



DUFFIELD ASSOCIATES
Consultants in the Geosciences

TEST BORING OW-1

Permit No : 209179

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Observation and Monitoring Well Installation Review		Date Started : June 28, 2005		Drilling Equipment : ATV-mounted CME-55									
Wastewater Treatment Facility		Date Completed : June 29, 2005		Drilling Methods : 4.25" H.S.A./ Mud Rotary									
At Stonewater Creek		Logged by : JPC		Surface Elevation : 24.2 feet									
Fairmount, Sussex County, Delaware		Weather : Clear to Heavy Rain		Northing : 238,225 U.S. Feet DE SPC NAD 83									
Project No.: 5708.YD		Driller/Agency : J. Foley/Walton Corporation		Easting : 714,015 U.S. Feet DE SPC NAD 83									
Depth Surf. Elev. in feet 24.2 ft	GRAPHIC	USCS	USDA	Sample Condition <input checked="" type="checkbox"/> Remolded	Water Levels ▼ During Drilling ▼ 7/7/2005	DESCRIPTION	SAMPLES	Sample Number	Blows per 6 inches	Recovery (ft)	Well Construction Details	WATER LEVEL	Observation Well 209179 Top of Well Elev PVC = 28.02
0													
21.3						APPARENT FILL: dark brown, dark grayish brown fine to medium sand, little silt, trace coarse sand (dry).							
21.0		SM	LS			SAME.		1A	2-3-3-3	1.9	Bentonite Plug - 3/8" granular bentonite		
20.3		SM	LS			Brown, dark brown fine to medium SAND, little to some silt, trace organics (decomposed vegetation) (dry to damp).		1B					
19.7		ML	L			Light brown, reddish brown fine to medium SAND, little to some silt with silty sand lenses (damp).		1C					
19.3		SM	LS			Brown, reddish brown SILT and fine to medium SAND. Reddish brown, brown fine to medium SAND, some silt (dry).		2A	2-2-2-2	1.8	2" Schedule 40 PVC Well Casing		
		SP-SM	LS/S			Yellow, light brown fine to medium SAND, trace to little silt (dry).		2B					
17.7						SAME (damp to dry).		2C	3-4-3-4	1.8	Sand Pack - #2 well sand		
		SP	S			White, pale yellow, yellowish brown medium SAND, little fine sand, trace silt, trace coarse sand (dry) (well sorted lithic layers at 7.6 feet +/-) (coarsening down).		3A					
16.2		SW	S			White, light gray, reddish yellow medium to very coarse SAND, little granules, trace pebbles (dry) (poorly sorted).		3B					
15.7		SP	S			Light gray, reddish yellow fine SAND, trace silt (lenses of well sorted medium to coarse sand) (dry).		4A	6-5-3-2	1.7			
15.0		SIL	CL			Light gray CLAYEY SILT, trace to little fine sand, trace organics (peat/lignite) (few faint yellow fine to medium mottles) (damp to moist).		4B					
13.9						SAME (sand content increasing).		4C					
						Yellow, reddish yellow, light gray, light brown fine to medium SAND, trace silt (moist to wet) (moderately to well sorted).		5A	6-9-10-11	1.6			
						Light brown, light gray, dark gray medium to coarse SAND, little very coarse sand, trace silt (coarsening down) (saturated).		5B					
		SP-SM	S			Yellow, light brown medium SAND, little coarse sand, little fine sand, trace to little silt (well sorted).		6	6-7-8-8	1.6	2" Schedule 40 PVC Screened Casing - 0.020" slot		
								7	3-4-5-5	1.7			

NOTES:

1. Observation Well OW-1 (DNREC ID 209179) installed upon completion.
2. Wet-on-spoon encountered at 12.4 feet +/-; water level observed at 11.2 feet +/-; bottom of augers at 14.0 feet +/-; b.e.g.s.
3. Auger boring performed in general accordance with ASTM D 1452. Mud rotary drilling started at 14 feet b.e.g.s.
4. Continuous, split-barrel sampling performed in general accordance with the Method

5. Soil descriptions performed in general accordance with ASTM D 2488, the Practice for Description and Identification of Soils (Visual-Manual Procedure).
6. Grain size scale utilized for soil descriptions based on a hybrid of the Udden-Wentworth Scale described in Delaware Geological Survey Open File Report 34 "Methodology for Mapping Groundwater Recharge in Delaware's Coastal Plain."

for Penetrative Test and Split-Barrel Sampling (ASTM D 1586).



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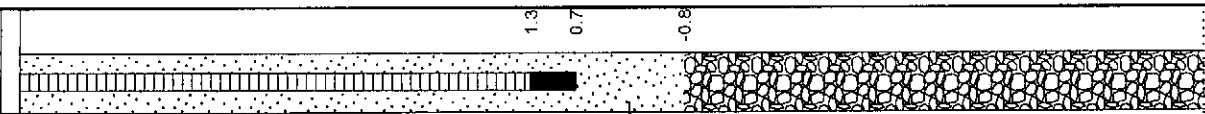
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At Stonewater Creek		Logged by : JPC		Surface Elevation : 24.2 feet		Surf Elev 24.2 ft			
Fairmount, Sussex County, Delaware		Weather : Clear to Heavy Rain		Northing : 238,225 U.S. Feet DE SPC NAD 83		WATER LEVEL			
Project No.: 5708.YD		Driller/Agency : J. Foley/Walton Corporation		Easting : 714,015 U.S. Feet DE SPC NAD 83					
Depth in feet	GRAPHIC	USCS	SP-SM	Sample Condition	Water Levels	SAMPLES	Blows per 6 inches	Recovery (ft)	Well Construction Details
Surf. Elev. 24.2 ft	DESCRIPTION								
16		USDA		<input checked="" type="checkbox"/>	7/7/2005				
18			S				8	6-7-9-9	1.7
20							9	7-7-7-9	1.3
22							10A	3-4-6-8	2.0
22							10B		
22							10C		
24							11	2-2-3-3	0.7
26							12	2-2-4-3	1.5
28							13	5-6-6-6	1.8
30							14	3-4-6-8	1.5
32							15	5-6-7-7	1.5

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Depth in feet	USCS	USDA	Sample Condition <input checked="" type="checkbox"/> Remolded	Water Levels During Drilling 7/7/2005	SAMPLES	Sample Number	Blows per 6 inches	Recovery (ft)	Well Construction Details	WATER LEVEL	Observation Well 209179 Surf Elev 24.2 ft
32						16	1-3-4-7	2.0	Slough Backfill		
34	SP-SM S					17	4-4-5-6	1.5			
36						18A	3-4-5-7	1.4			
38						18B					
40	SP-SM S					19	5-6-6-5	1.6	Bottom of Borehole - approximately 8" below slough backfill terminated at 40 feet below existing ground surface.		
42											
44											
46											
48											

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