DUFFIELD ASSOCIATES
Consultants in the Geosciences

TEST BORING MW-3

Permit No : 209177

Observation and Monitoring Well Installation Review	Date Started	: June 24, 2005	Drilling Equipment	: ATV-mounted CME-55
Wastewater Treatment Facility	Date Completed	: June 27, 2005	Drilling Methods	: 4.25" H.S.A.
At Stonewater Creek	Logged by	: JPC	Surface Elevation	: 22.4 feet
Fairmount, Sussex County, Delaware	Weather	: Clear to Rain	Northing	: 238,694 U.S. Feet DE SPC NAD 83
Project No.: 5708.YD	Driller/Agency	: J. Foley/Walton Corporation	Easting	: 713,956 U.S. Feet DE SPC NAD 83

Sample Condition: ⊠ Remolded

Water Levels: ▼ During Drilling; ▼ 7/7/2005

Depth in feet	Surf. Elev. 22.4 ft	GRAPHIC	USCS	USDA	DESCRIPTION	SAMPLES	Sample Number	Blows per 6 inches	Recovery (ft)	Well Construction Details	WATER LEVEL
0					Dark brown, grayish brown very fine to fine SAND, some silt, trace medium to coarse sand, trace organics (dry).		1A	5-4-6-5	1.9	Sakrete	
	21.6		SM	SL	Light brown, yellowish brown very fine SAND, and SILT, little fine sand, trace medium to coarse sand.		1B				
	21.1		CL-ML	CL	Reddish brown CLAYEY SILT, some to and fine sand, little medium sand, trace coarse sand (damp).		1C				
2	20.4		SM	LS	Reddish yellow, brown fine SAND, some to and silt, silt decreasing (damp).		2A	3-2-3-4	1.7		
	19.7		CL-ML	SICL	Light brown, grayish brown CLAYEY SILT, little fine to very fine sand, trace medium to coarse sand (damp).		2B				
	18.8		SP	S	Gray, yellow fine SAND, little to some medium sand, trace coarse sand, trace to little silt (dry).		2C				
4	18.4				Light gray, reddish yellow, grayish brown fine to medium SAND, trace to little coarse sand, trace silt, coarsening down to medium sand, trace granules (layered lithic structure).		3	3-6-6-9	1.5		
6			SP-SM	LS/S	White medium to coarse SAND, trace to no silt, little granules, little pebbles (coarsening down) (dry).		4A	10-11-10-9	1.6	Cement / Bentonite Grout	
	15.1		ML	L+	Gray, reddish yellow mottled SILT, little clay, little fine sand, trace medium to coarse sand (dry to damp).		4B				
8	14.4				Light gray, white medium SAND, little fine sand, trace to little coarse sand, trace silt, with gray silty clay and fine sand lenses 0.1 feet +/- thick every 0.7 feet +/-.		5	5-11-9-9	1.6		
10			SP	S	SAME with scattered gravel (coarsening down).		6A	9-8-9-11	2.0	2" Schedule 40 PVC Well Casing	
12	10.5				White very coarse SAND, trace coarse sand, trace granules, trace silt/clay.		6B				
					White, light gray medium SAND, scattered pebble lenses.		7	2-4-4-4	1.9	Sand Pack - #2 well sand	
14			SP-SM	LS/S	White medium to coarse SAND, trace silt, little gray clayey silt lense interlayered with fine sand, some silt 0.1 feet +/- thick at 14.8 feet +/-, (clay in shoe).		8	3-5-5-4	1.0	Top of Screen	
16											

Monitoring Well 209177
Top of Well Elev.
PVC = 25.44
Steel Casing Rim = 25.60
Surf. Elev. 22.4 ft

21.4
11.4
7.1

NOTES:
1. Monitoring Well MW-1 (DNREC ID 209177) installed upon completion.
2. Wet-on-spoon encountered at 10.0 feet +/-; water level observed at 9.0 feet +/-; bottom of augers at 10.0 feet +/- b.e.g.s.
3. EZ Mud used to wash out soils from the augers for samples 8 through 13.
4. Auger boring performed in general accordance with ASTM D 1452.
5. Continuous, split-barrel sampling performed in general accordance with the Method for Penetrative Test and Split-Barrel Sampling (ASTM D 1586).
6. Soil descriptions performed in general accordance with ASTM D 2488, the Practice for Description and Identification of Soils (Visual-Manual Procedure).
7. 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."

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Depth in feet	Surf. Elev. 22.4 ft	GRAPHIC	USCS	USDA	DESCRIPTION	SAMPLES	Sample Number	Blows per 6 inches	Recovery (ft)	Well Construction Details	WATER LEVEL
16					White, yellow medium SAND, with trace small discontinuous clayey silt lenses 1 inch +/- wide by .5 inches +/- thick.		9	3-4-5-8	1.8		
18			SP-SM	LS/S	White fine to medium SAND, trace to little silt (layered lithics at 19.3 feet +/-) (saturated).		10	2-1-2-2	1.6	2" Schedule 40 PVC Screened Casing - 0.020" slot	
20					SAME.		11A	3-1-3-4	2.0		
	1.3		CL	CL-C	Gray, reddish yellow, grayish olive brown CLAY, trace to little fine sand with sand and clay between 21.6 and 21.9 feet +/-, (overlying sand in shoe).		11B				
22	0.3				Gray CLAY, fine to medium sand lenses.		12A	2-2-2-3	2.0		
					White, light gray, reddish yellow medium SAND, trace silt, trace fine sand, lenses of coarse to very coarse sand (saturated) (color change at 22.8 feet +/- to yellowish brown).		12B				
24			SP-SM	LS/S	Yellow, light brown, light gray fine to medium SAND, little silt (saturated).		13	2-3-4-5	1.5	Bottom of Screen	
26	-3.6									Bottom of Borehole - approx. 8" diameter	
28											
30										Boring terminated at 30 feet below existing ground surface.	
32											

Monitoring Well 209177

Surf. Elev. 22.4 ft

-1.9

-2.8

-3.6

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