



MWH Americas, Inc.
335 Phoenixville Pike
Malvern, Pennsylvania 19355

Boring ID: FES-MW4 Ec13-121

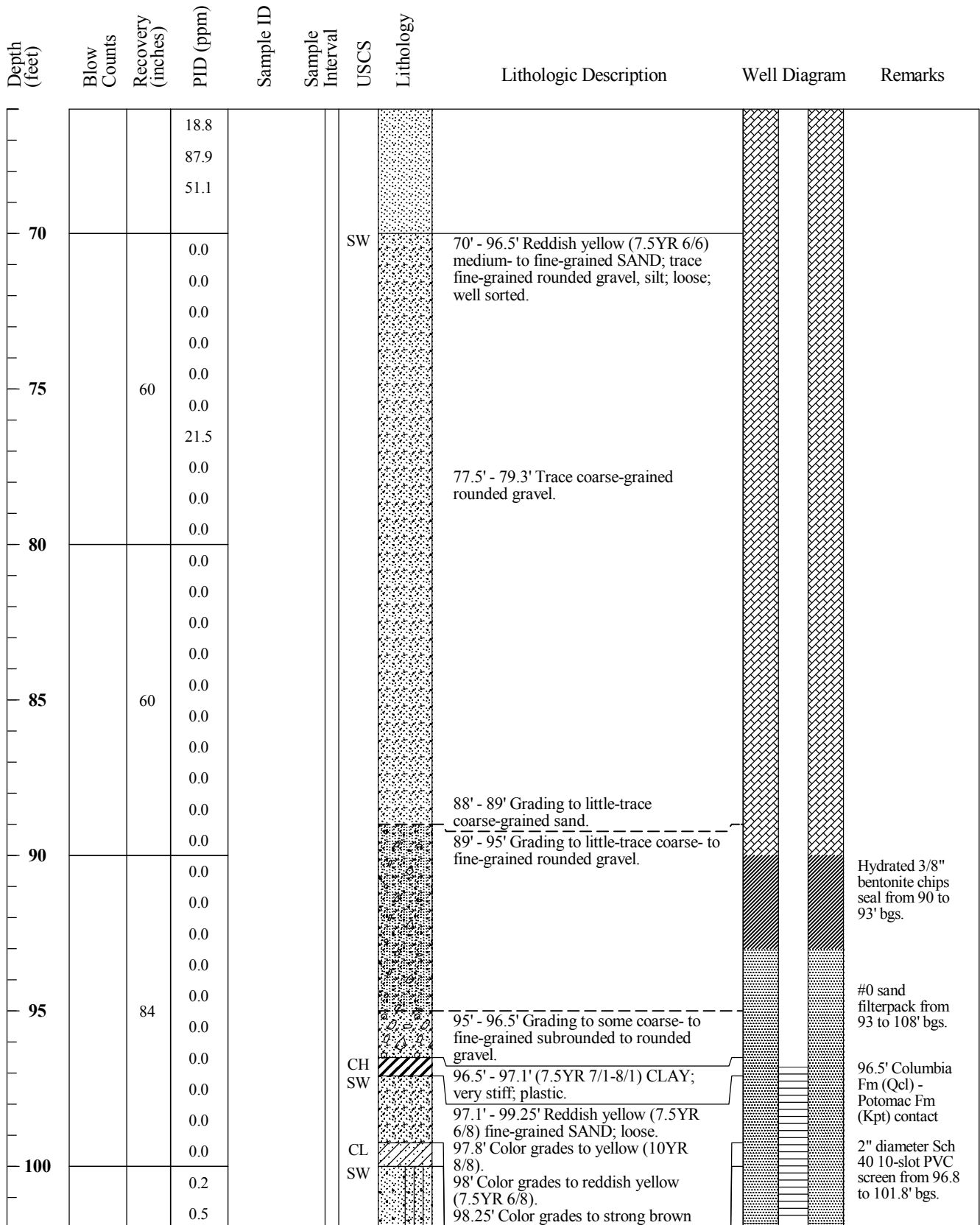
Page 1 of 4

Project Name: Frozen Earth Storage Location: Delaware City, DE Project Number: 1006472 Date Started: 11/18/2009 Date Finished: 11/24/2009 Drilling Method: Roto-sonic Sampling Method: State Permit Number: 229253	Boring Location: Frozen Earth Storage Drilling Company: Boart Longyear (R. Tabor) Ground Elevation (ft/msl): Total Depth (ft): 130.0' Boring Diameter (in): 10" Water Level During Drilling (ft/bgs): ~8 Weather Conditions: Logged By: J.Remenicky
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Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
0								0' - 60' Blind drilled. No samples recovered.		Stick-up well surface completion.
5										Delaware Well Permit #229253
10										6" diameter Sch 40 PVC secondary casing from 0 to 96.8' bgs. Exterior annular space filled with bentonite grout via tremie pipe.
15										
20										
25										2" diameter Sch 40 PVC riser from 0 to 96.8' bgs. Annular space between 2" riser and 6" casing filled with bentonite grout via tremie pipe from 0' to 90' bgs.
30										



Depth (feet)	Blow Counts	Recovery (inches)	PID (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
30										
35										
40										
45										
50										
55										
60			0.0			SP		60' - 70' Strong brown (7.5YR 4/6) medium-grained SAND; trace fine-grained subrounded gravel, coarse- and fine-grained sand, silt; loose; saturated; well sorted.		
			0.0							
			0.2							
			0.0							
65	66		25.3							
			92.1							





Depth (feet)	Blow Counts	Recovery (inches)	PLD (ppm)	Sample ID	Sample Interval	USCS	Lithology	Lithologic Description	Well Diagram	Remarks
105		108	0.3			SW	(7.5YR 5/6-5/8).			2" diameter Sch 40 PVC sump from 101.8 to 103.8' bgs.
			0.5			ML	98.3' - 98.4' Coarse-grained subangular iron deposit (siderite) grain.			
110			0.6			CL		98.7' Color grades to very pale brown (10YR 8/2).		Hydrated 3/8' bentonite chips from 108 to 110' bgs.
			0.3				99.1' Color grades to pink (7.5YR 8/3-8/4).			
			0.3				99.25' - 100' (7.5YR 8/3-8/4) fine-grained SANDY CLAY; soft; high plasticity.			
			0.5				100' - 103' Very pale brown (10YR 7/3) SILTY medium- to fine-grained SAND; loose; saturated; 1/2" white to light gray (10YR 8/1-7/1) silty clay - soft, high plasticity.			
			0.4							
			0.4							
115		102	0.5			SM		103' - 103.5' Reddish yellow (7.5YR 6/6) to brown (7.5YR 5/3) SILTY very fine-grained SAND; thin <8mm clay lenses.		
			0.9							
			0.3			SW				
			0.3			CL	103.5' - 104.3' Light gray (10YR 7/1) to very pale brown (10YR 7/4) SILT; little very fine-grained sand; little to no clay; dense.			
120			0.4				104.3' - 110.7' Light gray (10YR 7/1) SILTY CLAY; trace to no sand; very dense; moist; high plasticity; trace mottling to very pale brown (10YR 7/4).			
			0.5			ML				
			0.3			ML	110.7' - 112.6' Brownish yellow (10YR 6/8) SILTY very fine-grained SAND; trace clay; loose; saturated; grades to white (10YR 8/1) to light gray (10YR 7/1) sandy clay and silt.			
			0.1				112.2' Dark gray seam (~1/2"); soft; high plasticity.			
125		48	0.0			ML		112.6' - 113.7' Very pale brown (10YR 7/4) SILTY very fine-grained SAND; compact.		Bentonite and #0 sand from 110 to 130' bgs.
			0.0							
			0.0				113.7' - 117.3' Light gray (10YR 7/1) to white (10YR 8/1) SILTY CLAY; little to trace sand; very dense; with thin layers of yellowish brown (10YR 5/8) at 113.9', 115.1', 115.7', and 116.4'. Very hard at 117.0', cannot indent with fingernail.			
			0.0				117.3' - 118.3' Yellowish brown (10YR 5/8) to light gray (10YR 7/2) SILT with very fine-grained sand and clay; grades to sandy silt at 118.3'.			
130							118.3' - 121.5' Yellowish brown (10YR 5/8) to light gray (10YR 7/2) very fine-grained SANDY SILT; trace clay; soft.			
							121.5' - 123.5' Light gray (10YR 7/2) very fine-grained SANDY CLAYEY SILT; soft; saturated; high plasticity; trace yellowish brown (10YR 5/8); can roll into 2" long ribbons.			
135							124' - 130' No recovery.			