Log of Boring No. BRC-SB-19-A

BMI Site - Hydrogeologic Characterization

Henderson, Nevada

Drilling Method: Rotary Sonic
Drilling Equipment: Rotosonic
Drilling Contractor: Prosonic Corporation
Driller: Don Youngblood

Borehole Total Depth: 98.5 ft bgs
Borehole Diameter: 8.5 in
Boring Location: Location 19 (Well ID: AA-19
Depth to Water (ft. bgs): 30 ft bgs ▽

Sample Type: Split spoon
Sample Interval Continuous

Logged By: Adam Norris
Date Started: 7/8/04
Date Completed: 7/9/04

Monitoring Well Construction

Type of Surface Seal:	Bentonite-Grout	**Screen Slot Size:**	0.010 in
Blank Casing Type/Size:	4" Sch 80 PVC	**Top of Screen (ft. bgs):**	22 ft bgs
Screen Type/Size:	4" Sch 80 PVC	**Bottom of Screen (ft. bgs):**	42 ft bgs
Transition Sand Type:	N/A	**Type of Sand Pack:**	#10 x 20

Depth Elevation (MSLD)	Sample Type	Sample Interval	Sample Recovery (feet)	Sample Retained for Analysis	PID	Lithology	Soil Description	Well Construction
0	Core				NA		SM: SILTY SAND with GRAVEL, pale brown (10 YR 6/3), dry, subrounded to subangular sand, nonplastic silt, subrounded to subangular fine to coarse volcanic gravel (up to 2 1/2" - long). Approximately 25% gravel, 10% coarse sand, 15% medium sand, 30% fine sand and 20% silt.	Locking monument well box with concrete apron and ballards
							Collected sample BRC-SB-19-A-0 (Chemical analysis). SILTY SAND with GRAVEL, pale brown (10 YR 6/3), dry, subrounded to subangular sand, nonplastic silt, subrounded to subangular fine to coarse volcanic gravel (up to 2 1/2" - long). Approximately 25% gravel, 10% coarse sand, 15% medium sand, 30% fine sand and 20% silt.	
					NA			Cement Bentonite Grout
	Core		1.5/7		NA		SILTY SAND with GRAVEL, pale brown (10 YR 6/3), dry, subrounded to subangular sand, nonplastic silt, subrounded to subangular fine to coarse volcanic gravel (up to 1 1/2" - long). Approximately 20% gravel, 5% coarse sand, 10% medium sand, 45% fine sand and 20% silt. Collected sample BRC-SB-19-A-7 (Chemical analysis).	
					NA			
					NA		GM: SANDY SILTY GRAVEL, light brown (7.5YR6/3), dry, subrounded to subangular fine to coarse volcanic gravel (up to 3" long), subrounded to subangular sand, no cementation, nonplastic silt. Approximately 50% gravel, 10% coarse sand, 10% medium sand, 15% fine to very fine sand and 15% silt.	
-10					NA			4" Blank PVC Riser Pipe
					NA		SM: SILTY SAND with GRAVEL, brown (7.5YR5/3), dry, subrounded to subangular sand, nonplastic silt, subangular to subrounded fine to coarse volcanic gravel (up to 2" - long). Approximately 20% gravel, 10% coarse sand, 20% medium sand, 30% fine sand and 20% silt.	
					NA			
					NA			
					NA		SILTY SAND with GRAVEL, brown (7.5YR5/3), dry to moist, subrounded to subangular sand, nonplastic silt, subangular to subrounded fine to coarse volcanic gravel (up to 3" - long); trace local volcanic cobbles (up to 5" - long). Approximately 20% gravel, 10% coarse sand, 20% medium sand, 30% fine sand and 20% silt.	
					NA			Bentonite seal
	Core		1.5/10		NA		Collected sample BRC-SB-19-A-17 (Chemical analysis).	
					NA			
					NA		SILTY SAND with GRAVEL, brown (7.5YR5/4), dry to moist, subrounded to subangular sand, nonplastic silt, subangular to subrounded fine to coarse volcanic gravel (up to 1 1/2" - long). Approximately 15% gravel, 10% coarse sand, 15% medium sand, 40% fine sand and 20% silt.	#1C Transition Sand
-20					NA			
					NA			#10 x 20 Sand Pack
					NA		SILTY SAND with GRAVEL, brown (7.5YR5/4), dry to moist, subrounded to subangular sand, nonplastic silt, subangular to subrounded fine to coarse volcanic gravel (up to 3" - long); trace local volcanic cobbles (up to 4" - long). Approximately 25% gravel, 10% coarse sand, 15% medium sand, 30% fine sand and 20% silt.	
					NA			4" 0.010 Slot PVC screen

Depth Elevation (MSLD)	Sample Type	Sample Interval	Sample Recovery (feet)	Sample Retained for Analysis	PID	Lithology	Soil Description	Well Construction
					NA		GRAVELLY SILTY SAND, pale brown (7.5YR5/4), dry to moist, subrounded to subangular sand, nonplastic silt, subangular to subrounded fine to coarse volcanic gravel (up to 3" - long). Approximately 30% gravel, 10% coarse sand, 15% medium sand, 25% fine sand and 20% silt.	
	Core		1.5/10		NA		Collected sample BRC-SB-19-A-27 (Chemical analysis).	
					NA		GRAVELLY SILTY SAND, pale brown (10YR6/3), dry to moist, subrounded to subangular sand, nonplastic silt, subangular to subrounded fine to coarse volcanic gravel (up to 3" - long), some local moderate to strong cementation. Approximately 30% gravel, 10% coarse sand, 15% medium sand, 25% fine sand and 20% silt.	
-30					NA		Becomes wet at approx. 30 ft bgs. SILTY SAND, pale brown (10YR6/3), wet, subrounded to subangular sand, nonplastic to very low plasticity silt, some local moderate to strong cementation. Approximately 15% medium sand, 65% fine sand and 20% silt.	
	Grab				NA		Collected sample BRC-SB-19-A-32. Soil Saturated.	
					NA			
					NA		ML: SILTY SAND, pale yellow (2.5YR6/3), moist to wet, nonplastic to low plasticity fines, subangular to subrounded sand. Approximately 5% medium sand, 30% fine sand, 60% silt and 5% clay.	4" 0.010 Slot PVC screen
					NA			
					NA		SM: SILTY SAND, pale brown (10YR6/3), wet, nonplastic to low plasticity fines, subangular to subrounded sand. Approximately 5% medium sand, 55% fine, 40% silt and trace clay.	
			0		NA			#10 x 20 Sand Pack
					NA		ML: SILT with SAND, light gray (10YR7/2), moist to wet, nonplastic to low plasticity, fines, subangular to subrounded sand. Approximately 20% fine sand, 75% silt and 5% clay.	
-40					NA			
					NA			
					NA		SILT with SAND, moist, brown (7.5YR5/4), nonplastic to low plasticity fines, very stiff. Approximately 5% fine sand, 85% silt and 10% clay.	Threaded PVC Well Base Cap
					NA			
					NA		CLAYEY SILT, white (5YR8/1), moist, stiff, nonplastic to low plasticity fines. Approximately 5% fine sand, 75% silt and 20% clay.	
					NA			
			0		NA		CLAYEY SILT, white (5YR8/1), moist, nonplastic to low plasticity fines. Approximately 5% fine sand, 75% silt and 20% clay.	
					NA		SM: SILTY SAND, pale yellow (2.5YR8/3), moist, nonplastic, silt, subangular to subrounded sand. Approximately 5% medium sand, 65% fine and 30% silt.	
-50					NA		ML: SILT with SAND, pale brown (10YR6/3), moist, non plastic to low plasticity, fines, subangular to subrounded sand, some local gypsum at approx. 50 ft bgs. Approximately 20% fine sand, 75% silt and 5% clay.	Cement Backfill
					NA			
					NA			
					NA		SILTY SAND, yellowish brown (10YR5/4), wet, non plastic to low plasticity fines, subangular to subrounded sand. Approximately 25% fine sand, 70% silt and 5% clay.	
					NA		Collected sample BRC-SB-19-A-56. Soil saturated.	
					NA			
	Grab				NA		SM: SILTY SAND, light yellowish brown (10YR 6/4), wet, nonplastic, silt, subangular to subrounded sand. Approximately 60% fine sand and 40% silt.	
	Core		0		NA		ML: CLAYEY SILT, brown (7.5YR5/4), moist, nonplastic to low plasticity, fines, very stiff. Approximately 5% fine sand, 75% silt and 20% clay.	
					NA		Collected sample BRC-SB-19-A-57 (Chemical analysis).	

Depth Elevation (MSLD)	Sample Type	Sample Interval	Sample Recovery (feet)	Sample Retained for Analysis	PID	Lithology	Soil Description	Well Construction
-60					NA			
					NA		Abundant gypsum content at 60 to 61 ft. bgs.	
					NA			
					NA		CLAYEY SILT, brown (7.5YR5/4), moist, nonplastic to low plasticity fines, very stiff to hard. Approximately 80% silt and 20% clay.	
					NA			
					NA			
					NA		CLAYEY SILT, brown (7.5YR5/4), moist, nonplastic to low plasticity fines. Approximately 85% silt and 15% clay.	
					NA			
					NA			
					NA		CLAYEY SILT, yellowish brown (10YR5/4), moist, nonplastic to low plasticity fines, very stiff to hard. Approximately 85% silt and 15% clay.	
					NA			
-70					NA			
					NA			
					NA		CLAYEY SILT, brown (10YR5/3), moist, nonplastic to low plasticity fines, hard. Approximately 5% fine sand, 80% silt and 15% clay.	
					NA			
					NA			
					NA			Cement Backfill
					NA		SILTwith CLAY, brown (10YR5/3), moist, nonplastic to low plasticity fines, very stiff, subangular to subrounded sand, trace local gymsum. Approximately 10% fine sand, 80% silt and 10% clay.	
	Grab		1.5/20		NA		Light gray (2.5Y7/2) at 77' to 79' bgs. Collected sample BRC-SB-19-A-77 (Chemical analysis).	
					NA		Yellowish brown (10YR5/4) at 79' to 79.8' bgs	
					NA			
-80	Grab				NA		SM: SILTY SAND, yellowish brown (10YR5/4), wet, nonplastic, silt, subangular to subrounded sand. Approximately 70% fine sand and 30% silt.	
					NA		ML: CLAYEY SILT, brown (7.5YR5/3), moist, hard,nonplastic to low plasticity fines. Approximately 5% fine sand, 75% silt and 20% clay.	
					NA		Collected sample BRC-SB-19-A-80. Soil saturated.	
					NA			
					NA		CLAYEY SILT, brown (7.5YR5/4), moist, hard, nonplastic to low plasticity fines. Approximately trace fine sand, 80% silt and 20% clay.	
					NA			
					NA			
			1.5/10		NA			
					NA		CLAYEY SILT, greenish gray (5GY5/1), moist, very stiff, nonplastic to low plasticity fines. Approximately 80% silt and 20% clay.	
-90					NA			
					NA			
					NA			

Depth Elevation (MSLD)	Sample Type	Sample Interval	Sample Recovery (feet)	Sample Retained for Analysis	PID	Lithology	Soil Description	Well Construction
1	Core	0			NA NA NA NA NA		CLAYEY SILT, greenish gray (5GY5/3), moist, very stiff, nonplastic to low plasticity fines. Approximately 80% silt and 20% clay. CLAYEY SILT, greenish gray (5GY5/3), moist, very stiff, nonplastic to low plasticity fines. Approximately 80% silt and 20% clay. Collected sample BRC-SB-19-A-97 (Chemical analysis).	Cement Backfill