

*Guide for Using the Hydrogeologic Classification System for Logging Water Well Boreholes by Thomas M. Hanna NGWA Press

TWP 9515

68/46.3

25244

BORING AND WELL CONSTRUCTION LOG**WELL R-49**

Elevation Ground: 104.7 ft		CLIENT: Tesoro Alaska PROJECT SITE: Kenai Refinery PROJECT NO.: 10-19.10 AREA: PIRM GEOLOGIST: M. Blank					DRILLER: Pat Kelly DRILLING METHOD: Hollow-stem auger SAMPLING METHOD: Grab and 2-in split spoon START DATE: 3/3/98 END DATE: 3/4/98	
Elevation TOC: 105.36 ft								
Total BH Depth: 68 ft								
Total Well Depth: 63 ft								
Well Materials	DEPTH (FEET)	SAMPLE ID	BLOW COUNT (PER 6 INCHES)	SAMPLE INTERVAL	PIED READING (ft)	USCS		
Concrete Pad	0						Brown, medium to coarse SAND with 10% fine gravel (up to 0.5 inch), moist, no odor.	
Bentonite Grout	5							
Riser Pipe 6-inch diameter schedule 40 PVC	10					sp	@ 10 feet: 15% fine to coarse gravel (up to 1 inch).	
	15							
	20					sw	Brown, medium to coarse SAND with 35% fine to coarse gravel (up to 2 inch), moist, no odor.	
	25						@ 20 feet: 20% fine to coarse gravel (up to 2 inch).	
Bentonite Seal 3/4-inch chips	25							
Sand Pack 10/20 Colorado Silica Sand	30							
Well Screen 30 feet; 6-inch diameter; 0.030-inch slot; wire-wrapped stainless steel	35					sp	Brown, medium to coarse SAND with 15% fine to coarse gravel (up to 2 inch), moist, no odor.	
	40							

Brown, medium to coarse SAND with 10% fine gravel (up to 0.5 inch), moist, no odor.

@ 10 feet: 15% fine to coarse gravel (up to 1 inch).

Brown, medium to coarse SAND with 35% fine to coarse gravel (up to 2 inch), moist, no odor.

@ 20 feet: 20% fine to coarse gravel (up to 2 inch).

Brown, medium to coarse SAND with 15% fine to coarse gravel (up to 2 inch), moist, no odor.

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BORING AND WELL CONSTRUCTION LOG

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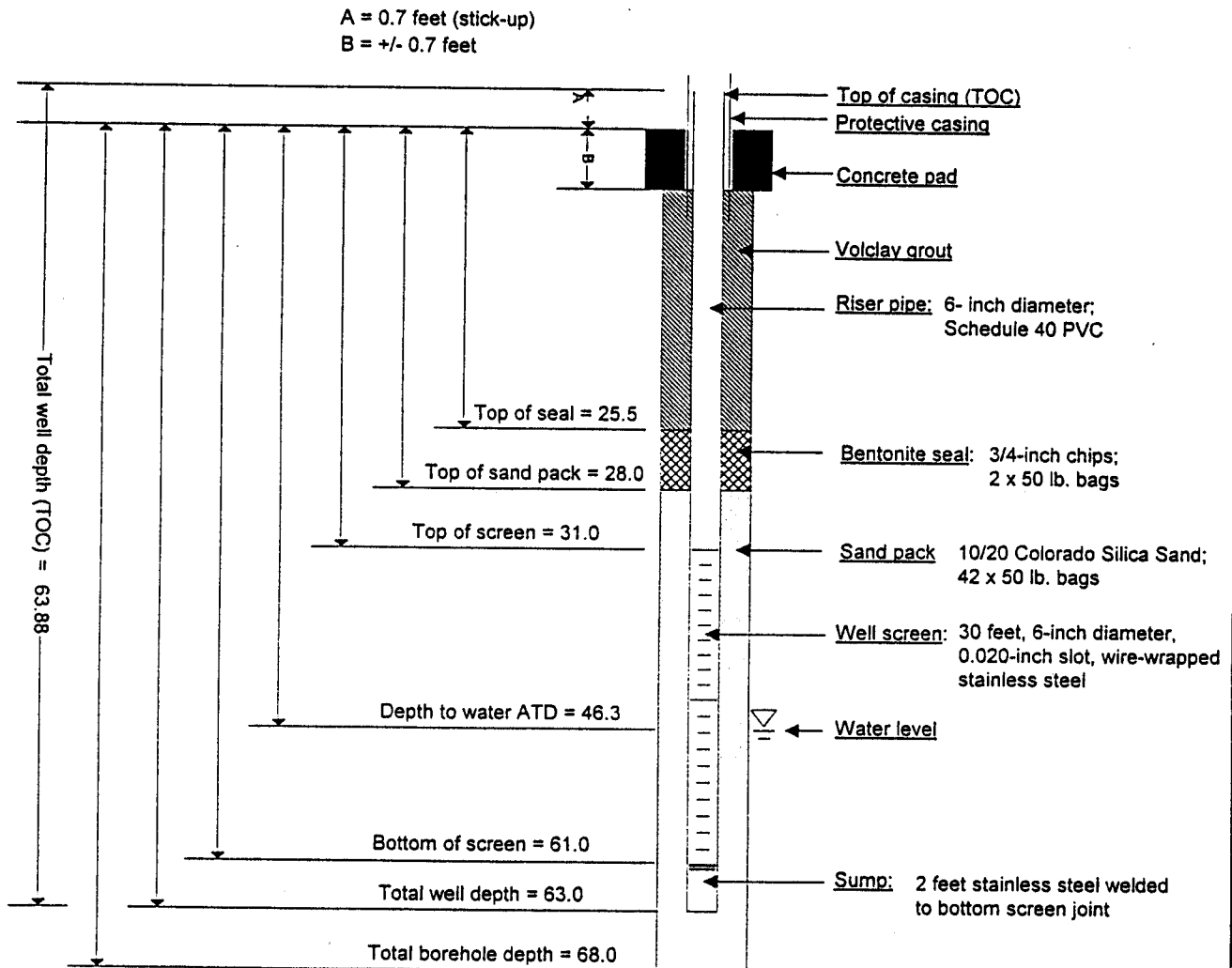
Well Materials		DEPTH (FEET)	SAMPLE ID	BLOW COUNT (PER 6 INCHES)	SAMPLE INTERVAL	PIED-READING (FEET)	USCS	CLIENT: Tesoro Alaska	DRILLER: Pat Kelly
								PROJECT SITE: Kenai Refinery	DRILLING METHOD: Hollow-stem auger
								PROJECT NO.: 01-19.10	SAMPLING METHOD: Grab and 2-in split spoon
								AREA: PIRM	START DATE: 3/3/98
								GEOLOGIST: M. Blank	END DATE: 3/4/98
Sand Pack 10/20 Colorado Silica Sand Well Screen 30 feet; 6- inch diameter; 0.030-inch slot; wire- wrapped stainless steel		40						@ 40 feet: as above with increasing hydrocarbon odor below 40 feet.	
		45					46.3	sp	
		50							
		55	1 4 18					Medium dense, gray, medium SAND with 5% fine gravel, wet, hydrocarbon odor. @ 54 feet: as above	
		57	9 16 21						
		58	3 15 22					@ 57 feet: 3-inch layer of hard, gray CLAY with 20% medium to coarse sand, and 20 % fine gravel (up to 0.5 inch), wet, no odor.	
		60	4 6 12 15 5 9 16 12 14 9					Medium dense, gray, medium SAND, wet, no odor.	
		63	11 8 12 14 9				sw	Dense, medium to coarse SAND with 35% fine to coarse gravel (up to 1.5 inch), wet, no odor. @ 63.5 feet: 0.5-inch layer of gray CLAY with 15% medium sand, wet, no odor.	
		65	10 11 15 14 10				sp	Medium dense, gray, medium SAND.	
		70						Total depth = 68 feet	
	75						Pilot hole drilled with 4.25-inch ID augers to 68 feet (augers to 66.5 feet). Reamed with 8.75-inch ID augers to 63 feet.		
	80								

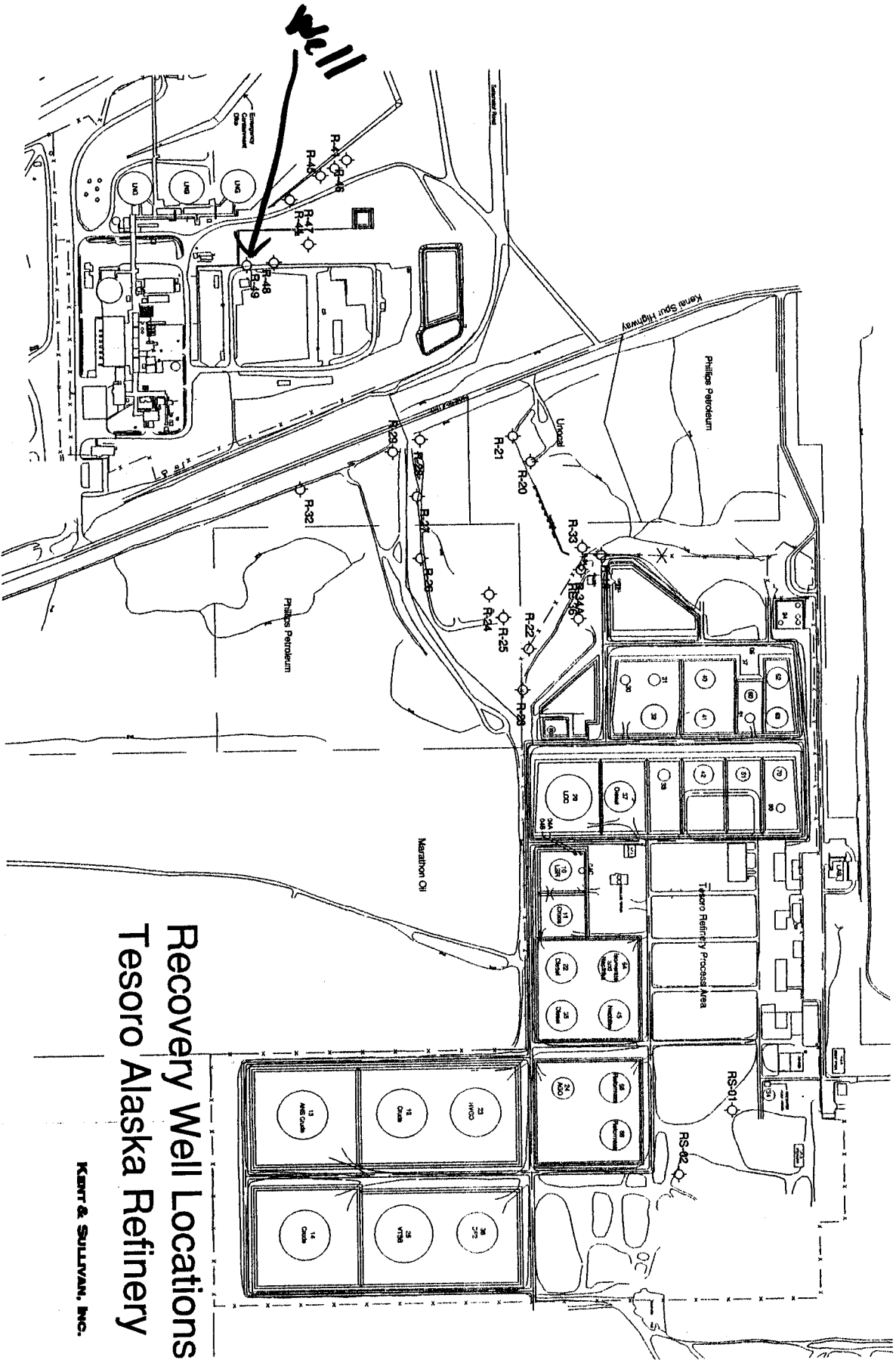
As-Built Diagram

Well R-49

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Well Location: PIRM Ground Elevation: 104.7 TOC Elevation: 105.36 Northing: 8842.0 Easting: 7854.12	Date Installed: 3/3 - 3/4/98 Project Number: 01-19.10 Geologist: M. Blank Drilling Company: Hughes Driller: Pat Kelly	Depth Drilled: 68.0	TD After Development: 63.88 (feet, TOC)
		Drilling Rig: CME-75	Drilling Method: HSA, 8.25" x 12"
		Hole Diameter: 12"	Soil Sampler Type: Splitspoon
		Number of Soil Samples: 10	Elevation Datum: MLLW
		Depth to Water at Time of Drilling (feet, bgs): 46.3	Checked by:





Recovery Well Locations Tesoro Alaska Refinery

KENT & SULLIVAN, INC.