown to tan, fine stiff, little fine to medium sand, damp
0.0					SANDY SILT (ML), tan to gray, as above
0.0					SILT (ML), light gray to white, stiff, trace clay, damp.
0.0					SANDY SILT (ML), tan to gray, mottled, little fine sand, stiff, damp. ^{Saprolite}
0.0					SANDY SILT (ML), ^{Saprolite} tan, medium stiff, little fine to medium sand saturated at 12 ft.
0.0					SILTY SAND AND GRAVEL (SM), ^{Saprolite or DIKE} fine grained to gravel, well graded, saturated.
0.0					SILTY SAND (SM), ^{Saprolite} tan, fine to medium, little silt, saturated.
0.0					SILTY SAND AND GRAVEL (SM), ^{Saprolite} tan to brown, fine to gravel, well graded, saturated

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					^{granulite} SILTY SAND (SM), tan to gray, fine to medium grained, little silt, well graded, saturated, occasional granitic texture.
25.0					
30.0					
35.0					
40.0					
45.0					
					Boring terminated at 28 ft.

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			
					TRACE <5%	



Test Boring Report

BORING NO. TMW-35
 PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
 CLIENT: Philips
 CONTRACTOR: AE Drilling
 EQUIPMENT: Geoprobe

PROJECT NO: ~~603754~~
 LOCATION: 60423308
 ELEVATION: Bottom of hole
 NORTHING: _____
 EASTING: _____
 DATE START: 7/18/14
 DATE FINISH: 7/18/14
 DRILLER: _____
 OVERSIGHT: C. S. Smith

GROUNDWATER			DRILLING INFORMATION		
DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION: USCS	
					SANDY SILT (ML), light brown, stiff, little fine sand, damp	
0.0						
					SANDY SILT (ML), ^{saprolite} tan to red, stiff, little fine to medium sand, stiff, damp	
0.0						
5.0					SANDY SILT (ML), ^{saprolite} tan to red, stiff, little fine sand, moist	
0.0						
					Wet at 9 ft.	
10.0					SANDY SILT (ML), ^{saprolite} tan to brown, medium stiff, some sand, saturated.	
0.0						
					SANDY SILT (ML), ^{saprolite} tan to brown, little fine sand, saturated	
15.0						
0.0						
20.0						
0.0						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

Test Boring Report

BORING NO. TMW-36
PAGE 1 OF

PROJECT: Composite Shakespeare ~~Structure~~ Structures Newberry
CLIENT: Philips
CONTRACTOR: AZ Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 603283008
LOCATION: Ringer Proj
ELEVATION:
NORTHING:
EASTING:
DATE START: 7/21/14
DATE FINISH: 7/21/14
DRILLER: G. Winborn
OVERSIGHT: C. Swideth

GROUNDWATER			DRILLING INFORMATION						
DATE	HRS AFTER COMP	WATER	DRILL METHOD			CASING INSTALL		TEMP / PERM	
			HOLE DIA.			CASING DIA.		CASING TYPE	
			TOTAL DEPTH			CASING DEPTH		GROUT TYPE	
			SAMPLING			HAMMER WT		HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					SOIL CLASSIFICATION: USCS
	0.0				SILTY SAND (SM), pale yellow, fine grained, some silt, well graded, dry
					SILTY SAND (SM), as above except olive yellow
5.0	0.0				SANDY SILT (ML), pale yellow to red, little fine to medium sand, stiff, damp
					SANDY SILT (ML), ^{saprolite} yellowish red, medium stiff, little fine sand, damp to moist
10.0	0.0				SANDY SILT (ML), saprolite, reddish yellow, medium stiff, little fine sand, moist to wet.
					SANDY SILT (ML), saprolite, yellow, as above, saturated
15.0	0.0				SANDY SILT (ML), saprolite, yellow, medium stiff, little fine sand, saturated.
20.0	0.0				

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			



Test Boring Report

BORING NO. TMW-37
PAGE 1 OF 2PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: GeoprobePROJECT NO: 60828303
LOCATION: Boazman Proj
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 7/21/14
DATE FINISH: 7/21/14
DRILLER: G. Winbourn
OVERSIGHT: C. Suddeth

GROUNDWATER DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					SOIL CLASSIFICATION: USCS
					SANDY SILT (ML), brownish yellow, stiff, little fine sand, dry
	0.0				SILTY SAND (SM), strong brown to light brownish gray, fine grained, little silt, few clay, well graded, damp
5.0					CLAYEY SILT (MH), yellowish brown, stiff, little clay, damp
	0.0				CLAY (CL), gray, stiff, hard, slightly plastic, moist
					SAND (SW), strong brown to light yellowish brown, fine to medium grained, few silt, well graded, wet
10.0					SILTY SAND (SM), ^{supralite} yellow, fine grained, some silt, well graded, saturated.
	0.0				
					SANDY SILT (ML), ^{supralite} yellow to pale yellow, soft, little fine sand, saturated
15.0					
	0.0				
20.0					
	0.0				

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

Test Boring Report

BORING NO. TMW-38
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 60323302
LOCATION: Barrington Proj
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 7/21/14
DATE FINISH: 7/21/14
DRILLER: G. Winburn
OVERSIGHT: C. Suddeth

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS AFTER COMP	WATER	DRILL METHOD		CASING INSTALL		TEMP / PERM	
			HOLE DIA		CASING DIA		CASING TYPE	
			TOTAL DEPTH		CASING DEPTH		GROUT TYPE	
			SAMPLING		HAMMER WT		HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION: USCS	
					SILTY SAND (SM), light yellowish brown, fine grained, little silt, well graded, dry.	
	0.0				SANDY SILT (ML), yellowish brown, stiff, little fine sand, damp.	
5.0					SANDY SILT (ML), light gray, stiff, little fine sand, few clay, moist.	
	0.0				SANDY SILT (ML), strong brown to gray, saprolite, medium stiff, little fine sand, saturated.	
10.0					SANDY SILT (ML), saprolite, yellowish brown, little fine sand, soft, saturated.	
	0.0					
	0.1					
15.0						
	0.0				SILTY SAND (SM), saprolite, reddish yellow, fine to medium grained, little silt, well graded, saprolite.	
20.0						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-9	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. TMW-39
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Philos
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 60328308
LOCATION: Ringer Loop
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 7/21/14
DATE FINISH: 7/22/14
DRILLER: B. Burnette
OVERSIGHT: C. Suddeth

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD		CASING INSTALL	TEMP / PERM
			HOLE DIA.		CASING DIA.	CASING TYPE
			TOTAL DEPTH		CASING DEPTH	GROUT TYPE
			SAMPLING		HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE
0.0				
5.0				
10.0				
15.0				
20.0				

FIELD CLASSIFICATION AND REMARKS

SOIL CLASSIFICATION: USCS

SILTY SAND (SM), yellow, fine grained, well graded, little silt, damp.

SILTY SAND (SM), as above except pale yellow.

SILTY SAND (SM), brownish yellow to light gray, fine to medium grained, little silt, few clay, well graded, wet

Drilling refusal at 13 ft

Push Geoprobe screen-point sampler to refusal at 21 ft, and open screen 17-21 ft.

No lithologic samples 13-21 ft.

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31-	HARD			

3rd Benzman location from Hwy

AECOM

Test Boring Report

BORING NO TMW-40
PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
CLIENT: Philips
CONTRACTOR: AE Drilling
EQUIPMENT: Geoprobe

PROJECT NO: 60323308
LOCATION: Benzman Prop
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 7/22/14
DATE FINISH: 7/22/14
DRILLER: B. Burnette
OVERSIGHT: C. Suddeth

GROUNDWATER DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	CASING INSTALL	TEMP / PERM
			HOLE DIA	CASING DIA	CASING TYPE
			TOTAL DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					SOIL CLASSIFICATION: USCS
					SILTY SAND (SM), yellow, fine grained, little silt, well graded, dry
	0.0				SANDY SILT (ML), red, Saprolite, stiff, little fine to medium sand, dry.
5.0					
	0.0				SANDY SILT (ML), Saprolite, reddish yellow, stiff, little fine sand, damp.
	0.0				
10.0					
	0.0				SANDY SILT (ML), Saprolite, brownish yellow, medium stiff to soft, little fine sand, moist
	0.0				Wet at 14.5 ft,
					SANDY SILT (ML), brownish yellow, Saprolite, soft, little fine sand, saturated
	0.0				
20.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

Test Boring Report

BORING NO. TMW-41

PAGE 1 OF 2

PROJECT: Shakespeare Composite Structures - Newberry
 CLIENT: Phillips
 CONTRACTOR: AE Drilling
 EQUIPMENT: Geoprobe

PROJECT NO: 60323308
 LOCATION: Conc. un. Proj
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 7/21/14
 DATE FINISH: 7/22/14
 DRILLER: Bi Burnette
 OVERSIGHT: C. Suddeth

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS AFTER COMP	WATER	DRILL METHOD		CASING INSTALL		TEMP / PERM	
			HOLE DIA		CASING DIA		CASING TYPE	
			TOTAL DEPTH		CASING DEPTH		GROUT TYPE	
			SAMPLING		HAMMER WT		HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					SAND(SW), light olive brown, fine to medium grained, few silt, saturated.
	0.0				
					SILTY SAND(SM), yellowish brown, fine to medium grained, little silt, few clay, well graded, moist
	0.0				
5.0					SILTY SAND(SM), pale yellow to yellowish brown, fine to medium grained, well graded, damp.
	0.0				
					SILTY SAND(SM), as above with granitic texture (saprolite)
	0.0				
10.0					SILTY SAND(SM), saprolite, brownish yellow to light yellowish brown, fine grained, little silt, well graded, saturated
	0.2				
					Drilling refusal at 15 ft
	0.0				Push Geoprobe screen - point sampler to refusal at 23 ft and open screen 18-22 ft. No lithologic samples 15-23 ft
15.0					
20.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					<u>SILTY SAND (SM)</u> Loose, moist, olive yellow (6/6 2.5), mostly medium to fine sand, some silt, non-plastic, relic structure (granite) - Saprolite -
		2		23.5'	<u>SILTY SAND (SM)</u> Loose, light yellowish Brown (6/4 2.5), mostly fine to medium sand, some silt, moist, non-plastic, relic structure (granite). - Saprolite -
		4			
25.0	66.7	5			
		8			
		3		28.5'	AS ABOVE
		7			Very dense, light yellowish Brown (6/4 2.5), mostly fine to medium sand, some silt, moist, non-plastic, relic structure (granite) - Saprolite -
30.0	8.0	50/4'			
	ft/min	0.04	0920		Auger Refusal @ 30.3' Bgs. - Saprolite -
		0.07	0932		-- Head drilling --
		0.04	1209		<u>SILTY SAND (SM)</u> SAME AS ABOVE
			1216		
		0.25	1220		softens up @ 32.8' Bgs. - - - -
			1330		
		1.0			
35.0		1.0			
		1.0			
		1.0			
		0.5	1336	38.3'	
			1341		
		1.0			- still soft -
40.0		1.0			
		1.0			
		1.0			
		1.0			
		1.0	1346	43.3'	
			1424		
		0.5			
45.0		0.2			- some chatter -

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	Rate ft/min		SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
		SAMPLER BLOWS PER INCHES	Dr. No. SAMPLE NUMBER Time		
45.0		0.2			
		1			- Softens up again -
		0.5			
		0.5	1435	48.3'	
		0.5	1439		
		0.5			
50.0		1			
		0.5			
		1			
		1	1446	53.3'	
		0.5	1451		
		0.5			
55.0		0.3			- little chatter -
		0.25			
		0.5			- softens up again -
		0.5	1504	58.3'	
		0.5	1508		
		0.5			
60.0		0.16			- some chatter -
		0.16			
		0.5			- softens some -
		0.5	1527	63.3'	
		0.5	1532		
		0.5			
65.0		0.25			- chatter; - Driller calls top of Rock -
		0.2			
		0.16			
		0.16	1556	68.3'	End of Rocksocket @ 68.3' 18.3' - Install 6" PVC surface casing - Continue with NR coring from 68' to drill out rock portion of well.
70.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			



Client/Site: Shakespeare Corporate Structures
 Project Number: 60328308.4
 Site Location: Newberry, SC
 Coordinates: _____ Elevation: _____
 Drilling Method: Trecone Mud Rotary / Coring w/ NR rods
 Sample Type(s): cores

Boring ID: MW-3D

Monitoring Well Installed: ✓
 Screened Interval: _____
 Depth of Boring: 89.5 (NG)
 Water Level: _____

Weather: Sunny, ~95°
 Drilling Contractor: A.P. Drilling
 Logged By: T. Watson
 Ground Elevation: _____

Date: 7/26/14 - 8/6/14
 Time: _____

Depth (ft)	Sample Depth (ft)	Recovery + Headspace (ppm) (# / %)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID
1	54.5' - 59.5'	0.72' / 14%		Very dense, yellow-brown, f-m sand, tr. c-sand & silt, relic structures (weathered granite), - Saprolite thin fractures w/ Fe staining	
2					
3					
4	59.5' - 64.5'	1.35' / 27%		As above, few fractures w/ weathered staining - Saprolite	
5					
6	64.5' - 74.4'	3.55' / 35%		As above to ~72'. Less weathering below 72', white-olive brown, competent rock (granitic) zones w/ weathered zones (saprolite), steep angled fractures (~60-70°)	
7					
8					
9	74.4' - 79.7'	2.71' / 54%		As above w/ weathered zones of saprolite at bottom 0.7', pink clay (?) in thin fractures, highly fractured	
10					
11					
12	79.7' - 84.5'	2.89' / 60%		Weathered/fractured granite as above, very dense/hard, yellow-olive brown-white, steep to vertical fractures, vertical fractures appear less weathered, highly weathered at bottom 0.75' (saprolite), very dense & crumbly, few clay/silt filled fractures	
13					
14					
15					
16	84.5' - 89.5'	4.45' / 89%		As above to ~85.45'. - Becomes lt grey/white/pink Granite (Newberry) - less fracturing, very thin angled, fine grained, fractures @ ~85.92, 86.24, 86.5, 86.94, 87.6, 88.15 + 88.35, some weathering @ 88.35-88.46, pink clay (?) in some v. thin fractures.	
17					
18			(~45-60°)		
19					
20					

NOTES: NR cored to 89.5' - Recovered out w/ 5-7/8" bit mud rotary and 4" casing set to 89.5'

Date	Time	Depth to groundwater while drilling

Checked by _____ Date: _____

ENSR AECOM	Client: <i>Shakespeare Composite Structures</i>		BORING ID: <i>MW-3D</i>
	Project Number:		
	Site Location: <i>Newberry, SC</i>		
	Drilling Method: <i>Coring w/ H2 rods/bit</i>		
Logged By: <i>T. Watson</i>		Sheet:	

Weather: <i>Sunny, hot ~90°+</i>	Date Started: <i>8/5/14</i>	Screened Interval: <i>Open Ho</i>
Drilling Contractor: <i>AK Drilling</i>	Date Finished: <i>8/6/14</i>	Depth of Boring: <i>105' CHR</i>
		Water Level:

Depth (feet)	Sample Depth	Blows per 6"	Recovery (%)	Time P-I-Dr (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Well Details	Groundwater Depth (Ft.)
89.0'	90.0'	NA	~1' / 100%	1420		*- cored through 4" inner PVC casing + 16" grout shoe Gray-white Granite, fine-gr matrix, pink coloring in thin fractures (clay?) *- changing out bit		
90.0'	94.0'	NA	~3.2' / 80%	1510		90'-93.3' Gray-yellow/brown Granite, fine-gr matrix, moderate fracturing, steep angled fractures (~30-50°), pink filled fractures w/ some dark weathering		
94.0'	95.0'	NA	~1.0' / 100%	1527		93.3'-96.4' olive-brown, med-coarse gr. Granite, crystalline to granular texture, moderate - highly weathered in fractured zones, dark weathered staining, angled (~50-60°)		
95.0'	100.0'	NA	~5' / 100%	1548		96.4'-100' Lt gray/bluish, fine-med gr texture Granite, moderate - heavy fracturing to ~100', angled (~45-70°), dark stained weathered zone ~97', primarily pink weathered fractures (clay filled?) from 98'-100'		
100'	105'	NA	~5' / 100%	1603		100-105' Lt gray/bluish, fine-gr texture Granite, fractures at ~101', 102.5', 103.9 + 104.7', bottom 0.3' highly fractured w/ dark weathered staining.		

NOTES: HQ cored to 89.5'; 4" PVC casing set at 88.5' HQ cored to 105'; open hole 88.5-105'	Date	Time	Depth to groundwater while drilling

Checked by _____ Date: _____

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					
			1322	23.5'	<u>POORLY GRAINED SAND (SP)</u> Loose, ^{wet} Pale Brown (6/3 1040), mostly med + coarse sand, few silt/clay, non-plastic, - Alluvium fill?
	0.0	3	1704		
25.0		4			<u>CLAYEY SAND (SC)</u> moist, Pale yellow (7/4 2.54), mostly fine sand, little clay, few silt, slightly plastic, relic structure (Schist?) - Saprolite -
		6			
		7			
			1405	28.5'	<u>SILTY SAND (SM)</u> Med Dense, moist, Pale yellow (7/4 54), mostly fine to medium sand, some silt, non-plastic, relic structures (Granite) - Saprolite -
		4	1734		
30.0	90.0	5			
		8			
		12			
			1438	33.5'	<u>SAME AS ABOVE</u> Dense, moist, Pale yellow (7/4 54), mostly fine to medium sand, some silt, non-plastic, relic structures (Granite) - Saprolite -
		19	1451		
35.0	63.1	15			
		20			
		23			
			1456	38.5'	<u>SAME AS ABOVE</u> Dense, light yellowish Brown (6/4 2.54), mostly fine to medium sands, some silt, non-plastic, relic structure (Granite) - Saprolite -
		18	1508		
40.0	11.7	19			
		24			
		29			
			1515	43.5'	<u>SAME AS ABOVE</u> very dense, moist, light yellowish Brown (6/4 2.54) mostly fine to med. sand, some silt, non-plastic, relic structures (Granite) - Saprolite -
		26	1523		
		36			
45.0	0.0	46			
		47			

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
45.0					
			1533 1623	48.5'	
	0.0	59/5"	1623		<u>SILTY SAND (SM)</u> Very dense, moist, light yellowish brown (6/4 2.57), mostly fine to med. sand, little silt, non-plastic, relic structure (granite) - Sepiolite
50.0					
	0.0	59/5"	1632 1646	53.5'	<u>SAME AS ABOVE</u> Very dense, moist, light yellowish brown (6/4 2.57), mostly medium to fine sand, little silt, trace clay, non-plastic, relic structure (granite) - Sepiolite
55.0					
	0.0	41 50/2"	1655 1709	58.5'	<u>SAME AS ABOVE</u> Very dense, moist, light yellowish brown (6/4 2.57), mostly fine to medium sand, few coarse sand, little to few silt, non-plastic, relic structure (granite) - Sepiolite
60.0					
	0.0	59/1/2"	1716 1138	63.5'	<u>SAME AS ABOVE</u> Very dense, moist, light yellowish brown (6/4 2.57) mostly fine to medium sand, trace coarse sand, little to few silt, non-plastic, relic structure (granite) - Sepiolite
65.0					
	0.16 0.11 0.35 0.35				
			1158 1349	68.6'	Surface casing set @ 68.6' Bgs.
70.0					

- Continue w/ 10" Tri-Cone latter bit for Richsfact
- Continue with NR Coring method for Rest portion of Well

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS		
70.0					<u>NO RECOVERY (NR)</u>		
					<i>Soft - soft drilling -</i>		
75.0			1348 1357	74.5'			
80.0			1401 1401	79.5'	<u>NO RECOVERY (NR)</u>		
85.0			1405	84.5'			
90.0			1420 1420	89.5'	<p><i>- Hard zone @ ~ 89' Bgs - small piece of weathered granite in core barrel</i> <u>Granite</u> <i>Hard, moderately severe weathering, light Olive Brown (5/6 2.54), fine to medium grain, granite, pink clay bottom of core piece. (8/9 2.54) - Newbery Granite</i></p>		
					<u>NO RECOVERY (NR)</u>		
					<u>Granite</u>		
95.0			1425	94.5'	<p><i>Hard, moderately severe weathered, light Olive yellow (8/6 2.54), fine to medium grain, Granite, fractured, iron staining throughout. R.R.D = 28%</i> <i>- Newbery Granite -</i></p>		
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING	
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED	
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ	
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY	
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%		
		31+	HARD				



Test Boring Report

BORING NO. MW-60
PAGE 5 OF 6

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
95.0			1451	96.3'	<p><u>Granite</u> Hard, very slight weathering, light bluish gray (S/L GLE), fine grained, Granite, fractures @ 98.8', 99.6', 97.8', + 97.6' Bgs, very close, smooth, pink staining, steep angles, RRB = 87% - Newberry Granite -</p> <p>- Driller calls TOR @ 96' Bgs -</p>
			1459		
			1506	99.6'	
100.					End of NR run @ 99.6' Bgs
105.					
110.					
115.					
120.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE	<5%
		31+	HARD			

8/7/14

60328308 Task 4

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
100					started HQ Run with light gray fine grained (qtz, plg feldspar) dk brown (biotite) (Newbury granite) no fracturing Final Horizontal fractures along zones of higher - higher percentage of biotite @ 100.6', 100.7', 100.9', 101.1' Step ^{angle} horizontal fracture @ 104.6' - along what appears to be pink layer of microcline feldspar RQD - 74% core run ends @ 105.2'
105					TD - 105.2'
110					
115					
120					
125					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			



Test Boring Report

BORING NO. MW-7D
PAGE 1 OF 5

PROJECT: Shakespeare Newberry
CLIENT: Shakespeare Composite Structures
CONTRACTOR: AE Drilling Services
EQUIPMENT: CME 750

PROJECT NO: 60328308.9
LOCATION: _____
ELEVATION: _____
DATE START: 7/23/14
DATE FINISH: _____
DRILLER: Abel McGuire
PREPARED BY: M. Law

GROUND WATER			DEPTH TO:		CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE		
					PVC	SS	
					SIZE ID	6"	2"
					HAMMER WT	-	140 lb
					HAMMER FALL	-	30"

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Drilling SAMPLE NUMBER Time	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
			0850	0	<p>- Pilot hole drilled w/ Mud rotary methods taking split-spoons @ 5' intervals below -25' Bgs to refusal.</p> <p>- 10" tri-cone roller bit used to ream out pilot hole and drill out socket for surface casing @ 67' Bgs</p> <p>- See MW-7 log for lithology from 0-25' Bgs.</p> <p>- 5 7/8" roller bit used to ream out pilot hole for 4" casing. Casing set at 88.5 ft bgs. (TD)</p>
5.0			0852 0904	3.9'	
			0905 0907	8.9'	
10.0			0908 0911	13.9'	
			0912 0914	18.9'	
15.0					
20.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	Drilling Sample Number Time	SAMPLER DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
20.0						
			0915	23.9'		
			0922			
25.0	28.7	4 3 3 5			<u>SILTY SAND (Sm)</u> Loose, wet, light yellowish brown (G/2 2.57), mostly fine sand, some silt, few med sand, non-plastic, relic structure (granite). - Saprinite -	
			0924	28.9'		
			0931			
30.0	14.1	4 5 8 11			<u>SAME AS ABOVE</u> medium dense, moist, light yellowish brown (G/2 2.57), mostly fine sand, some silt, few medium sand, non-plastic, relic structures (granite) - Saprinite -	
			0933	33.9'		
35.0	0.0	8 10 14 14			<u>SAME AS ABOVE</u> Med. Dense, moist, light yellowish brown (G/2 2.57), mostly fine sand, some silt, non-plastic, relic structure (granite) - Saprinite -	
40.0	81.3	8 12 15 14	0959	38.9'	<u>SAME AS ABOVE</u> Med. dense, moist, olive yellow (G/2 2.57), mostly fine sand, some silt, non-plastic, relic structure (granite), - Saprinite -	
			1901	43.9'		
			1012			
45.0	0.0	18 27 34			<u>SAME AS ABOVE</u> very dense, dry, light brownish gray (G/2 2.57), mostly fine sand, some little silt, few mica, non-plastic, relic structures (granite) - Saprinite - (Muscovite)	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	drilling SAMPLER NUMBER Time s	DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
45.0		40			<u>SILTY SAND (SM)</u> Very dense, dry, light brownish gray (6/2 2.54), mostly fine sand, little silt, few mica (muscovite), non-plastic, relic structures (granite) - Saprolite -
			1019	48.9'	
		35	1030		<u>SILTY SAND (SM)</u> Very dense, dry, light yellowish brown (6/3 2.54), mostly fine sand, little silt, trace clay , trace mica (muscovite), non-plastic, relic structures (granite). - Saprolite -
50.0	0.0	50/5"			
			1035	53.9'	
			1047		<u>SAME AS ABOVE</u> Very dense, dry, light brownish gray (6/2 2.54), mostly fine sand, little silt, trace clay, trace mica (muscovite), non-plastic, relic structures (granite) - Saprolite -
55.0	0.0	50/4"			
			1056	58.9'	
			1111		<u>SAME AS ABOVE</u> Very dense, dry, light brownish gray (6/2 2.54), mostly fine sand, little silt, trace clay, trace mica (muscovite), non-plastic, relic structure (granite), - Saprolite -
60.0					
		0.5 ft/min			- Harder drilling @ 62' Bgs -
		0.5 ft/min			
			1120	63.8'	
		50/0"			<u>NO RECOVERY (NR)</u> - Routine w/ 10" bit to overream hole and drill out socket -
65.0					
		0.25 ft/min			- Meeting water @ 65.5' or 66' Bgs -
		0.25 ft/min			
		0.20 ft/min			- Set surface casing @ 67' Bgs; socket from 64' to 67' Bgs
70.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

TW

RECOVERY		DEPTH IN FEET	ORGANIC VAPOR SCREENING (EPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
	(4) (0%)	70.0			1445		- cored pilot hole from bottom of 6" outer casing to bedrock, resting (7/30) 5-7/8" - Pilot hole reamed w/ 5-7/8" roller bit to 88.5' + 4" casing installed. (7/31/14) - (Set casing below fracture at 87.5')
				NA		74.8'	
	(1.3') (26%)	75.0					Recovery: 1.3' / 26% (sample appears to be partial core in) Tan-yellow/brown-pink, f-m sand, some silt, med. dense - dense, relic structures, thin lenses of pink clay, mica - Saprolite
				NA		79.9'	
	(1.3') (26%)	80.0					Recovery: 4.68' / 94% (no recovery at dep 0.32') Lt. gray/blue (pink), fine grained granite, steep (75-80°) angular fracture at ~87.5', pink surface in fracture appears to be from clay intrusion (no pink coloring on "fresh" breaks from coring) - Contact w/ overlying saprolite evident at ~84.7'
				NA	1530	84.9'	
	(4.68') (94%)	85.0					* - 4" inner casing set to 88.5'; core through 4" casing + front shoe w/ HQ rods/bit. (front at surface of core) Lt. gray/bluish, fine-gr. fractured granite, massive
					1550	89.4'	
	(1.6') (100%)	90.0					
					2/6/14	88.4'	
		92.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			

Aecom

Client: SHAKESPEARIE

Project Number: 60328308.4

Site Location: NEWBERRY, SC

Coordinates:

Elevation:

Sheet: 1 of 4

Drilling Method: MUD ROTARY

Monitoring Well Installed: Y

Sample Type(s): SPLIT SPOON

Boring Diameter: 4"

Screened Interval:

Weather: Clear

Logged By: JAL

Date/Time Started: 7/22/14 10:45

Depth of Boring: 95.4

Drilling Contractor: AE Drilling

Ground Elevation:

Date/Time Finished: 8/6/14

Water Level:

Depth (ft)	Geologic sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth (ft.)
1							PILET HOLE DRILLED WITH MUD ROTARY METHODS. SPLIT SPOON SAMPLES COLLECTED AT 5' INTERVALS BELOW 25' BGS.		
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by

Date:

Aecom

Client: <u>SUNBELLE PEACE</u>	BORING ID: <u>BDW-1</u>
Project Number: <u>60388308-4</u>	
Site Location: <u>Norberry SC</u>	Sheet: <u>2 of 4</u>
Coordinates:	Elevation:
Drilling Method:	Monitoring Well Installed: <u>Y</u>
Sample Type(s): <u>SPLIT SPIN</u>	Boring Diameter:
Weather: <u>Sunny</u>	Logged By: <u>JAL</u>
Drilling Contractor: <u>AE Drilling</u>	Date/Time Started: <u>7/27/14</u>
	Date/Time Finished: <u>8/6/14</u>
	Depth of Boring: <u>95.4</u>
	Water Level:

Depth (ft)	Geologic sample ID	Sample Depth (ft)	Blows per ft	Recovery (inches)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth (ft.)
2.1									
2.2									
2.3									
2.4			10				YELLOWISH BROWN, MOSTLY MED SAND, FEW SILT, TRACE CLAY, LOOSE, WET.		
2.5			11						
2.6			10						
2.7			16						
2.8									
2.9			4				SAA YELLOWISH BROWN, MOSTLY MED SAND, YELLOWISH BROWN, MOSTLY FINE TO MED SAND, LITTLE SILT, TRACE CLAY, LOOSE, MOIST.		
3.0			11						
3.1			15						
3.2			17				WHITE TO GRAY, MOSTLY MED SAND, FEW SILT.		
3.3									
3.4									
3.5			15				WHITE TO ORANGE (MOTT), MOSTLY FINE TO MED SAND, SOME SILT, V. DENSE, DRY.		
3.6			40						
3.7			50/4						
3.8									
3.9									
4.0							SAA, BUT YELLOWISH BROWN.		

NOTES:	Date	Time	Depth to groundwater while drilling

Checked by _____ Date: _____

Aecom

Client: SUNBELT
 Project Number: 60328309..4
 Site Location: Newberry, SC
 Coordinates: _____ Elevation: _____
 Drilling Method: _____
 Sample Type(s): SPLIT SP Boring Diameter: 6"

BORING ID: RDW-1

Sheet: 3 of 4
 Monitoring Well Installed: Y

Screened Interval: _____
 Depth of Boring: 95.4

Weather: Sunny Logged By: SAL Date/Time Started: 7/23/14
 Drilling Contractor: AE Drilling Ground Elevation: _____ Date/Time Finished: 8/6/14 Water Level: _____

Depth (ft)	Geologic sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth (ft.)
41									
42									
43									
44									
45			<u>50/3/4</u>				<u>SAA</u>		
46							<u>DRILL DOWN WITH 4" BALLER GWC BIT TO BEDROCK</u>		
47							<u>HEAD ~ 1' PER MIN 30 SEC</u>		
48							↓		
49									
50									
51									
52									
53									
54									
55									
56									
57									
58									
59									
60									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: _____ Date: _____

Aecom

Client: <u>SHAKESPEARE</u>	BORING ID: <u>RDU-1</u>	
Project Number: <u>60828308</u>		
Site Location: <u>Newberry, SC</u>		
Coordinates:	Elevation:	Sheet: <u>4 of 4</u>
Drilling Method:		Monitoring Well Installed: <u>Y</u>
Sample Type(s): <u>SILT SPUD</u>	Boring Diameter: <u>6"</u>	Screened Interval:
Weather: <u>Sunny</u>	Logged By: <u>JAL</u>	Date/Time Started: <u>7/29/14</u>
Drilling Contractor: <u>AE Drilling</u>	Ground Elevation:	Date/Time Finished: <u>8/6/14</u>
		Depth of Boring: <u>95.7</u>
		Water Level:

Depth (ft)	Geologic sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth (ft.)
61							SOFT FILL ABOUT 1' @ 61' - 62'		
62									
63							YELLOWISH BROWN, MOSTLY FINE SAND, FEW SILT, TRACE MICA, U. DENSE, DRY		
64			<u>50/1</u>						
65									
66									
67									
68									
69									
70									
71									
72									
73									
74									
75									
76									
77									
78									
79									
80									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by:

Date:

ENSR | AECOM

Client: *Shakespeare Composite Structures*
 Project Number:
 Site Location: *Newberry, SC*
 Drilling Method: *Coring using NQ rods / bit*
 Logged By: *T. Watson*

BORING ID: *RDW-1*
 Sheet:
 Screened Interval: *Open H*
 Depth of Boring: *95.4'*
 Water Level:

Weather: *Sunny, hot 90°F*
 Drilling Contractor: *A.E. Drilling*
 Date Started: *8/5/14 Coring*
 Date Finished: *8/6/14*

Depth (feet)	Sample Depth	Blows per 6"	Recovery (%)	P-I-D (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Well Details	Groundwater Depth (Ft.)
73.9 - 74.7	NA	~1'	100%	~1600		<p>Top 0.2' f-m gr, very hard syenite grades to orange-brown-tan, med-gr Gneiss (?), dark mica, heavy fracturing, lateral, ~74.2' - 75.9' Grey-pink-black (biotite?) Granite, coarse texture, crystalline, 75.9' - 77.8' becomes pink-grey, fine-gr texture, minimal v. thin fractures (Granite) 77.8' - 78.7' ^{80.7'} grades back to grey-pink-black, coarse Granite, f-gr zone w/ weathered fracture ~ 79.7' + 78.7' - grades to grey-blk, fine-gr textured Granite, slightly weathered fractures ~ 78.2', 78.4', 80.9', 81.2', 89.4' - grades back to grey-black, pink, med-gr. texture, Granite, no fractures</p>		
74.7 - 79.7	NA	5.0'	100%	1609				
79.7 - 84.7	NA	~4.9'	98%	1626				
84.7 - 89.7	NA	15'	100%	1030		<p>84.7-85.8 - grey/blk, fine textured Granite 85.8-86.9 - pink-grey-black, m-c textured Granite 86.9-88.4' - grey/blk, fine textured Granite, thin pink fracture vein ~ 86' 88.4'-89.7 - pink-grey-black, m-c textured Granite</p>		
89.7 - 94.7	NA	5'	100%	1032		<p>89.7-90' fine-gr. Granite w/ angular fracture + pink coloring 90'-91.7 med-c textured Granite, tan/pink-grey-blk 91.7-94.7 fine-gr. Granite, lt grey-blk, pink coloring + thin filled fracture ~ 93.2' (possibly water bearing @ 89.7+93.4'), possibly changing to quartzite to 95.4'</p>		
95.4'								

NOTES: *6" outer casing to ~73.3'; Coring w/ NQ rods/bit to 95.4'*

Date	Time	Depth to groundwater while drilling

Checked by: _____ Date: _____



Client/Site: *Shakespeare Composite Structures*
 Project Number: *60327308-4*
 Site Location: *Newberry, SC*
 Coordinates: _____ Elevation: _____
 Drilling Method: *Mud Rotary*
 Sample Type(s): *Split-Spoon*

Boring ID: *RDW-2*

Monitoring Well Installed: _____

Screened Interval: _____

Weather: *Mostly Sunny, in 75°*

Logged By: *T. Watson*

Date: *7/30/14*

Depth of Boring: _____

Drilling Contractor: *ALC. Drilling (A. McGowan)*

Ground Elevation: _____

Time: _____

Water Level: _____

Depth (ft)	Bore Counts Sample Depth (ft) per 6"	Penetration Headspace (ft/min)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID
22.7-24.7 (1105)	5, 6 8, 10	1.6/80%	SR	- Split-spoons starting at 22.7' - Drilling pilot hole for under-casing using a 4" roller bit Tan-olive-brown, f-sand, little silt, med dense, moist, few relic structures, tr. clay (casted fracture / mssw/ weathered staining)	
27.7-29.7 (1120)	15, 31 35, 32	1.7/85%	SM	Tan-olive-brown, f-sand, little med-sand, some little silt, moist, few relic structures, becomes more dense w/ depth	
32.7-34.7 (1141)	25, 50/6"	0.8/80%	SM	Tan-olive-brown, f-sand, little m-sand, some silt, moist, dense, relic structures (fracture lines) w/ weathering stains	
37.7-39.7 (1307)	50/4"	0.3/ -	SM	As above	
2.7-14.7 (1320)	50/3"	0.2/ -	SM	As above, still signs of relic structure, very dense (drilling approx 0.8-1.0' ft/min) - Saprolite	
17.7-19.7 (1335)	50/2"	NR	-	No Recovery	
52.7-54.7 (1348)	NR	NR	-	No Recovery	

NOTES: - Stopped split-spoon samples at 54.7'; continued drilling to 69.8' (driller calls top of rock).
 - Boring reamed out with 6" bit and 6" casing set to 71.3'

Date	Time	Depth to groundwater while drilling

Checked by _____ Date: _____

ENSR | AECOM

Client: *Shakespeare Composite Structures*
 Project Number:
 Site Location: *Newberry, SC*
 Drilling Method: *Mud Rotary / Core*
 Logged By: *T. Watton*

BORING ID:
RDW-2
 Sheet: *2 of 2*
 Screened Interval:
 Depth of Boring:
 Water Level:

Weather: *Overcast - sunny, ~85°*
 Drilling Contractor: *A.S. Drilling*

Date Started: *Core started 8/4/14 w/ HQ*
 Date Finished:

Depth (feet)	Sample Depth	Blows per 6"	Recovery (%)	(#)	P. I. D. (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Well Details	Groundwater Depth (Ft.)
	71.3	NA		15'	69%		<p>lt gray white ^{white}-pink matrix, fine-gr. Granite, highly fractured, pink ^{weathered} matrix ^{massive} fractures (clay intrusion?), - Newberry Granite or Quartzite (?)</p> <p>~75.3 - matrix changes to pink Granite, med-gr. ^{angular} massive weathering in fractures, qtz grains, (pink granite ^{quartzite} granite)</p> <p>- As above, weathered staining in angular fractures, highly fractured at bottom - 6" (pink quartzite?) crystalline + granular texture</p> <p>- Lt. gray-white Granite, less fractures in top 1.4'</p> <p>~80.3' fractured zone w/ weathered staining, more granular,</p> <p>~82-84.2' lt gray-white-pink Granite, angular fractures, then, w/ the pink weathering (clay matrix ^{filling}), ~30-60°</p> <p>~84.2-85.0' yellowish ^{olive} brown Granite w/ granular zones, vertical fracture w/ dark weathered staining w/ additional fractures</p> <p>- Boring terminated at 85.0'</p>		
	76.2	NA		1.9'					
	76.2	NA	84%						
	78.9			3.2'					
	78.9	NA	80%						
	85.0			4.9'					

2 core runs

654

NOTES: 6" core to 71.3'; core to 85' w/ HQ rods/bst.
 Open hole - 71' - 85'

Date	Time	Depth to groundwater while drilling

Checked by _____ Date: _____

PHASE I RI SOIL BORING LOGS

PROJECT: Expanded Investigation
CLIENT: Phillips
CONTRACTOR: AE Drilling
EQUIPMENT: Schram T-450

PROJECT NO: 6832830P
LOCATION: Norbeck, SC
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 11/13/14
DATE FINISH: _____
DRILLER: _____
OVERSIGHT: S. Ross

GROUNDWATER			DRILLING INFORMATION			
DATE	HRS	WATER	METHOD		CASING	TEMP / PERM
			HOLE DIA.		CASING DIA.	CASING TYPE
			DEPTH		CASING DEPTH	GROUT TYPE
			SAMPLING		HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION	USCS
					(SC-SM) silty sand	
5.0					(SP) poorly graded sand	
10.0					(SC) CLAYEY SAND	
15.0						
20.0					(SM)-SI) SILTY TO CLAYEY SAND	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS				
20.0					<i>(SC-2M) CLAYEY TO SILTY SAND</i>				
25.0					<i>similar to above</i>				
30.0					<i>similar to above</i>				
35.0					<i>similar to above</i>				
40.0					<i>similar to above</i>				
45.0					<i>similar to above</i>				

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.		DESCRIPTIONS		NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY	50-100%	WD	WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME	30-45%	NE	NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE	15-25%	UR	NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW	5-10%	NR	NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE	<5%		
		31+	HARD						

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	Mitsubishi Pilot BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
45.0					<p>Unconsolidated (SM-SC) silty to clayey sand</p> <p>Encountered rock layer @ 54'</p> <p>Weathered granite</p> <p>cleared rock layer @ 57'</p> <p>Chatter @ 64.0'</p> <p>More Chatter Drilling @ 2"/min</p>
46.0					
47.0					
48.0					
49.0					
50.0					
51.0					
52.0					
53.0					
54.0					
55.0					
56.0					
57.0					
58.0					
59.0					
60.0					
61.0					
62.0					
63.0					
64.0					
65.0					
66.0					
67.0					
68.0					
69.0					
70.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID	DESCRIPTIONS	NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%	
		31+	HARD				

4/2/00



DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
70.0					Misc clutter 2'/min bit advancement
75.0					Encountered very difficult drilling - Top of conglomerate rock encountered at approx 75.0'
				76.4	
				78.1	Boring set @ approx 76.0 78.0'
80.0					Granite hard, moderately weathered, light olive yellow fine to med grain, very thin iron stained zone layers throughout upper 3 ft. Fracture @ 76.5, 77.5 (severely fractured zone)
				83.4	79' Grades to moderately weathered light gray, fewer thin iron stained layers; Fracture @ 80' / 82.5' (AQO > 90%)
85.0					Granite Hard, moderately weathered, light bluish gray, fine to very fine to med grain, fractured Fracture zones @ 84.5, 85.2, 85.8, 86.3, 87.5
				88.4	Boring Terminated @ 88.4'
90.0					
95.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE	<5%
		31+	HARD			



Soil Boring Log

BORING NO. MW-10
 PAGE 1 OF 2

PROJECT: Statespace Composition Structures
 CLIENT: Phillips
 CONTRACTOR: Terra Sonix
 EQUIPMENT: 150 Compact Crawler

PROJECT NO: 60328398
 LOCATION: Dickert property
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 8/24/15
 DATE FINISH: 8/24/15
 DRILLER: Adam Marshall
 OVERSIGHT: M. Law

GROUNDWATER			DRILLING INFORMATION						
DATE	HRS	WATER	METHOD	<u>Sonic</u>	CASING	<u>PVC</u>	TEMP / PERM	<u>Perm</u>	
			HOLE DIA.	<u>6"</u>	CASING DIA.	<u>2"</u>	CASING TYPE	<u>PVC</u>	
			DEPTH	<u>30'</u>	CASING DEPTH	<u>-</u>	GROUT TYPE	<u>chias</u>	
			SAMPLING	<u>Cont. 4"</u>	HAMMER WT	<u>-</u>	HAMMER FALL	<u>-</u>	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
5.0					<u>Clayey Silt (mh)</u> Dry to moist, Reddish yellow (6/10 7.5% _R), mostly s-s, some clay, trace sand + mica, slightly plastic, mottling clays	
10.0					<u>SILTY SAND (Sm)</u> moist, light yellowish brown (6/10 10% _R), mostly med-f sand, some silt, trace mica, non-plastic, -Residual-	
15.0					<u>SAME AS ABOVE</u> -grading to light brownish gray (6/10 10% _R), wetter, faint relic structures, -Saprolite / residual-	
20.0					<u>SAME AS ABOVE</u>	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Soil Boring Log

BORING NO. MW-11
 PAGE 1 OF 2

PROJECT: Shakespeare Composition Structures
 CLIENT: Philips
 CONTRACTOR: Terra Sonic
 EQUIPMENT: 150 Compact Crawler

PROJECT NO: 60328308
 LOCATION: Dickert property
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 8/4/15
 DATE FINISH: 8/4/15
 DRILLER: Adams Marshall
 OVERSIGHT: M. Lew

GROUNDWATER

DRILLING INFORMATION

DATE	HRS	WATER	METHOD	<u>Sonic</u>	CASING	<u>PVC</u>	TEMP/PERM	<u>Perm</u>
			HOLE DIA.	<u>~6</u>	CASING DIA.	<u>2"</u>	CASING TYPE	<u>PVC</u>
			DEPTH	<u>30</u>	CASING DEPTH	<u>-</u>	GROUT TYPE	<u>Chips</u>
			SAMPLING	<u>Cont.</u>	HAMMER WT	<u>-</u>	HAMMER FALL	<u>-</u>

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	SOIL CLASSIFICATION: USCS
					<u>POORLY Grd'd sand (SP)</u> <u>Dry, very pale brown (7/8 109R), mostly fine quartz sand, few silt, non-plastic</u>	
5.0					<u>Clayey Silt (ML)</u> <u>Dry to moist, reddish yellow (6/8 7.59R), mostly silt, some clay, trace sand, trace mica, slightly plastic, mottling clays</u>	
10.0					<u>SILTY SAND (SM)</u> <u>moist, light yellowish brown (6/4 109R), mostly med sand, little silt, non-plastic, faint relic structure - saprolite residual</u> <u>- 2" white (8/1 109R) Band @ 11' Bgs -</u>	
15.0					<u>- 4" Band of clayey sand (SC) @ 16' Bgs, white (8/1 109R) with black (2/1 109R) and pink (8/4 2.59R) spotting, mostly med sand, some clay, slightly plastic, trace mica</u>	
20.0					<u>SAME AS ABOVE</u> <u>stronger relic structure - Saprolite -</u>	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Soil Boring Log

BORING NO. MW-12
 PAGE 1 OF 2

PROJECT: Shakespeare Compositon Structures
 CLIENT: Philips
 CONTRACTOR: Terra Sonic
 EQUIPMENT: 150 Compact Crawler

PROJECT NO: 60328308
 LOCATION: Dickent Property
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 8/4/15
 DATE FINISH: 8/4/15
 DRILLER: Adam Marshall
 OVERSIGHT: M. Law

GROUNDWATER

DRILLING INFORMATION

DATE	HRS	WATER	METHOD	<u>Sonic</u>	CASING	<u>PVC</u>	TEMP/PERM	<u>Perm</u>
			HOLE DIA.	<u>6"</u>	CASING DIA.	<u>2"</u>	CASING TYPE	<u>PVC</u>
			DEPTH	<u>30</u>	CASING DEPTH	<u>30</u>	GROUT TYPE	<u>chys</u>
			SAMPLING	<u>cont. 4'</u>	HAMMER WT	<u>-</u>	HAMMER FALL	<u>-</u>

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	SOIL CLASSIFICATION:	USCS
					<u>POORLY Graded SAND (SP)</u> <u>Dry, very pale Brown (7/3 104R), mostly very fine sand, fine silt, non-plastic</u>		
5.0					<u>Clayey Silt (ML)</u> <u>Dry to moist, Reddish yellow (6/8 7.54R) grading to light yellowish Brown (6/4 104R), mostly silt, little clay, few sand, trace mica, slightly to non-plastic</u> <u>- micaceous clays -</u>		
10.0					<u>Silty SANDS (SM)</u> <u>moist, light yellowish Brown (6/4 104R), mostly med. sand, little silt, non-plastic</u>		
15.0					<u>SILT (ML)</u> <u>moist, Brown (5/4 7.54R), mostly silt, few clay, trace sand, micaceous, slightly plastic, velvety structure, Black spotting (2/1 104R)</u> <u>- Saprolite -</u>		
					<u>1' Band of silty Sand (SM) @ 16.5' Bgs, brownish yellow (6/6 104R) to coarse sand, little silt, trace mica - Saprolite -</u>		
20.0					<u>SILT (as ABOVE)</u> <u>wet, Brown (5/4 7.54R), mostly silt, micaceous (black) trace sand, few clays, Black spotting (2/1 104R)</u>		

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					<u>SILT (ML)</u> Wet to moist, Brown (5/4 7.54A), mostly silt, micaeas (biotite mica), trace sands, few clay, slight plastic, relic structure, Black (2/1 107A) spotting - Saprolite
25.0					1' Band of <u>Silty Sand (Sm)</u> @ 25' Bgs, Brownish yellow (6/6 104A), mostly coarse to med. sands, little silt, trace mica, non-plastic, relic structure - Saprolite -
30.0					<u>SILT (ML) (AS ABOVE)</u> Trace rock fragments of quartz & feldspar as veins @ 31' Bgs, 2mm in size.
35.0					End of Boring @ 32' Bgs
40.0					
45.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			



Soil Boring Log

BORING NO. MW-13
 PAGE 1 OF 2

PROJECT: Shakespeare Composition Structures
 CLIENT: Phillips
 CONTRACTOR: Terra Sonic
 EQUIPMENT: 150 Compact Crawler

PROJECT NO: 60325208
 LOCATION: Dickert property
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 8/4/15
 DATE FINISH: 8/4/15
 DRILLER: Alton Marshall
 OVERSIGHT: M. Law

GROUNDWATER

DRILLING INFORMATION

DATE	HRS	WATER	METHOD	<u>Sonic</u>	CASING	<u>PVC</u>	TEMP / PERM	<u>Perm</u>
			HOLE DIA.	<u>~6"</u>	CASING DIA.	<u>2"</u>	CASING TYPE	<u>PVC</u>
			DEPTH	<u>~25'</u>	CASING DEPTH	<u>-</u>	GROUT TYPE	<u>chgs</u>
			SAMPLING	<u>Conds</u>	<u>4"</u>	HAMMER WT	<u>-</u>	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
5.0					<p><u>SILTY SAND (Sm)</u> moist, Gray (S/1 7.54K), mostly fine sand, little silt, non-plastic, becoming mottled with pinkish gray (7/1 7.54L) clays @ 2'-2.5' Bgs</p>	
					<p><u>2" Dry Lean clay lenses @ 6' Bgs</u></p>	
					<p><u>SILTY SAND (Sm)</u> Dry, light gray (7/1 7.54R), mostly very fine sand, some silt, non-plastic</p>	
10.0					<p><u>SILTY SAND (Sm)</u> moist, light yellowish Brown (6/4 107B), mostly med sand, little silt, trace mica, non-plastic</p>	
					<p><u>SILTY SAND (Sm)</u> moist, Gray (S/1 7.54R), mostly fine sand, little silt, non-plastic</p>	
15.0					<p><u>SILTY SAND (Sm)</u> moist, Brownish yellow (6/6 107A), mostly med sand, little silt, trace to fine mica, few pink (6/4 2.57L) Feldspar Bands. Relic structure - Saprolite -</p>	
20.0						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS				
					BLOWS/FT.	DENSITY	NOTES		
20.0							<p><u>SILTY SAND (SM)</u> moist, Brownish yellow (6/8 104R), mostly med sand, little silt, few mica, few pink (6/4 2.54R) Feldspar Bands, with strong calc structure - Saprolite -</p>		
25.0							<p>End of Boring @ 25' Bgs</p>		
30.0									
35.0									
40.0									
45.0									
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS		NOTES		
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY	50-100%	WD	WHILE DRILLING	
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME	30-45%	NE	NOT ENCOUNTERED	
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE	15-25%	UR	NOT READ	
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW	5-10%	NR	NO RECOVERY	
50+	VERY DENSE	16-30	VERY STIFF		TRACE	<5%			
		31+	HARD						



Soil Boring Log

BORING NO. MW-14
 PAGE 1 OF 1

PROJECT: Shakespeare Commission Structures
 CLIENT: Philips
 CONTRACTOR: Terra Sonix
 EQUIPMENT: 150 Compact Crawler

PROJECT NO: 60328308
 LOCATION: Dickert property
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 8/5/15
 DATE FINISH: 8/5/15
 DRILLER: Adam Marshall
 OVERSIGHT: M. Lew

GROUNDWATER			DRILLING INFORMATION						
DATE	HRS	WATER	METHOD	HOLE DIA.	CASING	TEMP / PERM	CASING DIA.	CASING TYPE	
			<u>Sonic</u>	<u>~6"</u>			<u>2"</u>	<u>pvc</u>	
				DEPTH				GROUT TYPE	
				<u>20</u>				<u>Chypps</u>	
			SAMPLING		HAMMER WT	HAMMER FALL			
			<u>Cont</u>	<u>4"</u>					

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					<u>POORLY GRAINED SAND (SP)</u> moist, light gray (7/1 109A), mostly fine sand, few silt, non-plastic
5.0					<u>SILTY SAND (SM)</u> moist, yellowish brown (5/6 109A), mostly fine sand, little silt, trace mica, non-plastic. very faint structure - Saprolite -
10.0					<u>SILTY SAND (SM)</u> moist, light gray (6/1 109A), mostly med. fine sand, little silt, non-plastic
15.0					<u>Granite</u> Soft to Hard. Slight to severely weathered, very fractured core, RRD = 10%, medium grain, rough, open, - wet zone better bearing fracture @ ~15' Bgs -
20.0					<u>SAME AS ABOVE</u> - PWR ZONE, softer, yellowish brown 5/6 109A) 15'-20' Bgs
					<u>End of Boring @ 20' Bgs</u>

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Soil Boring Log

BORING NO. MW-15
 PAGE 1 OF 1

PROJECT: Shakespeare Commission Structures
 CLIENT: Philip
 CONTRACTOR: Terra Sonix
 EQUIPMENT: 150 Compact Crawler

PROJECT NO: 80328308
 LOCATION: DuPont Property
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 8/5/15
 DATE FINISH: 8/5/15
 DRILLER: Adam Marshall
 OVERSIGHT: M. Lew

GROUNDWATER			DRILLING INFORMATION						
DATE	HRS	WATER	METHOD	<u>Sonic</u>	CASING	-	TEMP / PERM	<u>Perm</u>	
			HOLE DIA.	<u>6"</u>	CASING DIA.	<u>2"</u>	CASING TYPE	<u>PVC</u>	
			DEPTH	<u>20</u>	CASING DEPTH	-	GROUT TYPE	<u>chip's</u>	
			SAMPLING	<u>Cont.</u>	<u>4"</u>	HAMMER WT	-	HAMMER FALL	-

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
					- Very fine silty sands @ Gravel surface -	
					<u>NO Recovery</u>	
					- Trace Brown sands with Black silt @ 4.75' Bgs -	
5.0					<u>POORLY GRADED SAND (SP)</u> Dry, light gray (7/10% ₂), mostly fine sand, few silt, non-plastic	
					<u>SILTY SAND (SM)</u> moist, light gray (6/10% ₂), mostly med-fine sand, little silt, non-plastic, very faint red staining, - residual/sandstone trace mottling @ 8'-9' Bgs	
10.0					<u>SILT (ML)</u> moist, Brown (5/4 7.5% ₂), mostly silt, few clay, trace sand, micaceous (Gistite), slightly plastic, red staining End of Boring @ 12' Bgs - <u>Sample</u> Top of rock	
15.0						
20.0						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

Soil Boring Log

BORING NO. MW-16
PAGE 1 OF 1

PROJECT: Shakespeare Composition Structures
CLIENT: Philips
CONTRACTOR: Terra Sonic
EQUIPMENT: 150 Compact Crawler

PROJECT NO: 60328308
LOCATION: District Property
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 8/5/15
DATE FINISH: 8/5/15
DRILLER: Adam Marshall
OVERSIGHT: Mr. Law

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS	WATER	METHOD	<u>Sonic</u>	CASING	-	TEMP / PERM	<u>Perm</u>
			HOLE DIA.	<u>6"</u>	CASING DIA.	<u>2"</u>	CASING TYPE	<u>RCL</u>
			DEPTH	<u>20'</u>	CASING DEPTH	-	GROUT TYPE	<u>Chips</u>
			SAMPLING	<u>Cont.</u>	<u>4"</u>	HAMMER WT	-	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
					<u>POORLY GRADED SAND (SP)</u> <u>dry, very pale brown (7/3 1092), mostly fine sand, few silt, non-plastic</u>	
5.0					<u>Clayey Silt (ML)</u> <u>dry to moist, brownish yellow (6/6 1092) mottled with light gray (7/1 1092) clays, trace coarse sand quartz & feldspar in banding, slightly plastic</u> <u>- less clay with depth -</u>	
10.0					<u>SANDY SILT (SM)</u> <u>moist, yellowish brownish yellow (6/6 1092), mostly silt, little fine sand, trace mica, non-plastic, very faint structure</u>	
15.0					<u>SILT SAND (SM)</u> <u>moist, pale brown (6/3 1092), mostly fine to medium sand, little silt, few mica, trace clay banding - black (2/1 1092) stringers, relic structure - Saprolite -</u>	
					<u>SAME AS ABOVE</u>	
20.0					<u>End of Boring @ 20' Bgs</u> <u>- Harder drilling @ 15' Bgs -</u>	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Soil Boring Log

BORING NO. MW-17
PAGE 1 OF 2

PROJECT: Shakespeare Commission Structures
CLIENT: Philips
CONTRACTOR: Terra Sonix
EQUIPMENT: ISO Compact Crawler

PROJECT NO: 60328308
LOCATION: Pickett Property
ELEVATION: _____
NORTHING: _____
EASTING: _____

GROUNDWATER

DRILLING INFORMATION

DATE	HRS	WATER	METHOD	<u>Sonix</u>	CASING	<u>F</u>	TEMP / PERM	<u>Perm</u>
			HOLE DIA.	<u>6"</u>	CASING DIA.	<u>2"</u>	CASING TYPE	<u>PVC</u>
			DEPTH	<u>20'</u>	CASING DEPTH	<u>✓</u>	GROUT TYPE	<u>Chips</u>
			SAMPLING	<u>Cont.</u>	<u>4"</u>	HAMMER WT	<u>-</u>	HAMMER FALL

DATE START: 8/5/15
DATE FINISH: 8/5/15
DRILLER: Adam Marshall
OVERSIGHT: M. Lav

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
5.0					<u>CLAYEY SILT (ML)</u> Dy to moist, Reddish yellow (6/6 7.5R), mostly silt, little clay, mottled, trace to few fine sand, trace mica, slightly plastic - less clay mottling with depth	
10.0					<u>SILTY SAND (SM)</u> moist, brownish yellow (6/6 10YR), mostly med-fine sand, little silt, trace mica, faint relic structure, - saprolite - <u>AS ABOVE</u> - Reddish yellow 6/6 7.5R	
15.0					<u>SILTY SAND (SM)</u> moist to wet, very pale brown (7/3 10YR), mostly med. sand, little silt, few mica, non-plastic, relic structure (granite) trace Black (2/1 10YR) stringers and purple quartz veins <u>SAME AS ABOVE</u>	
20.0						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			

Soil Boring Log

BORING NO. MW-18
PAGE 1 OF 2

PROJECT: Shakespeare Composition Structures
CLIENT: philips
CONTRACTOR: Terra-Sonic
EQUIPMENT: 150 Compact Crawler

PROJECT NO: 6082508
LOCATION: Dickert property
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 8/3/15
DATE FINISH: 8/3/15
DRILLER: Adam
OVERSIGHT: M. Law

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS	WATER	METHOD	CASING	TEMP / PERM			
			<u>Sonic</u>		<u>PVC</u>	<u>Perm</u>		
			HOLE DIA. <u>~6"</u>	CASING DIA. <u>~2"</u>	CASING TYPE <u>PVC</u>			
			DEPTH <u>30'</u>	CASING DEPTH <u>21'</u>	GROUT TYPE <u>chips</u>			
			SAMPLING <u>Cont.</u>	HAMMER WT <u>4"</u>	HAMMER FALL <u>-</u>			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
					<p><u>SILT (ML)</u> moist, reddish yellow (7/8 57R), mostly silt, few clay, trace fine quartz sand, trace <u>minor</u> plastic, molting clay</p>	
5.0					<p><u>SILTY SAND (SM)</u> moist, reddish yellow (6/6 7.57R), mostly medium sand, some silt, trace mica, non-plastic - Residual -</p>	
10.0					<p><u>SAME AS ABOVE</u> light yellowish brown (6/4 104R), trace black stringers</p>	
15.0					<p>- gradung to brownish yellow (6/6 104R), then to pale brown (6/3 104A) @ ~ 12' Bgs - Saprolite -</p>	
					<p>3" piece of RWR granite; possible boulder? - <u>Harder drilling at 16.5' Bgs</u></p>	
20.0					<p><u>SILTY SAND (SM)</u> moist, light olive brown (5/6 7.51R), mostly sand, 1% silt, few mica, vein structures - Saprolite - non-plastic</p>	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					<p>5' piece of Granite; possible boulder? - Harder drilling @ 22' Bgs -</p> <p>3' piece of less weathered Granite @ 23' Bgs; Driller says He had to cut with water to get through.</p> <p><u>GRANITE</u></p> <p>Hard, gray, Granite, very slight to slight weathering, medium grain, Fracture joints @ 30' & 25' Bgs, Rough, open, close, Horizontal, Sound core from 30' to 25' (RQD=95%) becoming Fractured @ 25' - 23' Bgs (RQD=15%).</p> <p>End of Boring @ 30' Bgs</p>
21.0					
22.0					
23.0					
24.0					
25.0					
26.0					
27.0					
28.0					
29.0					
30.0					
31.0					
32.0					
33.0					
34.0					
35.0					
36.0					
37.0					
38.0					
39.0					
40.0					
41.0					
42.0					
43.0					
44.0					
45.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Soil Boring Log

BORING NO. MW-19
PAGE 1 OF 2

PROJECT: Shakespeare Composition Structures
CLIENT: Phillips
CONTRACTOR: Terra Sonix
EQUIPMENT: ISO Compact Crawler

PROJECT NO: 60315108
LOCATION: Chapman property
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 8/6/15
DATE FINISH: 8/6/15
DRILLER: Adam Marshall
OVERSIGHT: M. Lew

GROUNDWATER			DRILLING INFORMATION						
DATE	HRS	WATER	METHOD	SOIL	CASING	TEMP / PERM	ABR	OTHER	
			SOIL						
			HOLE DIA.	2.6"	CASING DIA.	2"	CASING TYPE	PVC	
			DEPTH	15'	CASING DEPTH		GROUT TYPE	Chips	
			SAMPLING	Cont	4"	HAMMER WT		HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
					<p><u>SILTY SAND (SM)</u> Dry, Brown (5/2 10YR), mostly fine to very fine sand, little silt, trace roots, non-plastic</p>	
5.0					<p><u>SILTY SAND (SM)</u> moist, light brownish gray (6/2 10YR), mostly fine sand, little to few silt, trace mica, non-plastic grading to light yellowish brown (6/4 10YR) @ 4' Bgs with stronger calc structure @ 6' Bgs - Sepiolite -</p>	
10.0					<p><u>SAME AS ABOVE</u> stronger calc structures (granite), dark yellowish brown (7/6 10YR) more mica - Harder Drilling @ 11' Bgs -</p>	
15.0					<p><u>Granite</u> Hard, grey, Granite, fresh, medium grained, sound core RQD = 100%, rough on ends, End of Boring @ 15' Bgs - Sepiolite/Pkt -</p>	
20.0						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Soil Boring Log

BORING NO. MW-20/202
 PAGE 1 OF 3

PROJECT: Shakespeare Composition Structures
 CLIENT: Philips
 CONTRACTOR: Terra Sonix
 EQUIPMENT: 150 Compact Crawler

PROJECT NO: 0328308
 LOCATION: Boston/Ringer
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 8/6/15 / 8/10
 DATE FINISH: 8/6/15
 DRILLER: Alan Marshall
 OVERSIGHT: McLau

GROUNDWATER			DRILLING INFORMATION						
DATE	HRS	WATER	METHOD	<u>Sonix</u>	CASING	-	TEMP / PERM	<u>Perm</u>	
			HOLE DIA.	<u>6"</u>	CASING DIA.	<u>2"</u>	CASING TYPE	<u>PVC</u>	
			DEPTH	<u>35'</u>	CASING DEPTH	-	GROUT TYPE	<u>Chips</u>	
			SAMPLING	<u>Cont.</u>	<u>4"</u>	HAMMER WT	-	HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
5.0					<p>- Very fine poorly graded sand (SP) Very pale brown (7/3 10YR) from cuttings HA <u>NO RECOVERY (S-S')</u></p>	- cleared with Hand Auger to 5'
10.0					<p><u>CLAYEY SILT (ML)</u> Dry to moist, brownish yellow (6/5 10YR) mottled becoming pale yellow (8/1 2.5Y) @ 7' Bgs, mostly silt, few to little clays, trace fine sand, trace mica, slightly to non-plasticity (below 6') very faint structure</p>	
15.0					<p><u>POORLY GRADED SAND (SP)</u> moist, yellow (7/6 10YR), mostly med. sand, few silt, trace mica, non-plastic, faint structure</p>	- Saprolite/residual -
20.0					<p><u>SILTY SAND (Sm)</u> moist, brownish yellow (6/6 10YR), mostly sand, little silt, few mica helix structure, non-plastic</p>	- Saprolite -

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					<u>SILTY SAND (SM)</u> moist, Brownish yellow (6/6 1048), mostly sand, little silt, trace few mica, relic structure, non-plastic - Saprolite -
25.0					<u>CLAYEY SAND (SC)</u> moist, light brown (6/4 7.54A), mostly sand, little clay, few silt, trace mica, trace pink to black stringers @ 23' Bgs
30.0					<u>SILTY SAND (SM)</u> moist, light tan-yellowish brown (6/4 2.54), mostly sand, little silt, few mica, non-plastic, strong relic structure - Saprolite -
35.0					End of Boring @ 35' Bgs 8/6/15 MW- 8/10/15 MW-
40.0					<u>SILTY SAND (SM)</u> moist, pale red (7/2 10R), mostly med. sand, little silt, few clay, few mica, trace rock fragments (granite), relic structure - Saprolite -
45.0					<u>SILTY SAND (SM)</u> moist, yellowish brown (6/6 1048), mostly med. sand, little silt, few mica, non-plastic, strong relic structure - Saprolite -
					GW Color: 100 L 0.125
					<u>Granite</u> Soft to very soft, moderate severe weathering, brownish yellow (6/6 1048), med. grained, Granite, iron s-och throughout, only fragments at recently, due to drilling, clay filled fracture @ 95' Bgs

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Soil Boring Log

BORING NO. MW-21
PAGE 1 OF 2

PROJECT: Shakespeare Composition Structures
CLIENT: Philips
CONTRACTOR: Terra Sonix
EQUIPMENT: 150 Compact Crawler

PROJECT NO: 60325308
LOCATION: Bozeman/Ringer
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 8/7/15
DATE FINISH: 8/7/15
DRILLER: Adam Marshall
OVERSIGHT: M. Lew

GROUNDWATER

DRILLING INFORMATION

DATE	HRS	WATER	METHOD	<u>Sonix</u>	CASING	-	TEMP / PERM	<u>Born</u>
			HOLE DIA.	<u>6"</u>	CASING DIA.	<u>2"</u>	CASING TYPE	<u>PVC</u>
			DEPTH	<u>30'</u>	CASING DEPTH	-	GROUT TYPE	<u>Chips</u>
			SAMPLING	<u>Cont.</u>	<u>4"</u>	HAMMER WT	-	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
0-5.0					<u>SANDY SILT (ML)</u> Hand Analyzed 0-5' to check utilities Org, reddish yellow (6/6 7.51A), mostly silt, little fine sand, few mica, non-plastic, faint structure	
5.0-10.0					<u>CLAYEY/SANDY SILT (ML)</u> moist, reddish yellow (6/6 542), mostly silt, little sand, little clay, trace mica, slightly plastic, mottled	
10.0-15.0					<u>CLAYEY/SILTY SAND (SM/SC)</u> moist, reddish yellow (6/6 7.51A), mostly sand, little silt, few mica, slightly plastic, faint structure - Saprolite/bedrock	
15.0-20.0					<u>SILTY SAND (SM)</u> moist, very pale Brown (7/4 104A), mostly med sand, little silt, few mica, non-plastic, relic structure (granite) - Saprolite -	
					<u>SAME AS ABOVE</u>	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. MW-22
 PAGE 1 OF 2

PROJECT: Shakespeare - Newberry
 CLIENT: Philips
 CONTRACTOR: Terrasonic
 EQUIPMENT: Sonic

PROJECT NO: _____
 LOCATION: _____
 ELEVATION: _____
 DATE START: 8/26/15
 DATE FINISH: 8/26/15
 DRILLER: _____
 PREPARED BY: C. Suddeth

GROUND WATER		DEPTH TO:		CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE	SIZE ID

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
5.0					SANDY SILT (ML), reddish yellow 7.54R 4/6 to strong brown 7.54R 5/6, stiff, little fine sand, damp
10.0					SANDY SILT (ML), Saprolite, yellowish red 54R 5/6 to strong brown 7.54R 5/6, medium stiff, little fine sand, damp granitic texture
15.0					SILTY SAND (SM), Saprolite, reddish yellow 7.54R 4/6, fine to medium grained, some silt, well graded, wet, granitic
20.0					SILTY SAND (SM), Saprolite, very pale brown 104R 7/4 fine to medium grained, some silt, well graded, saturated granitic

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Soil Boring Log

BORING NO. MW-23
 PAGE 1 OF 2

PROJECT: Shakespeare Newberry
 CLIENT: Philips
 CONTRACTOR: Cascade
 EQUIPMENT: Geoprobe

PROJECT NO: 60328308
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 12/15/15
 DATE FINISH: 12/15/15
 DRILLER: J. Allen
 OVERSIGHT: C. Suddeth

GROUNDWATER**DRILLING INFORMATION**

DATE	HRS	WATER	METHOD	CASING	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	SOIL CLASSIFICATION: USCS
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					SANDY SILT (ML), Saprolite, red 2.5 YR 4/8, stiff, little fine to medium sand, damp.	
5.0					SANDY SILT (ML), Saprolite, reddish yellow 5 YR 6/8, little fine sand, stiff, damp.	
10.0					SANDY SILT (ML), Saprolite, light red 2.5 YR 6/8, some fine to medium sand, medium stiff, moist. SANDY SILT (ML), Saprolite, light brown, ^{7.5 YR 6/4} as above.	
15.0					SANDY SILT (ML), Saprolite, light red 2.5 YR 6/8 to light brown 7.5 YR 6/4, some fine to medium sand, medium stiff, wet.	
20.0					SANDY SILT (ML), Saprolite, yellow 10 YR 7/6, soft, some fine to medium sand, granitic, saturated.	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					<i>Saprolite</i> SANDY SILT (ML), light gray 2.54 7/2 to pale yellow 2.54 8/2, some fine to medium sand, soft, saturated, granitic
25.0	0.0				SILTY SAND (SM), <i>Saprolite</i> , same colors as above, some silt, fine to medium well graded, saturated, granitic
30.0	0.0				Boring terminated at 30 ft.
35.0					
40.0					
45.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			



Soil Boring Log

BORING NO. MJ25
 PAGE 1 OF 1

PROJECT: Shakespeare - Newberry
 CLIENT: Philips
 CONTRACTOR: Cascade
 EQUIPMENT: Mini-Sonic

PROJECT NO: 6058308
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 2/26/16
 DATE FINISH: 2/26/16
 DRILLER: _____
 OVERSIGHT: S. Glass

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS	WATER	METHOD		CASING		TEMP / PERM	
			HOLE DIA.		CASING DIA.		CASING TYPE	
			DEPTH		CASING DEPTH		GROUT TYPE	
			SAMPLING		HAMMER WT		HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION	USCS
5.0					<p><u>Silty sand (SM)</u> Med dense, moist, mostly silt, some med to fine sand, trace clay similar to above except yellowish brown</p> <p>similar to above</p> <p>similar to above</p>	
					<p><u>Silty sand (SM)</u> Med dense, moist, pale brown to yellow, mostly silt, some fine sand, few clay (trace fine to silt granitic fabric)</p>	
					<p><u>Silty sand (SM)</u> Med dense, moist to wet, mostly silt, some med to med sand,</p> <p>similar to above</p> <p>similar to above</p> <p>similar to above</p>	

BLOWS/FT	DENSITY	BLOWS/FT	CONSISTENCY	SAMPLER ID	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS		
20.0					<p><u>SILTY SAND (SM)</u> med dense, wet, brown light brown, mostly med to fine sand, some silt, trace clay, trace mica</p> <p>similar to above</p>		
25.0					<p>Boring Terminated @ 28'</p>		
30.0					<p>TB # 28 Filter - 28-15' Bentonite - 15-12</p>		
35.0							
40.0							
45.0							

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			



Soil Boring Log

BORING NO. MN-2I
 PAGE 1 OF 3

PROJECT: Expanded Investigation - Shakespeare Shubert
 CLIENT: Philips
 CONTRACTOR: TERRASONIC
 EQUIPMENT: _____

PROJECT NO: 60328308
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 8/17/15
 DATE FINISH: _____
 DRILLER: _____
 OVERSIGHT: _____

GROUNDWATER

DRILLING INFORMATION

DATE	HRS	WATER	METHOD	HOLE DIA.	CASING	CASING DIA.	TEMP / PERM	CASING TYPE

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	SOIL CLASSIFICATION:	USCS
					cross-topsoil		
					(finest sands (sc)) yellowish red, mostly med to fine sand, few clay, few silt, dry, dense		
5.0		2.5			Silty Sand (sm) yellowish red, mostly med to fine sand, little silt, trace clay		
		0.2			similar to above except yellowish brown, moist, fence		
10.0		0.1			Silty sand (sm) yellowish brown, mostly med to fine sand, little silt, moist, faint relic granitic fabric		
		0.3			similar to above		
15.0		0.3			similar to above		
		0.5			similar to above		
20.0		2.2			Silty sand (sm) yellowish brown to light gray to dark brown (relict granitic fabric), mostly med to fine sand, some silt, few to trace clay, moist		

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0	2.7				similar to above
					similar to above
	4.6				
					<u>SILTY SAND (SM)</u> pale yellowish brown, mostly med to fine sand, some silty, dry, loose
25.0	2.3				
	6.1				<u>SILTY SAND (SM)</u> pale brown, mostly fine sand, some silt, few to fence clay, dense, moist
	2.9				
30.0					similar to above
					Weathered PWR - weathered Granite. Gray to reddish brown, pulverized to fines 33-34'
35.0					Color Test 31-35 - 0.5 fpm similar to above Granite - weathered, brown to pale gray
					severely weathered Granite / PWR - 39-41' <u>(Silty) (ML)</u> pale gray to pale brown, mostly silt, few fine sand, dense
40.0					PWR - severely weathered Granite - pale brown to pink red
					similar to above with 4-5" intermittent zones of pulverized rock [Silty SAND (SM)]
45.0					Color Test 1.25

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. MW-25
 PAGE 3 OF 3

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	Mitsubishi Pilot BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
45.0					similar to above
50.0					PWR - Weathered Granite, pink brown to brownish red, multiple fracture zones
55.0					similar to above
60.0					Boring Terminated @ 55'
65.0					
70.0					



Color
 Test
 NO

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Soil Boring Log

BORING NO. MW-3 I
 PAGE 1 OF 3

PROJECT: Shakespeare Composite Structures
 CLIENT: Philips
 CONTRACTOR: Terra Sonix
 EQUIPMENT: 150 Compact Crawler

PROJECT NO: 60326008
 LOCATION: Shakespeare property
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 8/11/15
 DATE FINISH: 8/11/15
 DRILLER: Adam Marshall
 OVERSIGHT: M. LAW

GROUNDWATER			DRILLING INFORMATION						
DATE	HRS	WATER	METHOD	<u>Sonic</u>	CASING	-	TEMP / PERM	<u>Perm</u>	
			HOLE DIA.	<u>~6"</u>	CASING DIA.	<u>PVC</u>	CASING TYPE		
			DEPTH	<u>55'</u>	CASING DEPTH	-	GROUT TYPE	<u>c</u>	
			SAMPLING	<u>Cont.</u>	4'	HAMMER WT	-	HAMMER FALL	-

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					FIELD CLASSIFICATION	REMARKS
5.0					<u>SANDY SILT (ML)</u>	- Hand Augered to ~ 5' to clear white-lime - 10% yellowish red (S/6 5.4R), mostly silt, little sand, trace clay, trace mica, found red clay non-plastic - from HA cuttings - <u>NO RECOVERY</u>
					<u>SILTY SAND (SW)</u>	moist, light olive brown (S/3 2.5Y), mostly fine sand, little silt, trace clay, non-plastic
					<u>CLAYEY SAND (SC)</u>	moist, light blue brown (S/3 2.5Y), mostly fine sand, little clay, trace to fine silt, faint mottling, slightly to low plasticity
10.0					<u>CLAYEY SILT (ML)</u>	moist, strong brown (S/6 7.5YR) with light (7/1 7.5YR) mottling with clay, mostly silt, some clays in nodding, trace fine sand, low plasticity mottling clays within non-plastic silt
15.0					<u>SILTY SAND (SW)</u>	moist, very pale brown (10/4 10YR), mostly sand, little silt, clays, fine to silt with depth, trace mottling to none, faint structures - Saprolite/bedrock
20.0						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORCBNC VALVE SCREENING (PFI)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS		
20.0					<p><u>SILTY SAND (Sm)</u> moist, very pale brown (7/4 10YR), mostly sand, little silt, few to trace clays, trace mica, faint structure - Separated residual</p>		
25.0					<p><u>SILTY SAND (Sm)</u> moist, brownish yellow (6/8 10YR), mostly sand, little silt, few mica, many plastic, strong relic structure (granitic) - Same like -</p>		
30.0					<p><u>SAME AS ABOVE</u></p>		
35.0					<p>GW Sample ND</p>		
40.0					<p>GW Collected ND</p>		
45.0					<p><u>SAME AS ABOVE</u></p>		
					<p>Some water bypassing out of MW-3 vault @ this depth</p>		
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING	
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED	
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ	
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY	
50+	VERY DENSE	16-30	VERY STIFF				
		31+	HARD				
					MOSTLY 50-100%		
					SOME 30-45%		
					LITTLE 15-25%		
					FEW 5-10%		
					TRACE <5%		

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0 45					<u>SILT SAND (Sm)</u> moist, olive (S/L SY), mostly med. sand, little silt, few clay, trace mica, slightly plastic, faint brown mottles.
26.0 50					<u>SILT SAND (Sm)</u> moist, light reddish brown (G/L SYR), mostly sand, little silt, few mica, non-plastic, strong calc structure (granite) - Saprolite -
38.0 62					End of Boring @ 55' Bgs
46.0 70					

Handwritten notes:
GW
Colortex

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			



Test Boring Report

BORING NO. MW-5I
PAGE 1 OF 3

PROJECT: Expanded Investigation
CLIENT: Phillips
CONTRACTOR: Terrasonic
EQUIPMENT: Auto-sonic

PROJECT NO: 60328308
LOCATION: _____
ELEVATION: _____
DATE START: 8/18/15
DATE FINISH: _____
DRILLER: _____
PREPARED BY: C. Suddeth

GROUND WATER		DEPTH TO:			CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE		
					SIZE ID		
					HAMMER WT		
					HAMMER FALL		

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					CRUSHED STONE (Fill), SAND AND GRAVEL (), gray fine grained to cobble size, well graded, damp
5.0				0-10	SILT C SILT C (), red, medium stiff, ^{few} fine sand, few clay, damp. (Fill?).
10.0	9.5				SILT C (), as above
15.0				10-20	Saprolite SILT C (), reddish brown, medium stiff, few fine sand, few clay, granitic texture, moist
					SILT (), Saprolite, tan, medium stiff, few fine to medium sand, few clay, wet to saturated.
20.0	8.3				SANDY SILT C (), tan to gray, soft, little fine to medium sand, wet to sat.

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

Test Boring Report

BORING NO. MW-5I
PAGE 2 OF 3

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					<i>Saprolite</i> SANDY SILT () <i>Saprolite</i> , gray to tan, soft, some sand fine to medium sand, saturated, granitic
				20-25	
	8.0			20-25	SILTY SAND () <i>Saprolite</i> , gray to tan, fine to med grained, well graded, granitic texture, saturated
25.0					
				25	
				25-35	SILTY SAND () as above
30.0	9.5			25-35	
	8.3				<i>Saprolite</i> SILTY SAND () light brown, fine to medium grained, some silt, well graded, sample is damp to dry due to heat from drilling, granitic texture
35.0					
				35-45	
40.0					
45.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
45.0					<p>PARTIALLY WEATHERED ROCK (), layers of silty sand and rock, granitic, tan to brown, fine to coarse silty sand, saturated.</p> <p>No recovery</p>
46.0					
47.0					
48.0					
49.0					
50.0					
51.0					
52.0					
53.0					
54.0					
55.0					<p>COMPETENT ROCK, granitic texture, multiple fractures in core, more weathered at top of run</p> <p>recovered 7 ft of competent rock in 10' run therefore top of rock either at 58 ft, or at 55 ft with occasional weathered zones washing out during drilling. Drilled with water? →</p>
56.0					
57.0					
58.0					
59.0					
60.0					
61.0					
62.0					
63.0					
64.0					
65.0					<p>Boring terminated</p>
66.0					
67.0					
68.0					
69.0					
70.0					
71.0					
72.0					
73.0					
74.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%	
		31+	HARD				



Soil Boring Log

BORING NO. MN-61
 PAGE 1 OF 3

PROJECT: Expanded Investigation
 CLIENT: Phillips
 CONTRACTOR: Terrasonic
 EQUIPMENT: sonic - Miniremaster

PROJECT NO: 60328309
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 7/21/15
 DATE FINISH: 11
 DRILLER: A. Marshall
 OVERSIGHT: S. C. 2027

GROUNDWATER			DRILLING INFORMATION			
DATE	HRS	WATER	METHOD		CASING	TEMP / PERM
			HOLE DIA.		CASING DIA.	CASING TYPE
			DEPTH		CASING DEPTH	GROUT TYPE
			SAMPLING		HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	SOIL CLASSIFICATION: USCS	
5.0					<p><u>CLAYEY SAND (SC)</u> moist, light red (7/6 2.5YR) to light reddish brown (7/4 2.5YR), mostly med to fine sand, little clay, few silt similar to above except mottled w/ white (8/2 2.5YR)</p> <p>Similar to above except light dark gray (4/1 2.5Y) w/ organics (wood fragments)</p> <p><u>CLAYEY SAND (SC)</u> moist, light gray (7/1 7.5YR) to reddish yellow (7/8 7.5YR) to light red (7/6 2.5YR) - mottled, mostly med to fine sand, some clay, few silt similar to above</p> <p>similar to above except yellow (7/6 10YR) w/ intermittent stringers of light bluish gray (7/1 CLAY 2)</p> <p>similar to above</p> <p><u>SILTY SAND (SM)</u> moist very pale brown (8/4 10YR), mostly med sand, little silt, dense</p>		
10.0							
15.0							
20.0							

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS		
20.0					<p><u>SILTY SAND (SM)</u> moist to wet, light greenish gray (8), CLAY(1), mostly fine sand, some silt, trace clay, trace mica</p> <p>similar to above except reddish yellow (8/6 7.5 yr) to very pale brown (8/2 10 yr) - mottled</p>		
25.0					<p>similar to above, faint relic structure/fabric</p>		
30.0					<p>similar to above</p>		
35.0					<p><u>SILTY SAND (SM)</u> moist, very pale brown (8/4 10 yr), mostly med to fine sand, little silt, trace clay (Thin interval of pink (8/4 2.5 yr) to white (8/1 2.5 yr) silty clay @ 33.5')</p>		
40.0					<p><u>SILTY SAND (SM)</u> moist, pale brown (8/2 2.5 yr to 7/4 2.5 yr), mostly med to fine sand, fine sand, some silt, trace clay (faint granitic fabric)</p> <p>similar to above</p>		
45.0					<p>similar to above - / very thin (2-3 mm) zones of gray (5/1 2.5 yr) silt</p>		
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING	
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED	
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ	
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY	
50+	VERY DENSE	16-30	VERY STIFF				
		31+	HARD				

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 8 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
55.0 15					<u>SILTY SAND (SM)</u> moist, pale brown (S/3 2.5 y) to (7/4 > 5 y) mostly ^{occasional} and to fine sand, little silt, trace clay, dense (intermittent) thin (2-3 mm) intervals of gray (S/1 2.5 y) silt (ML)
50 10					similar to above (Point relic granite fabric)
35 5					similar to above
					Boring Terminated @ 55'
120.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. MW-7I
PAGE 1 OF 3

PROJECT: Expanded Investigation
CLIENT: Philips
CONTRACTOR: Terrasonic
EQUIPMENT: Autosonic

PROJECT NO: 60320508
LOCATION: _____
ELEVATION: _____
DATE START: 8/19/15
DATE FINISH: 8/20/15
DRILLER: _____
PREPARED BY: _____

GROUND WATER		DEPTH TO:			CASING	SAMPLER	CORE BARREL
DATE	HRS AFTER COMP	WATER	BOTTOM OF CASING	BOTTOM OF HOLE	TYPE		
					SIZE ID		
					HAMMER WT		
					HAMMER FALL		

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					SAND AND COBBLES (), Crushed stone, light gray 104R71, fine grained to cobbles, well graded, damp
					SILT (), Fill, red 2.5 YR 5/8, ^{to gray} medium stiff, few fine sand, few clay, damp
5.0	0.4				
10.0	1.2				
15.0	0.6				
20.0	0.8				SANDY SILT (), Saprolite, medium stiff, red 2.5 YR 5/8 to gray, little fine sand, granitic texture, damp to moist

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

Test Boring Report

BORING NO. MW-7I
PAGE 2 OF 3

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					SANDY SILT (), Saprolite, light yellowish brown 10YR 6/4, soft, some fine to medium sand, saturated
25.0					SANDY SILT (), Saprolite, gray 10YR 6/1, soft, some fine to medium sand, saturated
30.0					SILTY SAND (), ^{Saprolite} very pale brown 10YR 7/4, fine to medium grained, some silt, well graded, saturated.
35.0					SILTY SAND (), Saprolite, light yellowish brown 2.5Y 6/4, fine to medium grained, some silt, well graded, saturated
40.0					SILTY SAND (), Saprolite, pale brown 2.5Y 8/3, as above
45.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			



Soil Boring Log

BORING NO. MN-9I
PAGE 1 OF 3

PROJECT: Expanded Investigation
CLIENT: Philips
CONTRACTOR: Terrasonic
EQUIPMENT:

PROJECT NO: _____
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 6/20/15
DATE FINISH: 8/21/15
DRILLER: A. Marshall
OVERSIGHT: S. Ross

GROUNDWATER

DRILLING INFORMATION

DATE	HRS	WATER	METHOD	CASING	TEMP / PERM
			HOLE DIA.	CASING DIA.	CASING TYPE
			DEPTH	CASING DEPTH	GROUT TYPE
			SAMPLING	HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION	USCS
5.0					<p>stiff <u>silty clay (ML/CL)</u> red stiff (2.5 yr 5/4) to reddish yellow (5 yr 6/4), mostly silt, little to few clay, few fine sand</p> <p>similar to above</p>	
10.0					<p><u>clayey sand (SC)</u> Greenish gray (clay sil) mostly med sand, little clay few silt, moist</p> <p>similar to above except few clay</p>	
15.0					<p><u>silty clay (ML/CL)</u> yellow (8/10 yr) to reddish yellow (7/8 5 yr) mostly silt, some clay, few fine sand, dense</p> <p>similar to above except little clay</p>	
20.0					<p><u>silty sand (SM)</u> Reddish yellow (7/8 5 yr) to yellow (7/8 10 yr) mostly silt, few fine sand, few to trace clay, moist,</p> <p>similar to above</p> <p>similar to above except <u>silty sand (SM)</u></p>	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS		
20.0					<p><u>SILTY SAND (SM)</u> yellow (7/6 10yr) to brownish yellow (6/6 10yr), mostly silt, some fine sand, trace clay, moist</p> <p>similar to above</p>		
25.0					<p>similar to above except few clay, trace fine mica</p>		
30.0					<p>similar to above</p>		
35.0					<p>Color Tee 30-35 (15 gpm) M Tube</p>	<p><u>SILTY SAND (SM)</u> Very pale brown (7/6 10yr) to pale brown, mostly silt, some med to fine sand, trace clay, trace mica</p>	
40.0						<p>similar to above, very stiff</p>	
45.0					<p>Color Tee 40-45 10 gpm M Tube</p>	<p><u>SILTY SAND (SM)</u> reddish yellow (7/6 7.5 yr) mostly silt, some med to fine sand, trace clay (faint relief granitic structure)</p>	
						<p><u>SILT (ML)</u> pale olive (0/3 5Y) to light pale brown (4/3 5Y) mostly silt, few fine sand, very dense, dry</p>	
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS		NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%	
		31+	HARD				

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	Mitsubishi Pilot BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
45.0					<p><u>SILTY SAND (SM)</u> very pale brown (8/3 104R to 7/4 104R) mostly silt, some fine sand, very dense trace clay, very dense (sample is more pulverized than cut) Saprolite similar to above</p> <p>some small cobble size pieces w/ relict granite structure fabric</p> <p>similar to above</p>
50.0					<p>Color Tan 0.25 ppm</p> <p>similar to above</p>
55.0					<p>Boring Terminated @ 55'</p>
60.0					
65.0					
70.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			



Soil Boring Log

BORING NO. MW-101
PAGE 1 OF

PROJECT: Expanded Investigation
CLIENT: Philips
CONTRACTOR: Terra Sonix
EQUIPMENT: Rotary Sonic Log

PROJECT NO: 60323208
LOCATION:
ELEVATION:
NORTHING:
EASTING:
DATE START: 8/25/15
DATE FINISH: 8/26/15
DRILLER: SRoss
OVERSIGHT:

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS	WATER	METHOD	HOLE DIA.	CASING	CASING DIA.	TEMP / PERM	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
					<p><u>poorly graded sand (SP)</u> light gray loam (7/2 2.5y), mostly med to fine sand, little silt, trace clay, loose</p>	
					<p><u>CLAYEY SAND (SC)</u> reddish yellow (6/9 5y₂) to light gray (7/1 5y₂) - mottled, mostly med to fine sand, little clay, few silt, dense</p>	
5.0						
					<p><u>Silty SAND (SM)</u> reddish yellow (7/8 2.5y₂) to pink (8/3 7.5y₂) to light gray (mottled) (7/1 2.5y₂) mostly fine sand, some silt, few to trace clay, moisty, trace mica, moist</p>	
10.0					<p>similar to above</p>	
					<p>little silt, similar to above except trace clay (faint granitic fabric) very pink brown (4/3 10y₂) to light gray (7/1 10y₂)</p>	
15.0						
					<p>similar to above</p>	
20.0						

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					<u>SILTY SAND (SM)</u> Very pale brown (1/3 10YR) to light gray (7/10YR) to light yellowish brown (6/4 10YR) mottled (faint granitic fabric, mostly fine sand, some silt, few mica similar to above
25.0					<u>SILTY SAND (SM)</u> Gray (5/1 10YR), mostly med to fine sand, little silt, few clay, moist
30.0					<u>SILT (ML)</u> Grayish brown (5/2 10YR), mostly silt, little fine sand, dry, dense
35.0					<u>SILTY SAND (SM)</u> Pale brown (8/4 2.5Y) to yellow (7/6 2.5Y) mostly fine sand, some silt, (faint granitic fabric), dry similar to above w/ intermittent very thin layers of grayish brown (5/2 10YR) silt similar to above except very dense, difficult drilling
40.0					severely weathered granite - light brown to light gray
45.0					



BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Soil Boring Log

BORING NO: MW-21I
~~FW-204~~
 PAGE 1 OF 3

PROJECT: Shakespeare Composting Structures
 CLIENT: Philips
 CONTRACTOR: Terra-Sonic
 EQUIPMENT: 150 Compact Crawler

PROJECT NO: 60328309
 LOCATION: Bosman / Ringer
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 8/7/15
 DATE FINISH: 8/7/15
 DRILLER: Adena Marshall
 OVERSIGHT: M. Law

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS	WATER	METHOD	<u>Sonic</u>	CASING	-	TEMP / PERM	<u>Poron</u>
			HOLE DIA.	<u>6"</u>	CASING DIA.	<u>2"</u>	CASING TYPE	<u>PVC</u>
			DEPTH		CASING DEPTH	-	GROUT TYPE	<u>Chips</u>
			SAMPLING	<u>Cont</u>	<u>4"</u>	HAMMER WT	-	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	SOIL CLASSIFICATION: USCS
					<u>SANDY SILT (ML)</u> - Hand augered to 5' clear utilities - Dry, Reddish yellow (6/8 7.5YR), mostly silt, little fine sand, non-plastic. faint structure, fine HA cuttings -	
5.0					<u>NO RECOVERY (4' to 7' Bgs)</u>	
					<u>SILTY SAND (SM)</u> Dry, Reddish yellow (6/8 7.5YR), mostly fine sand, little silt, trace mica, non-plastic	
10.0					<u>CLAYEY SILT (MH)</u> Dry, light red (6/8 2.5YR), with grey G/I & brown mottling, mostly silt, little clay & trace mica, slightly to low plasticity,	
					<u>SANDY SILT (ML)</u> Dry, tan-yellowish red (6/8 5YR), mostly silt, little fine sand, few mica, non-plastic, faint silt structure	
15.0					<u>SILTY SAND (SM)</u> moist, very pale brown (7/4 10YR), mostly fine sand, little silt, few clay, few mica, slightly plastic, faint structure - Saprotic -	
20.0					<u>SAME AS ABOVE</u> - less clays	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					<p><u>SILTY SAND (SM)</u> moist, very pale brown (7/4 10YR), mostly fine to med sand, little silt, non-plastic, few mica, relic structure (granite) - <u>Saprolite</u></p> <p><u>SAME AS ABOVE</u></p> <p><u>SILTY/SANDY CLAY (CL)</u> moist, very pale brown (7/4 10YR), mostly clay, little silt, few to little sand, low plasticity, few mica, relic structure</p> <p><u>SILTY SAND (SM) AS ABOVE</u></p>
21.0					
22.0					
23.0					
24.0					
25.0					
26.0					
27.0					
28.0					
29.0					
30.0					
31.0					
32.0					
33.0					
34.0					
35.0					
36.0					
37.0					
38.0					
39.0					
40.0					
41.0					
42.0					
43.0					
44.0					
45.0					



BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0 45					<u>SILTY SAND (SM)</u> moist, very pale brown (7/6 1042), mostly fine to med sand, little silt, few mica, strong relic structure (granite) - Saprolite -
25.0 50					<u>Severely weathered granite</u> Soft, moderately severe weathering, brownish yellow (6/3 1042), medium grain, Granite, iron staining throughout, only fragments of rock in core due to drilling. Mostly quartz sand, could be a vein in the rock.
30.0 55					<u>End of Boring @ 55' Bgs</u>
35.0 60					
40.0 65					
70.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100%
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45%
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25%
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10%
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			



Soil Boring Log

BORING NO. MW24I
PAGE 1 OF 2

PROJECT: Shakespeare
CLIENT: Philips
CONTRACTOR: Cascade
EQUIPMENT: Rotasonic

PROJECT NO: 60328307
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 2/17/16
DATE FINISH: 2/19/2016
DRILLER: _____
OVERSIGHT: S. Ross

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS	WATER	METHOD		CASING		TEMP / PERM	
			HOLE DIA.		CASING DIA.		CASING TYPE	
			DEPTH		CASING DEPTH		GROUT TYPE	
			SAMPLING		HAMMER WT		HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION	USCS
					Topsoil	
					<u>SILTY SAND (SM)</u> Yellowish red, mostly fine sand, some silt, trace fine to trace clay (quartz boulder between 2-3')	
5.0					<u>Lean Clay (CL)</u> Brown to reddish brown, mostly clay, some silt, little fine sand, moist	
					CL <u>SILT (MH)</u> Reddish yellow, to pale brown, mostly silt, few to trace of sand, trace clay	
10.0					similar to above except moist, red reddish brown, few clay	
					similar to above except reddish yellow, few to trace clay	
15.0					<u>SILTY SAND (SM)</u> Moist, med dense, pale brown to brownish yellow to pale yellow (mottled) mostly silt, some fine to of sand, trace clay	
					similar to above	
20.0					similar to above except alternating layers of pale yellow to pale brown, few clay, trace of mica	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					<u>SILTY SAND (SM)</u> fine moist to wet, red dense, mostly red sand, some silt, trace clay
					<u>POORLY GRADED SAND (SP)</u> fine moist, red dense, pale brown to pale yellow, mostly ^{med} sand, few silt, similar to above
25.0					similar to above except trace med to co gravel
					<u>SILT WITH SAND (MH)</u> Dense, moist, mostly gray to brownish gray, mostly silt, little med sand, trace
30.0					<u>Granite</u> Gray, hard, slight weathering, fine grained gfc, Feldspar, hornblende
					Fracture zone @ 34.5
					Fracture zone @ 36.0
					Fractures @ 37.5, 38, 39
40.0					TD = 39'
45.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			

PHASE II RI SOIL BORING LOGS



Test Boring Report

BORING NO. R-D
 PAGE 1 OF 2

PROJECT: 6053428.2.2 / Shakespear RT
 CLIENT: Phillips
 CONTRACTOR: A E Drilling
 EQUIPMENT: Geo-Drape

PROJECT NO: ↑
 LOCATION: 6053428.2.2
 ELEVATION: _____
 NORTHING: _____

GROUNDWATER

DRILLING INFORMATION

DATE	HRS	WATER	METHOD		CASING	TEMP / PERM
			HOLE DIA		CASING DIA	CASING TYPE
			DEPTH		CASING DEPTH	GROUT TYPE
			SAMPLING		HAMMER WT	HAMMER FALL

EASTING: _____
 DATE START: 06/07/17
 DATE FINISH: 06/07/17
 DRILLER: Murillo
 OVERSIGHT: A. Herington, J. Lechport

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION	USCS
0			1ft total return		Sand with organics (0-8 in)	
5.0			3ft return		mottled light brown + gray clay sand with silt upper 6 inches - sandy gray clay mottled gray to brown silty sand (fine/medium grained)	
10.0	2.4		2ft return		gray silty sand fine to medium grain mottled reddish brown to gray silty sand moist mottled silty sand fine to medium grained, gray to reddish brown	
15.0	86.0		2.5ft return		weathered quartz with silty gray to brown sand, medium grained. gray silty sand (stiff / clay)	
2.0	12.25				fine reddish to brown sand with muscovite clay	

BLOWS/FT	DENSITY	BLOWS/FT	CONSISTENCY	SAMPLER ID	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. 12-D
 PAGE 2 OF 2

PROJECT: _____
 CLIENT: Philips
 CONTRACTOR: AED
 EQUIPMENT: _____

PROJECT NO: _____
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: _____
 DATE FINISH: _____
 DRILLER: _____
 OVERSIGHT: _____

GROUNDWATER			DRILLING INFORMATION			
DATE	HRS	WATER	METHOD	CASING	TEMP / PERM	
			HOLE DIA.	CASING DIA.	CASING TYPE	
			DEPTH	CASING DEPTH	GROUT TYPE	
			SAMPLING	HAMMER WT	HAMMER FALL	

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION	USCS
20					Wet brown fine to medium sand	
23	12.5				Same as above	
25.0	13				Wet fine sand brownish to tan	
				full recovery	Same as above	
28	9.7				medium to coarse silty brown to tan sand. contains muscovite.	
30	21					
31	5					
32.5	11.8				Same as above, medium to coarse sands. brown to tan in color, moist contains quartz + muscovite	
				full recovery		
34	7				Same as above	
35.0					Same as above more wet	
38						
40						

BLOWS/FT	DENSITY	BLOWS/FT	CONSISTENCY	SAMPLER ID	DESCRIPTIONS	NOTES	
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%	
		31+	HARD				

Rod refusal at 51ft.



Test Boring Report

BORING NO. MN120
PAGE 3 OF 5

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
45.0					<p><u>SILTY SAND (SM)</u> Dense, dry moist to wet, reddish brown to yellowish brown, mostly fine sand, some silt, trace mica (reluct granitic structure)</p> <p>similar to above</p> <p>similar to above</p> <p>similar to above</p> <p>----- Partially weathered rock - <u>silty sand (SM)</u> w/ intervals of pale brown severely weathered granite</p> <p>----- light Pale brown to dark gray w/ dark gray to black (speckled) severely weathered (Granite)</p>	
46.0						
47.0						
48.0						
49.0						
50.0						
51.0						
52.0						
53.0						
54.0						
55.0						
56.0						
57.0						
58.0						
59.0						
60.0						
61.0						
62.0						
63.0						
64.0						
65.0						
66.0						
67.0						
68.0						
69.0						
70.0						
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
70.0				71'	Pale brown to light gray w/ dark gray to black (speckled), extensive weathering, <u>GRAWITE</u> Fractures at 72', 74, 80' Numerous mechanical breaks throughout 10' run
75.0					
80.0				81	Pink to pale brown, speckled, stone w/ dark gray to black of access minerals, extensive weathering (K-spar rich)
85.0				86	similar to above except more competent steep angle fractures (86.5'-88')
90.0					steep angle fracture 92-93' similar to above
95.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE	<5%
		31+	HARD			

95-110 very similar -/ ~~steep~~ steep angle fractures marked by very thin, pink bands 97', 104-106', 109-110.5', 115,



Test Boring Report

BORING NO. MW120

PAGE 5 OF 5

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
100.0					<p>Fine gray to dark gray, speckled, w/ black w/ access minerals, minor weathering, aphanitic texture, <u>GRANITE</u></p> <p>steep angle very thin fracture marked by pink banding - (109-110.5)'</p> <p>fracture similar to above from 104.5 to 106 (down center of rock core</p> <p>116</p> <p>similar to above, steep angle fractures - 116.5 ^{116.5} between 116.5' - 117.5', 121-122'</p> <p>Fracture @ 122.5'</p> <p>Transitions to phaneritic, ^{cs} white to light gray w/ fine black access minerals 124.5' - 125.5'</p> <p>Transitions back to aphanitic, ^{fine} gray to dark gray w/ the w/ black access minerals</p> <p>Coring Terminated @ 126'</p>
101.0					
102.0					
103.0					
104.0					
105.0					
106.0					
107.0					
108.0					
109.0					
110.0					
111.0					
112.0					
113.0					
114.0					
115.0					
116.0					
117.0					
118.0					
119.0					
120.0					
121.0					
122.0					
123.0					
124.0					
125.0					
126.0					
127.0					
128.0					
129.0					
130.0					
131.0					
132.0					
133.0					
134.0					
135.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			



Test Boring Report

BORING NO. MW170
 PAGE 1 OF 3

PROJECT: Phase II RE
 CLIENT: Philips
 CONTRACTOR: AE Drilling
 EQUIPMENT: CM 550 / Schramm

PROJECT NO: 60534283
 LOCATION: E. Side of Dickert
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: _____
 DATE FINISH: _____
 DRILLER: T. Burnette
 OVERSIGHT: S. Ross

GROUNDWATER			DRILLING INFORMATION			
DATE	HRS	WATER	METHOD		CASING	TEMP / PERM
			HOLE DIA		CASING DIA.	CASING TYPE
			DEPTH		CASING DEPTH	GROUT TYPE
			SAMPLING		HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
					Debris - wood fragments, soil (fill area)	
					" "	
					" "	
5.0					" "	
					Silty clay w/ sand	
					dense, dry, pale brown to reddish brown, mostly silt, few clay, few med sand, trace mica	
10.0					similar to above	
					similar to above	
15.0					similar to above	
					similar to above	
2.0					similar to above	

BLOWS/FT	DENSITY	BLOWS/FT	CONSISTENCY	SAMPLER ID	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. MW170

PAGE 2 OF 3

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					<i>Similar to above</i>
25.0					<i>SILTY SAND (SM) Dense, moist, light gray to pale brown to reddish brown, mostly med to fine sand, some silt, trace fine mica (relict granitic structure)</i>
30.0					<i>similar to above</i>
35.0					<i>similar to above</i>
40.0					<i>Partially weathered rock (PWR)</i>
45.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. MW170
 PAGE 3 OF 3

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
40.0					<p>Red brown to pale red, speckled, w/ black of access mins., multiple vertical fractures between 40.5, 41.5 - 43, 43.5 - 46</p> <p>similar to above</p> <p>Transitions to speckled gray to dark gray, w/ black of black access minerals, limited to no weathering, no fractures.</p>
41.0					
42.0					
43.0					
44.0					
45.0					
46.0					
47.0					
48.0					
49.0					
50.0					<p>Transitions to speckled gray to dark gray, w/ black of black access minerals, limited to no weathering, no fractures.</p>
51.0					
52.0					
53.0					
54.0					
55.0					
56.0					
57.0					
58.0					
59.0					
60.0					<p>Transitions to speckled gray to dark gray, w/ black of black access minerals, limited to no weathering, no fractures.</p>
61.0					
62.0					
63.0					
64.0					
65.0					
66.0					
67.0					
68.0					
69.0					
70.0					<p>Transitions to speckled gray to dark gray, w/ black of black access minerals, limited to no weathering, no fractures.</p>
71.0					
72.0					
73.0					
74.0					
75.0					
76.0					
77.0					
78.0					
79.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

Test Boring Report

BORING NO. MW19D
PAGE 1 OF 5

PROJECT: Shakespeare - Newbery Phase # 02
CLIENT: Philips
CONTRACTOR: HE Drilling
EQUIPMENT:

PROJECT NO: 60534283
LOCATION: Newbery, SC
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 6/20/17
DATE FINISH: 6/27/17
DRILLER: J. Brunette
OVERSIGHT:

GROUNDWATER

DRILLING INFORMATION

DATE	HRS AFTER COMP	WATER	DRILL METHOD	HOLE DIA.	CASING INSTALL	CASING DIA.	TEMP / PERM	CASING TYPE

FIELD CLASSIFICATION AND REMARKS
SOIL CLASSIFICATION: **USCS**

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
					<i>top soil</i> ML/CL - reddish brown, dry, mostly fine clay, some silt, few fine sand, trace mica
					<i>similar to above</i>
5.0					<i>Severely weathered granite - PWR</i>
					<i>Granite</i>
10.0					<i>Granite - Pale brown, weathered, aphanitic, Qtz, feldspar, hornblende, biotite</i>
					<i>Weathered face @ 11.0'</i> <i>similar to above except competent, less weathered (blue granite)</i>
15.0					<i>fine 12'</i> <i>Angular face 14.0'</i> <i>similar to above except pink to red microcline crystals, pegmatite texture</i>
					<i>Granite - Gray, aphanitic Qtz - light gray, feldspar, mafic minerals (black)</i>
20.0					<i>similar to above w/ phaneritic, light gray Qtz intrusion</i>

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
20.0					Similar to above - fine gtz & feldspar crystals, w/ very fine mafic crystals steep angular bands of red (weathered) feldspar? possible fracture @ 22'
25.0					Fracture visible @ 25', Red (microcline?) interval 2"-3" thick w/ break at this interval Granite - aphanitic, primarily fine gtz & feldspar crystals w/ 20% < 20% feldspar (Monzonite?)
30.0					similar to above except 1/2 core appears to contain a mixture of gtz, feldspar and w/ mafic min. while other 1/2 is predominantly gtz w/ very small % of mafics
35.0					similar to above similar to above except core transitions to 1/2 gtz + more aphanitic mix of gtz & feldspar
40.0					Vertical contact between predom. gtz & gtz-feldspar granite marked by pink vertical banding very small (2-3") area of pegmatite like gtz-biotite-feldspar between 36-37'
45.0					similar to above w/ addition pink vertical banding possibly indication weathering/fracture Fracture @ 43'

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
45.0				15-50' 5'	Light gray to bluish gray, no weathering, limited vertical very thin fracturing at contact between light gray & bluish gray, <u>GRANITE</u>
				Core RQD = 100%	Bluish gray speckled light gray & dark gray, <u>unweathered</u> weathering, no fractures, <u>GRANITE</u> RQD = 100% SS
50.0				50-55'	similar to above
				At 53' → RQD =	Grades to light gray med to cs predominantly gtz w/ accessory ^{sporadic} med muscovite crystals, unweathered, no fractures, transitions back to med to fine light gray speckled bluish gray, unweathered, no fractures, <u>GRANITE</u>
55.0					similar to above
60.0					similar to above
					similar to above except med predominantly gtz w/ limited Feldspar & mafic access. minerals
65.0					similar to above
					light to med gray speckled dark gray, no weathering, no fractures, <u>GRANITE</u>
70.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE	<5%
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
70.0					Similar to above - aphanitic texture - GRANITE
				65-75	
75.0					similar to above, no weathering, no fractures
					similar to above
80.0					
				75-85	similar to above
85.0					similar to above
90.0					Transitions to very dark gray to black, speckled, fine grained (hornblend, biotite, or Ca-rich feldspar) w/ intermittent light gray w/ dark gray, speckled intrusions of various thickness
95.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. SDW-3PAGE 2 OF 6

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS		
20.0					similar to above		
25.0					SILT WITH CLAY (CL-ML) (SAPROLITE) Moist, pale brown to reddish brown, mostly silt, little to few clay, trace fine sand, trace mica.		
30.0							
35.0					similar to above		
40.0							
45.0					similar to above		
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS		NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%	
		31+	HARD				

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS				
45.0					similar to above PWA - Extremely weathered - brown to reddish brown rising set c. 56' light gray to dark gray coarse light gray of fine gray fadial pink crystals w/ dark gray to black angular accessory minerals, phenocritic texture, extensive weathering, multiple zones of steep angle to vertical fractures, through out 10' interval similar to above similar to above w/ more obvious steep angle angle layers of the accessory minerals (biotite) the possible gneiss structure similar to above, weathered to severely weathered, numerous fractures to PWA. similar to above				
50.0									
55.0									
56.0									
56.66'			SDW3-						
60.0			(Gw)						
65.0									
70.0									
BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS		NOTES		
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY	50-100%	WD	WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME	30-45%	NE	NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE	15-25%	UR	NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW	5-10%	NR	NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE	<5%		
		31+	HARD						

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
70.0				66'	Similar to above
				RQD = 5%	Transition to light gray to dark gray, speckled, aphanitic, w/ very fine black access minerals, granite GRANITE. random Angled Fracture a 75°
75.0				76'	GRANITE similar to above except reddish brown to gray, speckled, aphanitic, w/ vF black access minerals, numerous mechanical breaks along preferential steep angles
				RQD = 19%	Visible horizontal, low angle fracture e 81° vertical fractures present at intermittent intervals
80.0					Additional fractures e 82, 83.4, 85°
					(multiple mechanical breaks throughout core)
85.0				86-96'	GRANITE reddish brown to gray, speckled, aphanitic (fine to med), w/ vF black access minerals, horizontal steep angle to vertical fractures w/ horizontal breaks between 85-88°
				RQD = 39%	steep angle fractures between 92-94° horizontal fracture at 94
90.0					similar to above, no fractures
95.0					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE	<5%
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
97.5					<p>Coarse to reddish brown (1/2 to 1/4 size) speckled, w/ dark gray matrix minerals, weathered w/ vertical fractures from 96 to 104', GRANITE horizontal fractures at 97.5' and 100.5'</p> <p>Transitions to dark gray to gray to pale red, fine to coarse crystal sizes, slight weathering, at w/ thin gtz vein intrusions at 105 and 106', horizontal</p> <p>96-106'</p> <p>109</p> <p>similar to above w/ gray to dark gray, fine to very fine gtz + Feldspar w/ vt black (hornblende?) crystals, intermittent veins, steep angle, pink to light gray, med crystal gtz - k spar veins (105-107, 109-110, 111-113, 115-116)</p> <p>106'</p> <p>similar to above except</p>
100					
102.5					
105					
107.5					
110					
112.5					
115					
117.5					
120					

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	MOSTLY 50-100% WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	SOME 30-45% NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	LITTLE 15-25% UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	FEW 5-10% NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			TRACE <5%
		31+	HARD			

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS
120.0 120					<p>SS Fine</p> <p>Fine to dark gray, speckled (qtz + feldspar) w/ vF black access. minerals, aphanitic texture, w/ ^{occasional} intermittent thin low angle intervals of light gray to pale pink (qtz + k-spar) <u>GRANITE</u></p> <p>Thin ^{100%} very thin, developing vertical fracture starting at 119.5" (pink-oxidized fracture)</p> <p>Fine to vF dark gray to gray, speckled w/ black, very access minerals, aphanitic texture, pink, weathered, thin vertical fracture 121-124 (121-124'), <u>GRANITE</u></p> <p>similar to above</p>
125.0 125					<p>fine to vF</p> <p>Contact between above and pale brown to pale red to gray, speckled, aphanitic (k-spar rich), steep angle very thin vertical fine (weathered pink) between 128-131.5 (128-129.5)</p> <p>similar to 125-130 interval (128-131.5)</p> <p>similar to 125 to 129' interval</p> <p>possible steep angle fracture @ 130'</p>
130.0 130					<p>131</p> <p>132</p> <p>133</p> <p>134</p> <p>135</p> <p>136</p> <p>137</p> <p>138</p> <p>139</p> <p>140</p> <p>141</p> <p>142</p> <p>143</p> <p>144</p> <p>145</p> <p>146</p> <p>147</p> <p>148</p> <p>149</p> <p>150</p> <p>151</p> <p>152</p> <p>153</p> <p>154</p> <p>155</p> <p>156</p> <p>157</p> <p>158</p> <p>159</p> <p>160</p> <p>161</p> <p>162</p> <p>163</p> <p>164</p> <p>165</p> <p>166</p> <p>167</p> <p>168</p> <p>169</p> <p>170</p> <p>171</p> <p>172</p> <p>173</p> <p>174</p> <p>175</p> <p>176</p> <p>177</p> <p>178</p> <p>179</p> <p>180</p> <p>181</p> <p>182</p> <p>183</p> <p>184</p> <p>185</p> <p>186</p> <p>187</p> <p>188</p> <p>189</p> <p>190</p> <p>191</p> <p>192</p> <p>193</p> <p>194</p> <p>195</p> <p>196</p> <p>197</p> <p>198</p> <p>199</p> <p>200</p> <p>201</p> <p>202</p> <p>203</p> <p>204</p> <p>205</p> <p>206</p> <p>207</p> <p>208</p> <p>209</p> <p>210</p> <p>211</p> <p>212</p> <p>213</p> <p>214</p> <p>215</p> <p>216</p> <p>217</p> <p>218</p> <p>219</p> <p>220</p> <p>221</p> <p>222</p> <p>223</p> <p>224</p> <p>225</p> <p>226</p> <p>227</p> <p>228</p> <p>229</p> <p>230</p> <p>231</p> <p>232</p> <p>233</p> <p>234</p> <p>235</p> <p>236</p> <p>237</p> <p>238</p> <p>239</p> <p>240</p> <p>241</p> <p>242</p> <p>243</p> <p>244</p> <p>245</p> <p>246</p> <p>247</p> <p>248</p> <p>249</p> <p>250</p> <p>251</p> <p>252</p> <p>253</p> <p>254</p> <p>255</p> <p>256</p> <p>257</p> <p>258</p> <p>259</p> <p>260</p> <p>261</p> <p>262</p> <p>263</p> <p>264</p> <p>265</p> <p>266</p> <p>267</p> <p>268</p> <p>269</p> <p>270</p> <p>271</p> <p>272</p> <p>273</p> <p>274</p> <p>275</p> <p>276</p> <p>277</p> <p>278</p> <p>279</p> <p>280</p> <p>281</p> <p>282</p> <p>283</p> <p>284</p> <p>285</p> <p>286</p> <p>287</p> <p>288</p> <p>289</p> <p>290</p> <p>291</p> <p>292</p> <p>293</p> <p>294</p> <p>295</p> <p>296</p> <p>297</p> <p>298</p> <p>299</p> <p>300</p> <p>301</p> <p>302</p> <p>303</p> <p>304</p> <p>305</p> <p>306</p> <p>307</p> <p>308</p> <p>309</p> <p>310</p> 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<p>584</p> <p>585</p> <p>586</p> <p>587</p> <p>588</p> <p>589</p> <p>590</p> <p>591</p> <p>592</p> <p>593</p> <p>594</p> <p>595</p> <p>596</p> <p>597</p> <p>598</p> <p>599</p> <p>600</p> <p>601</p> <p>602</p> <p>603</p> <p>604</p> <p>605</p> <p>606</p> <p>607</p> <p>608</p> <p>609</p> <p>610</p> <p>611</p> <p>612</p> <p>613</p> <p>614</p> <p>615</p> <p>616</p> <p>617</p> <p>618</p> <p>619</p> <p>620</p> <p>621</p> <p>622</p> <p>623</p> <p>624</p> <p>625</p> <p>626</p> <p>627</p> <p>628</p> <p>629</p> <p>630</p> <p>631</p> <p>632</p> <p>633</p> <p>634</p> <p>635</p> <p>636</p> <p>637</p> <p>638</p> <p>639</p> <p>640</p> <p>641</p> <p>642</p> <p>643</p> <p>644</p> <p>645</p> <p>646</p> <p>647</p> <p>648</p> <p>649</p> <p>650</p> <p>651</p> <p>652</p> <p>653</p> <p>654</p> <p>655</p> <p>656</p> <p>657</p> <p>658</p> <p>659</p> <p>660</p> <p>661</p> <p>662</p> <p>663</p> <p>664</p> <p>665</p> <p>666</p> <p>667</p> <p>668</p> <p>669</p> <p>670</p> <p>671</p> <p>672</p> <p>673</p> <p>674</p> <p>675</p> <p>676</p> <p>677</p> <p>678</p> <p>679</p> <p>680</p> <p>681</p> <p>682</p> <p>683</p> <p>684</p> <p>685</p> <p>686</p> <p>687</p> <p>688</p> <p>689</p> <p>690</p> <p>691</p> <p>692</p> <p>693</p> <p>694</p> <p>695</p> <p>696</p> <p>697</p> <p>698</p> <p>699</p> <p>700</p> <p>701</p> <p>702</p> <p>703</p> <p>704</p> <p>705</p> <p>706</p> <p>707</p> <p>708</p> <p>709</p> <p>710</p> <p>711</p> <p>712</p> <p>713</p> <p>714</p> <p>715</p> <p>716</p> <p>717</p> <p>718</p> <p>719</p> <p>720</p> <p>721</p> <p>722</p> <p>723</p> <p>724</p> <p>725</p> <p>726</p> <p>727</p> <p>728</p> <p>729</p> <p>730</p> <p>731</p> <p>732</p> <p>733</p> <p>734</p> <p>735</p> <p>736</p> <p>737</p> <p>738</p> <p>739</p> <p>740</p> <p>741</p> <p>742</p> <p>743</p> <p>744</p> <p>745</p> <p>746</p> <p>747</p> <p>748</p> <p>749</p> <p>750</p> <p>751</p> <p>752</p> <p>753</p> <p>754</p> <p>755</p> <p>756</p> <p>757</p> <p>758</p> <p>759</p> <p>760</p> <p>761</p> <p>762</p> <p>763</p> <p>764</p> <p>765</p> <p>766</p> <p>767</p> <p>768</p> <p>769</p> <p>770</p> <p>771</p> <p>772</p> <p>773</p> <p>774</p> <p>775</p> <p>776</p> <p>777</p> <p>778</p> <p>779</p> <p>780</p> <p>781</p> <p>782</p> <p>783</p> <p>784</p> <p>785</p> <p>786</p> <p>787</p> <p>788</p> <p>789</p> <p>790</p> <p>791</p> <p>792</p> <p>793</p> <p>794</p> <p>795</p> <p>796</p> <p>797</p> <p>798</p> <p>799</p> <p>800</p> <p>801</p> <p>802</p> <p>803</p> <p>804</p> <p>805</p> <p>806</p> <p>807</p> <p>808</p> <p>809</p> <p>810</p> <p>811</p> <p>812</p> <p>813</p> <p>814</p> <p>815</p> <p>816</p> <p>817</p> <p>818</p> <p>819</p> <p>820</p> <p>821</p> <p>822</p> <p>823</p> <p>824</p> <p>825</p> <p>826</p> <p>827</p> <p>828</p> <p>829</p> <p>830</p> <p>831</p> <p>832</p> <p>833</p> <p>834</p> <p>835</p> <p>836</p> <p>837</p> <p>838</p> <p>839</p> <p>840</p> <p>841</p> <p>842</p> <p>843</p> <p>844</p> <p>845</p> <p>846</p> <p>847</p> <p>848</p> <p>849</p> <p>850</p> <p>851</p> <p>852</p> <p>853</p> <p>854</p> <p>855</p> <p>856</p> <p>857</p> <p>858</p> <p>859</p> <p>860</p> <p>861</p> <p>862</p> <p>863</p> <p>864</p> <p>865</p> <p>866</p> <p>867</p> <p>868</p> <p>869</p> <p>870</p> <p>871</p> <p>872</p> <p>873</p> <p>874</p> <p>875</p> <p>876</p> <p>877</p> <p>878</p> <p>879</p> <p>880</p> <p>881</p> <p>882</p> <p>883</p> <p>884</p> <p>885</p> <p>886</p> <p>887</p> <p>888</p> <p>889</p> <p>890</p> <p>891</p> <p>892</p> <p>893</p> <p>894</p> <p>895</p> <p>896</p> <p>897</p> <p>898</p> <p>899</p> <p>900</p> <p>901</p> <p>902</p> <p>903</p> <p>904</p> <p>905</p> <p>906</p> <p>907</p> <p>908</p> <p>909</p> <p>910</p> <p>911</p> <p>912</p> <p>913</p> <p>914</p> <p>915</p> <p>916</p> <p>917</p> <p>918</p> <p>919</p> <p>920</p> <p>921</p> <p>922</p> <p>923</p> <p>924</p> <p>925</p> <p>926</p> <p>927</p> <p>928</p> <p>929</p> <p>930</p> <p>931</p> <p>932</p> <p>933</p> <p>934</p> <p>935</p> <p>936</p> <p>937</p> <p>938</p> <p>939</p> <p>940</p> <p>941</p> <p>942</p> <p>943</p> <p>944</p> <p>945</p> <p>946</p> <p>947</p> <p>948</p> <p>949</p> <p>950</p> <p>951</p> <p>952</p> <p>953</p> <p>954</p> <p>955</p> <p>956</p> <p>957</p> <p>958</p> <p>959</p> <p>960</p> <p>961</p> <p>962</p> <p>963</p> <p>964</p> <p>965</p> <p>966</p> <p>967</p> <p>968</p> <p>969</p> <p>970</p> <p>971</p> <p>972</p> <p>973</p> <p>974</p> <p>975</p> <p>976</p> <p>977</p> <p>978</p> <p>979</p> <p>980</p> <p>981</p> <p>982</p> <p>983</p> <p>984</p> <p>985</p> <p>986</p> <p>987</p> <p>988</p> <p>989</p> <p>990</p> <p>991</p> <p>992</p> <p>993</p> <p>994</p> <p>995</p> <p>996</p> <p>997</p> <p>998</p> <p>999</p> <p>1000</p>

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS	SPLIT SPOON	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST	SHELBY TUBE	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G	GRAB SAMPLE	UR NOT READ
31-50	DENSE	9-15	STIFF	MC	MACRO-CORE	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF			
		31+	HARD			

~~Terminated~~ Terminated @ 141'
Coring



Test Boring Report

BORING NO. MW-24
 PAGE _____ OF _____

PROJECT: _____
 CLIENT: Phillips
 CONTRACTOR: Elite Technologies
 EQUIPMENT: Geo-Probe 7802

PROJECT NO: _____
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 03-24-18
 DATE FINISH: 03-27-18
 DRILLER: Tyler Felder
 OVERSIGHT: E. Harrington

GROUNDWATER			DRILLING INFORMATION			
DATE	HRS	WATER	METHOD		CASING	TEMP / PERM
			HOLE DIA.		CASING DIA.	CASING TYPE
			DEPTH		CASING DEPTH	GROUT TYPE
			SAMPLING		HAMMER WT	HAMMER FALL

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
1					Mostly dark brown medium to fine sand, trace silt with organics	
1.5					mostly clay with little sand	
2					Mostly brown/tan/orange medium to fine sand with some clay	
3.64					Same as above	
5.0					Same as above	
6					Mostly brown/orange silty clay with some ^{fine to} medium sand	
7.5					Same as above, but changes from orange brown to tan	
10.0					Same as above	
15.0					Mostly brown/dark gray silty clay with trace of fine sand	
15.6					Same as above, but color is changing to tealish green. (mic shown)	
18.7					Mostly brown silty fine sand with some clay (mic present)	
20.0					Mostly brown/orange/tan ^{fine} medium to medium sand with some silt. (mic present)	
21.24						
25					REFUSAL @ 24.5' BGS - NO RETURN	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. MW-27
 PAGE 1 OF 2

PROJECT: _____
 CLIENT: Phillips
 CONTRACTOR: Elite Techniques
 EQUIPMENT: Geo-Packer - 7802 DT

PROJECT NO: _____
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____
 DATE START: 03-27-18
 DATE FINISH: 03-27-18
 DRILLER: Steve Aaron Bowen
 OVERSIGHT: E. Harrington, J. LeBeyec

GROUNDWATER			DRILLING INFORMATION				
DATE	HRS	WATER	METHOD	DPT	CASING	WT	TEMP / PERM
12/11/18	0706		HOLE DIA.	2 1/2 inch	CASING DIA.	1.2	
			DEPTH		CASING DEPTH		
			SAMPLING	Core	HAMMER WT		

12/11/18

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
0					Mostly Tan / Brown medium to fine sands, Trace silt (moist)	
2					Mostly tan / Brown medium to fine sands, Trace of clay	
4.5	4 ft return				Mostly Tan fine sand. (Dry/stiff) Mostly tan fine sand. Trace of clay	
5.0					Same as above	
7.5					Mostly Tan / Brown medium sand, Trace of clay	
8					Mostly grey clay, with little fine sands (stiff)	
9					Same, starts to become wet.	
10.0	5 ft return				Mostly brown medium sands, (soft) signs of weathered material.	
12.5					Mostly brown medium sands, (soft), Trace of clay (wet)	
13.0					Mostly brown/orange medium sands / weathered Sphro lite (Loose)	
13.5					Same as above	
15.0	3 1/2 ft				No Return	
17.5					Same as above	
20.0	2 5/8 ft return				No Return	
25					Same as above (weathered Sphro lite)	

25

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER-ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. _____
 PAGE 2 OF 2

PROJECT: _____
 CLIENT: Phillips
 CONTRACTOR: Elite Techniques
 EQUIPMENT: Geo-Probe - 2802 DT

PROJECT NO: _____
 LOCATION: _____
 ELEVATION: _____
 NORTHING: _____
 EASTING: _____

GROUNDWATER			DRILLING INFORMATION					
DATE	HRS	WATER	METHOD	DPT	CASING	TEMP / PERM		
<u>03/27/18</u>			HOLE DIA.	<u>2 1/2 inches</u>	CASING DIA.	CASING TYPE		
			DEPTH		CASING DEPTH	GROUT TYPE		
			SAMPLING	<u>Core</u>	HAMMER WT	HAMMER FALL		

DATE START: 03-27-18
 DATE FINISH: 03-27-18
 DRILLER: Acron Bowen
 OVERSIGHT: E. Harrigan, J. Leppert

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
<u>25</u>					<u>Dr. Return</u>	
<u>30</u>					<u>Same as above with trace of clay.</u>	
					<u>30ft Bottom</u>	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			



Test Boring Report

BORING NO. MW-29
PAGE _____ OF _____

PROJECT: _____
CLIENT: WHEELPOOL
CONTRACTOR: Elite Techniques
EQUIPMENT: Geo-Probe-7902

PROJECT NO: _____
LOCATION: _____
ELEVATION: _____
NORTHING: _____
EASTING: _____
DATE START: 03-28-18
DATE FINISH: 03-28-18
DRILLER: Tyler Felder
OVERSIGHT: _____

GROUNDWATER			DRILLING INFORMATION			
DATE	HRS	WATER	METHOD	HOLE DIA.	CASING	TEMP / PERM

DEPTH IN FEET	ORGANIC VAPOR SCREENING (PPM)	SAMPLER BLOWS PER 6 INCHES	SAMPLE NUMBER	SAMPLE DEPTH RANGE	FIELD CLASSIFICATION AND REMARKS	
					SOIL CLASSIFICATION:	USCS
					Mostly dark brown fine to medium sand with organics (very loose)	
					Mostly light brown to tan fine sands, very soft, wet trace of silt	
5.0	2.5 return				Mostly orange/tan medium to fine sands, stiff, trace of silt.	
					Mostly tan to white medium to fine sands, very stiff, dry, very dense	
					Same as above, but tan turns to orange/tan	
10.0	46+ return				Mostly tan/orange fine to medium sands, with trace of clay, mica is prevalent	
					Mostly tan to white medium to fine sands, medium dense, medium stiff. mica is prevalent	
					Same as above, but changes from tan to orange, sands become fine	
15.0	3ft return				Mostly weathered orange, red, tanish white fine to medium sands with a trace of clay.	
					Same as above, mica prevalent	
20.0	3ft return				Mostly brown/tan saprolite, fine to medium, dense, and stiff	
					Brown, fine to medium sands, very wet	
					Same as above.	
24	91 1/2 return				24 Bottom	

BLOWS/FT.	DENSITY	BLOWS/FT.	CONSISTENCY	SAMPLER ID.	DESCRIPTIONS	NOTES
0-4	VERY LOOSE	0-2	VERY SOFT	SS SPLIT SPOON	MOSTLY 50-100%	WD WHILE DRILLING
5-10	LOOSE	3-4	SOFT	ST SHELBY TUBE	SOME 30-45%	NE NOT ENCOUNTERED
11-30	MEDIUM DENSE	5-8	MEDIUM STIFF	G GRAB SAMPLE	LITTLE 15-25%	UR NOT READ
31-50	DENSE	9-15	STIFF	MC MACRO-CORE	FEW 5-10%	NR NO RECOVERY
50+	VERY DENSE	16-30	VERY STIFF		TRACE <5%	
		31+	HARD			

Appendix B

**Permanent Well
Construction Diagrams**

SHALLOW WELL CONSTRUCTION DIAGRAMS



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: AE Drilling
DRILLER: M. Gonzales
FIELD REPRESENTATIVE: C. Suddeth

WELL NUMBER: MW-1
JOB NUMBER: 60318382
TYPE OF INSTALLATION: Monitoring Well
LOCATION: _____
INSTALLATION DATE: 04/10/14

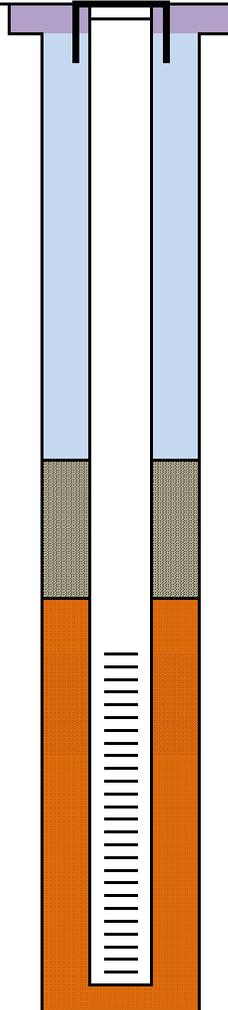
SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 106.55

NORTHING: 903785.85
EASTING: 1808640.77

GROUND SURFACE ELEVATION: 106.67 feet

CASING STICKUP: - 0.12 feet

COMMENTS:



TYPE OF ANNULAR SEAL Neat Cement
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 8.0 inch
TOP OF WELL SEAL 2.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 3.0 feet
TOP OF SCREENED INTERVAL 4.0 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 14.0 feet
BOTTOM OF BOREHOLE 14.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: AE Drilling
DRILLER: M. Gonzales
FIELD REPRESENTATIVE: C. Suddeth

WELL NUMBER: MW-2
JOB NUMBER: 60318382
TYPE OF INSTALLATION: Monitoring Well
LOCATION: _____
INSTALLATION DATE: 04/10/14

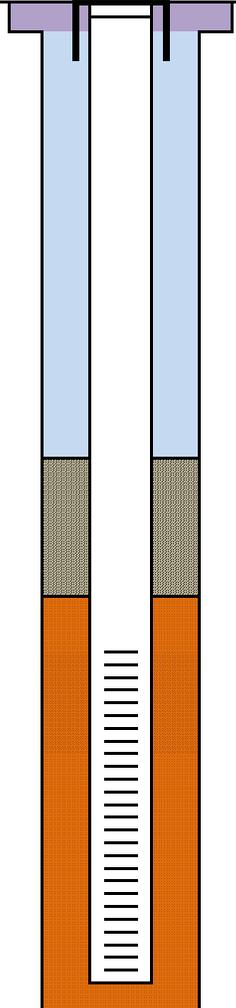
SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 103

NORTHING: 904147.71
EASTING: 1808877.29

GROUND SURFACE ELEVATION: 103.24 feet

CASING STICKUP: - 0.24 feet

COMMENTS:



TYPE OF ANNULAR SEAL Neat Cement
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 8.0 inch
TOP OF WELL SEAL 7.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 11.5 feet
TOP OF SCREENED INTERVAL 15.0 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 25.0 feet
BOTTOM OF BOREHOLE 26.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
 LOCATION: Newberry, SC
 CLIENT: Philips
 CONTRACTOR: AE Drilling
 DRILLER: M. Gonzales
 FIELD REPRESENTATIVE: C. Suddeth

WELL NUMBER: MW-3
 JOB NUMBER: 60318382
 TYPE OF INSTALLATION: Monitoring Well
 LOCATION: _____
 INSTALLATION DATE: 04/10/14

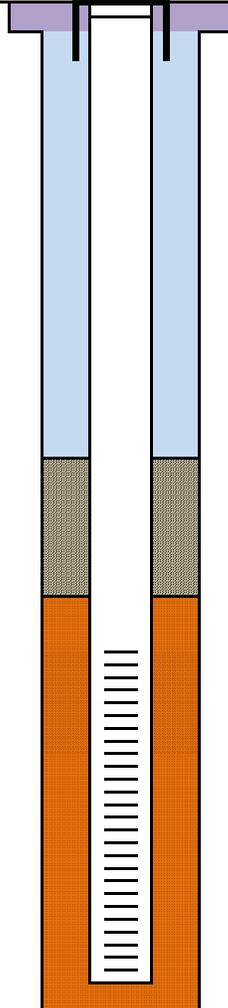
SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
 TOP OF CASING ELEVATION: 93.40

NORTHING: 904294.34
 EASTING: 1807682.74

GROUND SURFACE ELEVATION: 93.82 feet

CASING STICKUP: -0.40 feet

COMMENTS:



TYPE OF ANNULAR SEAL Neat Cement

TYPE OF WELL CASING OR RISER Sch. 40 PVC
 INSIDE DIAMETER 2.0 inch

NOMINAL BOREHOLE DIAMETER 8.0 inch

TOP OF WELL SEAL 11.0 feet
 TYPE OF SEAL Bentonite Chips

TOP OF SAND FILTER PACK 13.0 feet

TOP OF SCREENED INTERVAL 15.0 feet
 TYPE OF SCREEN PVC
 SLOT SIZE 0.010 inch
 INSIDE DIAMETER 2.0 inch
 SCREEN LENGTH 10.0 feet

FILTER PACK AROUND SCREEN No. 2 sand

BOTTOM OF WELL 25.0 feet
 BOTTOM OF BOREHOLE 26.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: AE Drilling
DRILLER: M. Gonzales
FIELD REPRESENTATIVE: C. Suddeth

WELL NUMBER: MW-4
JOB NUMBER: 60318382
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Southwest corner of site
INSTALLATION DATE: 04/11/14

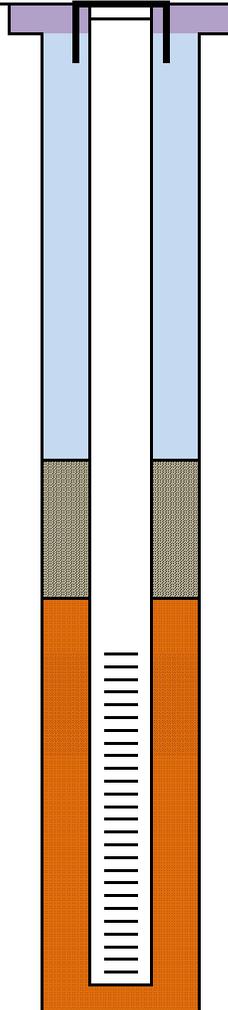
SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 104.66

NORTHING: 904270.88
EASTING: 1808044.45

GROUND SURFACE ELEVATION: 104.95 feet

CASING STICKUP: -0.29 feet

COMMENTS:



TYPE OF ANNULAR SEAL Neat Cement
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 8.0 inch
TOP OF WELL SEAL 11.1 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 13.2 feet
TOP OF SCREENED INTERVAL 15.0 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 25.0 feet
BOTTOM OF BOREHOLE 26.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: AE Drilling
DRILLER: M. Gonzales
FIELD REPRESENTATIVE: C. Suddeth

WELL NUMBER: MW-5
JOB NUMBER: 60318382
TYPE OF INSTALLATION: Monitoring Well
LOCATION: _____
INSTALLATION DATE: 04/14/14

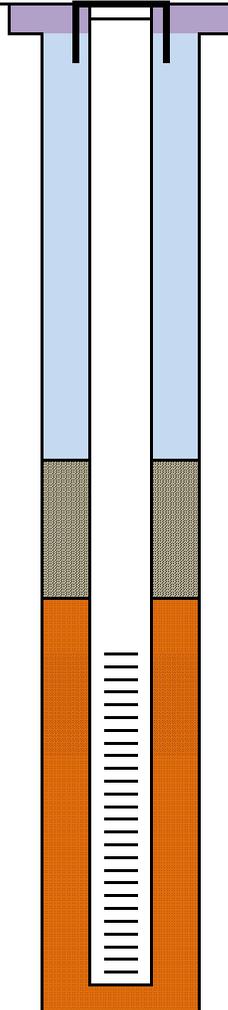
SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 102.33

NORTHING: 904746.46
EASTING: 1808388.11

GROUND SURFACE ELEVATION: 102.56 feet

CASING STICKUP: -0.23 feet

COMMENTS:



TYPE OF ANNULAR SEAL Neat Cement
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 8.0 inch
TOP OF WELL SEAL 11.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 13.0 feet
TOP OF SCREENED INTERVAL 15.0 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 25.0 feet
BOTTOM OF BOREHOLE 26.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: AE Drilling
DRILLER: M. Gonzales
FIELD REPRESENTATIVE: C. Suddeth

WELL NUMBER: MW-6
JOB NUMBER: 60318382
TYPE OF INSTALLATION: Monitoring Well
LOCATION: _____
INSTALLATION DATE: 04/14/14

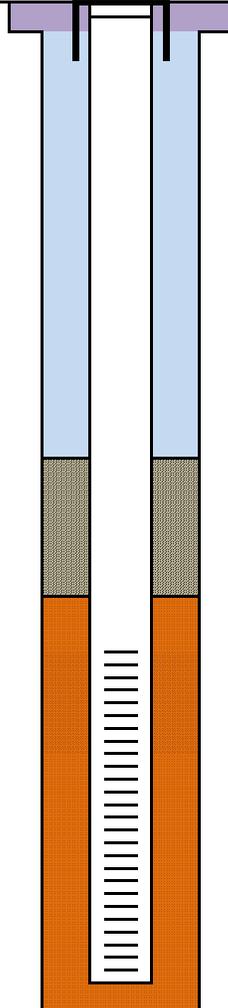
SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 106.06

NORTHING: 904425.70
EASTING: 1808230.82

GROUND SURFACE ELEVATION: 106.14 feet

CASING STICKUP: -0.08 feet

COMMENTS:



TYPE OF ANNULAR SEAL Neat Cement
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 8.0 inch
TOP OF WELL SEAL 11.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 13.1 feet
TOP OF SCREENED INTERVAL 15.5 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 25.5 feet
BOTTOM OF BOREHOLE 26.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: AE Drilling
DRILLER: M. Gonzales
FIELD REPRESENTATIVE: C. Suddeth

WELL NUMBER: MW-7
JOB NUMBER: 60318382
TYPE OF INSTALLATION: Monitoring Well
LOCATION: _____
INSTALLATION DATE: 04/15/14

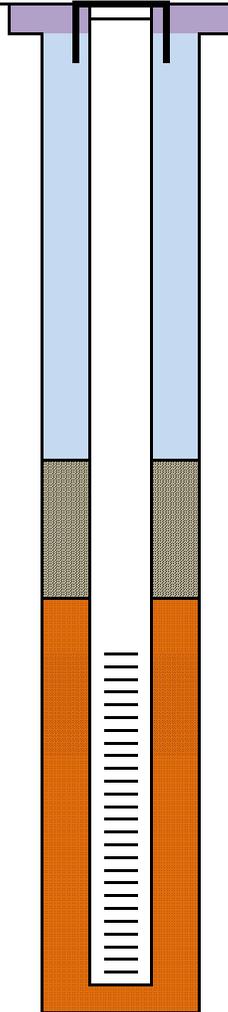
SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 99.51

NORTHING: 904876.36
EASTING: 1808234.38

GROUND SURFACE ELEVATION: 99.54 feet

CASING STICKUP: - 0.03 feet

COMMENTS:



TYPE OF ANNULAR SEAL Neat Cement
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 8.0 inch
TOP OF WELL SEAL 10.9 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 13.1 feet
TOP OF SCREENED INTERVAL 15.0 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 25.0 feet
BOTTOM OF BOREHOLE 26.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: AE Drilling
DRILLER: M. Gonzales
FIELD REPRESENTATIVE: C. Suddeth

WELL NUMBER: MW-8
JOB NUMBER: 60318382
TYPE OF INSTALLATION: Monitoring Well
LOCATION: _____
INSTALLATION DATE: 04/15/14

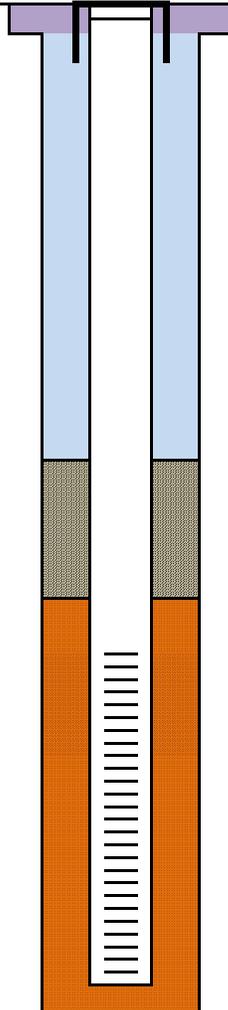
SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 102.75

NORTHING: 904445.00
EASTING: 1807989.27

GROUND SURFACE ELEVATION: 103.09 feet

CASING STICKUP: - 0.34 feet

COMMENTS:



TYPE OF ANNULAR SEAL Neat Cement
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 8.0 inch
TOP OF WELL SEAL 10.8 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 13.0 feet
TOP OF SCREENED INTERVAL 15.0 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 25.0 feet
BOTTOM OF BOREHOLE 26.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: AE Drilling
DRILLER: M. Gonzales
FIELD REPRESENTATIVE: C. Suddeth

WELL NUMBER: MW-9
JOB NUMBER: 60318382
TYPE OF INSTALLATION: Monitoring Well
LOCATION: _____
INSTALLATION DATE: 04/15/14

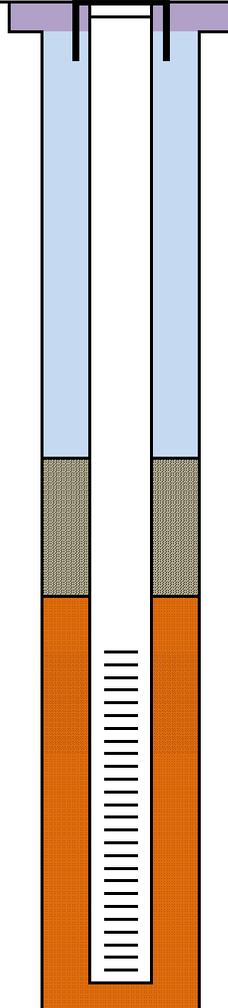
SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 101.03

NORTHING: 904518.52
EASTING: 1807907.99

GROUND SURFACE ELEVATION: 101.18 feet

CASING STICKUP: - 0.15 feet

COMMENTS:



TYPE OF ANNULAR SEAL Neat Cement
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 8.0 inch
TOP OF WELL SEAL 11.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 13.1 feet
TOP OF SCREENED INTERVAL 15.5 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 25.5 feet
BOTTOM OF BOREHOLE 26.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



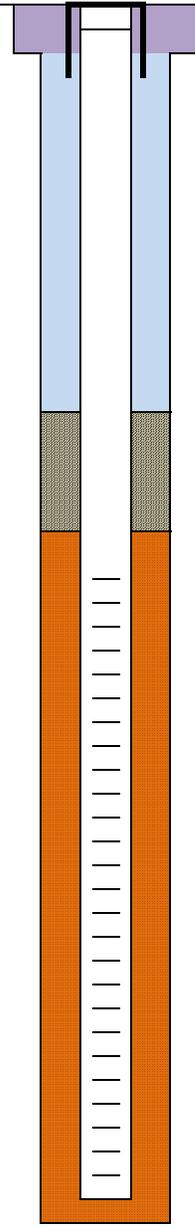
Shallow Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u>	WELL NUMBER: <u>TMW-21</u>
LOCATION: <u>Newberry, SC</u>	JOB NUMBER: <u>60318382</u>
CLIENT: <u>Philips</u>	TYPE OF INSTALLATION: <u>Monitoring Well</u>
CONTRACTOR: <u>AE Drilling</u>	
DRILLER: <u>G. Winbourn</u>	
FIELD REPRESENTATIVE: <u>C. Suddeth</u>	LOCATION: _____
	INSTALLATION DATE: <u>05/21/14</u>

SURVEY DATUM: <u>NAVD 88 (Vertical)</u>	NORTHING: <u>904398.78</u>
<u>NAD 83 (Horizontal)</u>	
TOP OF CASING ELEVATION: <u>106.14</u>	EASTING: <u>1808061.30</u>

GROUND SURFACE ELEVATION: _____ **CASING STICKUP:** _____ feet

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Neat Cement</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>1.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>4.0 inch</u>
TOP OF WELL SEAL	<u>7.2 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>9.3 feet</u>
TOP OF SCREENED INTERVAL	<u>13.5 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>1.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>23.5 feet</u>
BOTTOM OF BOREHOLE	<u>25.0 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



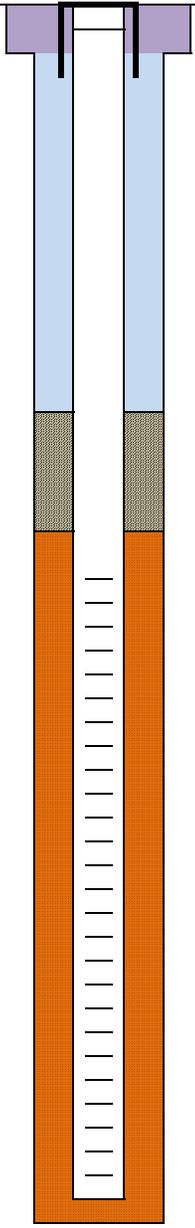
Shallow Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u> LOCATION: <u>Newberry, SC</u> CLIENT: <u>Philips</u> CONTRACTOR: <u>AE Drilling</u> DRILLER: <u>G. Winbourn</u> FIELD REPRESENTATIVE: <u>C. Suddeth</u>	WELL NUMBER: <u>TMW-22</u> JOB NUMBER: <u>60318382</u> TYPE OF INSTALLATION: <u>Monitoring Well</u> LOCATION: _____ INSTALLATION DATE: <u>05/21/14</u>
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SURVEY DATUM: <u>NAVD 88 (Vertical)</u> <u>NAD 83 (Horizontal)</u> TOP OF CASING ELEVATION: <u>106.12</u>	NORTHING: <u>904311.87</u> EASTING: <u>1808199.28</u> GROUND SURFACE ELEVATION: <u>106.22</u>
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CASING STICKUP: -0.1 feet

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Neat Cement</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>1.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>4.0 inch</u>
TOP OF WELL SEAL	<u>6.5 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>9.2 feet</u>
TOP OF SCREENED INTERVAL	<u>14.8 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>1.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>24.8 feet</u>
BOTTOM OF BOREHOLE	<u>25.0 feet</u>

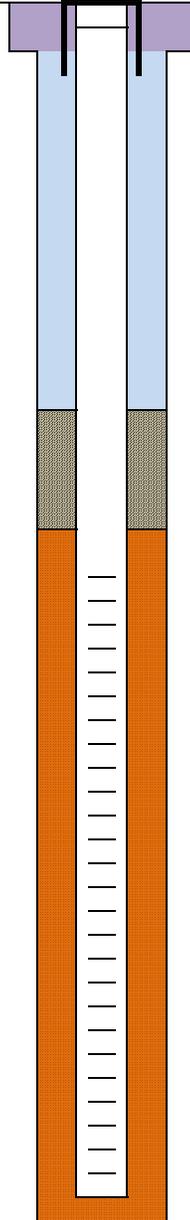
NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Temporary Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u> LOCATION: <u>Newberry, SC</u> CLIENT: <u>Philips</u> CONTRACTOR: <u>AE Drilling</u> DRILLER: <u>G. Winbourn</u> FIELD REPRESENTATIVE: <u>C. Suddeth</u>	WELL NUMBER: <u>TMW-23</u> JOB NUMBER: <u>60318382</u> TYPE OF INSTALLATION: <u>Monitoring Well</u> LOCATION: _____ INSTALLATION DATE: <u>05/27/14</u>
SURVEY DATUM: <u>NAVD 88 (Vertical)</u> <u>NAD 83 (Horizontal)</u> TOP OF CASING ELEVATION: <u>106.2</u>	NORTHING: <u>904266.87</u> EASTING: <u>1808323.30</u>
GROUND SURFACE ELEVATION: <u>106.35</u>	CASING STICKUP: <u>-0.14 feet</u>

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Neat Cement</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>1.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>4.0 inch</u>
TOP OF WELL SEAL	<u>8.0 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>11.0 feet</u>
TOP OF SCREENED INTERVAL	<u>14.8 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>1.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>24.8 feet</u>
BOTTOM OF BOREHOLE	<u>25.0 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



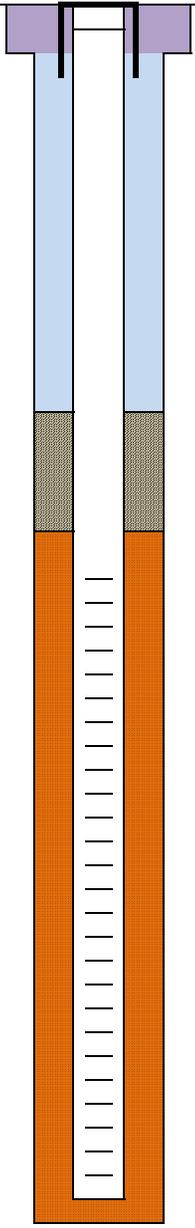
Shallow Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u>	WELL NUMBER: <u>TMW-24</u>
LOCATION: <u>Newberry, SC</u>	JOB NUMBER: <u>60318382</u>
CLIENT: <u>Philips</u>	TYPE OF INSTALLATION: <u>Monitoring Well</u>
CONTRACTOR: <u>AE Drilling</u>	LOCATION: _____
DRILLER: <u>G. Winbourn</u>	INSTALLATION DATE: <u>05/28/14</u>
FIELD REPRESENTATIVE: <u>C. Suddeth</u>	

SURVEY DATUM: <u>NAVD 88 (Vertical)</u>	NORTHING: <u>904723.74</u>
<u>NAD 83 (Horizontal)</u>	
TOP OF CASING ELEVATION: <u>104.59</u>	EASTING: <u>1808310.66</u>

GROUND SURFACE ELEVATION: 104.69 **CASING STICKUP:** -0.1 feet

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Neat Cement</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>1.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>4.0 inch</u>
TOP OF WELL SEAL	<u>10.0 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>13.0 feet</u>
TOP OF SCREENED INTERVAL	<u>14.8 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>1.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>24.8 feet</u>
BOTTOM OF BOREHOLE	<u>25.0 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



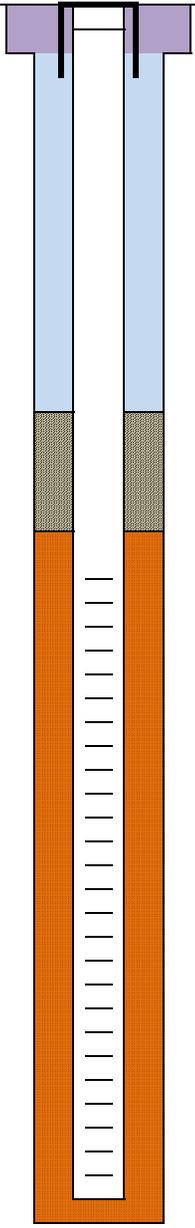
Shallow Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u> LOCATION: <u>Newberry, SC</u> CLIENT: <u>Philips</u> CONTRACTOR: <u>AE Drilling</u> DRILLER: <u>G. Winbourn</u> FIELD REPRESENTATIVE: <u>C. Suddeth</u>	WELL NUMBER: <u>TMW-25</u> JOB NUMBER: <u>60318382</u> TYPE OF INSTALLATION: <u>Monitoring Well</u> LOCATION: _____ INSTALLATION DATE: <u>05/28/14</u>
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SURVEY DATUM: <u>NAVD 88 (Vertical)</u> <u>NAD 83 (Horizontal)</u>	NORTHING: <u>904723.74</u>
TOP OF CASING ELEVATION: <u>104.59</u>	EASTING: <u>1808310.66</u>

GROUND SURFACE ELEVATION: 104.69 **CASING STICKUP:** -0.1 feet

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Neat Cement</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>1.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>4.0 inch</u>
TOP OF WELL SEAL	<u>8.0 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>11.5 feet</u>
TOP OF SCREENED INTERVAL	<u>14.8 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>1.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>24.8 feet</u>
BOTTOM OF BOREHOLE	<u>25.0 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u> LOCATION: <u>Newberry, SC</u> CLIENT: <u>Philips</u> CONTRACTOR: <u>AE Drilling</u> DRILLER: <u>M. Gonzalez</u> FIELD REPRESENTATIVE: <u>C. Suddeth</u>	WELL NUMBER: <u>TMW-29</u> JOB NUMBER: <u>60318382</u> TYPE OF INSTALLATION: <u>Monitoring Well</u> LOCATION: _____ INSTALLATION DATE: <u>05/31/14</u>
SURVEY DATUM: <u>NAVD 88 (Vertical)</u> <u>NAD 83 (Horizontal)</u> TOP OF CASING ELEVATION: <u>104.39</u>	NORTHING: <u>904149.24</u> EASTING: <u>1898499.43</u>
GROUND SURFACE ELEVATION: <u>104.69</u>	CASING STICKUP: <u>-0.1 feet</u>

COMMENTS:

TYPE OF ANNULAR SEAL	<u>Neat Cement</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>1.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>4.0 inch</u>
TOP OF WELL SEAL	<u>3.0 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>5.0 feet</u>
TOP OF SCREENED INTERVAL	<u>8.0 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>1.0 inch</u>
SCREEN LENGTH	<u>5.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>13.0 feet</u>
BOTTOM OF BOREHOLE	<u>13.0 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



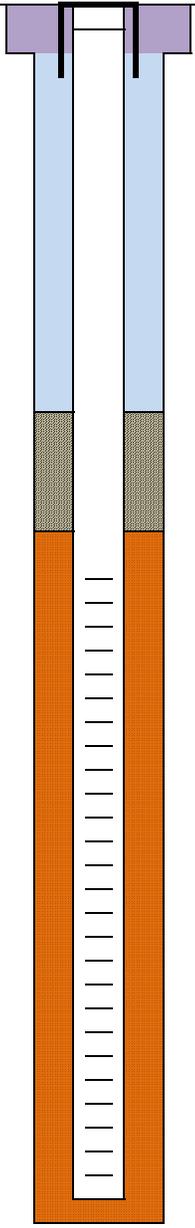
Shallow Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u> LOCATION: <u>Newberry, SC</u> CLIENT: <u>Philips</u> CONTRACTOR: <u>AE Drilling</u> DRILLER: <u>M. Gonzalez</u> FIELD REPRESENTATIVE: <u>C. Suddeth</u>	WELL NUMBER: <u>TMW-30</u> JOB NUMBER: <u>60318382</u> TYPE OF INSTALLATION: <u>Monitoring Well</u> LOCATION: _____ INSTALLATION DATE: <u>04/15/14</u>
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SURVEY DATUM: <u>NAVD 88 (Vertical)</u> <u>NAD 83 (Horizontal)</u>	NORTHING: <u>904185.08</u>
TOP OF CASING ELEVATION: <u>106.17</u>	EASTING: <u>1808279.06</u>

GROUND SURFACE ELEVATION: 106.27 **CASING STICKUP:** -0.1 feet

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Neat Cement</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>1.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>4.0 inch</u>
TOP OF WELL SEAL	<u>9.2 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>11.5 feet</u>
TOP OF SCREENED INTERVAL	<u>14.8 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>1.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>24.8 feet</u>
BOTTOM OF BOREHOLE	<u>25.0 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: AE Drilling
DRILLER: M. Gonzalez
FIELD REPRESENTATIVE: C. Suddeth

WELL NUMBER: TMW-31
JOB NUMBER: 60318382
TYPE OF INSTALLATION: Monitoring Well
LOCATION: _____
INSTALLATION DATE: 06/03/14

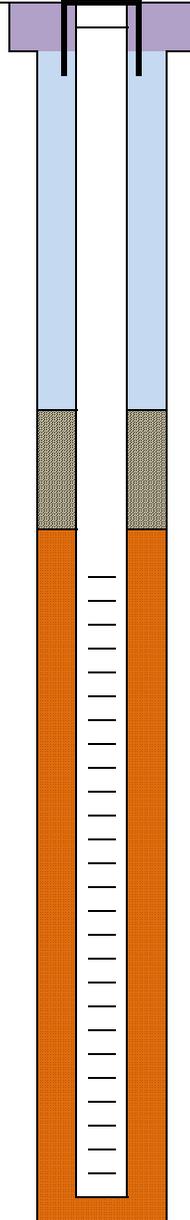
SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 106.21

NORTHING: 904198.60
EASTING: 1808538.07

GROUND SURFACE ELEVATION: 106.31

CASING STICKUP: -0.1 feet

COMMENTS:



TYPE OF ANNULAR SEAL Neat Cement
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 1.0 inch
NOMINAL BOREHOLE DIAMETER 4.0 inch
TOP OF WELL SEAL 3.8 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 7.0 feet
TOP OF SCREENED INTERVAL 11.0 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 1.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 21.0 feet
BOTTOM OF BOREHOLE 21.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: AE Drilling
DRILLER: M. Gonzalez
FIELD REPRESENTATIVE: C. Suddeth

WELL NUMBER: TMW-32
JOB NUMBER: 60318382
TYPE OF INSTALLATION: Monitoring Well
LOCATION: _____
INSTALLATION DATE: 06/05/14

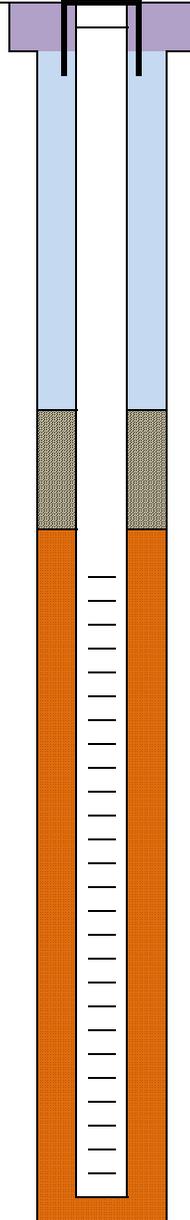
SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 104.52

NORTHING: 904786.00
EASTING: 1808256.02

GROUND SURFACE ELEVATION: 104.62

CASING STICKUP: -0.1 feet

COMMENTS:



TYPE OF ANNULAR SEAL Neat Cement
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 1.0 inch
NOMINAL BOREHOLE DIAMETER 4.0 inch
TOP OF WELL SEAL 9.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 12.5 feet
TOP OF SCREENED INTERVAL 14.8 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 1.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 24.8 feet
BOTTOM OF BOREHOLE 25.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u> LOCATION: <u>Newberry, SC</u> CLIENT: <u>Philips</u> CONTRACTOR: <u>AE Drilling</u> DRILLER: <u>M. Gonzalez</u> FIELD REPRESENTATIVE: <u>C. Suddeth</u>	WELL NUMBER: <u>TMW-33</u> JOB NUMBER: <u>60318382</u> TYPE OF INSTALLATION: <u>Monitoring Well</u> LOCATION: _____ INSTALLATION DATE: <u>06/05/14</u>
SURVEY DATUM: <u>NAVD 88 (Vertical)</u> <u>NAD 83 (Horizontal)</u> TOP OF CASING ELEVATION: <u>104.57</u>	NORTHING: <u>904634.82</u> EASTING: <u>1808330.14</u>
GROUND SURFACE ELEVATION: <u>104.67</u>	CASING STICKUP: <u>-0.1 feet</u>

COMMENTS:		<table style="width: 100%;"> <tr> <td style="text-align: right;">TYPE OF ANNULAR SEAL</td> <td><u>Neat Cement</u></td> </tr> <tr> <td style="text-align: right;">TYPE OF WELL CASING OR RISER</td> <td><u>Sch. 40 PVC</u></td> </tr> <tr> <td style="text-align: right;">INSIDE DIAMETER</td> <td><u>1.0 inch</u></td> </tr> <tr> <td style="text-align: right;">NOMINAL BOREHOLE DIAMETER</td> <td><u>4.0 inch</u></td> </tr> <tr> <td style="text-align: right;">TOP OF WELL SEAL</td> <td><u>8.6 feet</u></td> </tr> <tr> <td style="text-align: right;">TYPE OF SEAL</td> <td><u>Bentonite Chips</u></td> </tr> <tr> <td style="text-align: right;">TOP OF SAND FILTER PACK</td> <td><u>11.1 feet</u></td> </tr> <tr> <td style="text-align: right;">TOP OF SCREENED INTERVAL</td> <td><u>14.8 feet</u></td> </tr> <tr> <td style="text-align: right;">TYPE OF SCREEN</td> <td><u>PVC</u></td> </tr> <tr> <td style="text-align: right;">SLOT SIZE</td> <td><u>0.010 inch</u></td> </tr> <tr> <td style="text-align: right;">INSIDE DIAMETER</td> <td><u>1.0 inch</u></td> </tr> <tr> <td style="text-align: right;">SCREEN LENGTH</td> <td><u>10.0 feet</u></td> </tr> <tr> <td style="text-align: right;">FILTER PACK AROUND SCREEN</td> <td><u>No. 2 sand</u></td> </tr> <tr> <td style="text-align: right;">BOTTOM OF WELL</td> <td><u>24.8 feet</u></td> </tr> <tr> <td style="text-align: right;">BOTTOM OF BOREHOLE</td> <td><u>25.0 feet</u></td> </tr> </table>	TYPE OF ANNULAR SEAL	<u>Neat Cement</u>	TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>	INSIDE DIAMETER	<u>1.0 inch</u>	NOMINAL BOREHOLE DIAMETER	<u>4.0 inch</u>	TOP OF WELL SEAL	<u>8.6 feet</u>	TYPE OF SEAL	<u>Bentonite Chips</u>	TOP OF SAND FILTER PACK	<u>11.1 feet</u>	TOP OF SCREENED INTERVAL	<u>14.8 feet</u>	TYPE OF SCREEN	<u>PVC</u>	SLOT SIZE	<u>0.010 inch</u>	INSIDE DIAMETER	<u>1.0 inch</u>	SCREEN LENGTH	<u>10.0 feet</u>	FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>	BOTTOM OF WELL	<u>24.8 feet</u>	BOTTOM OF BOREHOLE	<u>25.0 feet</u>
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BOTTOM OF BOREHOLE	<u>25.0 feet</u>																															

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-10
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Dickert Property
INSTALLATION DATE: 08/04/15

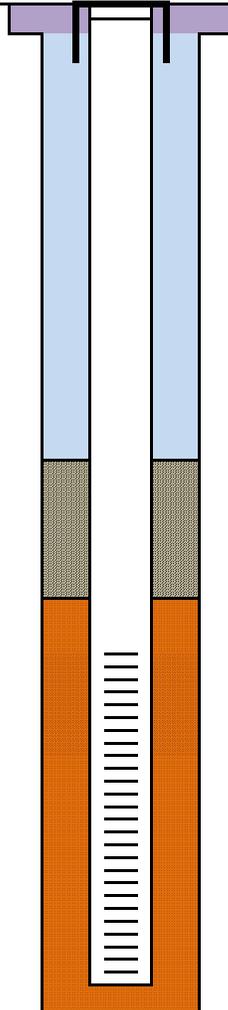
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 550.96 ft

NORTHING: 904882.40
EASTING: 1808439.00

GROUND SURFACE ELEVATION: 551.14 ft

CASING STICKUP: -0.18

COMMENTS:



TYPE OF ANNULAR SEAL	Concrete
TYPE OF WELL CASING OR RISER	Sch. 40 PVC
INSIDE DIAMETER	2.0 inch
NOMINAL BOREHOLE DIAMETER	6.0 inch
TOP OF WELL SEAL	1.0 feet
TYPE OF SEAL	Bentonite Chips
TOP OF SAND FILTER PACK	18.0 feet
TOP OF SCREENED INTERVAL	20.3 feet
TYPE OF SCREEN	PVC
SLOT SIZE	0.010 inch
INSIDE DIAMETER	2.0 inch
SCREEN LENGTH	9.7 feet
FILTER PACK AROUND SCREEN	No. 2 sand
BOTTOM OF WELL	30.32 feet
BOTTOM OF BOREHOLE	30.32 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-11
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Dickert Property
INSTALLATION DATE: 08/04/15

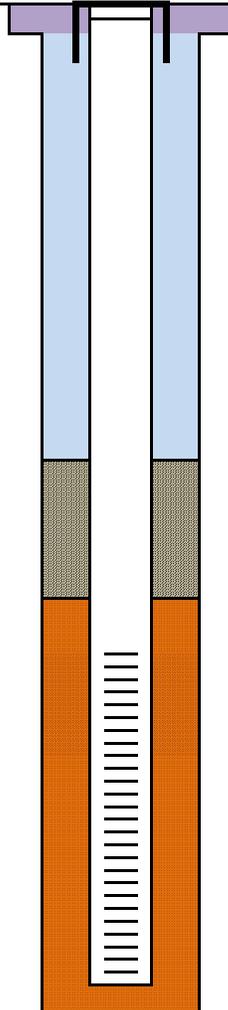
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 548.23 ft

NORTHING: 905117.00
EASTING: 1808177.00

GROUND SURFACE ELEVATION: 548.53 ft

CASING STICKUP: -0.3

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 0.5 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 18.0 feet
TOP OF SCREENED INTERVAL 20.32 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 9.7 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 30.32 feet
BOTTOM OF BOREHOLE 30.32 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-12
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Dickert Property
INSTALLATION DATE: 08/04/15

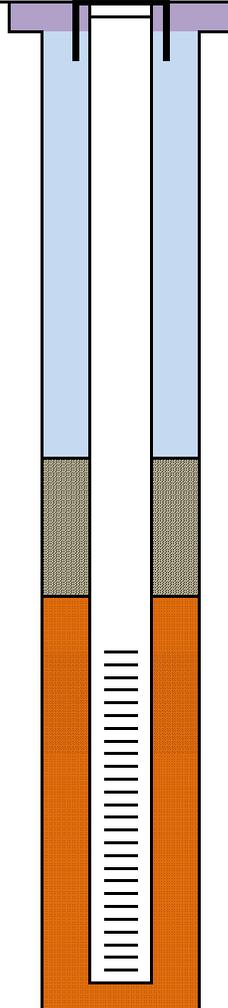
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 537.31 ft

NORTHING: 905486.10
EASTING: 1808319.00

GROUND SURFACE ELEVATION: 537.03 ft

CASING STICKUP: 0.28

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 1.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 19.0 feet
TOP OF SCREENED INTERVAL 21.4 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 9.7 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 31.37 feet
BOTTOM OF BOREHOLE 32.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-13
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Dickert Property
INSTALLATION DATE: 08/04/15

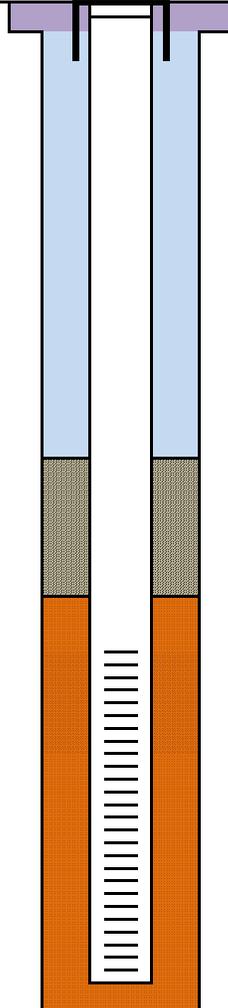
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 531.16 ft

NORTHING: 905696.80
EASTING: 1808488.00

GROUND SURFACE ELEVATION: 531.12 ft

CASING STICKUP: 0.04

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 1.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 13.0 feet
TOP OF SCREENED INTERVAL 15.3 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 9.7 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 25.29 feet
BOTTOM OF BOREHOLE 26.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-14
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Dickert Property
INSTALLATION DATE: 08/05/15

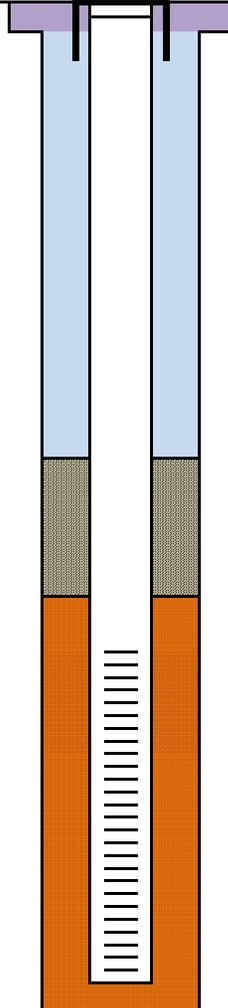
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 531.97 ft

NORTHING: 905590.30
EASTING: 1808658.00

GROUND SURFACE ELEVATION: 532.07 ft

CASING STICKUP: -0.1

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Concrete</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>2.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>6.0 inch</u>
TOP OF WELL SEAL	<u>1.0 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>8.0 feet</u>
TOP OF SCREENED INTERVAL	<u>10.2 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>2.0 inch</u>
SCREEN LENGTH	<u>9.7 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>20.22 feet</u>
BOTTOM OF BOREHOLE	<u>20.2 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-15
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Dickert Property
INSTALLATION DATE: 08/05/15

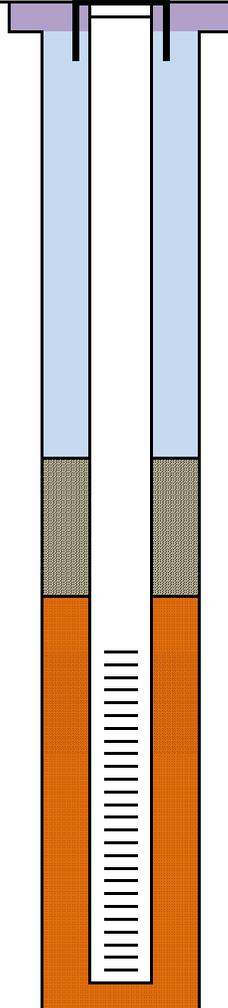
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 536.32 ft

NORTHING: 905418.60
EASTING: 1808809.00

GROUND SURFACE ELEVATION: 536.41 ft

CASING STICKUP: -0.09

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 0.5 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 1.0 feet
TOP OF SCREENED INTERVAL 1.6 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 9.7 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 11.63 feet
BOTTOM OF BOREHOLE 12.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-16
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Dickert Property
INSTALLATION DATE: 08/05/15

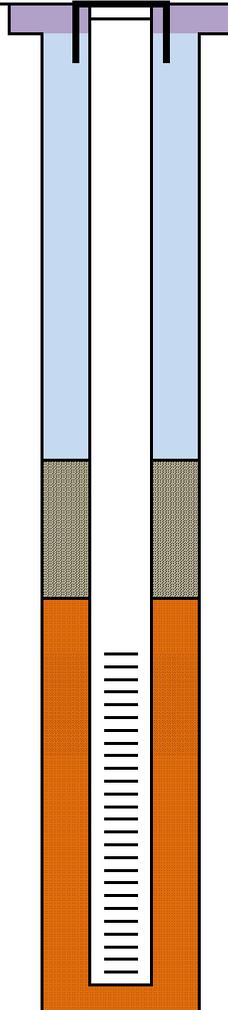
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 543.23 ft

NORTHING: 905215.80
EASTING: 1808719.00

GROUND SURFACE ELEVATION: 543.34 ft

CASING STICKUP: -0.11

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Concrete</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>2.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>6.0 inch</u>
TOP OF WELL SEAL	<u>1.0 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>8.0 feet</u>
TOP OF SCREENED INTERVAL	<u>10.3 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>2.0 inch</u>
SCREEN LENGTH	<u>9.7 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>20.29 feet</u>
BOTTOM OF BOREHOLE	<u>20.3 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-17
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Dickert Property
INSTALLATION DATE: 08/05/15

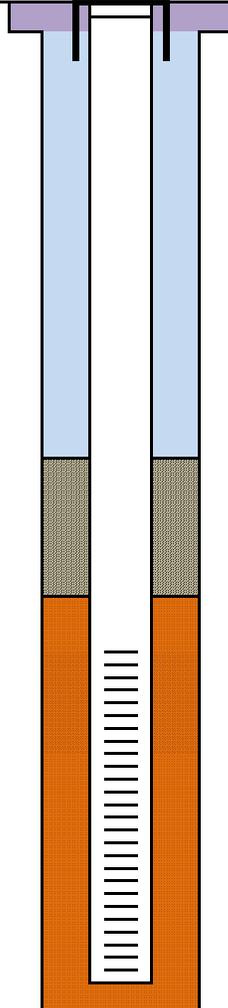
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 542.36 ft

NORTHING: 905211.60
EASTING: 1808788.00

GROUND SURFACE ELEVATION: 542.24 ft

CASING STICKUP: 0.12

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 1.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 17.0 feet
TOP OF SCREENED INTERVAL 20.3 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 9.7 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 30.27 feet
BOTTOM OF BOREHOLE 30.3 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-18
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Dickert Property
INSTALLATION DATE: 08/03/15

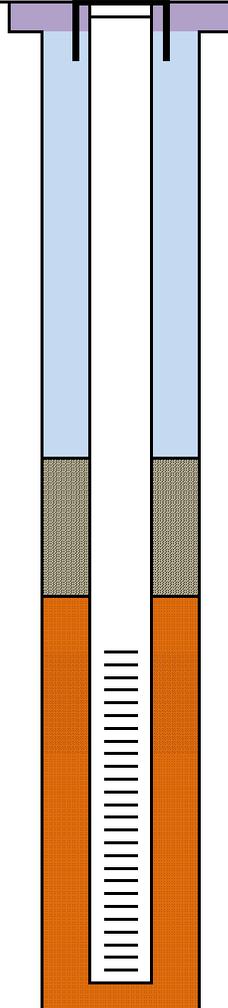
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 551.6 ft

NORTHING: 904660.20
EASTING: 1808729.00

GROUND SURFACE ELEVATION: 551.59 ft

CASING STICKUP: 0.01

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 1.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 7.0 feet
TOP OF SCREENED INTERVAL 13.7 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 9.7 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 23.67 feet
BOTTOM OF BOREHOLE 30.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-19
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Chapman Property
INSTALLATION DATE: 08/06/15

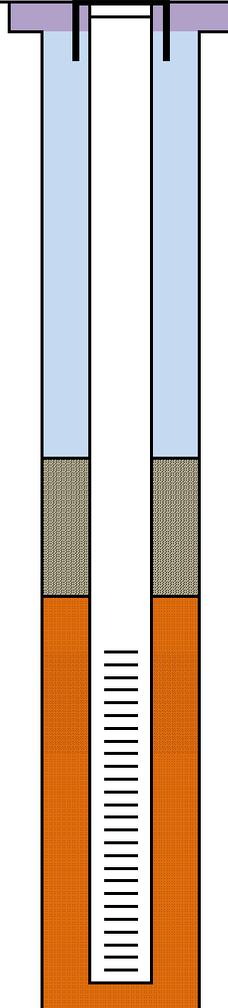
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 531.59 ft

NORTHING: 904765.10
EASTING: 1807235.00

GROUND SURFACE ELEVATION: 531.58 ft

CASING STICKUP: 0.01

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 1.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 3.0 feet
TOP OF SCREENED INTERVAL 4.8 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 9.7 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 14.77 feet
BOTTOM OF BOREHOLE 15.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-20
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Boazman / Ringer Property
INSTALLATION DATE: 08/06/15

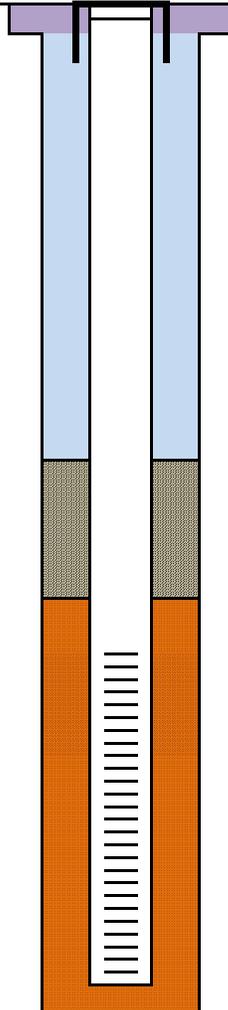
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 541.86 ft

NORTHING: 904624.30
EASTING: 1807616.00

GROUND SURFACE ELEVATION: 541.72 ft

CASING STICKUP: 0.14

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 1.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 23.0 feet
TOP OF SCREENED INTERVAL 25.3 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 9.7 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 35.3 feet
BOTTOM OF BOREHOLE 35.3 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-21
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Boazman / Ringer Property
INSTALLATION DATE: 08/07/15

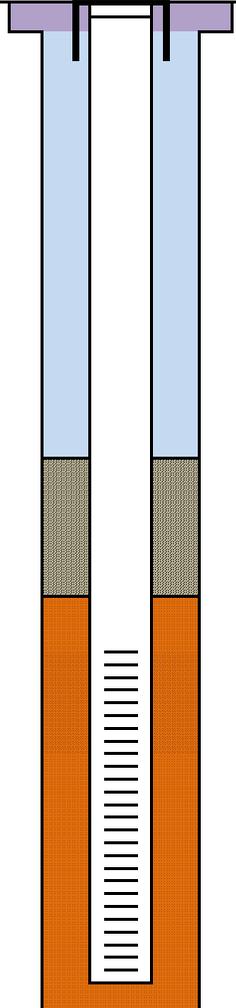
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 548.29 ft

NORTHING: 904957.60
EASTING: 1807901.00

GROUND SURFACE ELEVATION: 548.24 ft

CASING STICKUP: 0.05

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 0.6 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 10.5 feet
TOP OF SCREENED INTERVAL 14.2 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 9.7 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 24.17 feet
BOTTOM OF BOREHOLE 25.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Travis Overcash
FIELD REPRESENTATIVE: Chuck Suddeth

WELL NUMBER: MW-22
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Shakespeare Plant
INSTALLATION DATE: 08/26/15

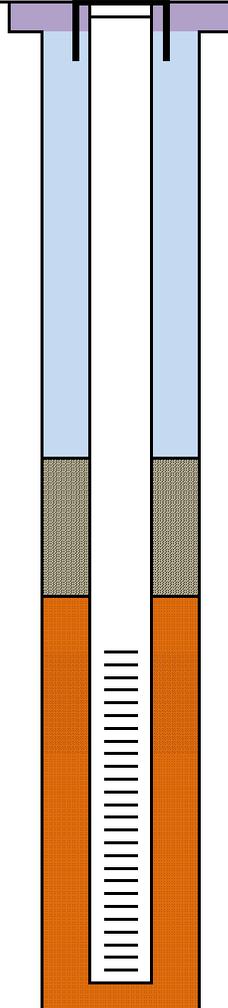
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 560.11 ft

NORTHING: 904073.80
EASTING: 1808219.00

GROUND SURFACE ELEVATION: 560.37 ft

CASING STICKUP: -0.26

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Concrete</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>2.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>6.0 inch</u>
TOP OF WELL SEAL	<u>25.9 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>13.0 feet</u>
TOP OF SCREENED INTERVAL	<u>16.2 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>2.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>26.2 feet</u>
BOTTOM OF BOREHOLE	<u>26.5 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



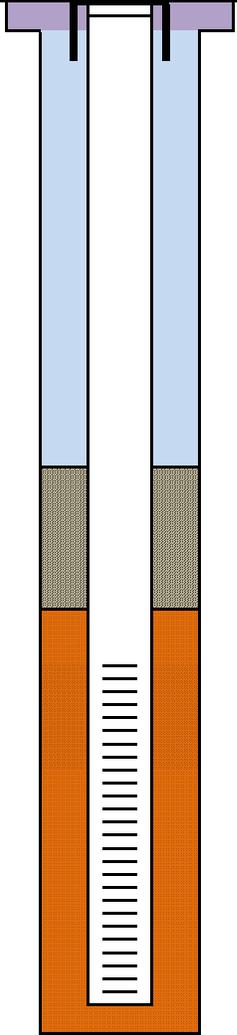
Shallow Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u>	WELL NUMBER: <u>MW-23</u>
LOCATION: <u>Newberry, SC</u>	JOB NUMBER: <u>60328302</u>
CLIENT: <u>Philips</u>	TYPE OF INSTALLATION: <u>Monitoring Well</u>
CONTRACTOR: <u>Cascade Drilling</u>	LOCATION: _____
DRILLER: <u>J. Allen</u>	INSTALLATION DATE: <u>12/15/15</u>
FIELD REPRESENTATIVE: <u>C. Suddeth</u>	

SURVEY DATUM: <u>NAVD 88 (Vertical)</u>	NORTHING: <u>904398.50</u>
<u>NAD 83 (Horizontal)</u>	EASTING: <u>1807281.00</u>
TOP OF CASING ELEVATION: <u>543.476</u>	

GROUND SURFACE ELEVATION: _____	CASING STICKUP: <u>0.274</u>
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COMMENTS:



TYPE OF ANNULAR SEAL	<u>Neat Cement</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>2.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>8.0 inch</u>
TOP OF WELL SEAL	<u>10.0 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>13.0 feet</u>
TOP OF SCREENED INTERVAL	<u>15.0 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>2.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>25.0 feet</u>
BOTTOM OF BOREHOLE	<u>26.0 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



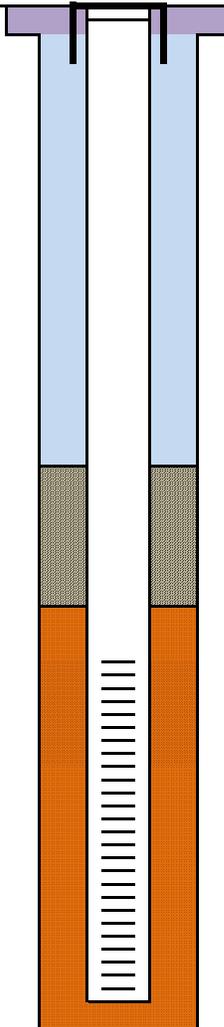
Shallow Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u> LOCATION: <u>Newberry, SC</u> CLIENT: <u>Philips</u> CONTRACTOR: <u>Cascade Drilling</u> DRILLER: <u>J. Allen</u> FIELD REPRESENTATIVE: <u>C. Suddeth</u>	WELL NUMBER: <u>MW-24</u> JOB NUMBER: <u>60328302</u> TYPE OF INSTALLATION: <u>Monitoring Well</u> LOCATION: _____ INSTALLATION DATE: <u>12/16/15</u>
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SURVEY DATUM: <u>NAVD 88 (Vertical)</u> <u>NAD 83 (Horizontal)</u>	NORTHING: <u>904567.40</u> EASTING: <u>1807059.00</u>
TOP OF CASING ELEVATION: <u>541.354</u>	

GROUND SURFACE ELEVATION: _____ **CASING STICKUP:** 0.253

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Neat Cement</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>2.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>8.0 inch</u>
TOP OF WELL SEAL	<u>14.0 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>17.5 feet</u>
TOP OF SCREENED INTERVAL	<u>20.0 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>2.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>30.0 feet</u>
BOTTOM OF BOREHOLE	<u>31.0 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



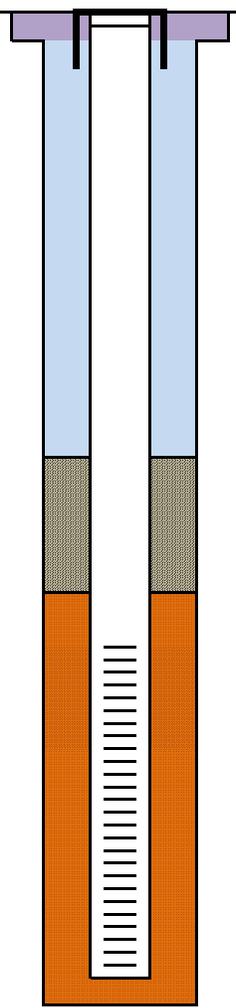
Shallow Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u>	WELL NUMBER: <u>MW-25</u>
LOCATION: <u>Newberry, SC</u>	JOB NUMBER: <u>60328302</u>
CLIENT: <u>Philips</u>	TYPE OF INSTALLATION: <u>Monitoring Well</u>
CONTRACTOR: <u>Cascade Drilling</u>	LOCATION: _____
DRILLER: _____	INSTALLATION DATE: <u>02/26/16</u>
FIELD REPRESENTATIVE: <u>S. Ross</u>	

SURVEY DATUM: <u>NAVD 88 (Vertical)</u>	NORTHING: <u>904165.30</u>
<u>NAD 83 (Horizontal)</u>	EASTING: <u>1806923.00</u>
TOP OF CASING ELEVATION: <u>535.6</u>	

GROUND SURFACE ELEVATION: _____ **CASING STICKUP:** -0.1

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Neat Cement</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>2.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>8.0 inch</u>
TOP OF WELL SEAL	<u>12.0 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>15.0 feet</u>
TOP OF SCREENED INTERVAL	<u>18.0 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>2.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>28.0 feet</u>
BOTTOM OF BOREHOLE	<u>28.0 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare
LOCATION: Newberry, South Carolina
CLIENT: Philips
CONTRACTOR: Elite Techniques
DRILLER: Tyler Felder
FIELD REPRESENTATIVE: E. Harrington

WELL NUMBER: MW-26
JOB NUMBER: 60534283
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Newberry, South Carolina
INSTALLATION DATE: 03/26/18

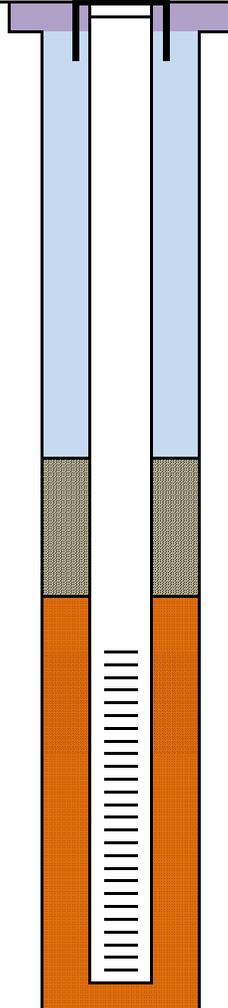
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 533.67 ft

NORTHING: 905722.64
EASTING: 1808150.32

GROUND SURFACE ELEVATION: 533.88 ft

CASING STICKUP: _____

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Grout</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>1.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>8.0 inch</u>
TOP OF WELL SEAL	<u>6.0 inch</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>10.5 feet</u>
TOP OF SCREENED INTERVAL	<u>12.5 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>1.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 Sand</u>
BOTTOM OF WELL	<u>24.5 feet</u>
BOTTOM OF BOREHOLE	<u>24.5 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare
 LOCATION: Newberry, South Carolina
 CLIENT: Philips
 CONTRACTOR: Elite Techniques
 DRILLER: Tyler Felder
 FIELD REPRESENTATIVE: E. Harrington

WELL NUMBER: MW-27
 JOB NUMBER: 60534283
 TYPE OF INSTALLATION: Monitoring Well
 LOCATION: Newberry, South Carolina
 INSTALLATION DATE: 03/26/18

SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)

NORTHING: 905878.92

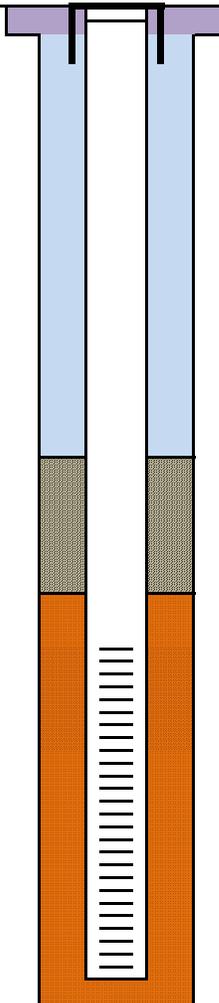
TOP OF CASING ELEVATION: 532.23 ft

EASTING: 1808266.74

GROUND SURFACE ELEVATION: 532.23 ft

CASING STICKUP: _____

COMMENTS:



TYPE OF ANNULAR SEAL Grout

TYPE OF WELL CASING OR RISER Sch. 40 PVC
 INSIDE DIAMETER 1.0 inch

NOMINAL BOREHOLE DIAMETER 8.0 inch

TOP OF WELL SEAL 6.0 inch

TYPE OF SEAL Bentonite Chips

TOP OF SAND FILTER PACK 18.0 feet

TOP OF SCREENED INTERVAL 20.0 feet

TYPE OF SCREEN PVC

SLOT SIZE 0.010 inch

INSIDE DIAMETER 1.0 inch

SCREEN LENGTH 10.0 feet

FILTER PACK AROUND SCREEN No. 2 Sand

BOTTOM OF WELL 30.0 feet

BOTTOM OF BOREHOLE 30.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE





Shallow Monitoring Well Construction Details

PROJECT: Shakespeare
 LOCATION: Newberry, South Carolina
 CLIENT: Philips
 CONTRACTOR: Elite Techniques
 DRILLER: Tyler Felder
 FIELD REPRESENTATIVE: E. Harrington

WELL NUMBER: MW-28
 JOB NUMBER: 60534283
 TYPE OF INSTALLATION: Monitoring Well
 LOCATION: Newberry, South Carolina
 INSTALLATION DATE: 03/26/18

SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)

NORTHING: 905849.12

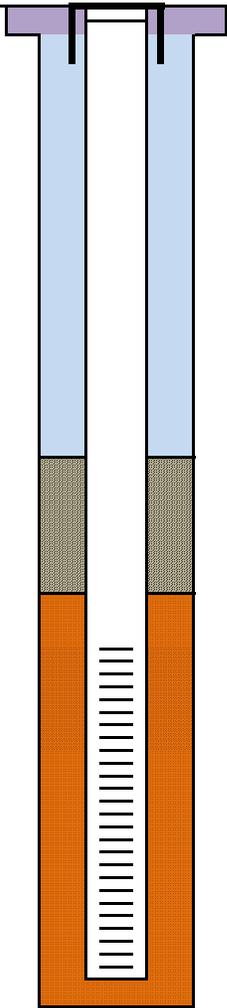
TOP OF CASING ELEVATION: 532.43 ft

EASTING: 1808550.82

GROUND SURFACE ELEVATION: 532.23 ft

CASING STICKUP: _____

COMMENTS:



TYPE OF ANNULAR SEAL Grout

TYPE OF WELL CASING OR RISER Sch. 40 PVC
 INSIDE DIAMETER 1.0 inch

NOMINAL BOREHOLE DIAMETER 8.0 inch

TOP OF WELL SEAL 6.0 inch

TYPE OF SEAL Bentonite Chips

TOP OF SAND FILTER PACK 11.5 feet

TOP OF SCREENED INTERVAL 13.5 feet

TYPE OF SCREEN PVC

SLOT SIZE 0.010 inch

INSIDE DIAMETER 1.0 inch

SCREEN LENGTH 10.0 feet

FILTER PACK AROUND SCREEN No. 2 Sand

BOTTOM OF WELL 23.5 feet

BOTTOM OF BOREHOLE 23.5 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE





Shallow Monitoring Well Construction Details

PROJECT: Shakespeare
LOCATION: Newberry, South Carolina
CLIENT: Philips
CONTRACTOR: Elite Techniques
DRILLER: Tyler Felder
FIELD REPRESENTATIVE: E. Harrington

WELL NUMBER: MW-29
JOB NUMBER: 60534283
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Newberry, South Carolina
INSTALLATION DATE: 03/26/18

SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)

NORTHING: 905726.54

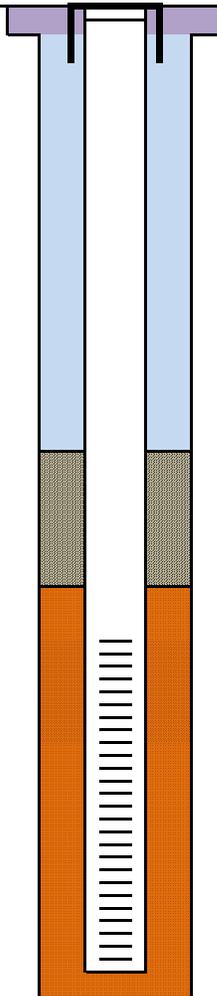
TOP OF CASING ELEVATION: 539.53 ft

EASTING: 1808880.98

GROUND SURFACE ELEVATION: 539.79 ft

CASING STICKUP: _____

COMMENTS:



TYPE OF ANNULAR SEAL Grout

TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 1.0 inch

NOMINAL BOREHOLE DIAMETER 8.0 inch

TOP OF WELL SEAL 6.0 inch

TYPE OF SEAL Bentonite Chips

TOP OF SAND FILTER PACK 12.0 feet

TOP OF SCREENED INTERVAL 14.0 feet

TYPE OF SCREEN PVC

SLOT SIZE 0.010 inch

INSIDE DIAMETER 1.0 inch

SCREEN LENGTH 10.0 feet

FILTER PACK AROUND SCREEN No. 2 Sand

BOTTOM OF WELL 24.0 feet

BOTTOM OF BOREHOLE 24.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



INTERMEDIATE WELL CONSTRUCTION DIAGRAMS



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Chuck Suddeth

WELL NUMBER: MW-2I
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Shakespeare Facility
INSTALLATION DATE: 08/18/15

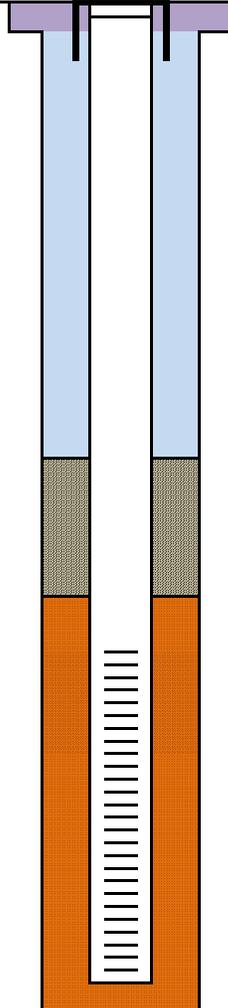
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 560.19 ft

NORTHING: 904221.00
EASTING: 1808653.00

GROUND SURFACE ELEVATION: 559.97 ft

CASING STICKUP: 0.22

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 28.5 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 33.0 feet
TOP OF SCREENED INTERVAL 36.6 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 46.55 feet
BOTTOM OF BOREHOLE 55.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver law

WELL NUMBER: MW-3I
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Shakespeare Facility
INSTALLATION DATE: 08/11/15

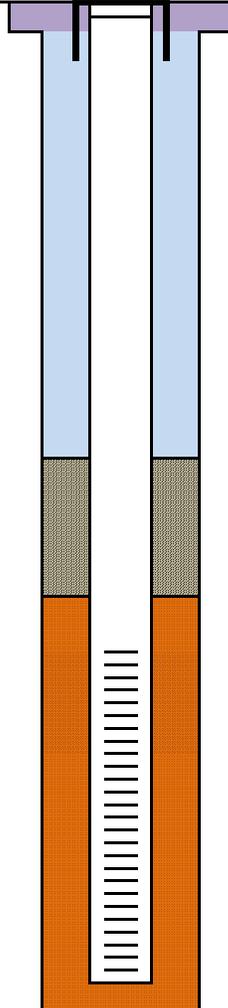
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 548.95 ft

NORTHING: 904295.80
EASTING: 1807689.00

GROUND SURFACE ELEVATION: 548.84 ft

CASING STICKUP: 0.11

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 28.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 42.0 feet
TOP OF SCREENED INTERVAL 44.7 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 9.7 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 54.73 feet
BOTTOM OF BOREHOLE 55.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Chuck Suddeth

WELL NUMBER: MW-5I
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Shakespeare Facility
INSTALLATION DATE: 08/19/15

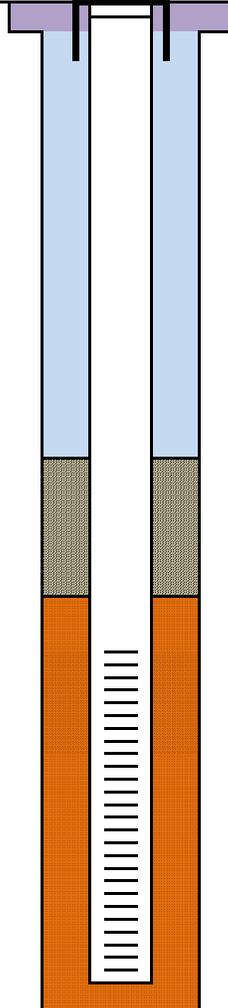
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 559.69 ft

NORTHING: 904670.90
EASTING: 1808462.00

GROUND SURFACE ELEVATION: 559.6 ft

CASING STICKUP: 0.09

COMMENTS:



TYPE OF ANNULAR SEAL Concrete

TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch

NOMINAL BOREHOLE DIAMETER 6.0 inch

TOP OF WELL SEAL 36.0 feet

TYPE OF SEAL Bentonite Chips

TOP OF SAND FILTER PACK 43.0 feet

TOP OF SCREENED INTERVAL 47.0 feet

TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet

FILTER PACK AROUND SCREEN No. 2 sand

BOTTOM OF WELL 57.0 feet
BOTTOM OF BOREHOLE 65.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Scott Ross

WELL NUMBER: MW-6I
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Shakespeare Facility
INSTALLATION DATE: 08/21/15

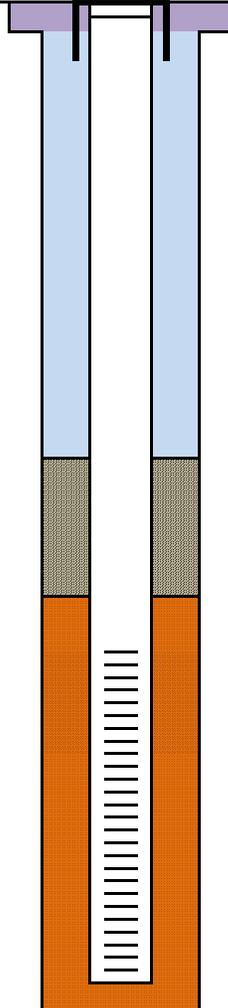
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 560.14 ft

NORTHING: 904457.90
EASTING: 1808209.00

GROUND SURFACE ELEVATION: 560.28 ft

CASING STICKUP: -0.14

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 33.6 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 37.0 feet
TOP OF SCREENED INTERVAL 40.0 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 50.0 feet
BOTTOM OF BOREHOLE 55.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Chuck Suddeth

WELL NUMBER: MW-71
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Shakespeare Facility
INSTALLATION DATE: 08/20/15

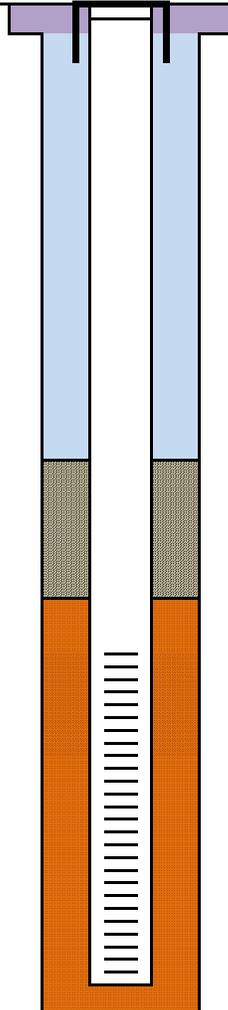
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 555.3 ft

NORTHING: 904863.60
EASTING: 1808233.00

GROUND SURFACE ELEVATION: 555.26 ft

CASING STICKUP: 0.04

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 27.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 32.0 feet
TOP OF SCREENED INTERVAL 37.1 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 47.10 feet
BOTTOM OF BOREHOLE 55.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Scott Ross

WELL NUMBER: MW-9I
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Shakespeare Facility
INSTALLATION DATE: 08/21/15

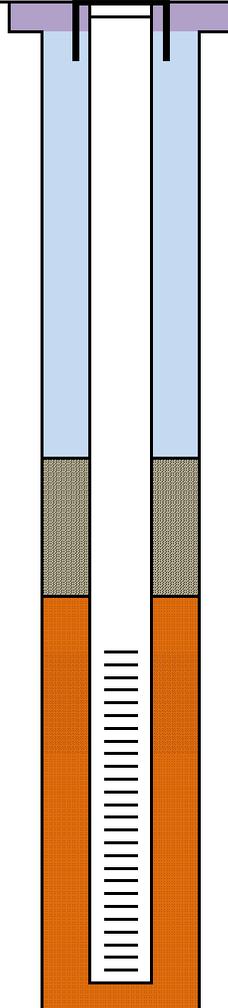
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 556.08 ft

NORTHING: 904499.20
EASTING: 1807891.00

GROUND SURFACE ELEVATION: 556.06 ft

CASING STICKUP: 0.02

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 29.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 33.0 feet
TOP OF SCREENED INTERVAL 37.6 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 10.0 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 47.6 feet
BOTTOM OF BOREHOLE 55.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Travis Overcash
FIELD REPRESENTATIVE: Chuck Suddeth

WELL NUMBER: MW-101
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Dickert Property
INSTALLATION DATE: 08/24/15

SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)

NORTHING: 904991.80

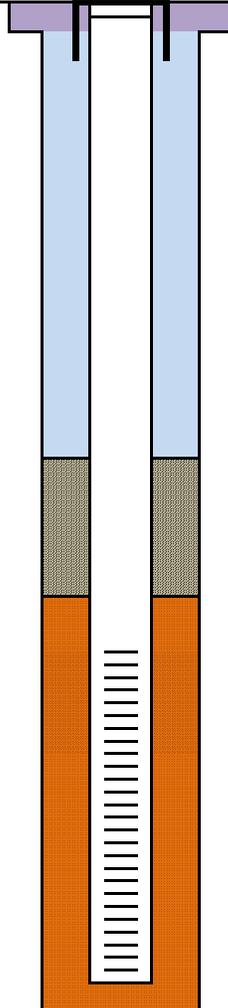
TOP OF CASING ELEVATION: 548.4 ft

EASTING: 1808367.00

GROUND SURFACE ELEVATION: 548.49 ft

CASING STICKUP: -0.09

COMMENTS:



TYPE OF ANNULAR SEAL	<u>Concrete</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>2.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>6.0 inch</u>
TOP OF WELL SEAL	<u>25.0 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>28.5 feet</u>
TOP OF SCREENED INTERVAL	<u>31.0 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>2.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>41.0 feet</u>
BOTTOM OF BOREHOLE	<u>41.0 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-201
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Boazman / Ringer Property
INSTALLATION DATE: 08/11/15

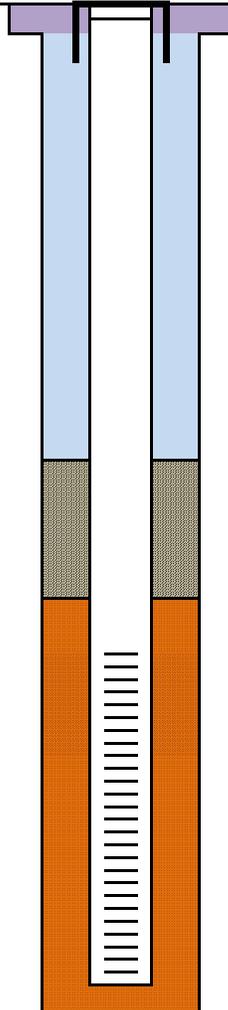
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 541.54 ft

NORTHING: 904612.00
EASTING: 1807601.00

GROUND SURFACE ELEVATION: 541.25 ft

CASING STICKUP: 0.29

COMMENTS:



TYPE OF ANNULAR SEAL Concrete
TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch
NOMINAL BOREHOLE DIAMETER 6.0 inch
TOP OF WELL SEAL 38.0 feet
TYPE OF SEAL Bentonite Chips
TOP OF SAND FILTER PACK 42.0 feet
TOP OF SCREENED INTERVAL 43.1 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 9.7 feet
FILTER PACK AROUND SCREEN No. 2 sand
BOTTOM OF WELL 53.11 feet
BOTTOM OF BOREHOLE 55.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures Site
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: Terrasonic
DRILLER: Adam Marshall
FIELD REPRESENTATIVE: Mclver Law

WELL NUMBER: MW-211
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: Boazman / Ringer Property
INSTALLATION DATE: 08/10/15

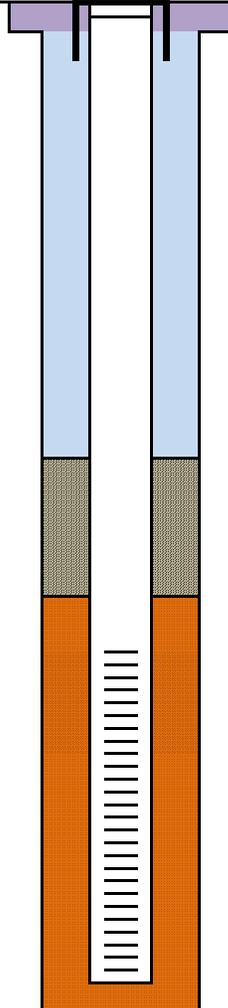
SURVEY DATUM: SC State Plane, NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 552.89 ft

NORTHING: 904950.70
EASTING: 1807751.00

GROUND SURFACE ELEVATION: 552.82 ft

CASING STICKUP: 0.07

COMMENTS:



TYPE OF ANNULAR SEAL Concrete

TYPE OF WELL CASING OR RISER Sch. 40 PVC
INSIDE DIAMETER 2.0 inch

NOMINAL BOREHOLE DIAMETER 6.0 inch

TOP OF WELL SEAL 39.0 feet
TYPE OF SEAL Bentonite Chips

TOP OF SAND FILTER PACK 43.0 feet
TOP OF SCREENED INTERVAL 44.8 feet
TYPE OF SCREEN PVC
SLOT SIZE 0.010 inch
INSIDE DIAMETER 2.0 inch
SCREEN LENGTH 9.7 feet

FILTER PACK AROUND SCREEN No. 2 sand

BOTTOM OF WELL 54.83 feet
BOTTOM OF BOREHOLE 55.0 feet

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



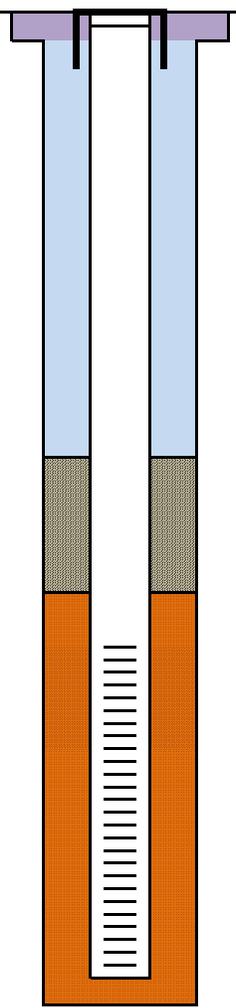
Shallow Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures	WELL NUMBER: MW-241
LOCATION: Newberry, SC	JOB NUMBER: 60328302
CLIENT: Philips	TYPE OF INSTALLATION: Monitoring Well
CONTRACTOR: Cascade Drilling	LOCATION:
DRILLER:	INSTALLATION DATE: 02/18/16
FIELD REPRESENTATIVE: S. Ross	

SURVEY DATUM: NAVD 88 (Vertical)	NORTHING: 904402.50
NAD 83 (Horizontal)	EASTING: 1807181.00
TOP OF CASING ELEVATION: 544.993	

GROUND SURFACE ELEVATION:	CASING STICKUP: 0.069
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COMMENTS:



TYPE OF ANNULAR SEAL	<u>Neat Cement</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>2.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>8.0 inch</u>
TOP OF WELL SEAL	<u>2.0 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>31.8 feet</u>
TOP OF SCREENED INTERVAL	<u>32.7 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>2.0 inch</u>
SCREEN LENGTH	<u>5.0 feet</u>
FILTER PACK AROUND SCREEN	<u>No. 2 sand</u>
BOTTOM OF WELL	<u>37.9 feet</u>
BOTTOM OF BOREHOLE	<u>39.0 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



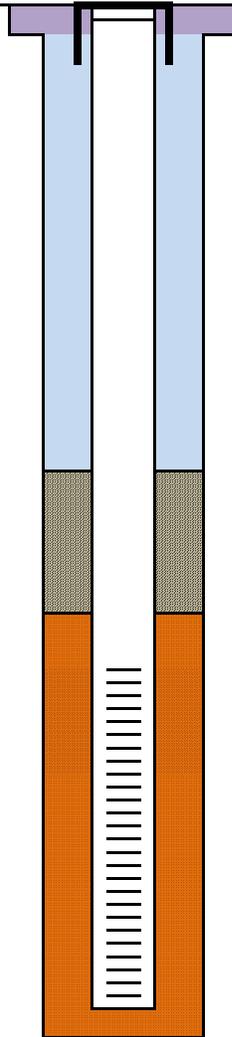
Shallow Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u> LOCATION: <u>Newberry, SC</u> CLIENT: <u>Philips</u> CONTRACTOR: <u>AE Drilling</u> DRILLER: <u>Marcello Gonzalez</u> FIELD REPRESENTATIVE: <u>S. Ross</u>	WELL NUMBER: <u>MW 121</u> JOB NUMBER: <u>60534283</u> TYPE OF INSTALLATION: <u>Monitoring Well</u> LOCATION: <u>Dickert Property</u> INSTALLATION DATE: <u>06/12/17</u>
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SURVEY DATUM: <u>NAVD 88 (Vertical)</u> <u>NAD 83 (Horizontal)</u> TOP OF CASING ELEVATION: <u>536.63 ft- msl</u>	NORTHING: <u>905410.00</u> EASTING: <u>1808286.00</u>
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GROUND SURFACE ELEVATION: <u>536.44 ft- msl</u>	CASING STICKUP: <u>0.19 feet</u>
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COMMENTS:



TYPE OF ANNULAR SEAL	<u>Neat Cement</u>
TYPE OF WELL CASING OR RISER	<u>Sch. 40 PVC</u>
INSIDE DIAMETER	<u>2.0 inch</u>
NOMINAL BOREHOLE DIAMETER	<u>8.0 inch</u>
TOP OF WELL SEAL	<u>32.7 feet</u>
TYPE OF SEAL	<u>Bentonite Chips</u>
TOP OF SAND FILTER PACK	<u>35.1 feet</u>
TOP OF SCREENED INTERVAL	<u>36.8 feet</u>
TYPE OF SCREEN	<u>PVC</u>
SLOT SIZE	<u>0.010 inch</u>
INSIDE DIAMETER	<u>2.0 inch</u>
SCREEN LENGTH	<u>10.0 feet</u>
FILTER PACK AROUND SCREEN	<u>Well Gravel #1</u>
BOTTOM OF WELL	<u>46.8 feet</u>
BOTTOM OF BOREHOLE	<u>47.0 feet</u>

NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE

BEDROCK WELL CONSTRUCTION DIAGRAMS



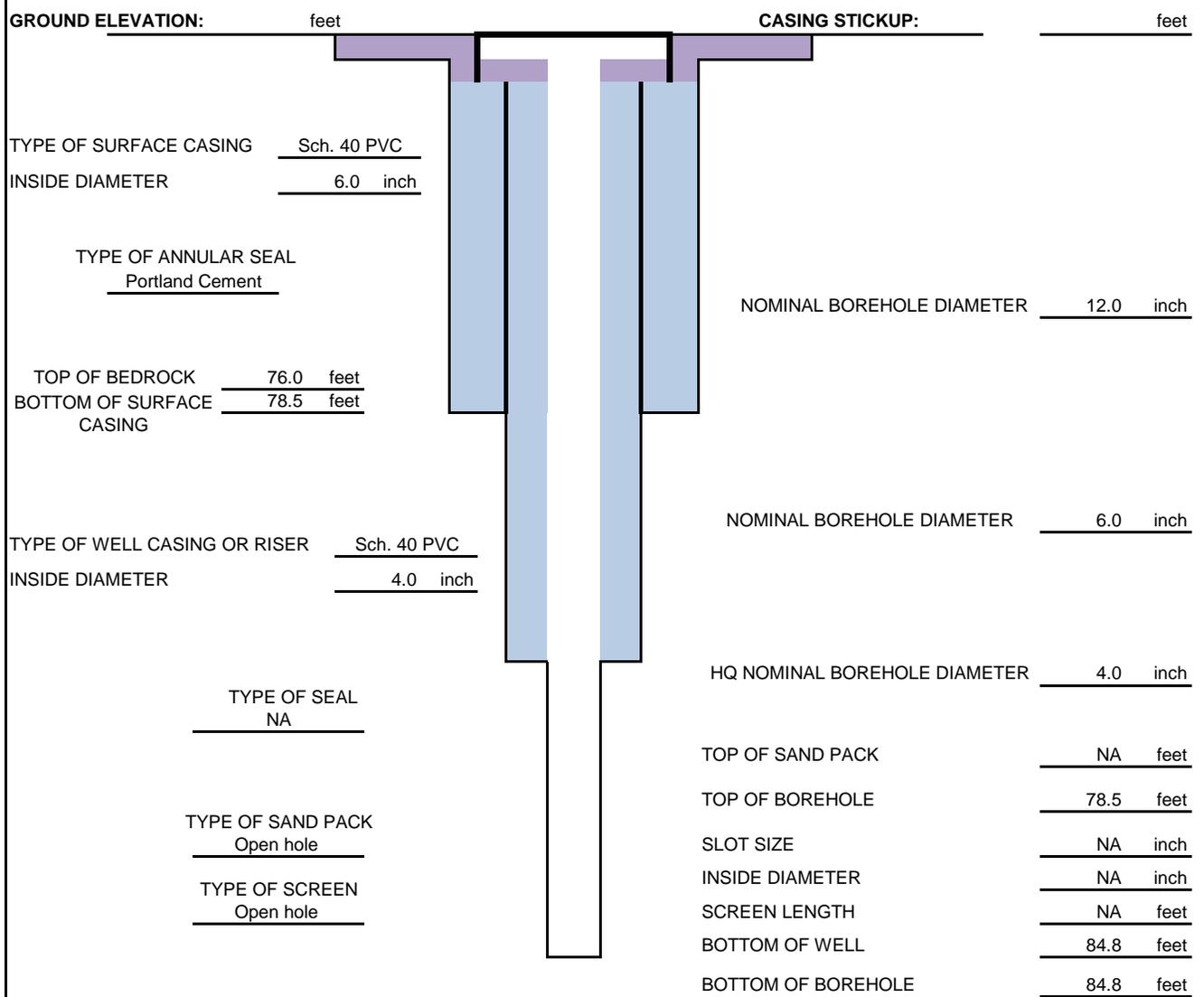
Deep Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
 LOCATION: Newberry, SC
 CLIENT: Philips
 CONTRACTOR: AE Drilling
 DRILLER: T. Burnette
 FIELD REPRESENTATIVE: M. Law/S.Ross

WELL NUMBER: MW-2D
 JOB NUMBER: 60328308
 TYPE OF INSTALLATION: Monitoring Well
 LOCATION: _____
 INSTALLATION DATE: 08/11/14

SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
 TOP OF CASING ELEVATION: 104.1

NORTHING: 904174.87
 EASTING: 1808763.48



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



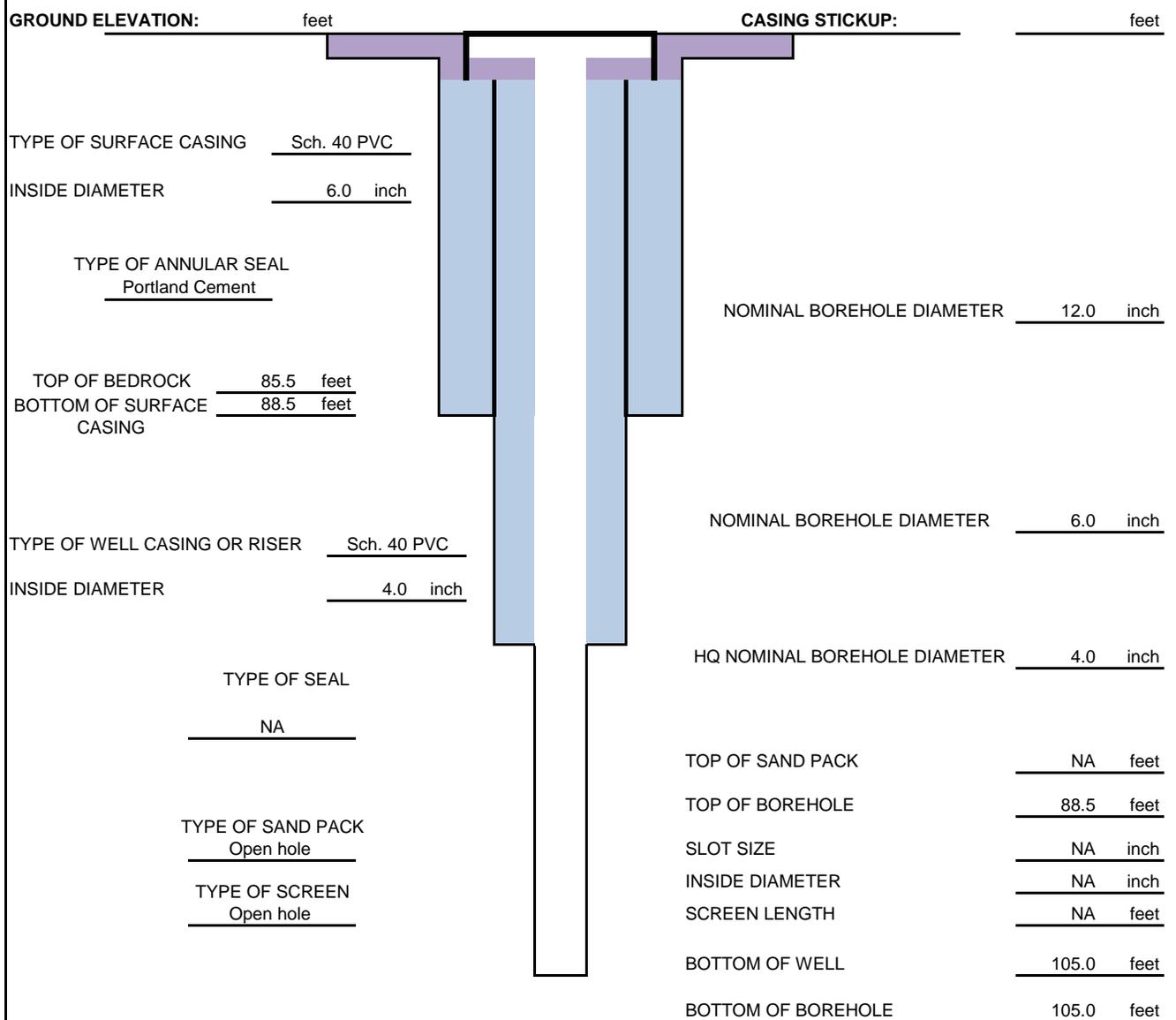
Deep Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
 LOCATION: Newberry, SC
 CLIENT: Philips
 CONTRACTOR: AE Drilling
 DRILLER: A. McGuire
 FIELD REPRESENTATIVE: T. Watson

WELL NUMBER: MW-3D
 JOB NUMBER: 60328308
 TYPE OF INSTALLATION: Monitoring Well
 LOCATION: _____
 INSTALLATION DATE: 08/06/14

SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
 TOP OF CASING ELEVATION: 94.16

NORTHING: 904300.64
 EASTING: 1807686.32



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Deep Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures
 LOCATION: Newberry, SC
 CLIENT: Philips
 CONTRACTOR: AE Drilling
 DRILLER: A. McGuire
 FIELD REPRESENTATIVE: T. Watson/S.Ross

WELL NUMBER: MW-6D
 JOB NUMBER: 60328308
 TYPE OF INSTALLATION: Monitoring Well
 LOCATION: _____
 INSTALLATION DATE: 08/07/14

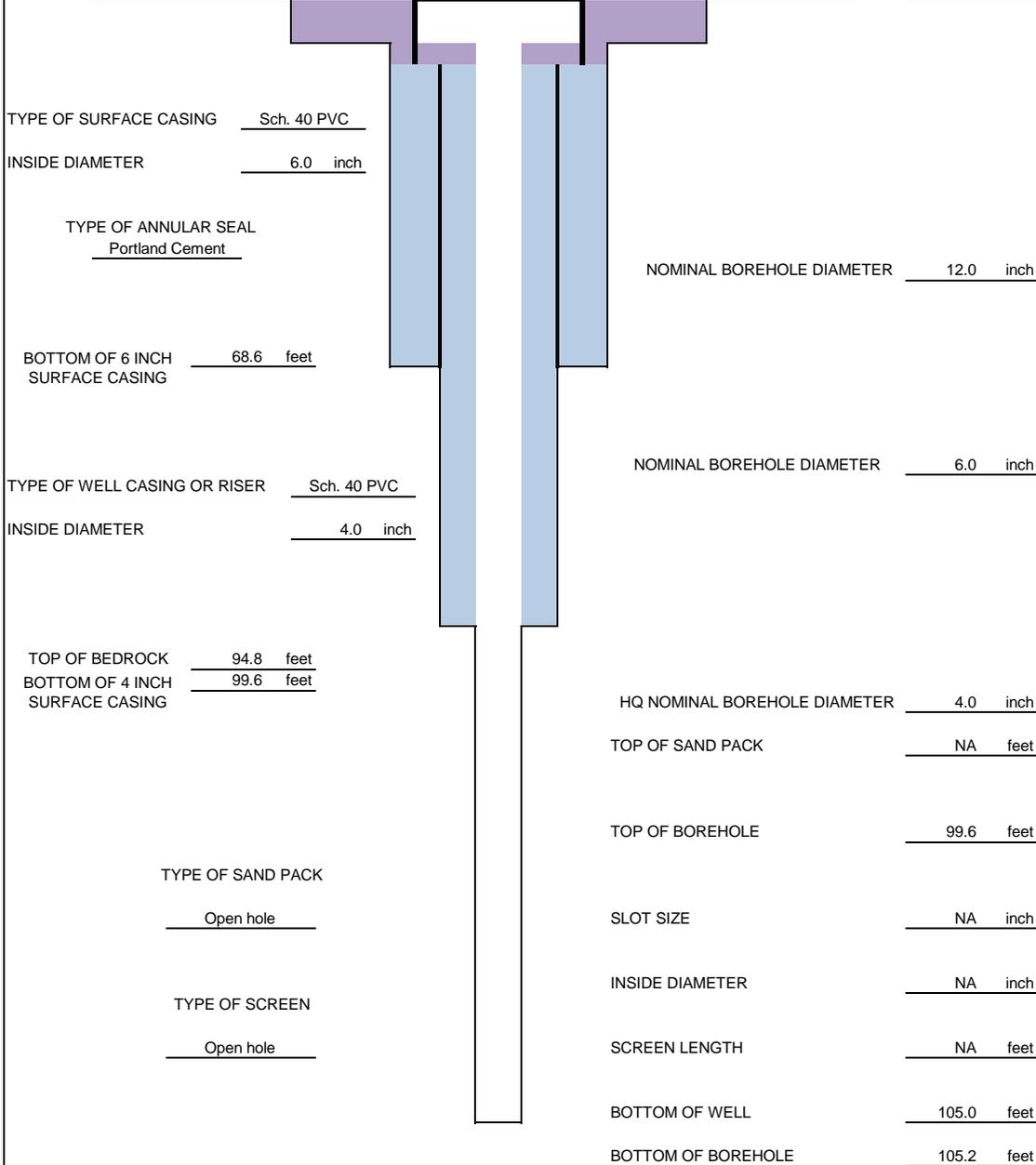
SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)

NORTHING: 904486.13

TOP OF CASING ELEVATION: 94.16

EASTING: 1808226.27

GROUND ELEVATION: _____ feet CASING STICKUP: _____ feet



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Deep Monitoring Well Construction Details

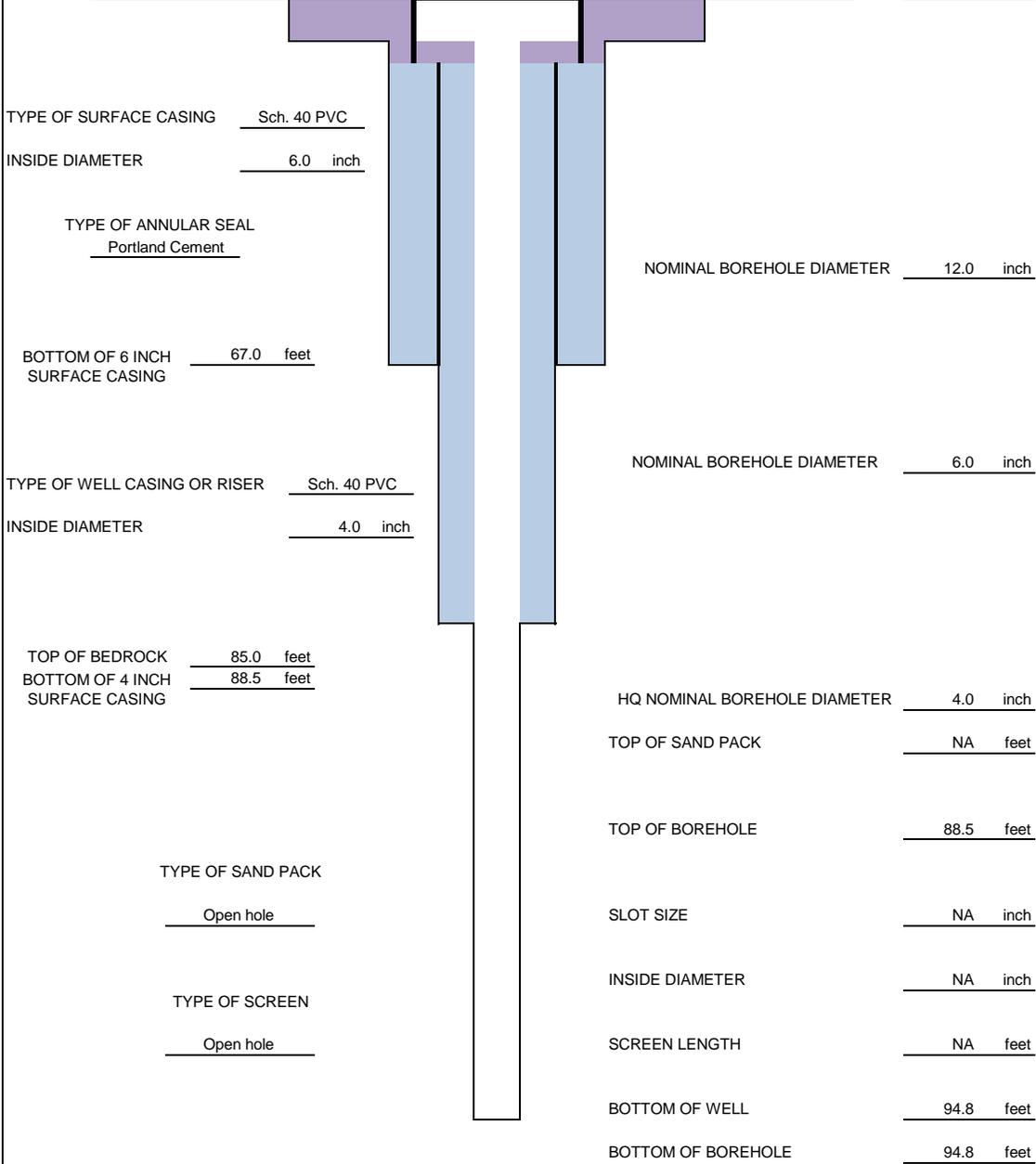
PROJECT: Shakespeare Composite Structures
LOCATION: Newberry, SC
CLIENT: Philips
CONTRACTOR: AE Drilling
DRILLER: A. McGuire
FIELD REPRESENTATIVE: T. Watson/S.Ross

WELL NUMBER: MW-7D
JOB NUMBER: 60328308
TYPE OF INSTALLATION: Monitoring Well
LOCATION: _____
INSTALLATION DATE: 07/30/14

SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
TOP OF CASING ELEVATION: 100.07

NORTHING: 904868.47
EASTING: 1808223.04

GROUND ELEVATION: _____ **feet** **CASING STICKUP:** _____ **feet**



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



Deep Monitoring Well Construction Details

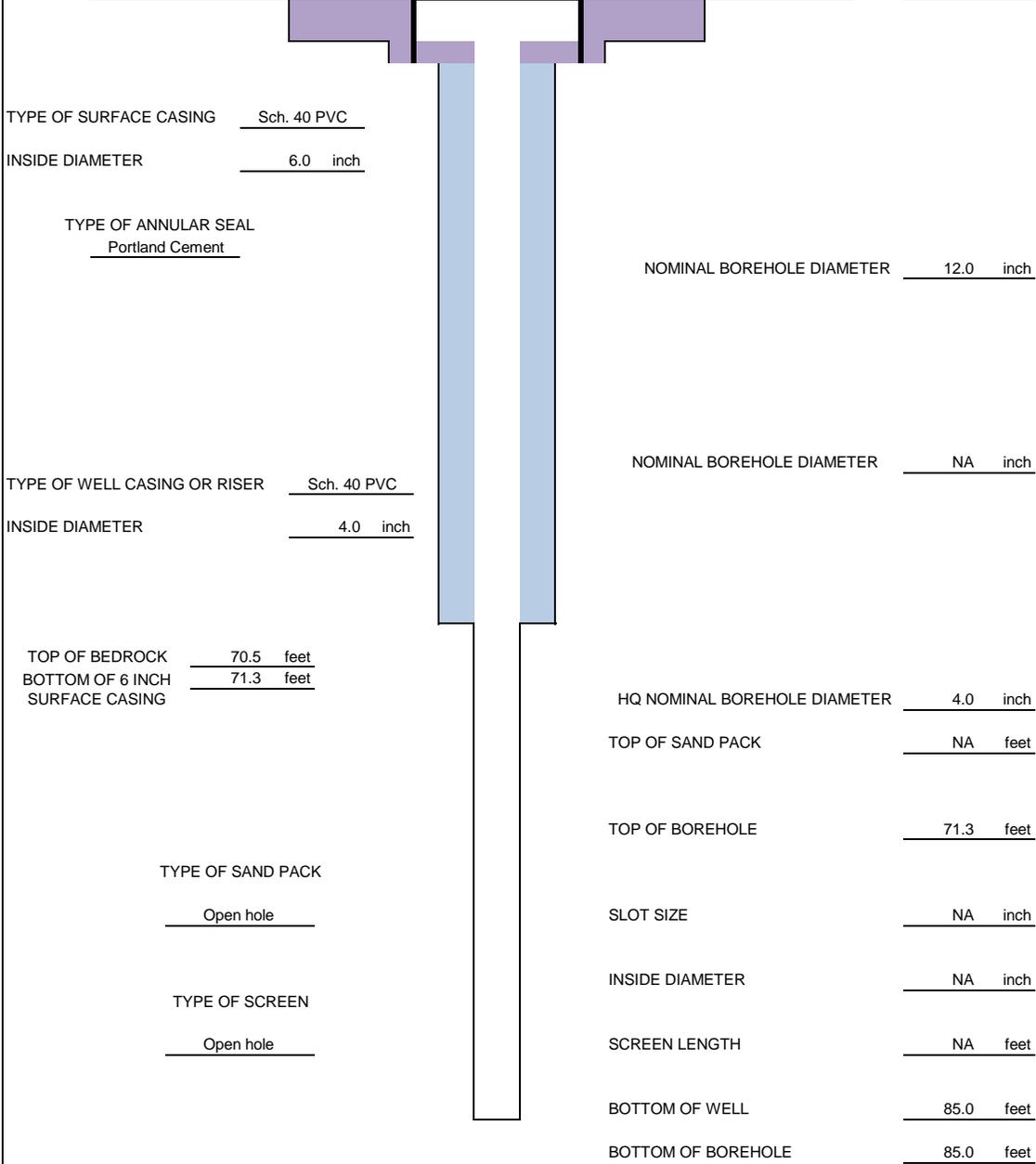
PROJECT: Shakespeare Composite Structures
 LOCATION: Newberry, SC
 CLIENT: Philips
 CONTRACTOR: AE Drilling
 DRILLER: A. McGuire
 FIELD REPRESENTATIVE: T. Watson

WELL NUMBER: RDW-2
 JOB NUMBER: 60328308
 TYPE OF INSTALLATION: Monitoring Well
 LOCATION: _____
 INSTALLATION DATE: 08/04/14

SURVEY DATUM: NAVD 88 (Vertical)
NAD 83 (Horizontal)
 TOP OF CASING ELEVATION: 95.98

NORTHING: 904929.52
 EASTING: 1807671.71

GROUND ELEVATION: _____ feet CASING STICKUP: _____ feet



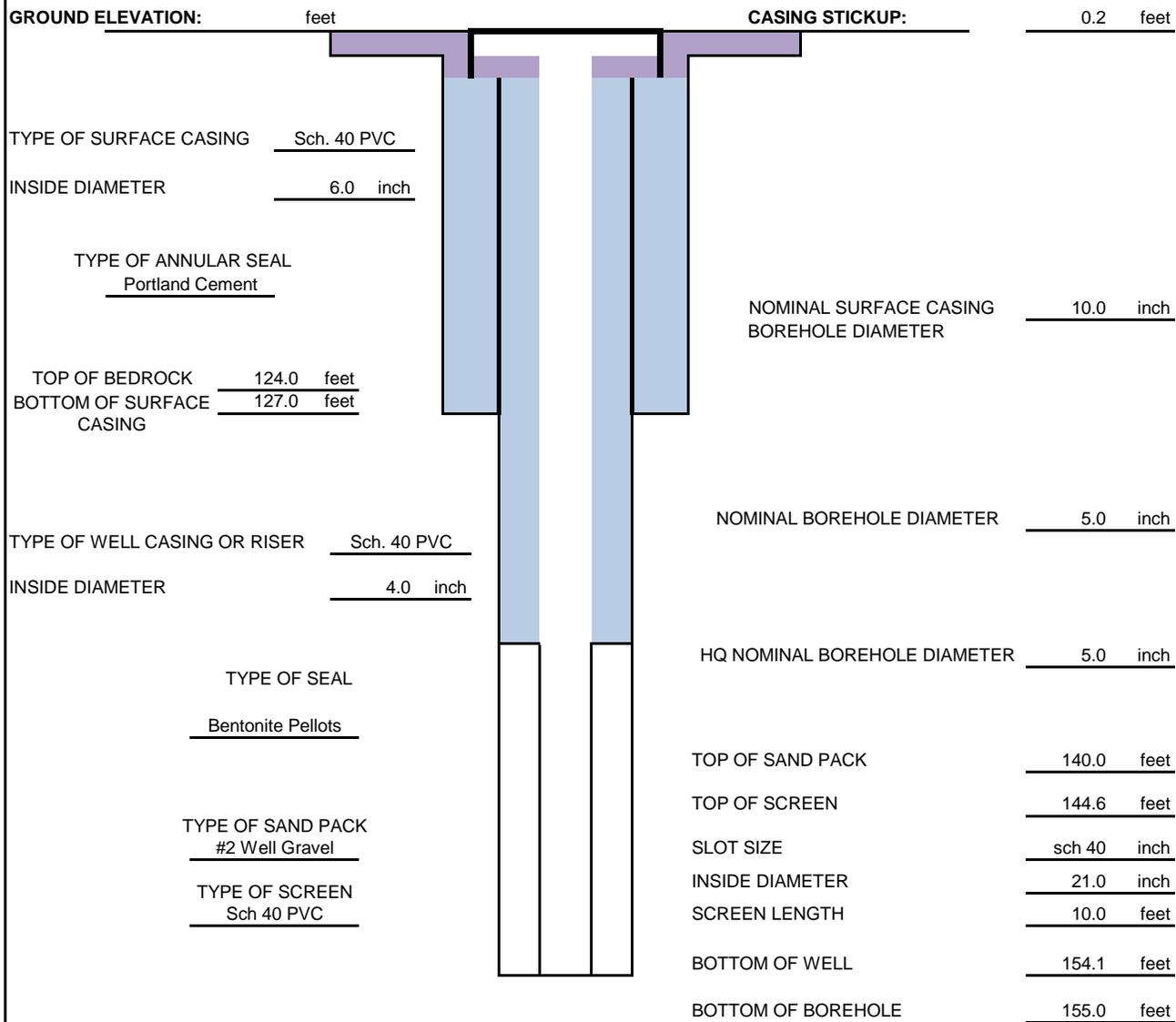
NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE



Deep Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u>	WELL NUMBER: <u>MW-9D</u>
LOCATION: <u>Newberry, SC</u>	JOB NUMBER: <u>60328308</u>
CLIENT: <u>Philips</u>	TYPE OF INSTALLATION: <u>Monitoring Well</u>
CONTRACTOR: <u>Cascade Drilling</u>	LOCATION: <u>Shakespeare Plant</u>
DRILLER: <u>Ray</u>	INSTALLATION DATE: <u>04/14/16</u>
FIELD REPRESENTATIVE: <u>S. Ross</u>	

SURVEY DATUM: <u>NAVD 88 (Vertical)</u>	NORTHING: <u>904387.90</u>
<u>NAD 83 (Horizontal)</u>	
TOP OF CASING ELEVATION: <u>552.91</u>	EASTING: <u>1807788.00</u>



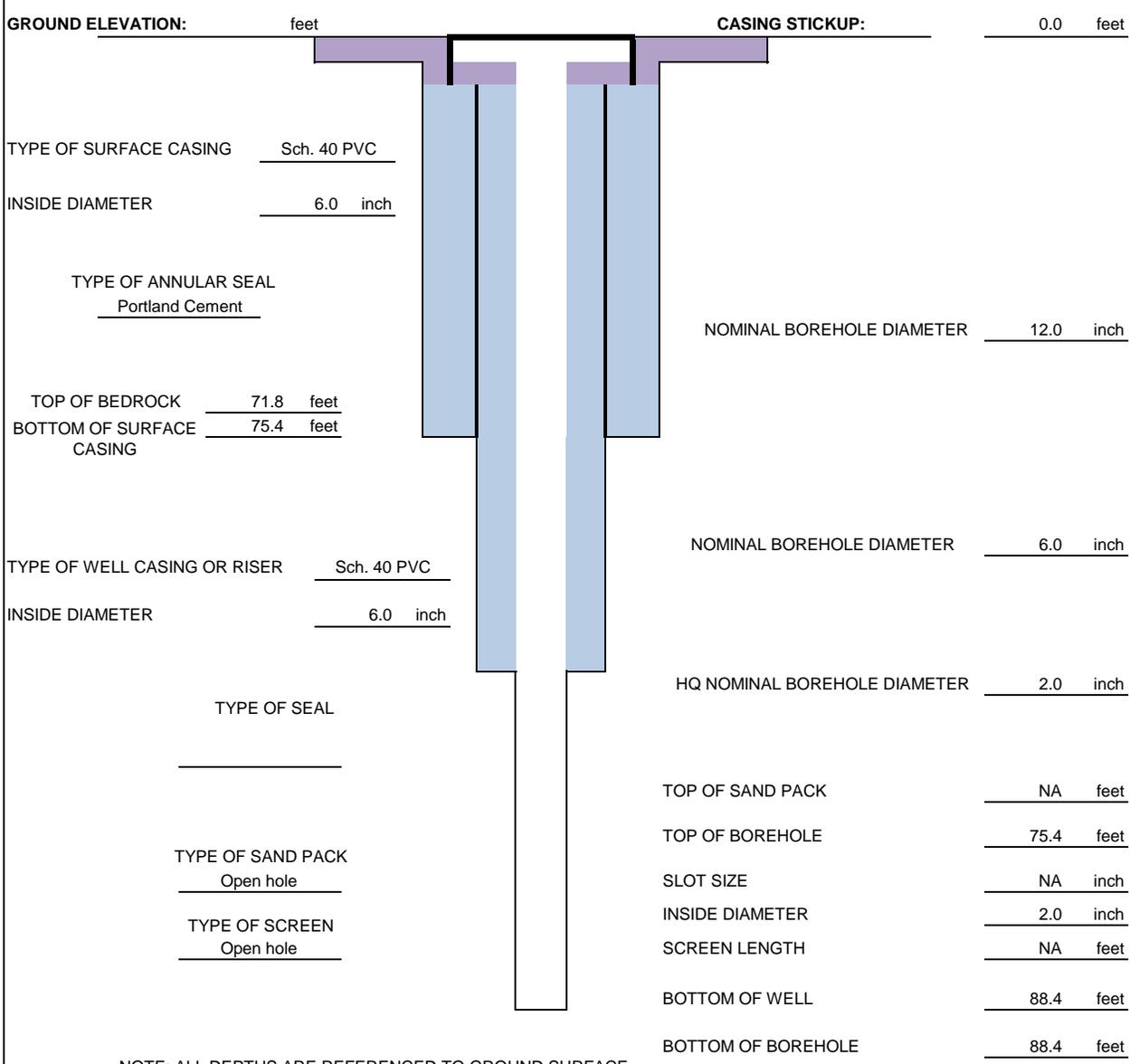
NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE



Deep Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u> LOCATION: <u>Newberry, SC</u> CLIENT: <u>Philips</u> CONTRACTOR: <u>AE Drilling</u> DRILLER: <u>Burnett</u> FIELD REPRESENTATIVE: <u>S. Ross</u>	WELL NUMBER: <u>SDW-1</u> JOB NUMBER: <u>60328308</u> TYPE OF INSTALLATION: <u>Monitoring Well</u> LOCATION: <u>Shealy Property</u> INSTALLATION DATE: _____
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SURVEY DATUM: <u>NAVD 88 (Vertical)</u> <u>NAD 83 (Horizontal)</u> TOP OF CASING ELEVATION: <u>529.646</u>	NORTHING: <u>904244.00</u> EASTING: <u>1806365.00</u>
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NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
 DIAGRAM NOT TO SCALE

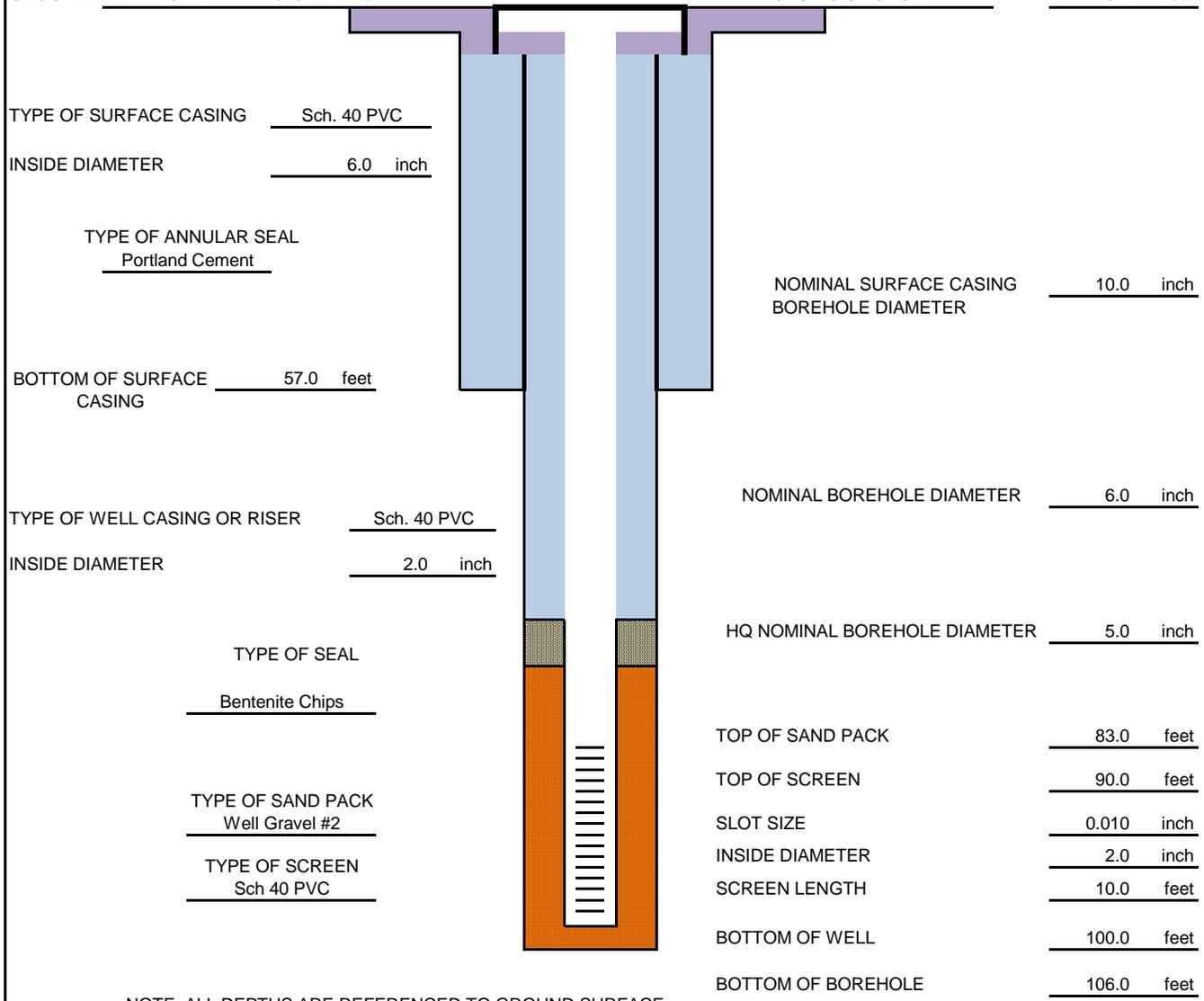


Bedrock Monitoring Well Construction Details

PROJECT: Shakespeare Composite Structures	WELL NUMBER: SDW-3
LOCATION: Newberry, SC	JOB NUMBER: 60534283
CLIENT: Philips	TYPE OF INSTALLATION: Monitoring Well
CONTRACTOR: AE Drilling	LOCATION: Shealy Property
DRILLER: Tommy Burnette	INSTALLATION DATE: 07/09/17
FIELD REPRESENTATIVE: S. Ross / J. Leaphart	

SURVEY DATUM: NAVD 88 (Vertical)	NORTHING: 903914.60
NAD 83 (Horizontal)	EASTING: 1807450.00
TOP OF CASING ELEVATION: 537.31 ft-msl	

GROUND ELEVATION: 545.12 ft-msl **CASING STICKUP:** -0.1 feet



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE

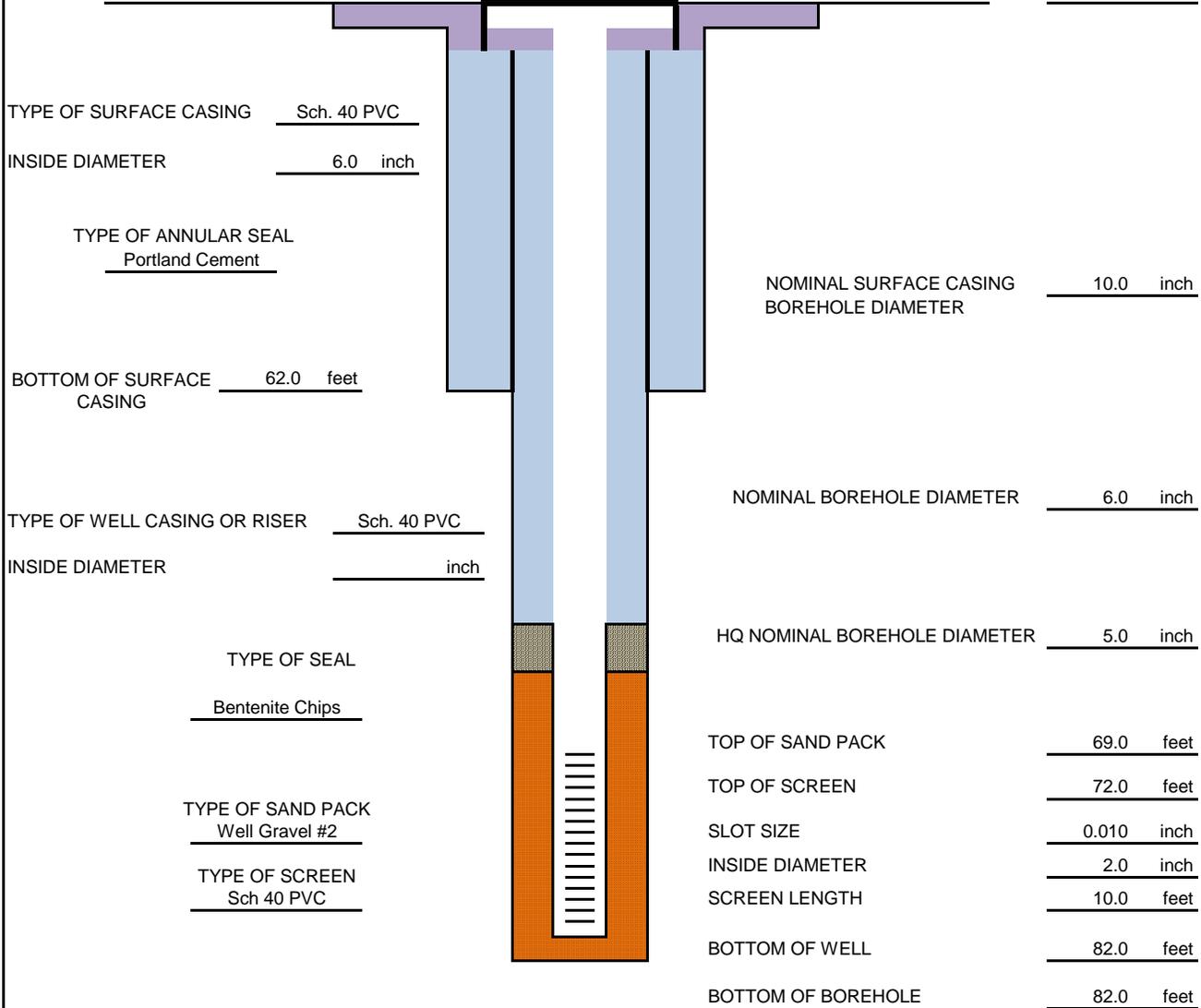


Bedrock Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u>	WELL NUMBER: <u>MW 12D</u>
LOCATION: <u>Newberry, SC</u>	JOB NUMBER: <u>60534283</u>
CLIENT: <u>Philips</u>	TYPE OF INSTALLATION: <u>Monitoring Well</u>
CONTRACTOR: <u>AE Drilling</u>	LOCATION: <u>Dickert Property</u>
DRILLER: <u>Tommy Burnette</u>	INSTALLATION DATE: <u>07/12/17</u>
FIELD REPRESENTATIVE: <u>S. Ross / J. Leaphart</u>	

SURVEY DATUM: <u>NAVD 88 (Vertical)</u>	NORTHING: <u>905369.40</u>
<u>NAD 83 (Horizontal)</u>	
TOP OF CASING ELEVATION: <u>537.31 ft msl</u>	EASTING: <u>1808315.00</u>

GROUND ELEVATION: 537.18 ft msl **CASING STICKUP:** 0.13 feet



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE

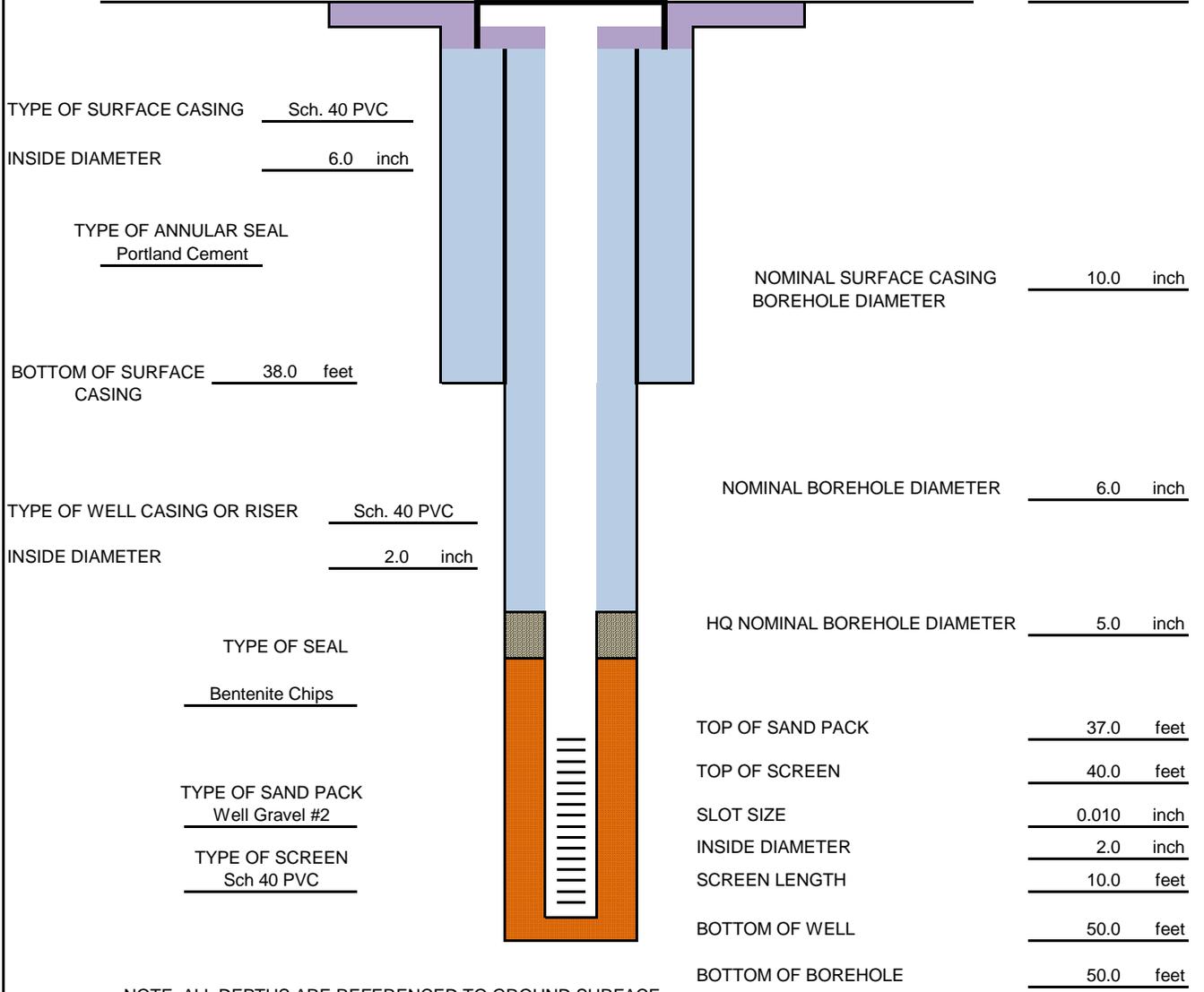


Bedrock Monitoring Well Construction Details

PROJECT: <u>Shakespeare Composite Structures</u>	WELL NUMBER: <u>MW 19D</u>
LOCATION: <u>Newberry, SC</u>	JOB NUMBER: <u>60534283</u>
CLIENT: <u>Philips</u>	TYPE OF INSTALLATION: <u>Monitoring Well</u>
CONTRACTOR: <u>AE Drilling</u>	LOCATION: <u>Dickert Property</u>
DRILLER: <u>Tommy Burnette</u>	INSTALLATION DATE: <u>07/14/17</u>
FIELD REPRESENTATIVE: <u>S. Ross / J. Leaphart</u>	

SURVEY DATUM: <u>NAVD 88 (Vertical)</u>	NORTHING: <u>904882.90</u>
<u>NAD 83 (Horizontal)</u>	EASTING: <u>1808902.00</u>
TOP OF CASING ELEVATION: <u>537.31 ft- msl</u>	

GROUND ELEVATION: 532.1 ft- msl **CASING STICKUP:** 0.07 feet



NOTE: ALL DEPTHS ARE REFERENCED TO GROUND SURFACE
DIAGRAM NOT TO SCALE