

Log of Boring No. BRC-SB-07-A

BMI Site - Hydrogeologic Characterization

Henderson, Nevada



Drilling Method: Mud Rotary
Drilling Equipment: Tricone
Drilling Contractor: Water Development Corporation
Driller: Juan Aguilar

Borehole Total Depth: 400 ft bgs
Borehole Diameter: 10 in.
Boring Location: Location 7 (Well ID: AA-07)
Depth to Water (ft. bgs): NM

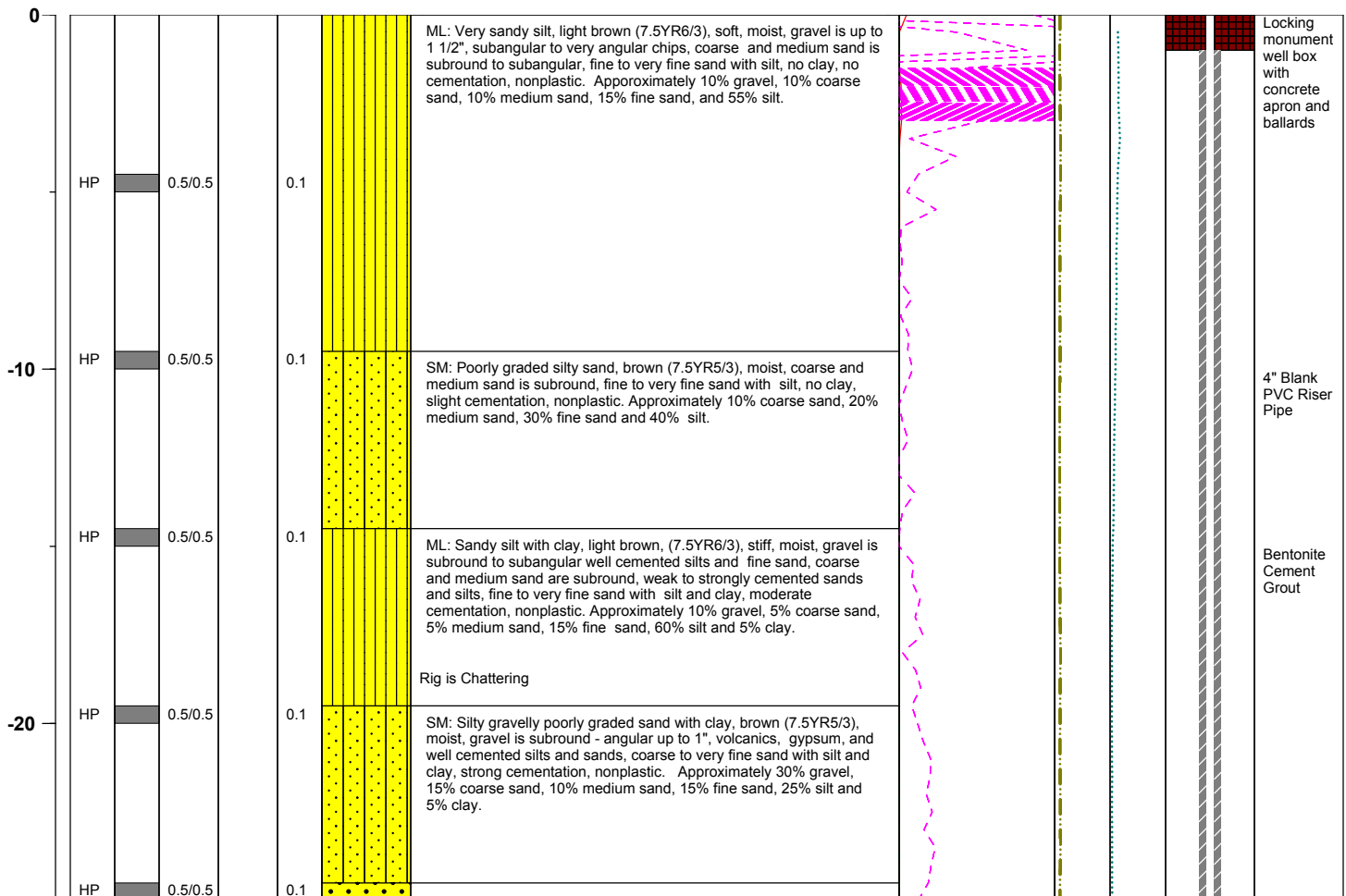
Sample Type: Hydropunch
Sample Interval: 5 ft

Logged By: Dave Kremer
Date Started: 4/6/04
Date Completed: 4/6/04

Monitoring Well Construction

Type of Surface Seal:	Bentonite-Cement	Screen Slot Size:	0.010 in
Blank Casing Type/Size:	4" Sch 80 PVC	Top of Screen (ft. bgs):	350 ft bgs
Screen Type/Size:	4" Sch 80 PVC	Bottom of Screen (ft. bgs):	370 ft bgs
Transition Sand Type:	#1C	Type of Sand Pack:	#10 x 20

Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data			Well Construction	
								E-Log		Caliper Log (inch)		Guard Log (OHM.M)
								16" (OHM)	64" (OHM)			
								S. PT. (OHM)				



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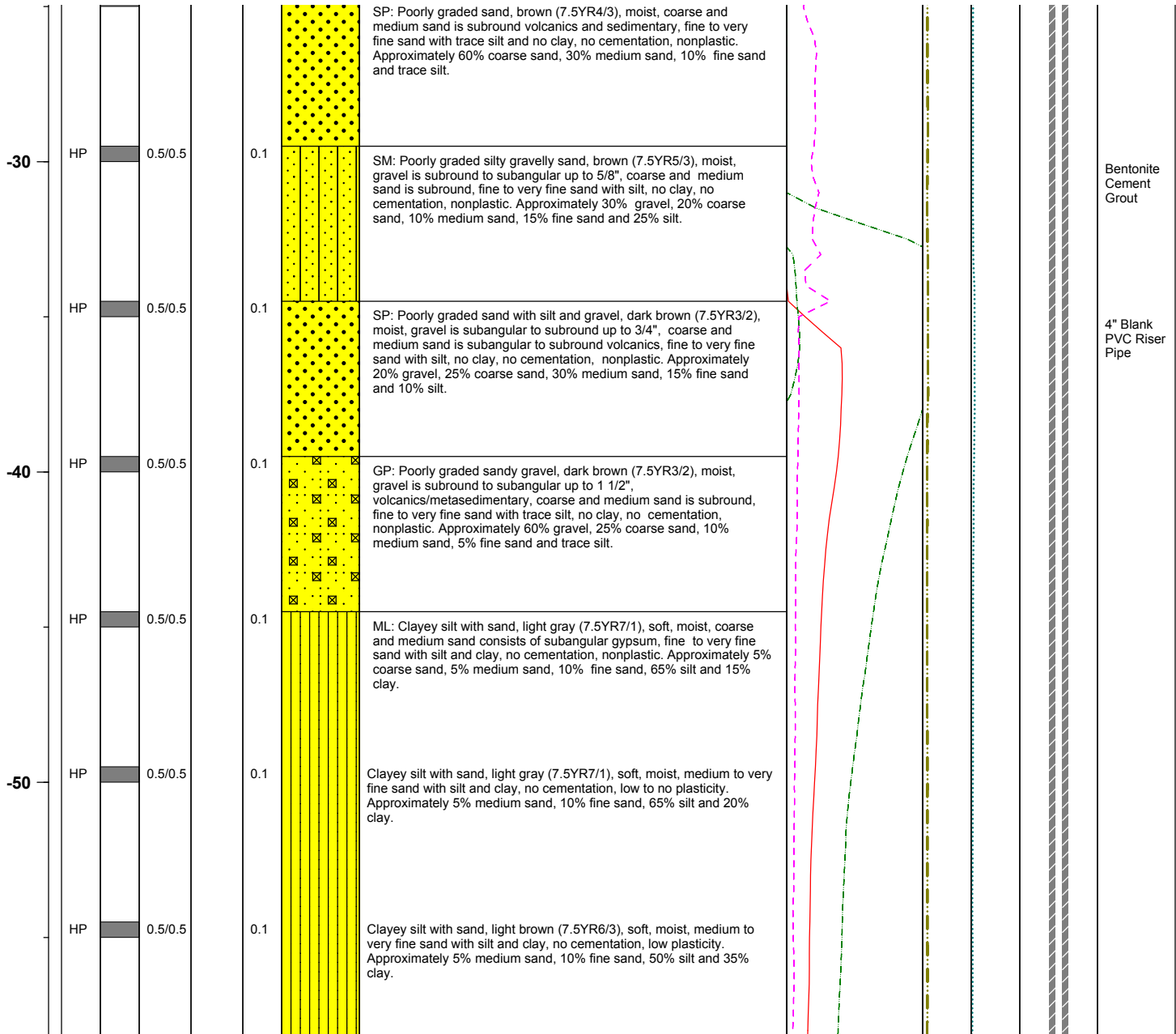
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								E-Log		Caliper Log (inch)		Guard Log (OHM.M)
								16" (OHM)	64" (OHM)			



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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data			Well Construction		
								E-Log				Caliper Log (inch)	Guard Log (OHM.M)
								16" (OHM)	64" (OHM)	S. PT. (OHM)			

-60	HP	0.5/0.5	0.1	0.1	Very sandy silt with clay, brown (7.5YR5/3), medium stiff, moist, medium to very fine sand with silt and clay, no cementation, nonplastic. Approximately 20% medium sand, 25% fine sand, 50% silt and 5% clay.								Bentonite Cement Grout
	HP	0.5/0.5	0.1	0.1	Very sandy silt with clay, brown (7.5YR5/3), medium stiff, moist, trace gravel and coarse sand consisting of subangular gypsum crystal fragments up to 1", medium to very fine sand with silt and clay, no cementation, nonplastic. Approximately trace gravel, trace coarse sand, 20% medium sand, 25% fine sand, and 50% silt and 5% clay.								4" Blank PVC Riser Pipe
-70	HP	0.5/0.5	0.1	0.1	Clayey silt with sand, light gray (7.5YR7/1), soft, moist, coarse and medium sand consist of subangular gypsum, fine to very fine sand with silt and clay, no cementation, nonplastic. Approximately 5% coarse sand, 5% medium sand, 10% fine sand 65% silt and 15% clay.								
	HP	0.5/0.5	0.1	0.1	Clayey silt with sand, light gray (7.5YR7/1), soft, moist, trace gravel is subangular gypsum fragments up to 1", medium to very fine sand with silt and clay, no cementation, low plasticity. Approximately trace gravel, 5% medium sand, 10% fine sand, 60% silt and 25% clay.								
-80	HP	0.5/0.5	0.1	0.1	Clayey sandy silt, pinkish gray (7.5YR6/2), soft, moist, medium to very fine sand with silt and clay, no cementation, low to no plasticity. Approximately 10% medium sand, 25% fine sand, 45% silt, and 20% clay.								
	HP	0.5/0.5	0.1	0.1	Sandy clayey silt, pinkish gray (7.5YR6/2), soft, moist, gravel is subangular gypsum up to 3/4", coarse and medium sand is subround gypsum, fine to very fine sand with silt and clay, no cementation, nonplastic. Approximately 5% gravel, 5% coarse sand, 10% medium sand, 15% fine sand, 50% silt and 15% clay.								
-90	HP	0.5/0.5	0.1	0.1	Sandy silt with clay, brown (7.5YR4/3), soft, moist, trace gravel and coarse sand consisting of subangular to subround gypsum up to 3/4", medium to very fine sand with silt and clay, no cementation, no plasticity. Approximately trace gravel, trace coarse sand, 10% medium								Bentonite Cement Grout

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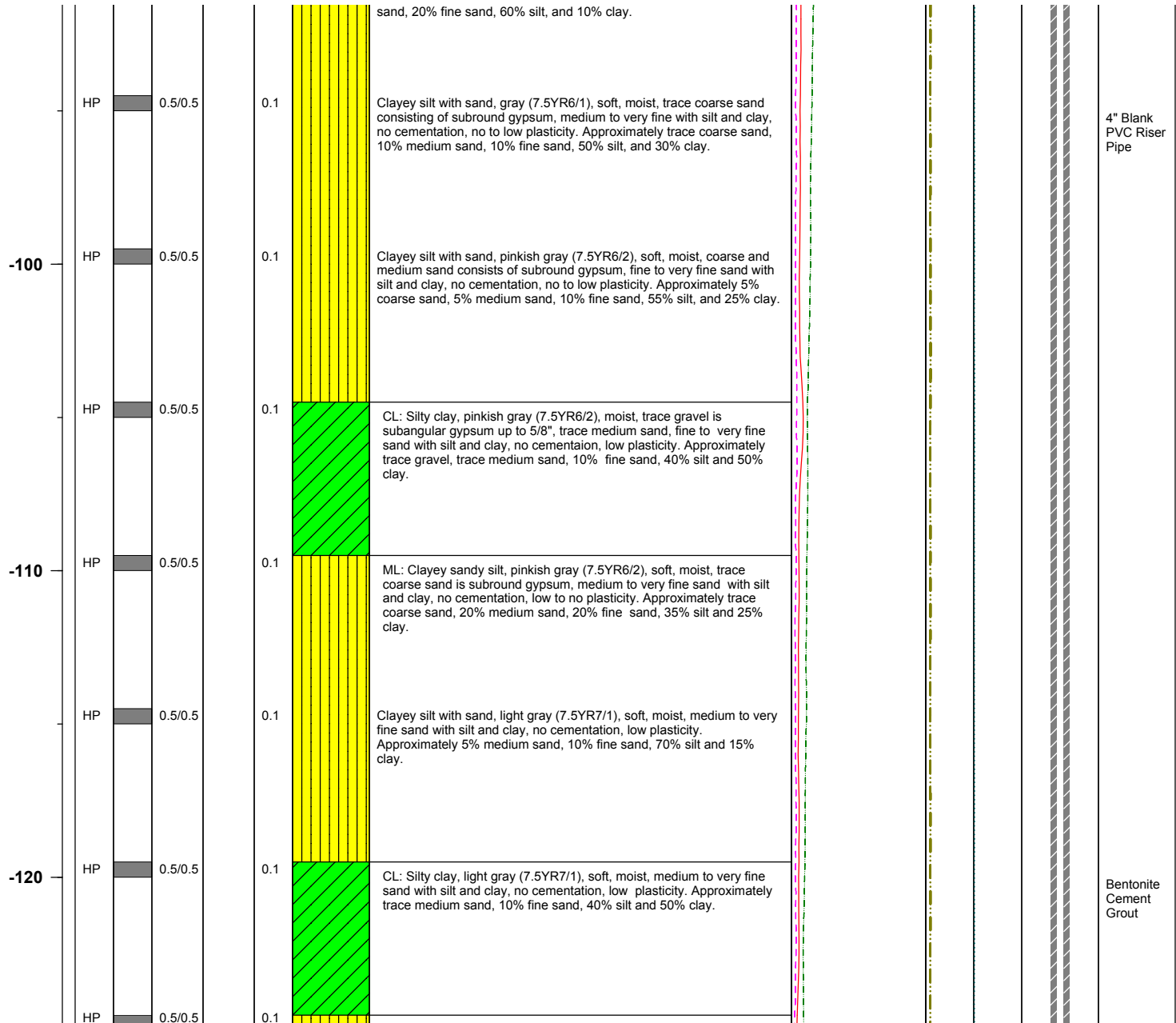
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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data				Well Construction	
								E-Log			Caliper Log (inch)		Guard Log (OHM.M)
								16" (OHM)	64" (OHM)	S. PT. (OHM)			
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Depth Elevation (BGS)	Sample Type	Sample Interval	Sample Recovery	Sample Retained for Analysis	PID	Lithology	Soil Description	Geophysical Data				Well Construction
								E-Log			Caliper Log (inch)	
								16" (OHM)	64" (OHM)	S. PT. (OHM)		
								<div><div></div></div>	<div><div></div></div>	<div><div></div></div>		

							ML: Very sandy silt with clay, white (7.5YR8/1), soft, moist, gravel is subangular gypsum up to 1", coarse and medium sand is subround gypsum, fine to very fine sand with silt and clay, no cementation, no plasticity. Approximately 5% gravel, 5% coarse sand, 15% medium sand, 15% fine sand, 50% silt and 10% clay.								
-130	HP		0.5/0.5		0.1		Sandy silt with clay, light gray (7.5YR7/1), soft, moist, trace gravel and coarse sand is gypsum up to 3/4", medium to very fine sand with silt and clay, no cementation, nonplastic. Approximately trace gravel, trace coarse sand, 15% medium sand, 15% fine sand, 60% silt, and 10% clay.								
	HP		0.5/0.5		0.1		Clayey silt, bluish gray (Gley 2 6/5PB), soft, moist, fine to very fine sand with silt and clay, no cementation, low to no plasticity. Approximately 10% fine sand, 50% silt and 40% clay.								
-140	HP		0.5/0.5		0.1		Very sandy silt with clay, pinkish gray (7.5YR 6/2), soft, moist, medium to very fine sand with silt and clay, no cementation, nonplastic. Approximately 20% medium sand, 25% fine sand, 50% silt and 5% clay.								
	HP		0.5/0.5		0.1		Clayey silt, brown (7.5YR5/2), soft, moist, trace medium to very fine sand with silt and clay, no cementation, low to no plasticity. Approximately trace medium sand, 5% fine sand, 70% silt, and 25% clay.								
-150	HP		0.5/0.5		0.1		Clayey silt with sand, pinkish gray (7.5YR6/2), soft, moist, coarse and medium sand is subround gypsum, fine to very fine sand with silt and clay, no cementation, no to very low plasticity. Approximately 5% coarse sand, 5% medium sand, 10% fine sand, 60% silt and 20% clay.								
	HP		0.5/0.5		0.1		Clayey silt with sand, light brown (7.5YR6/3), soft, moist, trace coarse sand is subround gypsum, medium to very fine sand with silt and clay, no cementation, low to no plasticity. Approximately trace coarse sand, 10% medium sand, 15% fine sand, 55% silt and 20% clay.								Bentonite Cement Grout

4" Blank
PVC Riser
Pipe

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								E-Log			Caliper Log (inch)		Guard Log (OHM.M)
								16" (OHM)	64" (OHM)	S. PT. (OHM)			

-160	HP	0.5/0.5	0.1				Sandy silt with clay, brown (7.5YR4/3), soft, moist, medium to very fine sand with silt and clay, no cementation, nonplastic. Approximately 10% medium sand, 20% fine sand, 65% silt and 5% clay.						4" Blank PVC Riser Pipe
	HP	0.5/0.5	0.1				Clayey silt with sand, brown (7.5YR4/3), soft, moist, medium to very fine sand with silt and clay, no cementation, low to no plasticity. Approximately 5% medium sand, 10% fine sand, 45% silt and 40% clay.						
-170	HP	0.5/0.5	0.1				Clayey silt, pinkish gray (7.5YR6/2), soft, moist, fine to very fine sand with silt and clay, no cementation, low plasticity. Approximately 10% fine sand, 50% silt and 40% clay.						
	HP	0.5/0.5	0.1				CL: Silty clay, brown (7.5YR5/2), soft, moist, very fine sand with silt and clay, no cementation, low to moderate plasticity. Approximately 5% fine sand, 40% silt and 55% clay.						
-180	HP	0.5/0.5	0.1				Silty clay, brown (7.5YR5/2), soft, moist, very fine sand with silt and clay, no cementation, low to moderate plasticity. Approximately 10% fine sand, 40% silt and 50% clay.						
	HP	0.5/0.5	0.1				ML: Clayey sandy silt, light brown (7.5YR6/3), soft, moist, coarse and medium sand is subround gypsum, fine to very fine sand with silt and clay, no cementation, low - no plasticity. Approximately 5% coarse sand, 10% medium sand, 15% fine sand, 40% silt, and 30% clay.						Bentonite Cement Grout
-190	HP	0.5/0.5	0.1				Silt with clay and sand, light brown (7.5YR6/3), medium stiff, moist, trace gravel and coarse sand is subangular to subround gypsum, medium to very fine sand with silt and clay, no cementation, nonplastic. Approximately trace gravel, trace coarse sand, 5% medium sand, 10%						4" Blank PVC Riser Pipe

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								E-Log			Caliper Log (inch)		Guard Log (OHM.M)
								16" (OHM)	64" (OHM)	S. PT. (OHM)			
								<div><div></div></div>	<div><div></div></div>	<div><div></div></div>			

							fine sand, 75% silt and 10% clay.					
	HP	0.5/0.5		0.1			Clayey silt, light brown (7.5YR6/3), soft, moist, trace coarse sand is subround gypsum, medium to very fine sand with silt and clay, no cementation, nonplastic. Approximately trace coarse sand, 5% medium sand, 5% fine sand, 60% silt and 30% clay.					
-200	HP	0.5/0.5		0.1			CL: Silty clay, brown (7.5YR5/3), soft, moist, trace medium to very fine sand with silt and clay, no cementation, low plasticity. Approximately trace medium sand, 5% fine sand, 45% silt, and 50% clay.					
	HP	0.5/0.5		0.1			Silty clay with sand. Same as above. Approximately 5% medium sand, 10% fine sand, 35% silt, and 50% clay.					
-210	HP	0.5/0.5		0.1			ML: Clayey silt with sand, bluish gray (Gley 2 5/10B), soft, moist, trace gravel and coarse sand is subangular gypsum, medium to very fine sand with silt and clay, no cementation, nonplastic, slight decay odor. Approximately trace gravel, trace coarse sand, 5% medium sand, 15% fine sand, 60% silt and 20% clay.					
	HP	0.5/0.5		0.1			Clayey sandy silt. Same as above. Approximately trace gravel, 5% coarse sand, 10% medium sand, 15% fine sand, 55% silt and 15% clay.					Bentonite Cement Grout
-220	HP	0.5/0.5		0.2			Clayey silt with sand, light bluish gray (Gley 2 7/5PB), soft, moist, trace coarse sand is subround, medium to very fine with silt and clay, no cementation, nonplastic, strong decay odor. Approximately trace coarse sand, 5% medium sand, 10% fine sand, 70% silt and 15% clay.					4" Blank PVC Riser Pipe

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								E-Log			Caliper Log (inch)		Guard Log (OHM.M)
								16" (OHM)	64" (OHM)	S. PT. (OHM)			

	HP	0.5/0.5		0.2		Clayey silt with sand, dark greenish gray (Gley 2 4/10BG), same as above. Approximately 5% coarse sand, 5% medium sand, 10% fine sand, 60% silt and 20% clay.						
-230	HP	0.5/0.5		0.1		Same as above. Clayey silt with sand. Approximately trace coarse sand 5% medium sand, 10% fine sand, 70% silt and 15% clay.						
	HP	0.5/0.5		0.2		CL: Silty clay, dark greenish gray (Gley 2 4/10BG), soft to medium stiff, moist, trace coarse and medium sand is subround gypsum, very fine sand with silt and clay, no cementation, no to low plasticity, very strong odor of decay. Approximately trace coarse sand, trace medium sand, 5% fine sand, 33% silt and 60% clay.						
-240	HP	0.5/0.5		0.1		ML: Clayey silt with sand, dark greenish gray (Gley 2 4/10BG), soft, moist, medium to very fine sand with silt and clay, no cementation, nonplastic, very strong odor of decay. Approximately 5% medium sand, 15% fine sand, 55% silt, and 25% clay.						
	HP	0.5/0.5		0.2		Same as above. Clayey silt with sand. Approximately 5% medium sand, 15% fine sand, 60% silt and 20% clay.						
-250	HP	0.5/0.5		0.2		Very sandy clayey silt, bluish gray (Gley 2 6/5B), soft to medium stiff, moist, coarse and medium sand is subround gypsum, fine to very fine sand with silt and clay, no cementation, nonplastic, odor of decay. Approximately 5% coarse sand, 15% medium sand, 20% fine sand, 45% silt, and 15% clay.						Bentonite Cement Grout
	HP	0.5/0.5		0.1		Very sandy silt with clay. Same as above. Approximately 5% coarse sand, 15% medium sand, 20% fine sand, 50% silt and 10% clay.						4" Blank PVC Riser Pipe

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								E-Log			Caliper Log (inch)		Guard Log (OHM.M)
								16" (OHM)	64" (OHM)	S. PT. (OHM)			

-260	HP	0.5/0.5	0.3	Same as above. Clayey silt with sand. Approximately trace coarse sand, 10% medium sand, 15% fine sand, 60% silt and 15% clay.								
	HP	0.5/0.5	0.1	CL: Silty clay, brown (7.5YR5/2), soft, moist, very fine sand with silt and clay, no cementation, low to moderate plasticity, no odor. Approximately 5% fine sand, 25% silt and 70% clay.								
-270	HP	0.5/0.5	0.1	ML: Clayey silt with sand, brown (7.5YR5/2), medium stiff, moist, coarse and medium sand is subround gypsum, fine to very fine sand with silt and clay, no cementation, nonplastic, strong odor of decay. Approximately 5% coarse sand, 5% medium sand, 10% fine sand, 50% silt and 30% clay.								
	HP	0.5/0.5	0.1	Clayey silt with sand. Same as above. Approximately 5% coarse sand, 5% medium sand, 10% fine sand, 55% silt, and 25% clay.								
-280	HP	0.5/0.5	0.1	Clayey silt with sand, light bluish gray (GLEY2 7/5B), soft, moist, medium to very fine sand with silt and clay, no cementation, nonplastic, weak odor of decay. Approximately 10% medium sand, 15% fine sand, 60% silt, and 15% clay.								Bentonite Cement Grout
	HP	0.5/0.5	0.1	Sandy silt with clay. Same as above. Approximately 15% medium sand, 20% fine sand, 55% silt and 10% clay.								4" Blank PVC Riser Pipe
-290	HP	0.5/0.5	0.2	Clayey silt with sand, light bluish gray (Gley 2 7/10B), soft, moist, trace coarse is subround gypsum, medium to very fine sand with silt and clay, no cementation, nonplastic, weak odor of decay. Approximately trace coarse sand, 10% medium sand, 15% fine sand, 60% silt, and 15%								

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								E-Log			Caliper Log (inch)		Guard Log (OHM.M)
								16" (OHM)	64" (OHM)	S. PT. (OHM)			

							clay. Rig is Chattering						
	HP	0.5/0.5			0.1		Same as above. Clayey silt with sand. Approximately trace coarse sand, 5% medium sand, 15% fine sand, 60% silt, and 20% clay.						
-300	HP	0.5/0.5			0.1		Clayey silt with sand, light bluish gray (Gley 2 7/10B), soft, moist, medium to very fine sand with silt and clay, no cementation, nonplastic, weak to no odor. Approximately 5% medium sand, 15% fine sand, 60% silt and 20% clay.						
	HP	0.5/0.5			0.2		Same as above. Clayey silt, bluish gray (Gley 2 6/10B). Approximately 10% medium sand, 15% fine sand, 60% silt, and 15% clay.						
-310	HP	0.5/0.5			0.1		Same as above. Sandy silt with clay, gray (7.5YR6/1). Approximately trace coarse sand, 10% medium sand, 20% fine sand, 60% silt and 10% clay.						Bentonite Cement Grout
	HP	0.5/0.5			0.1		Clayey silt with sand, pinkish gray (7.5YR 6/2), soft, moist, trace coarse sand is subround caliched and gypsum, medium to very fine sand with silt and clay, no cementation, nonplastic, no odor. Approximately trace coarse sand, 5% medium sand, 10% fine sand, 65% silt, and 20% clay.						4" Blank PVC Riser Pipe
-320	HP	0.5/0.5			0.1		Same as above. Sandy clayey silt, brown (7.5YR 5/3). Approximately 5% coarse sand, 10% medium sand, 15% fine sand, 55% silt, and 15% clay.						

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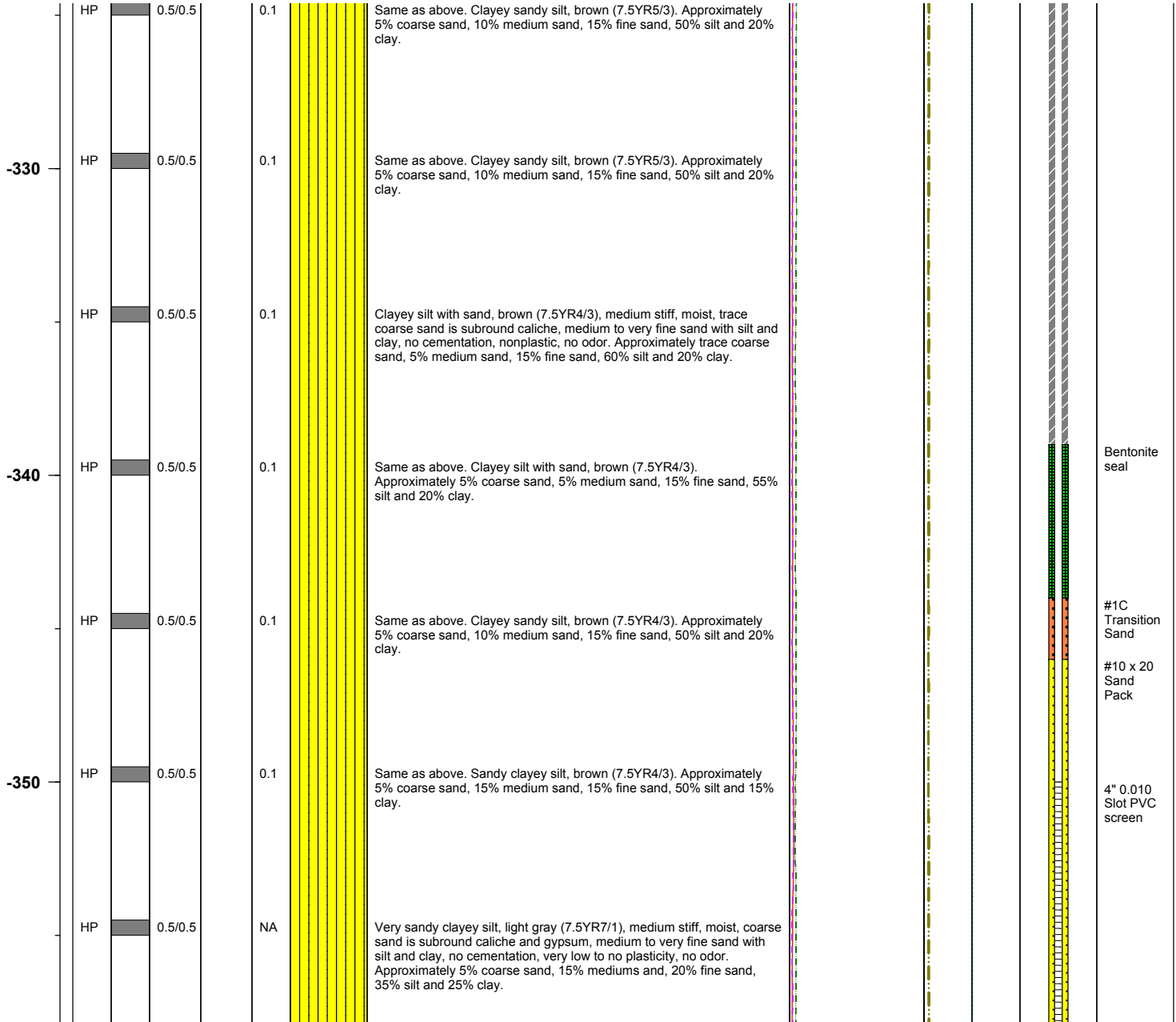
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								E-Log			Caliper Log (inch)		Guard Log (OHM.M)
								16" (OHM)	64" (OHM)	S. PT. (OHM)			



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								E-Log			Caliper Log (inch)	Guard Log (OHM.M)		
								16" (OHM)	64" (OHM)	S. PT. (OHM)				
360	HP		0.5/0.5		NA		Same as above. Clayey silt with sand, brown (7.5YR5/2). Approximately 5% coarse sand, 10% medium sand, 10% fine sand, 60% silt, and 15% clay.							
	HP		0.5/0.5		NA		Same as above. Clayey silt with sand, brown (7.5YR5/3). Approximately trace coarse sand, 10% medium sand, 15% fine sand, 60% silt and 15% clay.							
370	HP		0.5/0.5		NA		Same as above. Clayey silt with sand, brown (7.5YR5/3). Approximately trace coarse sand, 5% meidium sand 20% fine sand, 60% silt and 15% clay.							Threaded PVC Well Base Cap
	HP		0.5/0.5		NA		Sandy silt with clay, brown (7.5YR5/3), soft, moist, trace coarse sand is subround caliched and gypsum, medium to very fine sand with silt and clay, no cementation, nonplastic, no odor. Approximately trace coarse sand, 10% medium sand, 20% fine sand, 60% silt and 10% clay.							Basal Bentonite Seal
380	HP		0.5/0.5		NA		Same as above. Sandy silt with clay, brown (7.5YR5/3). Approximately 5% coarse sand, 15% medium sand, 15% fine sand, 55% silt and 10% clay.							
	HP		0.5/0.5		NA		Same as above. Sandy clayey silt, brown (7.5YR5/3). Approximately trace coarse sand, 10% medium sand, 20% fine sand, 55% silt and 15% clay.							Cement Backfill
390	HP		0.5/0.5		NA		Clayey silt with sand, brown (7.5YR5/3) stiff, moist. trace gravel and coarse sand is subround to subangular, caliched and very little gypsum, medium to very fine sand with silt and clay, no cementation, very low to no plasticity. no odor. . Approximately trace gravel, trace coarse sand,							

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								E-Log			Caliper Log (inch)		Guard Log (OHM.M)
								16" (OHM)	64" (OHM)	S. PT. (OHM)			

							10% medium sand, 15% fine sand, 50% silt and 25% clay.					
	HP		0.5/0.5		NA		Clayey silt with sand, brown (7.5YR5/3), medium stiff, moist, coarse and medium sand is subround gypsum and caliche, fine to very fine sand with silt and clay, no cementation, nonplasticity, very weak odor of decay. Approximately 5% coarse sand, 5% medium sand, 15% fine sand, 50% silt, and 25% clay.					
-400	HP		0.5/0.5		NA							

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