

APPENDIX D

Monitoring Well Construction Logs

2008 MONITORING WELL LOGS

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-01Da-d					
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 415.81 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 9/23/08			DATE FINISHED: 10/1/08		
DRILLING METHOD: 4 1/4" dia. HSA/HQ Core Barrel/ 11 7/8" Roller bit					TOTAL DEPTH: 96.0 fbgs			SCREEN INTERVAL: multiple depths fbgs		
DRILLING EQUIPMENT: CME-85 Rotary Drill Rig					DEPTH TO WATER: 24 ft		COMPL.		CASING:	
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: MAC					
HAMMER WEIGHT: 140lb			DROP: 30" (auto)		RESPONSIBLE PROFESSIONAL: R. Frappa				REG. NO.	

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
	Sample No.	Sample	Blows/ foot	OVM (ppm)				
Surface Elevation: 413.94 fmsl								
1					see log of GMX-MW-1S for 0-30' lithology			
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Project No. 12661.002

Geomatrix Consultants

WELL_OVM ALL MONITORING WELLS.GPJ (5/09)
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DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS			
	Sample No.	Sample	Blows/ foot				1Da	1Db	1Dc	1Dd
31	R#1				0.0	(30-35') Run #1: Rochester Shale interbedded shale/limestone - med.-hard grey fine grained limestone with shale interbeds throughout - typically less than or equal to 0.5" in thickness, few shells at 30.1', minor dolomitization at 30.4-32.8' exhibiting few small (1mm) vugs, frequent mechanical breaks, no in-situ joints noted, minor horizontal fracturing (closed) at 34' within shale interbeds No NAPL presence identified RQD: 31"/49" (63%)				
32										
33										
34										
35	R#2				0.0	(35-40') Run #2: Rochester Shale same as above becoming slightly less calcareous with shale (med. bedded) dominating, heavily broken zones at 37.7-37.9' and 39-40' No NAPL presence on core or within fractures, could not produce sheen with DI water sprayed on core, no staining present RQD: 22"/39" (56%)				
36										
37										
38										
39	R#3				0.0	(40-45') Run #3: Rochester Shale same as above becoming more calcareous (med.-hard) with few shale interbeds, brachiopods x-sections throughout, shale seam at 42.5' exhibits slight odor, open vertical joint (partially healed) at 42.9-43.1' RQD: 49"/60" (82%)				
40										
41										
42										
43	R#4				0.0	(45-50') Run #4: Rochester Shale hard grey shaley limestone - massively bedded with few shale partings throughout, significant increase of calcareous component (frequent shells, crinoid rubble, few small vugs) no NAPL presence RQD: 47"/57" (82%)				
44										
45										
46										
47	R#5				0.0	(50-55') Run #5: Irondequoit Limestone med.-hard grey limestone with shaley interbeds, shale partings (weathered to clay at 52.1, 52.7, 53.1, & 53.7), shale bed (moderately weathered) at 54-54.2', 3-4mm vugs encountered throughout, brachiopods & crinoid rubble less frequent no odors, sheens or staining observed RQD: 48"/60" (80%)				
48										
49										
50										
51	R#6				0.0	(55-60') Run #6: Irondequoit Limestone same as above grading to a light grey limestone with frequent small 1-2mm dia. vugs between 55.8 & 57.3' and grey to dark grey limestone with shaley interbeds to 60' no NAPL, odors, staining or sheers RQD: 46"/56" (82%)				
52										
53										
54										
55	R#7				0.0	(60-65') Run #7: Irondequoit Limestone dark grey limestone with shaley interbeds - 2 open vertical joints at 61-61.4' and 63.2-63.5', shale is unweathered, few med. breaks bottom 1.5' increasing green thinly bedded shale at 64-65' RQD: 100%				
56										
57										
58										
59	R#8				0.0	(65-70') Run #8: Irondequoit Limestone to Williamson Shale at 68'				
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63										
64										
65										
66										

WELL_OVM ALL MONITORING WELLS.GPJ (5/09)

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS		
	Sample No.	Sample	Blows/ foot				1Dc	1Dd	
67	R#8				0.0	grey to green shale with limestone interbeds at 67' & 68.5' - several mechanical breaks within shale, open vertical fracture between 67' & 67.5', moderately weathered shale at 68' & 68.5', locally weathered to clay no NAPL, staining or sheens RQD: 41"/58" (71%)			coring) * Run #8: lost 10 gal water
68									
69									
70									
71	R#9				0.0	(70-75') Run #9: Williamson Shale to Sodus Shale at 74' dark green to grey shale - few partings and slightly weathered mudseams at 70.5' and 73.5', no vertical fracturing, some pitting from calcareous solutioning, thinly bedded RQD: 40"/60" (67%)			* Run #9: lost 20 gal water
72									
73									
74									
75	R#10					(75-80') Run #10: Sodus Shale same shale as above - very broken with occasional clay seams, very broken zone at 76.5-77.5', limestone interbed at 77.6-77.8', many brachiopods from 76.5-79' no odors or sheens RQD: 30%			* Run #10: lost 20 gal water
76									
77									
78									
79	R#11					(80-85') Run #11: Sodus Shale same thin bedded shale - more calcareous, abundant brachiopods, very broken zone at 80-81' becoming massive below 82' and less fossils RQD: 53%			* Run #11: lost 120 gal water (mostly from 80-81')
80									
81									
82									
83	R#12					(85-90') Run #12: Sodus Shale grey, massive, thin bedded shale - occasional bedding plane fractures and brachiopods RQD: 96%			* Reaming at 10" coverhole to 96' complete. Minimal water loss (less than 20g) during 10 hour reaming process. Purge drill water and rinse coverhole w/ potable water. (10/1/2008)
84									
85									
86									
87	R#13					(90-95') Run #13: Reynales Limestone light grey hard limestone - med. grained shaley interbeds at 90-92', broken zone at 91-92', stylotites at 94', near vertical fracture from 93.7' to 94.2' RQD: 3 1/4.8' (63%)			* Allowed well to sit for about 1 hr and water level rises to within 30' of ground surface with air, purge accumulated water. (~1,500 gal. purged)
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PROJECT: Former West Station Plant Area MGP Site		Log of Well No. GMX-MW-01S	
BORING LOCATION: See Site Plan for MW locations		TOP OF RISER ELEVATION: 416.93 fmsl	DATUM: barge canal
DRILLING CONTRACTOR: Nothnagle Drilling Company		DATE STARTED: 9/23/08	DATE FINISHED: 9/23/08
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers/ HQ Core Barrel		TOTAL DEPTH: 30.0 fbgs	SCREEN INTERVAL: 20-30 fbgs
DRILLING EQUIPMENT: CME-85 Rotary Drill Rig		DEPTH TO WATER: 24 ft	COMPL. CASING:
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: MAC	
HAMMER WEIGHT: 140lb	DROP: 30" (auto)	RESPONSIBLE PROFESSIONAL: R. Frappa	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
	Sample No.	Sample	Blows/ foot				
Surface Elevation: 413.94 fmsl							stickup
1	1		8	0.1	FILL - brown fine to med. Sand with coarse limestone Gravel - dry, no odors or staining	GMXMMW01S (2-4')	
2			9				
3	2		16	2.0	FILL - brown fine to med. Sand grading to dark brown to black, coarse limestone Gravel, cobble lodged in shoe, dry - strong petroleum hydrocarbon-type odor at 3-4'		* collected 2-4' sample for lab analysis
4			14				
5	3		8	40	FILL - brown fine to med. Sand and coarse limestone Gravel - dry, black staining, sheens		Grout to Surface
6			7				
7	4		6	20	FILL - brown fine Sand with Silt lodged in shoe		* poor recovery
8			4				
9	5		4	10			
10			9		FILL - brown fine Sand with Silt - slight petroleum hydrocarbon-type odor, no staining or sheens		2" dia. PVC Riser
11	6		5	0.7			
12			3				
13	7		5	0.5			
14			5				
15	8		5	0.5			
16			8				
17	9		3	0.3	FILL - brown fine Sand with Silt, trace brick and clinker/coal fragments moist throughout, compact, some black staining at 21-22' - petroleum hydrocarbon-type odor	3/8" Bentonite Chips	
18			7				
19	10		10	0.3		#00N Filter Sand	
20			15				
21	11		8	22.8			
22			7		FILL - brown fine Sand with Silt, trace brick and clinker/coal fragments, trace wood ber at 22-23', weathered concrete at 23.5-24', moist, loose to compact - slight petroleum hydrocarbon-type odor	2" dia. PVC Screen	
23	12		11	8.7			
24			4				
25	13		5	32	NATIVE ALLUVIUM - Fine Gravel (GP), some med. Sand, saturated, loose, black staining, strong sheens - strong petroleum hydrocarbon-type odor	* spoon bouncing; auger refusal at 29'	
26			7			* overdrill 4 1/4" HSA with 10 1/4" dia. auger to prepare for 10" temp. casing	
27	14		3	30	friable limy Shale bedrock moist	* roller bit. to 30', heavy sheens & NAPL blebs returned in received water	
28			7				
29	15		16				
30			18				
			100/.5				
			100/.1				

WELL_OVM ALL MONITORING WELLS.GPJ (5/09)

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-02D				
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 416.75 fmsl			DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/6/08			DATE FINISHED: 10/6/08	
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers					TOTAL DEPTH: 39.0 fbgs			SCREEN INTERVAL: N/A fbgs	
DRILLING EQUIPMENT: CME-85 Rotary Drill Rig					DEPTH TO WATER:	FIRST 22 ft	COMPL.	CASING:	
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: MAC/McIntosh				
HAMMER WEIGHT: 140lb			DROP: 30" (auto)		RESPONSIBLE PROFESSIONAL: R. Frappa			REG. NO.	
DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS			
	Sample No.	Sample	Blows/foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.				
					Surface Elevation: 414.43 fmsl	stickup			
1	1		9	0.0	FILL - brown topsoil, some fine limestone Gravel, little wood fiber				
2			10						
3	2		6	0.0					
4			5		FILL - black fine Sand (possibly foundry sand), some coarse Sand and fine angular limestone Gravel moist				
5	3		6	0.0					
6			7						
7	4		7	0.0	FILL - brown fine Sand, little brick moist, soft to loose, no odors or staining				
8			1						
9			2	0.0					
10			1		FILL - brown fine Sand, little brick moist, soft to loose, no odors or staining				
11	6		2	0.0					
12			1						
13			2	0.0	FILL - Shale Gravel, some fine Sand, trace Silt and occ. pieces of brick lodged in shoe				
14	7		3	0.0					
15			6						
16			6	0.0	FILL - Shale Gravel, some fine Sand, trace Silt and occ. pieces of brick lodged in shoe				
17	8		4	0.0					
18			11						
19			12	0.0	FILL - brown fine Sand with Silt, trace coarse Sand, little brick and coal, some Gravel 18-20', cobble lodged in shoe - moist, soft				
20	9		4	0.0					
21			1						
22			2	0.0	FILL - brown fine Sand with Silt, trace coarse Sand, little brick and coal, some Gravel 18-20', cobble lodged in shoe - moist, soft				
23	10		3	0.0					
24			8						
25			5	0.0	FILL - brown fine Sand with Silt, trace coarse Sand, little brick and coal, some Gravel 18-20', cobble lodged in shoe - moist, soft				
26	11		4	0.0					
27			2						
28			5	0.0	FILL - brown fine Sand with Silt, trace coarse Sand, little brick and coal, some Gravel 18-20', cobble lodged in shoe - moist, soft				
29	12		15	0.0					
30			9						
					NO RECOVERY				
					Gravel (GP) with loose fine Sand and Silt, saturated, no sheens, light septic odor				
					weathered Shale bedrock moist				
					(24-29') Run #1: light grey/brown hard Limestone with thin shale interbeds, few unweathered shale partings, few 1-2" long sub vertical fractures, several small vugs throughout (<2mm dia.) no odors, no sheen recovery: 3.2'/5' (79%) RQD: (68%)				
					(29-34') Run #2: light grey/brown hard Limestone				
					GMXMMW25(2-4')				
					GMXMMW25(22-22.4')				
					stickup				
					* Open Rock Hole				
					* collected samples for lab analysis: 6-8' and 22-22.4'				
					Cement/ bentonite grout				
					4" Steel Casing Riser to 2' below bedrock				
					* auger grinding @ 22'				
					* advanced auger to 24'				
					* lost 125 gal water (steady)				
					* average drill rate = 3 min./foot				
					Bedrock				
					WELL_OVM ALL MONITORING WELLS.GPJ (5/09)				
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WELL_OVM ALL MONITORING WELLS.GPJ (5/09)

Log of Well No. GMX-MW-02D (cont'd)

DEPTH (feet)	SAMPLES				DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS		
	Sample No.	Sample	Blows/ foot	OVM (ppm)				
31					with few small breaks and crinoid stems in cross section no odors, no sheen recovery: 5'/5' RQD: (68%)			* lost 275 gal water (steady)
32								* average drill rate = 3 min./foot
33					(34-39') Run #3: light grey/brown hard Limestone with several mechanical breaks along shale partings no odors, no sheen recovery: 5'/5' (79%) RQD: (32%)			Open HQ Coverhole
34								
35								* lost 80 gal water (steady)
36								* average drill rate = 2.5 min./foot
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PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-02S				
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 416.85 fmsl			DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/6/08			DATE FINISHED: 10/6/08	
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers					TOTAL DEPTH: 23.0 fbgs			SCREEN INTERVAL: 13-22.6 fbgs	
DRILLING EQUIPMENT: CME-85 Rotary Drill Rig					DEPTH TO WATER:	FIRST 22 ft	COMPL.	CASING:	
SAMPLING METHOD: Not sampled for lithology					LOGGED BY: G. Combes				
HAMMER WEIGHT: 140lb			DROP: 30" (auto)		RESPONSIBLE PROFESSIONAL: R. Frappa				REG. NO.

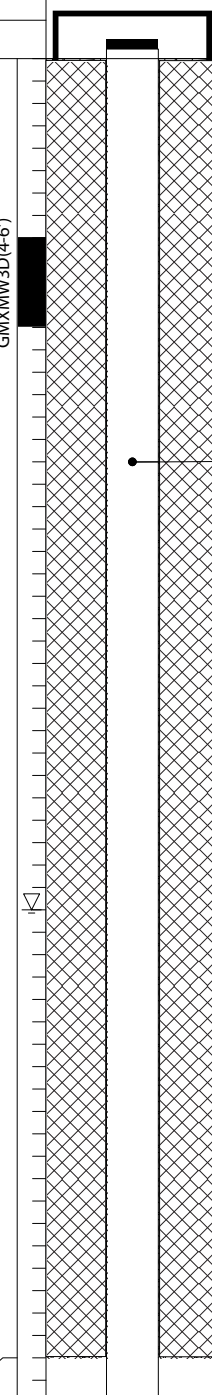
DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot				
						Surface Elevation: 414.43 fmsl	~2.25' stickup
1						see log of GMX-MW2D for lithology	Grout to surface 2" dia. PVC Riser * hydrated bentonite chips 3/8" Bentonite Chips #00N Filter Sand 2" dia. PVC Screen
2							
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11							
12							
13							
14							
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16							
17							
18							
19							
20							
21							
22							
23						Shale bedrock (see log of GMX-MW2D)	
24							
25							
26							
27							
28							
29							
30							

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WELL_OVM ALL MONITORING WELLS.GPJ (5/09)
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PROJECT: Former West Station Plant Area MGP Site		Log of Well No. GMX-MW-03D	
BORING LOCATION: See Site Plan for MW locations		TOP OF RISER ELEVATION: 413.72 fmsl	DATUM: barge canal
DRILLING CONTRACTOR: Nothnagle Drilling Company		DATE STARTED: 10/7/08	DATE FINISHED: 10/7/08
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers/ HQ Core Barrel		TOTAL DEPTH: 46.0 fbgs	SCREEN INTERVAL: N/A fbgs
DRILLING EQUIPMENT: CME-85 Rotary Drill Rig		DEPTH TO WATER:	FIRST 19 ft
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: MAC	
HAMMER WEIGHT: 140lb	DROP: 30" (auto)	RESPONSIBLE PROFESSIONAL: R. Frappa	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
	Sample No.	Sample	Blows/ foot				
						Surface Elevation: 413.72 fmsl	
1	1		3	0.0	FILL - tan/brown fine Sand, Silt and fine angular Gravel, some loose coarse Sand, trace brick and concrete no odors or staining		flush mount curb box
2			5				
3	2		4	0.1	FILL - black foundry Sand with coal clinker, some masonry brick dry, no odors		* Open Rock Hole
4			3				
5	3		5	0.1	FILL - black Sand with little brick very slight petroleum odor		* collected 4-6' sample for lab analysis
6			2				
7	4		3		FILL - coal with cotton fabric, abundant wood fiber, little Sand and trace glass, taffy like consistency (possible tar), strong coal tar-like odor		Cement/ Betonite Grout
8			4	100			
9	5		8	12	FILL - brown fine Sand with refractory brick strong odors		4" Steel Casing Riser to 2' below bedrock
10			15	14			
11	6		10		FILL - wood fiber (poor recovery)		* PID readings coming from wood
12			11	124			
13	7		12		FILL - black fine to med. Sand, wood fiber, trace brick, viscous taffy like matrix very strong coal tar-like odor		
14			4				
15	8		5	115			
16			7				
17	9		12	156	FILL - med. to coarse black Sand, trace fine rounded Gravel and brick, moist, petroleum hydrocarbon type odor		
18			7				
19	10		19	7.4			
20			3				
21	11		4	7.3	FILL - weathered to fine angular siltstone bedrock Gravel - strong odors FILL - bedrock fragments with fine Sand and Silt matrix saturated, no sheen, strong petrol odor		
22			5				
23	12		5	15	FILL - bedrock fragments, trace brick and red shale pieces very light sheen, petrol odor		
24			9				
25	13		12	5.1	FILL - fine Sand, Silt and weathered brown bedrock Gravel fragments moist, light sheen, strong odors		
26			4				
27	14		27	15	FILL - fine Sand, Silt, weathered brown bedrock Gravel fragments, blebs of NAPL		
28			18				
29	15		39	17	FILL - med. Sand saturated		* spoon bouncing @ 28'
30			100/2	50			
			15	0.4	Shale bedrock		

WELL_OVM ALL MONITORING WELLS.GPJ (5/09)

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS			
	Sample No.	Sample	Blows/ foot							
31			12			moist, lightly weathered, visible laminating				* auger refusal @ 30.5'
32			12			(31-36') Run #1: hard, grey to light grey limestone with shaley interbeds several 1-2mm dia. vugs where limestone dominates, top 6" is more weathered				* Run #1: less than 5 gal water lost, drill rate approximately 2.5 min./feet
33			54			exhibiting more brown shale partings, few shale inclusions (wrip-ups) within limestone, few small brachiopods in cross section, bottom 1' is dominated by dark grey shale				
34	R#1					RQD: 23"/50" (46%)				
35						(36-41') Run #2: hard, grey limestone with shale interbeds and several shale wrip-ups at 40-41', few healed subvertical fractures				* Run #2: less than 5 gal water lost
36						RQD: 40"/60" (67%)				
37										
38	R#2									Bedrock
39										
40										
41						(41-46') Run #3: hard, grey limestone with increase in crinoid and brachiopod hash below 42', open vertical fracture at 43-43.2'				* Open HQ Coverhole
42						RQD: 46"/59" (78%)				
43	R#3									
44										
45										
46										* end of corehole at 46'
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PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-03S					
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 413.46 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/7/08			DATE FINISHED: 10/7/08		
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers					TOTAL DEPTH: 29.0 fbgs			SCREEN INTERVAL: 18-28 fbgs		
DRILLING EQUIPMENT: CME-85 Rotary Drill Rig					DEPTH TO WATER: 19 ft		COMPL.		CASING:	
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: MAC					
HAMMER WEIGHT: 140lb				DROP: 30" (auto)			RESPONSIBLE PROFESSIONAL: R. Frappa		REG. NO.	

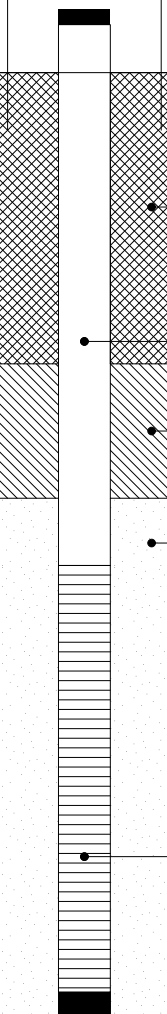
DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot	foot			
						Surface Elevation: 413.72 fmsl	
1						see log of GMX-MW3D for lithology	
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30						Shale bedrock (see log of GMX-MW3D)	

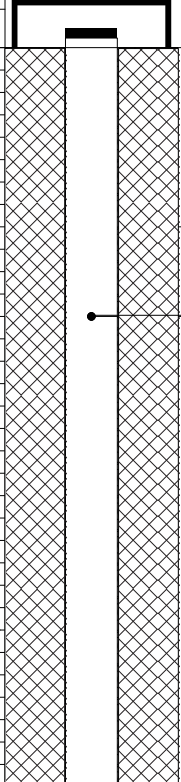
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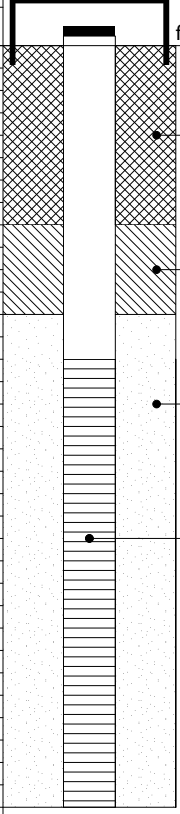
WELL_OVM ALL MONITORING WELLS.GPJ (5/09)
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PROJECT: Former West Station Plant Area MGP Site		Log of Well No. GMX-MW-04S	
BORING LOCATION: See Site Plan for MW locations		TOP OF RISER ELEVATION: 416.26 fmsl	DATUM: barge canal
DRILLING CONTRACTOR: Nothnagle Drilling Company		DATE STARTED: 10/8/08	DATE FINISHED: 10/8/08
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers		TOTAL DEPTH: 21.1 fbg	SCREEN INTERVAL: 11-20.5 fbg
DRILLING EQUIPMENT: CME-75 Rotary Drill Rig		DEPTH TO WATER:	FIRST COMPL. CASING:
SAMPLING METHOD: 2" & 3" Split Spoons		LOGGED BY: G. Combes	
HAMMER WEIGHT: 140lb	DROP: 30" (auto)	RESPONSIBLE PROFESSIONAL: R. Frappa	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
	Sample No.	Sample	Blows/ foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.		
	Surface Elevation: 413.78 fmsl						
1	1		2	0.0	FILL - dark to light brown fine Sand, Silt, topsoil dry	 stickup * collected 8'-10', 12'-14' and 20'-22' sample for lab. analysis Cement/Bentonite Grout to Surface * 3" spoon used for 4-6' only 2" dia. PVC Riser 3/8" bentonite seal #00N Filter sand * extremely high PID readings * 8500ppm reading coming from wood * 225ppm reading coming from H and coal tar material 2" dia. PVC Screen	
2			2		FILL - light grey and black fine Sand, fine gravel, pieces of brick		
3	2		5	0.0	FILL - black fine Sand, trace-fine gravel, pieces of coal and brick		
4			4		FILL - brown fine to med. Sand, fine angular Gravel, pieces of concrete		
5	3		4				
6			5	0.0			
7	4		24/2'				
8			8	8.2			
9	5		4		FILL - black fine med. Sand, fine Gravel, pieces of coal, coal tar-like material 8-11'(separate phase), wet at bottom, light sheen, pushed cobble with sampler, coal tar-like odor		
10			1	185.0			
11	6		1				
12			4	180.5			
13	7		25	24.2	FILL - Coal, fine Gravel, pieces of brick, some fine Sand, Silt and coal tar-like material		
14			13				
15	8		13	290	FILL - rotten wood and same fill as above wet, unknown sweet odor, some green/blue staining		
16			5				
17	9		5	8500	FILL - coal tar-like material with some fill as above		
18			7	225			
19	10		11	15.8	FILL - Silty Gravel wet, soft, NAPL presence throughout as strong sheens		
20			9				
21	11		16	49	FILL - Silty Gravel and pieces of brick wet, soft, owing, strong odor (possibly diesel fuel), yellow-green NAPL		
22			19				
23			2	3.0	FILL - dark grey Silt, fine Sand and wood wet, blebs of NAPL present		
24			3	0	grey weathered Shale bedrock thinly laminated		
25			4				
26			100/1'				
27							
28							
29							
30							

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-05D				
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 413.11 fmsl			DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/9/08			DATE FINISHED: 10/9/08	
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers/ HQ Core Barrel					TOTAL DEPTH: 29.5 fbgs			SCREEN INTERVAL: N/A fbgs	
DRILLING EQUIPMENT: CME-85 Rotary Drill Rig					DEPTH TO WATER:		FIRST 13 ft	COMPL.	CASING:
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: MAC				
HAMMER WEIGHT: 140lb			DROP: 30" (auto)		RESPONSIBLE PROFESSIONAL: R. Frappa				REG. NO.
DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS			
	Sample No.	Sample	Blows/foot						
					Surface Elevation: 413.11 fmsl	flush mount curb box			
1	1		14	0.0	Asphalt				
2			8		FILL - brown fine Sand with Silt, brick and trace fines dry, compact, no odors or staining				
3	2		13	0.0					
4			3						
5	3		4	0.0					
6			5		FILL - brown Silt with little brick and trace coal moist throughout, no odors or staining				
7	4		2	0.0					
8			2						
9	5		3	0.1					
10			2		FILL - same as above brown Silt with increasing brick and some fine angular Gravel moist				
11	6		3	0.0					
12			2		NATIVE ALLUVIUM-				
13	7		3	0.0	fine grey/brown Sand (SP), some Silt and trace LP fines, moist to saturated at 13', very soft, no odors or staining				
14			1		same as above (SP), with trace fine Silt				
15	8		1	0.0					
16			1						
17	9		2	0.0	Weathered Shale Bedrock, locally more competent visible laminations, no odors or staining				
18	10		4	0.0					
19			7						
20			18		(19.5-24.5') Run #1: grey Shale with limestone interbeds, hard, thinly bedded, several brachiopods throughout, few rip-ups of limestone within shale RQD: 28"/60" (47%)				
21			26						
22	R#1		100/1						
23									
24									
25					(24.5-29.5') Run #2: grey Shale with limestone interbeds as above RQD: 33"/48" (68%)				
26									
27	R#2								
28									
29									
30									
					WELL_OVM ALL MONITORING WELLS.GPJ (5/09)				
Project No. 12661.002					Geomatrix Consultants				
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PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-05S				
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 413.10 fmsl			DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/9/08			DATE FINISHED: 10/9/08	
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers					TOTAL DEPTH: 29.5 fbgs			SCREEN INTERVAL: 7-17 fbgs	
DRILLING EQUIPMENT: CME-85 Rotary Drill Rig					DEPTH TO WATER:	FIRST 13 ft	COMPL.	CASING:	
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: MAC				
HAMMER WEIGHT: 140lb			DROP: 30" (auto)		RESPONSIBLE PROFESSIONAL: R. Frappa				REG. NO.

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	foot			
						Surface Elevation: 413.11 fmsl	
1						see log of GMX-MW5D for lithology	 flush mount curb box Grout to surface 3/8" Bentonite Seal #00N Filter Sand 2" dia. PVC Screen * 6" sump at 47'
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17						Shale bedrock (see log of GMX-MW3D)	
18							
19							
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Project No. 12661.002

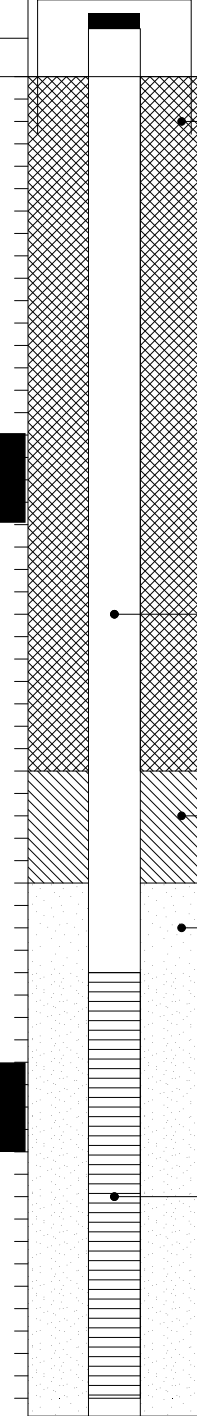

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WELL_OVM ALL MONITORING WELLS.GPJ (5/09)
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PROJECT: Former West Station Plant Area MGP Site		Log of Well No. GMX-MW-07S	
BORING LOCATION: See Site Plan for MW locations		TOP OF RISER ELEVATION: 412.80 fmsl	DATUM: barge canal
DRILLING CONTRACTOR: Nothnagle Drilling Company		DATE STARTED: 10/9/08	DATE FINISHED: 10/9/08
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers		TOTAL DEPTH: 14.1 fbgs	SCREEN INTERVAL: 8-13 fbgs
DRILLING EQUIPMENT: CME-85 Rotary Drill Rig		DEPTH TO WATER: FIRST 12 ft	COMPL. CASING:
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: MAC	
HAMMER WEIGHT: 140lb	DROP: 30" (auto)	RESPONSIBLE PROFESSIONAL: R. Frappa	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
	Sample No.	Sample	Blows/ foot				
					Surface Elevation: 412.80 fmsl		
1	1		25	0.0	FILL - Asphalt with brick, crushed limestone Gravel, little brown fine Sand and Silt dry, no odors		flush mount curb box Cement/Bentonite Grout to surface * poor recovery at several depths 2" dia. PVC Riser 3/8" bentonite seal * broke auger sub & head on concrete at 6.5', moved north ~3' #00N lter sand 2" dia. PVC Screen
2			13				
3	2		20	0.0			
4			11				
5	3		10	0.1	FILL - dark brown to grey Silt with little fine Gravel		
6			8		Concrete		
7	4		11	0.1			
8			1		FILL - dark brown to grey Silt with little fine Gravel slight coal tar like odor		
9	5		2	0.0			
10			3				
11	6		6	0.0			
12			3		FILL - same as above		
13	7		4	0.0			
14	8		3		FILL - dark brown to grey Silt, coarse Sand and little fine Gravel - no odors or staining		
15			4				
16			11	0.0			
17			28	0.0			
18			26		grey to brown weathered Shale bedrock moist to dry, visible laminations, locally weathered to silt with clay, shale becoming hard and less weathered at 13.5', no evidence of impact		* spoon refusal at 14'
19			21				
20			100/.1				
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							

WELL_OVM ALL MONITORING WELLS.GPJ (5/09)

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-08S			
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 417.19 fmsl		DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/9/08		DATE FINISHED: 10/10/08	
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers					TOTAL DEPTH: 30.4 fbgs		SCREEN INTERVAL: 20-29.5 fbgs	
DRILLING EQUIPMENT: CME-75 Rotary Drill Rig					DEPTH TO WATER:	FIRST	COMPL.	CASING:
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: G. Combes			
HAMMER WEIGHT: 140lb			DROP: 30" (auto)		RESPONSIBLE PROFESSIONAL: R. Frappa			REG. NO.
DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS		
	Sample No.	Sample	Blows/foot					
					Surface Elevation: 414.84 fmsl	stickup		
1	1		7	0.0	FILL - grey fine Gravel, some fine to coarse Sand, dry		Cement/Bentonite Grout to Surface	
2			8		FILL - brown fine Sand and Silt, trace fine Gravel, moist			
3	2		10		FILL - black fine Sand and Silt, moist, no odors			
4			7	0.0	FILL - black, grey and yellow med. to coarse Sand, fine Gravel, pieces of brick, coal and concrete, no odors		* auger grinding hard on concrete	
5			12		Concrete		* no sampling 4-8' (concrete)	
6			50/4				* augered through concrete to 8'	
7							* collected 8-10' sample for lab analysis	
8							2" dia. PVC Riser	
9	3		5	0.0	FILL - brown fine to coarse Sand, fine Gravel and pieces of concrete, moist, no odors			
10			4		FILL - brown fine to coarse Sand and fine Gravel moist, no odors or impact identified			
11	4		6	0.0				
12			7		FILL - grey fine Gravel, some med. to coarse Sand, little brown fine Sand and Silt moist, no odors			
13	5		12	0.0	FILL - brown fine to med. Sand with pieces of coal, glass and occasional fine rounded Gravel moist to wet at bottom, no odors			
14			22				3/8" bentonite seal	
15	6		11	0.0	FILL - brown fine med. to coarse Sand, some fine Gravel wet, no odors			
16			3				#00N filter sand	
17	7		3	0.0				
18			6					
19	8		4	0.0	FILL - black fine Gravel, little fine coarse Sand wet, coal tar-like odor			
20			10				* weathered shale is not bedrock	
21	9		18	0.0	NATIVE ALLUVIUM - broken weathered Shale (GP)- wet, layered, coal tar-like odor			
22			9				* collected 22-24' sample for lab analysis	
23	10		6	7.1	black med. to coarse Sand (SP), fine Gravel wet, blebs of NAPL throughout, strong sweet and coal tar-like odors			
24			15					
25	11		3	45	brown fine Sand (SP) and Silt, little fine rounded shale gravel		2" dia. PVC Screen	
26			8		wet to moist at bottom, black staining, strong coal tar-like odor			
27	12		15	3.1	grey, brown and black fine rounded Gravel (GP) , some med. to coarse Sand			
28			14		wet, strong coal tar-like odor			
29	13		7	0.0	black fine Gravel (GP), little med. to coarse Sand, green/brown weathered shale at bottom			
30			4		wet, lighter coal tar-like odor			
			23					
			1					

WELL_OVM ALL MONITORING WELLS.GPJ (5/09)

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot				
31	14		7			green/brown weathered Shale	
32			11				
33			11				
34			100/4				
35							
36							
37							
38							
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PROJECT: Former West Station Plant Area MGP Site		Log of Well No. GMX-MW-09S	
BORING LOCATION: See Site Plan for MW locations	TOP OF RISER ELEVATION: 416.91 fmsl		DATUM: barge canal
DRILLING CONTRACTOR: Nothnagle Drilling Company	DATE STARTED: 10/10/08		DATE FINISHED: 10/10/08
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers	TOTAL DEPTH: 24.1 fbgs		SCREEN INTERVAL: 14-23.5 fbgs
DRILLING EQUIPMENT: CME-75 Rotary Drill Rig	DEPTH TO WATER:	FIRST	COMPL.
SAMPLING METHOD: 2" Split Spoon	LOGGED BY: G. Combes		
HAMMER WEIGHT: 140lb	DROP: 30" (auto)	RESPONSIBLE PROFESSIONAL: R. Frappa	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
					Surface Elevation: 414.34 fmsl	
1	1		4	0.0		
2			7			
3	2		11		FILL - dark brown to black Silt and fine to coarse Sand, some fine Gravel, pieces of brick, coal dry, no odors	
4			10	0.0		
5	3		7			
6			6		FILL - same as above with increase of brown fine Sand moist, no odors	
7	4		5			
8			5	0.0		
9	5		2		FILL - dark brown, black, brownish red med. coarse Sand, some Silt and fine Gravel, pieces of brick and coal moist, no odors	
10			2			
11	6		3		FILL - black fine med. Sand, little fine Gravel, pieces of brick and coal - moist, no odors	
12			3	0.0		
13	7		3		FILL - brown, black and yellow fine Gravel and fine med. to coarse Sand, trace Silt, pieces of brick, metal and concrete - moist, no odors	
14			4			
15	8		6		FILL - yellow brown weathered Sandstone and fine Gravel - moist	
16			7	0.0		
17	9		7		FILL - broken up pieces of grey Dolomite in brown fine med. Sand and little rounded fine Gravel matrix moist, no odors, lone dolomite pieces 15.5-16'	
18			10			
19	10		10		FILL - broken up pieces of Dolomite, grey fine Gravel and fine to coarse Sand - dry, no odors	
20			10	0.0		
21	11		4		NATIVE ALLUVIUM - grey/brown fine angular Gravel (GP), some fine to coarse Sand, trace Silt - wet, no odors	
22			5			
23	12		10		brown green fine to med. Sand (SP), trace rounded fine Gravel, occasional pieces of weathered shale - saturated	
24			15			
25			16	0.0	dark brown fine med. Sand (SP) - saturated	
26			37			
27			44		brown weathered Shale, occasional dolomite partings dry, thinly laminated	
28			24			
29			39			
30			8			
			14			
			100/4			

WELL_OVM ALL MONITORING WELLS.GPJ (5/09)



PROJECT: Former West Station Plant Area MGP Site		Log of Well No. GMX-MW-10S		
BORING LOCATION: See Site Plan for MW locations		TOP OF RISER ELEVATION: 414.28 fmsl		DATUM: barge canal
DRILLING CONTRACTOR: Nothnagle Drilling Company		DATE STARTED: 10/13/08		DATE FINISHED: 10/13/08
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers		TOTAL DEPTH: 30.0 fbgs		SCREEN INTERVAL: 19.8-29.3 fbgs
DRILLING EQUIPMENT: CME-75 Rotary Drill Rig		DEPTH TO WATER:	FIRST	COMPL. CASING:
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: G. Combes		
HAMMER WEIGHT: 140lb		DROP: 30" (auto)		RESPONSIBLE PROFESSIONAL: R. Frappa
				REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
	Sample No.	Sample	Blows/ foot				
Surface Elevation: 414.28 fmsl							
1	1		24	0.0	Asphalt		
2			12		FILL - road bedding gravel backfill: dark grey to brown grey fine angular Gravel, some coarse to fine Sand dry, no odors		
3	2		12	0.0	FILL - dark brown Silt, little fine to coarse Sand, some fine Gravel, moist, no odors, black staining		
4			6		FILL - brown to black coarse to fine Sand, some fine angular Gravel, little Silt and pieces of brick moist, no odors		
5	3		4	0.0			
6			3				
7			4		FILL - dark brown and grey fine angular Gravel, some coarse to fine Sand, little Silt, moist, no odors		
8	4		50/2	0.0			
9			4		FILL - dark grey Gravel, little fine to med. Sand, trace Silt and pieces of brick, moist		
10			6		FILL - dark grey fine Gravel, little coarse to fine Sand, trace Silt, pieces of brick, moist to wet, no odors		
11	6		3	0.0			
12			2		NO RECOVERY (possible void in bricks)		
13	7		3	0.0			
14			3		FILL - grey fine Gravel, trace coarse to fine Sand, little Silt, angular limestone or calcareous shale moist to dry, looks like road bedding		
15	8		2	0.0			
16			5		FILL - brown to dark brown and yellow fine Gravel, some coarse to fine Sand, little Silt - wet, no odors or staining		
17	9		7	0.0			
18			2		FILL - brown med. to fine Sand and Silt, little fine Gravel, pieces of wood - wet, some black staining, very slight coal tar-like odor at bottom		
19	10		4	0.0			
20			2		FILL - soft black Silt and fine Sand, little fine Gravel, pieces of brick, saturated, some blebs of NAPL and sheen present - slight coal tar-like odor		
21	11		70	0.0			
22			9		FILL - black fine Gravel and coarse to med. Sand, trace Silt, occasional pieces of brick - saturated to wet, some blebs of NAPL present, slight coal tar-like odor		
23	12		6	0.0			
24			7				
25	13		16	0.0	NATIVE ALLUVIUM		
26			32		brown weathered Shale (GP) - moist, occasional black staining, slight coal tar-like odor		
27	14		50	0.0			
28			3		black to dark grey fine Gravel (GP) and brown coarse to fine Sand, little Silt - saturated, slight unknown odor (possibly coal tar-like)		
29	15		10	0.0			
30			22		brown to grey weathered Shale bedrock- thinly laminated, very slight unknown odor (same as		

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot				
31			11			above)	
32			100/3				
33							
34							
35							
36							
37							
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PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-11S-a				
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 416.52 fmsl			DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/13/08			DATE FINISHED: 10/13/08	
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers					TOTAL DEPTH: 3.5 fbgs			SCREEN INTERVAL: N/A fbgs	
DRILLING EQUIPMENT: CME-75 Rotary Drill Rig					DEPTH TO WATER:		FIRST	COMPL.	CASING:
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: G. Combes				
HAMMER WEIGHT: 140lb			DROP: 30" (auto)		RESPONSIBLE PROFESSIONAL: R. Frappa				REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	
					Surface Elevation: 414.43 fmsl	
1	1		27	0.0	Asphalt	* auger grinding hard 1.8-3.5' * driller concerned about breaking rig; drilling stopped at 3.5' * hole continued on SB-MW-11S-b
2			11		FILL - grey fine Gravel, little coarse to fine Sand, pieces of concrete, dry	
3			8		Concrete	
4			100/7			
5						
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Project No. 12661.002

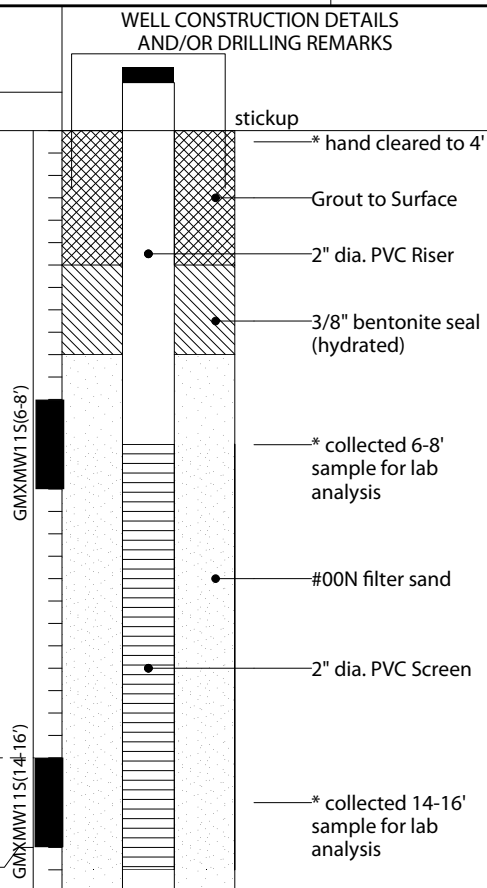

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WELL_OVM ALL MONITORING WELLS.GPJ (5/09)

PROJECT: Former West Station Plant Area MGP Site		Log of Well No. GMX-MW-11S-b	
BORING LOCATION: See Site Plan for MW locations		TOP OF RISER ELEVATION: 416.52 fmsl	DATUM: barge canal
DRILLING CONTRACTOR: Nothnagle Drilling Company		DATE STARTED: 10/17/08	DATE FINISHED: 10/17/08
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers		TOTAL DEPTH: 17.0 fbgs	SCREEN INTERVAL: 7-16.5 fbgs
DRILLING EQUIPMENT: CME-75 Rotary Drill Rig		DEPTH TO WATER:	FIRST
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: G. Combes	
HAMMER WEIGHT: 140lb		RESPONSIBLE PROFESSIONAL: R. Frappa	
DROP: 30" (auto)		REG. NO.	

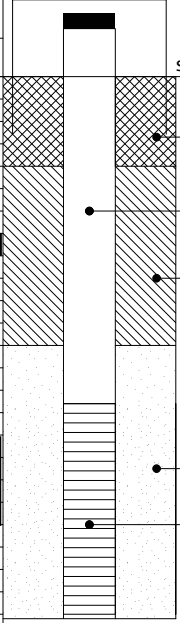
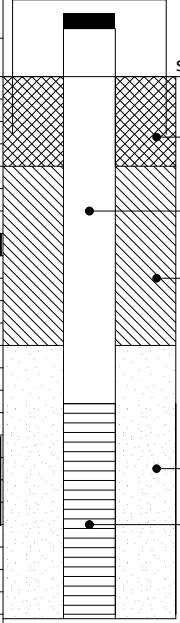
DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
	Sample No.	Sample	Blows/ foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.		
					Surface Elevation: 414.43 fmsl		
1					FILL - brown black fine to med. Gravel and coarse to fine Sand, moist, no odors		
2							
3							
4					FILL - dark brown coarse to fine Sand, some fine Gravel, little Clayey Silt, moist, no odors		
5	1		4				
6			50/.4				
7	2		3	0.0	FILL - brown to dark brown fine to coarse Sand, some fine Gravel, little Clayey Silt, moist, no odors or signs of impact		
8			2				
9			3				
10	3		3	0.0	FILL - brown fine Gravel, some coarse to fine Sand, trace Silt, bits of coal, moist, no odors		
11			3				
12			4				
13	4		6	0.0	FILL - brown fine Gravel, fine to med. Sand and Clayey Silt, occasional pieces of coal, moist, no odors or impact present		
14			6				
15			7				
16	5		7	0.0	FILL - brown fine Gravel and coarse to fine Sand, some Clayey Silt, moist, no impact identified		
17			4				
18			14				
19	6		6	0.0	NATIVE ALLUVIUM - brown very fine Sand (SP), some fine Gravel, some Clayey Silt (possible weathered bedrock), moist to wet, no odors or signs of impact		
20			7				
21			7				
22	7		18	0.0	weathered bedrock with Clayey Silt thinly laminated		
23			10				
24			12				
25			8				
26			100/.3				
27							
28							
29							
30							

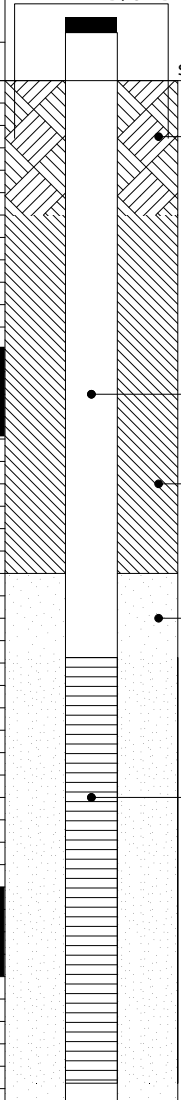


PROJECT: Former West Station Plant Area MGP Site		Log of Well No. GMX-MW-12S	
BORING LOCATION: See Site Plan for MW locations		TOP OF RISER ELEVATION: 401.05 fmsl	DATUM: barge canal
DRILLING CONTRACTOR: Nothnagle Drilling Company		DATE STARTED: 10/14/08	DATE FINISHED: 10/14/08
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers		TOTAL DEPTH: 11.7 fbgs	SCREEN INTERVAL: 6.7-11.7 fbgs
DRILLING EQUIPMENT: CME-85 Rotary Drill Rig		DEPTH TO WATER: 5 ft	COMPL. CASING:
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: MAC	
HAMMER WEIGHT: 140lb	DROP: 30" (auto)	RESPONSIBLE PROFESSIONAL: R. Frappa	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
					Surface Elevation: 398.21 fmsl	
1	1		2	0.0	FILL - brown fine Sand with trace Silt - dry	stickup Cement/Bentonite Grout to Surface 2" dia. PVC Riser * NAPL and impacts are found from 1-4'; visually decrease significantly below 4-6' interval 3/8" Bentonite Seal #00N Filter Sand 2" dia. PVC Screen * auger refusal at 11.7', grinding smoothly * collected 2-4' and 10-11.5' samples for lab analysis
2			3	110	FILL - med. Sand with trace Gravel, hard/brittle to taffy like consistency, visible staining, strong sheen	
3	2		33	47	- strong coal tar-like odor	
4			14	112	FILL - same as above mixed with trace brick, concrete and wood fiber - tar-like consistency 3.5-4'	
5	3		19		FILL - same as above (poor recovery) saturated at 5'	
6			26	N/A		
7	4		12			
8			5	5.7	FILL - loose coarse black Sand with concrete, brick, fine rounded Gravel, slight sheen	
9	5		3	8.2	- light to moderate coal tar-like odor with septic odor dominating	
10			17			
11	6		1	0.2	FILL - black to grey fine Sand, Silt and Gravel, trace concrete, firm, no sheen	
12			7		- very light coal tar-like and moderate septic odor	
13			9		Shale bedrock	
14			100/1			
15						
16						
17						
18						
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PROJECT: Former West Station Plant Area MGP Site		Log of Well No. GMX-MW-13S	
BORING LOCATION: See Site Plan for MW locations		TOP OF RISER ELEVATION: 400.74 fmsl	DATUM: barge canal
DRILLING CONTRACTOR: Nothnagle Drilling Company		DATE STARTED: 10/14/08	DATE FINISHED: 10/14/08
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers		TOTAL DEPTH: 12.1 fbgs	SCREEN INTERVAL: 7.3-12 fbgs
DRILLING EQUIPMENT: CME-85 Rotary Drill Rig		DEPTH TO WATER: 6 ft	CASING: COMPL.
SAMPLING METHOD: 2" Split Spoon		LOGGED BY: G. Combes	
HAMMER WEIGHT: 140lb	DROP: 30" (auto)	RESPONSIBLE PROFESSIONAL: R. Frappa	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot			
					Surface Elevation: 398.00 fmsl	
1	1		5	0.0	FILL - fine grey Sand	 stickup * lightly raining Cement/Bentonite Grout to Surface 2" dia. PVC Riser 3/8" Bentonite Seal * spoon fell under weight of hammer several times #00N Filter sand 2" dia. PVC Screen * collected 3.5-4' and 8-10' samples for lab analysis
2			9		FILL - dark grey/black fine to med. Sand and fine Gravel, pieces of coal, coke and brick, dry, no odors	
3	2		11		FILL - brown fine Sand, trace fine Gravel, dry	
4			22	16.0		
5			13			
6	3		21		FILL - coal tar like material, dry, soft strong coal tar-like odor	
7			7		FILL - black fine Sand, little fine Gravel, moist septic odor	
8			2	0.0		
9	4		5			
10			2		FILL - black fine Sand, saturated light septic odor until 8'	
11			1/1'	0.0		 stickup * lightly raining Cement/Bentonite Grout to Surface 2" dia. PVC Riser 3/8" Bentonite Seal * spoon fell under weight of hammer several times #00N Filter sand 2" dia. PVC Screen * collected 3.5-4' and 8-10' samples for lab analysis
12	5		WOH	0.0	FILL - red brown to grey brown layered fine Sand, little fine Gravel, saturated, no odors	
13			WOH		FILL - black, brown and yellow fine coarse Sand, little fine Gravel, trace Silt, pieces of coal and bricks, saturated	
14	6		3	0.0		
15			3			
16	7		7		Shale/Siltstone bedrock	
17			9			
18			16			
19			100/2			
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-14S					
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 415.63 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/23/08			DATE FINISHED: 10/23/08		
DRILLING METHOD: Direct Push					TOTAL DEPTH: 25.5 fbgs			SCREEN INTERVAL: 12.9-22.4 fbgs		
DRILLING EQUIPMENT: GEOPROBE 6610 DT					DEPTH TO WATER:	FIRST	COMPL.	CASING:		
SAMPLING METHOD: 4' Direct Push Acetate Sleeves					LOGGED BY: G. Combes					
HAMMER WEIGHT: 140lb			DROP: 30" (auto)		RESPONSIBLE PROFESSIONAL: R. Frappa				REG. NO.	
DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS				
	Sample No.	Sample	Blows/foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.					
Surface Elevation: 413.38 fmsl										
1					FILL - black and brown fine to med. Gravel, coarse to fine Sand and Clayey Silt					
2	1		N/A	0						
3										
4					FILL - brown to black to red fine Sand and Silt, pieces of brick and coal moist to wet					
5										
6	2		N/A	0						
7					FILL - dark grey and brown fine Sand and Silt, pieces of brick and coal, wet to moist slight septic odor					
8										
9										
10	3		N/A	0	FILL - brown fine Sand and Silt, trace fine Gravel, pieces of coal and brick wet, no odors					
11										
12										
13					FILL - black fine to coarse Sand and Silt, little fine Gravel and pieces of coal, wet slight coal tar-like odor					
14	4		N/A	0						
15										
16					FILL - grey Silt and med. fine Sand, trace fine Gravel, saturated					
17										
18	5		N/A	.5						
19					FILL - black fine Gravel, fine Sand, some Silt saturated, septic odor					
20										
21										
22	6		N/A	0	weathered, brown shale bedrock gravel					
23										
24										
25	7		N/A							
26										
27										
28										
29										
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WELL_OVM ALL MONITORING WELLS.GPJ (5/09)

Project No. 12661.002

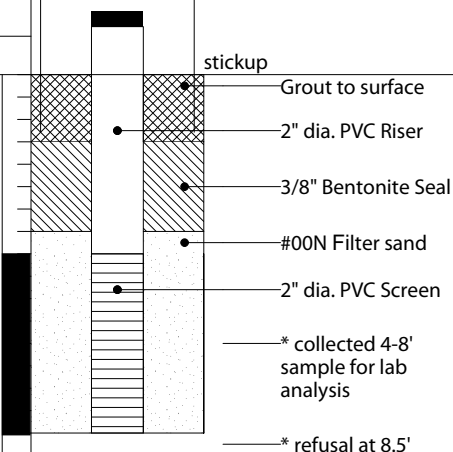
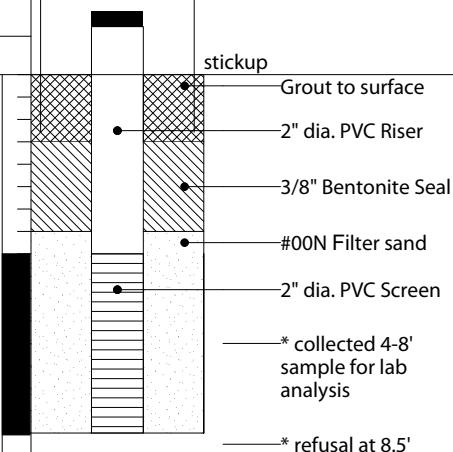
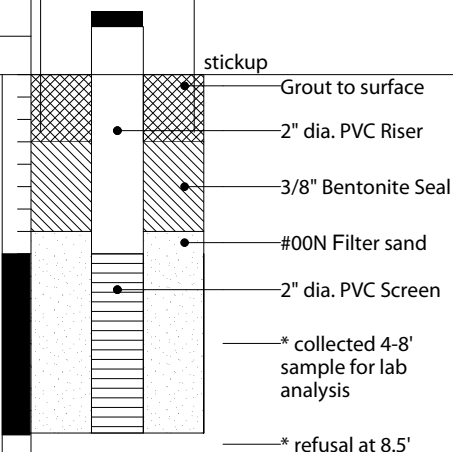
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PROJECT: Former West Station Plant Area MGP Site		Log of Well No. GMX-MW-15S	
BORING LOCATION: See Site Plan for MW locations		TOP OF RISER ELEVATION: 415.62 fmsl	DATUM: barge canal
DRILLING CONTRACTOR: Nothnagle Drilling Company		DATE STARTED: 10/23/08	DATE FINISHED: 10/23/08
DRILLING METHOD: Direct Push		TOTAL DEPTH: 26.5 fbgs	SCREEN INTERVAL: 16.4-26 fbgs
DRILLING EQUIPMENT: GEOPROBE 6610 DT		DEPTH TO WATER: 14 ft	COMPL. CASING:
SAMPLING METHOD: 4' Direct Push Acetate Sleeves		LOGGED BY: G. Combes	
HAMMER WEIGHT: 140lb	DROP: 30" (auto)	RESPONSIBLE PROFESSIONAL: R. Frappa	REG. NO.

DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
					Surface Elevation: 412.88fmsl	
1					FILL - black fine to med. Gravel, trace fine to coarse Sand, moist	
2	1		N/A	0.0	FILL - brown coarse to fine Sand, fine Gravel, little Clayey Silt and piece of coal - moist, no odors	
3					FILL - brown Clayey Silt, some fine med. Sand, little fine Gravel - moist, no odors	
4						
5						
6	2		N/A	0.0	FILL - black, brown and yellow brown fine Gravel, coarse fine Sand, some Silt - moist, no odors	
7						
8						
9						
10	3		N/A	0.0		
11						
12						
13						
14	4		N/A	0.0	FILL - brown to black fine Sand, Silt, trace fine rounded Gravel	
15					moist to wet at 10' and saturated at 14', slight septic odors, no staining	
16						
17						
18	5		N/A	0.0		
19						
20						
21						
22	6		N/A	0.0	FILL - black fine to med. Sand, trace fine Gravel saturated	
23						
24						
25						
26	7		N/A	0.0	FILL - black coarse to med. Sand, fine weathered shale Gravel and some Silt, saturated septic odor	
27						
28					Shale bedrock	
29						
30						

WELL_OVM ALL MONITORING WELLS.GPJ (5/09)

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-16S			
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 396.82 fmsl		DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/27/08		DATE FINISHED: 10/27/08	
DRILLING METHOD: Direct Push					TOTAL DEPTH: 8.5 fbgs		SCREEN INTERVAL: 4-8 fbgs	
DRILLING EQUIPMENT: GEOPROBE 6610 DT					DEPTH TO WATER:	FIRST	COMPL.	CASING:
SAMPLING METHOD: 4' Macrocores					LOGGED BY: G. Combes			
HAMMER WEIGHT: NA			DROP: NA		RESPONSIBLE PROFESSIONAL: R. Frappa			REG. NO.
DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS		
	Sample No.	Sample	Blows/ foot					
					Surface Elevation: 394.89 fmsl			
1					FILL - green brown grading to black Silt and fine Sand, saturated, no odors			
2	1		N/A	0				
3					FILL - black fine sand, saturated, light sheen			
4					FILL - black Silt and fine Sand, light sheen, no odors, occasional bivalve clam shell			
5								
6	2		N/A	0				
7								
8	3		N/A	0				
9					grey weathered Shale bedrock			
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PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-17S				
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 399.63 fmsl			DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/27/08			DATE FINISHED: 10/27/08	
DRILLING METHOD:					TOTAL DEPTH: 8.3 fbgs			SCREEN INTERVAL: 2.5-7.5 fbgs	
DRILLING EQUIPMENT: Backhoe					DEPTH TO WATER:	FIRST 8.25 ft	COMPL.	CASING:	
SAMPLING METHOD:					LOGGED BY: MAC				
HAMMER WEIGHT:			DROP:		RESPONSIBLE PROFESSIONAL: R. Frappa			REG. NO.	

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	foot			
Surface Elevation: 396.16 fmsl							
1					see drilling re- marks column	GMXMW17S(5-6') * monitoring well installed with excavator Topsoil and Excavated Backfill PVC Pack Screen * OVM readings = ~1-2ppm throughout excavation * OVM readings higher (~30-40ppm) where tar dominates	
2							
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WELL_OVM ALL MONITORING WELLS.GPJ (5/09)

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PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-18S				
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 395.14 fmsl			DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/27/08			DATE FINISHED: 10/27/08	
DRILLING METHOD:					TOTAL DEPTH: 7.0 fbgs			SCREEN INTERVAL: 2-7 fbgs	
DRILLING EQUIPMENT: Backhoe					DEPTH TO WATER: 7.0		FIRST 4 ft		COMPL.
SAMPLING METHOD:					LOGGED BY: MAC				
HAMMER WEIGHT:			DROP:		RESPONSIBLE PROFESSIONAL: R. Frappa				REG. NO.

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot				
Surface Elevation: 392.59 fmsl							
1						GMX-MW-18S (5-6')	
2					FILL - brown fine Sand with Silt, little brick, concrete, fine to med. Gravel, glass, steel pipe (4" dia. X 15' long), few large cobbles - no odors or tar encountered		
3							
4					NATIVE ALLUVIUM - large bedrock cobbles mixed with fine Sand and Silt exhibits layering, heavy staining and sheens, water entering test pit at 4', separate brown NAPL phase accumulates on water surface - strong coal tar like odor		
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WELL_OVM ALL MONITORING WELLS.GPJ (5/09)

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PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-19S				
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: 398.46 fmsl			DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/28/08			DATE FINISHED: 10/28/08	
DRILLING METHOD:					TOTAL DEPTH: 7.0 fbgs			SCREEN INTERVAL: 2-7 fbgs	
DRILLING EQUIPMENT: Backhoe					DEPTH TO WATER:	FIRST 4 ft	COMPL.	CASING:	
SAMPLING METHOD:					LOGGED BY: MAC				
HAMMER WEIGHT:			DROP:		RESPONSIBLE PROFESSIONAL: R. Frappa				REG. NO.

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot	OVM (ppm)			
Surface Elevation: 395.72 fmsl							
1						GMXMW19S(5-6')]	
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WELL_OVM ALL MONITORING WELLS.GPJ (5/09)
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PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-20S				
BORING LOCATION: See Site Plan for MW locations					TOP OF RISER ELEVATION: (not surveyed)			DATUM:	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 10/30/08			DATE FINISHED: 10/30/08	
DRILLING METHOD:					TOTAL DEPTH: 8.0 fbgs			SCREEN INTERVAL: 3-8 fbgs	
DRILLING EQUIPMENT: Backhoe					DEPTH TO WATER:	FIRST 1.5 ft	COMPL.	CASING:	
SAMPLING METHOD:					LOGGED BY: MAC				
HAMMER WEIGHT:			DROP:		RESPONSIBLE PROFESSIONAL: R. Frappa			REG. NO.	

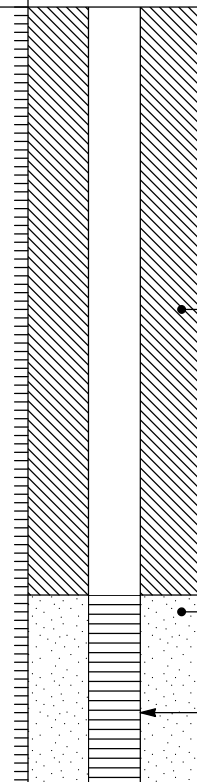
DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
	Sample No.	Sample	Blows/ foot	NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.				
						Surface Elevation: (not surveyed)		
1						GMXMW20S(4-5') Topsoil and Excavated Backfill PVC Pack Screen * collected 4-5' sample for lab analysis * reached limit of excavator at 8'		
2					FILL - angular bedrock cobbles with Silt, Sand and Gravel saturated at 1.5', very slight sheen on water in test pit - no odors or staining			
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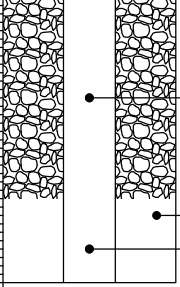
Project No. 12661.002

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WELL_OVM ALL MONITORING WELLS.GPJ (5/09)
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2009 MONITORING WELL LOGS

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-161				
BORING LOCATION: See Site Plan for MW Locations					TOP OF RISER ELEVATION: 396.67 fmsl			DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 11/18/09			DATE FINISHED: 11/19/09	
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers/ HQ Core Barrel					TOTAL DEPTH: 47.0 fbgs			SCREEN INTERVAL: 37-47 fbgs	
DRILLING EQUIPMENT: Gus Pech					DEPTH TO WATER:		FIRST	COMPL.	CASING:
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: MAC				
HAMMER WEIGHT: 140			DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa			REG. NO.	
DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS		
	Sample No.	Sample	Blows/ foot	NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.					
Surface Elevation: 394.93 fmsl									
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80					*** See GMX-MW-16D for bedrock lithology from 12-27' bgs (27-37) Run #1: Rochester Shale Rec: 10.0'/10.0' (100%) RQD: 7.3'/10.0' (73%) Lith: Rochester Shale, with several medium to large diameter vugs (~5 to 10 mm). Many brachiopods throughout. Irondequoit Limestone at ~33 feet bgs. Light grey limestone with many grey-green shale interbeds. No staining or odors. Increased limestone content and decreased shale content with depth. (37-47) Run #2: Irondequoit Limestone Rec: 9.5'/10.0' (95%) RQD: 9.1'/9.5' (95.8%) Lith: Irondequoit Limestone. Light grey-green limestone with dark gray interbedding. No staining or odors. Many small to medium healed vertical fractures. Several small diameter (~1 mm) vugs. Several mechanical breaks. Increased limestone content with depth.	 3/8" Diameter Bentonite Chips #00N Filter Sand 2" Diameter 0.010" Slot PVC Well Diameter			

PROJECT: Former West Station Plant Area MGP Site						Log of Well No. GMX-MW-16D						
BORING LOCATION: See Site Plan for MW Locations						TOP OF RISER ELEVATION: 396.79 fmsl			DATUM: barge canal			
DRILLING CONTRACTOR: Nothnagle Drilling Company						DATE STARTED: 11/9/09			DATE FINISHED: 11/10/09			
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers/ HQ Core Barrel						TOTAL DEPTH: 17.0 fbgs			SCREEN INTERVAL: 12-17 fbgs			
DRILLING EQUIPMENT: Gus Pech						DEPTH TO WATER:		FIRST		COMPL.		
SAMPLING METHOD: 2" Split Spoon						LOGGED BY: AKC						
HAMMER WEIGHT: 140				DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.		
DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION				WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS		
	Sample No.	Sample	Blows/ foot	foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.						
						Surface Elevation: 394.91 fmsl						
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80					FILL Green brown grading to black silt and fine sand, saturated, no odors. FILL Black silt and fine sand, light sheen, no odors, occasional bivalve clam shell. Bedrock (12-21') Run #1: Rochester Shale Rec: 9.0'/9.0' (100%) RQD: 3.2'/9.0' (35.6%) Lith: Rochester shale, gray to dark gray calcareous shale. Locally soft with few bedding plane partings. NAPL staining along bedding plane partings at 24.5' bgs. Occasional small vugs (5-10 mm in diameter). Few healed vertical fractures throughout. (21-27') Run #2: Rochester Shale Rec: 6.0'/6.0' (100%) RQD: 4.5'/6.0' (75%) Lith: Rochester shale, as above, with few small to large diameter (1-10 mm) vugs. Calcite filled 10 mm diameter vug at 22' bgs. Many brachiopods throughout, few healed vertical fractures throughout. Open vertical fractures at 25-27' bgs. Coal tar-like material, NAPL and staining present in fracture plane at 27' bgs and in parting at ~22' bgs.				 4" Steel Casing Riser to 2' below bedrock Bedrock Open HQ Coverhole			

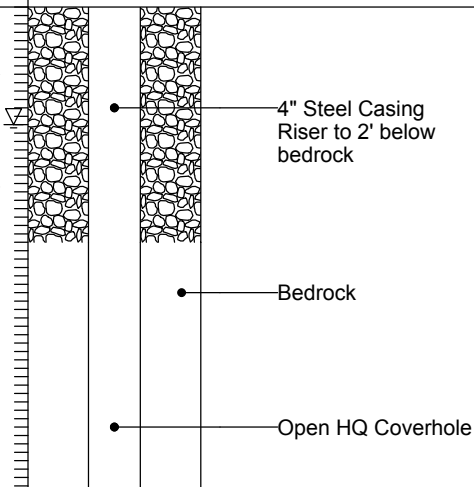
Project No. 12661.004


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WELL_OVM MONITORING WELL LOGS.GPJ (3/10)

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PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-17D					
BORING LOCATION: See Site Plan for MW Locations					TOP OF RISER ELEVATION: 397.22 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 11/10/09			DATE FINISHED: 11/11/09		
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers/ HQ Core Barrel					TOTAL DEPTH: 29.0 fbgs			SCREEN INTERVAL: 14-29 fbgs		
DRILLING EQUIPMENT: Gus Pech					DEPTH TO WATER:		FIRST 7 ft		COMPL. CASING:	
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: MAC					
HAMMER WEIGHT: 140			DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.	

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
	Sample No.	Sample	Blows/ foot	foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.		
Surface Elevation: 395.45 fmsl								
1 2 3 4	1 2 3 4	6 7 9 15 22 15 14 25 18 16 6 7 40 50/0.2	27.0 31.0 10.0 1.7	Hand excavate to 4' bgs. Cuttings consist of brown fine sand with silt, metal, several solidified tar block and concrete. FILL Weathered concrete and shale bedrock gravel. Slight coal tar-like odor and light sheen. As above, saturated. Staining and heavy sheen. Coal tar-like odor. Gray fine to coarse sand with silt, little coarse angular gravel, trace brick. Slight coal tar-like odor. No staining. Bedrock (14-24') Run #1: Rochester Shale Rec: 9.4'/10.0' (94%) RQD: 4.9'/9.4' (52.1%) Lith: Dark gray clacareous shale. No staining or odors. Several healed vertical fractures. Few 2 to 3" long open vertical fractures, (~2 to 3 mm aperature), several mechanical breaks. Few brachiopods throughout. Few small diameter (~1 to 3 mm) vugs, clay imparting in parting at 21' bgs. (24-29') Run #2: Rochester Shale Rec: 5.0'/5.0' (100%) RQD: 4.5'/5.0' (90%) Lith: As above, significant calcareous debris layering throughout core, with many brachiopods. Increased limestone content, few healed vertical fractures, few open fractures with 1 to 2 mm aperature. Few small to large vugs (1 to 10 mm in diameter).	 4" Steel Casing Riser to 2' below bedrock Bedrock Open HQ Coverhole			

Project No. 12661.004


Geomatrix Consultants

WELL_OVM MONITORING WELL LOGS.GPJ (3/10)
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PROJECT: Former West Station Plant Area MGP Site						Log of Well No. GMX-MW-17S						
BORING LOCATION: See Site Plan for MW Locations						TOP OF RISER ELEVATION: 397.49 fmsl			DATUM: barge canal			
DRILLING CONTRACTOR: Nothnagle Drilling Company						DATE STARTED: 11/11/09			DATE FINISHED: 11/11/09			
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers						TOTAL DEPTH: 14.0 fbgs			SCREEN INTERVAL: 3.5-10.5 fbgs			
DRILLING EQUIPMENT: Gus Pech						DEPTH TO WATER:		FIRST COMPL.		CASING:		
SAMPLING METHOD: 2" Split Spoon						LOGGED BY: MAC						
HAMMER WEIGHT: 140				DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.		
DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION				WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS		
	Sample No.	Sample	Blows/ foot	foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.						
						Surface Elevation: 395.11 fmsl						
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80					*** See GMX-MW-17D for lithology							

Project No. 12661.004

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WELL_OVM MONITORING WELL LOGS.GPJ (3/10)
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PROJECT: Former West Station Plant Area MGP Site						Log of Well No. GMX-MW-191					
BORING LOCATION: See Site Plan for MW Locations						TOP OF RISER ELEVATION: 399.48 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company						DATE STARTED: 11/16/09			DATE FINISHED: 11/17/09		
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers/ HQ Core Barrel						TOTAL DEPTH: 42.0 fbgs			SCREEN INTERVAL: 32-42 fbgs		
DRILLING EQUIPMENT: Gus Pech						DEPTH TO WATER:	FIRST 10 ft	COMPL.	CASING:		
SAMPLING METHOD: 2" Split Spoon						LOGGED BY: MAC					
HAMMER WEIGHT: 140			DROP: Autohammer			RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.	

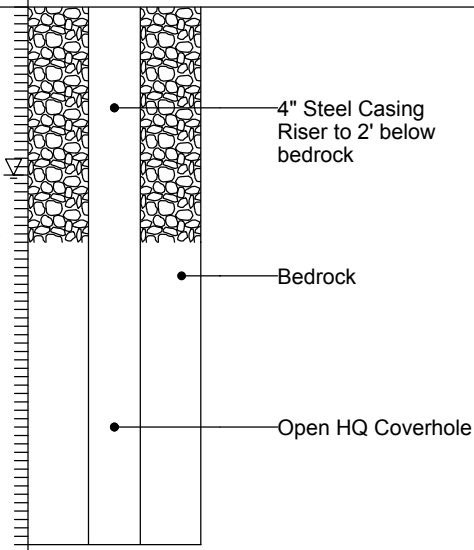
DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	OVM (ppm)			
Surface Elevation: 397.99 fmsl							
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42					*** See GMX-MW-19D for overburden lithology (17-27') Run #1: Rochester Shale Rec: 9.0'/10.0' (90%) RQD: 7.3'/9.0' (81.1%) Lith: Rochester shale, dark gray calcareous shale, coal tar-like odor. Tar at 17.0-20' bgs in partings. Sheens at 18-18.75' bgs in partings. Few small (~1 mm aperture). Vertical fractures, few bedding plane fractures, several mechanical breaks. 1/2" clay partings at 21' and 23' bgs. Many brachiopods throughout. Many small diameter (1 to 2 mm) vugs throughout. Few large diameter (~10 mm) vugs, large vug or vertical fracture (~2" in diameter) at 22' bgs. (27-32') Run #2: Rochester Shale Rec: 4.4'/5.0' (88%) RQD: 2.8'/4.4' (63.6%) Lith: Rochester shale. As above, increased limestone content from 29-32' bgs. No staining or odors, clay partings at 28.5' bgs. Several 1 to 2" long healed vertical fractures, several mechanical breaks, many brachiopods throughout, many small diameter (~1 mm) vugs, 2 large diameter (~15 to 22 mm) vugs at 29 and 30' bgs. (32-42') Run #3: Irondequoit Limestone Rec: 10.0'/10.0' (100%) RQD: 9.2'/10.0' (92%) Lith: Irondequoit Limestone at 32' bgs. Light grey-green limestone with gray and gray-green interbedding. No staining or odors. Several small healed vertical fractures. Small bedding plane fractures, mainly in shale interbeds. Few small to medium vugs (~1mm to ~4mm) throughout. Several mechanical breaks. Increased limestone content with depth.	Cement/bentonite grout 3/8" Diameter Bentonite Chips #00N Filter Sand 2" Diameter 0.010" Slot PVC Well Diameter	

Project No. 12661.004

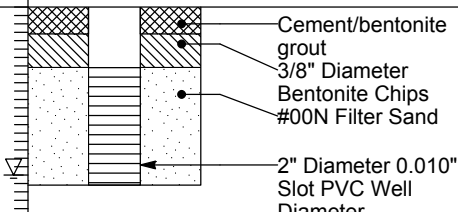
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WELL_OVM MONITORING WELL LOGS.GPJ (3/10)
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PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-19D					
BORING LOCATION: See Site Plan for MW Locations					TOP OF RISER ELEVATION: 399.96 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 11/13/09			DATE FINISHED: 11/16/09		
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers/ HQ Core Barrel					TOTAL DEPTH: 32.0 fbgs			SCREEN INTERVAL: 17-32 fbgs		
DRILLING EQUIPMENT: Gus Pech					DEPTH TO WATER:		FIRST 10 ft		COMPL. CASING:	
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: MAC					
HAMMER WEIGHT: 140			DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.	

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot	NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.			
						Surface Elevation: 397.90 fmsl	
						* Top 5' of fill was cleared with a mini-excavator	
	1		17	0.0		FILL Brown fine sand with silt, weathered concrete and masonry brick. Dry. No staining or odors.	
	2		28	17.0		FILL Moist brown to black fine sand with fine gravel, little coarse, trace brick. Coal tar-like odor. No staining.	
	3		11	1.7		Slight sheen when sprayed with DI water.	
	4		5	1.9		FILL Gray-black fine sand with fine to coarse angular shale gravel. Slight coal tar-like and spetic-like odor. No staining or sheens.	
			11			Bedrock	
			20			(17-27') Run #1: Rochester Shale	
			28			Rec: 9.0'/10.0' (90%)	
			15			RQD: 7.3'/9.0' (81.1%)	
			12			Lith: Rochester shale, dark gray calcareous shale, coal tar-like odor. Tar at 17.0-20' bgs in partings. Sheens at 18-18.75' bgs in partings. Few small (~1 mm aperture). Vertical fractures, few bedding plane fractures, several mechanical breaks. 1/2" clay partings at 21' and 23' bgs. Many brachiopods throughout. Many small diameter (1 to 2 mm) vugs throughout. Few large diameter (~10 mm) vugs, large vug or vertical fracture (~2" in diameter) at 22' bgs.	
			50/0.1			(27-32') Run #2: Rochester Shale	
						Rec: 4.4'/5.0' (88%)	
						RQD: 2.8'/4.4' (63.6%)	
						Lith: Rochester shale. As above, increased limestone content from 29-32' bgs. No staining or odors, clay partings at 28.5' bgs. Several 1 to 2" long healed vertical fractures, several mechanical breaks, many brachiopods throughout, many small diameter (~1 mm) vugs, 2 large diameter (~15 to 22 mm) vugs at 29 and 30' bgs.	

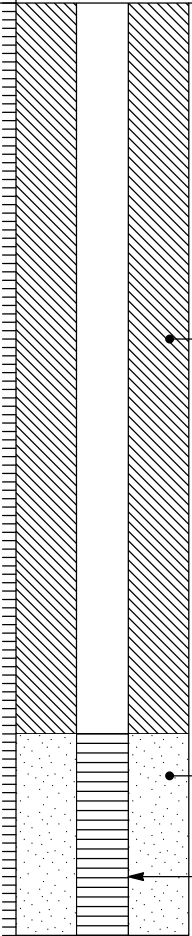
WELL_OVM MONITORING WELL LOGS.GPJ (3/10)

PROJECT: Former West Station Plant Area MGP Site						Log of Well No. GMX-MW-19S						
BORING LOCATION: See Site Plan for MW Locations						TOP OF RISER ELEVATION: 399.97 fmsl			DATUM: barge canal			
DRILLING CONTRACTOR: Nothnagle Drilling Company						DATE STARTED: 11/13/09			DATE FINISHED: 11/13/09			
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers						TOTAL DEPTH: 11.0 fbgs			SCREEN INTERVAL: 3.6-10.6 fbgs			
DRILLING EQUIPMENT: Gus Pech						DEPTH TO WATER:		FIRST 10 ft		COMPL.		
SAMPLING METHOD: 2" Split Spoon						LOGGED BY: MAC						
HAMMER WEIGHT: 140				DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.		
DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION				WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS		
	Sample No.	Sample	Blows/ foot	foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.						
						Surface Elevation: 397.92 fmsl						
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80					1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80				 Cement/bentonite grout 3/8" Diameter Bentonite Chips #00N Filter Sand 2" Diameter 0.010" Slot PVC Well Diameter			
						***See GMX-MW-19D for lithology						

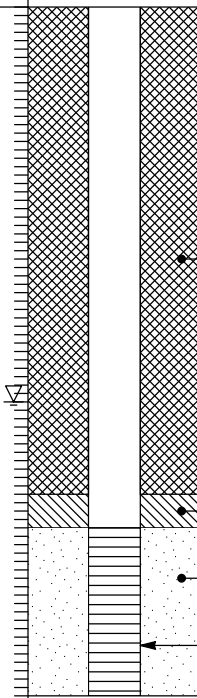
Project No. 12661.004


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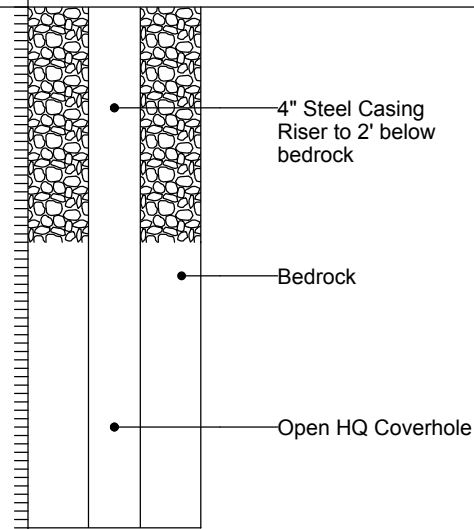
WELL_OVM MONITORING WELL LOGS.GPJ (3/10)
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PROJECT: Former West Station Plant Area MGP Site						Log of Well No. GMX-MW-201D					
BORING LOCATION: See Site Plan for MW Locations						TOP OF RISER ELEVATION: 415.60 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company						DATE STARTED: 11/6/09			DATE FINISHED: 11/6/09		
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers/ HQ Core Barrel						TOTAL DEPTH: 56.5 fbgs			SCREEN INTERVAL: 45.5-55.5 fbgs		
DRILLING EQUIPMENT: CME 850						DEPTH TO WATER:		FIRST	COMPL.	CASING:	
SAMPLING METHOD: 2" Split Spoon, HQ Core						LOGGED BY: AKC					
HAMMER WEIGHT: 140				DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.	
DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION			WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS		
	Sample No.	Sample	Blows/ foot	NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.							
						Surface Elevation: 413.56 fmsl					
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56						*** See GMX-MW-201 S for lithology					
						(44.5-47.5') Run #1: Rochester Shale Rec: 1.7'/3.0' (57%) RQD: 0.3'/1.7' (17.6%) Lith: Heavy weathered gray shale, bottom ~8" of core is weathered to clay. Few brachiopods, several mechanical breaks. Several clay partings at top of core. No staining or odors. ***Advance rollerbit through weathered bedrock/clay between 47.5 and 50' bgs.			3/8" Diameter Bentonite Chips		
						(50-56.5') Run #2: Irondequoit Limestone Rec: 4.2'/6.5' (65%) RQD: 2.2'/4.2' (52.4%) Lith: Irondequoit limestone, light gray-green limestone with dark gray shale interbedding. No staining or odors. Several small healed vertical fractures. Several bedding plane fractures, predominantly in shale interbeds. Brachiopods concentrated in hash layers between 50-54' bgs. Many small to large diameter (~1-10 mm) vugs. 1/2" clay parting at 52' bgs. Iron oxide-like staining at 50', 55', 56' bgs. Several mechanical breaks			#00N Filter Sand		
									2" Diameter 0.010" Slot PVC Well Diameter		
WELL_OVM MONITORING WELL LOGS.GPJ (3/10)											
Project No. 12661.004					 Geomatrix Consultants					Page 1 of 1	

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-201S					
BORING LOCATION: See Site Plan for MW Locations					TOP OF RISER ELEVATION: 415.88 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 11/4/09			DATE FINISHED: 11/16/09		
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers					TOTAL DEPTH: 56.5 fbgs			SCREEN INTERVAL: 31-41 fbgs		
DRILLING EQUIPMENT: CME 850					DEPTH TO WATER: 23.5 ft		COMPL.		CASING:	
SAMPLING METHOD: 2" Split Spoon, HQ Core					LOGGED BY: AKC					
HAMMER WEIGHT: 140			DROP: Autohammer			RESPONSIBLE PROFESSIONAL: Richard Frappa			REG. NO.	

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	ft		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	
						Surface Elevation: 413.77 fmsl	
1	1		1		0.8	3" of top soil.	 Cement/bentonite grout 3/8" Diameter Bentonite Chips #00N Filter Sand 2" Diameter 0.010" Slot PVC Well Diameter
2	2		2		8.7	FILL Light brown fine sand with silt, some coarse sand and subangular to rounded fine gravel. Trace pieces of wood. Loose and moist. No staining or odors.	
3	3		3		NA	FILL Gray silt with fine sand, coal dust. Trace wood and slag. Loose and dry. No staining or odors.	
4	4		4		0.9	FILL Gray silt with fine sand, coal dust with coarse and subangular gravel. Trace wood and slag. Loose and dry. No staining or odors.	
5	5		5		0.0	FILL Dark gray fine to medium sand with silt, trace coarse sand and fine gravel. Trace brick and wood, small slag fragments. Loose and dry. No staining or odor.	
6	6		6		1.2		
7	7		7		3.9		
8	8		8		1.9		
9	9		9		0.5		
10	10		10		0.6		
11	11		11		2.7	As above, with large slag fragments and coal dust.	
12	12		12		22.2	Broken rock in top 3" of sampler.	
13	13		13		19.2	As above, very slight diesel-like odor.	
14	14		14		29.7	Large pieces of rock and brick, slight diesel-like odor. Dry and loose	
15	15		15		5.9	FILL Brown fine sand, trace medium to coarse sand and fine gravel, pieces of wood, trace coal dust. Moist and loose. Slight diesel-like odor.	
16	16		16		1.0	Fine to coarse subangular to angular gravel, pieces of brick. Moist and loose.	
17	17		17		1.0	Brown-dark brown silt with fine and coarse sand, fine subangular to angular gravel, pieces of brick. Wet, slight coal tar-like odor.	
18	18		18		1.1	FILL Dark brown-dark gray, fine to medium sand with silt, coarse sand and fine to coarse subangular to angular gravel. Pieces of brick and wood. Wet with sheen. Slight diesel-like odor.	
19	19		19			FILL Weathered shale bedrock gravel with clay and silt, trace fine sand, trace brick. Wet. Strong diesel-like odor. Slight sheen. Coal tar-like odor. Staining.	
20	20		20			As above, with medium to coarse sand, wet, sheen, coal tar-like odor and NAPL present, heavy staining.	
21	21		21			Light brown clay and silt with dark gray fine to medium sand. Wet. Coal tar-like odor.	
22	22		22			FILL Dark gray, fine to coarse sand with brown clay and silt, trace fine to coarse weathered shale gravel. Wet. Sheen. Slight coal tar-like odor.	
23	23		23			NATIVE ALLUVIUM Fine brown sand with silt and clay. Compacted, moist. No staining. Slight coal tar-like odor.	
24	24		24			NATIVE ALLUVIUM Light brown well sorted fine sand and silt, grades to medium sand, grades to coarse sand, grades to fine to coarse gravel with some silt. Wet. No staining. Slight coal tar-like odor.	

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-21D					
BORING LOCATION: See Site Plan for MW Locations					TOP OF RISER ELEVATION: 412.71 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 11/16/09			DATE FINISHED: 11/27/09		
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers/ HQ Core Barrel					TOTAL DEPTH: 31.0 fbgs			SCREEN INTERVAL: 16-31 fbgs		
DRILLING EQUIPMENT: CME 850					DEPTH TO WATER:		FIRST	COMPL.	CASING:	
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: AKC					
HAMMER WEIGHT: 140			DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.	

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	ft		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	
						Surface Elevation: 413.16 fmsl	
1						* Hand cleared to 4' bgs	
2	1		2	0	Brown fine sand and silt, trace medium to coarse sand. Trace brick and trace coal dust. Moist. No staining or odors.		
3	2		2	0	Dark gray fine sand and silt, trace medium sand, no staining or odors. Trace angular gravel.		
4	3		3	0	Brown silt and clay with trace fine to medium sand. Moist to wet. No staining or odors.		
5	4		4	0	FILL Brown silt and clay with trace fine to medium sand. Trace coarse gravel and brick. Grades to fine sand with silt. Trace medium to coarse sand. Moist to wet. No staining or odors.		
6	5		5	0	Light brown and light gray clay. Weathered shale bedrock. Moist. No staining or odors.		
7						Bedrock (16-26') Run #1: Rochester Shale Rec: 7'/10.0' (87%) RQD: 4.9'/8.7' (56.3%) Lith: Rochester shale, dark gray slightly calcareous shale. No staining or odors. Clay in partings at 16.5', 24', 24.5' and 25.5' bgs. Clay in vertical fracture at 20' bgs few small (<2" long) healed vertical fractures, few small open vertical fracture (~1 mm aperture). Few bedding plane fractures, several mechanical breaks. Few small diameter (1 to 2 mm) vugs throughout, one large diameter (~20 mm) vug at 25.5' bgs. Few brachiopods.	
8						(26-31') Run #2: Rochester Shale Rec: 3.7'/5.0' (74%) RQD: 1.4'/3.7' (37.8%) Lith: Rochester shale, as above, increased limestone content 28.5'-30' bgs. Clay in partings at 26.5' and 30' bgs, several bedding plane fractures. Several mechanical breaks. ~27 - 27.5' bgs is subangular shale pieces with clay, few open vertical fractures (~1-2 mm aperture). Few brachiopods throughout. Few small diameter (~1-2 mm) vugs. Large diameter (~10 mm) vug at 26.5' bgs.	

Project No. 12661.004

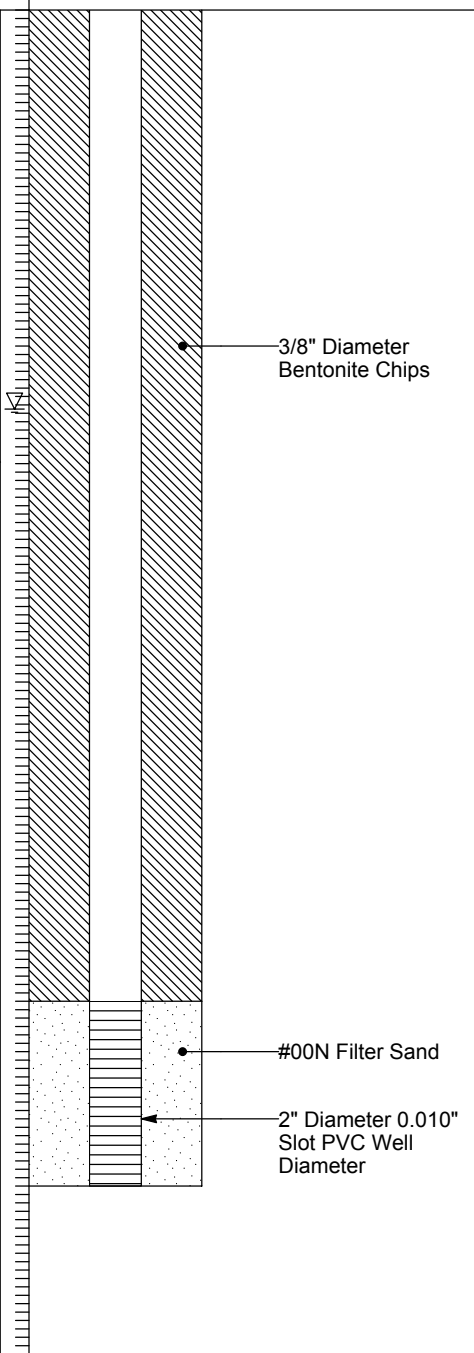

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WELL_OVM MONITORING WELL LOGS.GPJ (3/10)
 Page 1 of 1

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-22D					
BORING LOCATION: See Site Plan for MW Locations					TOP OF RISER ELEVATION: 415.92 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 11/6/09			DATE FINISHED: 11/6/09		
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers/ HQ Core Barrel					TOTAL DEPTH: 50.0 fbgs			SCREEN INTERVAL: 35-50 fbgs		
DRILLING EQUIPMENT: CME 75					DEPTH TO WATER: 15 ft		COMPL.		CASING:	
SAMPLING METHOD: 2" Split Spoon, NX Core					LOGGED BY: AKC & MAC					
HAMMER WEIGHT: 140			DROP: Autohammer			RESPONSIBLE PROFESSIONAL: Richard Frappa			REG. NO.	

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	ft		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	
						Surface Elevation: 413.63 fmsl	
						* Hand cleared to 4' bgs.	
1			15		0.1	FILL Gray fine sand and trace limestone gravel. Loose and moist. No staining or odors.	4" Steel Casing Riser to 2' below bedrock Bedrock Open HQ Coverhole
2			8		2.0		
3			8		3.7	FILL Light brown fine sand with silt, coal fragments, brick and concrete. Loose and dry.	
4			5		0.5	As above, with weathered concrete.	
5			15		0.4		
6			7		1.7		
7			8		4.7	Slight sheen. Coal tar-like odor at 17-18' bgs.	
8			4		1.5	FILL Gray-black weathered shale bedrock. Moist. Slight coal tar-like odor. Light sheen.	
9			4		1.7	As above, with some larger gravel (medium). Light staining and moderate coal tar-like odor.	
10			5		168 Peak	As above, with few NAPL blebs. Strong sheen and coal tar-like odor. Saturated. Fine to medium sand 22-23'.	
11			4		137	As above, with weathered bedrock gravel with sand.	
12			5		20	Strong coal tar-like odor. Heavy sheens. Staining. Few NAPL blebs. Saturated.	
13			5		13.5	As above, coarse angular bedrock gravel with silt and fine to medium sand.	
14			9		4.1		
15			6			Bedrock	
16			7			Highly weathered between 30 and 35' bgs. Auger advances easily to 35' bgs. No staining or odors within shale matrix.	
17			10			(35-45') Run #1: Rochester Shale	
18			10			Rec: 8.9'/10' (89%)	
19			30			RQD: 5.3'/8.9' (59.6%)	
20			15			Lith: Rochester shale, slightly calcareous dark gray shale. No staining or odors. Several small open vertical fractures (~1 mm aperture), many bedding plane fractures, many small to large diameter (~1 to 10 mm) vugs, many brachiopods throughout. Several mechanical breaks. Iron oxide-like staining at ~38' bgs.	
21			14			(45-50') Run #2: Rochester Shale	
22			13			Rec: 4.5'/5.0' (90%)	
23			30			RQD: 3.4'/4.5' (74.6%)	
24			20			Lith: As above, 4" of heavily weathered shale at ~47' bgs, 1/2" clay parting at 48.5' bgs, high limestone content in bottom foot of core. ~20 mm filled vug at 49.5' bgs. No vertical fractures.	
25			50/0.2				

WELL_OVM MONITORING WELL LOGS.GPJ (3/10)

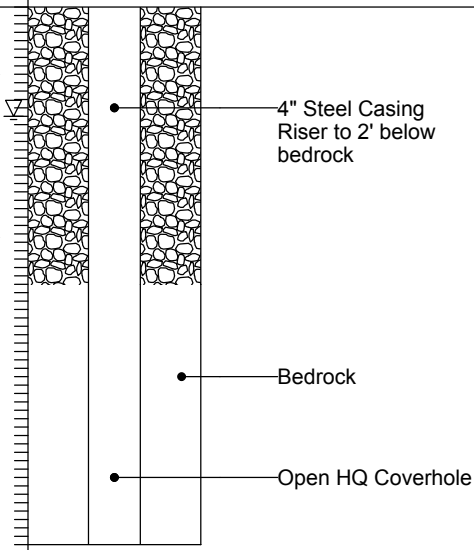
PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-231			
BORING LOCATION: See Site Plan for MW Locations					TOP OF RISER ELEVATION: 416.41 fmsl		DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 11/12/09		DATE FINISHED: 11/13/09	
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers/ HQ Core Barrel					TOTAL DEPTH: 70.0 fbgs		SCREEN INTERVAL: 60-70 fbgs	
DRILLING EQUIPMENT: CME 850					DEPTH TO WATER:	FIRST 23.75 ft	COMPL.	CASING:
SAMPLING METHOD: 2" Split Spoon, NX Core					LOGGED BY: AKC			
HAMMER WEIGHT: 140			DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa			REG. NO.
DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION		WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
	Sample No.	Sample	Blows/ foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.			
					Surface Elevation: 414.50 fmsl			
1	1		4	0	FILL Brown fine sand with silt, trace fine to coarse subangular gravel. Trace brick, trace coal dust. Moist. No staining or odors.		 3/8" Diameter Bentonite Chips #00N Filter Sand 2" Diameter 0.010" Slot PVC Well Diameter	
2	2		7	0				
3	3		10	0/16.7	FILL Brick fragments and coal dust, trace slag fragments. No staining or odors.			
4	4		13	14.4	Tar block (first foot) and coal tar (bottom 0.5') with taffy-like consistency. Strong coal tar-like odor.			
5	5		10	7.0				
6	6		11	NA				
7	7		8	NA				
8	8		5	NA				
9	9		4	35/9.7	FILL Tar with brown fine sand and silt, pieces of brick. Taffy-like consistency. Grades to black and light brown fine sand. Silt with trace of rounded gravel. Moist. Strong coal tar-like odor.			
10	10		7	28.7	Dark brown fine sand with silt, trace fine subrounded gravel, trace tar.			
11	11		4	1.7	Moist. Strong coal tar-like odor.			
12	12		3	2.0	Brick fragments. Slight coal tar-like odor.			
13	13		5	22.1/1.3	FILL Black fine sand with silt, trace fine subrounded gravel and trace brick. Moist. Strong coal tar-like odor.			
14	14		4	59.7	FILL Brown fine sand and silt, trace fine to coarse subrounded to angular gravel. Wet. Slight coal tar-like odor.			
			8		Dark brown and black fine sand with silt, and trace brick. Moist. Strong coal tar-like odor.			
			6		Brown fine sand and silt, trace fine to coarse subrounded to angular gravel. Wet. Slight coal tar-like odor.			
			9		Tar and brown fine to medium sand and asilt. Trace coarse angular gravel, stiff taffy-like consistency. Strong coal tar-like odor.			
			7					
			8					
			7					
			18					
			100/0.5					
					Bedrock			
					(30-40') Run #1: Rochester Shale			
					Rec: 8.9'/10.0' (89%)			
					RQD: 3.7'/8.9' (41.5%)			
					Lith: Rochester shale, dark gray slightly calcareous shale. No staining or odor. Few small diameter (~1 mm) vugs. Few small open vertical fractures (~1 mm aperture), several bedding plane fractures, several mechanical breaks, few brachiopods, increased limestone bedding 36-40' bgs.			
					(40-50') Run #2: Rochester Shale			
					Rec: 9.0'/10.0' (90%)			
					RQD: 4.8'/9.0' (53.3%)			
					Lith: As above, few small healed vertical fractures, increased brachiopods in hash layers 49-50' bgs.			
					(50-60') Run #3: Rochester Shale			
					Rec: 9.4'/10' (94%)			
					RQD: 6.1'/9.4' (65%)			
					Lith: 50-57.5' bgs: Rochester shale, as above. Many			
80								
80								
Project No. 12661.004					Geomatrix Consultants			

[illegible]

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-24D				
BORING LOCATION: See Site Plan for MW Locations					TOP OF RISER ELEVATION: 413.20 fmsl			DATUM: barge canal	
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 11/10/09			DATE FINISHED: 11/12/09	
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers/ HQ Core Barrel					TOTAL DEPTH: 43.0 fbgs			SCREEN INTERVAL: 28-43 fbgs	
DRILLING EQUIPMENT: CME 850					DEPTH TO WATER:		FIRST	COMPL.	CASING:
SAMPLING METHOD: 2" Split Spoon, NX Core					LOGGED BY: AKC				
HAMMER WEIGHT: 140			DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa			REG. NO.	

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	OVM (ppm)		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	
						Surface Elevation: 410.76 fmsl	
1	1		4	0	FILL Dark brown fine sand and silt. Fine to coarse angular to rounded gravel, brick, wood, organics, trace slag. Moist. No odors or staining. FILL Gray-brown fine sand and silt, fine to coarse angular gravel. Trace brick, trace organic matter. Moist. No odors or staining. Gray fine sand and silt with fine angular gravel. Coal dust, trace slag and trace brick. No staining or odors. FILL Gray-brown silt with fine sand, trace medium and coarse sand, trace brick, trace slag. No staining or odors. As above, with highly weathered tar block. Strong coal tar-like odor, hard taffy-like consistency. FILL Gray-brown fine to medium sand with coarse sand and fine subrounded to subangular gravel. Trace brick, trace wood. No staining, slight coal tar-like odor. FILL Dark brown fine to medium sand with coarse sand and fine subrounded to subangular gravel, trace brick, trace wood. Wet. No staining, slight coal tar-like odor. FILL Black fine sand and silt, trace medium to coarse sand and fine to coarse angular to subrounded gravel. Wet. Slight coal tar-like odor. Bedrock (28-38') Run #1: Rochester Shale Rec: 8.8'/10' (88%) RQD: 5.1'/8.8' (58%) Lith: Rochester shale, dark gray calcareous shale, no dark staining or odors. Few small to large diameter (1-10 mm) vugs. Large diameter (~20 mm) calcite filled vug at 37' bgs. Few brachiopods throughout. Many bedding plane fractures, several mechanical breaks. ~1/2" clay parting at 36.5' bgs. One small vertical fracture at 37.5' bgs. (38-43') Run #2: Rochester Shale Rec: 4.4'/5.0' (88%) RQD: 2.9'/4.4' (66%) Lith: As above.	4" Steel Casing Riser to 2' below bedrock Bedrock Open HQ Coverhole	
2	2		8	0			
3	3		12	0			
4	4		13	0			
5	5		7	0			
6	6		8	0			
7	7		10	0			
8	8		9	0			
9	9		12	0			
10	10		5	0			
11	11		7	0			
12	12		8	0			
13	13		11	0			
14			6	35.0			
15			3	0			
16			4	0			
17			4	2.8			
18			4	0			
19			14	0			
20			10	0			
21			6	0			
22			4	0			
23			9	0			
24			15	0			
25			8	0			
26			15	0			
27			9	0			
28			8	0			
29			8	0			
30			6	0			
31			10	0			
32			6	0			
33			4	0			
34			3	0			
35			2	0			
36			3	0			
37			5	0			
38			7	0			
39			9	0			
40			100/0.2	0			

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-25D					
BORING LOCATION: See Site Plan for MW Locations					TOP OF RISER ELEVATION: 399.32 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 11/11/09			DATE FINISHED: 11/12/09		
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers/ HQ Core Barrel					TOTAL DEPTH: 32.0 fbgs			SCREEN INTERVAL: 17-32 fbgs		
DRILLING EQUIPMENT: Gus Pech					DEPTH TO WATER: 6.5 ft		COMPL.		CASING:	
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: AKC & MAC					
HAMMER WEIGHT: 140			DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.	

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.			
						Surface Elevation: 397.66 fmsl	
						* Cleared to 4' bgs with an excavator	
1	1		1	8.5		FILL Gray to black fine sand with some coarse sand and little brick, concrete. Some tar (soft, taffy-like). Coal tar-like odor.	 4" Steel Casing Riser to 2' below bedrock Bedrock Open HQ Coverhole
2	2		19.1			As above, with some staining and NAPL. Saturated between 6.5' and 7' bgs.	
3	3		3.0			FILL Loose coarse sand with concrete. Saturated. No staining or sheens. Light coal tar-like odor.	
4	4		23			As above, with staining and NAPL present at bottom of sample shoe. Coal tar-like odor throughout.	
						Bedrock (14-29') Run #1: Rochester Shale Rec: 2.1'/2.5' (84%) RQD: 0.3'/2.1' (14.3%) Lith: Rochester shale at 16.5' bgs, top 2.5' of core are concrete (14-16.5' bgs). Dark gray slightly clacareous shale, no staining or odors. ~6" clay parting at 17-17.5' bgs, 1/2" clay parting at 18' bgs, several small open vertical fractures (~1 mm aperature), several mechanical breaks, few bedding plane fractures, few brachiopods, few small diameter (~1-2 mm) vugs.	
						(19-29') Run #2: Rochester Shale Rec: 8.6'/10' (86%) RQD: 5.3'/8.6' (61.6%) Lith: Rochester shale, as above, with increasing limestone content ~1/2" clay parting at 20.5' bgs. Few small open vertical fractures (~1 mm aperature). Several bedding plane fractures, several mechanical breaks. Many brachiopods, concentrated in several hash layers between 24-29' bgs. Many small diameter (1-2 mm) vugs throughout one large calcite filled vug (~10 mm diameter) at ~22' bgs.	
						(29-32') Run #3: 2 Rochester Shale Rec: 3.0'/3.0' (100%) RQD: 2.7'/3.0' (90%) Lith: Rochester shale, as above, with 1/2" clay parting at 30.5' bgs. No vertical fractures, several mechanical breaks. Many brachiopods throughout, concentrated predonminantly in hash layering, few small diameter (~1-2 mm) vugs. One large calcite filled vug (~10 mm in diameter) at 31' bgs.	

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WELL_OVM MONITORING WELL LOGS.GPJ (3/10)

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PROJECT: Former West Station Plant Area MGP Site						Log of Well No. GMX-MW-4D					
BORING LOCATION: See Site Plan for MW Locations						TOP OF RISER ELEVATION: 415.97 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company						DATE STARTED: 10/29/09			DATE FINISHED: 11/2/09		
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers/ HQ Core Barrel						TOTAL DEPTH: 41.0 fbgs			SCREEN INTERVAL: 26-41 fbgs		
DRILLING EQUIPMENT: CME 85						DEPTH TO WATER:		FIRST		COMPL.	
SAMPLING METHOD: 2" Split Spoon, HQ Core						LOGGED BY: AKC					
HAMMER WEIGHT: 140				DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.	

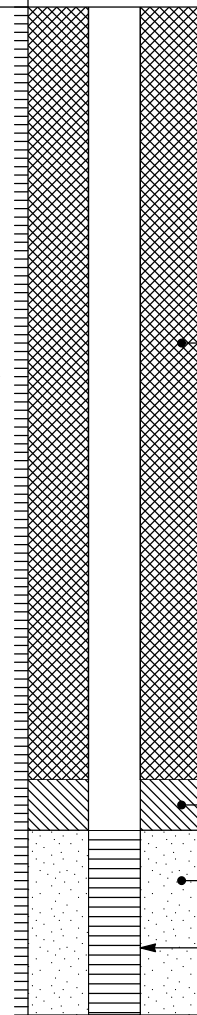
DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS	
	Sample No.	Sample	Blows/ foot	ft		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.		
						Surface Elevation: 413.52 fmsl		
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100					*** See log of GMX-MW-4S for overburden lithology Advance augers to ~17' bgs without sampling. Soil cuttings consist of black fine to medium sand with coarse sand and fine gravel, pieces of brick and concrete. Coal tar-like material present. Taffy-like consistency. Sheen on sediments. Strong odor. Black stained fine to coarse sand and coarse gravel, saturated. Coal tar-like material present. Strong odor. Advance augers to 23' bgs and set 4" permanent casing-grout in place. *** See log of GMX-MW-4I for bedrock lithology	4" Steel Casing Riser to 2' below bedrock Bedrock Open HQ Coverhole		

Project No. 12661.004

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WELL_OVM MONITORING WELL LOGS.GPJ (3/10)
 Page 1 of 1

PROJECT: Former West Station Plant Area MGP Site						Log of Well No. GMX-MW-4I					
BORING LOCATION: See Site Plan for MW Locations						TOP OF RISER ELEVATION: 415.80 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company						DATE STARTED: 10/29/09			DATE FINISHED: 10/30/09		
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers/ HQ Core Barrel						TOTAL DEPTH: 60.0 fbgs			SCREEN INTERVAL: 50-60 fbgs		
DRILLING EQUIPMENT: CME 85						DEPTH TO WATER:		FIRST COMPL.		CASING:	
SAMPLING METHOD: 2" Split Spoon, HQ Core						LOGGED BY: AKC					
HAMMER WEIGHT: 140				DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.	

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	
						Surface Elevation: 413.55 fmsl	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60						*** See log of GMX-MW-4S for overburden lithology Advance to ~22' bgs without sampling. Soil cuttings are dark brown to black fine to medium sand with coarse sand, fine gravel, pieces of brick and concrete. Coal tar-like material present, and taffy-like consistency. Strong coal tar-like odor. Advance rollerbit 22-26' bgs and set 4" permanent casing-grout in place. Wood pieces in return water. (26-30') Run #1: Rochester Shale Recovery: 3.7'/4' (92.5%) RQD: 1.9'/3.7' (51.35%) Lith: (Rochester shale) Gray slightly calcareous shale, no staining or odors, no NAPL. Thin (~1/2") clay partings at 27.5' and 29.4' bgs. Few healed vertical fractures, few open vertical fractures (~1 mm aperture), several mechanical breaks. Few bedding plane fractures. Few brachiopods. Few small and large vugs (~1 to 10 mm diameter). (20-25') Run #2: Rochester Shale Recovery: 4.5'/5.0' (90%) RQD: 3.3'/4.5' (73.33%) Lith: As above (35-40') Run #3: Rochester Shale Recovery: 4.0'/5.0' (80%) RQD: 3.5'/4.0' (87.5%) Lith: As above, with increasing limestone content. Several brachiopod hashlayers, ~1/2" clay parting at 36.5' bgs (40-45') Run #4: Rochester Shale Recovery: 4.8'/5.0' (96%) RQD: 4.1'/4.8' (85.4%) Lith: As above, increasing limestone content. Brachiopods throughout (45-50') Run #5: Irondequoit Limestone Rec: 4.9'/5' (98%) RQD: 4.4'/4.9' (89.8%) Lith: 45-48' bgs: As above.	 Cement/bentonite grout 3/8" Diameter Bentonite Chips #00N Filter Sand 2" Diameter 0.010" Slot PVC Well Diameter

Project No. 12661.004

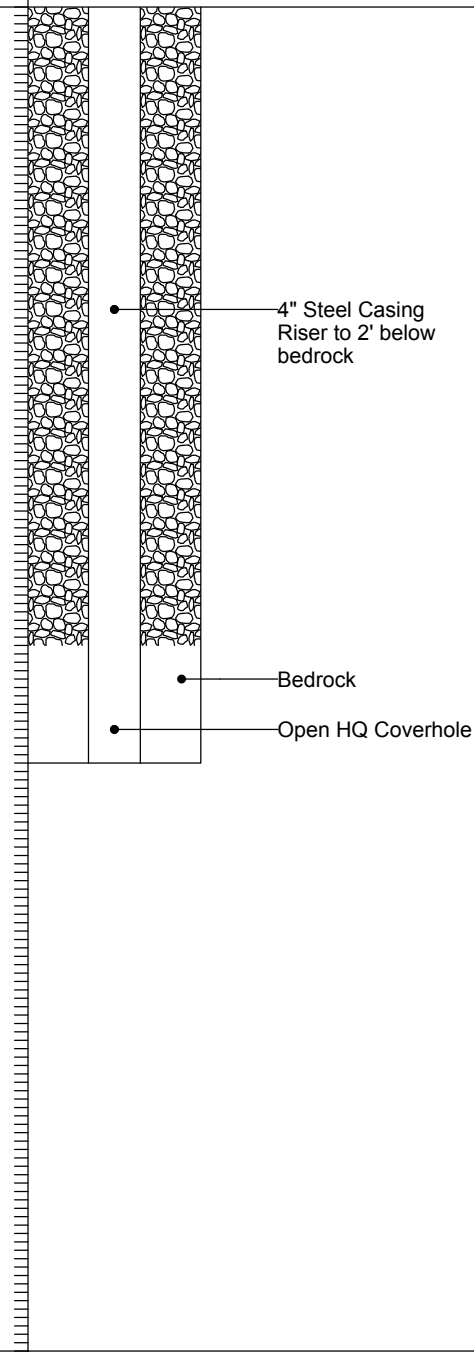

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WELL_OVM MONITORING WELL LOGS.GPJ (3/10)
 Page 1 of 2

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-4I (cont'd)	
DEPTH (feet)	SAMPLES				DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	OVM (ppm)		
48-50'					48-50' bgs: Irondequoit Limestone, gray-green limestone with green shale interbeds, no staining or odors. Fe open vertical gractures (~1 mm aperature) several mechanical breaks, few small vugs(~1 mm diameter), few brachiopod fossils throughout. Increasing limestone content with decreasing shale content with depth.	
(50-55')					(50-55') Run #6: Irondequoit Limestone Rec: 4.3'/5.0' (86%) RQD: 3.4'/4.3' (79%) Lith: As above, decreasing shale content.	
44-45'						
43-44'						
42-43'						
41-42'						
40-41'						
39-40'						
38-39'						
37-38'						
36-37'						
35-36'						
34-35'						
33-34'						
32-33'						
31-32'						
30-31'						
29-30'						
28-29'						
27-28'						
26-27'						
25-26'						
24-25'						
23-24'						
22-23'						
21-22'						
20-21'						
19-20'						
18-19'						
17-18'						
16-17'						
15-16'						
14-15'						
13-14'						
12-13'						
11-12'						
10-11'						
9-10'						
8-9'						
7-8'						
6-7'						
5-6'						
4-5'						
3-4'						
2-3'						
1-2'						
0-1'						



PROJECT: Former West Station Plant Area MGP Site						Log of Well No. GMX-MW-6D					
BORING LOCATION: See Site Plan for MW Locations						TOP OF RISER ELEVATION: 416.18 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company						DATE STARTED: 10/26/09			DATE FINISHED: 11/2/09		
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers/ HQ Core Barrel						TOTAL DEPTH: 60.0 fbgs			SCREEN INTERVAL: 38-45 fbgs		
DRILLING EQUIPMENT: CME 85						DEPTH TO WATER:		FIRST		COMPL.	
SAMPLING METHOD: Soil-None; Bedrock-HQ Core, NX Core						LOGGED BY: AKC & MAC					
HAMMER WEIGHT: 140				DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.	

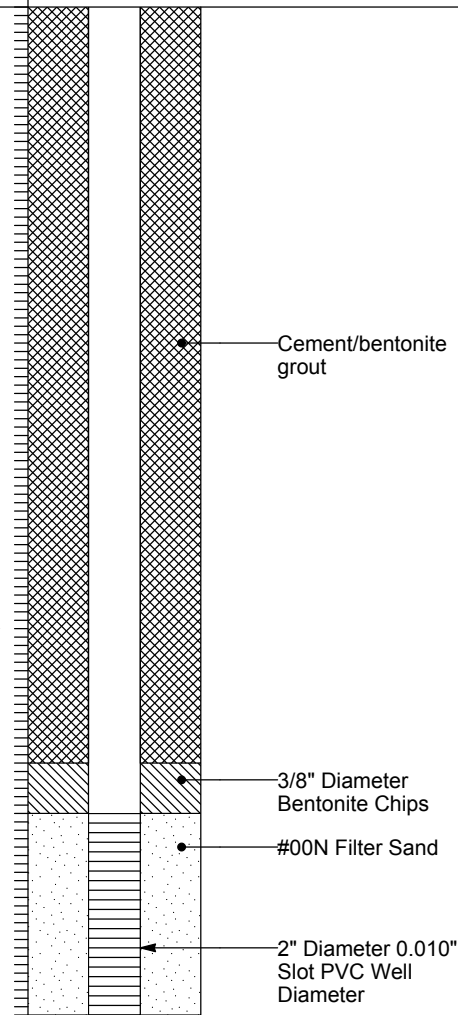
DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	foot		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	
						Surface Elevation: 413.92 fmsl	
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60					*** See log of GMX-MW-6S for overburden lithology *** Advance 6 1/4" diameter auger to 38' bgs and set 4" permanent casing.	 4" Steel Casing Riser to 2' below bedrock Bedrock Open HQ Coverhole	
Bedrock (38-43') Run #1: Rochester Shale Rec: 3.3'/5.0' (66%) RQD: 1.9'/3.3' (57.6%) Lith: Rochester shale, gray calcareous shale, coal tar-like material present in clay partings and mechanical breaks. Slight odor. Many brachiopods throughout several mechanical breaks. (43-45') Run #2: Rochester Shale Rec: 1.7'/2' (85%) RQD: 0.7'/1.7' (41.2%) Lith: As above, no coal tar-like material. No odor. Increasing limestone content with depth.							

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WELL_OVM MONITORING WELL LOGS.GPJ (3/10)
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PROJECT: Former West Station Plant Area MGP Site						Log of Well No. GMX-MW-6I					
BORING LOCATION: See Site Plan for MW Locations						TOP OF RISER ELEVATION: 416.20 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company						DATE STARTED: 11/2/09			DATE FINISHED: 11/3/09		
DRILLING METHOD: 6 1/4" dia. Hollow Stem Augers/ HQ Core Barrel						TOTAL DEPTH: 60.0 fbgs			SCREEN INTERVAL: 50-60 fbgs		
DRILLING EQUIPMENT: CME 85						DEPTH TO WATER:		FIRST		COMPL.	
SAMPLING METHOD: Soil-None; Bedrock-HQ Core, NX Core						LOGGED BY: AKC & MAC					
HAMMER WEIGHT: 140				DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.	

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	OVM (ppm)		NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	
Surface Elevation: 413.99 fmsl							
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60					*** See log of GMX-MW-6S for overburden lithology ***Advance 6 1/4" diameter auger to 37' bgs and set 4" permanent casing.	 Cement/bentonite grout 3/8" Diameter Bentonite Chips #00N Filter Sand 2" Diameter 0.010" Slot PVC Well Diameter	
Bedrock (37-42') Run #1: Rochester Shale Rec: 3.7'/5.0' (74%) RQD: 2.2'/3.7' (59.5%) Lith: Rochester shale, gray calcareous shale clay at top of core. ~2" clay parting at ~41' bgs. No odors or NAPL present. Many brachiopods throughout, few small open vertical fractures (~1 mm aperture) at ~39.5' bgs. Several mechanical breaks, small bedding plane fractures in core beneath clay partings. (42-44') Run #2: Rochester Shale Rec: 1.3'/2.0' (65%) RQD: 0.4'/1.3' (30.8%) Lith: As above, ~1" clay parting at 42.5' bgs. In core from ~43'-44' bgs are several healed vertical fractures. Many small to large diameter (~1-10 mm) vugs. Increased limestone interbeds. (44-54') Run #3: Rochester Shale Rec: 8.7'/10.0' (87%) RQD: 4.9'/8.7' (56.3%) Lith: (44-45.5' bgs) Rochester shale, gray calcareous shale. No odors or NAPL present. Heavily weathered shale interval (retains layered shale structure) ~3" at 45.5' bgs. Many brachiopods, few small diameter (~1							

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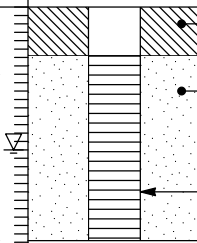
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WELL_OVM MONITORING WELL LOGS.GPJ (3/10)

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-6I (cont'd)	
DEPTH (feet)	SAMPLES			OVM (ppm)	DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot			
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100				mm) vugs. Several mechanical breaks. (45.5-54') Run #3 cont'd: Irondequoit Limestone Lith: Irondequoit limestone, light gray-green limestone with gray shale interbedding. ~6" heavily weathered shale layer (retains shale structure) at 47' bgs. Many small to large diameter (~1-10 mm) vugs. At ~49' bgs a large calcite filled vug (~20 mm diameter) and 1-2" diameter vug. From ~49-54' bgs several hash layers and 3" shale interbed. (54-60') Run #4: Irondequoit Limestone Rec: 5.5'/6.0' (92%) RQD: 3.7'/5.5' (67.3%) Lith: As above, with significant shale interbedding. Few small to large diameter (~1-10 mm) vugs. Several mechanical breaks.		
Project No. 12661.004					WELL_OVM MONITORING WELL LOGS.GPJ (3/10)	
 Geomatrix Consultants					Page 2 of 2	

PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-MW-8D (cont'd)	
DEPTH (feet)	SAMPLES				DESCRIPTION NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	OVM (ppm)		
77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54 53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1				foot of core, predominantly limestone with shale interbeds. Few small diameter (1 mm) vugs in bottom of core. Many brachiopods throughout.		
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PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-PZ-26S					
BORING LOCATION: See Site Plan for MW Locations					TOP OF RISER ELEVATION: 400.41 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 11/26/09			DATE FINISHED: 11/26/09		
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers					TOTAL DEPTH: 13.9 fbgs			SCREEN INTERVAL: 3.9-13.9 fbgs		
DRILLING EQUIPMENT: Gus Pech					DEPTH TO WATER: 8.5 ft		COMPL.		CASING:	
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: MAC					
HAMMER WEIGHT: 140			DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.	

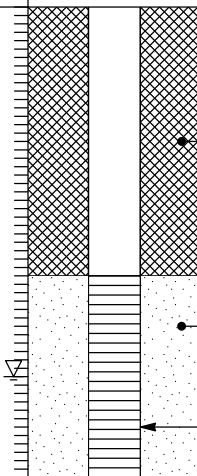
DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/foot	NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.			
						Surface Elevation: 398.65 fmsl	
						*Cleared to 4' bgs with an excavator.	 3/8" Diameter Bentonite Chips #00N Filter Sand 2" Diameter 0.010" Slot Continuous Wire Wrap PVC Well Diameter
1	1		7	0	FILL Brown fine sand with silt and fine angular limestone gravel, masonry brick. Loose and dry. No odors or staining. As above, with some coarse sand. Light to moderate sheen and coal tar-like odor. Saturated, loose to soft.		
2	2	11	0				
3	3	7	15.7				
4	4	5	16.0				
5	5	4	2.3		Bedrock Rochester Shale		

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WELL_OVM MONITORING WELL LOGS.GPJ (3/10)
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PROJECT: Former West Station Plant Area MGP Site					Log of Well No. GMX-PZ-27S					
BORING LOCATION: See Site Plan for MW Locations					TOP OF RISER ELEVATION: 414.78 fmsl			DATUM: barge canal		
DRILLING CONTRACTOR: Nothnagle Drilling Company					DATE STARTED: 11/30/09			DATE FINISHED: 11/30/09		
DRILLING METHOD: 4 1/4" dia. Hollow Stem Augers					TOTAL DEPTH: 28.0 fbgs			SCREEN INTERVAL: 18-28 fbgs		
DRILLING EQUIPMENT: Gus Pech					DEPTH TO WATER: 22 ft		COMPL.		CASING:	
SAMPLING METHOD: 2" Split Spoon					LOGGED BY: MAC					
HAMMER WEIGHT: 140			DROP: Autohammer		RESPONSIBLE PROFESSIONAL: Richard Frappa				REG. NO.	

DEPTH (feet)	SAMPLES				OVM (ppm)	DESCRIPTION	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ foot	NAME (USCS Symbol): color, moist, % by weight, plast., structure, cementation, react. w/HCl, geo. inter.			
Surface Elevation: 415.10 fmsl							
1			11		0	Concrete core 0 - 8"	 Cement/bentonite grout #00N Filter Sand 2" Diameter 0.010" Slot PVC Well Diameter
			37		0	Hand clear 8 - 48" bgs	
			17		0	FILL Brown, dry fine sand with silt and fine rounded gravel. No staining or odors.	
			11				
			14				
			12				
			11				
			15				
			7		0	FILL Brown fine sand to silt, some concrete pieces, little fine round gravel. Dry. No staining or odors.	
			8		0		
			5		0		
			4		0	FILL Brown fine sand with silt, some brick. Fine gravel and concrete pieces. No staining or odors.	
			10		0		
			6		0		
			9		0		
			3		0		
			6		0		
			5		0		
			10		0		
			6		0		
			5		0		
			10		0		
			6		0		
			5		0		
			4		8.4	FILL Wood pieces with some brick and coarse sand. Slight coal tar-like odor. Slight sheen.	
			5		25.0	FILL Black fine sand with little medium to coarse coarse sand, some coarse gravel. Strong coal tar-like odor. Staining and NAPL blebs (seperate phase).	
			5		58.0	Bedrock	
			10				
			9				
			7				
			5				
			4				
			4				
			3				
			10				
			9				
			8				
			15				
			24				
			19				
			50/0.4				

WELL_OVM MONITORING WELL LOGS.GPJ (3/10)