

HYDROGEOLOGIC STUDY REPORT

WALDRICK GRAVEL MINE
11006 SOUTHEAST OLD HIGHWAY 99
THURSTON COUNTY, WASHINGTON

COPY

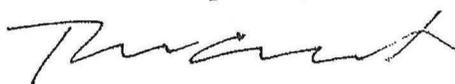


Submitted by:
Farallon Consulting, L.L.C.
975 5th Avenue Northwest
Issaquah, Washington 98027
Farallon PN: 525-004

For:
Lakeside Industries
6505 226th Place Southeast
Issaquah, Washington 98027

December 12, 2007

Prepared by:

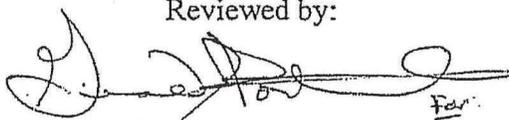


Thomas Cammarata
Senior Geochemist, L.G., L.H.G.



Thomas J. Cammarata

Reviewed by:



Clifford T. Schmitt, L.G., L.H.G.
Principal



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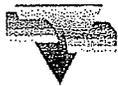
- Figure 1 *Site Vicinity Map*
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1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this Hydrogeologic Study Report for the Waldrick Gravel Mine located at 11006 Southeast Old Highway 99 in Thurston County, Washington (Figure 1). The hydrogeologic study was conducted as part of a 5-year review of the existing Special Use Permit issued by Thurston County for the Waldrick Gravel Mine operated by Lakeside Industries. The purpose of the study was to evaluate whether mining activities conducted at the Waldrick Gravel Mine have breached the seasonal high groundwater table, and if so, to provide a recommendation on the target mining depth to ensure that additional breaches of the seasonal high groundwater table do not occur.

During the Special Use Permit review process initiated by Thurston County in 2006, the Washington State Department of Ecology (Ecology) sent a letter dated July 12, 2006 to the Thurston County Development Services Department stating that the elevation of the Waldrick Gravel Mine floor was approximately 200 feet above mean sea level (msl), which approximates the local groundwater table elevation. Ecology stated that groundwater could seasonally rise to levels above the floor of the Waldrick Gravel Mine, creating surface water discharge that could pose a potential threat to the Deschutes River, located approximately 900 feet north and east of the Waldrick Gravel Mine. The elevation of the Deschutes River is approximately 190 feet above msl. Ecology recommended that the mining depth be restricted to an unspecified elevation above the seasonal high groundwater level to maintain an adequate storage capacity within the unsaturated soil, thus reducing potential groundwater discharge to the surface. The Thurston County Development Services Department issued a report dated September 18, 2006 recommending that a hydrogeological study be conducted as part of the 5-year review of Special Use Permit SUP 14-88 and SUP 98-607.

The hydrogeologic study conducted by Farallon included the following activities:

- Preparing a topographic survey of the Waldrick Gravel Mine and the land down-gradient of the Waldrick Gravel Mine;
- Installing three groundwater monitoring wells;
- Surveying the elevation of the groundwater monitoring wells;
- Measuring the groundwater elevation in each monitoring well and estimating the groundwater flow direction at the Waldrick Gravel Mine; and
- Comparing the lowest elevation at the base of the Waldrick Gravel Mine to the inferred groundwater elevation at the base of the Waldrick Gravel Mine.

1.1 PURPOSE

The purpose of the hydrogeologic study was to evaluate whether mining activities conducted at the Waldrick Gravel Mine have breached the seasonal high groundwater table, and to collect sufficient data for Thurston County to conduct a 5-year review of existing Special Use Permits SUP 14-88 and SUP 98-607 for the Waldrick Gravel Mine.



1.2 REPORT ORGANIZATION

Section 2 of this report provides a description of the Waldrick Gravel Mine and regional geology. The technical elements of the hydrogeologic study conducted by Farallon are summarized in Section 3. Section 4 provides the results of the study. Farallon's conclusions are presented in Section 5. Sections 6 and 7 present a listing of the documents cited in and the limitations pertinent to this report, respectively.



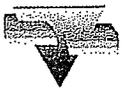
2.0 SITE DESCRIPTION

The address of the Waldrick Gravel Mine is 11006 Southeast Old Highway 99 in Thurston County, Washington (Figure 1). The Waldrick Gravel Mine is located within Township 17 North, Range 01 West, in 30 Section (U.S. Geological Survey 1990). The Waldrick Gravel Mine is a 50-acre mining operation located north of Waldrick Road and east of BNSF Railway Company railroad tracks and Old Highway 99. The majority of the property surrounding the Waldrick Gravel Mine is used as farmland and as single-family residences on larger agricultural parcels. The Waldrick Gravel Mine is operated by Lakeside Industries of Issaquah, Washington.

2.1 REGIONAL GEOLOGY

The Waldrick Gravel Mine is located within the Puget Sound Lowland, which consists of a broad, low-lying region situated between the Cascade Range to the east and the Olympic Mountains and Willapa Hills to the west. The geology of the Waldrick Gravel Mine consists of Pleistocene Frazer and Vashon glacier outwash sand, and gravel deposits that were deposited by glacier melt water. Non-glacial Holocene alluvium deposits originating from the Deschutes River are located proximate to the Waldrick Gravel Mine. Bedrock in the area of the Waldrick Gravel Mine consists of Miocene and Oligocene volcanic rocks composed of basalt, gabbro, and olivine (U.S. Department of Natural Resources 1987). The bedrock also is locally composed of Eocene and Oligocene sandstone comprised of andesite and siltstone (Alt and Hyndman 1984).

The surficial soils west and east of the Waldrick Gravel Mine are comprised of Spanaway-Nisqually soils, with 2 to 10 percent slopes. The Spanaway-Nisqually soils are composed of very deep, somewhat excessively drained, nearly level to rolling soils on glacial outwash terraces. The Spanaway-Nisqually soils consist of 60 percent Spanaway gravelly sandy loam, which has a 2 to 5 percent slope, and 30 percent Nisqually loamy fine sand. The Spanaway-Nisqually soils are well drained, and formed from glacial outwash and volcanic ash deposits (U.S. Department of Agriculture 1981).



3.0 FIELD ACTIVITIES

This section provides a discussion of the field activities conducted at the Waldrick Gravel Mine by Farallon in October and November 2007. Table 1 shows the depth to groundwater and groundwater elevations measured in October and November 2007 at newly installed groundwater monitoring wells MW-1 through MW-3. Figure 2 depicts a topographic survey of the Waldrick Gravel Mine and the land to the north, Figure 3 depicts cross-sections of the Waldrick Gravel Mine, and Figure 4 depicts the locations of monitoring wells MW-1 through MW-3 and groundwater elevations contours at the Waldrick Gravel Mine. Presented below is a discussion of the field activities conducted for the hydrogeologic study.

3.1 TOPOGRAPHIC SURVEY MAP

Appogee Land Survey of Lacey, Washington prepared a topographic survey map of the Waldrick Gravel Mine and land extending from the northern permit boundary to the Deschutes River. The survey included the topography, select land features, the boundaries of the Waldrick Gravel Mine, and the elevations of groundwater monitoring wells (Figure 2). The vertical datum used to determine the elevations at the Waldrick Gravel Mine and the land to the north is NGVD 29, which is equivalent to vertical datum relative to mean sea level (msl).

3.2 MONITORING WELL INSTALLATION

Boart Longyear of Milton, Washington, under the direction of Farallon, installed three monitoring wells MW-1 through MW-3 at the Waldrick Gravel Mine on October 22 and 23, 2007. The monitoring well screens are 0.020-inch slot, extending from approximately 31 to 70 feet below ground surface (bgs). The top of the well casings were completed with above ground steel monuments. The annulus of each borehole was filled with 2/12 clean silica sand to a height of approximately 2 feet above the top of the screened interval. A bentonite seal was set above the sand pack in each borehole annulus, followed by bentonite/cement grout extending to near surface grade. The surface completion of each monitoring well consisted of an 8-inch-diameter above ground monument cover. Well construction logs are provided in Appendix A.

The monitoring wells were developed by Boart Longyear under the supervision of Farallon using a surge block and stainless steel bailer. Approximately 10 well volumes of groundwater was removed from each monitoring well during development.

3.3 GROUNDWATER ELEVATION MONITORING

The groundwater elevations at monitoring wells MW-1 through MW-3 were measured on October 22 and 23 and November 15, 2007. Groundwater levels were measured at each monitoring well to an accuracy of 0.01 foot using an electronic water level meter. Table 1 presents the groundwater elevations measured at the Waldrick Gravel Mine.



4.0 RESULTS

4.1 SITE GEOLOGY

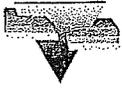
The soils encountered during the hydrogeologic study consisted of alluvium deposits comprised of a mixture of sands and silt to a depth of approximately 6 feet bgs in the unmined southern portion of the Waldrick Gravel Mine. The alluvium overlies unconsolidated sand and gravel deposits representing Pre-Frazier and Vashon Stade glaciation. At monitoring wells MW-1 and MW-2, these deposits are present above 180 feet msl, which was the approximate total depth drilled. At monitoring well MW-3 in the northern end of the Waldrick Gravel Mine, sand and gravel deposits overlie a sandy silt deposit at an elevation of approximately 195 feet above msl. Underlying the sandy silt at monitoring well MW-3 is a siltstone containing igneous inclusions (Figure 3). Well construction logs for monitoring wells MW-1, MW-2, and MW-3 are presented in Appendix A.

4.2 SITE TOPOGRAPHY

The surface elevations at the Waldrick Gravel Mine range from 270 feet above msl at the southern end of the unmined portions of the Waldrick Gravel Mine to 215 feet above msl at the base of Waldrick Gravel Mine near the northern permit boundary (Figure 2). From the northern permit boundary to the Deschutes River, elevations range from 215 to 190 feet above msl, respectively.

4.3 GROUNDWATER CONDITIONS

The groundwater encountered during drilling activities is representative of an unconfined water-bearing zone. The groundwater elevations measured at monitoring wells MW-1 through MW-3 in October and November 2007 ranged from 205.60 feet above msl at monitoring well MW-2, located at the northern edge of the Waldrick Gravel Mine floor, to 221.51 feet above msl at monitoring well MW-1, located at the unmined southern end of the Waldrick Gravel Mine near Waldrick Road (Table 1). Based on groundwater elevations measured in November 2007, groundwater at the Waldrick Gravel Mine flows to the east-northeast, with a gradient of 0.006 foot/foot. Comparison of the groundwater elevation at monitoring well MW-2, as measured in October and November 2007, to the elevation at the base of the Waldrick Gravel Mine of 215 feet above msl indicates that the groundwater table is 8 to 12 feet below the ground surface, and that groundwater does not discharge to the surface (Figures 3 and 4).



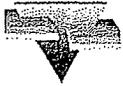
5.0 CONCLUSION

Results from the hydrogeologic study indicate that groundwater at the Waldrick Gravel Mine occurs in an unconfined aquifer that flows to the east-northeast, toward the Deschutes River. The groundwater elevation at the base of the Waldrick Gravel Mine measured at monitoring well MW-2 in November 2007 was 208.25 feet above msl. The lowest topographic elevation at the base of the Waldrick Gravel Mine is 215 feet above msl. The difference between the elevation at the base of the Waldrick Gravel Mine and the groundwater elevation at monitoring well MW-2 indicates that groundwater does not discharge to the ground surface at the Waldrick Gravel Mine, and that there is storage capacity within the unsaturated soil (Figures 3 and 4).



6.0 REFERENCES

- Alt, David, and Donald W. Hyndman. 1984. *Roadside Geology of Washington*. Mountain Press Publishing Company. Missoula, Montana. pp. 17-252.
- Thurston County. 2006. *Five-Year Review of the Approved Special Use Permit (SUP 14-88 and SUP 98-0607) for 50 Acre Gravel Mine Facility Operated by Lakeside Industries*. September 18.
- _____. 2007. *Post Hearing Order. Five-Year Review of SUP 14-88 and SUP 98-0607*. September 12.
- U.S. Department of Agriculture. 1981. *Soil Survey of Thurston County, Washington*. Soil Conservation Service.
- U.S. Geological Survey. 1990. *U.S. Geological Survey Topographic Map, East Olympia Quadrangle, Washington, 7.5 Minute Series*.
- Washington State Department of Natural Resources (DNR). 1987. *Geological Map of Washington – Southwest Quadrant*.



7.0 LIMITATIONS

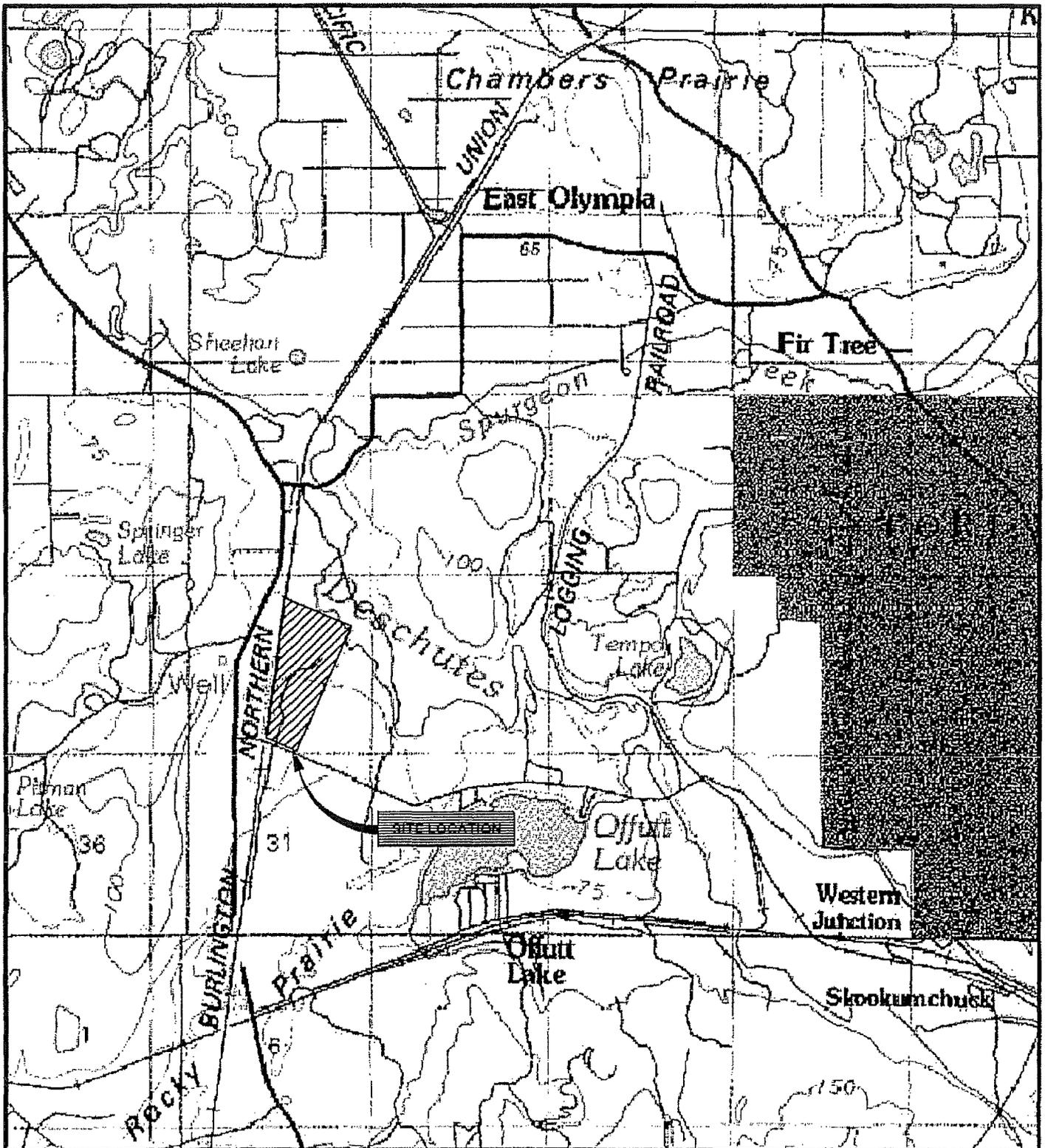
The conclusions and recommendations contained in this report are based on professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location, and are subject to the following inherent limitations:

- **Accuracy of Information.** Certain information used by Farallon in this report has been obtained, reviewed, and evaluated from various sources believed to be reliable. Although Farallon's conclusions, opinions, and recommendations are based in part on such information, Farallon's services did not include the verification of its accuracy or authenticity. Should such information prove to be inaccurate or unreliable, Farallon reserves the right to amend or revise its conclusions, opinions, and/or recommendations.
- **Reconnaissance.** Farallon performed a reconnaissance of the site that is the subject of this report/assessment to document current conditions.

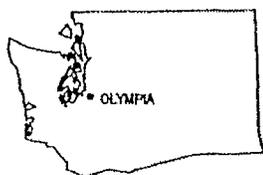
FIGURES

HYDROGEOLOGIC STUDY REPORT
Waldrick Gravel Mine
11006 Southeast Old Highway 99
Thurston County, Washington

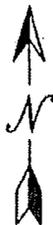
Farallon PN: 525-004



REFERENCE: 7.5 MINUTE USGS QUADRANGLE OFFUTT LAKE, WASHINGTON. DATED 1980



WASHINGTON



FARALLON CONSULTING
975 5th Avenue Northwest
Issaquah, WA 98027

FIGURE 1

SITE VICINITY MAP
WALDRICK PIT
THURSTON COUNTY, OLYMPIA WASHINGTON

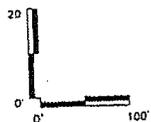
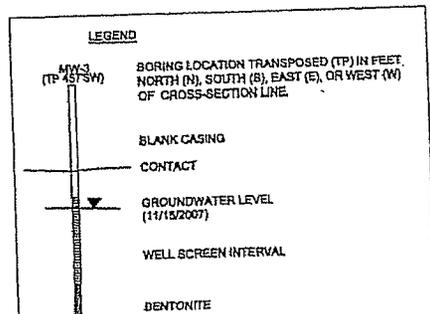
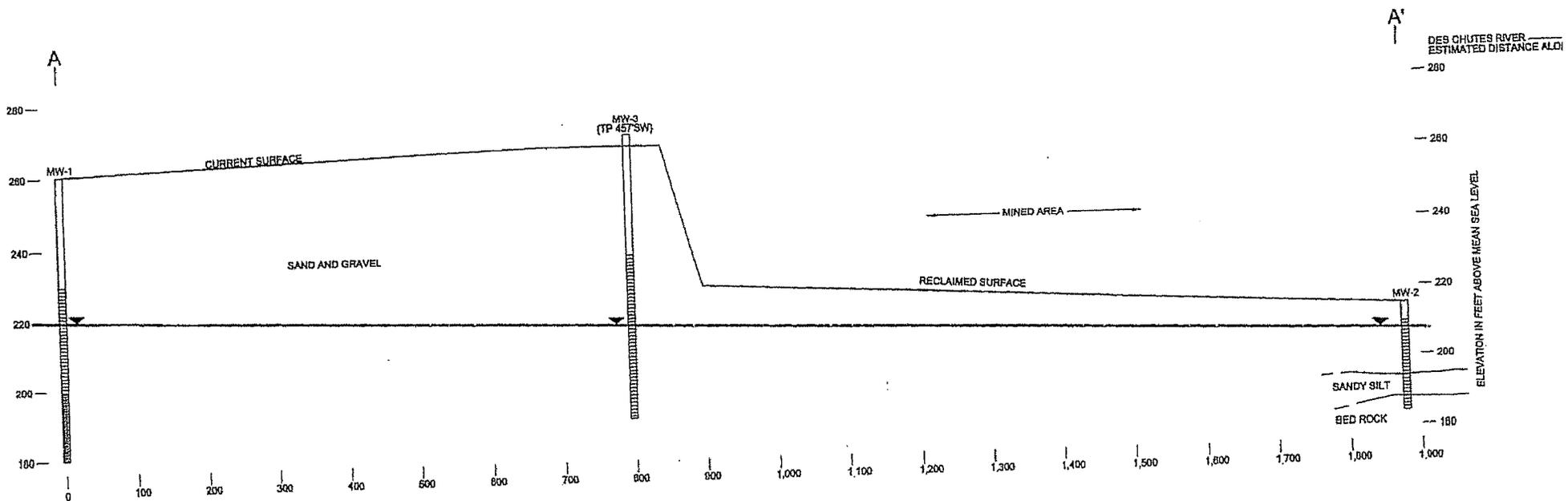
FARALLON PN:525-004

Drawn By:DEW

Checked By:TC

Date:12/6/07

Disk Reference:525004



ANTONIO B. RABBESON DLC NO. 42
 IN THE SE 1/4 OF SECTION 30,
 TOWNSHIP 17 N., RANGE 1 W., W.M.
 THURSTON COUNTY, WASHINGTON



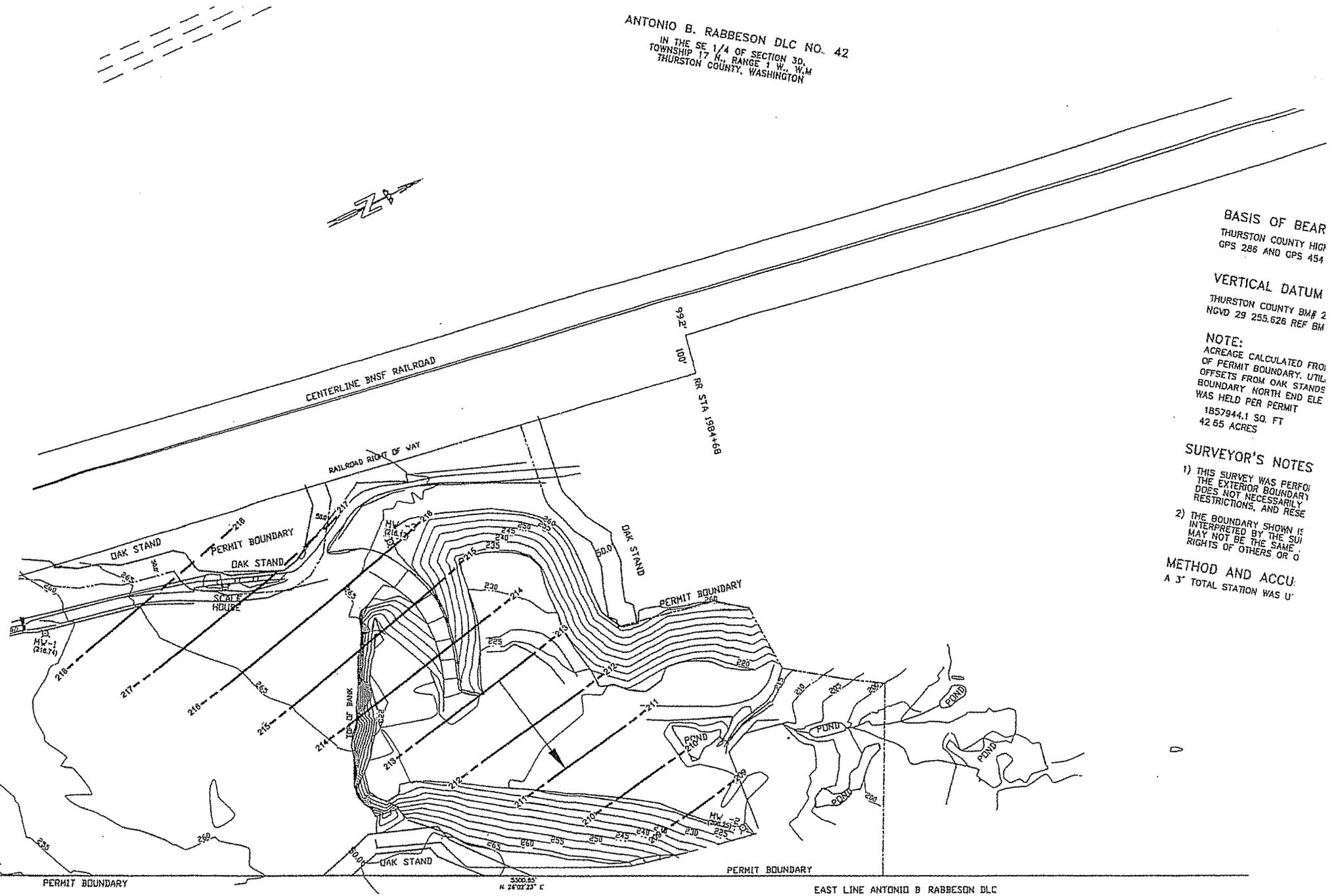
BASIS OF BEAR
 THURSTON COUNTY HIGH
 GPS 286 AND GPS 454

VERTICAL DATUM
 THURSTON COUNTY BM# 2
 NGVD 29 255,626 REF BM

NOTE:
 ACREAGE CALCULATED FROM
 OF PERMIT BOUNDARY. UTIL
 OFFSETS FROM OAK STANDS
 BOUNDARY NORTH END ELE
 WAS HELD PER PERMIT
 1857944.1 SQ. FT
 42.65 ACRES

SURVEYOR'S NOTES
 1) THIS SURVEY WAS PERFO
 THE EXTERIOR BOUNDARY
 DOES NOT NECESSARILY
 RESTRICTIONS, AND RESE
 2) THE BOUNDARY SHOWN IS
 INTERPRETED BY THE SUI
 MAY NOT BE THE SAME
 RIGHTS OF OTHERS OR O

METHOD AND ACCU:
 A 3" TOTAL STATION WAS U

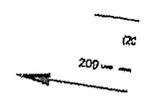


PERMIT BOUNDARY

3300.25
 N 24° 01' 23" E

PERMIT BOUNDARY

EAST LINE ANTONIO B RABBESON DLC



TABLE

HYDROGEOLOGIC STUDY REPORT
Waldrick Gravel Mine
11006 Southeast Old Highway 99
Thurston County, Washington

Farallon PN: 525-004

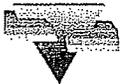


Table 1
Summary of Groundwater Elevation Data
Waldrick Gravel Mine
Lakeside Industries
Thurston County, Washington
Farallon PN: 525-004

Well ID	Date Measured	Casing Elevation (feet) ¹	Depth to Water (feet) ²	Groundwater Elevation (feet) ³
MW-1	10/22/07	262.51	41.00	221.51
	11/15/07	262.51	43.77	218.74
MW-2	10/22/07	218.10	12.50	205.60
	11/15/07	218.10	9.85	208.25
MW-3	10/23/07	268.80	52.05	216.75
	11/15/07	268.80	52.67	216.13

NOTES:

¹Top of casing based on a vertical datum of NGVD 29

²Depth to water below top of well casing

³Elevation based on a vertical datum of NGVD 29

**APPENDIX A
BORING LOGS**

HYDROGEOLOGIC STUDY REPORT
Waldrick Gravel Mine
11006 Southeast Old Highway 99
Thurston County, Washington

Farallon PN: 525-004

USCS Classification and Graphic Legend

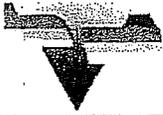
Major Divisions	USCS Graphic Symbol	USCS Letter Symbol	Lithologic Description
-----------------	---------------------	--------------------	------------------------

Coarse-Grained Soil (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well graded GRAVEL, well graded GRAVEL with sand
		GRAVEL WITH FINES (Appreciable amount of fines)		GP	Poorly graded GRAVEL, GRAVEL with sand
				GP-GM	Poorly graded GRAVEL - GRAVEL with sand and silt
				GM	Silty GRAVEL
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well graded SAND
		SAND WITH FINES (Appreciable amount of fines)		SP	Poorly graded SAND
				SP-SM	Poorly graded SAND - silty SAND
				SM	Silty SAND
				SC	Clayey SAND
				SM-ML	SILT - Silty SAND
Fine-Grained Soil (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)		ML	SILT	
			CL	CLAY	
			OL	Organic SILT	
	SILT AND CLAY (Liquid limit greater than 50)		MH	Inorganic SILT	
			CH	Inorganic CLAY	
			OH	Organic CLAY	
		Highly Organic Soil		PT	Peat
OTHER MATERIALS	PAVEMENT		AC	Asphalt concrete	
			CO	Concrete	
	OTHER		RK	Bedrock	
			WD	Wood Debris	
			DB	Debris (Miscellaneous)	
			PC	Portland cement	

Legend

	Sample Interval		Cement Grout		Solid line indicates sharp contact between units well defined.
	Grab Sample Interval		Bentonite		Dashed line indicates gradational contact between units.
	Water level at time of drilling		Sand Pack		
	Water level at time of sampling		Well Cap		
	Blank Casing				
	Screened Casing				

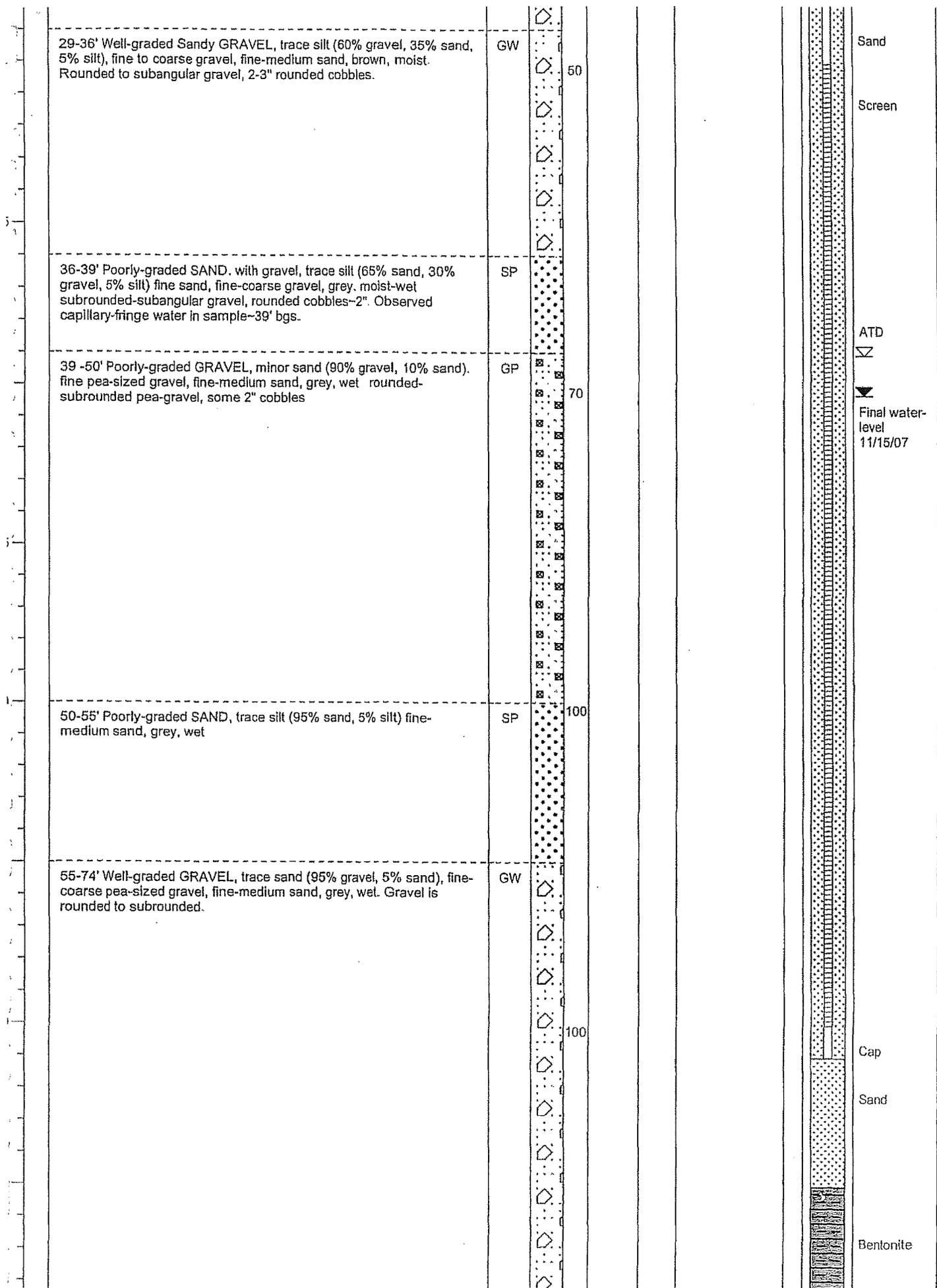
feet bgs = feet below ground surface
 NE = Not Encountered
 NA = Not Applicable
 PID = Photoionization Detector
 PN = Project Number
 units = PID units calibrated to 100 ppm isobutylene
 USCS = Unified Soil Classification System

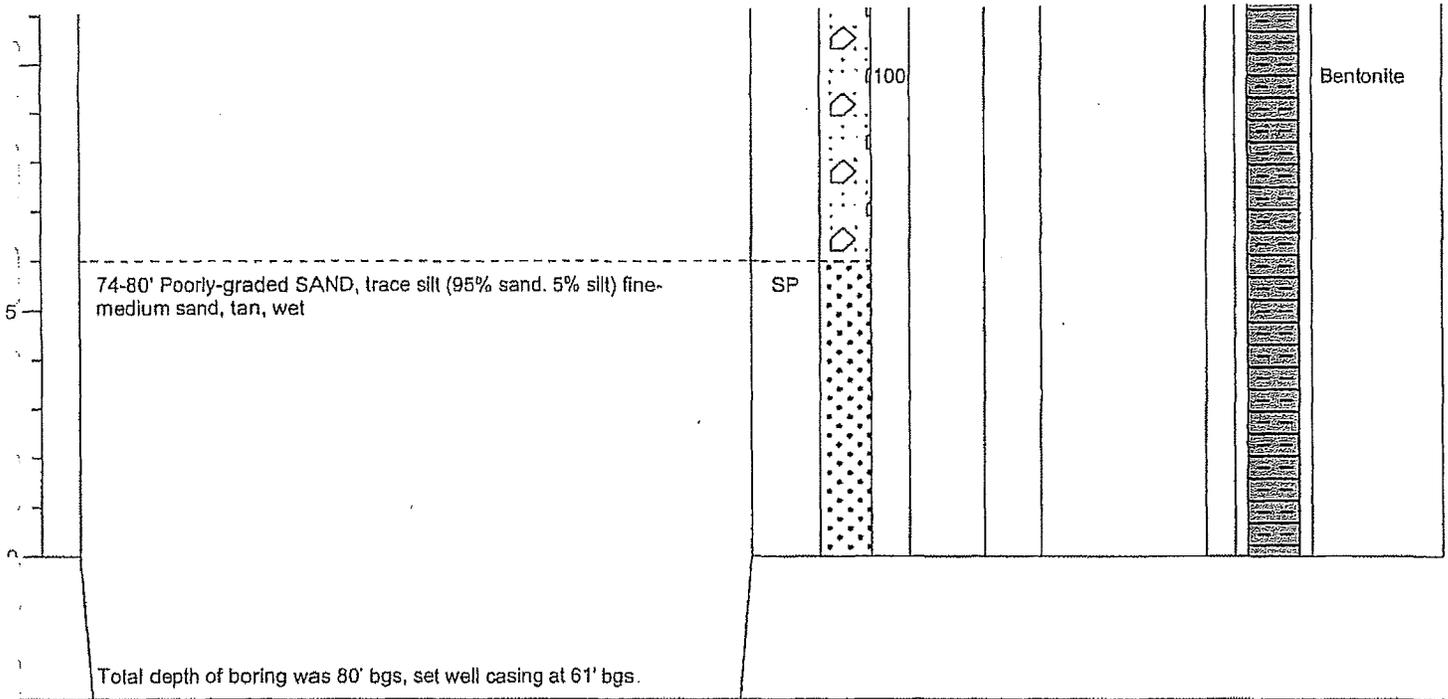


Client: Lakeside Industries
Project: Waldrick Pit
Location: Thurston County, WA
Farallon PN: 525-004
Logged By: Ken Scott

Date/Time Started: 10/22/2007 945 **Sampler Type:** Continuous 10' barrel
Date/Time Completed: 10/22/2007 1320 **Drive Hammer (lbs.):** NA
Equipment: Spider Track-rig **Depth of Water ATD (ft bgs):** 41'
Drilling Company: Boart Longyear **Total Boring Depth (ft bgs):** 80
Drilling Foreman: Brian Owens **Total Well Depth (ft bgs):** 61'bgs
Drilling Method: Sonic

Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0-2'	Grass	TOPSOIL			NA	NA	NA	NA	Stickup Concrete
2"-2.5'	Sandy SILT, trace gravel (60% silt, 35% sand, 5% gravel), fine-medium sand, fine gravel, dark brown, moist. Root-rhizomes to ~2' bgs	ML							
2.5-4.5'	Silty SAND, minor gravel (50% sand, 40% silt, 10% gravel), fine-medium sand, fine gravel, dark brown, moist	SM							
4.5-7.0'	GRAVEL, trace sand (75% cobbles, 15% gravel, 10% sand), fine-coarse gravel, fine-coarse gravel, fine-coarse sand, grey, moist. Gravel is rounded to sub-angular.	GW							
7.0-10.5'	Well-graded GRAVEL with sand, minor silt (60% gravel, 30% sand, 10% silt), fine-coarse gravel, fine-medium sand, brown, moist. Gravel is rounded	GW-GM							
10.5-17.0'	Well-graded GRAVEL, minor sand, trace silt (70% cobbles, 20% gravel, 8% sand, 2% silt), fine-coarse gravel, fine-medium poorly-graded sand, brown, moist. Gravel is rounded to sub-angular, cobbles are rounded to subrounded	GW			100				Bentonite
17-20'	Well-graded Sandy GRAVEL, trace silt (55% gravel, 40% sand, 5% silt), fine-coarse gravel, fine-medium sand, brown, moist. Observed small isolated pocket of red, plastic clay at 14.5' bgs,	GW							
20-22'	Poorly-graded SAND, minor gravel, trace silt (85% sand, 10% gravel, 5% silt) fine sand, fine gravel, grey, dry	SP			100				Wet zone
22-29'	Well-graded Sandy GRAVEL, trace silt (55% gravel, 35% sand, 10% silt), fine to coarse gravel, fine-medium sand, grey, moist. Rounded to subangular gravel, 2-3" rounded cobbles.	GW							





Well Construction Information

Foundation Type: Stickup	Filter Pack: 2/12 Sand	Ground Surface Elevation (ft): 259.10'
Casing Diameter (inches): 2-inch	Surface Seal: Concrete	Top of Casing Elevation (ft): 262.51'
Screen Slot Size (inches): 0.020	Annular Seal: Bentonite	Boring Abandonment: NA
Screened Interval (ft bgs): 30-60'	Surveyed Location: X: 589364.038 Y: 1052134.071	



FARALLON CONSULTING

975 5th Avenue Northwest
Issaquah, WA 98027

Log of Boring: MW-2

Client: Lakeside Industries
Project: Waldrick Pit
Location: Thurston County, WA
Farallon PN: 525-004
Logged By: Ken Scott

Date/Time Started: 10/22/2007 1420
Date/Time Completed: 10/22/2007 1530
Equipment: Spider Track-rig
Drilling Company: Boart Longyear
Drilling Foreman: Brian Owens
Drilling Method: Sonic

Sampler Type: Continuous 10' barrel
Drive Hammer (lbs.): NA
Depth of Water ATD (ft bgs): 12.5' bgs
Total Boring Depth (ft bgs): 31' bgs
Total Well Depth (ft bgs): 31' bgs

Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0 - 2.0'	Poorly-graded Silty SAND, minor gravel (50% sand, 40% silt, 10% gravel), fine-medium sand, coarse gravel, dark brown, moist. Gravel is rounded	SM			NA	NA	NA	NA	Stickup Concrete
2.0-3.5'	Sandy SILT, trace gravel (50% silt, 45% sand, 5% gravel), fine-medium sand, coarse gravel, dark brown, moist. Gravel is rounded.	ML							Bentonite
3.5-8.5'	Gravelly poorly-graded SAND, minor silt (50% sand, 35% gravel, 15% silt), fine-medium sand, coarse gravel, brown, moist. Gravel is rounded	SM							
8.5-10'	Poorly-graded SAND with gravel, trace silt (65% sand, 30% gravel, 5% silt) fine-medium sand, coarse gravel, brown, moist-wet. Observed water~9.5' bgs	SP							Final water-level 10/15/07
10 - 12'	Well-graded GRAVEL, minor sand, trace silt (80% gravel, 15% sand, 5% silt), fine-coarse gravel, fine-medium sand, brown, wet.	GW		100					Screen ATD
12-21'	Poorly-graded SAND, trace silt (95% sand, 5% silt) fine sand, tan, wet.	SP							
	Observed red-mottling at 20' bgs.	ML							
21-24'	Sandy SILT, minor gravel and sand (40% silt, 30% sand, 30% gravel), fine sand, coarse gravel, grey, moist. Gravel is rounded	ML							
24-26'	SILT with sand (75% silt, 25% sand), fine sand, grey, moist.	RK							Sand

27-31' SILTSTONE (100% silt), light-green, dry

100

Cap

Well Construction Information

Instrument Type: Stickup

Casing Diameter (Inches): 2-Inch

Screen Slot Size (Inches): 0.020

Screened Interval (ft bgs): 5-30' bgs

Filter Pack: 2/12 Sand

Surface Seal: Concrete

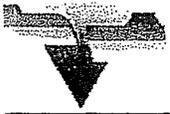
Annular Seal: Bentonite

Ground Surface Elevation (ft): 215.63'

Top of Casing Elevation (ft): 218.10'

Boring Abandonment: NA

Surveyed Location: X: 590852.826' Y: 1053291.383'



Client: Lakeside Industries
Project: Waldrick Pit
Location: Thurston County, WA

Farallon PN: 525-004

Logged By: Ken Scott

Date/Time Started: 10/23/2007 1130
Date/Time Completed: 10/23/2007 1515
Equipment: Spider Track-rig
Drilling Company: Boart Longyear
Drilling Foreman: Brian Owens
Drilling Method: Sonic

Sampler Type: Continuous 10' barrel
Drive Hammer (lbs.): NA
Depth of Water ATD (ft bgs): 52.05'
Total Boring Depth (ft bgs): 70' bgs
Total Well Depth (ft bgs): 70' bgs

Depth (ft bgs)	Sample Interval	Lithologic Description	USCS	USGS Graphic	% Recovery	Blow Counts 8/8/8	PID (units)	Sample ID	Sample Analyzed	Boring/Well Construction Details
0-4"		Concrete slab pad	CO			NA	NA	NA	NA	Stickup Concrete
4"-11.0'		Well-graded GRAVEL, minor sand, trace silt (80% gravel, 15% sand, 5% silt), fine-coarse gravel, medium-coarse sand, brown, moist. Gravel is rounded, cobbles are~ 2-3" rounded.	GW							
11-18'		Poorly-graded SAND, trace silt (95% sand, 5% silt) fine sand, fine gravel, tan, moist.	SP							Bentonite
18-36'		Poorly-graded SAND, trace silt (95% sand, 5% silt) fine-medium sand, tan, moist.	SP							

