



MWH Americas, Inc.
335 Phoenixville Pike
Malvern, Pennsylvania 19355

Boring ID: SB7

DC54-19

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Project Name: Valero
Location: Delaware City, DE
Project Number:
Date Started: 6/1/2007
Date Finished: 6/1/2007
Drilling Method: Geoprobe
Sampling Method:
State Permit Number: NA

Boring Location: Delaware City Refinery
Drilling Company: BL Myers (J. Long)
Ground Elevation (ft/msl):
Total Depth (ft): 50.0'
Boring Diameter (in): "
Water Level During Drilling (ft/bgs):
Weather Conditions:
Logged By: A. Clark

Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Remarks
0			0.0					0' - 0.7' Brown TOPSOIL	
1			0.3					0.7' - 0.9' Tan fine-medium-grained SAND and GRAVEL, degraded cement	
2		31.2	4.7			SW		0.9' - 1.2' Dark yellowish brow (10YR 4/4) fine-grained SAND, little medium-coarse-grained sand, trace fine-grained gravel and silt, dry	
3			1347			SW-SM		1.2' - 1.7' Yellowish brown (10YR 5/8) fine-grained SAND with SILT, little medium-grained sand, trace coarse-grained sand, dry	
4			1553			SW-SM		1.7' - 1.9' Dark yellowish brown fine-medium-grained SAND, some silt, trace fine-grained gravel and coarse-grained sand, moist	
5			2328			SW-SM-SP		1.9' - 2.3' Fine-grained SAND, little silt, trace medium-coarse-grained sand	
6			60.9			SW		2' brown (10YR 5/3)	
7			31.3					2.3' - 2.6' Very dark gray to black stained fine-grained SAND, trace medium-grained sand, wet, strong hydrocarbon odor, leaves oil residue on gloves	
8			18.1					2.6' - 5' No Lithology	
9			13.0					5' - 7.2' Light olive brown (2.5YR 5/4) medium-grained SAND, little fine-grained sand, trace fine-coarse-grained subangular -subrounded gravel and coarse-grained sand, wet, light hydrocarbon odor, gray clay lenses last 0.2'	
10			11.7					7.2' - 10' No Lithology	
11			9.2			CL		10' - 10.1' Reddish yellow CLAY seam	
12			7.5			SW		10.1' - 11' Brown to dark gray brown (10YR 5/3) and (10YR 5/2) fine-medium-grained SAND, some fine-grained subrounded gravel and coarse-grained sand, trace coarse-grained gravel	
13			5.3			CL		11' - 11.1' Gray CLAY seam	
14			7.8			SW		11.1' - 12.6' Brown (10YR 4/3) fine-medium-grained SAND, little coarse-grained sand grading to trace coarse-grained sand and gray clay lenses to 12' bgs grades to light olive brown (2.5Y 5/3) at 12' bgs, wet, slight hydrocarbon odor	
15			8.0					12.6' - 15' No Lithology	
			6.6						



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15			5.9			SW ML CL		15' - 15.05' Very dark gray fine-medium-grained SAND, wet	According to driller 15'-20' bgs very soft, no hammer was used, pushed down slowly, pulled back slowly
16							15.05' - 15.35' Very dark gray SILT, some clay, soft, very moist		
17		.45					15.35' - 15.45' Brown CLAY with orange brown SAND		
18									
19									
20			6.0			CL CL		20' - 20.2' Black silty CLAY, trace organics	Sampled SB7(20.8' for C-14 analysis 6/27/07 According to driller 20'-25' bgs very soft, no hammer was used, pushed down slowly, pulled back slowly
21			4.2			PT		20.2' - 20.6' Dark gray (10YR 4/1) CLAY, little silt	
22			24.3				(10YR 2/2) PEAT with silty CLAY		
23		12						21' - 25' No Lithology	
24									
25			1.7			CL ML		25' - 25.3' Dark grayish brown silty CLAY, wet	Peat 21'-25' bgs in well installed @ location SB-7, Well = 246-MW46 6/29/07 SKS
26			1.0					25.3' - 31.8' Dark gray SILT, trace very fine-fine-grained sand and mica, wet	
27			1.7						
28			3.1						
29		16.8							
30			2.6					30' brown sandy seams	
31			2.4						
32			3.0						
33			1.6			ML		31.8' - 33.1' Brown fine-grained sandy SILT with gray silt seams grading to silty fine-medium-grained sand, silt decreasing with depth to little	
			37.2					32.6' dark yellowish brown	



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Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Remarks
33			16					32.8' olive brown 33.1' - 35' No Lithology	
34									
35			1.7			SP		35' - 36.6' Olive brown, dark yellowish brown, brown and grayish brown fine-grained SAND bands, trace medium-grained sand and silt	
36			3.7						
			2.6						
			1.7			CL		36.6' - 36.8' Very dark gray to black CLAY, some silt, slightly micaceous, trace light gray mica silty laminations	
37		21.6	3.6					36.8' - 40' No Lithology	<i>Swell 36-41</i>
38									
39									
40			3.6			CL		40' - 47.1' Very dark gray silty CLAY, light gray micaceous silty laminations, moist	
41			6.0						
			11.1						
42									
			19.2						
43									
44									
45			0.2					45' trace cemented sand	
46			3.0						
47			1.0						
			25.2					47.1' - 50' No Lithology	
48									
49									
50								50' End of Boring	
51									