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SUBSURFACE EXPLORATION SUMMARY

Quadrant Lake Union Center 659 North 34th Street Seattle, Washington Project Number: 1317

April 3, 1995

DRAFT SUBJECT TO REVISION

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Quadrant Lake Union Center 659 North 34th Street Seattle, Washington Project Number: 1317

Prepared for:

Quadrant Lake Union Center 659 North 34th Street Seattle, Washington Project Number: 1317

Prepared by:

Environmental Management Resources, Inc. 2509 152nd Avenue NE, Suite B Redmond, Washington

April 3, 1995



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EXECUTIVE SUMMARY

The main body of the report should be consulted for a detailed discussion of the report findings. Based on the drilling of 27 soil borings, a brief summary of the results of our site evaluation is presented below:

- Drilling: 27 borings, B1 through B27 were drilled to a depth of three to five feet below ground surface (bgs).
- Soils: Based on lithology observed during the drilling and sampling of the borings, site soils generally consist of a surface layer of gravel that is immediately underlain by very dark brown sand, silt and gravel. This layer contains abundant cobbles up to a foot in diameter. The very dark brown sand, silt and gravel is underlain by light-to-dark brown sand, light brown sand and gravel, brown silt, and light gray silt and clay at various locations along the length of the site. The soil in borings B25 through B27 did not have the very dark brown sand, silt and gravel layer at the surface.
- Groundwater: No groundwater table was encountered. However, there was a wet zone at a depth of about one foot in the area around sampling location B19. Because of the water, no sample was collected from this location.
- Analytical Results Soil: The results of the soil sampling analyses indicated that the soil samples did not contain TPH as diesel fuel or heavier oil above the WDOE Model Toxics Control Act Method A compliance level of 200 ppm (Table 1) with the exception of one sample—B27-2.5. This sample contained 630 ppm TPH heavier than diesel fuel. The laboratory analytical report is presented as Appendix D. None of the samples contained detectable concentrations of PCBs. Only two samples, B26-1.5 and B27-1 contained detectable concentrations of PAHs. No carcinogenic PAHs were detected above the WDOE Model Toxics Control Act Method A compliance level of 20 ppm.



1.0 PROJECT DESCRIPTION

This report presents the results of our Phase II Subsurface Soil Exploration conducted for Quadrant Lake Union Center (Quadrant) at their facility in Seattle, Washington (Figure 1). The site is located in the SW 1/4 of the SW 1/4 of Section 18, Township 25 North, Range 4 East of King County, Washington. The property is located immediately south of North 34th Street between Stone Way at its east end and Phinney Avenue North at its west end (Figure 1). The approximate site boundaries, the locations of site structures, the locations of our explorations and other pertinent site information are presented on the Site Plan, Figure 2.

1.1 Background

The site is a former Burlington Northern Railroad right-of-way running alongside and parallel to North 34th Street in the Fremont neighborhood of Seattle (Figure 2). The right-of-way is approximately 3000 feet long and 30 to 40 feet wide. It runs immediately south of North 34th Street between Stone Way at its east end and Phinney Avenue North at its west end. Much of the northern side of the site is a concrete retaining wall ranging in height from 1 to 20 feet. The southern side of the site is bordered by asphalt parking lots, storage areas and buildings.

The eastern third of the site between Aurora Avenue and Stone Way is 90-95% covered with an asphalt parking lot and asphalt bicycle path and a new building on the right-of-way just east of the Aurora Avenue bridge. The site consists of the western two-thirds of the right-of-way and is predominantly unpaved between Aurora Avenue and Phinney Avenue, but contains numerous trailers, storage containers and other miscellaneous vehicles and equipment.

Previous investigation of the site has indicated that there is shallow soil, less than 2 feet below ground surface (bgs), containing elevated levels of petroleum hydrocarbons ranging from 110 ppm to 46,000 ppm along the right-of-way (Figure 3). PCBs and PAHs were also detected along the right-of-way. The first phase of previous soil samples were collected from locations targeted because of visible staining or other potential indicators of petroleum hydrocarbon occurrence. The second phase of previous soil samples were collected from a trench running down the center of the right-of-way. It was concluded from the soil sampling results that approximately 5,200 cubic yards of soil containing petroleum hydrocarbons would have to be remediated between Stone Way and Aurora Avenue North, and approximately 8,650 cubic yards of soil containing petroleum hydrocarbons would have to be remediated between Aurora Avenue North and Phinney Avenue North. This investigation focuses on the western portion of the right-of-way.

1.2 Purpose and Scope

The purpose of this investigation was to: 1) further characterize the soil with regard to petroleum hydrocarbon occurrence between Aurora Avenue North and Phinney Avenue North; 2) determine if groundwater has been impacted under the site; and 3) evaluate the field and laboratory data with regard to current regulatory criteria.

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During this evaluation, EMR performed the following scope of work:

- Drilled 27 soil borings: 24 in the right-of-way and 3 south of the right-of-way
- Submitted selected soil samples from each boring for chemical analysis of TPH by Ecology specified method WTPH-D extended, PCBs and/or PAHs
- Evaluated the accumulated data and prepared this report with recommendations



2.0 SITE CONDITIONS

The site consists of a former railroad right-of-way that is partially covered with asphalt. The former railroad right-of-way is approximately 40 feet wide and 3000 feet long. The eastern third of the site is covered with asphalt, the remaining western third is bare ground. The focus of this investigation was the western two-thirds of the right-of-way and will be referred to as the site from this point on.

The site is being used for storage space with numerous trailers, containers and equipment located on it. The ground surface is predominantly gravel. The site is flat and at an elevation of approximately 15 feet above mean sea level.



3.0 SUBSURFACE EXPLORATION

The subsurface exploration program accomplished for this study consisted of drilling 27 borings (B-1 through B-27) to a depth of three to five feet below the ground surface (bgs) (Figure 4).

3.1 Subsurface Conditions

Based on lithology observed during the drilling and sampling of the borings, site soils generally consist of a surface layer of gravel that is immediately underlain by very dark brown sand, silt and gravel. This layer contains abundant cobbles up to a foot in diameter. The very dark brown sand, silt and gravel is underlain by light-to-dark brown sand, light brown sand and gravel, brown silt, and light gray silt and clay at various locations along the length of the site. The soil in borings B25 through B27 did not have the very dark brown sand, silt and gravel layer at the surface.

No groundwater table was encountered. However, there was a wet zone at a depth of about one foot in the area around sampling location B19. Because of the water, no sample was collected from this location.

3.2 Soil Borings

The site was divided into a sampling grid consisting of 120 cells. A total of 24 borings were drilled in individual cells chosen at random. One boring was drilled in each of the selected grid locations. In addition, three borings were drilled south of the right-of-way to check for TPH. EMR personnel used a hand held two-man post hole digger equipped with a six inch outer diameter auger to drill the borings. Borings were drilled to a maximum depth of five feet below the ground surface. An electric jackhammer was used to break through asphalt and concrete pavement where necessary. All drilling equipment was decontaminated between boring locations.

3.3 Soil Sampling

Discrete soil samples were collected at depths ranging from 1.5 feet to 5 feet bgs to obtain representative samples of the subsurface soil. Samples were collected with a three inch diameter bucket auger. All sampling equipment was decontaminated between sampling points. Soil samples were placed into clean glass jars. Samples were labeled with the boring location and the sampling depth, i.e. B4-3 means boring number B4 from the three foot depth. Soil sampling Quality Assurance/Quality Control (QA/QC) procedures are detailed in Appendix E.

Each soil sample was screened for headspace volatiles in the field using a photoionization detector (PID). There were no PID readings observed above background levels. In addition to PID screening, each sample was classified as to soil lithology in the field using the Unified Soil Classification System (Appendix C).

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4.0 QUANTITATIVE ANALYSES

4.1 Analytical Methods

All of the soil samples were analyzed for total petroleum hydrocarbons as diesel fuel extended to heavier hydrocarbons by WDOE specified method WTPH-D extended. Nine of the samples were analyzed for polychlorinated biphenyls (PCBs). Fourteen of the samples were analyzed for polynuclear aromatic hydrocarbons (PAHs).

4.2 Chemical Analytical Results

The results of the soil sampling analyses indicated that the soil samples did not contain TPH as diesel fuel or heavier oil above the WDOE Model Toxics Control Act Method A compliance level of 200 ppm (Table 1) with the exception of one sample—B27-2.5. This sample contained 630 ppm TPH heavier than diesel fuel. The laboratory analytical report is presented as Appendix D.

None of the samples contained detectable concentrations of PCBs. Only two samples, B26-1.5 and B27-1 contained detectable concentrations of PAHs. No carcinogenic PAHs were detected above the WDOE Model Toxics Control Act Method A compliance level of 20 ppm. These two samples were collected from a depth of 1 to 1.5 feet below the ground surface composed of asphalt. It is possible that the TPH and PAHs detected in the soil samples resulted from small amounts of asphalt inadvertently getting into the soil samples when they were collected.



5.0 CONCLUSIONS

5.1 Subsurface Soil

Field observations of the subsurface soils during boring showed that the top 2 to 2.5 feet of soil is composed of very dark brown sand, silt and gravel. This material is fill that was the former road-bed for the railroad tracks. The soil in borings B25 through B27 did not have the very dark brown sand, silt and gravel layer at the surface.

During this investigation, 27 soil borings, B1 through B27, were advanced to further characterize known TPH, PCB and PAH affected subsurface soils. TPHs, PCBs and PAHs were not detected above the MTCA Method A compliance levels in any of the samples with the exception of B27-2.5 which contained 630 ppm TPH heavier than diesel fuel. The samples indicate that there is no TPH, PCB or PAH contamination of concern at or below a depth of 3 feet below the ground surface. The soil samples that contained low concentrations (<100 ppm) of TPH, B11 through B18, were generally located in the areas corresponding to the previous shallow soil samples containing high concentrations of TPH. In general, these areas are located north of buildings K, M, H and C.

Previous soil samples were collected from the road-bed material and indicate that it contains, in places, higher concentrations of TPH (>200 ppm). The previous soil samples generally targeted isolated areas of visible soil staining. Two of these areas were around railroad track switches, three were at stained areas representing recent spills, and the other locations were located arbitrarily in the centerline of the tracks. The concentrations of TPH near the switches ranged from 400-11,700 ppm and averaged 3,363 ppm. The concentration of TPH at recent spills ranged from 120-46,000 ppm and averaged 13,260 ppm. The concentrations from the arbitrary sample locations ranged from 61-960 ppm and averaged 288 ppm. Clearly the concentration of TPH in the right-of-way away from isolated stained areas is significantly lower than the stained areas. Thus the stained areas are not representative of the right-of-way as a whole.

The TPH present in the shallow soil in the right-of-way is generally concentrated around switches and recent spills. Figure 5 shows that areas where the soil contains elevated levels of TPH. This area totals approximately 31,900 square feet. If the soil containing >200 ppm TPH extends down to 2 feet bgs, a total of 2,363 cubic yards of soil would require treatment/disposal.

5.2 Groundwater

Groundwater was not encountered under the site to the total depth explored (5 feet bgs). Groundwater has not been impacted by the TPH in the soil at this site.



6.0 RECOMMENDATIONS

6.1 Further Investigation

Due to the presence of 630 ppm TPH in soil sample B27-1.5, EMR recommends additional soil borings in the area around boring B27 to confirm and delineate the TPH occurrence. We recommend three to four borings to be drilled through the asphalt down to a depth of two feet. One soil sample from each boring should be collected from a depth of 1.5 to 2 feet bgs. These samples should be analyzed for TPH by method WTPH-D extended. This additional investigation will cost roughly \$3,000-\$4,000.

6.2 Soil Remediation

Based on this current and previous studies of the subsurface soils at this site, there is approximately 2,363 cubic yards of soils containing petroleum hydrocarbons above the MTCA Method A compliance level of 200 ppm (Figures 5) in the right-of-way between Aurora Avenue North and Phinney Avenue North. This TPH impacted soil does not extend below a depth of 2 feet bgs.

Previous reports have detailed the remedial options available for soil containing TPH concentration >200 ppm. These include capping the site, bioremediation, low temperature thermal desorption and soil excavation with landfill disposal. Capping the site with a LDPE liner system or asphalt would limit the future use of the site area for buildings, etc. A previous treatability study conducted by Enviros, Inc. indicated that the TPH in the soil would not effectively biodegrade due to the presence of heavy hydrocarbons and PAHs. Biodegradation is also time intensive requiring a long treatment duration to achieve cleanup levels. On-site low temperature thermal desorption is not practical due to space limitations. Excavation of the soil containing TPH followed by off-site thermal desorption or landfill disposal seem to be the most promising remediation alternatives.

Due to space limitations, it would be best to load the soil directly into dump trucks for transport from the site rather than stockpilling the soil on-site. Excavation, loading, transportation and disposal of the TPH impacted soil in a landfill will cost roughly \$175,000 to \$200,000 depending on the total volume and weight of soil. Excavation, loading, transportation and thermal desorption of the TPH impacted soil will cost roughly \$225,000 to \$250,000 depending on the total volume and weight of soil. Consulting services including confirmation sampling, meetings, reporting and project management will cost roughly \$25,000 to \$35,000.

Disposal 14/401-85 19-11-27,000

75 -104 24,000 - 27,000

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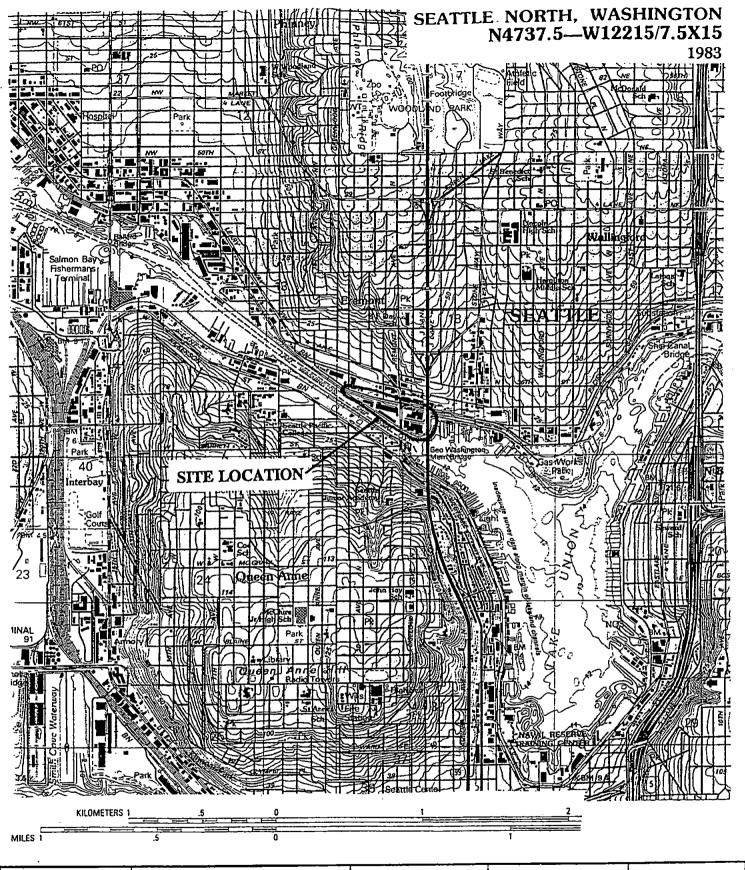
7.0 LIMITATIONS

This assessment was completed following generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area. Geologic and soil formations are inherently random, variable and indeterminate in nature; therefore, the findings and conclusions stated herein must be considered not as scientific certainties, but as professional opinions concerning the significance of the limited data gathered during the assessment. No other warranty, expressed or implied, is made. EMR does not and cannot represent that the site contains no hazardous waste or material, petroleum products, or other latent condition beyond that noted by EMR during the period of site assessment. Reuse of any part of this assessment for any other purpose without EMR's written authorization shall be at Client's risk. The Client agrees to indemnify and hold harmless EMR from all actions, claims, damages, and expense, including attorney fees, arising out of any unauthorized reuse.



APPENDIX A: Figures

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Burlington Northern Railroad Co. Quadrant Center

Subsurface Soil Investigation Site Location Map

Drawn By:

Checked By: TJP

Project Number: 1317

C.I.D:

Scale:

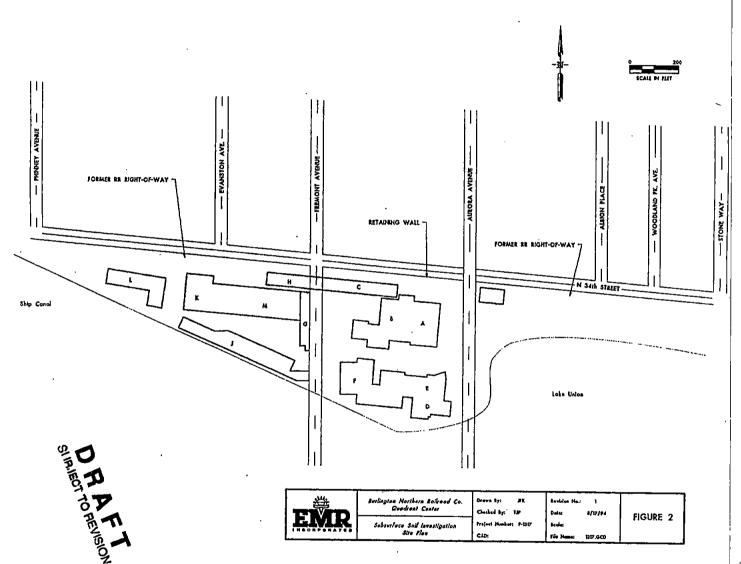
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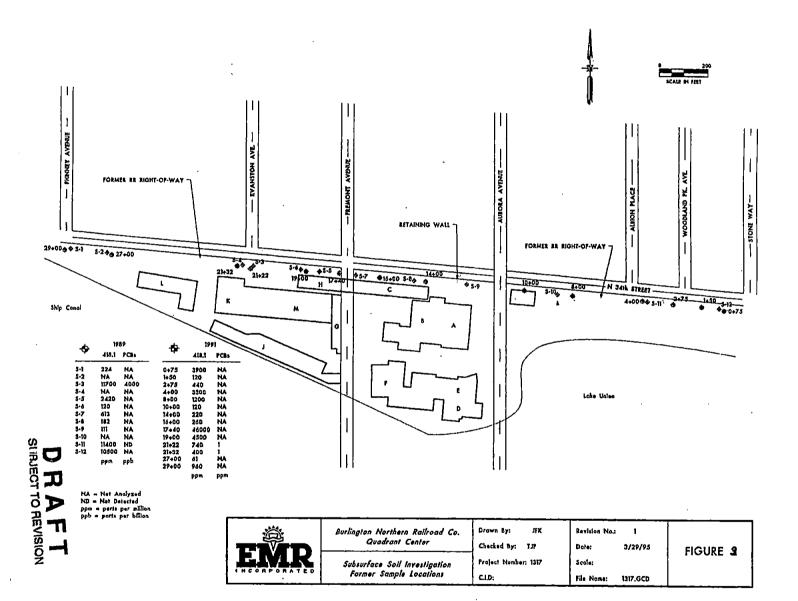
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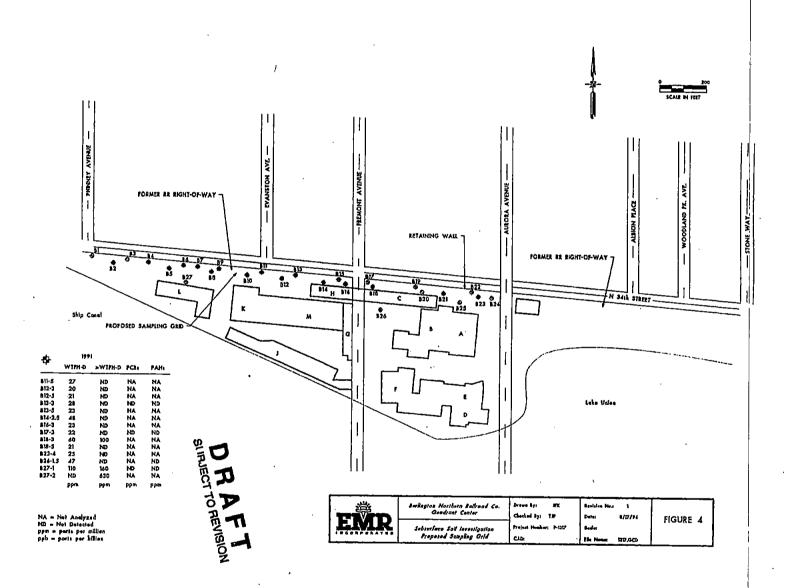
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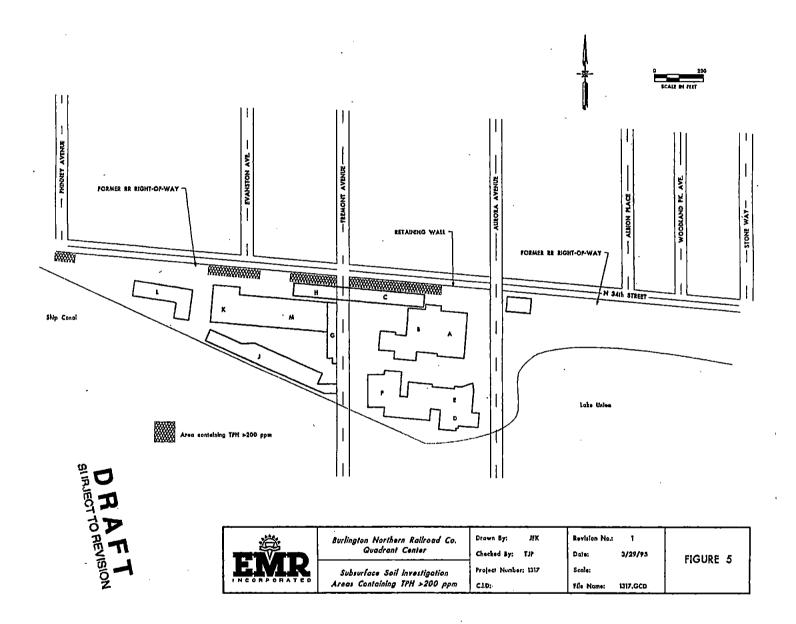
3/29/95

FIGURE 1









APPENDIX B: Tables

TABLE 1
Soil Sample Results
Quadrant Center
Seattle, WA
EMR Project #1317

Soil samples collected 2/7/95 to 2/9/95

		Sample ID	Depth (ft)	Diesel Range Hydrocarbons	> Diesel Range Hydrocarbons	Total PCBs	Total Carcinogenic PAHs	Units
	•	∠B1-3	3	ND	ND	NA	ND	ppm
	3'	∠B1-5	- 5	ND	ND	NA	NA	ppm
		2 B2-3	3	ND	ND	NA	NA	ppm
	24'	∠ B2-5	5	ND	ND	NA	NA	ppm
		/B3-3	3	ND	ND	NA	ND	ppm
	/	∠B3-5	5	ND	ND	NA	NA	ppm
		/B4-3	3	ND	ND	NA	NA	ppm
	2,8	-B4-5	5	ND	ND	NA	NA	ppm
	5 6	∕B5-3	3	ND	ND	ND	ND	ppm
	2.5	[←] B5-5	5	ND	ND	NA	NA	ppm
	5 /	∠B6-3	3	ND	ND	NA	NA	ppm
	3 /	<-B6-5	5	ND	ND ·	NA	NA	ppm
	_ (∕B7-3	· 3	ND	ND	ND	ND	ppm
	3'	► 87-5	5	ND	ND	NA	NA	þþm
*	2-4	∕	3	ND	ND	NA	ND	ppm
X	_	B8-5	5	ND	ND	NA	, NA	ppm
4	2-4	/ B9-3	3	ND	ND	NA	NA	ppm
_	2.1	B9-5	5	ND	ND ~	NA	NA	ppm
	24	/ B10-3	3	ND	ND	ND	ND	ppm
	4.7	€B10-5	5	ND	ND	NA	NA	ppm
	2.4	/B11-3	3	ND	ND	NA	NA	ppm
	6.1	[←] B11-5	. 5	27	ND	NA	NA	ppm
	ے′	/B12-3	3	20	ND	NA	NA	ppm
	ے	B12-5	5	21	ND	NA	NA	ppm
	2'	∕B13-3	3	28	ND	ND	ND	ppm
		B13-5	5 ,	23	ND	NA	NA	ppm
	2.5,-	∽ В14-2.5	2.5	48	ND	NA	NA ND	ppm
.te	3,	一 B15-3	3	ND	ND	NA	NA NA	ppm
41	Ζ',	B16-3	3	23	ND	NA	ND ND	ppm
4.	21	B17-3	3	22	ND ND	ND NA	NA NA	ppm
		B17-4.5	4.5	ND	ND 100	NA NA	NA NA	ppm
	21	B18-3 B18-5	> 3	60	100		NA NA	ppm
	_	-		21	ND	NA ND	ND ND	ppm
	2'	∠ B20-3	3	. ND	ND ND	NA NA	NA NA	ppm
	_	B20-4	4	ND	ND ND	NA NA	NA NA	ppm
	2'	B21-3	3	ND	ND	NA NA	NA NA	ppm
		B21-4.5	4.5	ND ND	ND ND	NA NA	,NA NA	ppm
	2'	— B22-3	3	ND	ND	MA	IVA	ppm

TABLE 1

Soil Sample Results

Quadrant Center

Seattle, WA

EMR Project #1317

Soil samples collected 2/7/95 to 2/9/95

						i otal	
	Sample ID	Depth (ft)	Diesel Range Hydrocarbons	> Diesel Range Hydrocarbons	Total PCBs	Carcinogenic PAHs	Units
21	✓ B23-3	3	ND	ND	ND	ND	ppm
21	S B23-4	4	25	·ND	NA	NA	ppm
-(/ B24-3	3	ND	ND	ND	ND	ppm
21	S24-4	4	ND	ND	NA	NA	ppm
1.6	∕B25-1.5	1.5	ND	ND	ND	ND	ppm
1.4	── B25-4	4	ND	_ ND	NA	NA	ppm
24.	/ B26-1.5	1.5	47 /	4/ 100	NA	0.2	ppm
٠) سم	←B26-4	4	ND	ND	NA	NA	ppm
1.6	/ B27-1	1	110	160	ND	ND .	ppm
1.0	B27-2.5	2.5	ND	630	NA	NA	ppm
	WDOE Cleanu	up Level	200	200 · ;	10	20	ppm

ND = Not Detected

NA = Not Analyzed

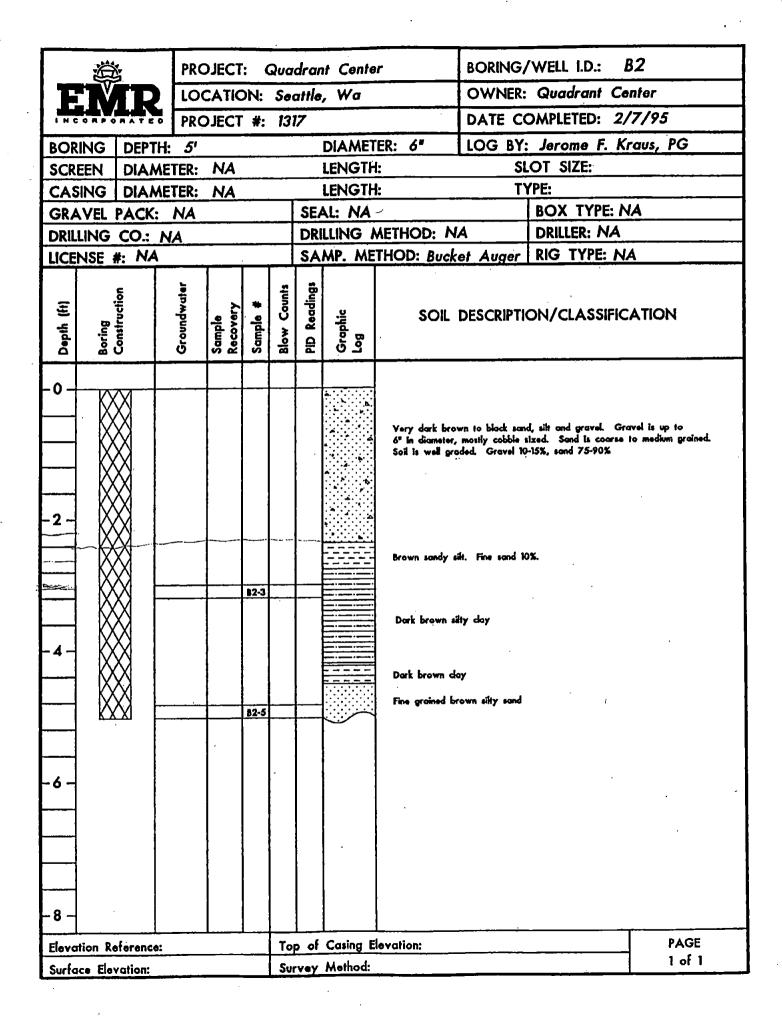
ppm = parts per million

APPENDIX C: Drilling Logs

			PRO	OJEC1	: (Qua	dra	nt Cente	er	BORING	/WELL I.D.:	B1
T	W	D	LO	CATIC	DN:	Se	attle	, Wa		OWNER:	Quadrant Ce	nter
1 N C		TEO	PRO	DJECT	#:	13	17			DATE CO	OMPLETED: 2/	17/95
BOR	ING D	EPTH:	5'			**-		DIAME	TER: 6"	LOG BY:	Jerome F. K	raus, PG
SCR	EEN DI	AME	TER:	NA			•	LENGTI	1 :	SL	OT SIZE:	
CAS	SING DI	AME	TER:	NA				LENGTI	l :	TY	/PE:	
GR/	VEL PA	CK:	NA				_	AL: NA			BOX TYPE: N	IA
	LING CO		<u>'A</u>				-		METHOD: N		DRILLER: NA	<u> </u>
LICE	NSE #:	<u>NA</u>			,		SA	MP. ME	THOD: Buck	et Auger	RIG TYPE: N.	<u>A</u>
Depth (ft)	Boring Construction		Groundwater	Sample Recovery	Sample #	Blow Counts	PID Readings	Graphic Log	SOIL	DESCRIPTIO	ON/CLASSIFIC	ATION
-0-	XX											
			•						Very dark brov	rn to black same	i, silt and gravel. Gra	svel is up to
						•					ized. Sand is coarse: -15%, sand 75-90%	to medium grained
	\otimes									1.		
	KXXI											
-2-		1		}								
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	XXX				B1-3				Gray sandy silt.	Fine sand 103	4.	_
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-4-									Brown sand an	d gravel		
\vdash	XXX								Dark brown silt:	, dan		
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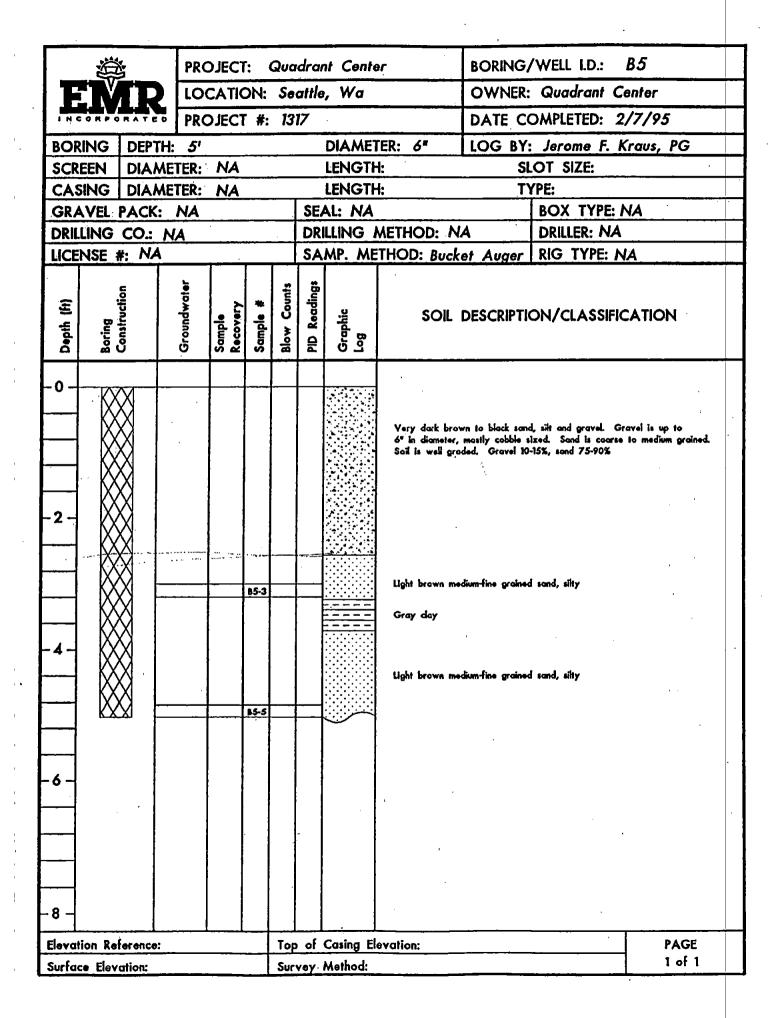
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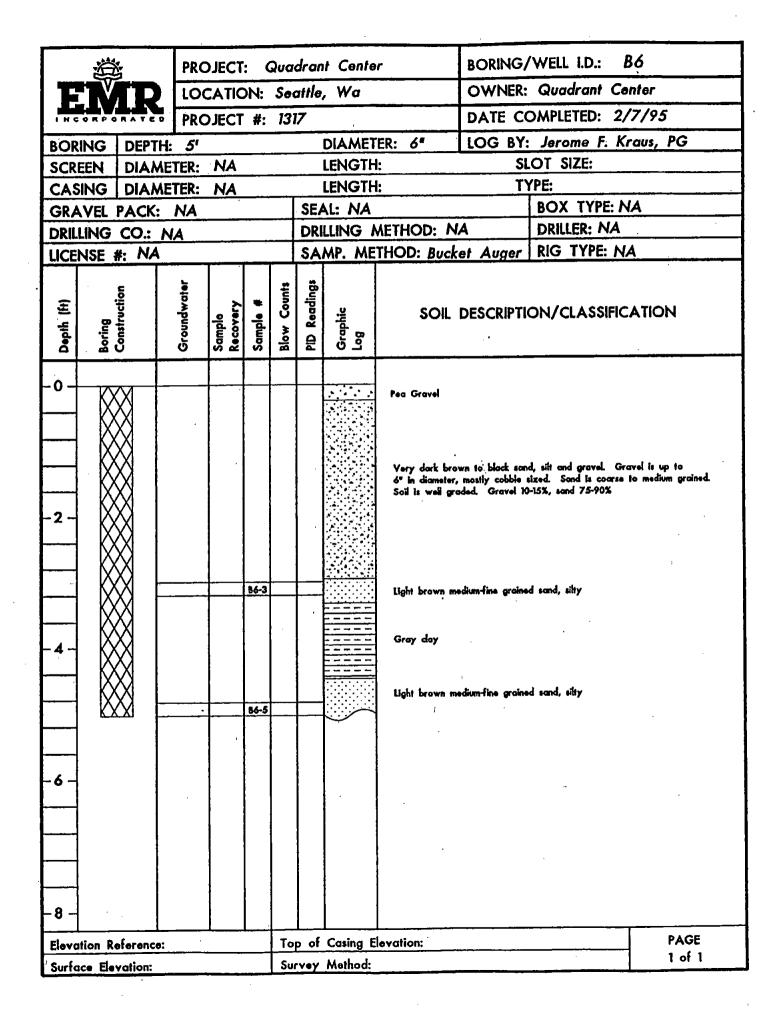


B3 BORING/WELL I.D.: PROJECT: Quadrant Center OWNER: Quadrant Center LOCATION: Seattle, Wa DATE COMPLETED: 2/7/95 PROJECT #: 1317 DIAMETER: 6" LOG BY: Jerome F. Kraus, PG DEPTH: 5' BORING | SLOT SIZE: SCREEN DIAMETER: NA LENGTH: TYPE: LENGTH: CASING | DIAMETER: NA BOX TYPE: NA SEAL: NA GRAVEL PACK: NA DRILLER: NA DRILLING METHOD: NA DRILLING CO .: NA SAMP. METHOD: Bucket Auger | RIG TYPE: NA LICENSE #: NA Boring Construction Blow Counts Ξ Sample Recovery Graphic Log SOIL DESCRIPTION/CLASSIFICATION Sample Depth O. Very dark brown to black sand, silt and gravel. Gravel is up to 6° in diameter, mostly cobble sixed. Sand is coarse to medium grained. Soil is well graded. Gravel 10-15%, sand 75-90% 2 -Brown sandy silt. Fine sand 10%. 83-3 Gray day Dark brown day Fine grained brown silty sand 83-5 6. 8 -**PAGE** Top of Casing Elevation: Elevation Reference: 1 of 1 Survey Method: Surface Elevation:

			PRC	JECT	· (Qua	dran	t Cente	r	BORING/	WELL I.D.:	34
7	V	TD	LOC	ATIC	DN:	Sec	attle	, Wa	•	OWNER:	Quadrant Ce	nter
ING		RATED		JECT				<u> </u>		DATE CO	OMPLETED: 2/	7/95
BOR	ING	DEPTH	: 5'					DIAMET	ER: 6*	LOG BY:	Jerome F. Ki	raus, PG
		DIAME		NA		-		LENGTH	:	SL	OT SIZE:	
		DIAME			-			LENGTH	•	ŢY	PE:	
		PACK:				\neg	SE/	AL: NA			BOX TYPE: N	IA
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		: NA					SA	MP. ME	THOD: Buck	et Auger	RIG TYPE: N	4
Depth (ft)	Boring	Construction	Groundwater	Sample Recovery	Sample #	Blow Counts	PID Readings	Graphic Log	SOIL	DESCRIPTIO	ON/CLASSIFIC	ATION
-4-					B.4-3				6' in diameter, Soil is well gra Light brown me Gray day	mostly cobble s		svel is up to to medium grained.
-8-				<u> </u>			<u> </u>					
	ition Re	ference:						Casing E Method:	levation:			PAGE 1 of 1

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			PRC)JEC1	Γ: (Qua	drai	nt Cente	or	BORING/	WELL I.D.:	37
F		ľR) LO	CATIO	ON:	So	attle	, Wa		OWNER:	Quadrant Ce	nter
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BOF	ING	DEPT	H: <i>5</i> ′				,	DIAMET	ER: 6"	LOG BY:	Jerome F. Kı	raus, PG
SCR	EEN	DIAM	AETER:	NA				LENGTH	{ :		OT SIZE:	
				NA				LENGTH	<u>{: </u>	TY	PE:	
	VEL							AL: NA			BOX TYPE: N	<u> </u>
	LING	-	•				_		METHOD: NA		DRILLER: NA	4
LICE	NSE #	F; NA	·	1	<u></u>		SA T	MP. ME	THOD: Bucke	et Auger	RIG TYPE: N.	3
Depth (ft)	Boring	Construction	Groundwater	Sample Recovery	Sample #	Blow Counts	PID Readings	Graphic Log	SOIL	DESCRIPTIO	ON/CLASSIFIC	ATION
Lo-												ν.
Ľ		$X \mid$							Pea Gravel			
	X	XI I										
	$ \hspace{.1cm} \rangle \rangle$	\lozenge							••		•	,
	X	$\langle \rangle$							ó" in diameter,	mostly cobble si	l, silt and gravel. Gra ized. Sand is coarse (vel is up to
	X								Soil is well grad	ded. Gravel 10-	15%, sand 75-90%	,
-2-	X	$X \perp$										
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	$\langle X \rangle$	XI F			B7-3				Light brown med	dium-fine grained	sand, silty	
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	$\langle X \rangle$	Ω						-,				
	X	X							Light brown med	dium-fine grained	sand, silty	
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Flavo	ion Ref	erence				Tor	ام د	Casing El	evation:			PAGE
	ce Elev							Method:				1 of 1

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PROJECT: Quadrant Center LOCATION: Seattle, Wa OWNER: Quadrant Center PROJECT #: 1317 DATE COMPLETED: 2/7/95 BORING DEPTH: 5' DIAMETER: 6" LOG BY: Jerome F. Kraus, PG SCREEN DIAMETER: NA LENGTH: SLOT SIZE: CASING DIAMETER: NA LENGTH: TYPE: GRAVEL PACK: NA SEAL: NA BOX TYPE: NA DRILLING CO.: NA DRILLING METHOD: NA DRILLER: NA LICENSE #: NA SAMP. METHOD: Bucket Auger RIG TYPE: NA LICENSE #: NA SOIL DESCRIPTION/CLASSIFICATION Light brown sand, sit and gravel. Gravel is up to 6' in diameter. Sand is coarse to medium grained. Sail is well graded. Gravel 10-15%, sand 75-90% Very dark brown to block sand, sit and gravel. Gravel is up to 6' in diameter. Sand is coarse to medium grained. Sail is well graded. Gravel 10-15%, sand 75-90%		***		PPO	IECT	. ()ua	dean	t Cente	r	BORING/	WELL I.D.:	18
BORING DEPTH: 5' DIAMETER: 6" LOG BY: Jerome F. Kraus, PG SCREEN DIAMETER: NA LENGTH: SLOT SIZE: CASING DIAMETER: NA LENGTH: TYPE: GRAVEL PACK: NA SEAL: NA BOX TYPE: NA DRILLING CO.: NA DRILLING METHOD: NA DRILLER: NA LICENSE #: NA SAMP. METHOD: Bucket Auger RIG TYPE: NA LICENSE #: NA SAMP. METHOD: Bucket Auger RIG TYPE: NA LIGHT brown sond, sift and gravel. Gravel is up to 6' in diameter. Sand is coarse to medium grained. Soil is well graded. Gravel 10-15%, sand 75-90% Very dark brown to block sond, sift and gravel. Gravel is up to 6' in diameter. Sand is coarse to medium grained. Soil is well graded. Gravel 10-15%, sand 75-90%	7		n		places with	-	- V	-					
BORING DEPTH: 5' DIAMETER: 6" LOG BY: Jerome F. Kraus, PG SCREEN DIAMETER: NA LENGTH: SLOT SIZE: CASING DIAMETER: NA LENGTH: TYPE: GRAVEL PACK: NA DRILLING METHOD: NA DRILLING CO.: NA LICENSE #: NA SAMP. METHOD: Bucket Auger RIG TYPE: NA LICENSE #: NA SOIL DESCRIPTION/CLASSIFICATION Pea Gravel Light brown sond, silt and gravel. Gravel is up to 6' in diameter. Sord is course to medium grained. Soil is well graded. Gravel 10-15%, sand 75-90%.		TVI	K		-	THE PARTY NAMED IN	to Maria	THE REAL PROPERTY.	, , ,		-	The second secon	
SCREEN DIAMETER: NA LENGTH: SLOT SIZE: CASING DIAMETER: NA LENGTH: TYPE: GRAVEL PACK: NA SEAL: NA BOX TYPE: NA DRILLING CO.: NA DRILLING METHOD: NA DRILLER: NA LICENSE #: NA SAMP. METHOD: Bucket Auger RIG TYPE: NA SOIL DESCRIPTION/CLASSIFICATION Fea Gravel Light brown and, silt and gravel. Gravel is up to 6° in diameter. Sand is coarse to medium grained. Sail is well graded. Gravel 10-15%, sand 75-90%.					JECT	₩.	13		DIAMET	ED. 48	-		
CASING DIAMETER: NA LENGTH: TYPE: GRAVEL PACK: NA DRILLING CO.: NA DRILLING METHOD: NA LICENSE #: NA SAMP. METHOD: Bucket Auger SOIL DESCRIPTION/CLASSIFICATION Pea Gravel Light brown sand, silt and gravel. Gravel is up to 65 in diameter. Sand is coarse to medium grained. Sail is well graded. Gravel 10-15%, sand 75-90%.					NA						The second secon	The state of the s	dos, ro
GRAVEL PACK: NA DRILLING CO.: NA DRILLING METHOD: NA DRILLER: NA LICENSE #: NA SAMP. METHOD: Bucket Auger RIG TYPE: NA SOIL DESCRIPTION/CLASSIFICATION Pea Gravel Light brown sand, silt and gravel. Gravel is up to 6' in diameter. Sand is coarse to medium grained. Sail is well graded. Gravel 10-15%, sand 75-90% Very dark brown to block sand, silt and gravel. Gravel is up to 5' in diameter. mostly cobble sized. Sond is coarse to medium grained. Sail is well graded. Gravel 10-15%, sand 75-90%					-								
DRILLING CO.: NA LICENSE #: NA SAMP. METHOD: Bucket Auger RIG TYPE: NA SOIL DESCRIPTION/CLASSIFICATION Fea Gravel Light brown sand, sift and gravel. Gravel is up to 6° in diameter. Sand is coarse to medium grained. Sail is well graded. Gravel 10-15%, sand 75-90% Very dark brown to black sand, sift and gravel. Gravel is up to 6° in diameter, mostly dobble sized. Sand is coarse to medium grained. Sail is well graded. Gravel 10-15%, sand 75-90%				-	110					• • • • • • • • • • • • • • • • • • • •			A
LICENSE #: NA SAMP. METHOD: Bucket Auger RIG TYPE: NA SOIL DESCRIPTION/CLASSIFICATION Page Gravel Light brown sand, silt and gravel. Gravel is up to 6° in diameter. Sand is coarse to medium grained. Sail is well graded. Gravel 10-15%, sand 75-90% Very dark brown to block sand, silt and gravel. Gravel is up to 6° in diameter, mostly cobble sized. Sand is coarse to medium grained. Sail is well graded. Gravel 10-15%, sand 75-90%							\neg			AETHOD: N	A	DRILLER: NA	211,00
Pea Gravel Light brown sand, silt and gravel. Gravel is up to 6° in diameter. Sand is coarse to medium grained. Soil is well graded. Gravel 10-15%, sand 75-90% Very dark brown to black sand, silt and gravel. Gravel is up to 6° in diameter, mostly cobble sized. Sand is coarse to medium grained.		-						SA	MP. ME	THOD: Buck	et Auger	RIG TYPE: N	4
Light brown sand, silt and gravel. Gravel is up to 6" in diameter. Sand is coarse to medium grained. Soil is well graded. Gravel 10-15%, sand 75-90% Very dark brown to black sand, silt and gravel. Gravel is up to 6" in diameter, mostly cobble sized. Sand is coarse to medium grained. Sal is well graded. Gravel 10:15%, sand 75-90%	Depth (ft)	Boring Construction		Groundwater	Sample Recovery	Sample #	Blow Counts	PID Readings	Graphic Log	\$OIL	DESCRIPTIO	ON/CLASSIFIC	ATION
6° in diameter. Sand is coarse to medium grained. Sail is well graded. Gravel 10-15%, sand 75-90% Very dark brown to black sand, silt and gravel. Gravel is up to 6° in diameter, mostly cobble sized. Sand is coarse to medium grained. Sail is well graded. Gravel 10:15%, sand 75-90%	-0-									Pea Gravel		9	
6" in diameter, mostly cobble sixed. Sand is coarse to medium grained.	-2-									ó" in diameter.	Sand is coarse	to medium grained.	
			_			88-3				6" in diameter,	mostly cobble s	ixed. Sand is coarse	rvel is up to to medium grained.
Light brown sand, silt and gravel. Gravel is up to 6" in diameter. Sand is coarse to medium grained. Soil is well graded. Gravel 10-15%, sand 75-90%						B8-5				6" in diameter.	Sand is coarse	to medium grained.	
-6-	-6-						,						
-8 - Elevation Reference: Top of Casing Elevation: PAGE		ain Defe-					To	n of	Casina F	evation:			PAGE
Surface Elevation: Survey Method:										VIUIVIA			

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		IR	ro	CATIO	ON:	Se	attle	, Wa		OWNER:	Quadrant C	enter
i N c	CORPO	RATEO	PRC)JEC1	#:	13	17		- -	DATE CO	OMPLETED: 2	17/95
	RING	DEPTH:						DIAME	TER: 6"	LOG BY:	Jerome F. k	Kraus, PG
	EEN	DIAME						LENGTH			OT SIZE:	
		DIAME		NA			F ==	LENGTH	<u>l: </u>	<u>T</u> \	PE:	
		ACK:					_	AL: NA	VI		BOX TYPE: /	VA
	NSE #	CO.: N	<u>A</u>			-	_		METHOD: N		DRILLER: NA	
						<u> </u>	Ĭ	Mr. ME	THOU: BUCKE	er Auger	RIG TYPE: N	IA
Depth (ft)	Boring Construction		Groundwater	Sample Recovery	Sample #	Blow Counts	PID Readings	Graphic Log	SOIL I	DESCRIPTIO	ON/CLASSIFIC	CATION
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	\bigvee								Pea Gravel			
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	XX					ļ			ó° in diameter.	Sand is coarse	al. Gravel is up to to medium grained.	
	\bigotimes				j				Soil is well grad	ed. :Gravel 10-	15%, sand 75-90%	
-2-	XX				ĺ							
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	· XX				-				Very dark brow	n to black sand,	, silt and gravel. Gr	avel is up to
		≬			B9-3				ó" in diameter, s Soil is well grad	nostly cobble si ed. Gravel 10-1	xed. Sand is coarse 15%, sand 75-90%	to medium grained.
\Box	\bowtie											
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\dashv	\boxtimes				19-5				Soil is well grad	ed. Gravel 10-1	5%, sand 75-90%	
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		PRC	JECT	: (Qua	drai	nt Cente	r	BORING/	WELL I.D.: I	310
F	MD	LO	CATIC	N:	Se	attle	, Wa		OWNER:	Quadrant Ce	nter
ING	ORPORATE	PRC	JECT	#:	131	7			DATE CO	OMPLETED: 2/	8/95
BOR	ING DEPT	H: <i>5</i> ′	·				DIAMET	ΈR: 6"	LOG BY:	Jerome F. Ki	raus, PG
SCR	EEN DIAM	AETER:	NA				LENGTH	<u> :</u>	±	OT SIZE:	
CAS	ING DIAN	AETER:	NA				LENGTH	:	TY	PE:	
	VEL PACK						AL: NA		· · · · · · · · · · · · · · · · · · ·	BOX TYPE: N	A
	LING CO.:							METHOD: N		DRILLER: NA	<u> </u>
LICE	NSE #: NA	1		·	-	SA 	Mr. ME	THOD: Buck	et Auger	RIG TYPE: N	1
Depth (ft)	Boring Construction	Groundwater	Sample Recovery	Sample #	Blow Counts	PID Readings	Graphic Log	SOIL	DESCRIPTIO	ON/CLASSIFIC	ATION
-0-						-		Pea Gravel			
-2-								ó" in diameter,	mostly cobble si	i, silt and gravel. Gra ized. Sand is coarse l 15%, sand 75-90%	wel is up to to medium grained.
				B10-3				Light brown si	Hy sand, very fi	ine grained	
				B10-5				Light brown so	and, medium grai	ined	,
-6-		:									
-8-		-									
	tion Reference				Tor	o of	Casing El	evation:	<u>.</u>		PAGE
	ce Elevation:		-				Method:				1 of 1

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T	V	TD	LO	CATIO	DN:	Se	attle	, Wa	<u></u>	OWNER:	Quadrant Ce	enter
IN	0 1 0	RATEC	PRC	JECT	#:	13	17			DATE CO	OMPLETED: 2	/8/95
BOR	ING	DEPTI	H: 5'					DIAMET	ER: 6"	LOG BY:	Jerome F. K	raus, PG
SCR	EEN	DIAM	ETER:	NA				LENGTH	l:	SL	OT SIZE:	•
CAS	SING	DIAM	ETER:	NA				LENGTH	l:	T	/PE:	
GR/	VEL F	ACK:	NA					AL: NA			BOX TYPE: N	<i>IA</i>
	LING								METHOD: N		DRILLER: NA	.
LICE	NSE #	: NA		· ·		لــــا	SA	MP. ME	THOD: Buck	et Auger	RIG TYPE: N.	<u>A</u>
Dopth (ft)	Boring		Groundwater	Sample Recovery	Sample #	Blow Counts	PID Readings	Graphic Log	SOIL (DESCRIPTIO	ON/CLASSIFIC	HOITA
-0-	77.7							e e e e e e e e				
	I XX	XI I				j						
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			;						Very derk bree	un tá black sons	l, silt and gravel. Gra	avel le un to
	l XX	X							6º in diameter,	mostly cobble si	ized. Sand is coarse 15%, sand 75-90%	to medium grained.
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	X								Light brown so	and, medium-coor	rse grained	
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Eleva	tion Ref	erence:				Top	of	Casing El	evation:			PAGE
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		PR	OJECT	ī: (Qua	drai	nt Cente	or	BORING	WELL I.D.:	312
	WD	ΙO	CATIO	DN:	Se	attle	, Wa		OWNER:	Quadrant Ce	nter
ING	ORPORATE	PRO	OJECT	#:	13	17			DATE CO	OMPLETED: 2/	/8/95
BOR	RING DEPT	H: 5'					DIAMET	ER: 6"	LOG BY:	Jerome F. K	raus, PG
SCR	EEN DIAM	AETER:	NA				LENGTH			OT SIZE:	
	SING DIAN		NA				LENGTH	ł:	<u> </u>	/PE:	- 4
	VEL PACK						AL: NA	VETUOD M	4	BOX TYPE: N	IA
	LING CO.:		-					METHOD: N		DRILLER: NA	<u> </u>
LICE	NSE #: NA		T -			SA T	Mr. ME	THOD: BUCK	er Auger	RIG TYPE: N.	A
Depth (ft)	Boring Construction	Groundwater	Sample Recovery	Sample #	Blow Counts	PID Readings	Graphic Log	SOIL	DESCRIPTIO	ON/CLASSIFIC	ATION
-0-							100000000			•	,
								6º in diameter.	mostly cobble s	d, silt and gravel. Graixed. Sand is coarse 1-15%, sand 75-90%	ivel is up to to medium grained.
-2-			ľ								
				812-3							
-4-								Light brown so	and, fine-medium	grained	
	K.X.XI			B12-5							
-6-					,						
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										,	
-8-											,
Eleva	tion Reference	:			To	p of	Casing E	levation:			PAGE
Surfa	ce Elevation:				Sur	vey	Method:				1 of 1

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	PROJECT:				or			B13
EMR	LOCATION:			, Wa	:		Quadrant Ce	
INCORPORATED	PROJECT #:	13		· · · · ·			OMPLETED: 2/	
BORING DEPTH:				DIAMET			Jerome F. K	raus, PG
SCREEN DIAME				LENGTH	 		OT SIZE:	
	TER: NA			LENGTH	l:	11	PE:	
GRAVEL PACK:				AL: NA	AETHOD. M	<u> </u>	BOX TYPE: N	(A
DRILLING CO.: N. LICENSE #: NA	Α		-		METHOD: NA		DRILLER: NA RIG TYPE: NA	<u> </u>
				Mr. ML	THOU. BUCK	er Auger	RIG TIFE. M	
Depth (ft) Boring Construction	Groundwater Sample Recovery Sample #	Blow Counts	PID Readings	Graphic Log	SOIL	DESCRIPTIO	ON/CLASSIFIC	ATION
-2-		-			6° in diameter,	mostly cobble si	, sile and gravel. Gra zed. Sand is coarse (15%, sand 75-90%	ivel is up to to medium grained.
4-	B13-3				Greenish/grays Gray silty day	and, fine-medium	grained	
	813-5				Gray Mily day			
-6-			·					
Elevation Reference:				Casina El		.	<u> </u>	PAGE
Surface Elevation:				Casing Ele Method:	evation:			PAGE 1 of 1

PROJECT:						Qua	dra	nt Cente	or	BORING/WELL I.D.: B14		
T	FND LOCATION:					So	attle	, Wa		OWNER: Quadrant Center		
I N	CORPO	RATE	PRO	DJECT	#:	13	17			DATE CO	OMPLETED: 2/	/8/95
BO	RING	DEPT	H: 2.5	5'				DIAMET	ER: 6"	LOG BY:	Jerome F. K	raus, PG
SCR	REEN	DIAN	AETER:	NA				LENGTH	l:	SL	OT SIZE:	
CA	SING	DIAN	AETER:	NA				LENGTH	l:	T	PE:	
GR.	AVEL I	ACK	: NA		_		SE	AL: NA			BOX TYPE: N	IA
	DRILLING CO.: NA								METHOD: N		DRILLER: NA	
LICE	NSE #	: NA	1	т	_	لـــا	SA	MP. ME	THOD: Bucke	et Auger	RIG TYPE: N.	<u> </u>
Depth (ft)	Depth (ft) Boring Construction Groundwater Sample Recovery						PID Readings	Graphic Log	SOIL I	ATION		
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<u> </u>	$ \hspace{.1cm} \rangle \rangle$	$\langle 1 1 \rangle$									~	
ļ						-			l, silt and gravel. Gra	svel is up to		
									6" in diameter, Soil is well grad	Ized. Sand is coarse 15%, sand 75-90%	4. Sand is coarse to medium grained. 6, sand 75-90%	
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	l KX	XI I			814-2	5	-					•
<u> </u>		.							Light brown grav	elly sand, cobbl	6 5	
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	tion Ref		:					Casing El	evation:			PAGE 1 of 1

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PROJECT:							drai	nt Cente	or .	BORING/WELL I.D.: B15				
		TD	LO	CATIO	DN:	Se	attle	, Wa		OWNER: Quadrant Center				
1 11		RATED	PRO	DJEC1	#:	13	17			DATE CO	OMPLETED: 2,	/8/95		
ВО	RING	DEPTH	i: 2.5					DIAMET	ER: 6"	LOG BY:	LOG BY: Jerome F. Kraus, PG			
1	EEN	DIAM						LENGTH	l:		OT SIZE:	·		
CAS	SING	DIAM	ETER:	NA				LENGTH	l:	TYPE:				
GR/	AVEL F	ACK:	NA				SE	AL: NA		BOX TYPE: NA				
		CO.: 1	NA_				-		METHOD: N					
LICE	NSE #	: NA	:	т.			SA	MP. ME	THOD: Buck	et Auger	RIG TYPE: N	<u>A</u>		
Depth (ft)	Depth (ft) Boring Construction Groundwater Sample Recovery						PID Readings	Graphic Log	SOIL	DESCRIPTION	ON/CLASSIFIC	ATION		
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ļ									Very dark brov	vn to black sand	l, silt and gravel. Gra	ivel is up to		
									ó" in diameter, Soil is well gra	mostly cobble si ded. Gravel 10-	ized. Sand is coarse 15%, sand 75-90%	to medium grained.		
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	IX X	XII		.										
	\bowtie	ă I							:					
	\bigotimes	Ø E	·.		815-3				Light brown grav	elly sand, cobbl	••			
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Eleva	tion Ref	erence:				Top	of	Casing El	evation:			PAGE		
	Surface Elevation:							Method:				1 of 1		

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	***	PRC	DJECT		 Qua	drai	nt Cente	· ·	BORING/WELL I.D.: B16				
LOCATION:								•	OWNER: Quadrant Center				
	ORPORATE	<u> </u>	JECT			_		·		OMPLETED: 2/8			
100	ING DEPT	H: 4'					DIAMET	FR- 6"		Jerome F. Kro			
		AETER:	NA			_	LENGTH			OT SIZE:	,		
	SING DIAM		\leftarrow				LENGTH	·	TYPE:				
	VEL PACK						AL: NA			BOX TYPE: NA			
	LING CO.:					DR	ILLING A	METHOD: N	A	DRILLER: NA			
LICE	NSE #: NA					SA	MP. ME	THOD: Buck	et Auger	RIG TYPE: NA			
Depth (ft)	Boring Construction	Groundwater	Sample Recovery	Sample #	Blow Counts	PID Readings	Graphic Log	SOIL 1	SOIL DESCRIPTION/CLASSIFICATION				
-2-				B16-3				ó" in diameter,	mostly cobble si ded. Gravel 10- vally sand, cobble	i, silt and gravel. Grave ized. Sand Is coarse to 15%, sand 75-90%	il is up to medium grained.		
-6-													
							Top of Casing Elevation: Survey Method: PAGE 1 of 1						

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R17 PROJECT: Quadrant Center BORING/WELL I.D.: LOCATION: Seattle, Wa OWNER: Quadrant Center PROJECT #: 1317 DATE COMPLETED: 2/8/95 BORING LOG BY: Jerome F. Kraus, PG DEPTH: 4.5' DIAMETER: 6" SCREEN DIAMETER: NA LENGTH: SLOT SIZE: CASING | DIAMETER: NA LENGTH: TYPE: GRAVEL PACK: NA SEAL: NA BOX TYPE: NA DRILLING CO.: NA DRILLING METHOD: NA DRILLER: NA LICENSE #: NA SAMP. METHOD: Bucket Auger RIG TYPE: NA **Boring** Construction Readings Sample Recovery Graphic Log SOIL DESCRIPTION/CLASSIFICATION 0 Very dark brown to black sand, silt and gravel. Gravel is up to 6° in diameter, mostly cobble sized. Sand is coarse to medium grained. Sail is well graded. Gravel 10-15%, sand 75-90% 2 Light brown sand, silt and gravel. Gravel is up to BT-3 6" in diameter, mostly cobble sized. Sand is coarse to medium grained. Soil is well graded. Gravel 10-15%, sand 75-90% BT-45 6. 8 -Elevation Reference: **PAGE** Top of Casing Elevation: 1 of 1 Surface Elevation: Survey Method:

	PROJECT: Qu	adrant Cente	er	BORING/WELL I.D.: B18							
FMD	LOCATION: S	eattle, Wa		OWNER: Quadrant Center							
INCORPORATED	PROJECT #: 1	317		DATE CO	OMPLETED: 2/8/95						
BORING DEPTH:	······································										
SCREEN DIAME	TER: NA	LENGTH	 	SL	OT SIZE:						
CASING DIAME	TER: NA	LENGTI	1 :	TY	'PE:						
GRAVEL PACK:	NA	SEAL: NA	· · · · · · · · · · · · · · · · · · ·		BOX TYPE: NA						
DRILLING CO.: N	<u>A</u>		METHOD: NA		DRILLER: NA						
LICENSE #: NA		SAMP. ME	THOD: Bucke	et Auger	RIG TYPE: NA						
Depth (ft) Boring Construction	Groundwater Sample Recovery Sample #	PID Readings Graphic Log	SOIL I	DESCRIPTIO	ON/CLASSIFICATION						
0				· .							
-2-			6" in diameter, Soil is well grad	mostly cobble si led : Gravel 10-	l, silt and gravel. Gravel is up to xed. Sand is coarse to medium grained. 15%; sand 75-90%						
-4-	B18-3		Brown sand wi	ith some gravel	d with some gravel						
-6-	818-5		Commit & al								
-8 -			-								
Elevation Reference: Surface Elevation:		p of Casing Elervey Method:	evation:		PAGE 1 of 1						

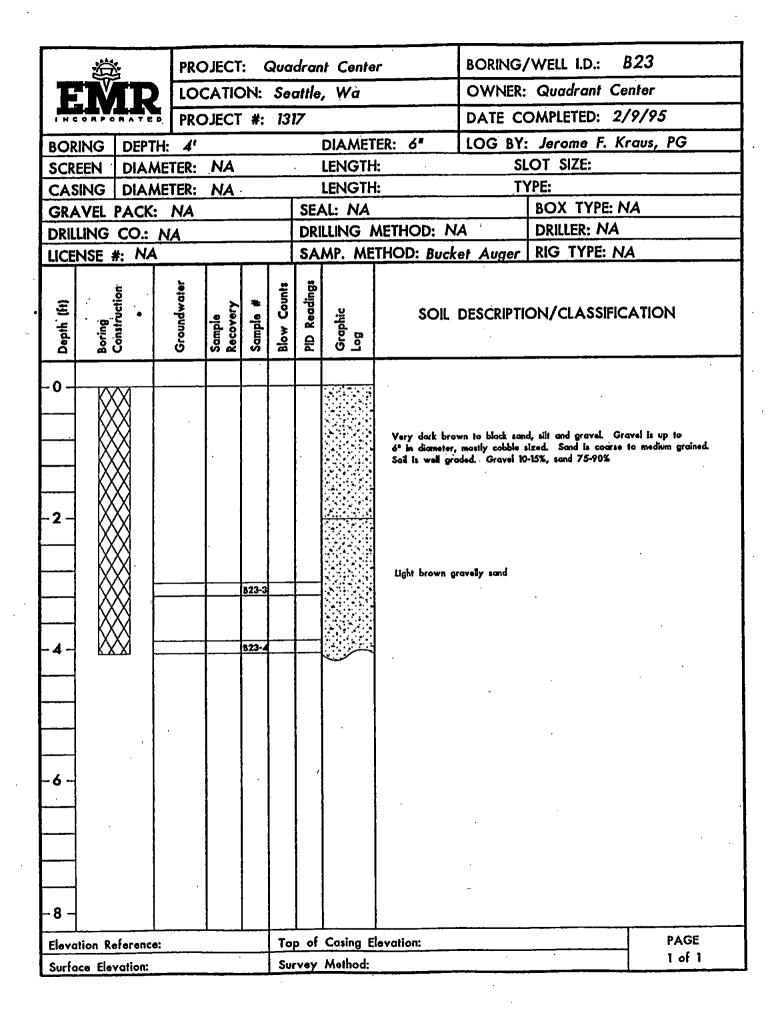
e 6 .

PROJECT: Quadrant Center **B20** BORING/WELL I.D.: LOCATION: Seattle, Wa OWNER: Quadrant Center PROJECT #: 1317 DATE COMPLETED: 2/8/95 BORING **DEPTH:** LOG BY: Jerome F. Kraus, PG DIAMETER: 6" SCREEN DIAMETER: NA LENGTH: SLOT SIZE: CASING DIAMETER: NA LENGTH: TYPE: GRAVEL PACK: NA SEAL: NA BOX TYPE: NA DRILLING CO.: NA DRILLING METHOD: NA DRILLER: NA LICENSE #: NA SAMP. METHOD: Bucket Auger RIG TYPE: NA Groundwater PID Readings Sample Recovery Graphic Log SOIL DESCRIPTION/CLASSIFICATION 0 Very dark brown to black sand, silt and gravel. Gravel is up to 6" in diameter, mostly cabble sized. Sand is coarse to medium gr Sail is well graded. Gravel 10-15%, sand 75-90% . 2 light brown silty sand B20-3 <u> 5</u>20-6 8 -Elevation Reference: Top of Casing Elevation: **PAGE** 1 of 1 Surface Elevation: Survey Method:

Survey Method:

Surface Elevation:

PROJECT: Quadrant Center BORING/WELL I.D.: **B22** LOCATION: Seattle, Wa OWNER: Quadrant Center PROJECT #: 1317 DATE COMPLETED: 2/9/95 BORING DEPTH: DIAMETER: 6" LOG BY: Jerome F. Kraus, PG SCREEN **DIAMETER:** NA LENGTH: SLOT SIZE: CASING | DIAMETER: NA LENGTH: TYPE: GRAVEL PACK: NA SEAL: NA BOX TYPE: NA DRILLING CO .: NA DRILLING METHOD: NA DRILLER: NA SAMP. METHOD: Bucket Auger LICENSE #: NA RIG TYPE: NA Blow Counts Ξ Graphic Log SOIL DESCRIPTION/CLASSIFICATION Depth 0 Very dark brown to black sand, silt and gravel. Gravel is up to 6° in diameter, mostly cobble sized. Sand is coarse to medium grained. Soil is well graded. Gravel 10-15%, sand 75-90% 2 . Light brown gravely sand B22-3 6 8 Elevation Reference: Top of Casing Elevation: **PAGE** 1 of 1 Surface Elevation: Survey Method:



PROJECT: Quadrant Center B24 BORING/WELL I.D.: LOCATION: Seattle, Wa OWNER: Quadrant Center PROJECT #: 1317 DATE COMPLETED: 2/9/95 BORING **DEPTH:** DIAMETER: LOG BY: Jerome F. Kraus, PG SCREEN DIAMETER: NA. LENGTH: SLOT SIZE: CASING | DIAMETER: LENGTH: TYPE: NA GRAVEL PACK: NA SEAL: NA BOX TYPE: NA DRILLING METHOD: NA DRILLING CO.: NA DRILLER: NA LICENSE #: NA SAMP. METHOD: Bucket Auger RIG TYPE: NA PID Readings Sample Recovery Graphic Log SOIL DESCRIPTION/CLASSIFICATION 0 Very dark brown to black sand, silt and gravel. Gravel is up to 6° in diameter, mostly cabble sized. Sand is coarse to medium grained. Soil is well graded. Gravel 10-15%, sand 75-90% 2 Light brown gravely sand B24-3 B24-6 8 Elevation Reference: Top of Casing Elevation: PAGE 1 of 1 Surface Elevation: Survey Method:

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FNTD LOCATION:										OWNER: Quadrant Center			
IN	ORPO	RATED		DJECT				-			OMPLETED: 2		
BO	RING	DEPTH						DIAME	TER: 6"	LOG BY: Jerome F. Kraus, PG			
	EEN	DIAME		NA				LENGTI			OT SIZE:	1403, 10	
CAS	SING	DIAME	TER:	NA		·		LENGTH	l :		/PE:		
GR/	VEL F	ACK:	NA				SE	AL: NA			BOX TYPE: N	VA.	
		CO.: N	IA		,		_		METHOD: N		DRILLER: NA		
LICE	NSE #	: NA		1.			SA	MP. ME	THOD: Bucke	et Auger	RIG TYPE: N	<u>A</u>	
Depth (ft)	Depth (ft) Boring Construction Groundwater Sample Recovery Sample #						PID Readings	Graphic Log	SOIL	DESCRIPTIO	ON/CLASSIFIC	CATION	
-0-	- KX	и							Asphalt				
	X					ļ			Mehilan				
	\mathbb{K}							Dark brown sand, silt and gravel					
	B25-												
\vdash						5							
-2-									Light brown med	d			
	- IXX	1			- 1							,	
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Surfac	• Eleva	tion:				Surv	Survey Method:					1 of 1	

PROJECT: Quadrant Center B26 BORING/WELL I.D.: LOCATION: Seattle, Wa OWNER: Quadrant Center PROJECT #: 1317 DATE COMPLETED: 2/9/95 BORING DEPTH: 4' DIAMETER: 6" LOG BY: Jerome F. Kraus, PG SCREEN DIAMETER: NA LENGTH: SLOT SIZE: TYPE: CASING | DIAMETER: NA LENGTH: GRAVEL PACK: NA SEAL: NA BOX TYPE: NA DRILLING CO.: NA DRILLING METHOD: NA DRILLER: NA LICENSE #: NA SAMP. METHOD: Bucket Auger | RIG TYPE: NA PID Readings SOIL DESCRIPTION/CLASSIFICATION 0 -**Aspholt** Concrete B26-15 Dork brown sand, silt and gravel 2 Light brown sandy silt w/some gravel B26-6.-- 8 Elevation Reference: Top of Casing Elevation: **PAGE** 1 of 1 Surface Elevation: Survey Method:

PROJECT: Quadrant Center BORING/WELL I.D.: B27 LOCATION: Seattle, Wa OWNER: Quadrant Center PROJECT #: 1317 DATE COMPLETED: 2/9/95 BORING **DEPTH:** LOG BY: Jerome F. Kraus, PG DIAMETER: 6" SCREEN DIAMETER: NA LENGTH: **SLOT SIZE:** CASING DIAMETER: NA LENGTH: TYPE: GRAVEL PACK: NA SEAL: NA BOX TYPE: NA DRILLING CO.: NA DRILLING METHOD: NA DRILLER: NA LICENSE #: NA SAMP. METHOD: Bucket Auger RIG TYPE: NA PID Readings Sample Recovery Graphic Log SOIL DESCRIPTION/CLASSIFICATION 0 **Asphalt** B27-1 2 · Light brown medium grained sand B27-25 4 6 -8 Elevation Reference: Top of Casing Elevation: PAGE

Survey Method:

Surface Elevation:

1 of 1