



Project Name:	2009 Dissolved Phase Plume Continued Delineation	Boring Location:	Delaware City Refinery
Location:	Delaware City, DE	Drilling Company:	Bowser Morner
Project Number:		Ground Elevation (ft/msl):	
Date Started:	Unknown	Total Depth (ft):	295.0'
Date Finished:	Unknown	Boring Diameter (in):	6"
Drilling Method:	Roto-Sonic	Water Level During Drilling (ft/bgs):	
Sampling Method:		Weather Conditions:	
State Permit Number:	NA	Logged By:	Joseph Remenicky

Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
0						ML		0' - 0.5' Light yellowish brown (10YR 6/4) organic layer/topsoil within silt matrix.		
5		5.1				SM		0.5' - 1.1' Light yellowish brown (10YR 6/4) SILT; little clay; trace fine-grained subrounded gravel, fine-grained sand; dry; trace mica.		
10						ML SM		1.1' - 3.1' Color grades to yellowish brown (10YR 5/6); moist. 2.6' Coarse-grained angular gravel grain. (Siderite?). 3.2' - 4.7' Color grades to dark yellowish brown (10YR 4/6); some fine-grained sand.		
15		7.3				ML ML		4.7' - 5.1' Yellowish brown (10YR 5/6) medium- to fine-grained SAND; little silt; moist. 5.1' - 9' No sample.		
20						CL		9' - 9.7' Light yellowish brown (10YR 6/4) SILT; low plasticity. 9.7' - 11.5' Dark yellowish brown (10YR 3/6) fine-grained SAND; some silt.		
25		9.5				CL		11.5' - 12' Dark brown (10YR 3/3) SILT; some fine-grained sand; interbedded coarse- to fine-grained gravel-sized clay nodules. 12' - 15.5' Dark olive brown (2.5Y 3/3) SILT; low plasticity.		
30						CL ML		12.6' Color mottles to dark gray (10YR 4/1) and gray (10YR 6/1). 13.4' - 13.6' Shell fragments. 14.9' Gastropod? 15.5' - 19.9' Dark olive brown (2.5Y 3/3) fine-grained SANDY CLAY; soft; medium plasticity.		
35		9.8				CL		16.3' - 19' No sample. 19.5' Large shell fragments. 19.9' - 26.8' Greenish black (Gley 1 2.5/10Y) SILTY CLAY; little to trace fine-grained sand; medium plasticity; shell fragments. 21.5' Large shell fragments. 23.7' Large shell fragments. 26.5' - 26.8' Large clay nodule. 26.8' - 28.5' Greenish black (Gley 1 2.5/10Y) CLAY; high plasticity; moist. 28.5' - 36.2' Very dark greenish gray (Gley 1 3/10Y) fine-grained SANDY CLAYEY SILT; micaceous.		



Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
35							ML CL	36.2' - 36.8' Greenish black (Gley 1 2.5/10Y) SILT; little clay; soft; low plasticity.		
40		11.5						36.8' - 108' Greenish black (Gley 1 2.5/10Y) SILTY CLAY; soft; low plasticity; micaceous.		
45										
50										
55		11.4								
60										
65		11.5								
70										
75		14.4								



Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
80										
85		12.6								
90								89' - 99' Dark olive gray (5Y 3/2) glauconitic zone.		
95		13								
100										
105		10								
110						ML ML SW		108' - 108.6' Gray (10YR 5/1) CLAYEY SILT; low plasticity; micaceous. 108.6' - 109' Gray (10YR 5/1) SILT; some coarse- to fine-grained sand; little coarse- to fine-grained subrounded gravel; micaceous; glauconitic zones; tubular burrows..		
115		11				SM		109' - 118.6' Light gray (5Y 7/1) fine-grained SAND; little silt. 113' Color grades to olive yellow (2.5Y 6/6). 114' Color grades to light gray (5Y 7/1). 116.9' - 118.6' Coarse-grain gravel-sized hematite/siderite grains.		



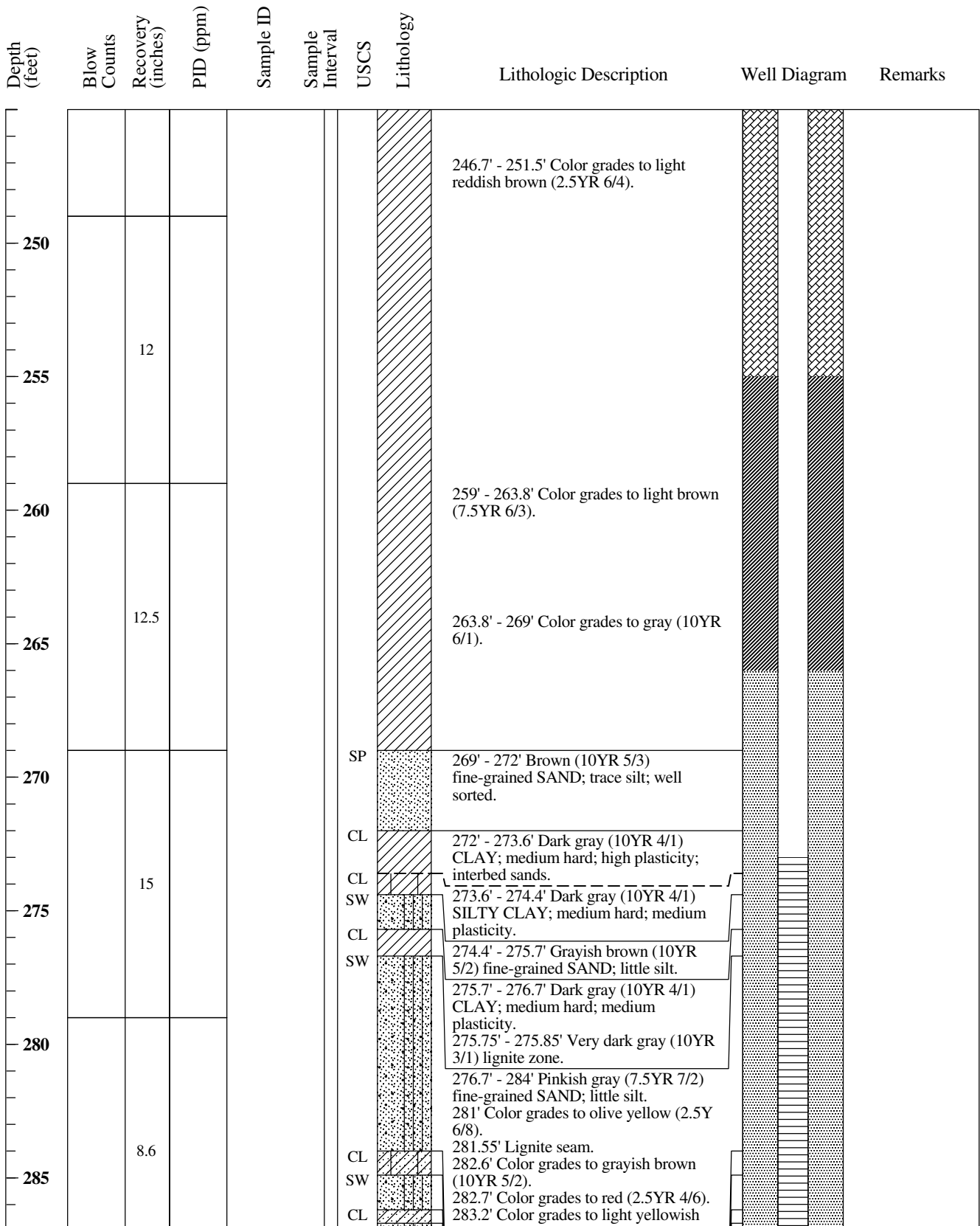
Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
120								118.6' - 123.2' Olive yellow (2.5Y 6/8) SILTY fine-grained SAND; moist; zones of partial lithofication.		
125		9.9				SP SP CL SP CL SP		123.2' - 124.1' Olive yellow (2.5Y 6/8) fine-grained SAND; some silt; moist; zones of partial lithofication. 124.1' - 124.9' Pale brown (10YR 6/3) well sorted fine-grained SAND. 124.9' - 125.2' Gray (10YR 6/1) fine-grained SANDY CLAY; soft; moist; medium plasticity.		
130						SM		125.2' - 125.9' Yellowish red (5YR 4/6) medium-grained SAND; some silt; little fine-grained sand.		
135		8.9				CL SW ML SW		125.9' - 126.2' Light gray (10YR 7/1) CLAY; some to little fine-grained sand; moist. 126.2' - 127.3' Yellow (2.5Y 7/6) fine-grained SAND; little silt. 127.1' - 127.3' Red (2.5Y 4/6) partially lithofied fine-grained sand zone; some-little silt.		
140						SW SW CL		127.3' - 131' Pink (7.5YR 7/4) SILTY fine-grained SAND; becomes more reddish yellow (7.5YR 6/6) at depth. 131' - 135.5' Pale red (10R 6/4) CLAY; hard; plastic; grades to light gray (10YR 7/1) at depth. 133.5' - 133.6' Silt seam. 134.8' - 135' Silty fine-grained sand seam.		
145		11.6						135.5' - 136.5' White (10YR 8/1) fine-grained SAND; some silt. 136.5' - 137' White (10YR 8/1) SILT; trace fine-grained sand. 137' - 140' White (10YR 8/1) fine-grained SAND; some silt. 139' Color grades to light gray (5Y 7/2). 140' - 140.3' Brown (7.5YR 5/4) fine-grained SAND; little silt; partial lithofied zones at depth.		
150								140.3' - 140.5' Olive (5Y 4/3) medium-to fine-grained SAND. 140.5' - 174.5' Red (2.5YR 4/6), light gray (10YR 7/1) with pale red (10R 6/2) mottled CLAY; hard; high plasticity.		
155		17								
160										



Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
165		12.6								
170								170.4' Color grades to light gray (10YR7/1).		
175		10.8				SW SW		174.5' - 174.7' Light gray (10YR7/1) SILTY very fine-grained SAND. 174.55' Paleohorizon; lithofied clay.		
						ML		174.7' - 176.3' Light gray (10YR7/1) SILTY fine-grained SAND. 175.9' Paleohorizon; lithofied clay.		
180								176.3' - 189' Light gray (10YR7/1) SILT; some fine-grained SAND.		
185		9.9								
190						SW		189' - 201.4' Pinkish gray (7.5YR 7/2) fine-grained SAND; little silt.		
195		8.8								
200						ML		201.4' - 214.1' Pinkish gray (7.5YR 7/2) and light gray (10YR 7/1) very		



Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
205		9.2						fine-grained SANDY SILT.		
210										
215		12.2				CL SW ML CL		212.85' - 213' Color grades to red (2.5Y 4/6). 214.1' - 214.8' Light gray (10YR 7/1) SILTY CLAY; hard; high plasticity. 214.8' - 215' Light gray (10YR 7/2) fine-grained SAND; little silt. 215' - 215.3' Red (2.5YR 4/8) SILT. 215.3' - 269' Gray (10YR 6/1) CLAY; hard; high plasticity. 216.7' - 242.7' Red (2.5YR 4/6), light gray (10YR 7/1) with pale red (10R 6/2) mottled .		
220										
225		14.2								
230										
235		14.4								
240										
245		10.8						242.7' - 246.7' Color grades to light gray (10YR 7/1).		





Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
290		8				SW		brown (10YR 6/4). 283.25' - 283.3' Very dark gray (10YR 3/1) lignite zone.		
						CL SW		284' - 284.9' Gray (10YR 5/1) SILTY fine-grained SANDY CLAY. 284.9' - 286.2' Grayish brown (10YR 5/2) fine-grained SAND; some to little silt; thin clay stringers.		
295						SC SP SW ML		286.2' - 286.7' Grayish brown (10YR 5/2) fine-grained SANDY CLAY; soft; low to medium plasticity. 286.7' - 288.5' Dark gray (10YR 4/1) fine-grained SAND; little silt; well sorted. 288.5' - 289' Dark gray (7.5YR 4/1) fine-grained SANDY CLAY; soft. 289' - 292.2' Dark gray (10YR 4/1) fine-grained SAND; little silt; well sorted; lignite. 291.7' - 291.9' Very dark gray (10YR 3/1) lignite seam. 292.2' - 292.6' Pale brown (10YR 6/3) CLAYEY fine-grained SAND. 292.6' - 293.2' Dark gray (10YR 4/1) fine-grained SAND; well-sorted; lignite. 293.2' - 293.4' Grayish brown (10YR 5/2) coarse- to medium-grained SAND; little fine-grained subrounded gravel. 293.4' - 295' Pale brown (10YR 6/3) SILT; little medium- to fine-grained sand; coarsening downward		
300										
305										
310										
315										
320										
325										