



DATE: April 2006

PROJECT NUMBER: 129684

BROWN AND CALDWELL
Carson City, Nevada

Atlantic Richfield Company

Figure 2-15

Well B/W-11D Construction Details

Project Name: Yerington Groundwater Investigation

Well Number: B/W-11

Soil Boring

Monitoring Well

Project Number: 121243.021

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Boring Location: On mine site, near lined evaporatin ponds		Elevation: 4368.1 feet amsl	East: 321936 North: 1554614.6
Drilling Contractor: WDC	Driller: B. Zamow	Date Started: 9/28/05	Date Finished: 9/27/05
Drilling Equipment: Gus Pech GP24-400RS, Diedrich Sonic Head		Total Depth: (feet) 233.5	Water Depth: (feet) 45' / 35.84'
Sampling Method: Core Barrel	Borehole Diameter: 6"	Well Diameter and Material: 2-inch PVC	
Drilling Method: Sonic, utilized 6" casing and a 4.5" core barrel		Screened Interval and Well Depth: 170.3-190.3 ft., bottom at 190.5 ft.	
Well Seal: Bentontite and Cement		Slot Size: 0.020"	Filter Material: #10-20 Silica Sand
Logged By: C. Gardner		Development Method: Swabbed, bailed, pumped	

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
		VLT	Vat Leach Tailings (0-2.25 feet) Dry, loose, no odor. Primarily coarse to medium sand with ~40% gravel to 20 mm and ~20% silt and clay. The sand and gravel is angular. The fines are nonplastic, yellow, and do not react to HCl.					<p>Descriptions of drilled cuttings based on ASTM Method D-2488 (the visual-manual procedure), grain-size determinations and nomenclature based on the Unified Soil Classification System. Munsell colors described wet.</p> <p>Horizontal survey data is expressed in the Nevada State Plane system, Nevada West zone, in feet.</p> <p>Sharp contacts indicated by solid lines, gradational contacts indicated by dashed line.</p> <p>All depths are below land surface unless stated otherwise.</p> <p>WELL DESIGN B/W-11D: Screened Interval: 170.3-190.3 feet. Bottom of sump: 190.5 feet.</p> <p>Cement Grout: 0-160.5 feet. Bentonite Chips: 160.5-167 feet. Filter Pack: #60 Sand 167-167.5 feet, #10-20 Sand 167.5-194 feet. Bentonite Chips: 194-233.5 feet</p> <p>Top of PVC Elevation: 4,370.60 feet amsl. PVC Stick-up: 2.5 feet above land surface.</p>
	4365	SW-SM	WELL-GRADED SAND WITH SILT (2.25-7.75 feet) Dry, medium dense, no odor. Primarily medium to fine sand with trace gravel to ~5mm and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and react strongly to HCl.					
5		SC	CLAYEY SAND (7.75-8.5 feet) Dry, medium dense, no odor. Primarily medium to fine sand with trace gravel to ~10 mm and ~35% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and react strongly to HCl.					
	4360	SM	SILTY SAND (8.5-9.5 feet) Dry, medium dense, no odor. Primarily medium to fine sand with ~5% gravel to ~10 mm and ~20% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are					
		SM						

SONIC METHOD LOG YERINGTON.GPJ BRN&CALD.GDT 1/31/06

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
		SC	CLAYEY SAND (36-38 feet) Dry to moist, dense, strong acid odor. Primarily medium to fine sand with trace gravel to ~10 mm and ~35% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
4330		SM	SILTY SAND (38-41.5 feet) Dry to moist, dense, strong acid odor. Primarily medium to fine sand with ~10% gravel to ~8 mm and ~20% silt and clay. The sand is subangular to subrounded, the gravel is angular. The fines have low plasticity and toughness, brown, and have no reaction to HCl.					
40		SC	CLAYEY SAND (41.5-45 feet) Moist, dense, strong acid odor. Primarily medium to fine sand with ~5% gravel to ~30 mm and ~30% silt and clay. The sand is subangular to subrounded, the gravel is angular to subangular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
4325		SW-SM	WELL-GRADED SAND with SILT and GRAVEL (45-46.5 feet) Saturated, medium dense, strong acid odor. Primarily coarse to medium sand with ~15% gravel to ~20mm and ~10% silt and clay. The sand and gravel is subangular to subrounded. The fines are nonplastic, brown, and have no reaction to HCl.					
45		SC	CLAYEY SAND (46.5-49 feet) Moist, medium dense, strong acid odor. Primarily medium to fine sand with ~10% coarse sand to ~3 mm and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
4320		SM	SILTY SAND (49-50.5 feet)					

B/W-11 @ 45 - 50 Ft.

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
50			Saturated, medium dense, strong acid odor. Primarily medium to fine sand with ~10% gravel to ~20 mm and ~15% silt and clay. The sand is subangular to subrounded, the gravel is angular. The fines are nonplastic, brown, and have no reaction to HCl.					
		SW-SM	WELL-GRADED SAND with SILT (50.5-52.5 feet) Saturated, medium dense, strong acid odor. Primarily medium to fine sand with ~5% gravel to ~20 mm and ~10% silt and clay. The sand is subangular to subrounded, the gravel is angular. The fines are nonplastic, brown, and have no reaction to HCl.					
	4315	SM	SILTY SAND (52.5-55 feet) Dry to moist, medium dense, strong acid odor. Primarily medium to fine sand with ~10% gravel to ~20 mm and ~15% silt and clay. The sand is subangular to subrounded, the gravel is angular. The fines are nonplastic, brown, and have no reaction to HCl.					
55		SM	SILTY SAND (55-55.75 feet) Dry to moist, dense, strong acid odor. Primarily medium to fine sand with ~5% gravel to ~8 mm and ~15% silt and clay. The sand and gravel is subangular to subrounded. The fines are nonplastic, brown, and have no reaction to HCl.					
		SC	CLAYEY SAND (55.75-59 feet) Dry to moist, dense, strong acid odor. Primarily medium to fine sand with ~10% coarse sand to ~4 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
	4310							
		SC	CLAYEY SAND (59-62.5 feet) Dry to moist, dense, strong acid odor. Primarily medium to fine sand with trace gravel to ~5 mm and ~30% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
60								

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
65	4305	SC	CLAYEY SAND (62.5-66.75 feet) Dry to moist, dense, strong acid odor. Primarily medium to fine sand with ~5% coarse sand to ~5 mm and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
		SM	SILTY SAND (66.75-68 feet) Dry to moist, dense, strong acid odor. Primarily medium to fine sand with ~5% gravel to ~5 mm and ~20% silt and clay. The sand is subangular to subrounded, the gravel is angular. The fines are nonplastic, brown, and have no reaction to HCl.					
70	4300	SC	CLAYEY SAND (68-70 feet) Moist, dense, strong acid odor. Primarily medium to fine sand with ~5% gravel to ~8 mm and ~25% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
		SM	SILTY SAND (70-72 feet) Moist, dense, strong acid odor. Primarily medium to fine sand with trace coarse sand to ~5 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, brown, and have no reaction to HCl.					
75	4295	SC	CLAYEY SAND (72-74.5 feet) Moist, medium dense, strong acid odor. Primarily medium to fine sand with trace gravel to ~10 mm and ~30% silt and clay. The sand and gravel is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
		SM	SILTY SAND (74.5-75.5 feet) Dry to moist, dense, strong acid odor. Primarily medium to fine sand with ~10% gravel to ~10 mm and ~25% silt and clay. The sand is subangular to					

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
		SM	subrounded, the gravel is angular. The fines have low plasticity and toughness, are brown, and have no reaction to HCl.					
		SM	Dry to moist, dense, strong acid odor. Primarily medium to fine sand with ~10% gravel to ~10 mm and ~25% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl.					
	4290	SM	SILTY SAND with GRAVEL (76.25-77.75 feet) Saturated, medium dense, strong acid odor. Primarily coarse to medium sand with ~15% gravel to ~10 mm and ~15% silt and clay. The sand and gravel is subangular to subrounded. The fines are nonplastic, brown, and have no reaction to HCl.					
		SM	SILTY SAND (77.75-79 feet) Moist, medium dense, strong acid odor. Primarily medium to fine sand with ~15% coarse sand to ~5 mm and ~25% silt and clay. The sand is subangular to angular. The fines have low plasticity and toughness, are light brown, and have no reaction to HCl.					
	80	SM	SILTY SAND (79-80 feet) Saturated, medium dense, strong acid odor. Primarily medium to fine sand with ~10% gravel to ~12 mm and ~20% silt and clay. The sand and gravel is subangular to angular. The fines are nonplastic, brown, and have no reaction to HCl.					
		SC	CLAYEY SAND (80-88 feet) Moist, dense, strong acid odor. Primarily medium to fine sand with ~15% coarse sand to ~5 mm and ~25% silt and clay. The sand is subangular to angular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
	4285							
	85							
	4280	SM	SILTY SAND (88-90 feet) Saturated, medium dense, strong acid odor.					

B/W-11 @ 75 - 80 Ft.

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
			Primarily medium to fine sand with ~5% coarse sand to ~5 mm and ~15% silt and clay. The sand is subangular to angular. The fines are nonplastic, brown, and have no reaction to HCl.					
90		SC	CLAYEY SAND (90-91.5 feet) Dry to moist, dense, strong acid odor. Primarily medium to fine sand with ~15% coarse sand to ~5 mm and ~25% silt and clay. The sand is subangular to angular. The fines have medium plasticity, low toughness, are brown, and have no reaction to HCl.					
		SC	CLAYEY SAND (91.5-94 feet) Dry, very dense, strong acid odor. Primarily medium to fine sand with ~5% gravel to ~10 mm and ~35% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
	4275							
		SM	SILTY SAND (94-95 feet) Dry to moist, dense, strong acid odor. Primarily medium to fine sand with ~5% coarse sand to ~5 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, brown, and have no reaction to HCl.					
95		SM	SILTY SAND (95-98 feet) Saturated and medium dense from ~95-96 feet, moist and dense from ~96-98 feet, strong acid odor. Primarily medium to fine sand with trace gravel to ~8 mm and ~15% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl.					
	4270							
		SC	CLAYEY SAND (98-103 feet) Dry to moist, dense, strong acid odor. Primarily medium to fine sand with trace coarse sand to ~3 mm and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity, low toughness, are brown, and have no reaction to HCl.					
100								

B/W-11 @ 95 - 100 Ft.

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
4265		SC	CLAYEY SAND (103-105.5 feet) Moist, dense, strong acid odor. Primarily medium to fine sand with ~5% gravel to ~8 mm and ~30% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
105		SM	SILTY SAND (105.5-108.5 feet) Saturated and medium dense from 105.5-106.5 feet, moist and dense from 106.5-108.5 feet, strong acid odor. Primarily medium to fine sand with ~10% gravel to ~15 mm and ~20% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have low plasticity and toughness, are brown, and have no reaction to HCl.					
4260		SC	CLAYEY SAND (108.5-109.5 feet) Moist, dense, acid odor. Primarily medium to fine sand with trace gravel to ~12 mm and ~30% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
110		SM	SILTY SAND (109.5-110.5 feet) Dry to moist, dense, weak acid odor. Primarily medium to fine sand with trace gravel to ~10 mm and ~15% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl.					
		SM	SILTY SAND (110.5-113 feet) Dry to moist, dense, weak acid odor. Primarily medium to fine sand with ~5% gravel to ~8 mm and ~20% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have slight plasticity, low toughness, are brown, and have no reaction to HCl.					
4255		SC	CLAYEY SAND (113-115 feet) Dry to moist, dense, weak acid odor. Primarily medium to fine sand with ~5% gravel to ~10 mm and ~30% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
115		SM	SILTY SAND (115-118 feet) Dry to moist, dense, weak acid odor. Primarily medium to fine sand with ~5% gravel to ~8 mm and ~20% silt and clay. The sand and gravel is subangular to subrounded. The fines have low plasticity and toughness, are brown, and have no reaction to HCl.					
	4250	SC	CLAYEY SAND (118-119 feet) Moist, dense, slight acid odor. Primarily medium to fine sand with trace gravel to ~8 mm and ~20% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
		SM	SILTY SAND (119-121.5 feet) Moist, dense, slight acid odor. Primarily medium to fine sand with ~5% coarse sand to ~5 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines have low plasticity and toughness, are brown, and have no reaction to HCl.					
120		SC	CLAYEY SAND (121.5-123.5 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with ~15% coarse sand to ~5 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity, low toughness, are brown, and have a strong reaction to HCl. Some strongly developed caliche present.					
	4245	SM	SILTY SAND (123.5-125.5 feet) Moist, dense, no odor. Primarily medium to fine sand with ~15% coarse sand to ~5 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and have a weak reaction to HCl.					
		SW-SM	WELL-GRADED SILTY SAND (125.5-127 feet) Moist to saturated, medium dense, no odor. Primarily medium to fine sand with ~5% gravel to ~10 mm and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, are brown, and have no reaction to HCl.					
125		SM	SILTY SAND (127-128 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~5% gravel to ~8 mm					

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
4240		SW-SM	and ~15% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl. WELL-GRADED SAND with SILT (128-135.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~5% fine to coarse gravel to ~60 mm and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl.					
130								
4235								
135		SW-SM	WELL-GRADED SAND with SILT (135.5-138.75 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~5% gravel to ~10 mm and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl.					
4230								
140		SC	CLAYEY SAND (138.75-140 feet) Moist, dense, no odor. Primarily medium to fine sand with trace coarse sand to ~5 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity, low toughness, are brown, and have no reaction to HCl.					
		SC	CLAYEY SAND (140-142 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with trace coarse sand to ~4 mm and ~35% silt and clay. The sand is subangular to					

B/W-11 @ 130 - 135 Ft.

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
			subrounded. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.					
	4225	SM SW-SM	SILTY SAND (142-142.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace gravel to ~10 mm and ~15% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, are brown, and have no reaction to HCl. WELL-GRADED SAND with SILT (142.5-144 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~5% gravel to ~20 mm and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl.					
	145	SM	SILTY SAND (144-149.5 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with ~5% gravel to ~10 mm and ~20% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, are brown, and have a strong reaction to HCl.					
	4220							
	150	SC	CLAYEY SAND (149.5-150.5 feet) Dry, dense, no odor. Primarily medium to fine sand with ~10% gravel to ~10 mm and ~20% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have a weak reaction to HCl.					
		SC	CLAYEY SAND (150.5-153 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with ~5% sand to ~4 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have a weak to strong reaction to HCl.					
	4215	SC	CLAYEY SAND (153-154.75 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with ~10% gravel to ~12 mm and ~20% silt and clay. The sand is subangular to					

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
			subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have a weak to strong reaction to HCl.					
155		SM	SILTY SAND with GRAVEL (154.75-155.5 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with ~15% gravel to ~12 mm and ~20% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have a weak to strong reaction to HCl.					
		CL						
		SC	SANDY LEAN CLAY (155.5-156 feet) Dry, hard, no odor. Primarily silt and clay with ~35% medium to fine sand and ~5% gravel to ~15 mm. The sand is subangular to subrounded, the gravel is angular to subangular. The fines have medium plasticity and toughness, are brown (7.5YR 4/3), and do not react to HCl.					
		SC	CLAYEY SAND (156-157.5 feet) Dry, dense, no odor. Primarily medium to fine sand with trace gravel to ~8 mm and ~30% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.					
4210		SC	CLAYEY SAND (157.5-159 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with ~5% gravel to ~8 mm and ~25% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.					
		SM	SILTY SAND (159-160.9 feet) Moist, dense, no odor. Primarily medium to fine sand with ~10% coarse sand to ~4 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, brown, and have no reaction to HCl.					
160		SC	CLAYEY SAND (160.9-161 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with ~5% gravel to ~10 mm and ~35% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.					
		SW-SM						
		SC	WELL-GRADED SAND with SILT (161-162 feet) Moist to saturated, medium dense, no odor. Primarily medium to fine sand with ~5% coarse sand to ~4 mm and ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, brown, and have no reaction to HCl.					
4205		SC	CLAYEY SAND (162-163 feet) Moist, dense, no odor. Primarily medium to fine sand with ~5% coarse sand to ~3 mm and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
		SC	CLAYEY SAND (163-164.5 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with ~5% coarse sand to ~4 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
165		SC	CLAYEY SAND (164.5-165 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have a weak to strong reaction to HCl.					
		SC	CLAYEY SAND (165-165.5 feet)					

B/W-11 @ 159 - 164 Ft.

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
170	4200	SM	Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 20 mm and ~40% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.					
		SC	CLAYEY SAND (165.5-167 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have a weak to strong reaction to HCl.					
		SC	SILTY SAND (167-167.5 feet) Moist, medium dense, slight acid odor. Primarily medium to fine sand with ~15% coarse sand to ~5 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, brown, and have no reaction to HCl.					
		SC	CLAYEY SAND (167.5-169.5 feet) Moist, medium dense, no odor. Primarily medium to fine sand with ~15% coarse sand to ~5 mm and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity, low toughness, are brown, and have a no reaction to HCl.					
		SM	CLAYEY SAND (169.5-170.5 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with ~5% gravel to 15 mm and ~35% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.					
		SC	CLAYEY SAND (170.5-171.5 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm and ~35% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.					
		SW-SM	SILTY SAND (171.5-172 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with trace gravel to ~8 mm and ~15% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl.					
			CLAYEY SAND (172-173 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm and ~35% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.					
			WELL-GRADED SAND with SILT (173-177 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~5% gravel to ~10 mm and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl.					
		4195	SC	CLAYEY SAND (177-178.25 feet) Moist, medium dense, no odor. Primarily medium to fine sand with ~10% coarse sand to ~5 mm and ~35% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.				
175	4190	SM	SILTY SAND (178.25-180 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with ~10% coarse sand to ~3 mm and ~30% silt and clay. The sand is subangular to subrounded. The fines have low plasticity and toughness, are brown, and have no reaction to HCl.					

B/W-11 @ 173 - 178 Ft.

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Soil Boring

Monitoring Well

Project Number: 121243.021

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
		SW-SM	WELL-GRADED SAND with SILT and GRAVEL (180-181.5 feet) Saturated, medium dense, no odor. Primarily coarse to medium sand with ~15% gravel to ~15 mm and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl.					
	4185	SC	CLAYEY SAND (181.5-187 feet) Moist from ~181-183 feet, dry to moist from ~183 to 187 feet, dense, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm and ~25% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.					
	185							
	4180	SW	WELL-GRADED SAND (187-188.5 feet) Saturated, medium dense, slight acid odor. Primarily medium sand with ~10% coarse sand to ~5 mm and ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, brown, and have a strong to no reaction to HCl.					
		SW-SM	WELL-GRADED SAND with SILT (188.5-189.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~10% coarse sand to ~5 mm and ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, brown, and have no reaction to HCl.					
	190	SC	CLAYEY SAND (189.5-191 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with trace gravel to ~8 mm and ~35% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have a weak to no reaction to HCl.					
		CL	SANDY LEAN CLAY (191-192.5 feet) Dry to moist, hard, no odor. Primarily silt and clay with ~40% medium to fine sand with trace gravel to ~10 mm. The sand is angular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a strong to no reaction to HCl.					
		SC	CLAYEY SAND (192.5-193.5 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with trace coarse sand to ~4					

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
195	4170	CL	mm and ~45% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have a strong to no reaction to HCl. SANDY LEAN CLAY (193.5-194 feet) Dry to moist, hard, no odor.	B/W-11 @ 195 - 200 Ft.				
		SC	Primarily silt and clay with ~40% medium to fine sand with trace gravel to ~10 mm. The sand is angular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown (7.5YR 5/4), and have a strong to no reaction to HCl.					
		SC	CLAYEY SAND (194-194.5 feet) Dry, very dense, no odor. Primarily medium to fine sand with trace coarse sand to ~4 mm and ~45% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.					
		SM	CLAYEY SAND (194.5-195 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with trace coarse sand to ~3 mm and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have a strong to no reaction to HCl. CLAYEY SAND with GRAVEL (195-195.75 feet) Moist to saturated, dense, no odor. Primarily coarse to fine sand with ~30% gravel to ~20 mm and ~20% silt and clay. The sand and gravel is angular to subangular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
		SC	SILTY SAND (195.75-198 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~5% gravel to ~10 mm and ~15% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl. CLAYEY SAND with GRAVEL (198-198.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~20% gravel to ~60 mm and ~20% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
		SW-SM	WELL-GRADED SAND with SILT (198.5-199 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace gravel to ~8 mm and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl.					
		SC	CLAYEY SAND with GRAVEL (199-199.5 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with ~20% gravel to ~60 mm and ~20% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.					
		SM	WELL-GRADED SAND with SILT (199.5-200 feet) Saturated, medium dense, no odor. Primarily medium to fine sand with trace gravel to ~8 mm and ~10% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines are nonplastic, brown, and have no reaction to HCl.					
		SC	CLAYEY SAND (200-201.5 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with ~5% gravel to ~10 mm and ~35% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have a strong to no reaction to HCl.					
		SM	SILTY SAND with GRAVEL (201.5-204 feet) Dry to moist, dense, no odor. Primarily coarse to medium sand with ~20% gravel to ~10					
205	4165	SC	CLAYEY SAND (200-201.5 feet) Dry to moist, dense, no odor. Primarily medium to fine sand with ~5% gravel to ~10 mm and ~35% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have a strong to no reaction to HCl.	B/W-11 @ 195 - 200 Ft.				
		SM	SILTY SAND with GRAVEL (201.5-204 feet) Dry to moist, dense, no odor. Primarily coarse to medium sand with ~20% gravel to ~10					

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
220		SW-SM	<p>Primarily medium to fine sand with ~5% coarse sand to ~5 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity, low toughness, are brown, and have a strong to no reaction to HCl.</p> <p>WELL-GRADED SAND with SILT (220-222.5 feet) Saturated, dense, no odor.</p> <p>Primarily medium to fine sand with ~10% coarse sand to ~3 mm and ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, brown, and have no reaction to HCl.</p>					
	4145	SC	<p>CLAYEY SAND (222.5-223 feet) Moist, very dense, no odor.</p>					
		CL	<p>Primarily medium to fine sand with ~5% gravel to ~8 mm and ~35% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.</p> <p>SANDY LEAN CLAY (223-224.5 feet) Dry to moist from ~223-223.5 feet, dry from ~223.5-224.5 feet, very hard, no odor.</p>					
225		SC	<p>Primarily silt and clay with ~30% medium to fine sand with ~5% gravel to ~10 mm. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are yellowish brown (10YR 5/4), and have a strong reaction to HCl.</p> <p>CLAYEY SAND with GRAVEL (224.5-228.25 feet) Dry, very dense, no odor.</p> <p>Primarily coarse to fine sand with ~25% gravel to ~75 mm and ~35% silt and clay. Cobbles to ~10 cm comprise ~20% of the interval. The sand is subangular to subrounded, the gravel is angular to subangular. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.</p>					
	4140	SC	<p>CLAYEY SAND (228.25-228.75 feet) Dry, very dense, no odor.</p>					
		SC	<p>Primarily medium to fine sand with trace gravel to ~10 mm and ~35% silt and clay. The sand is subangular to subrounded, the gravel is subangular. The fines have medium plasticity and toughness, are strong brown, and have a strong reaction to HCl.</p>					
		SC	<p>CLAYEY SAND with GRAVEL (228.75-229 feet) Dry, very dense, no odor.</p> <p>Primarily medium to fine sand with ~20% gravel to ~10 mm and ~35% silt and clay. The sand and gravel is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have no reaction to HCl.</p> <p>COBBLES with SANDY CLAY (229-233.5 feet) Dry, very dense, no odor.</p> <p>Primarily cobbles comprised of weathered and non weathered tuff with ~35% sandy clay. The tuff has a gray groundmass with angular to subangular clasts to ~5 mm. The sandy clay is primarily silt and clay with ~40% medium to fine sand to ~2 mm. The sand is angular to subangular. The fines have medium plasticity and toughness, and are yellowish brown (10YR 5/4). The fines have a strong reaction to HCl from</p>					
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B/W-11 @ 219 - 224 Ft.

Project Name: Yerington Groundwater Investigation

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Monitoring Well

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
	4135		~229 to 231 feet, and a weak reaction to HCl from ~231 to 233.5 feet.					