

Project: Motiva - Monitoring Well and Soil Boring Data

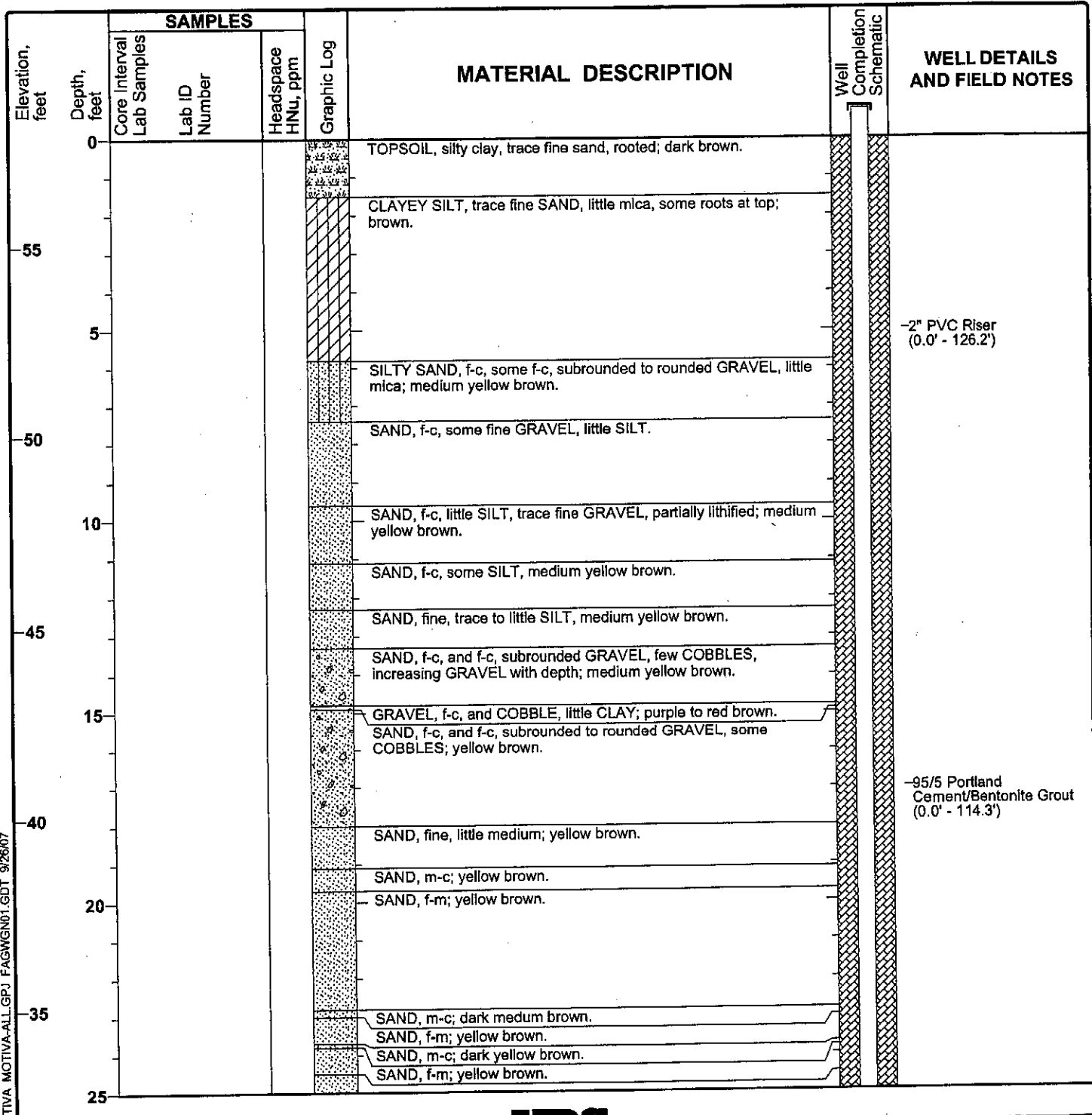
Project Location: Delaware City Refinery

Project Number: 20240412.W1000

Log of Monitoring Well D51C

Sheet 1 of 6

Date(s) Drilled	Logged By <b>Stephen Zahniser</b>	Checked By
Drilling Method <b>Roto Sonic</b>	Drill Bit Size/Type	Total Depth of Borehole <b>141.8 feet</b>
Drill Rig Type <b>Roto Sonic</b>	Drilling Contractor <b>Boart Longyear</b>	Surface Elevation <b>57.80 NAVD88</b>
Groundwater Level(s)	Sampling Method(s)	Top of Casing Elevation
Location <b>Wrangle Hill Road</b>	Borehole Completion	



MOTIVA MOTIVA-ALL.GPJ FAGWGN01.GDT 9/26/07



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Log of Monitoring Well D51C

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Elevation, feet	Depth, feet	SAMPLES			Graphic Log	MATERIAL DESCRIPTION	Well Completion Schematic	WELL DETAILS AND FIELD NOTES
		Core Interval Lab Samples	Lab ID Number	Headspace H <sub>2</sub> S, ppm				
25						SAND, f-c, little SILT, little fine rounded GRAVEL, yellow brown. SAND, f-c, yellow brown.		
30						GRAVEL, f-c, subangular to subrounded, some fine SAND; medium brown. SAND, medium, some coarse; orange brown.		
30						SAND, coarse, some medium; pinkish tan. SAND, coarse, some medium, little fine, little fine GRAVEL, little SILT, partially lithified; dark gray grading to tan gray.		
25						SAND, fine, little coarse; medium yellow-red brown. Iron oxide band at 33'. SILT and fine SAND and Iron oxide; mottled reddish black, deep brown, and yellow brown.		
35						SAND, m-c, grayish yellow brown. SILT and fine SAND; yellow brown to orange brown. SAND, f-c; medium brown.		
20								
40						GRAVEL and COBBLES, rounded to subrounded, little fine SAND. SAND, m-c, little SILT, medium brown. SAND, f-c, little SILT, trace mica; tan.		
15						SAND, f-m, trace coarse, little SILT, medium brown.		
45						SAND, f-m, little mica; medium brown to 49.5', grayish tan brown 49.5'-50.6'. GRAVEL and SAND seam at 48.4' (0.4' thick).		
10						GRAVEL and SAND seam at 51.2' (0.2' thick).		
50								
5						SAND, fine, little mica; grayish tan brown.		

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Elevation, feet	Depth, feet	SAMPLES			Graphic Log	MATERIAL DESCRIPTION	Well Completion Schematic	WELL DETAILS AND FIELD NOTES
		Core Interval Lab Samples	Lab ID Number	Headspace H <sub>2</sub> O, ppm				
55					GRAVEL, fine seam at 54'.			
					SAND, fine and f-c, subrounded to rounded GRAVEL; medium yellow brown.			
0					SAND, fine, little medium, little mica; tan brown. gray seam at 59.7' (0.1' thick)			
60					CLAY; gray with black staining			
					SAND, f-m, little coarse, little fine, subrounded to rounded GRAVEL; grayish tan brown, increasing GRAVEL with depth.			
-5					SAND, f-m, little mica; medium brown gray			
65					SAND, f-m; mottled buff and medium gray.			
-10					SILT, little CLAY, little fine SAND, micaceous; orange brown with gray laminations.			
70					SILTY CLAY to CLAYEY SILT, micaceous; dark gray.		Columbia - Merchantville Contact (70.1 ft bgs)	
-15								
75								
-20								
80								
-25								

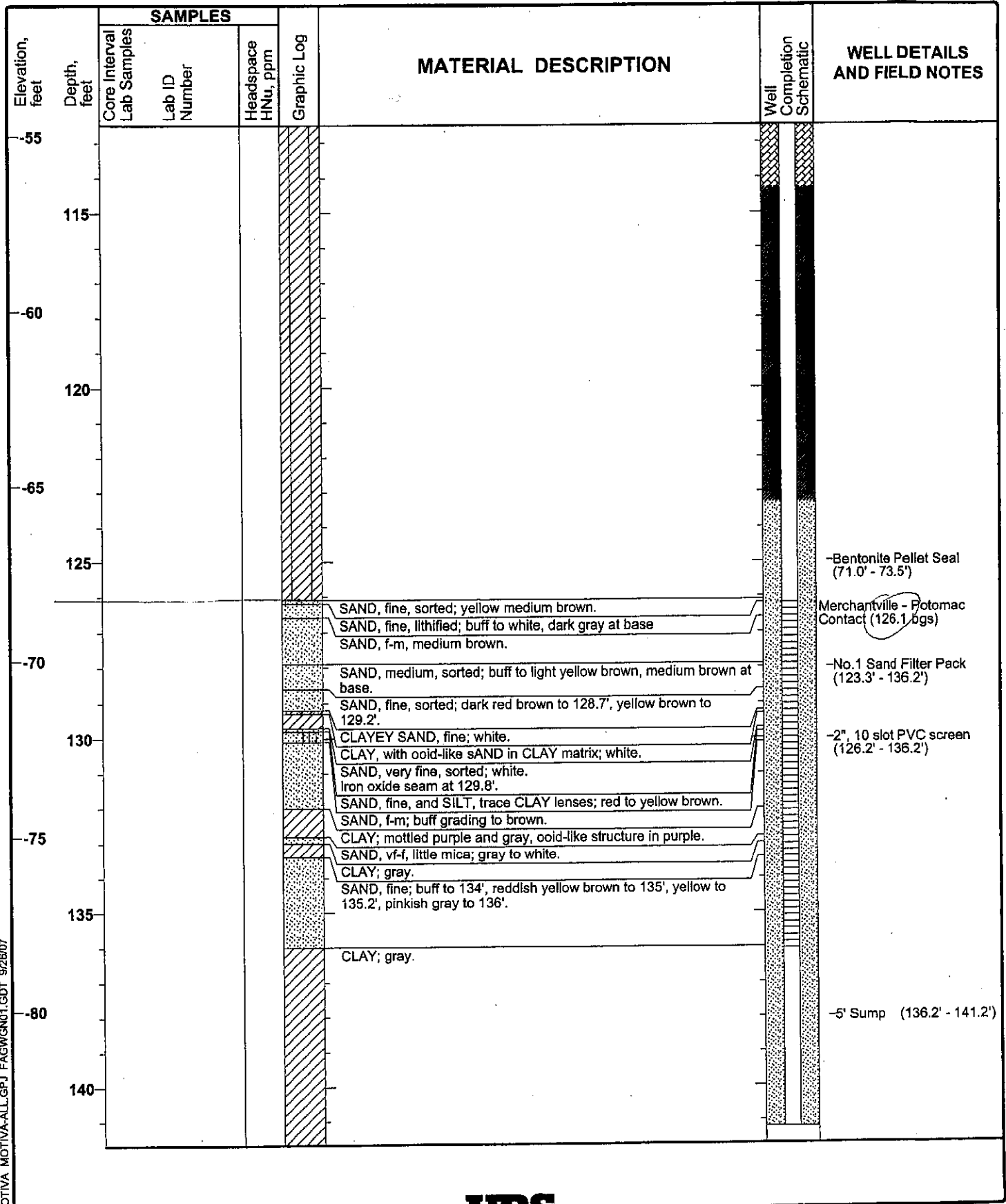
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Elevation, feet	Depth, feet	SAMPLES			Graphic Log	MATERIAL DESCRIPTION	Well Completion Schematic	WELL DETAILS AND FIELD NOTES
		Core Interval Lab Samples	Lab ID Number	Headspace H <sub>2</sub> Nu, ppm				
85								
-30								
90								
-35								
95								
-40								
100					CLAYEY SILT, glauconitic/micaceous; dark gray mottled with buff gray and dark green.			
-45								
105					SILTY CLAY to CLAYEY SILT, micaceous, little to some glauconite; dark gray.			
-50								
110								

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Log of Monitoring Well D51C

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Elevation, feet	Depth, feet	SAMPLES			Graphic Log	MATERIAL DESCRIPTION	Well Completion Schematic	WELL DETAILS AND FIELD NOTES
		Core Interval Lab Samples	Lab ID Number	Headspace HNU, ppm				
-85								
	145							
-90								
	150							
-95								
	155							
-100								
	160							
-105								
	165							
-110								
	170							

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