WORK PLAN FOR CONFIRMATORY SOIL SAMPLING

Olympic Pipe Line Company Kent Block Valve

74th Avenue South & South 259th Street

Kent, Washington, 98032

Ecology Facility Site ID: 2401

Voluntary Cleanup Program ID: NW2708

Antea® Group Project No. WAKBVDB141
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1.0 INTRODUCTION

On behalf of Remediation Management (a BP affiliated company) and Olympic Pipe Line Company (OPLC), Antea®Group (Antea Group) has prepared this *Work Plan for Confirmatory Soil Sampling* (work plan) at the OPLC Kent Block Valve Site located near the intersection of 74th Avenue South & South 259th Street in Kent, King County, Washington. The work plan was prepared in response to an *Opinion Letter* dated June 12, 2013, issued by the Washington State Department of Ecology (Ecology). A copy of the *Opinion Letter* is included as Appendix A.

2.0 BACKGROUND

2.1 Site Description

The property in which the release occurred is a narrow ROW parcel located approximately 500 feet east-northeast of the intersection of 74th Avenue South and South 259th Street (the Property). The ROW where the block valve is located is owned by Puget Sound Energy (PSE) and leased by OPLC. The block valve is part of an underground pipeline that supplies refined petroleum products from refineries in north Washington State to bulk fuel terminals and other facilities for distribution. Characterization of the release indicates that the actual MTCA Site location (the Site) is an area extending approximately 60 feet to the southeast, 100 feet to the east, and 530 feet to the southwest of the block valve Property. A Site Location Map is presented as Figure 1. An Expanded Site Map detailing the site features is presented as Figure 2.

2.2 Previous Investigations

2.2.1 August 1989 – Site Discovery

Prior to a real estate transaction, GeoEngineers conducted a site assessment in August 1989 on the adjacent property west of the Site. Site assessment activities included the installation of three groundwater monitoring wells (MW-1 through MW-3) on the adjacent property. Groundwater laboratory analyses indicated elevated concentrations of benzene {2,400 parts per billion (ppb)} in MW-1. OPLC was subsequently informed of the results. OPLC inspected the pipeline and block valve and a pinhole-sized leak was observed in the threading of a bolt located on the west side of the block valve. Following repairs, OPLC excavated approximately 30 cubic yards of hydrocarbon impacted soil from the area immediately surrounding the block valve.

Additional information may be found in GeoEngineers *Report of Geoenvironmental Services, Subsurface Contamination Study and Remedial Action Monitoring,* dated October 1, 1990.

2.2.2 August through December 1989 – Subsurface Investigation and Excavations

OPLC contracted GeoEngineers to conduct a complete subsurface investigation to determine the extent of hydrocarbon impacts related to the release. GeoEngineers directed the advancement of borings, test pits, and trenches in the release area. 25 soil samples were collected from the test pits and trenches. Eight soil samples reportedly contained petroleum hydrocarbon concentrations in excess of Ecology's draft MTCA Method A Cleanup Levels at the time.

Once the impacted area(s) had been identified, two additional soil excavations were performed on the east and west sides of the pipeline and block valve between August 31 and September 27, 1989. Excavation of impacted soil extended to approximately six feet bgs on the east side of the pipeline and extended to depths between 16 feet and 24 feet bgs on the west side of the pipeline. Excavation was discontinued in the vicinity of the pipeline due to the risk of compromising the structural integrity of the pipeline. Additional excavation to remove the deeper layers of impacted soil to the west of the pipeline and block valve was discontinued due to the logistics associated with the removal of large thicknesses of overlying uncontaminated soil (up to 20 feet) in order to access the thin zone of impacted soil. Approximately 1,950 tons of soil was removed during the remedial excavations.

According to GeoEngineers, soil which was not impacted with petroleum hydrocarbons or which contained concentrations of petroleum hydrocarbons below Ecology's previous cleanup guidelines was stored on-site in temporary stockpiles for use as backfill material. Upon completion of the excavations, a 30-inch diameter recovery well (RW-1) was installed in the backfill of the western excavation; however, additional groundwater recovery equipment was not installed.

Between September and December 1989, GeoEngineers directed the installation of monitoring wells MW-4 through MW-19 to depths between 16.5 feet and 32.5 feet bgs. One soil sample was collected during the installation of well MW-9 at a depth of 33 feet bgs and did not contain petroleum hydrocarbon concentrations in excess of Ecology's previous cleanup guidelines. Soil samples were not collected from the other borings advanced during well installation activities since field screening of soils did not indicate the presence of petroleum hydrocarbons. Groundwater data from the first year of monitoring and sampling indicated concentrations of petroleum hydrocarbons in excess of Ecology's previous cleanup guidelines in wells MW-1, MW-6, MW-8 through MW-11, and MW-13 through MW-16.

Additional information may be found in GeoEngineers *Report of Geoenvironmental Services, Subsurface Contamination Study and Remedial Action Monitoring,* dated October 1, 1990. Maps showing the locations of test pits, excavation areas, soil borings, and associated soil data are included as Appendix B. Historical groundwater data are included as Appendix C.

2.2.3 March and April 1990 – Well Abandonments

On March 27, 1990, monitoring wells MW-1, MW-4, MW-8 and MW-10 were abandoned. Monitoring well MW-2 was abandoned on April 4, 1990. The wells were abandoned due to the construction of the Valley Freeway Building.

2.2.4 1993 – Missing Monitoring Wells

In 1993, the recovery well and monitoring wells MW-6, MW-7, MW-11 and MW-12 were found paved over. MW-17, adjacent to the Green River, could also not be located. Seven monitoring wells remained: MW-9, MW-13 through MW-16, MW-18, and MW-19.

2.2.5 September 1999 – Additional Well Installation

On September 7, 1999, monitoring well MW-17A was installed at the Site to a depth of 30 feet bgs. One soil sample was collected during the installation activities at a depth of 24 feet bgs and analyzed for total petroleum hydrocarbons as gasoline (TPH-G), total petroleum hydrocarbons as diesel (TPH-D), and total petroleum hydrocarbons as oil (TPH-O). Analytical results from the soil sample submitted for analysis were below Ecology's Model Toxics Control Act (MTCA) Method A Cleanup Levels and the laboratory method reporting limits (MRLs).

Additional information may be found in GeoEngineer's *Results of Groundwater Monitoring and Monitoring Well Replacement*, dated October 1, 1999. A copy of the soil analytical data table for MW-17A is included as Appendix D.

2.2.6 July 2001 – Additional Well Installation

On July 31, 2001, monitoring wells MW-20 and MW-21 were installed to depths of 20 ft bgs and 30 ft bgs, respectively. Based on field screening results, one soil sample collected from MW-21 at 16 feet bgs was submitted for laboratory analysis. Analytical results from the soil sample submitted for analysis were below Ecology's MTCA Method A Cleanup Levels and laboratory MRLs.

Additional information may be found in GeoEngineer's *Supplemental Site Characterization,* dated September 18, 2001. A copy of the laboratory analytical results is included as Appendix E.

2.2.7 June 2003 through August 2004 – Air-Sparge Well Installation and Remedial Activities

In 2003, air sparge wells BS-1 through BS-4 were installed to a depth of 40 ft bgs. Composite soil samples were collected during the installation of the sparge wells for waste disposal characterization. Monthly air sparging

events on BS-1 through BS-4 were initiated on January 21, 2004, with the purpose of increasing dissolved oxygen concentrations in the groundwater and to enhance volatilization of BTEX constituents in the groundwater. Air sparging activities occurred on a monthly basis through August 2004. On September 2 and 17, 2004, enhanced liquid recovery (ELR) events were performed. During these events, approximately 168 gallons of groundwater was extracted. Following the ELR events, oxygen-releasing compound (ORC) socks were placed in wells MW-15 and MW-16. The purpose of the ORC socks was to increase the amount of oxygen available for microbial respiration, thus facilitating the process of natural attenuation via aerobic degradation. An evaluation of the October 2004 groundwater analytical data indicated that concentrations of petroleum hydrocarbons were not decreasing significantly. Therefore, air sparging and ORC applications were subsequently discontinued.

Additional information may be found in GeoEngineer's *June 2003 Drilling and Quarterly Groundwater Monitoring Report,* dated August 11, 2003. A copy of the laboratory analytical results for BS-1 through BS-4 is included as Appendix F.

2.3 Current Site Status

Quarterly groundwater monitoring and sampling was conducted at the Site through the first quarter of 2014. Four consecutive quarters of groundwater concentrations below Ecology MTCA Method A Cleanup Levels was obtained on June 5, 2013, in all groundwater monitoring wells at the Site with the exception of MW-15. MW-15 was found damaged in September 2012, and samples were unable to be obtained in the third and fourth quarters of 2012. It is unknown how the damaged occurred, but Antea Group infers the damaged was occurred during upgrades to the sidewalk and landscaping in the area. Antea Group contracted Cascade Drilling of Woodinville, Washington to complete repairs to MW-15 during the first quarter of 2013, and quarterly groundwater sampling resumed. Three consecutive quarters of groundwater concentrations below MTCA Method A Cleanup Levels had been obtained in the third quarter of 2013; however, construction materials were located on the well in the fourth quarter of 2013 and it was unable to be sampled. Four quarters of groundwater concentrations below MTCA Method A Cleanup Levels was obtained in MW-15 with receipt of the analytical data collected in the first quarter of 2014. Groundwater sampling at the Site was suspended following the first quarter sampling event. The groundwater data is presented in Table 1. The Site was enrolled in Ecology's Voluntary Cleanup Program (VCP) on April 2, 2013. Following submission of a *Remedial Investigation Report* by Antea Group on January 10, 2013, Ecology issued an *Opinion Letter* on June 12, 2013, indicating, among other items, that confirmatory soil sampling needed to be conducted at the Site. Additionally, the *Opinion Letter* requested that current soil conditions be characterized between OPLC's Kent Block Valve and the Valley Freeway Building.

3.0 SITE GEOLOGY AND HYDROGEOLOGY

The Site is located approximately 35 feet above mean sea level within the Green River basin of the Puget Lowlands. Local geology is classified as Quaternary Alluvium, which is classified as unconsolidated sand and silt, with varying amounts of gravel and cobbles (Washington Division of Geology and Earth Resources, 2005). Soils observed at the Site during the well installation activities generally consisted of sand and/or silty-sand underlain by sandy-silt and silt.

The Green River is the nearest surface water body and is located approximately 570 feet south of the Property. The Green River flows in a general northerly direction to Puget Sound approximately 15 miles north of the Site. The lower 12 miles of the Green River is referred to as the Duwamish River. With the exception of the parking lot for the warehouse facility located to the west of the Property, the remainder of the Site is mostly unpaved. All available cross sections and boring logs are included in Appendix G.

4.0 OBJECTIVE AND SCOPE OF WORK

The objective of the subsurface investigation is to confirm the degradation of historically impacted soil and to characterize current soil conditions near the Valley Freeway Building. All fieldwork will be implemented and completed in accordance with BP's Control of Work (CoW) Defined Practices.

4.1 Proposed Soil Boring Locations

Antea Group is proposing to advance fifteen soil borings to an approximate depth of 20 feet bgs to assess current soil conditions across the Site. All proposed soil boring locations are based on historical impacts identified during the 1989 remedial excavation and groundwater monitoring events. Six borings are proposed adjacent to or between historically impacted sample points OP-1, OP-3, OP-5, OP-7, OP-12, OP-14, OP-16, OP-23, and OP-24. Nine borings are proposed adjacent or between historically impacted groundwater monitoring wells MW-1, MW-6, MW-8, MW-9, MW-10, MW-11, and MW-13 through MW-16. Figure 3 depicts the locations of all the proposed soil boring locations.

Per Remediation Management (RM) Defined Practice for Ground Disturbance (RM Ground Disturbance), all borings must be cleared to a minimum of 6.5 feet bgs utilizing a vacuum truck with air-knife and/or hand tools. Once the borings are cleared to 6.5 feet bgs, a licensed driller will advance the borings using a Geoprobe™ drilling rig. Upon completion of soil sampling, all borings will be backfilled with hydrated bentonite chips and the original surface will be restored.

5.0 PRE-FIELD ACTIVITIES

5.1 Pre-Drilling and Planning Activities

As part of pre-drilling activities, Antea Group has:

- Prepared this *Work Plan*;
- Updated the Health and Safety plan (HASP) for the Site. A copy of the HASP will be available at the Site during field activities. Field activities performed by Antea Group will be conducted in accordance with guidelines established in the HASP;
- Requested a public locate via the One-Call Notification Center;
- Conducted a Site visit with the Ecology site manager, Dale Myers on March 4, 2014;
- Attempted to gain access to the Valley Freeway Property; and
- Conducted a meeting with subcontractors to develop the WRAT and TSEAs associated with the scope of work described in this *Work Plan*.

5.2 Utility Locates

The proposed boring locations will be marked and the Utility Underground Location Center will be contacted at least 72 hours before the Site walk is scheduled. A Site walk will be conducted to visually inspect for utility markers and indicators. Antea Group staff will meet a representative from OPLC onsite to locate petroleum pipelines that lie within the Kent Block Valve and adjacent parcels. All proposed boring locations will be moved at least 10 feet from the OPLC pipeline. Due to the close proximity of these borings, an OPLC representative may remain onsite. Applied Professional Services (APS) will also be utilized to identify subsurface utilities. APS will sweep a search zone 10 feet in all direction surrounding the proposed boring locations. APS uses Metrotech 810 multi-frequency locators to identify conductive subsurface utilities. All utilities will be marked in paint and recorded on a drawing/plot plan. Proposed boring locations that are within two feet of an identified utility will be relocated three or more feet away from the identified utility.

6.0 SAMPLING AND ANALYSIS PLAN

Soil samples will be collected during soil boring activities to evaluate current soil conditions with respect to petroleum hydrocarbons. All borings will be completed by Cascade Drilling, L.P. of Woodinville, Washington. In accordance with RM Ground Disturbance protocol, a vacuum truck with air-knife and /or hand auger will be used at each boring location to safely remove subsurface soil to a minimum depth of 6.5 feet bgs to reduce the probability of damaging underground utilities that may not have been identified through the public and/or private underground utility locating activities.

6.1 Soil Sampling

Where recovered, soil samples will be collected continuously from each boring. Field and laboratory methods associated with soil samples are described below.

6.1.1 Soil Sampling Procedures

The vacuum truck with air-knife will be used to pothole the boring location to a depth of approximately 5 feet bgs or shallower based on depths of historical impacts. A hand auger equipped with a steel soil auger head and 5 foot extension rod or other tools deemed feasible will be used to collect an undisturbed soil sample at depth of less than 6.5 feet bgs. The soil auger head is approximately 3 inches in diameter and 12 inches long. Following sample collection, the vacuum truck and air-knife will again be used to advance the pothole to a depth of at least 6.5 feet bgs and soil sampling will continue as detailed below.

Soil samples will be collected at approximately 5 foot intervals to 20 feet bgs or the terminal depth of the boring unless field observations, PID readings, historical data, or other information indicates that additional samples are necessary. Soil samples will be collected from the soil borings using new, disposable acetate liners. Soil samples will be obtained from the acetate liner and hand auger using a syringe sampler and placed into laboratory-supplied 40-milliliter (mL) VOA vials preserved with methanol and sodium bisulfate in accordance with EPA Method 5035A. Additional soil will be placed into 4 to 8-ounce laboratory-supplied glass soil jars. After collection, each soil sample will be field screened for the presence of volatile organic compounds with a PID to aid in the facilitation of selecting representative soil sample for chemical analysis. Clear plastic bags will be filled to one-third to half capacity and then sealed. Soils in the bags will then be gently agitated to facilitate the breakup of any lumps and allowed to sit for approximately ten minutes prior to analyzing the air above the soil in the bag. The maximum vapor concentrations will be recorded for each soil sample collected.

6.1.2 Soil Sample Designations

Soil samples will be assigned a unique identification code. The sample designation consists of the boring location number and the depth or depth interval. For example, the designation "CB-1-10" identifies a soil sample collected at 10 feet bgs from boring location CB-1.

6.3 Quantitative Laboratory Analyses

All sample containers will be labeled, placed in a field cooler after collections, and packed with ice pending transport to Test America of Tacoma, Washington. Standard chain-of-custody procedures will be used for all samples submitted to the laboratory. Samples will be sub-packed by sample locations in new zippered plastic bags and stored in the dark at approximately 4 degrees Celsius. A temperature compliance vial will accompany each cooler to verify that proper holding temperatures were maintained during transport.

A chain-of-custody form sealed in a plastic zippered bag will accompany each sample cooler containing laboratory samples. The Antea Group field personnel will retain a copy of the chain-of-custody, and the original will be sent with the samples to the laboratory.

Soil samples selected for chemical analysis will be delivered to Test America and analyzed within standard holding times. The soil samples will be analyzed for constituents listed in Table 830-1, Required Testing for Petroleum Releases, of the Ecology MTCA Cleanup Regulation, Chapter 173-340 WAC. Soil samples will be analyzed for the following constituents:

- TPH-G range using Northwest Method NWTPH-Gx;
- TPH-D and TPH-O ranges using Northwest Method NWTPH-Dx with Silica Gel cleanup;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 8260B;
- Total lead using EPA Method 6020; and
- Volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) using Northwest Method NWVPH and NWEPH (if warranted).

In accordance with the time schedule for the project, all samples will be submitted for regular turn around analyses with Test America. Rush analyses may be requested if field conditions or waste disposal profiling necessitates expedited analyses.

6.4 Data Evaluation

Concentrations of constituents of concern in soil will be compared to Ecology's MTCA Method A Cleanup Levels. Based on field conditions and analytical results, EPH and VPH concentrations in soil may also be calculated and compared to Ecology's MTCA Method B Cleanup Levels.

6.5 Equipment Decontamination

Soil sampling equipment will be decontaminated prior to initiating sampling activities, between sampling locations, and upon completion of sampling activities. Field sampling equipment used in the collection of soil samples will be decontaminated by washing with non-phosphate detergent and rinsing with deionized water. Drilling equipment that directly contacts soil samples will be decontaminated after each exploration. Attached soil will be brushed off and any remaining visible soil will be removed using a high-pressure steam cleaner.

6.6 Investigation-Derived Waste

Soil and decontamination fluid will be generated during the drilling activities. All wastes will be temporarily contained in Department of Transportation approved 55-gallon drums and stored at the Site. Drum labels identifying generator, site address, contents, and contact information will be affixed to the drums on a daily basis. Arrangements for proper disposal and/or recycling of waste will be made upon receipt of final analytical results. The waste will be disposed by a certified waste hauler, Belshire of Foothill Ranch, CA. Waste Manifest documentation will be retained and reported with final results.

6.7 Field Quality Control and Documentation

Samples will be kept in sight of the sampling crew or in a secure, locked vehicle at all times. Transfer of samples from field personnel to the laboratory will be documented using chain-of-custody procedures. If someone other than the sample collector transports samples to the laboratory, the collector will sign and date the chain-of-custody record and insert the name of the person or firm transporting the sample under "transported by" before sealing the container with a custody seal.

Field personnel will record required field information for each sampling location. The person recording the data will review all data and log forms daily, so that any errors or omissions can be corrected. All completed data sheets will be removed daily from the field, photocopied, and stored in the project file.

6.8 Report Generation

A written report will be prepared describing the results of field activities, analytical results, and data evaluation results. Conclusions and recommendations regarding the results of field activities and potential future work, if warranted will be included in the report. The report will include tables, maps, figures, and appendices pertinent to the data collected during field activities.

7.0 SCHEDULE

Antea Group is prepared to execute the field activities outlined in this work plan upon receipt of Ecology's approval. This schedule may be delayed or accelerated by contractor availability, weather, third-party access agreement issues, or other factors. All other work plan contingencies are included in Appendix H.

7.1 Access

As discussed in Section 2.3, Ecology issued an *Opinion Letter* on June 12, 2013, requesting confirmatory soil sampling be conducted throughout the Site. Specifically, Ecology stated, *"current soil conditions between the block valve property and the Valley Freeway Building remain unknown."* Following receipt of the *Opinion Letter*, Antea Group attempted to gain access to the property located at 25618 74th Avenue South in Kent, Washington. The property is owned by CWWA Valley Freeway 5 LLC (Valley Freeway) and managed by Kidder Mathews. On July 16, 2013, Antea Group, on behalf of OPLC, contacted Mr. Jan Greene with Kidder Mathews via telephone. Mr. Greene requested a summary stating the rationale for the access request. On August 6, 2013, Antea Group provided the requested summary to Mr. Greene via email. On August 7, 2013, Mr. Greene acknowledged receipt of the email and indicated he would present the request to the ownership group of the Valley Freeway property. On August 20, August 28, and September 23, 2013, Antea Group sent emails to Mr. Greene inquiring as to the status of acquiring access to the Valley Freeway property. On September 10, 2013, Antea Group engaged Mr. Joseph Stone, the OPLC Right of Way Agent, in assisting with access attempts. On October 9, 2013, Mr. Stone was contacted by

Mr. Greene via telephone. During the call, Mr. Greene indicated he would resubmit the access request to the Valley Freeway ownership group. On November 12, 2013, in response to an email from Antea Group, Mr. Greene indicated that the Valley Freeway ownership group was not making granting access to Antea Group "a priority right now." Antea Group sent additional emails to Mr. Greene on March 14, June 3 and August 11, 2014, inquiring if there was any progress with ownership. To date, Antea Group has received no response.

Based on the lack of response from the Valley Freeway ownership group regarding access, Antea Group has concluded that access to the property will not be granted. Antea Group developed this work plan to address all data gaps identified by Ecology in the June 12, 2013, *Opinion Letter*; however, without access to the Valley Freeway property, Antea Group is unable to characterize current soil conditions on the Valley Freeway property as requested by Ecology. Antea Group believes it has exhausted all avenues to obtain access to the Valley Freeway property, and proposes to move forward with the assessment installing the six borings that are not located on the Valley Freeway property. Based on the results of the analytical testing, Antea Group proposes to request a No Further Action (NFA) determination for the OPLC Kent Block Valve property only.

Antea Group respectfully requests an "*Opinion"* from Ecology on the potential to obtain a NFA determination for the OPLC Kent Block Valve property only.

8.0 REMARKS

The recommendations contained in this report represent Antea USA, Inc.'s professional opinions based upon the currently available information and are arrived at in accordance with currently accepted professional standards. This report is based upon a specific scope of work requested by the client. The contract between Antea USA, Inc. and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Antea USA, Inc.'s client and anyone else specifically identified in writing by Antea USA, Inc. as a user of this report. Antea USA, Inc. will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea USA, Inc. makes no express or implied warranty as to the contents of this report.

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Date: August 25, 2014

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Table

Table 1 Historical Groundwater Gauging and Analytical Data

TABLE 1
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-9	9/20/1989	95.21	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	12/20/1989	95.21	NG	NG	NG	NG	--	--	--	4.8	86	25	120	--	--	--	--
	1/23/1990	95.21	NG	NG	NG	NG	--	--	--	4.8	85	53	240	--	--	--	--
	2/20/1990	95.21	NG	NG	NG	NG	--	--	--	**14**	38	41	120	--	--	--	--
	3/20/1990	95.21	NG	NG	NG	NG	--	--	--	**26**	6.3	38	110	--	--	--	--
	4/23/1990	95.21	NG	NG	NG	NG	--	--	--	**23**	6.7	42	81	--	--	--	--
	12/13/1990	95.21	NG	NG	NG	NG	--	--	--	0.9	1.6	15	30	--	--	--	--
	8/26/1992	95.21	NG	NG	NG	NG	--	--	--	3.3	ND	0.9	1.3	--	--	--	--
	6/3/1993	95.21	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	8/17/1999	95.21	NP	18.82	NP	76.39	<50	**530**	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/17/2000	95.21	NP	16.1	NP	79.11	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/22/2000	95.21	NP	16.88	NP	78.33	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/31/2000	95.21	NP	19.22	NP	75.99	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/27/2000	95.21	NP	19.31	NP	75.9	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2000	95.21	NP	18	NP	77.21	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/30/2001	95.21	NP	23	NP	72.21	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/11/2001	95.21	NP	18.06	NP	77.15	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	95.21	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	--	--	--	--
	12/27/2001	95.21	NP	14.41	NP	80.8	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/14/2002	95.21	NP	14.5	NP	80.71	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	95.21	NP	18.04	NP	77.17	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	95.21	NP	23.05	NP	72.16	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	95.21	NP	13.82	NP	81.39	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	95.21	NP	18.37	NP	76.84	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	95.21	NP	17.38	NP	77.83	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	95.21	NP	18.63	NP	76.58	--	--	--	--	--	--	--	--	--	--	--
	4/11/2006	95.21	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	95.21	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	95.21	NP	19.39	NP	75.82	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	95.21	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	95.21	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	95.21	NP	17.39	NP	77.82	--	--	--	--	--	--	--	--	--	--	--
	3/3/2011	95.21	NP	16.32	NP	78.89	--	--	--	--	--	--	--	--	--	--	--
	9/12/2012	95.21	NP	19.43	NP	75.78	<50.0	<78.4	<392	<1	<1	<1	<3	<1.0	<1.0	<1.0	<10.0
	11/07/12	95.21	NP	16.81	NP	78.40	<100	<200	<200	<1	<1	<1	<3	--	--	--	9.4
	03/08/13	95.21	NP	15.37	NP	79.84	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	95.21	NP	16.67	NP	78.54	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0098	<0.50	<10

TABLE 1
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-13	10/18/1989	97.41	NG	NG	NG	NG	--	--	--	3.4	ND	ND	ND	--	--	--	--
	12/21/1989	97.41	NG	NG	NG	NG	--	--	--	2.5	ND	ND	ND	--	--	--	--
	1/23/1990	97.41	NG	NG	NG	NG	--	--	--	3.3	ND	ND	ND	--	--	--	--
	2/20/1990	97.41	NG	NG	NG	NG	--	--	--	**20**	9.3	1.7	8	--	--	--	--
	3/21/1990	97.41	NG	NG	NG	NG	--	--	--	**29**	37	13	64	--	--	--	--
	4/23/1990	97.41	NG	NG	NG	NG	--	--	--	**49**	5.8	26	110	--	--	--	--
	8/26/1992	97.41	NG	NG	NG	NG	--	--	--	**9.5**	0.5	1.6	3.7	--	--	--	--
	6/3/1993	97.41	NG	NG	NG	NG	--	--	--	3.8	ND	0.6	2.1	--	--	--	--
	8/17/1999	97.41	NP	19.5	NP	77.91	370	<250	--	**66.5**	3.45	2.63	28.8	--	--	--	--
	3/17/2000	97.41	NP	17.72	NP	79.69	<50	<250	--	1.46	<0.5	<0.5	<1	--	--	--	--
	6/22/2000	97.41	NP	18.38	NP	79.03	<80	--	--	1.35	<0.5	<0.5	<1	--	--	--	--
	7/31/2000	97.41	NP	20.05	NP	77.36	222	<250	--	**40**	<1.05	<0.5	<1	--	--	--	--
	9/27/2000	97.41	NP	20.96	NP	76.45	284	<250	--	**47.5**	<1.66	<1	8.99	--	--	--	--
	12/27/2000	97.41	NP	20.68	NP	76.73	53.6	<250	--	<0.653	0.964	<0.5	1.61	--	--	--	--
	3/30/2001	97.41	NP	18.77	NP	78.64	<50	--	--	1.03	<0.5	<0.5	2.89	--	--	--	--
	7/11/2001	97.41	NP	20.91	NP	76.5	114	--	--	2.52	<0.5	<0.5	3.26	--	--	--	--
	9/26/2001	97.41	NP	21.72	NP	75.69	144	--	--	2.66	<0.5	<0.5	3.74	--	--	--	--
	12/27/2001	97.41	NP	17.59	NP	79.82	70.4	--	--	1.57	<0.5	<0.5	1.67	--	--	--	--
	3/14/2002	97.41	NP	17.9	NP	79.51	<50	--	--	0.61	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	97.41	NP	20.83	NP	76.58	55	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	97.41	NP	19.2	NP	78.21	88.5	--	--	0.574	<0.5	<0.5	1.59	--	--	--	--
	6/1/2004	97.41	NP	16.56	NP	80.85	<50	--	--	0.574	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	97.41	NP	20.99	NP	76.42	<50	--	--	0.658	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	97.41	NP	20.18	NP	77.23	86.1	--	--	0.747	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	97.41	NP	20.92	NP	76.49	115	--	--	0.956	<0.5	<0.5	<1	--	--	--	--
	4/11/2006	97.41	NP	17.25	NP	80.16	58.6	<243	--	0.614	<0.5	<0.5	<1	--	--	--	--
	5/4/2007	97.41	NP	18.07	NP	79.34	65.3	<236	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/5/2007	97.41	NP	20.61	NP	76.8	249	<236	--	**8.4**	<0.5	<0.5	<1	--	--	--	--
	2/12/2008	97.41	NP	14.08	NP	83.33	55	<240	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/17/2008	97.41	NP	18.99	NP	78.42	<50	<243	<485	0.64	<0.5	<0.5	<1	--	--	--	--
	1/12/2009	97.41	NP	15.53	NP	81.88	550	<238	<476	**12.5**	0.94	<0.5	1.93	--	--	--	--
	3/3/2010	97.41	NP	18.52	NP	78.89	<50	<120	260	<1	<1	<1	<2	--	--	--	--
	3/3/2011	97.41	NP	17.22	NP	80.19	<50	<75	<380	<1	<1	<1	<3	--	--	--	--
	9/12/2012	97.41	NP	20.55	NP	76.86	<50.0	<78.4	<392	<1	<1	<1	<3	<1.0	<1.0	<1.0	<10.0
	11/7/2012	97.41	NP	17.78	NP	79.63	<100	<200	<200	<1	<1	<1	<3	--	--	--	11.3
	03/08/13	97.41	NP	17.20	NP	80.21	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	97.41	NP	17.97	NP	79.44	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0097	<0.50	<10

TABLE 1
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-14	11/10/1989	97.15	NG	NG	NG	NG	--	--	--	**1800**	22	41	170	--	--	--	--
	12/20/1989	97.15	NG	NG	NG	NG	--	--	--	**160**	1.6	6.5	18	--	--	--	--
	1/23/1990	97.15	NG	NG	NG	NG	--	--	--	**110**	1	ND	6.8	--	--	--	--
	2/21/1990	97.15	NG	NG	NG	NG	--	--	--	**14**	ND	ND	1.3	--	--	--	--
	3/21/1990	97.15	NG	NG	NG	NG	--	--	--	**530**	6.9	20	47	--	--	--	--
	4/23/1990	97.15	NG	NG	NG	NG	--	--	--	**360**	2.2	1.9	7.8	--	--	--	--
	5/18/1990	97.15	NG	NG	NG	NG	--	--	--	**500**	4.3	4.2	14	--	--	--	--
	12/13/1990	97.15	NG	NG	NG	NG	--	--	--	**16**	ND	ND	ND	--	--	--	--
	10/7/1991	97.15	NG	NG	NG	NG	--	--	--	**8.4**	ND	ND	ND	--	--	--	--
	8/26/1992	97.15	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	6/3/1993	97.15	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	8/17/1999	97.15	NP	20.84	NP	76.31	<50	269	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/17/2000	97.15	NP	18.08	NP	79.07	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/22/2000	97.15	NP	18.86	NP	78.29	<80	--	--	1.91	0.888	<0.5	2.49	--	--	--	--
	7/31/2000	97.15	NP	21.25	NP	75.9	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/27/2000	97.15	NP	21.45	NP	75.7	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2000	97.15	NP	20.82	NP	76.33	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/30/2001	97.15	NP	18.67	NP	78.48	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/11/2001	97.15	NP	20.7	NP	76.45	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	97.15	NP	21.53	NP	75.62	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2001	97.15	NP	17.05	NP	80.1	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/14/2002	97.15	NP	17.72	NP	79.43	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	97.15	NP	20.6	NP	76.55	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	97.15	NP	19.01	NP	78.14	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	97.15	NP	16.57	NP	80.58	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	97.15	NP	20.81	NP	76.34	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	97.15	NP	20.21	NP	76.94	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	97.15	NP	21.02	NP	76.13	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	4/11/2006	97.15	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	97.15	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	97.15	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	97.15	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	97.15	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	97.15	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
	3/3/2011	97.15	NP	17.99	NP	79.16	--	--	--	--	--	--	--	--	--	--	--
	9/12/2012	97.15	NP	21.33	NP	75.82	<50.0	131	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	97.15	NP	18.31	NP	78.84	<100	<200	<200	<1	<1	<1	<3	--	--	--	<3
	03/08/13	97.15	NP	17.41	NP	79.74	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	97.15	NP	18.62	NP	78.53	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0098	<0.50	<10

TABLE 1
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-15	11/10/1989	96.84	NG	NG	NG	NG	--	--	--	**99**	ND	ND	1	--	--	--	--
	12/20/1989	96.84	NG	NG	NG	NG	--	--	--	**200**	2.2	1.7	6.4	--	--	--	--
	1/23/1990	96.84	NG	NG	NG	NG	--	--	--	**120**	1.4	ND	2.6	--	--	--	--
	2/21/1990	96.84	NG	NG	NG	NG	--	--	--	**48**	ND	ND	0.7	--	--	--	--
	3/21/1990	96.84	NG	NG	NG	NG	--	--	--	**53**	0.5	ND	0.5	--	--	--	--
	4/23/1990	96.84	NG	NG	NG	NG	--	--	--	**53**	ND	ND	ND	--	--	--	--
	5/18/1990	96.84	NG	NG	NG	NG	--	--	--	**59**	ND	ND	ND	--	--	--	--
	12/13/1990	96.84	NG	NG	NG	NG	--	--	--	**450**	120	17	97	--	--	--	--
	10/7/1991	96.84	NG	NG	NG	NG	--	--	--	**350**	6.6	16	50	--	--	--	--
	8/26/1992	96.84	NG	NG	NG	NG	--	--	--	**380**	3.6	21	66	--	--	--	--
	6/3/1993	96.84	NG	NG	NG	NG	--	--	--	**370**	4.1	15	52	--	--	--	--
	8/17/1999	96.84	NP	21.1	NP	75.74	<50	<250	--	**611**	12	23.4	72.7	--	--	--	--
	3/17/2000	96.84	NP	18.33	NP	78.51	140	<250	--	**300**	4.19	0.064	20.5	--	--	--	--
	6/22/2000	96.84	NP	19.02	NP	77.82	<800	--	--	**631**	13	11.6	55.7	--	--	--	--
	7/31/2000	96.84	NP	21.3	NP	75.54	94.7	<250	--	**72.1**	1.33	<0.5	6.59	--	--	--	--
	9/27/2000	96.84	NP	21.6	NP	75.24	<1000	<250	--	**637**	11	41.8	64.3	--	--	--	--
	12/27/2000	96.84	NP	20.88	NP	75.96	587	<250	--	**547**	8.72	40.2	58.5	--	--	--	--
	3/30/2001	96.84	NP	18.59	NP	78.25	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/11/2001	96.84	NP	20.72	NP	76.12	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	96.84	NP	21.54	NP	75.3	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2001	96.84	NP	17.73	NP	79.11	566	--	--	**212**	7.19	<2.5	16.8	--	--	--	--
	3/14/2002	96.84	NP	17.98	NP	78.86	586	--	--	**320**	3.78	<0.5	15.5	--	--	--	--
	6/17/2003	96.84	NP	20.83	NP	76.01	**1020**	--	--	**386**	4.86	0.555	16.8	--	--	--	--
	3/1/2004	96.84	NP	19.29	NP	77.55	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	96.84	NP	16.27	NP	80.57	163	--	--	**59**	0.966	<0.5	2.55	--	--	--	--
	9/1/2004	96.84	NP	20.78	NP	76.06	389	--	--	**125**	2.07	<0.5	5.52	--	--	--	--
	10/18/2004	96.84	NP	19.99	NP	76.85	662	--	--	**253**	<2.5	<2.5	<5	--	--	--	--
	7/27/2005	96.84	NP	21.36	NP	75.48	414	--	--	**188**	2.32	<1	9.07	--	--	--	--
	4/11/2006	96.84	NP	19.32	NP	77.52	544	<250	--	**145**	2.28	<0.5	9.05	--	--	--	--
	5/4/2007	96.84	NP	19.08	NP	77.76	159	<236	--	**18.8**	<0.5	<0.5	<1	--	--	--	--
	9/5/2007	96.84	NP	21.67	NP	75.17	105	<236	--	0.99	<0.5	<0.5	1.27	--	--	--	--
	2/12/2008	96.84	NP	14.9	NP	81.94	248	<243	--	**16.4**	0.97	<0.5	5.49	--	--	--	--
	7/17/2008	96.84	NP	20.21	NP	76.63	384	<243	<485	**24.7**	1.54	<0.5	6.84	--	--	--	--
	1/12/2009	96.84	NP	15.53	NP	81.31	289	<236	<472	0.829	1.01	<0.5	4.84	--	--	--	--
	3/3/2010	96.84	NP	19.79	NP	77.05	<50	<120	<240	<1	<1	<1	<2	--	--	--	--
	9/12/2012	96.84	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD
	11/7/2012	96.84	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD	WD
	03/08/13	96.94	NP	18.03	NP	78.91	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	96.94	NP	18.95	NP	77.99	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0097	<0.50	<10
	08/29/13	96.94	NP	21.83	NP	75.11	<50.0	<130	<250	<2.0	<2.0	<2.0	<6.0	<2.0	--	--	1.5
	12/12/13	96.94	NP	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI
	12/19/13	96.94	NP	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI	WI
	03/19/14	96.84	NP	11.29	NP	85.55	<50	<120	<240	<5.0	<5.0	<5.0	<10	<5.0	--	--	<2.0

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OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-16	12/19/1989	97.32	NG	NG	NG	NG	--	--	--	**98**	1.1	ND	ND	--	--	--	--
	1/23/1990	97.32	NG	NG	NG	NG	--	--	--	**560**	6.8	2.4	5.5	--	--	--	--
	2/21/1990	97.32	NG	NG	NG	NG	--	--	--	**750**	320	64	360	--	--	--	--
	3/21/1990	97.32	NG	NG	NG	NG	--	--	--	**720**	400	63	310	--	--	--	--
	4/23/1990	97.32	NG	NG	NG	NG	--	--	--	**1200**	740	140	630	--	--	--	--
	5/18/1990	97.32	NG	NG	NG	NG	--	--	--	**780**	750	97	470	--	--	--	--
	12/13/1990	97.32	NG	NG	NG	NG	--	--	--	**590**	98	26	130	--	--	--	--
	10/7/1991	97.32	NG	NG	NG	NG	--	--	--	**840**	180	99	400	--	--	--	--
	8/26/1992	97.32	NG	NG	NG	NG	--	--	--	**520**	20	150	480	--	--	--	--
	6/3/1993	97.32	NG	NG	NG	NG	--	--	--	**420**	14	170	380	--	--	--	--
	8/17/1999	97.32	NP	21.37	NP	75.95	710	256	--	**48.6**	3.4	3.99	30.1	--	--	--	--
	3/17/2000	97.32	NP	18.76	NP	78.56	**981**	<250	--	**168**	8	39.4	71.7	--	--	--	--
	6/22/2000	97.32	NP	19.31	NP	78.01	132	--	--	**12.6**	1.25	<0.5	4.15	--	--	--	--
	7/31/2000	97.32	NP	21.7	NP	75.62	580	<250	--	**61**	4.19	1.07	20.8	--	--	--	--
	9/27/2000	97.32	NP	21.71	NP	75.61	623	<250	--	**55.4**	4.72	3.34	18.4	--	--	--	--
	12/27/2000	97.32	NP	21.15	NP	76.17	473	<250	--	**34.7**	2.83	<0.5	9.18	--	--	--	--
	3/30/2001	97.32	NP	18.84	NP	78.48	649	--	--	**30.6**	2.66	<0.5	4.42	--	--	--	--
	7/11/2001	97.32	NP	21.04	NP	76.28	538	--	--	**33.8**	2.36	<0.5	6.08	--	--	--	--
	9/26/2001	97.32	NP	21.79	NP	75.53	305	--	--	**22.1**	1.51	<0.5	3.24	--	--	--	--
	12/27/2001	97.32	NP	17.99	NP	79.33	468	--	--	**23.7**	2.48	<0.5	5.69	--	--	--	--
	3/14/2002	97.32	NP	18.25	NP	79.07	630	--	--	**95.7**	3.78	5.54	6.69	--	--	--	--
	6/17/2003	97.32	NP	21.08	NP	76.24	383	--	--	**20.2**	2.29	<0.5	3.29	--	--	--	--
	3/1/2004	97.32	NP	19.57	NP	77.75	127	--	--	**7.26**	0.68	<0.5	1.11	--	--	--	--
	6/1/2004	97.32	NP	16.52	NP	80.8	226	--	--	**15.3**	1.2	<0.5	1.06	--	--	--	--
	9/1/2004	97.32	NP	21.03	NP	76.29	314	--	--	**15.7**	1.58	<0.5	1.37	--	--	--	--
	10/18/2004	97.32	NP	20.2	NP	77.12	<80	--	--	2.7	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	97.32	NP	21.65	NP	75.67	122	--	--	4.27	0.523	<0.5	1.2	--	--	--	--
	4/11/2006	97.32	NP	19.59	NP	77.73	**1090**	<258	--	**152**	3.84	70.6	3.7	--	--	--	--
	5/4/2007	97.32	NP	19.35	NP	77.97	578	<236	--	**22.3**	0.58	4.77	<1	--	--	--	--
	9/5/2007	97.32	NP	21.95	NP	75.37	251	<236	--	1.18	<0.5	<0.5	<1	--	--	--	--
	2/12/2008	97.32	NP	15.11	NP	82.21	421	<238	--	2.01	0.77	<0.5	1.56	--	--	--	--
	7/17/2008	97.32	NP	20.48	NP	76.84	379	<243	<485	1.31	0.514	<0.5	1.13	--	--	--	--
	1/12/2009	97.32	NP	15.61	NP	81.71	307	<236	<472	1.22	<0.5	<0.5	<1	--	--	--	--
	3/3/2010	97.32	NP	20.05	NP	77.27	52	<120	<240	<1	<1	<1	<2	--	--	--	--
	3/3/2011	97.32	NP	19.02	NP	78.30	<50	<75	<380	<1	<1	<1	<3	--	--	--	--
	9/12/2012	97.32	NP	21.92	NP	75.40	<50	<78.4	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	97.32	NP	19.15	NP	78.17	170	<200	<200	<1	<1	<1	<3	--	--	--	7.2
	03/08/13	97.32	NP	18.37	NP	78.95	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	97.32	NP	19.25	NP	78.07	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0097	<0.50	<10

TABLE 1
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-17A	9/19/1999	97.96	NP	23.35	NP	74.61	<50	269	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/17/2000	97.96	NP	20.24	NP	77.72	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/22/2000	97.96	NP	21.01	NP	76.95	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/31/2000	97.96	NP	23.3	NP	74.66	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/27/2000	97.96	NP	23.09	NP	74.87	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2000	97.96	NP	22.55	NP	75.41	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/30/2001	97.96	NP	19.98	NP	77.98	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/11/2001	97.96	NP	22.59	NP	75.37	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	97.96	NP	23.11	NP	74.85	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2001	97.96	NP	19.82	NP	78.14	<50	--	--	<0.5	0.622	<0.5	1.24	--	--	--	--
	3/14/2002	97.96	NP	19.54	NP	78.42	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	97.96	NP	22.72	NP	75.24	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	97.96	NP	21.17	NP	76.79	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	97.96	NP	17.03	NP	80.93	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	97.96	NP	22.29	NP	75.67	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	97.96	NP	20.99	NP	76.97	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	97.96	NP	23.18	NP	74.78	--	--	--	--	--	--	--	--	--	--	--
	4/11/2006	97.96	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	97.96	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	97.96	NP	23.36	NP	74.6	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	97.96	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	97.96	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	97.96	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
	3/3/2011	97.96	NP	20.63	NP	77.33	--	--	--	--	--	--	--	--	--	--	--
	9/12/2012	97.96	NP	23.46	NP	74.5	<50	<78.4	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	97.96	NP	20.55	NP	77.41	<100	<200	<200	<1	<1	<1	<3	--	--	--	8
	03/08/13	97.96	NP	19.79	NP	78.17	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	97.96	NP	20.83	NP	77.13	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0096	<0.50	<10

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OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-18	12/20/1989	98.24	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	1/22/1990	98.24	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	2/21/1990	98.24	NG	NG	NG	NG	--	--	--	ND	ND	ND	0.5	--	--	--	--
	3/20/1990	98.24	NG	NG	NG	NG	--	--	--	1	1	ND	0.7	--	--	--	--
	4/23/1990	98.24	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	5/18/1990	98.24	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	12/13/1990	98.24	NL	NL	NL	NL	--	--	--	**14**	ND	ND	ND	--	--	--	--
	1/4/1991	98.24	NG	NG	NG	NG	--	--	--	3.3	ND	ND	ND	--	--	--	--
	10/7/1991	98.24	NG	NG	NG	NG	--	--	--	**12**	ND	ND	ND	--	--	--	--
	8/26/1992	98.24	NG	NG	NG	NG	--	--	--	**64**	ND	1.6	6.6	--	--	--	--
	6/3/1993	98.24	NG	NG	NG	NG	--	--	--	**97**	1.5	ND	23	--	--	--	--
	8/17/1999	98.24	NP	23.14	NP	75.1	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/17/2000	98.24	NP	20.52	NP	77.72	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/22/2000	98.24	NP	21.3	NP	76.94	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/31/2000	98.24	NP	23.43	NP	74.81	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/27/2000	98.24	NP	23.21	NP	75.03	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2000	98.24	NP	22.71	NP	75.53	54.6	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/30/2001	98.24	NP	20.24	NP	78	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/11/2001	98.24	NP	22.76	NP	75.48	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	98.24	NP	23.24	NP	75	77.5	--	--	0.602	<0.5	<0.5	1.05	--	--	--	--
	12/27/2001	98.24	NP	20.21	NP	78.03	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/14/2002	98.24	NP	19.85	NP	78.39	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	98.24	NP	22.89	NP	75.35	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	98.24	NP	21.43	NP	76.81	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	98.24	NP	17.16	NP	81.08	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	98.24	NP	22.44	NP	75.8	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	98.24	NP	21.15	NP	77.09	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	98.24	NP	23.37	NP	74.87	--	--	--	--	--	--	--	--	--	--	--
	4/11/2006	98.24	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	98.24	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	98.24	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	98.24	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	98.24	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	98.24	NP	21.65	NP	76.59	--	--	--	--	--	--	--	--	--	--	--
	3/3/2011	98.24	NP	21.01	NP	77.23	--	--	--	--	--	--	--	--	--	--	--
	9/12/2012	98.24	NP	23.63	NP	74.61	<50	<78.4	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	98.24	NP	21.01	NP	77.23	<100	<200	<200	<1	<1	<1	<3	--	--	--	<3
	03/08/13	98.24	NP	20.17	NP	78.07	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	98.24	NP	21.18	NP	77.06	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0097	<0.50	<10

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OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-19	12/20/1989	98.45	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	4/23/1990	98.45	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	5/18/1990	98.45	NG	NG	NG	NG	--	--	--	ND	1.2	ND	ND	--	--	--	--
	12/13/1990	98.45	NG	NG	NG	NG	--	--	--	ND	1.4	ND	ND	--	--	--	--
	1/4/1991	98.45	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	10/7/1991	98.45	NG	NG	NG	NG	--	--	--	1.3	ND	ND	ND	--	--	--	--
	8/26/1992	98.45	NG	NG	NG	NG	--	--	--	ND	ND	ND	ND	--	--	--	--
	6/3/1993	98.45	NG	NG	NG	NG	--	--	--	3	ND	ND	ND	--	--	--	--
	8/17/1999	98.45	NP	23.18	NP	75.27	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/17/2000	98.45	NP	20.65	NP	77.8	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/22/2000	98.45	NP	21.45	NP	77	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/31/2000	98.45	NP	23.49	NP	74.96	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/27/2000	98.45	NP	23.27	NP	75.18	<50	<575	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2000	98.45	NP	22.78	NP	75.67	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/30/2001	98.45	NP	20.38	NP	78.07	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/11/2001	98.45	NP	22.83	NP	75.62	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	98.45	NP	23.29	NP	75.16	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2001	98.45	NP	20.39	NP	78.06	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/14/2002	98.45	NP	19.19	NP	79.26	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	98.45	NP	22.98	NP	75.47	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	98.45	NP	21.61	NP	76.84	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	98.45	NP	17.24	NP	81.21	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	98.45	NP	22.55	NP	75.9	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	98.45	NP	21.24	NP	77.21	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	98.45	NP	23.44	NP	75.01	--	--	--	--	--	--	--	--	--	--	--
	4/11/2006	98.45	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	98.45	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	98.45	NP	23.61	NP	74.84	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	98.45	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	98.45	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	98.45	NP	21.96	NP	76.49	--	--	--	--	--	--	--	--	--	--	--
	3/3/2011	98.45	NP	21.16	NP	77.29	--	--	--	--	--	--	--	--	--	--	--
	9/12/2012	98.45	NP	23.68	NP	74.77	<50	<78.4	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	98.45	NP	21.15	NP	77.3	<100	<200	<200	<1	<1	<1	<3	--	--	--	<3
	03/08/13	98.45	NP	20.34	NP	78.11	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	98.45	NP	21.32	NP	77.13	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0097	<0.50	<10

TABLE 1
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-20	8/8/2001	96.5	NP	15.91	NP	80.59	<50	<250	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	96.5	NP	16.81	NP	79.69	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2001	96.5	NP	9.17	NP	87.33	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/14/2002	96.5	NP	9.21	NP	87.29	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	96.5	NP	14.3	NP	82.2	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	96.5	NP	10.82	NP	85.68	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	96.5	NP	13.41	NP	83.09	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	96.5	NP	16.2	NP	80.3	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	96.5	NP	16.15	NP	80.35	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	96.5	NP	15.55	NP	80.95	--	--	--	--	--	--	--	--	--	--	--
	4/11/2006	96.5	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	96.5	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	96.5	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	96.5	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	96.5	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	96.5	NP	10.69	NP	85.81	--	--	--	--	--	--	--	--	--	--	--
	3/3/2011	96.5	NP	9.11	NP	87.39	--	--	--	--	--	--	--	--	--	--	--
	9/12/2012	96.5	NP	15.62	NP	80.88	<50	<78.4	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	96.5	NP	13.27	NP	83.23	<100	<167	<167	<1	<1	<1	<3	--	--	--	<3
	03/08/13	96.50	NP	10.86	NP	85.64	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	96.50	NP	11.61	NP	84.89	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0096	<0.50	<10

TABLE 1
HISTORICAL GROUNDWATER GAUGING AND ANALYTICAL DATA
OPLC KENT BLOCK VALVE
74TH AVE SOUTH & SOUTH 259TH STREET
KENT, WASHINGTON

Well I.D.	Date	GROUNDWATER GAUGING DATA					GROUNDWATER ANALYTICAL DATA										
		TOC Elevation (ft)	Depth to LNAPL (ft)	Depth to Water (ft)	LNAPL Thickness (ft)	Water Elevation* (ft)	TPH-G (C6-C12) (UG/L)	TPH-D (C12-C24) (UG/L)	TPH-O (C24-C40) (UG/L)	Benzene (UG/L)	Toluene (UG/L)	Ethylbenzene (UG/L)	Xylene (Total) (UG/L)	MTBE (UG/L)	EDB (UG/L)	EDC (UG/L)	TOTAL PB (UG/L)
Applied Action Level: 2007 MTCA Method A							**800**	**500**	**500**	**5**	**1000**	**700**	**1000**	**20**	**0.01**	**5**	**15**
MW-21	8/8/2001	96.82	NP	21.38	NP	75.44	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/26/2001	96.82	NP	21.42	NP	75.4	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	12/27/2001	96.82	NP	17.06	NP	79.76	<50	--	--	<0.5	0.62	<0.5	1.11	--	--	--	--
	3/14/2002	96.82	NP	17.2	NP	79.62	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/17/2003	96.82	NP	20.4	NP	76.42	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	3/1/2004	96.82	NP	18.33	NP	78.49	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	6/1/2004	96.82	NP	16.3	NP	80.52	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	9/1/2004	96.82	NP	20.5	NP	76.32	<50	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	10/18/2004	96.82	NP	19.68	NP	77.14	<80	--	--	<0.5	<0.5	<0.5	<1	--	--	--	--
	7/27/2005	96.82	NP	20.92	NP	75.9	--	--	--	--	--	--	--	--	--	--	--
	4/11/2006	96.82	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	5/4/2007	96.82	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	9/5/2007	96.82	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	2/12/2008	96.82	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	7/17/2008	96.82	NG	NG	NG	NG	--	--	--	--	--	--	--	--	--	--	--
	3/3/2010	96.82	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
	3/3/2011	96.82	NP	17.42	NP	79.40	<50	<75	<380	<1	<1	<1	<3	--	--	--	--
	9/12/2012	96.82	NP	21.28	NP	75.54	<50	<78.4	<392	<1	<1	<1	<3	<1	<1	<1	<10
	11/7/2012	96.82	NP	18.31	NP	78.51	<100	<200	<200	<1	<1	<1	<3	--	--	--	<3
	03/08/13	96.82	NP	17.28	NP	79.54	<50.0	<250	<500	<0.500	<0.500	<0.500	<1.00	<0.500	--	--	<10
	06/05/13	96.82	NP	18.17	NP	78.65	<50.0	<250	<500	<0.50	<0.50	<0.50	<1.00	<0.50	<0.0097	<0.50	<10

Notes:

TOC - Top of Casing

ft - Feet

NP - LNAPL not present

LNAPL - Light non-aqueous phase liquid

* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)

Elevation - feet above mean sea level

NG - Not Gauged

NL - Not Located

WD - Well Damaged

WI - Well Inaccessible

-- - No information available

Results in BOLD exceed applicable action limits

MTCA - Model Toxics Control Act

< - Not detected at or ablve indicated laboratory reporting limit

UG/L - micrograms per liter

TPH-G - Total petroleum hydrocarbons as gasoline analyzed by Northwest Method NWTPH-Gx

TPH-D - Total petroleum hydrocarbons as diesel analyzed by Northwest Method NWTPH-Dx with silica gel cleanup

TPH-O - Total petroleum hydrocarbons as oil analyzed by Northwest Method NWTPH-Dx with silica gel cleanup

Benzene, toluene, ethylbenzene, total xylenes analyzed by EPA Method 8260

EDB - 1,2-dibromoethane analyzed by EPA Method 8260 or 8011.

EDC - 1,2-dichloroethane; analyzed using EPA Method 8260

Total lead analyzed by EPA Method 6010/6020

Figures

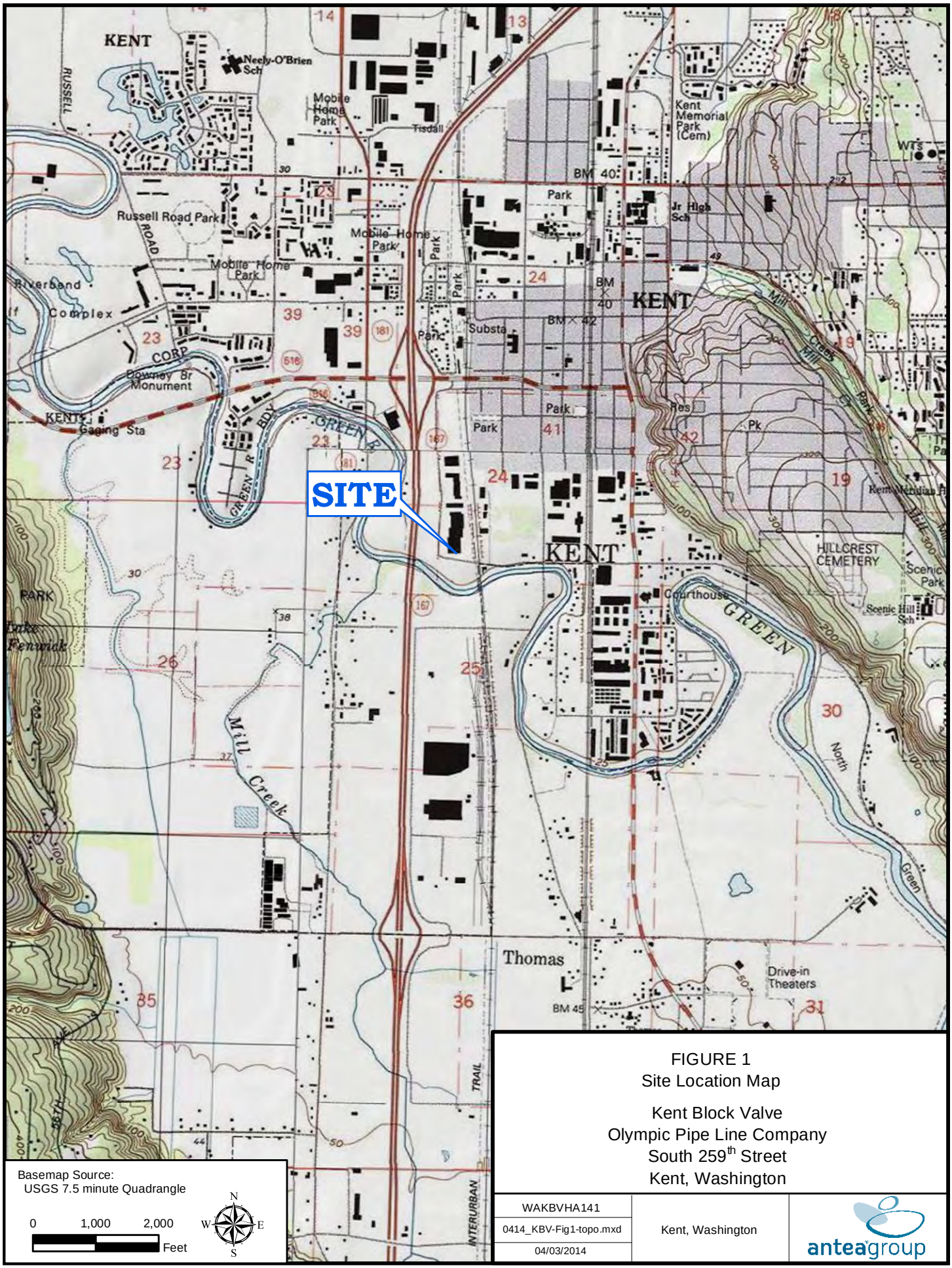


FIGURE 1
Site Location Map

Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

WAKBVHA141	Kent, Washington	anteagroup
0414_KBV-Fig1-topo.mxd		
04/03/2014		

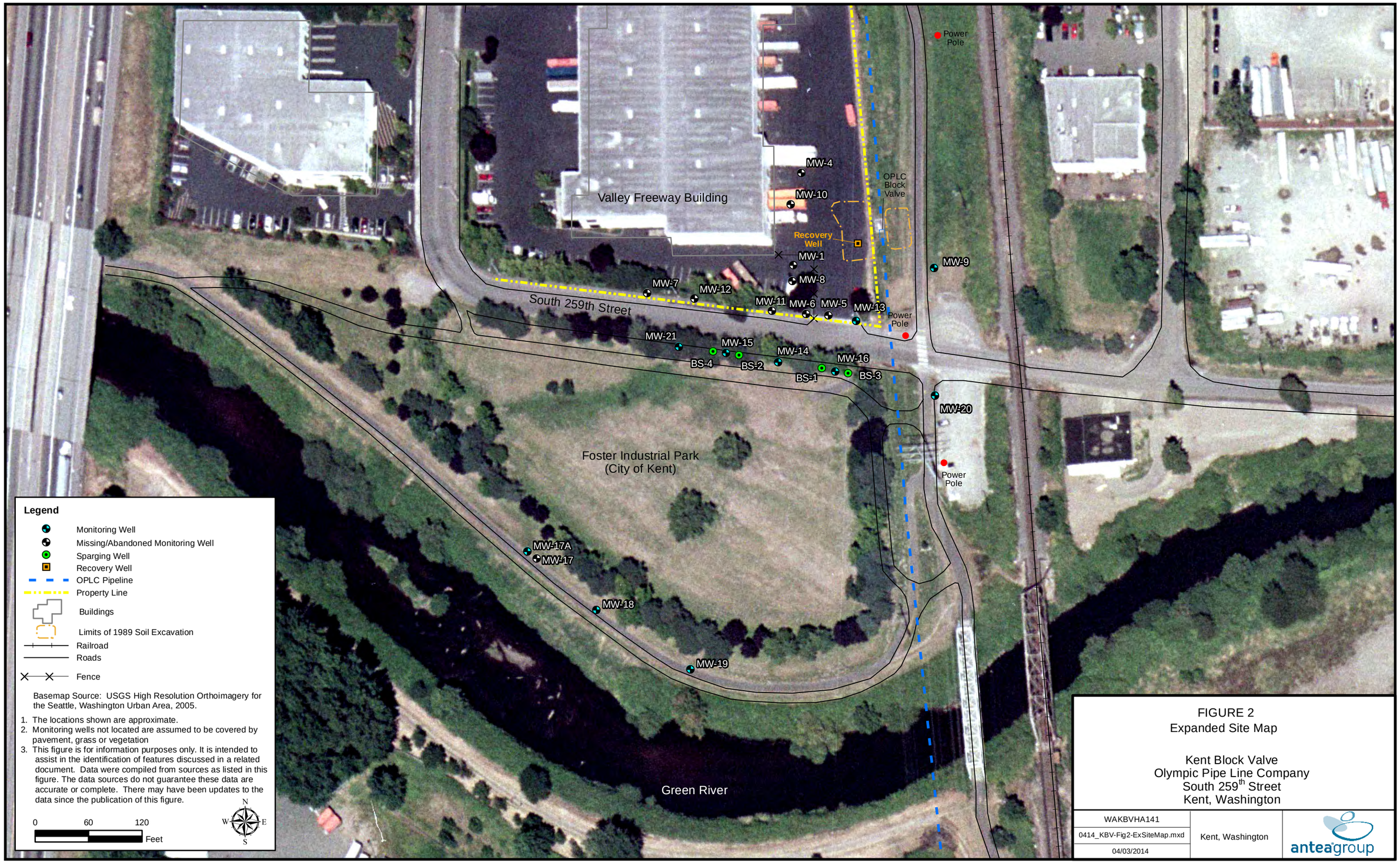


FIGURE 2
Expanded Site Map

Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

WAKBVHA141	Kent, Washington	antea group
0414_KBV-Fig2-ExSiteMap.mxd		
04/03/2014		

FIGURE 3
Site Map
Proposed Boring Locations

Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

WAKBVDA131	Kent, Washington	anteagroup
0314_KBV-Fig3-PropSample.mxd		
03/27/2014		

Appendix A

Opinion Letter, Washington State Department of Ecology

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

June 12, 2013

Mr. Bryan Taylor
Antea Group
4006 148th Avenue NE
Redmond, WA 98052

Re: Opinion Pursuant to WAC 173-340-515(5) on Remedial Investigation for the Following Hazardous Waste Site:

- Name: Olympic Pipe Line Co. Kent
- Address: 74th Avenue South and South 259th Street, Kent
- Facility/Site No.: 2401
- VCP No.: NW2705
- Cleanup Site No.: 3070

Dear Mr. Taylor:

Thank you for submitting documents regarding your remedial investigation for the Olympic Pipe Line Co. Kent (Site) for review by the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding a review of submitted documents/reports pursuant to requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site:

- Petroleum hydrocarbons (TPH), benzene, ethylbenzene, toluene and xylenes (BTEX) into soil and groundwater.

Ecology is providing this advisory opinion under the specific authority of RCW 70.105D.030(1)(i) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. The state does

not have the authority to settle with any person potentially liable under MTCA except in accordance with RCW 70.105D.040(4). The opinion is advisory only and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your remedial investigation:

1. Olympic Pipe Line Company Kent Block Valve Remedial Investigation Report, dated January 10, 2013, prepared by Antea Group.

Those documents are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can make an appointment by calling the NWRO resource contact at (425) 649-7235 or sending an email to nwro_public_request@ecy.wa.gov.

The Site is defined by the extent of contamination caused by the following release:

- Petroleum hydrocarbons (TPH), benzene, ethylbenzene, toluene and xylenes (BTEX) into soil and groundwater.

Based on a review of supporting documentation listed above, pursuant to **requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site, Ecology has determined:**

- Confirmational soil sampling throughout the facility to assess current soil conditions is required. Additionally, current soil conditions between the block valve property and the Valley Freeway Building remain unknown.
- Because the Site does not qualify for the exclusion, Site Specific Terrestrial Ecological Evaluation must be performed for this Site.
- To complete the soil vapor pathway investigation, refer to Ecology's "*Guidance for Evaluation Soil Vapor Intrusion in Washington State: Investigation and Remedial Action*" Review Draft October 2009, Publication No. 09-09-047.
- Environmental sampling data for all cleanup sites must be submitted both in printed and electronic form. The electronic data can be submitted using Ecology's EIM Environmental Information Management web page http://www.ecy.wa.gov/eim/.

This opinion does not represent a determination by Ecology that a proposed remedial action will be sufficient to characterize and address the specified contamination at the Site or that no further remedial action will be required at the Site upon completion of the proposed remedial action. To obtain either of these opinions, you must submit appropriate documentation to Ecology and request such an opinion under the VCP. **This letter also does**

not provide an opinion regarding the sufficiency of any other remedial action proposed for or conducted at the Site.

Please note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

The state, Ecology, and its officers and employees make no guarantees or assurances by providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

Again, Ecology appreciates your initiative in conducting independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed for or conducted at the Site meet those requirements.

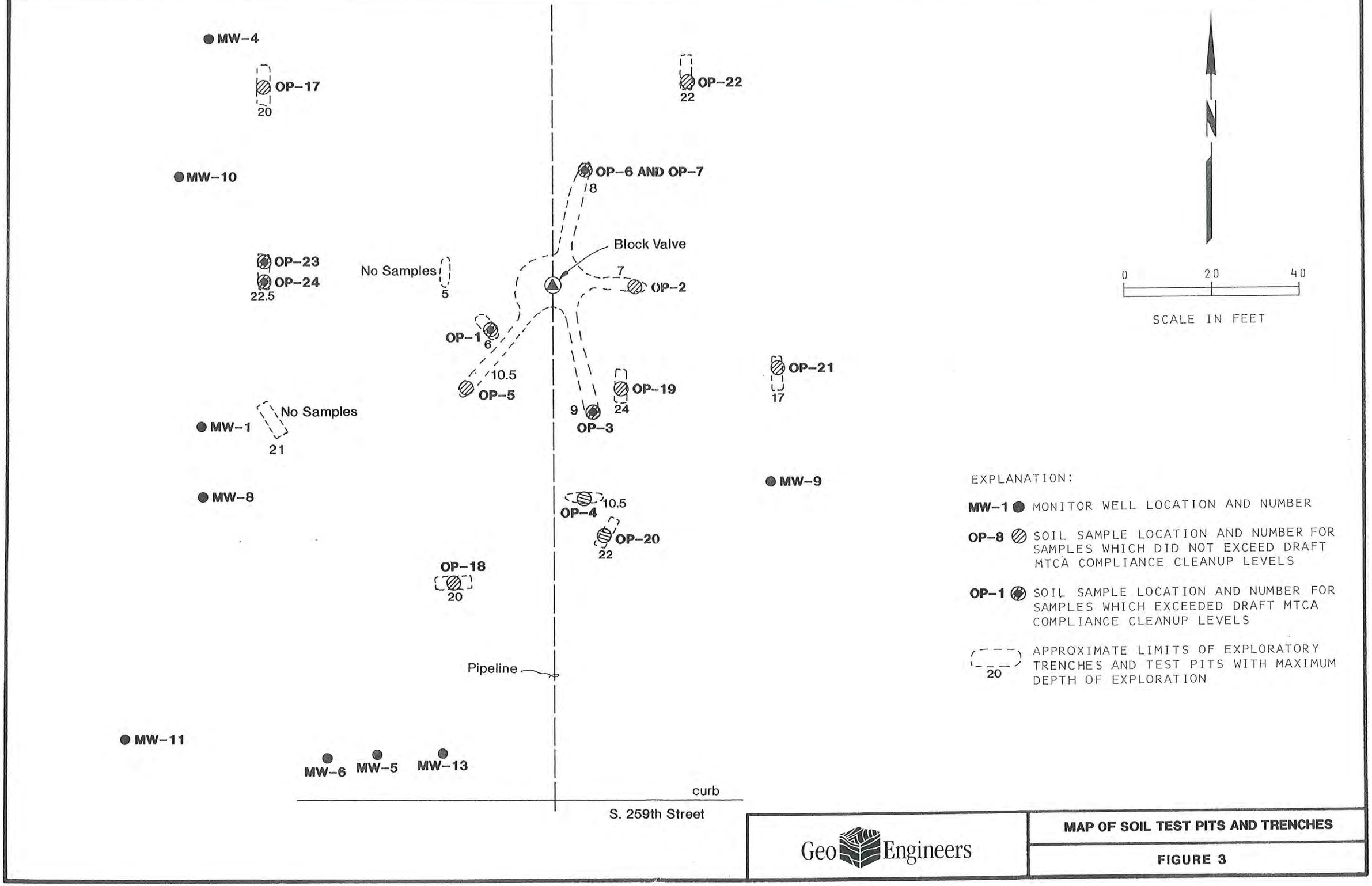
If you have any questions regarding this opinion, please contact me at (425) 649-4446 or by email at damy461@ecy.wa.gov.

Sincerely,

Dale Myers
Site Manager
Toxics Cleanup Program

Appendix B

1989 Soil Data, GeoEngineers

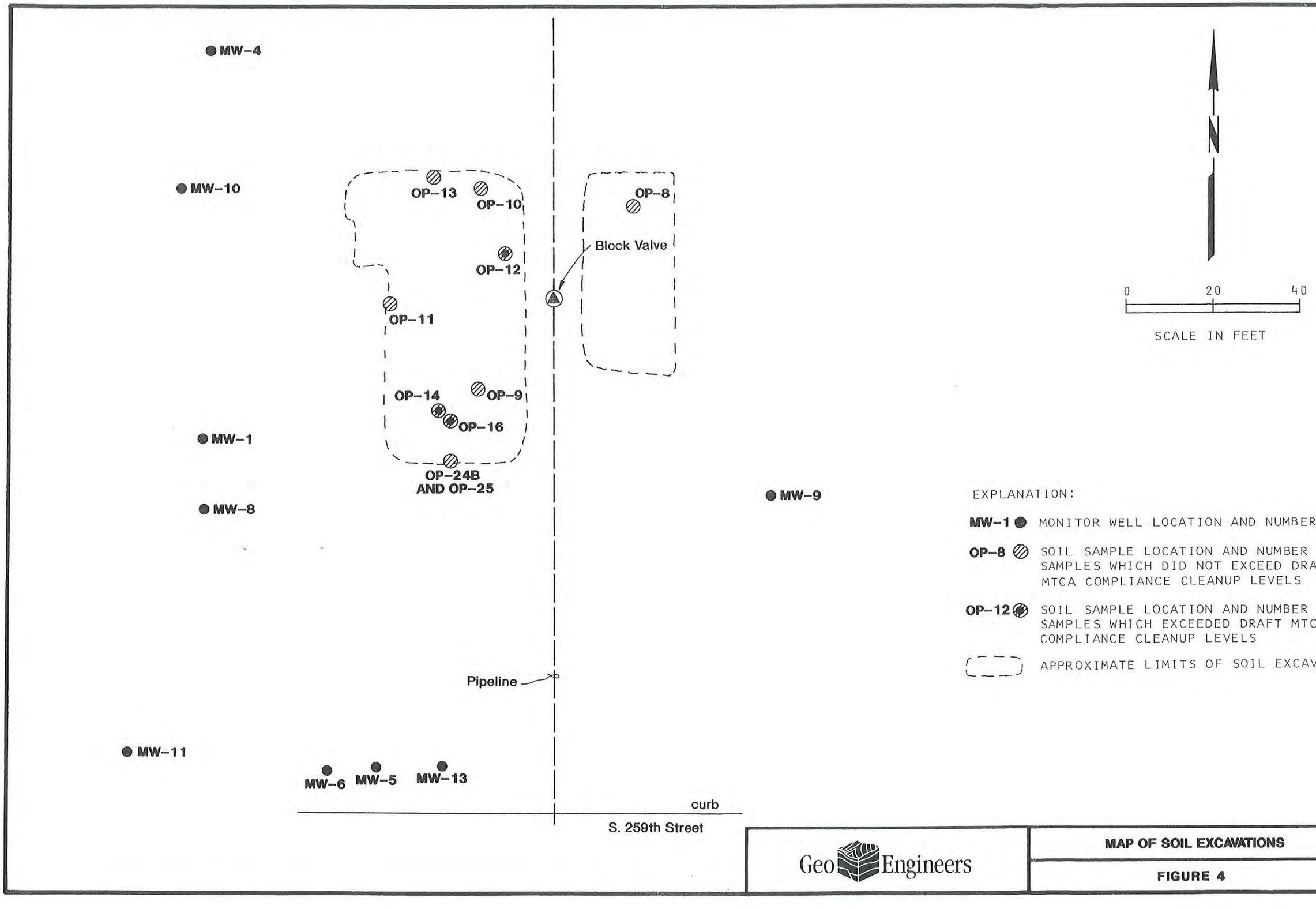


Geo Engineers

MAP OF SOIL TEST PITS AND TRENCHES

FIGURE 3

894-005-804 OKP:BDH 4/6/90



894-005-804 OKP:BDH 4/6/90

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TABLE 3
SUMMARY OF SOIL ANALYTICAL DATA

Sample Number	Sample Date	Depth (Feet)	Lithology	EPA Method 8020				EPA Method 418.1 TPH (ppm)
				Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Total Xylenes (ppb)	
OP-1	08/28/89	6.0	Sand	760	12,000	3,100	89,000	290
OP-2	08/29/89	7.0	Silt	ND	ND	ND	ND	ND
OP-3	08/29/89	9.0	Silt	660	1,400	ND	1,940	68
OP-4	08/29/89	10.5	Silt	ND	74	36	218	ND
OP-5	08/29/89	11.5	Silt	180	1,200	84	4,400	55
OP-6	08/29/89	5.0	Sand	ND	ND	ND	ND	1,100
OP-7	08/29/89	8.0	Silt	71	260	200	1,130	1.4
OP-8	09/01/89	6.0	Sand	ND	ND	ND	ND	1.6
OP-9	09/01/89	5.0	Sand	ND	ND	ND	ND	1.7
OP-10	09/01/89	5.0	Sand	ND	ND	ND	ND	1.6
OP-11	09/05/89	5.0	Sand	ND	46	27	280	ND
OP-12	09/06/89	18.0	Sandy silt	910	390	2,300	2,060	ND
OP-13	09/06/89	16.0	Silt	ND	ND	ND	ND	1.6
OP-14	09/06/89	15.0	Silt	3,900	540	5,000	2,610	4.5
OP-16	09/07/89	16.0	Silt	880	320	1,200	1,670	ND
OP-17	09/07/89	12.0	Silt	ND	ND	ND	ND	ND
OP-18	09/07/89	12.0	Sand	ND	49	ND	158	ND
OP-19	09/07/89	24.0	Sand	ND	ND	ND	ND	ND
OP-20	09/08/89	22.0	Silt	ND	ND	ND	ND	ND
OP-21	09/08/89	17.0	Silt	ND	ND	ND	ND	ND
OP-22	09/08/89	22.0	Silty sand	ND	ND	ND	ND	ND
OP-23	09/08/89	22.5	Sand	390	530	1,200	2,840	470
OP-24	09/08/89	24.5	Sand	1,500	250	2,800	1,250	ND
OP-24B	09/11/89	22.5	Silt	180	ND	56	42	ND
OP-25	09/11/89	5.0	Sand	ND	ND	ND	ND	ND
MW-9-7	09/18/89	33.0	Sand	ND	ND	ND	ND	ND
DRAFT MTCA Compliance Cleanup Level				500	20,000	40,000	20,000	200

Notes:
"TPH" = Total petroleum hydrocarbons
"ppb" = parts per billion
"ppm" = parts per million
"ND" = not detected; see laboratory data sheets in Appendix B for analyte detection limits.
Shaded values indicate contaminant concentrations which exceed DRAFT MTCA Compliance Cleanup Levels.

Appendix C

Historical Groundwater Data, GeoEngineers

GeoEngineers

TABLE 5 (Page 1 of 3)
SUMMARY OF GROUND WATER QUALITY DATA

Monitor Well	Sample Date	EPA Method 8020			
		Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Total Xylenes (ppb)
MW-1	08-29-89	2,400	530	99	2,240
	12-20-89	95	34	9.5	78
MW-4	09-05-89	ND	ND	ND	ND
	12-21-89	ND	ND	ND	ND
MW-5	12-21-89	ND	ND	ND	ND
	04-23-90	ND	ND	ND	ND
MW-6	09-20-89	410	13	11	41
	12-21-89	79	2.2	1.1	11
	01-23-90	910	23	17	83
	02-20-90	950	65	190	280
	03-20-90	9.6	0.6	ND	6.7
	04-23-90	130	22	16	75
	05-18-90	220	39	20	120
MW-7	09-20-89	1.1	ND	ND	0.8
	12-20-89	ND	ND	ND	ND
	05-18-90	ND	ND	ND	ND
MW-8	09-20-89	6,400	550	840	2,170
	12-20-89	9,300	<2,500	<2,500	<2,500
	01-23-90	10,000	980	5,000	4,700
	02-20-90	2,700	500	1,900	2,200
	03-20-90	1,800	470	1,100	1,700
MW-9	09-20-89	ND	ND	ND	ND
	12-20-89	4.8	25	86	120
	01-23-90	4.8	53	85	240
	02-20-90	14	41	38	120
	03-20-90	26	38	6.3	110
	04-23-90	23	42	6.7	81
MW-10	09-20-89	29	ND	1.1	0.5
	12-20-89	74	ND	0.77	1.6
	01-23-90	140	12	87	53
	02-20-90	130	33	100	67
	03-20-90	270	58	330	220
DRAFT MTCA Compliance Cleanup Levels		5	20	40	20

Notes:
"ppb" = parts per billion
"ND" = Not detected; see laboratory data sheets in Appendix D for analyte detection limits.
Shaded values indicate BETX concentrations which exceed DRAFT MTCA Compliance Cleanup Levels.

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TABLE 5 (Page 2 of 3)

Monitor Well	Sample Date	EPA Method 8020			
		Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Total Xylenes (ppb)
MW-11	10-18-89	520	16	13	47
	12-20-89	1,200	53.9	29.6	158
	01-23-90	1,600	96	170	220
	02-20-90	1,200	56	100	240
	03-21-90	2,200	130	260	420
	04-23-90	2,000	140	180	440
	05-18-90	2,300	150	205	500
MW-12	10-18-89	ND	ND	ND	ND
	12-20-89	ND	ND	ND	ND
	01-23-90	ND	ND	ND	ND
	02-21-90	ND	ND	ND	ND
	03-21-90	ND	ND	ND	ND
	04-23-90	ND	ND	ND	ND
	05-18-90	ND	ND	ND	ND
MW-13	10-18-89	3.4	ND	ND	ND
	12-21-89	2.5	ND	ND	ND
	01-23-90	3.3	ND	ND	ND
	02-20-90	20	1.7	9.3	8.0
	03-21-90	29	13	37	64
	04-23-90	49	26	5.8	110
MW-14	11-10-89	1,800	41	22	170
	12-20-89	160	6.5	1.6	18
	01-23-90	110	ND	1.0	6.8
	02-21-90	14	ND	ND	1.3
	03-21-90	530	20	6.9	47
	04-23-90	360	1.9	2.2	7.8
	05-18-90	500	4.2	4.3	14
MW-15	11-10-89	99	ND	ND	1.0
	12-20-89	200	1.7	2.2	6.4
	01-23-90	120	ND	1.4	2.6
	02-21-90	48	ND	ND	0.7
	03-21-90	53	ND	0.5	0.5
	04-23-90	53	ND	ND	ND
	05-18-90	59	ND	ND	ND
DRAFT MTCA Compliance Cleanup Levels		5	20	40	20

Notes:
"ppb" = parts per billion
"ND" = Not detected; see laboratory data sheets in Appendix D for analyte detection limits.
Shaded values indicate BETX concentrations which exceed DRAFT MTCA Compliance Cleanup Levels.

GeoEngineers

TABLE 5 (Page 3 of 3)

Monitor Well	Sample Date	EPA Method 8020			
		Benzene (ppb)	Ethyl-benzene (ppb)	Toluene (ppb)	Total Xylenes (ppb)
MW-16	12-19-89	98	ND	1.1	ND
	01-23-90	560	2.4	6.8	5.5
	02-21-90	750	64	320	360
	03-21-90	720	63	400	310
	04-23-90	1,200	140	740	630
	05-18-90	780	97	750	470
MW-17	12-19-89	ND	ND	ND	ND
	04-23-90	ND	ND	ND	ND
	05-18-90	ND	ND	ND	ND
MW-18	12-20-89	ND	ND	ND	ND
	01-22-90	ND	ND	ND	ND
	02-21-90	ND	ND	ND	0.5
	03-20-90	1.0	ND	1.0	0.7
	04-23-90	ND	ND	ND	ND
	05-18-90	ND	ND	ND	ND
MW-19	12-20-89	ND	ND	ND	ND
	04-23-90	ND	ND	ND	ND
	05-18-90	ND	ND	1.2	ND
DRAFT MTCA Compliance Cleanup Levels		5	20	40	20

Notes:
"ppb" = parts per billion
"ND" = Not detected; see laboratory data sheets in Appendix D for analyte detection limits.
Shaded values indicate BETX concentrations which exceed DRAFT MTCA Compliance Cleanup Levels.

TABLE 1 (Page 1 of 4)
SUMMARY OF GROUND WATER MONITORING DATA
OPLC KENT BLOCK VALVE RELEASE
KENT, WASHINGTON

Monitoring Well Number	Date Sampled	BETX (EPA method 8020 and/or 8021B) (µg/l)				Petroleum Hydrocarbons (mg/l)	
		B	E	T	X	Gasoline (Ecology Method WTPH-G)	Diesel (Ecology Method WTPH-D)
MW-6	09/20/89	410	13	11	41	–	–
	12/21/89	79	2.2	1.1	11	–	–
	01/23/90	910	23	17	83	–	–
	02/20/90	950	65	190	280	–	–
	03/20/90	9.6	0.6	ND	6.7	–	–
	04/23/90	130	22	16	75	–	–
	05/18/90	220	39	20	120	–	–
	12/13/90	280	2.1	8.9	13	–	–
	10/07/91	180	4.6	5.3	12	–	–
	08/26/92	320	18	7.8	47	–	–
	06/03/93	3.0	ND	ND	0.7	–	–
MW-7	09/20/89	1.1	ND	ND	0.8	–	–
	12/20/89	ND	ND	ND	ND	–	–
	05/18/90	ND	ND	ND	ND	–	–
	12/13/90	ND	ND	ND	ND	–	–
	10/07/91	ND	ND	ND	ND	–	–
	08/26/92	ND	ND	ND	ND	–	–
	06/03/93	ND	ND	ND	ND	–	–
MW-9	09/20/89	ND	ND	ND	ND	–	–
	12/20/89	4.8	25	86	120	–	–
	01/23/90	4.8	53	85	240	–	–
	02/20/90	14	41	38	120	–	–
	03/20/90	26	38	6.3	110	–	–
	04/23/90	23	42	6.7	81	–	–
	12/13/90	0.9	15	1.6	30	–	–
	08/26/92	3.3	0.9	ND	1.3	–	–
	06/03/93	ND	ND	ND	ND	–	–
	08/17/99	<0.500	<0.500	<0.500	<1.00	<0.0500	0.530
MTCA Method A Cleanup Level		5.0	30.0	40.0	20.0	1.0	

Notes appear on page 4 of 4

TABLE 1 (Page 2 of 4)

Monitoring Well Number	Date Sampled	BETX (EPA method 8020 and/or 8021B) (µg/l)				Petroleum Hydrocarbons (mg/l)	
		B	E	T	X	Gasoline (Ecology Method WTPH-G)	Diesel (Ecology Method WTPH-D)
MW-11	10/18/89	520	16	13	47	–	–
	12/20/89	1200	53.9	29.6	158	–	–
	01/23/90	1600	96	170	220	–	–
	02/20/90	1200	56	100	240	–	–
	03/21/90	2200	130	260	420	–	–
	04/23/90	2000	140	180	440	–	–
	05/18/90	2300	150	205	500	–	–
	12/13/90	5500	340	280	1,200	–	–
	10/07/91	1100	100	21	280	–	–
	08/26/92	1400	140	28	420	–	–
	06/03/93	1000	170	25	420	–	–
MW-12	10/18/89	ND	ND	ND	ND	–	–
	12/20/89	ND	ND	ND	ND	–	–
	01/23/90	ND	ND	ND	ND	–	–
	02/21/90	ND	ND	ND	ND	–	–
	03/21/90	ND	ND	ND	ND	–	–
	04/23/90	ND	ND	ND	ND	–	–
	05/18/90	ND	ND	ND	ND	–	–
	12/13/90	ND	ND	ND	ND	–	–
	10/07/91	ND	ND	ND	ND	–	–
	08/26/92	3.9	0.5	ND	1.4	–	–
	06/03/93	ND	ND	ND	ND	–	–
MW-13	10/18/89	3.4	ND	ND	ND	–	–
	12/21/89	2.5	ND	ND	ND	–	–
	01/23/90	3.3	ND	ND	ND	–	–
	02/20/90	20	1.7	9.3	8.0	–	–
	03/21/90	29	13	37	64	–	–
	04/23/90	49	26	5.8	110	–	–
	08/26/92	9.5	1.6	0.5	3.7	–	–
	06/03/93	3.8	0.6	ND	2.1	–	–
	08/17/99	66.5	2.63	3.45	28.8	0.370	<0.250
MTCA Method A Cleanup Level		5.0	30.0	40.0	20.0	1.0	

Notes appear on page 4 of 4

TABLE 1 (Page 3 of 4)

Monitoring Well Number	Date Sampled	BETX (EPA method 8020 and/or 8021B) (µg/l)				Petroleum Hydrocarbons (mg/l)	
		B	E	T	X	Gasoline (Ecology Method WTPH-G)	Diesel (Ecology Method WTPH-D)
MW-14	11/10/89	1800	41	22	170	–	–
	12/20/89	160	6.5	1.6	18	–	–
	01/23/90	110	ND	1.0	6.8	–	–
	02/21/90	14	ND	ND	1.3	–	–
	03/21/90	530	20	6.9	47	–	–
	04/23/90	360	1.9	2.2	7.8	–	–
	05/18/90	500	4.2	4.3	14	–	–
	12/13/90	16	ND	ND	ND	–	–
	10/07/91	8.4	ND	ND	ND	–	–
	08/26/92	ND	ND	ND	ND	–	–
	06/03/93	ND	ND	ND	ND	–	–
	08/17/99	<0.500	<0.500	<0.500	<1.00	<0.0500	0.269
MW-15	11/10/89	99	ND	ND	1.0	–	–
	12/20/89	200	1.7	2.2	6.4	–	–
	01/23/90	120	ND	1.4	2.6	–	–
	02/21/90	48	ND	ND	0.7	–	–
	03/21/90	53	ND	0.5	0.5	–	–
	04/23/90	53	ND	ND	ND	–	–
	05/18/90	59	ND	ND	ND	–	–
	12/13/90	450	17	120	97	–	–
	10/07/91	350	16	6.6	50	–	–
	08/26/92	380	21	3.6	66	–	–
	06/03/93	370	15	4.1	52	–	–
	08/17/99	611	23.4	12	72.7	<0.500	<0.250
MW-16	12/19/89	98	ND	1.1	ND	–	–
	01/23/90	560	2.4	6.8	5.5	–	–
	02/21/90	750	64	320	360	–	–
	03/21/90	720	63	400	310	–	–
	04/23/90	1200	140	740	630	–	–
	05/18/90	780	97	750	470	–	–
	12/13/90	590	26	98	130	–	–
	10/07/91	840	99	180	400	–	–
	08/26/92	520	150	20	480	–	–
	06/03/93	420	170	14	380	–	–
	08/17/99	48.6	3.99	3.40	30.1	0.710	0.256
MTCA Method A Cleanup Level		5.0	30.0	40.0	20.0	1.0	

Notes appear on page 4 of 4

TABLE 1 (Page 4 of 4)

Monitoring Well Number	Date Sampled	BETX (EPA method 8020 and/or 8021B) (µg/l)				Petroleum Hydrocarbons (mg/l)	
		B	E	T	X	Gasoline (Ecology Method WTPH-G)	Diesel (Ecology Method WTPH-D)
MW-17	12/19/89	ND	ND	ND	ND	--	--
	04/23/90	ND	ND	ND	ND	--	--
	05/18/90	ND	ND	ND	ND	--	--
	12/13/90	ND	ND	ND	ND	--	--
	10/07/91	ND	ND	ND	ND	--	--
	08/26/92	ND	ND	ND	ND	--	--
MW-17A	09/10/99	<0.500	<0.500	<0.500	<1.00	<0.0500	0.269
MW-18	12/20/89	ND	ND	ND	ND	--	--
	01/22/90	ND	ND	ND	ND	--	--
	02/21/90	ND	ND	ND	0.5	--	--
	03/20/90	1.0	ND	1.0	0.7	--	--
	04/23/90	ND	ND	ND	ND	--	--
	05/18/90	ND	ND	ND	ND	--	--
	12/13/90	14	ND	ND	ND	--	--
	01/04/91	3.3	ND	ND	ND	--	--
	10/07/91	12	ND	ND	ND	--	--
	08/26/92	64	1.6	ND	6.6	--	--
	06/03/93	97	ND	1.5	23	--	--
	08/17/99	<0.500	<0.500	<0.500	<1.00	<0.0500	<0.250
MW-19	12/20/89	ND	ND	ND	ND	--	--
	04/23/90	ND	ND	ND	ND	--	--
	05/18/90	ND	ND	1.2	ND	--	--
	12/13/90	ND	ND	1.4	ND	--	--
	01/04/91	ND	ND	ND	ND	--	--
	10/07/91	1.3	ND	ND	ND	--	--
	08/26/92	ND	ND	ND	ND	--	--
	06/03/93	3.0	ND	ND	ND	--	--
	08/17/99	<0.500	<0.500	<0.500	<1.00	<0.0500	<0.250
MTCA Method A Cleanup Level		5.0	30.0	40.0	20.0	1.0	

Notes:
µg/l = micrograms per liter
Shaded concentrations are greater than the MTCA Method A cleanup level
mg/l = milligrams per liter
ND = not detected, refer to laboratory reports for analyte detection limits
-- = not sampled or not tested

Appendix D

MW-17A Soil Data, GeoEngineers

TABLE 3
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA[1]
OPLC KENT BLOCK VALVE RELEASE
KENT, WASHINGTON

Sample Number[2]	Sample Date	Sample Depth (ft bgs)	Field Screening Results[3]		Total Petroleum Hydrocarbons [4]		
			Sheen	Headspace Vapor (ppm)	Gasoline-Range	Diesel-Range	Heavy Oil-Range
MW-17A-24	09/07/99	24	NS	380	<20.0	<50.0	<100
MTCA Method A Cleanup Levels					100	200	200

Notes:
[illegible]

Appendix E

MW-21 Laboratory Analytical Report, NCA Analytical

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Geo Engineers/Olympic Pipeline Co.	Project: OPLC-Kent Block Valve	
8410 154th Ave. NE	Project Number: 0894-005-02 T2	**Reported:**
Redmond WA, 98052	Project Manager: Tina King	08/13/01 14:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-21-16.0	B1H0035-01	Soil	07/31/01 12:00	08/01/01 16:15

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Scott A. Woerman, Project Manager

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Geo Engineers/Olympic Pipeline Co.	Project: OPLC-Kent Block Valve	
8410 154th Ave. NE	Project Number: 0894-005-02 T2	**Reported:**
Redmond WA, 98052	Project Manager: Tina King	08/13/01 14:42

Volatile Petroleum Products and BTEX by NWTPH-Gx and EPA 8021B

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-21-16.0 (B1H0035-01) Soil Sampled: 07/31/01 12:00 Received: 08/01/01 16:15									
Gasoline Range Hydrocarbons	ND	5.00	mg/kg dry	1	1H07028	08/07/01	08/08/01	NWTPH-Gx/8021B	
Benzene	ND	0.0300	"	"	"	"	"	"	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.100	"	"	"	"	"	"	
Surrogate: 4-BFB (FID)	*78.7 %*	*50-147*			"	"	"	"	
Surrogate: 4-BFB (PID)	*81.8 %*	*54-123*			"	"	"	"	

Scott A. Woerman, Project Manager

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Geo Engineers/Olympic Pipeline Co.	Project: OPLC-Kent Block Valve	
8410 154th Ave. NE	Project Number: 0894-005-02 T2	**Reported:**
Redmond WA, 98052	Project Manager: Tina King	08/13/01 14:42

Semivolatile Petroleum Products by NWTPH-Dx with Acid/Silica Gel Clean-up

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-21-16.0 (B1H0035-01) Soil Sampled: 07/31/01 12:00 Received: 08/01/01 16:15									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	1H07007	08/07/01	08/12/01	NWTPH-Dx SG	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*69.5 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*83.1 %*	*50-150*			"	"	"	"	

Scott A. Woerman, Project Manager

Appendix F

BS-1 through BS-4 Laboratory Analytical Data, NCA Analytical

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Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119
907.563.9200 fax 907.563.9210

Geo Engineers/Olympic Pipeline Co.	Project: OPLC-Kent Block Valve	
8410 154th Ave NE	Project Number: 0894-005-03	**Reported:**
Redmond, WA/USA 98052	Project Manager: Tina King	07/17/03 10:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BS-1	B3G0264-01	Soil	06/26/03 14:40	07/10/03 17:00
BS-2	B3G0264-02	Soil	06/26/03 13:00	07/10/03 17:00
BS-3	B3G0264-03	Soil	06/26/03 11:15	07/10/03 17:00
BS-4	B3G0264-04	Soil	06/26/03 09:00	07/10/03 17:00
6/27/03 (lab composite)	B3G0264-05	Soil	06/26/03 09:00	07/10/03 17:00

North Creek Analytical - Bothell

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Jeff Gerdes

Jeff Gerdes, Project Manager

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Geo Engineers/Olympic Pipeline Co.	Project: OPLC-Kent Block Valve	
8410 154th Ave NE	Project Number: 0894-005-03	**Reported:**
Redmond, WA/USA 98052	Project Manager: Tina King	07/17/03 10:29

Volatile Petroleum Products by NWTPH-Gx
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BS-1 (B3G0264-01) Soil Sampled: 06/26/03 14:40 Received: 07/10/03 17:00									**I-02**
Gasoline Range Hydrocarbons	ND	5.00	mg/kg dry	1	3G14005	07/14/03	07/15/03	NWTPH-Gx	
Surrogate: 4-BFB (FID)	*87.7 %*	*52-123*			"	"	"	"	
BS-2 (B3G0264-02) Soil Sampled: 06/26/03 13:00 Received: 07/10/03 17:00									**I-02**
Gasoline Range Hydrocarbons	ND	5.00	mg/kg dry	1	3G14005	07/14/03	07/15/03	NWTPH-Gx	
Surrogate: 4-BFB (FID)	*87.7 %*	*52-123*			"	"	"	"	
BS-3 (B3G0264-03) Soil Sampled: 06/26/03 11:15 Received: 07/10/03 17:00									**I-02**
Gasoline Range Hydrocarbons	ND	5.00	mg/kg dry	1	3G14005	07/14/03	07/15/03	NWTPH-Gx	
Surrogate: 4-BFB (FID)	*86.7 %*	*52-123*			"	"	"	"	
BS-4 (B3G0264-04) Soil Sampled: 06/26/03 09:00 Received: 07/10/03 17:00									**I-02**
Gasoline Range Hydrocarbons	ND	5.00	mg/kg dry	1	3G14005	07/14/03	07/15/03	NWTPH-Gx	
Surrogate: 4-BFB (FID)	*82.8 %*	*52-123*			"	"	"	"	
6/27/03 (lab composite) (B3G0264-05) Soil Sampled: 06/26/03 09:00 Received: 07/10/03 17:00									**I-02**
Gasoline Range Hydrocarbons	ND	5.00	mg/kg dry	1	3G14005	07/14/03	07/15/03	NWTPH-Gx	
Surrogate: 4-BFB (FID)	*83.9 %*	*52-123*			"	"	"	"	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Gerdes

Jeff Gerdes, Project Manager

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907.563.9200 fax 907.563.9210

Geo Engineers/Olympic Pipeline Co.	Project: OPLC-Kent Block Valve	
8410 154th Ave NE	Project Number: 0894-005-03	**Reported:**
Redmond, WA/USA 98052	Project Manager: Tina King	07/17/03 10:29

Semivolatile Petroleum Products by NWTPH-Dx (w/o Acid/Silica Gel Clean-up)

North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BS-1 (B3G0264-01) Soil Sampled: 06/26/03 14:40 Received: 07/10/03 17:00									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3G14023	07/14/03	07/16/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*101 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*121 %*	*57-120*			"	"	"	"	*S-03*
BS-2 (B3G0264-02) Soil Sampled: 06/26/03 13:00 Received: 07/10/03 17:00									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3G14023	07/14/03	07/15/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*82.0 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*97.4 %*	*57-120*			"	"	"	"	
BS-3 (B3G0264-03) Soil Sampled: 06/26/03 11:15 Received: 07/10/03 17:00									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3G14023	07/14/03	07/16/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*88.0 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*112 %*	*57-120*			"	"	"	"	
BS-4 (B3G0264-04) Soil Sampled: 06/26/03 09:00 Received: 07/10/03 17:00									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3G14023	07/14/03	07/16/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*90.4 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*113 %*	*57-120*			"	"	"	"	
6/27/03 (lab composite) (B3G0264-05) Soil Sampled: 06/26/03 09:00 Received: 07/10/03 17:00									
Diesel Range Hydrocarbons	ND	10.0	mg/kg dry	1	3G14023	07/14/03	07/15/03	NWTPH-Dx	
Lube Oil Range Hydrocarbons	ND	25.0	"	"	"	"	"	"	
Surrogate: 2-FBP	*82.6 %*	*50-150*			"	"	"	"	
Surrogate: Octacosane	*95.1 %*	*57-120*			"	"	"	"	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jeff Gerdes

Jeff Gerdes, Project Manager

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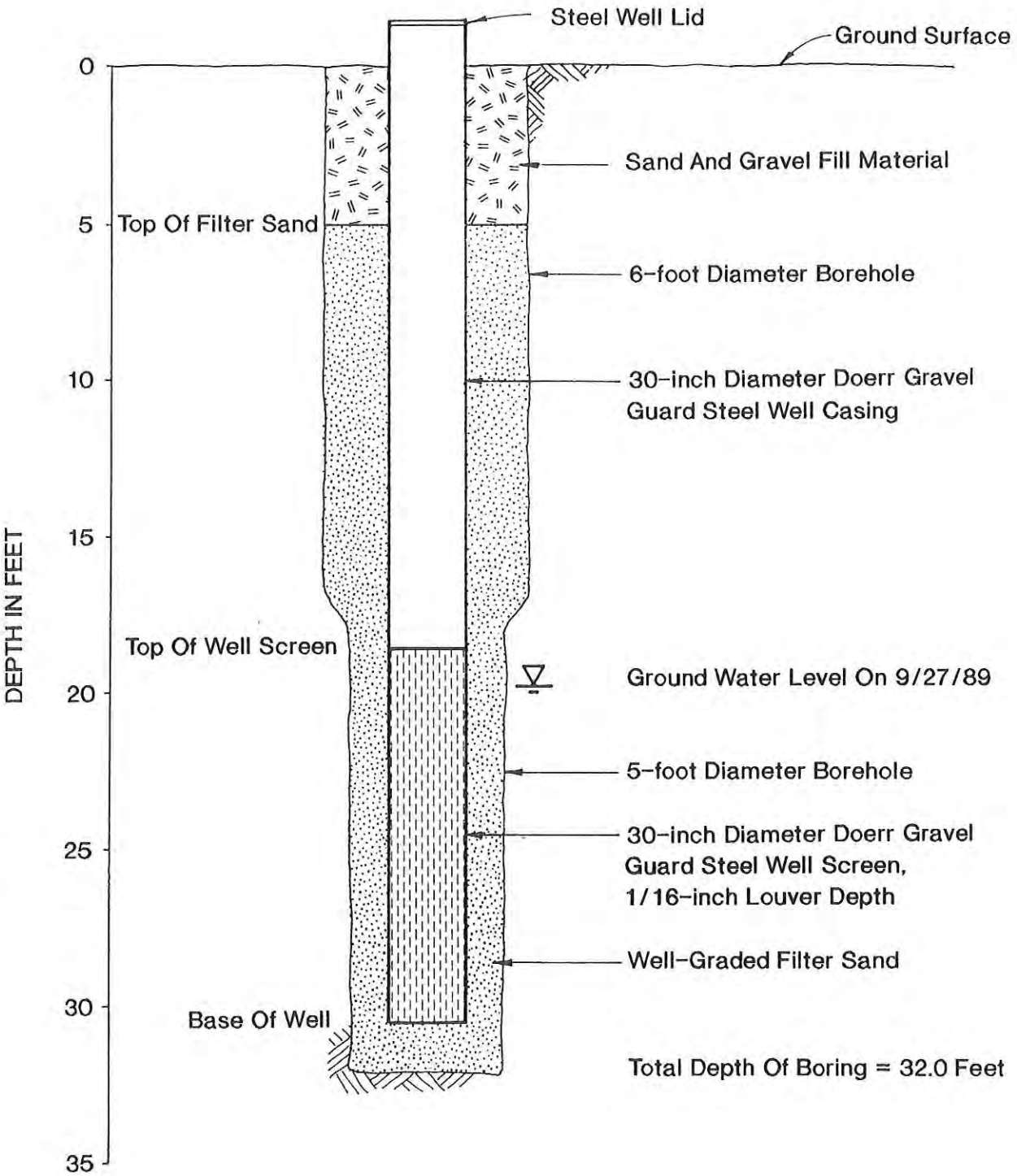
503.906.9200 fax 503.906.9210
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588
Anchorage 2000 W. International Airport Road, Suite A10, Anchorage, AK 99502-1119
907.563.9200 fax 907.563.9210

Geo Engineers/Olympic Pipeline Co. 8410 154th Ave NE Redmond, WA/USA 98052	Project: OPLC-Kent Block Valve Project Number: 0894-005-03 Project Manager: Tina King	**Reported:** 07/17/03 10:29

BTEX by EPA Method 8021B
North Creek Analytical - Bothell

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
BS-1 (B3G0264-01) Soil Sampled: 06/26/03 14:40 Received: 07/10/03 17:00									**I-02**
Benzene	ND	0.0300	mg/kg dry	1	3G14005	07/14/03	07/15/03	EPA 8021B	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.100	"	"	"	"	"	"	
Surrogate: 4-BFB (PID)	*78.0 %*	*60-127*			"	"	"	"	
BS-2 (B3G0264-02) Soil Sampled: 06/26/03 13:00 Received: 07/10/03 17:00									**I-02**
Benzene	ND	0.0300	mg/kg dry	1	3G14005	07/14/03	07/15/03	EPA 8021B	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.100	"	"	"	"	"	"	
Surrogate: 4-BFB (PID)	*80.8 %*	*60-127*			"	"	"	"	
BS-3 (B3G0264-03) Soil Sampled: 06/26/03 11:15 Received: 07/10/03 17:00									**I-02**
Benzene	ND	0.0300	mg/kg dry	1	3G14005	07/14/03	07/15/03	EPA 8021B	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.100	"	"	"	"	"	"	
Surrogate: 4-BFB (PID)	*99.2 %*	*60-127*			"	"	"	"	
BS-4 (B3G0264-04) Soil Sampled: 06/26/03 09:00 Received: 07/10/03 17:00									**I-02**
Benzene	ND	0.0300	mg/kg dry	1	3G14005	07/14/03	07/15/03	EPA 8021B	
Toluene	ND	0.0500	"	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	"	
Xylenes (total)	ND	0.100	"	"	"	"	"	"	
Surrogate: 4-BFB (PID)	*76.8 %*	*60-127*			"	"	"	"	



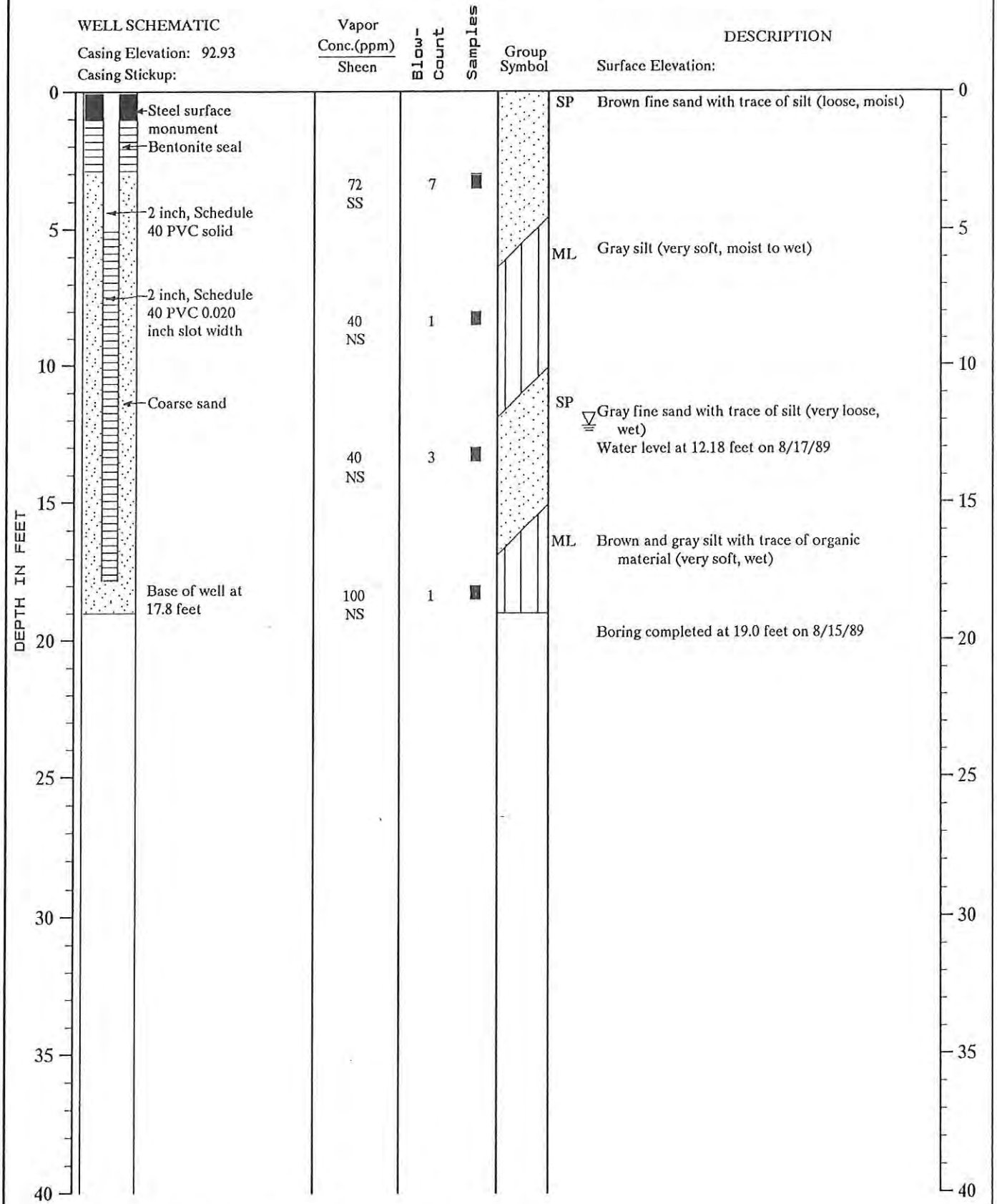
Geo Engineers

RECOVERY WELL CONSTRUCTION DETAIL

FIGURE 9

0894-05-804 OKP:KKT 12-4-89

MONITOR WELL NO. MW-1



Note: See Figure A-2 for explanation symbols

Geo Engineers

Log of Monitor Well

Figure A-3

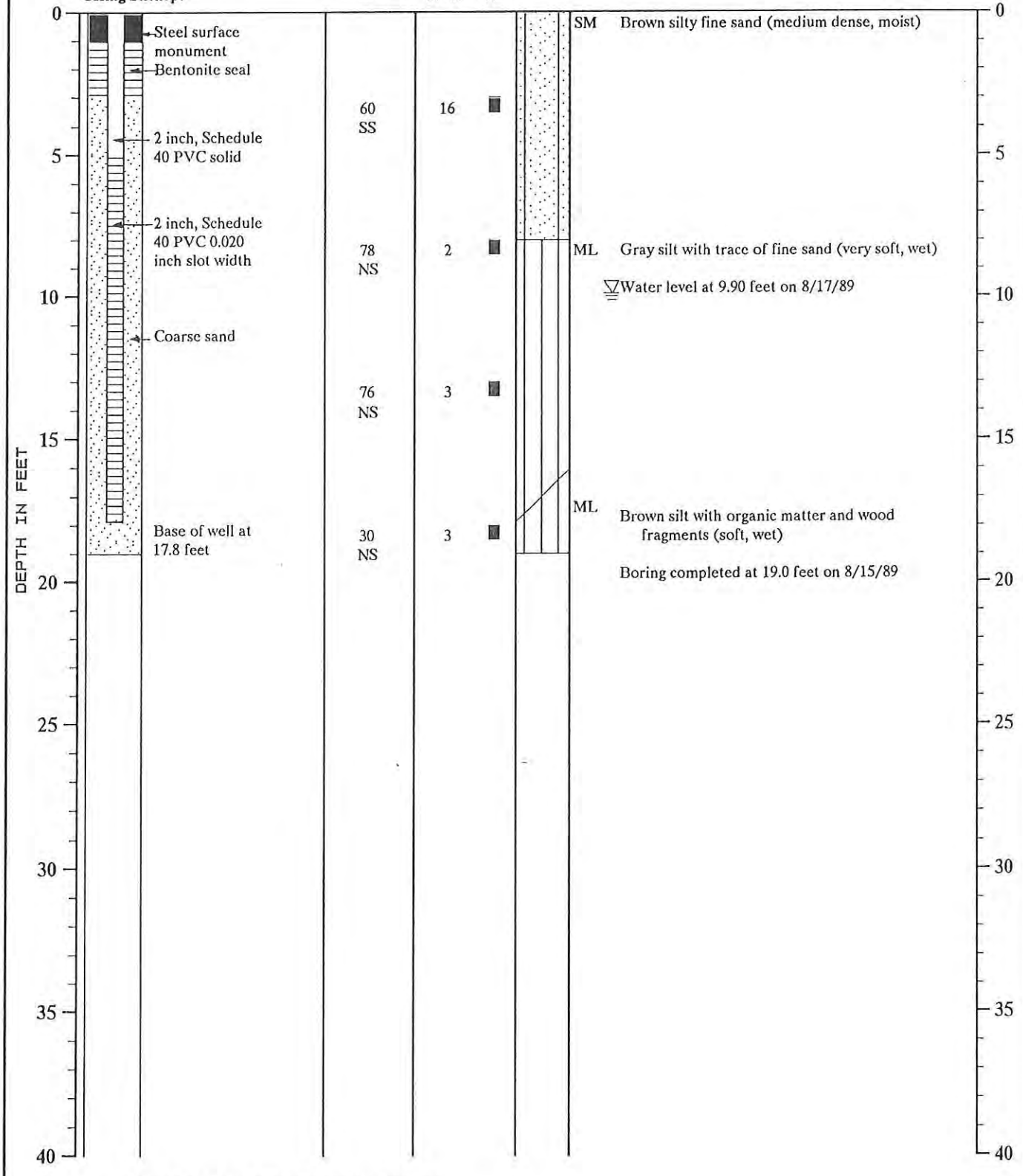
JRG:CDO 9/28/89

1192-046-B01

Appendix G

Cross Sections and Boring Logs

MONITOR WELL NO. MW-2



Note: See Figure A-2 for explanation symbols

Geo Engineers

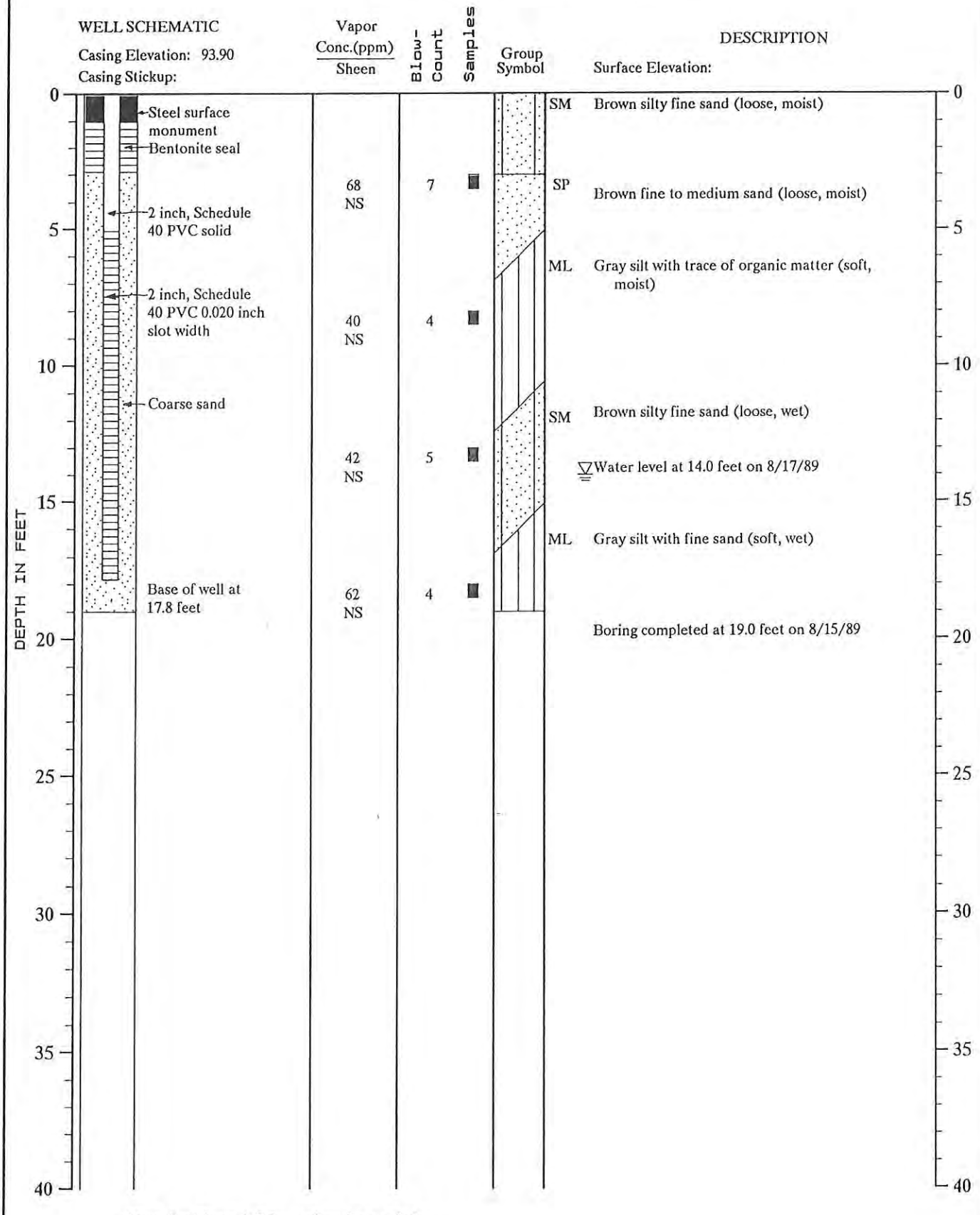
Log of Monitor Well

Figure A-4

JRG:CDO 10/6/89

1192-046-B01

MONITOR WELL NO. MW-3



Note: See Figure A-2 for explanation symbols

Geo Engineers

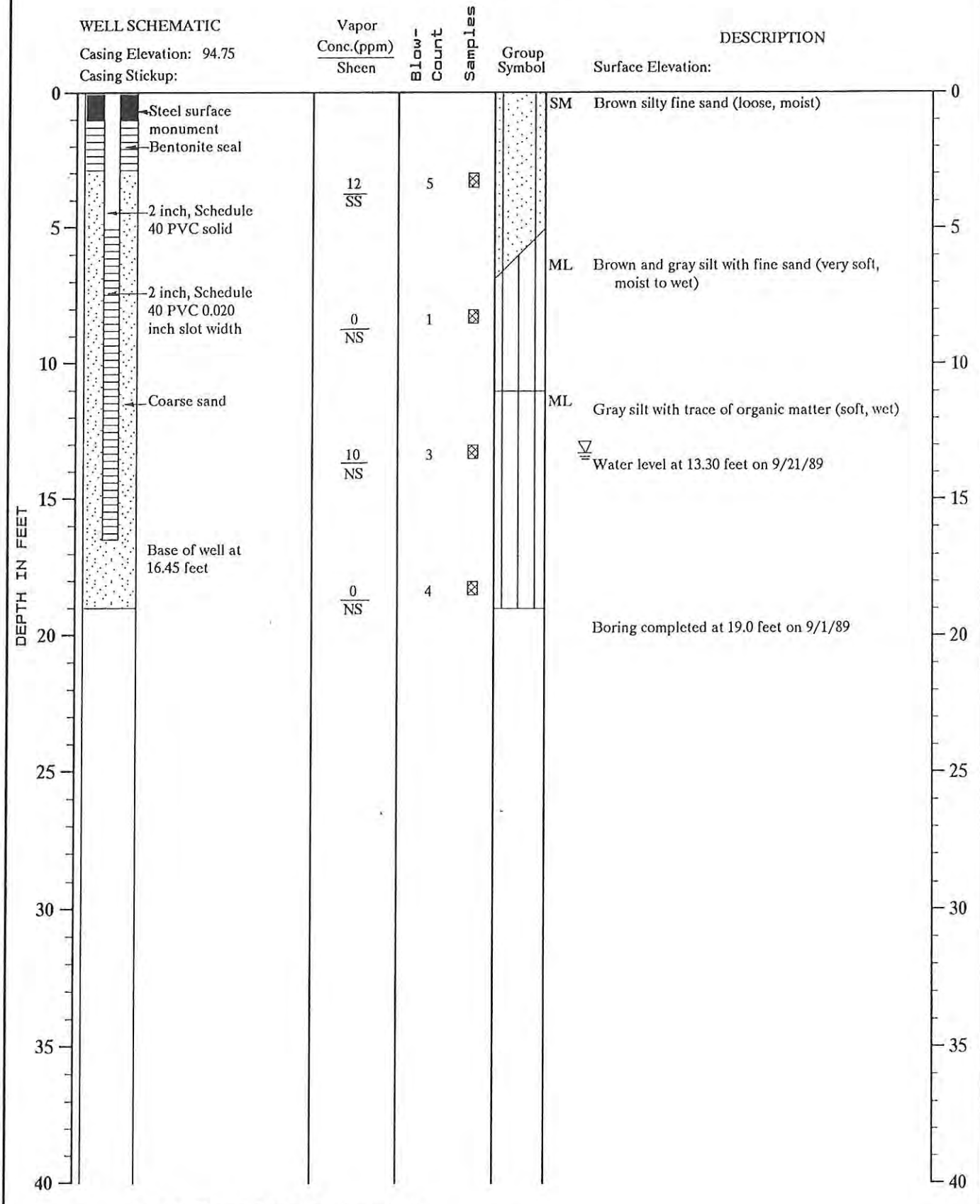
Log of Monitor Well

Figure A-5

JRG:CDO 9/28/89

1192-046-B01

MONITOR WELL NO. MW-4



Note: See Figure A-2 for explanation symbols

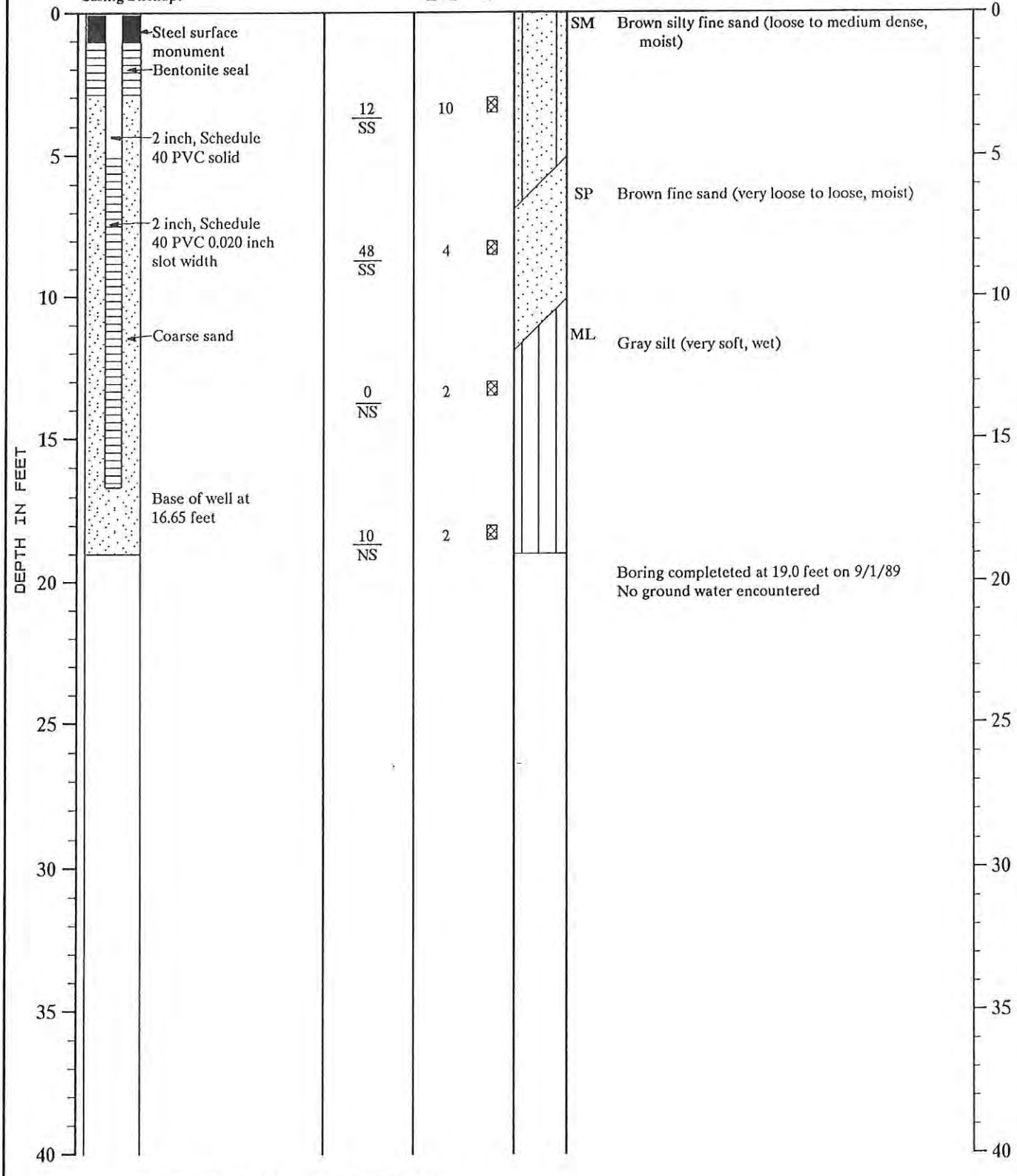
Geo Engineers

Log of Monitor Well

Figure A-6

0894-005-B04 OKP:CDO 10/6/89

MONITOR WELL NO. MW-5



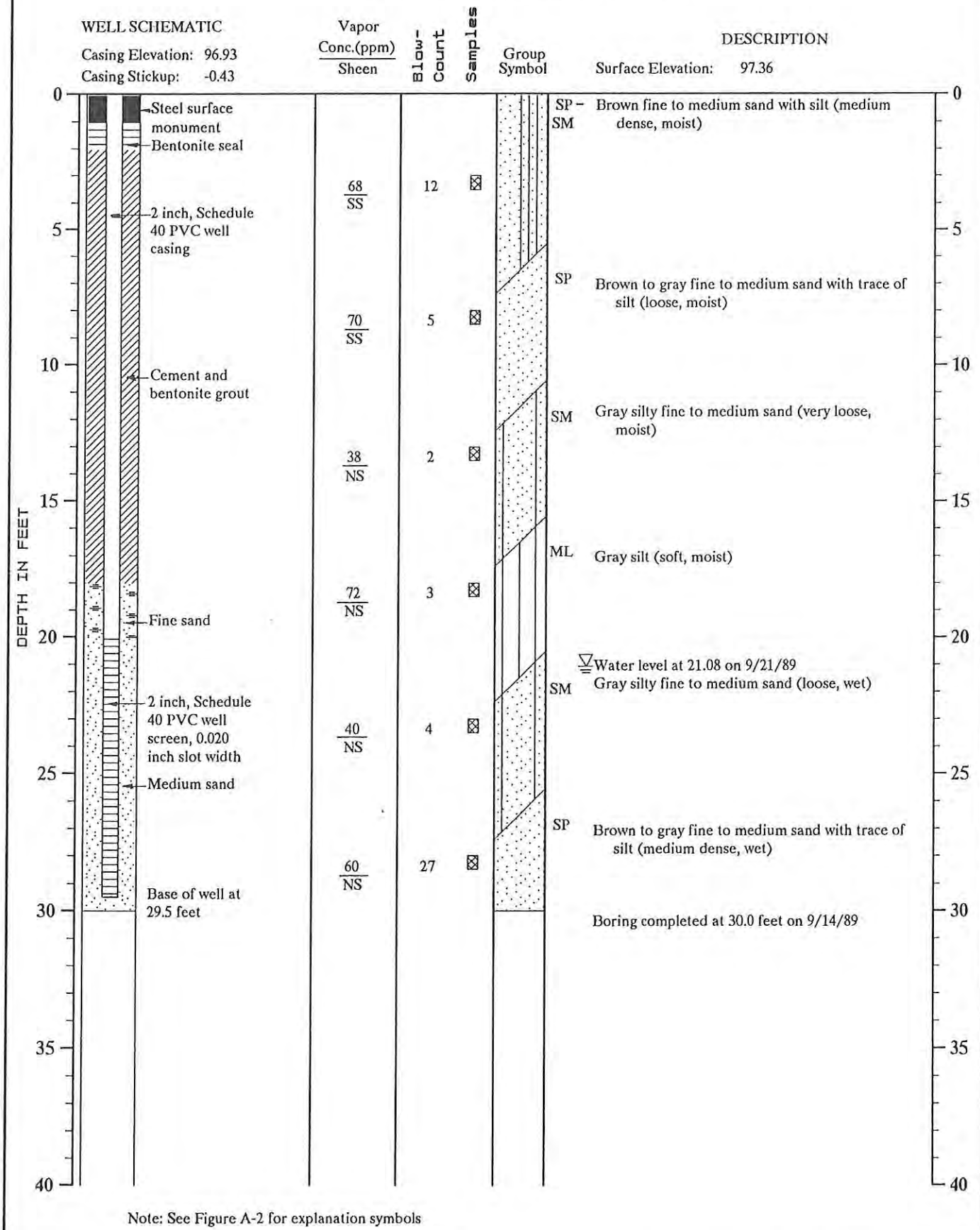
Note: See Figure A-2 for explanation symbols

Geo Engineers

Log of Monitor Well

Figure A-7

MONITOR WELL NO. MW-6



Note: See Figure A-2 for explanation symbols

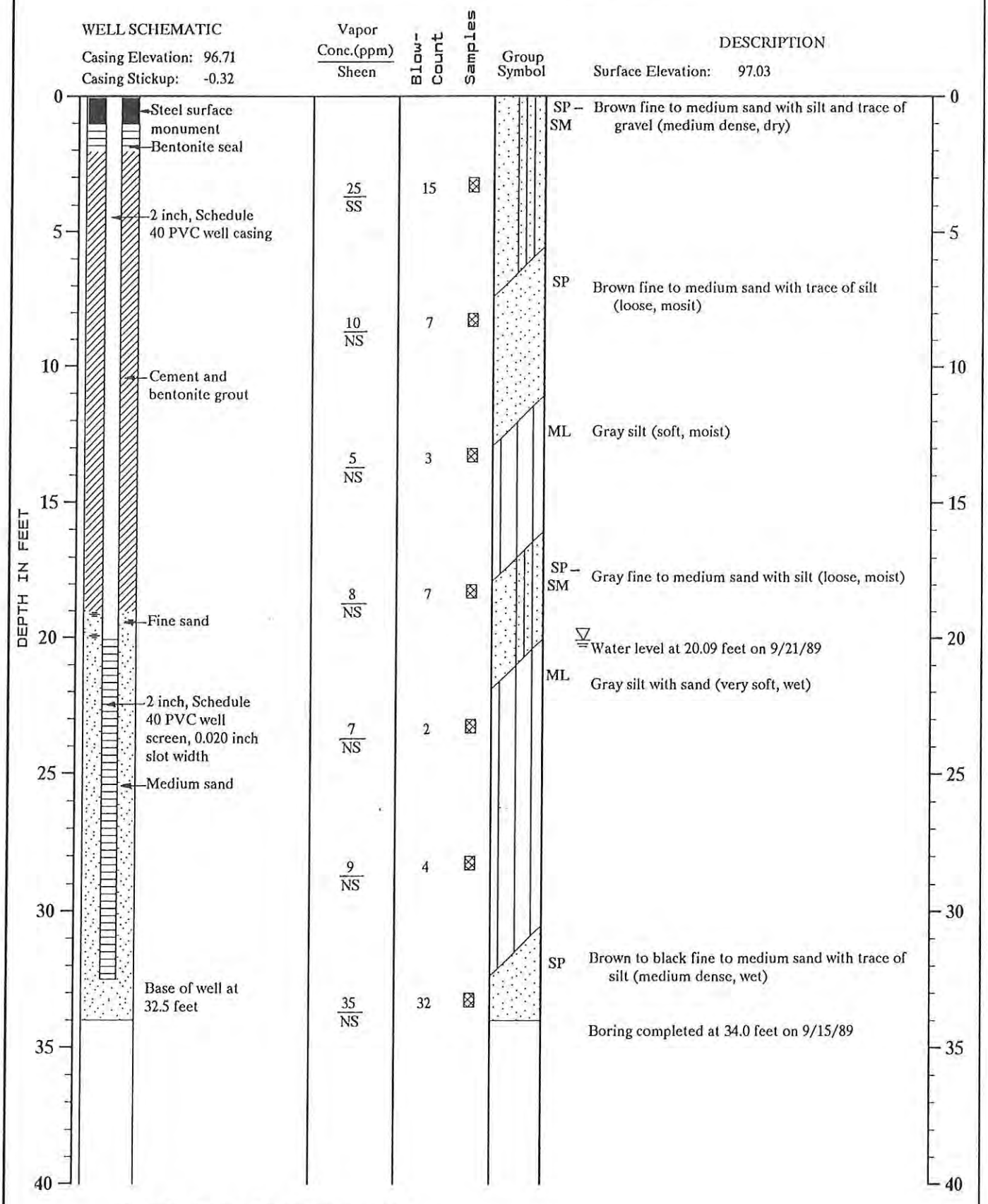
Geo Engineers

Log of Monitor Well

Figure A-8

0894-005-B04 OKP:CDO 10/4/89

MONITOR WELL NO. MW-7



Note: See Figure A-2 for explanation symbols

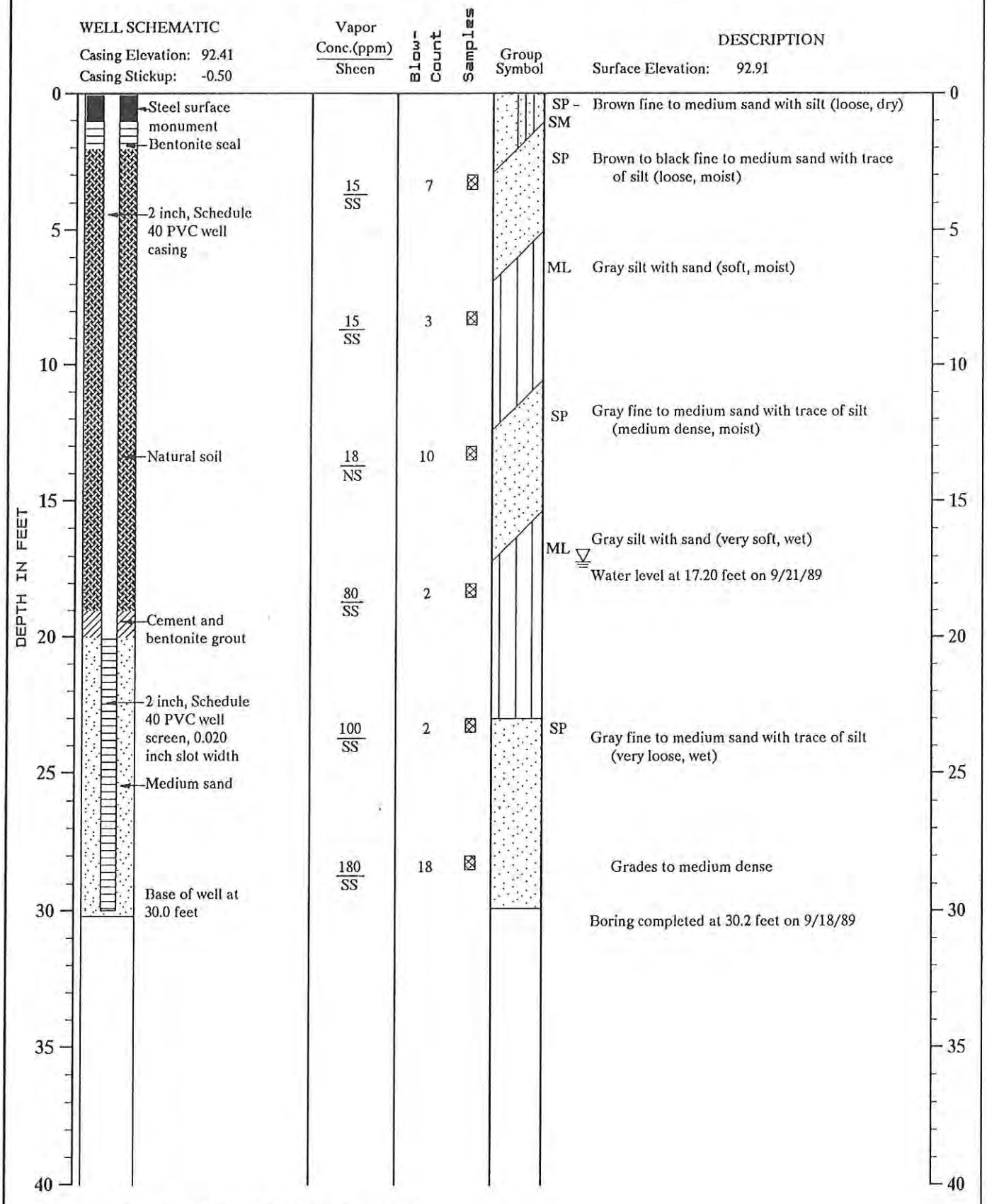
Geo Engineers

Log of Monitor Well

Figure A-9

0894-005-B04 OKP:CDO 10/4/89

MONITOR WELL NO. MW-8



Note: See Figure A-2 for explanation symbols

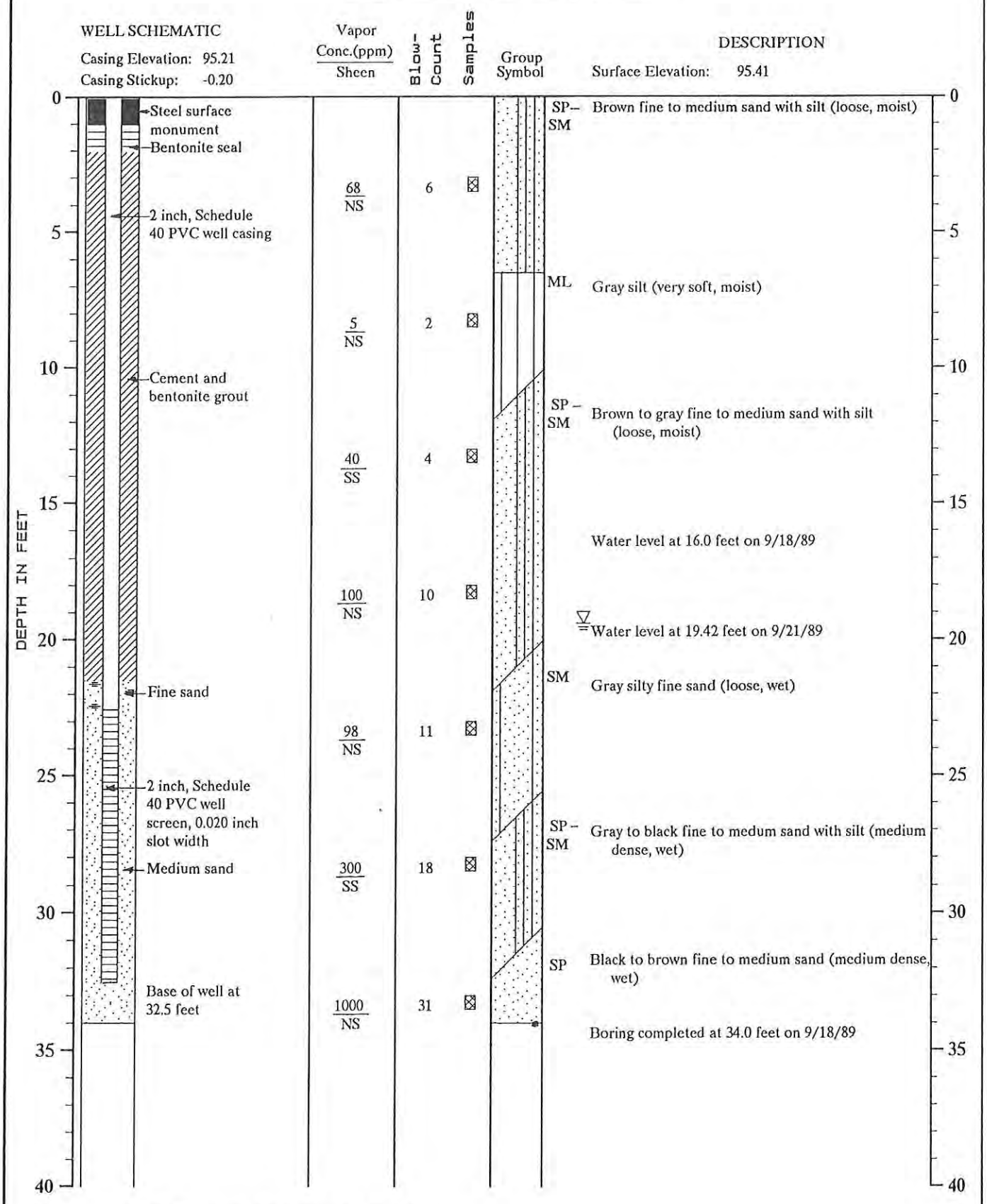
Geo Engineers

Log of Monitor Well

Figure A-10

0894-005-B04 OKP:CDO 10/4/89

MONITOR WELL NO. MW-9



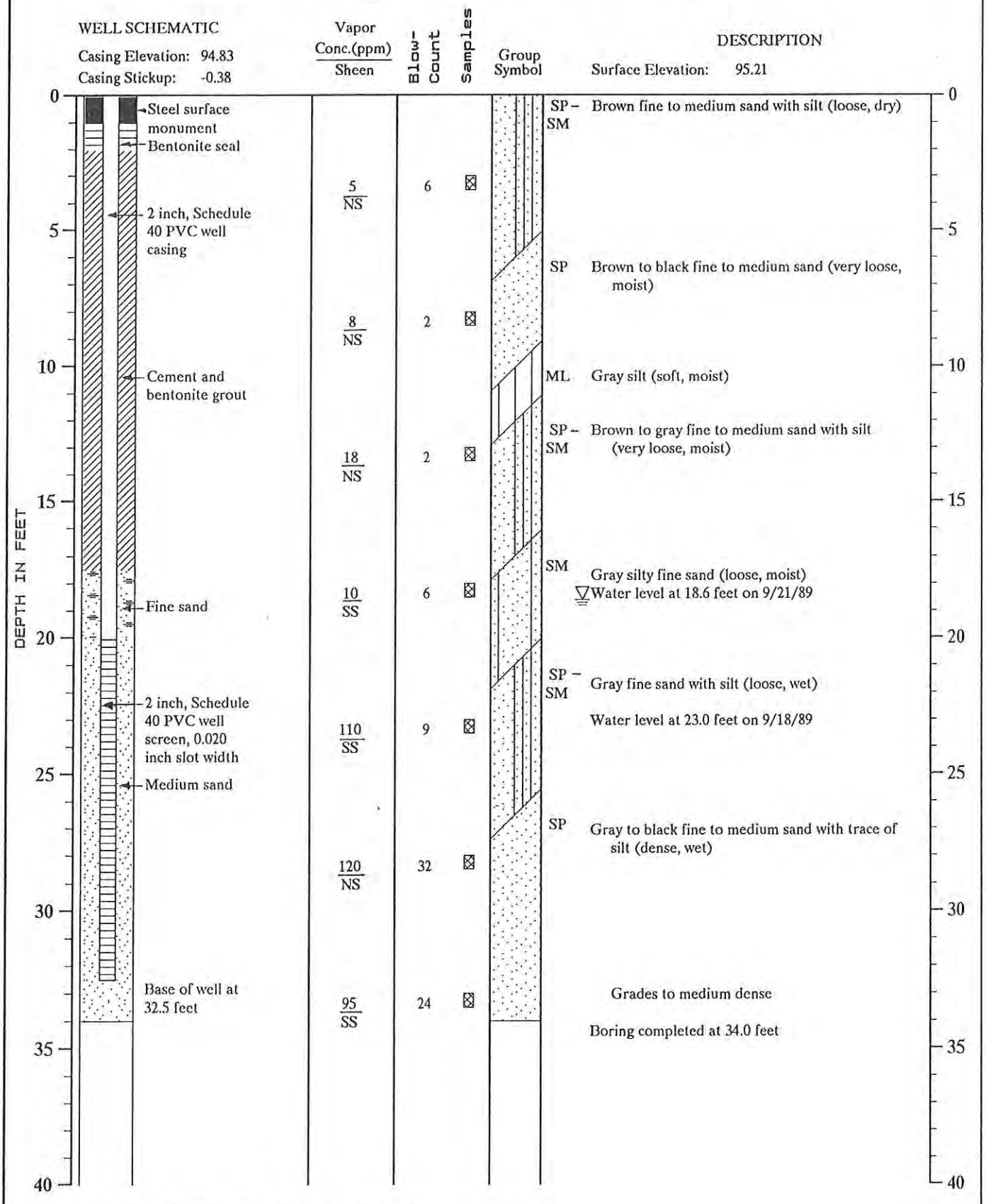
Note: See Figure A-2 for explanation symbols

Geo Engineers

Log of Monitor Well

Figure A-11

MONITOR WELL NO. MW-10



Note: See Figure A-2 for explanation symbols

Geo Engineers

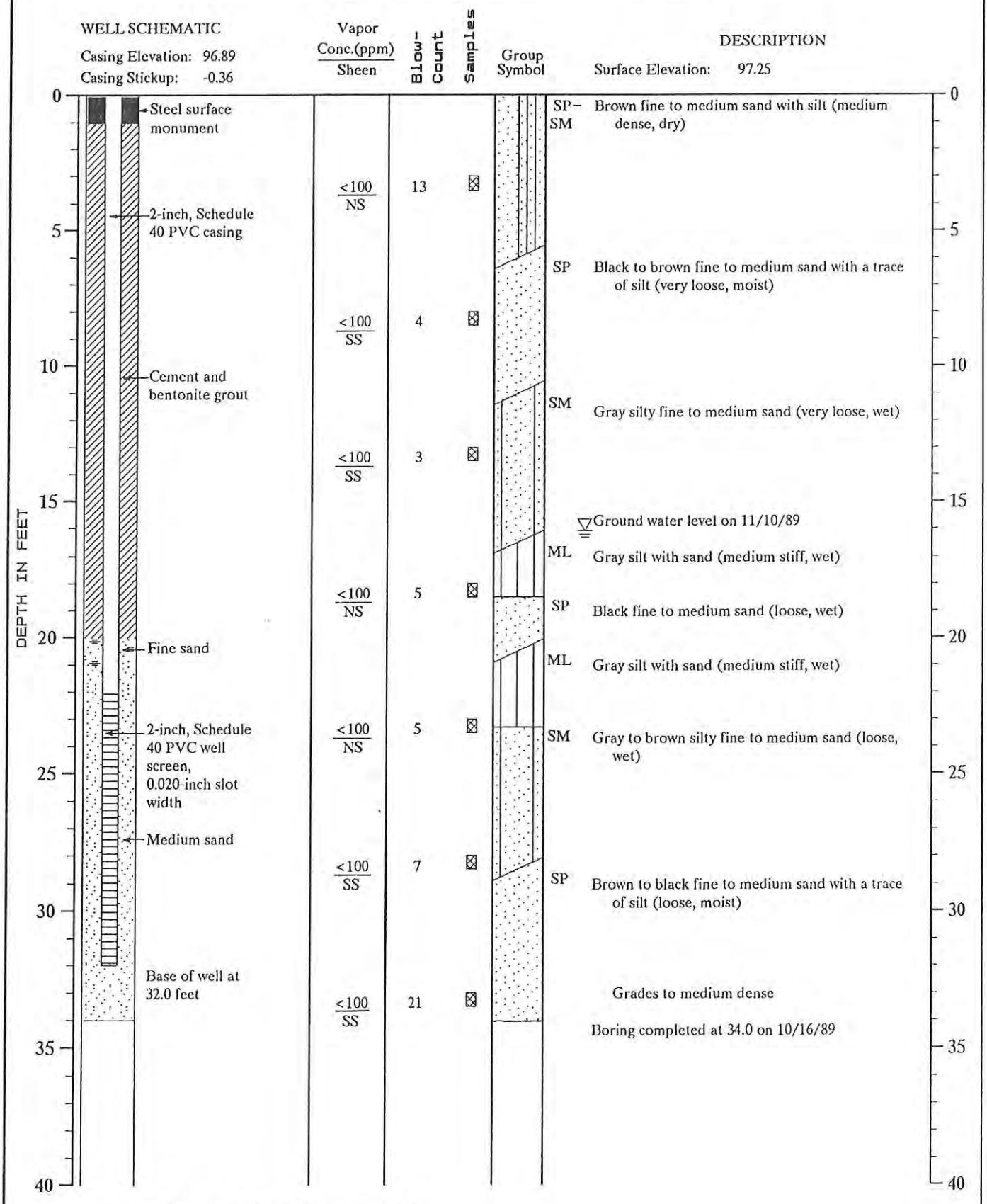
Log of Monitor Well

Figure A-12

OKP:CDO 10/5/89

0894-005-B04

MONITOR WELL NO. MW-11



Note: See Figure A-2 for explanation symbols

Geo Engineers

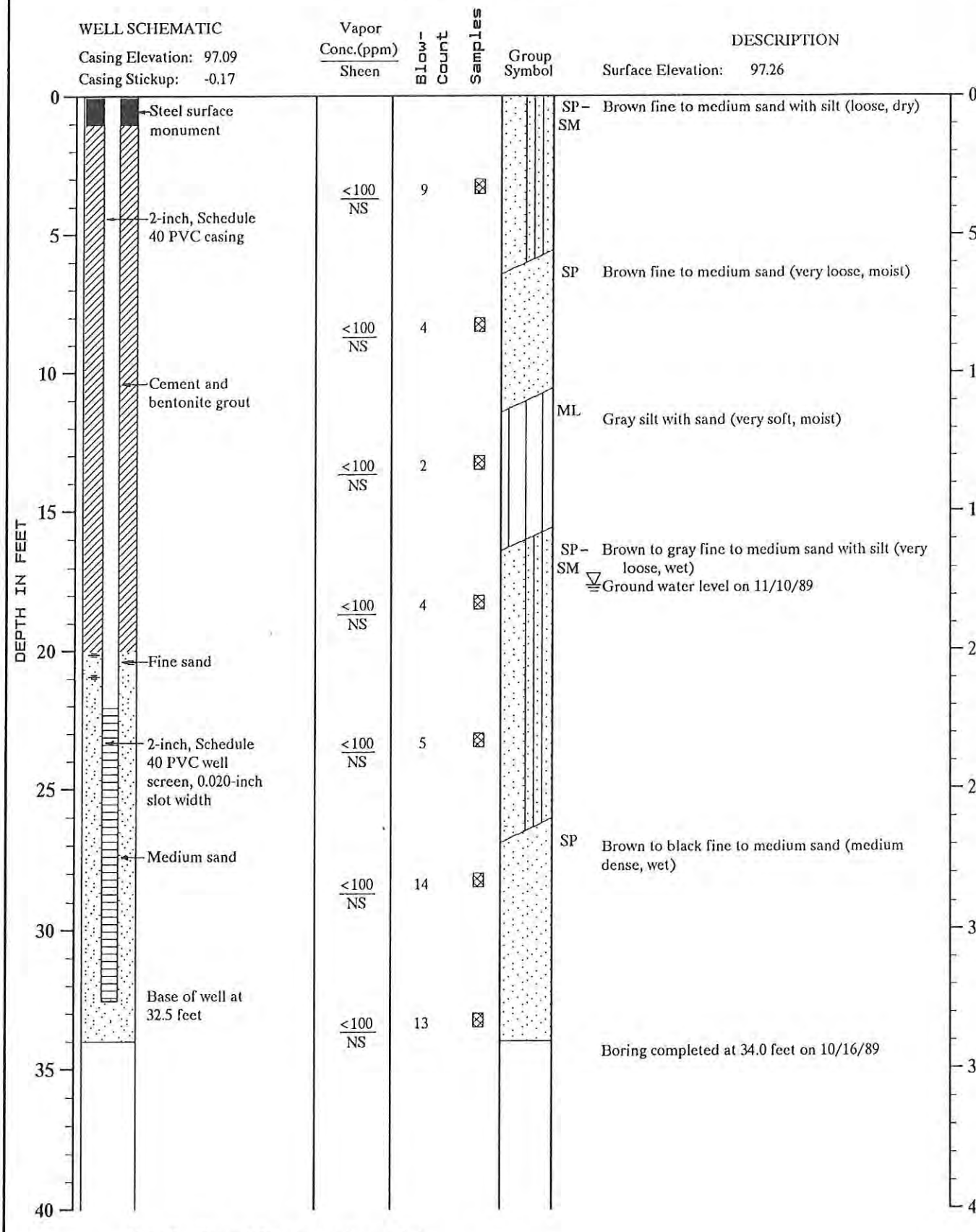
Log of Monitor Well

Figure A-13

:OKP:CDO 12/8/89

0894-005-B04

MONITOR WELL NO. MW-12



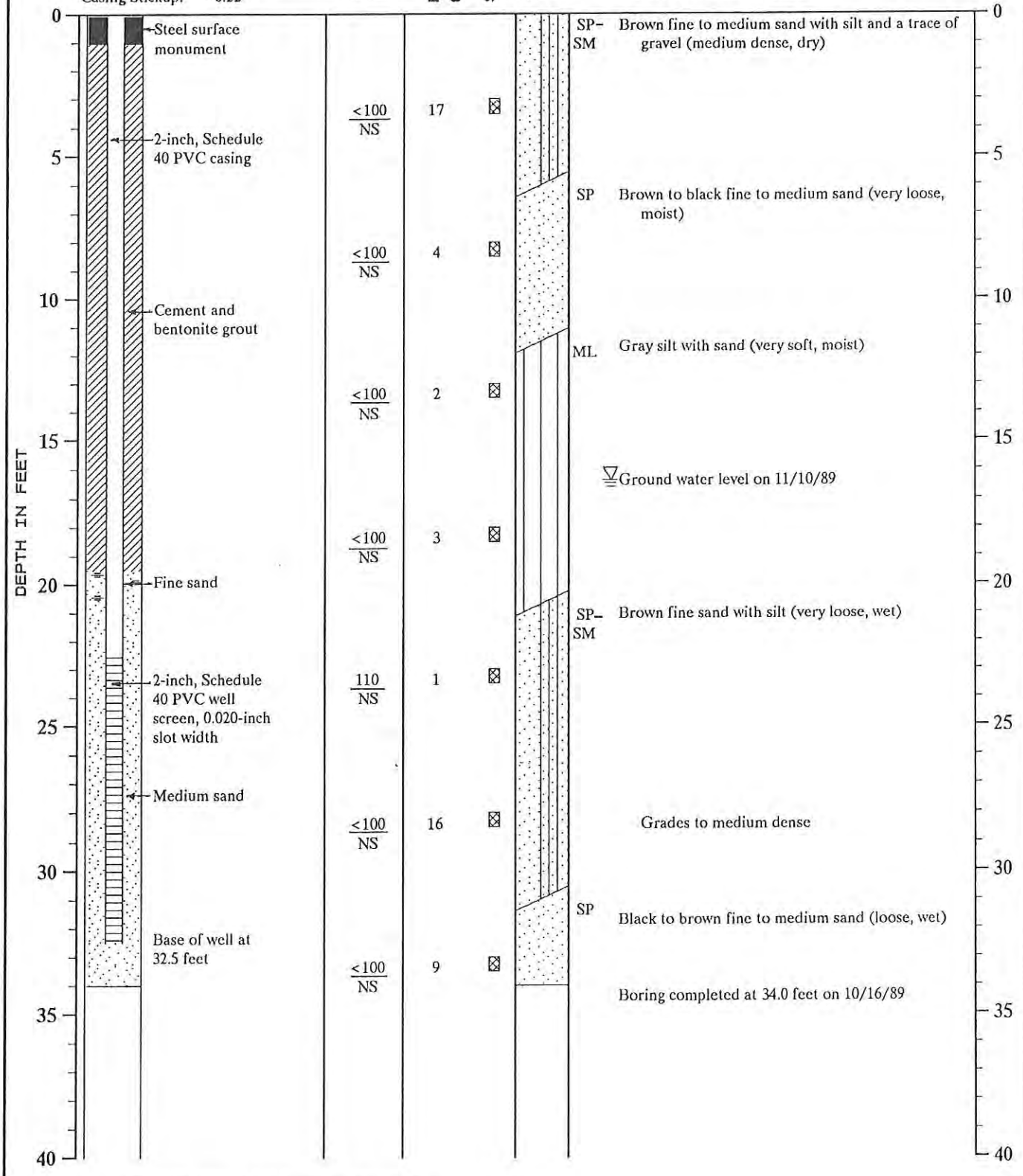
Note: See Figure A-2 for explanation symbols

Geo Engineers

Log of Monitor Well

Figure A-14

MONITOR WELL NO. MW-13



Note: See Figure A-2 for explanation symbols

Geo Engineers

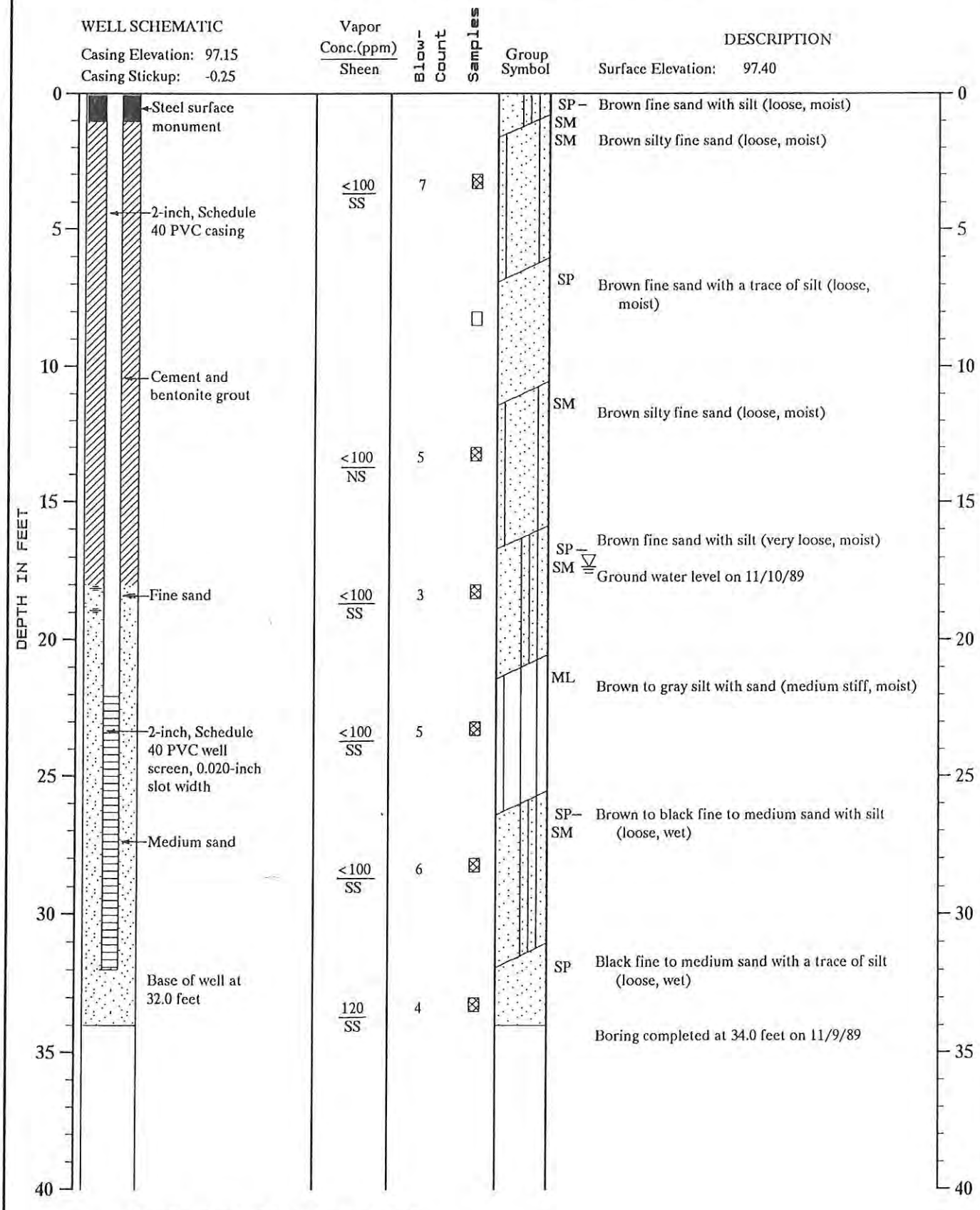
Log of Monitor Well

Figure A-15

:OKP:CDO 12/8/89

0894-005-B04

MONITOR WELL NO. MW-14



Note: See Figure A-2 for explanation symbols

Geo Engineers

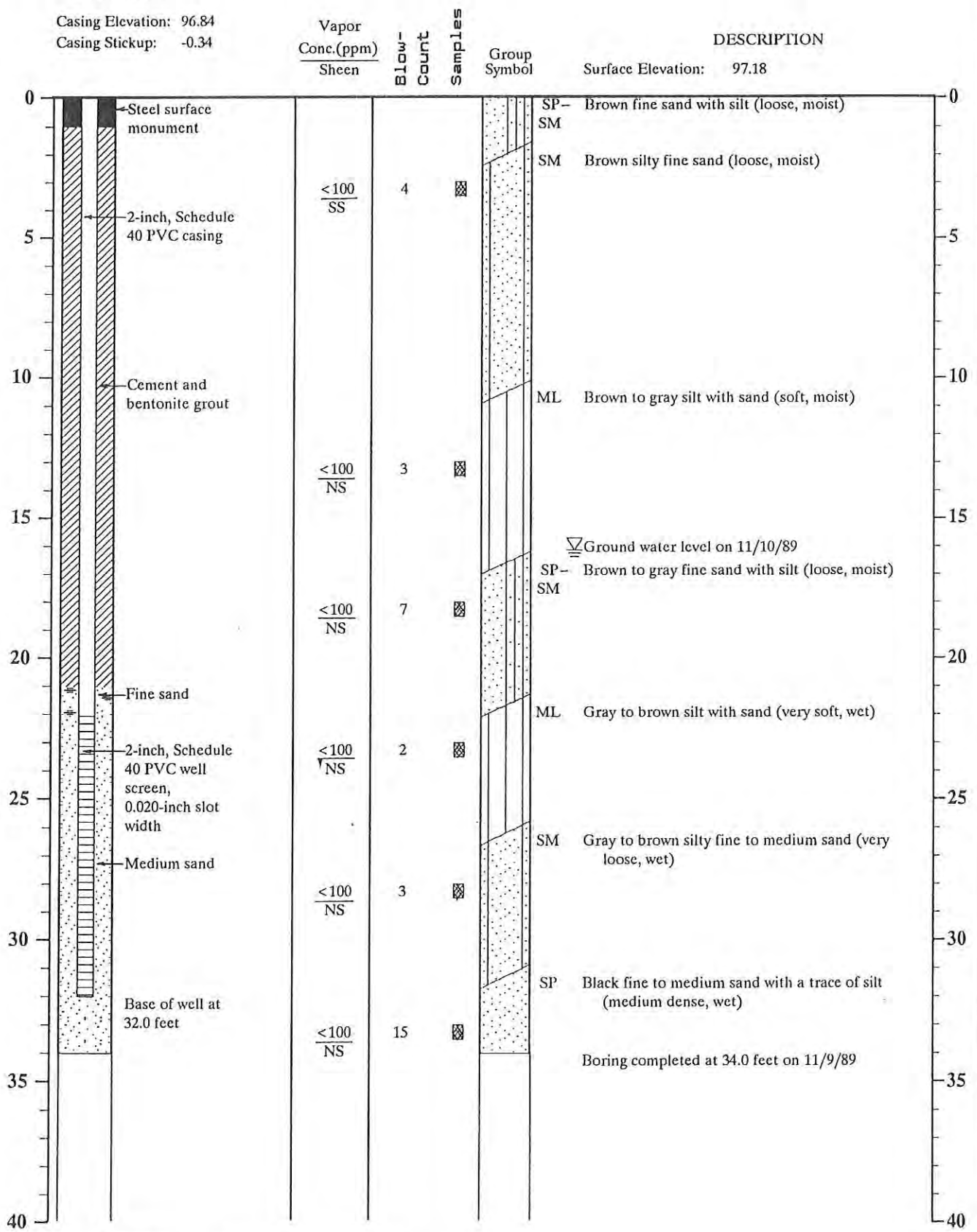
Log of Monitor Well

Figure A-16

:OKP:CDO 12/8/89

0894-005-B04

MONITOR WELL NO. MW-15



Note: See Figure A-2 for explanation of symbols

Geo Engineers

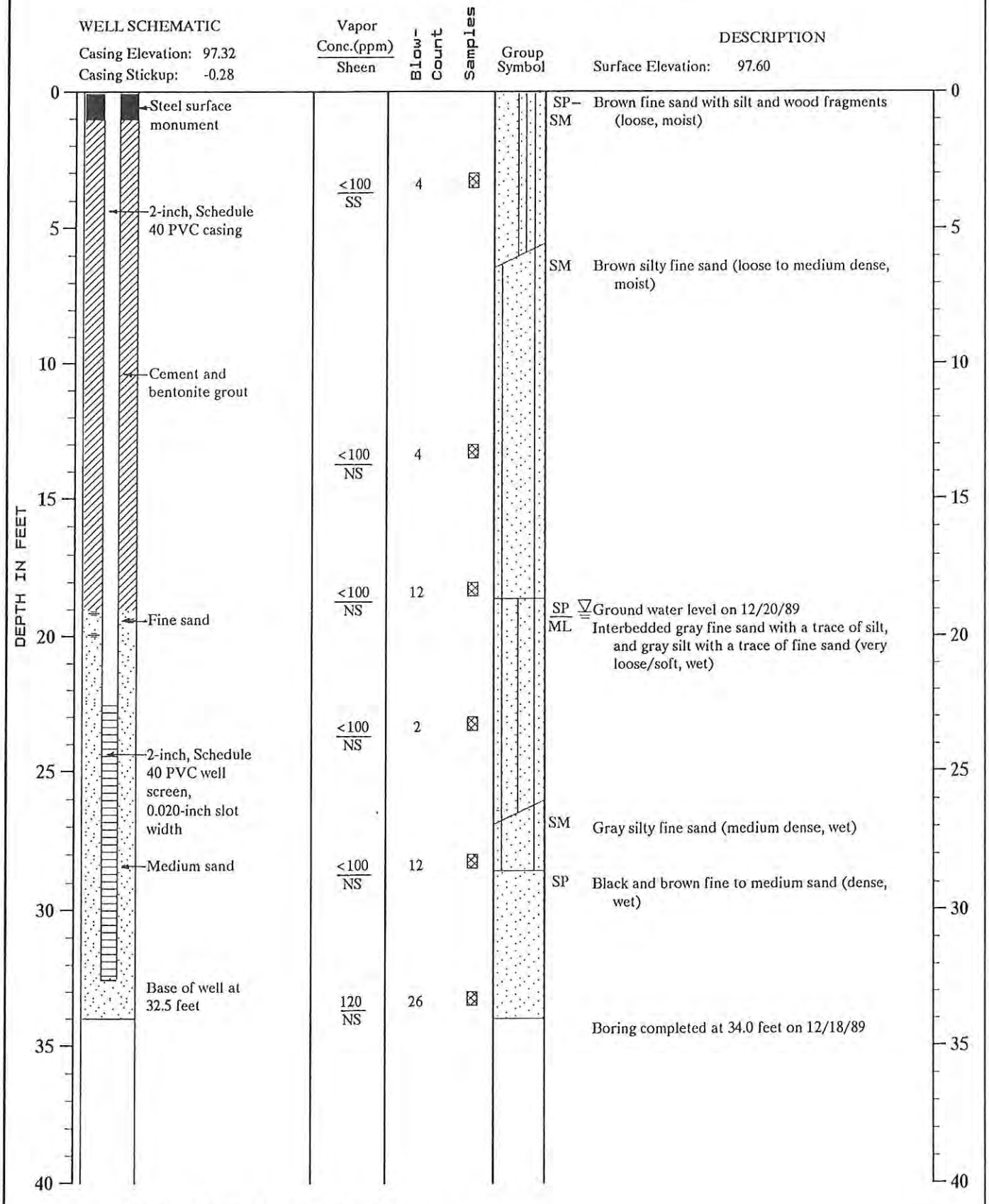
Log of Monitor Well

Figure A-17

:OKP:CDO 8/29/90

0894-005-B04

MONITOR WELL NO. MW-16



Note: See Figure A-2 for explanation symbols

Geo Engineers

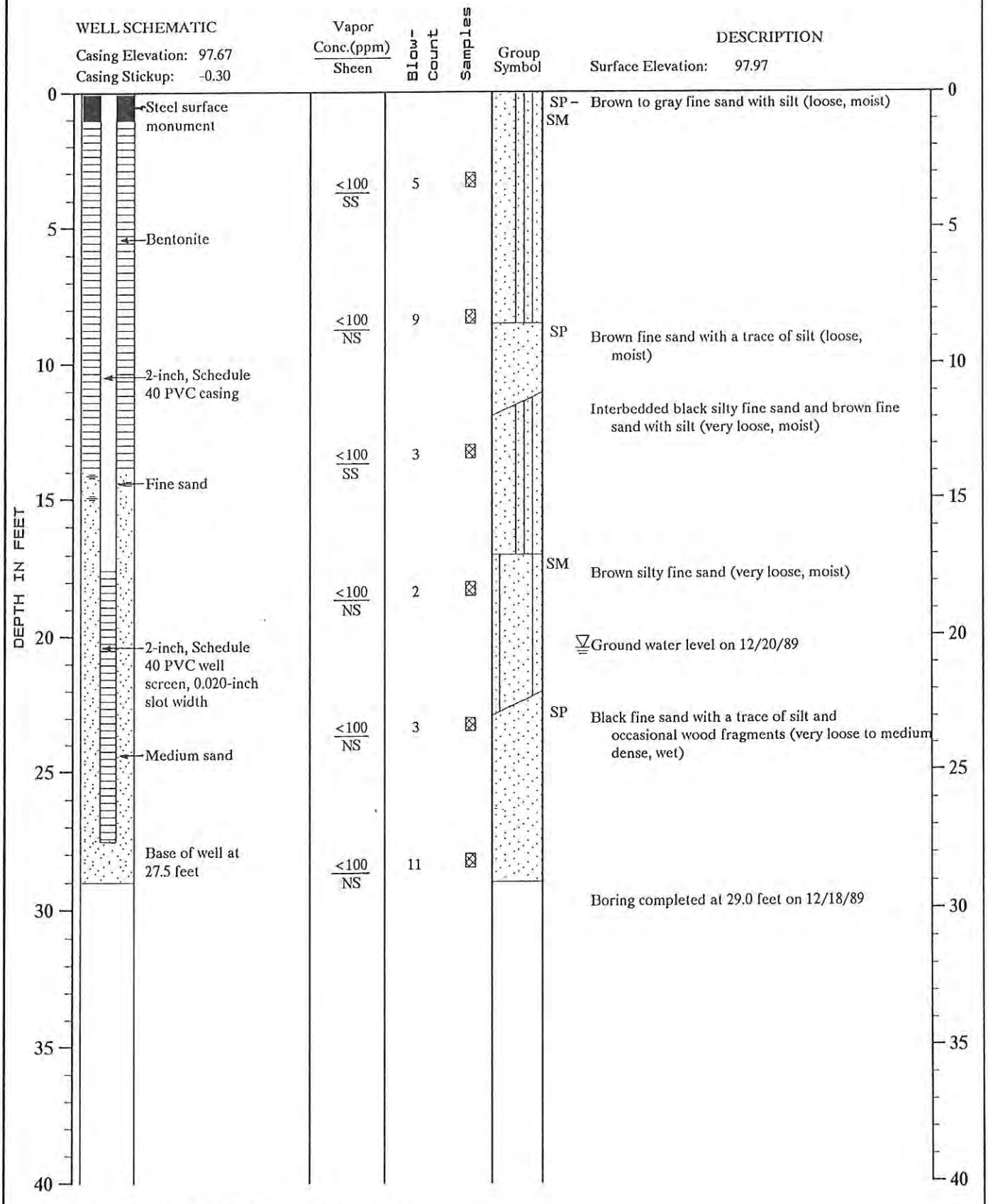
Log of Monitor Well

Figure A-18

:OKP:CDO 2/10/90

0894-005-B04

MONITOR WELL NO. MW-17



Note: See Figure A-2 for explanation symbols

Geo Engineers

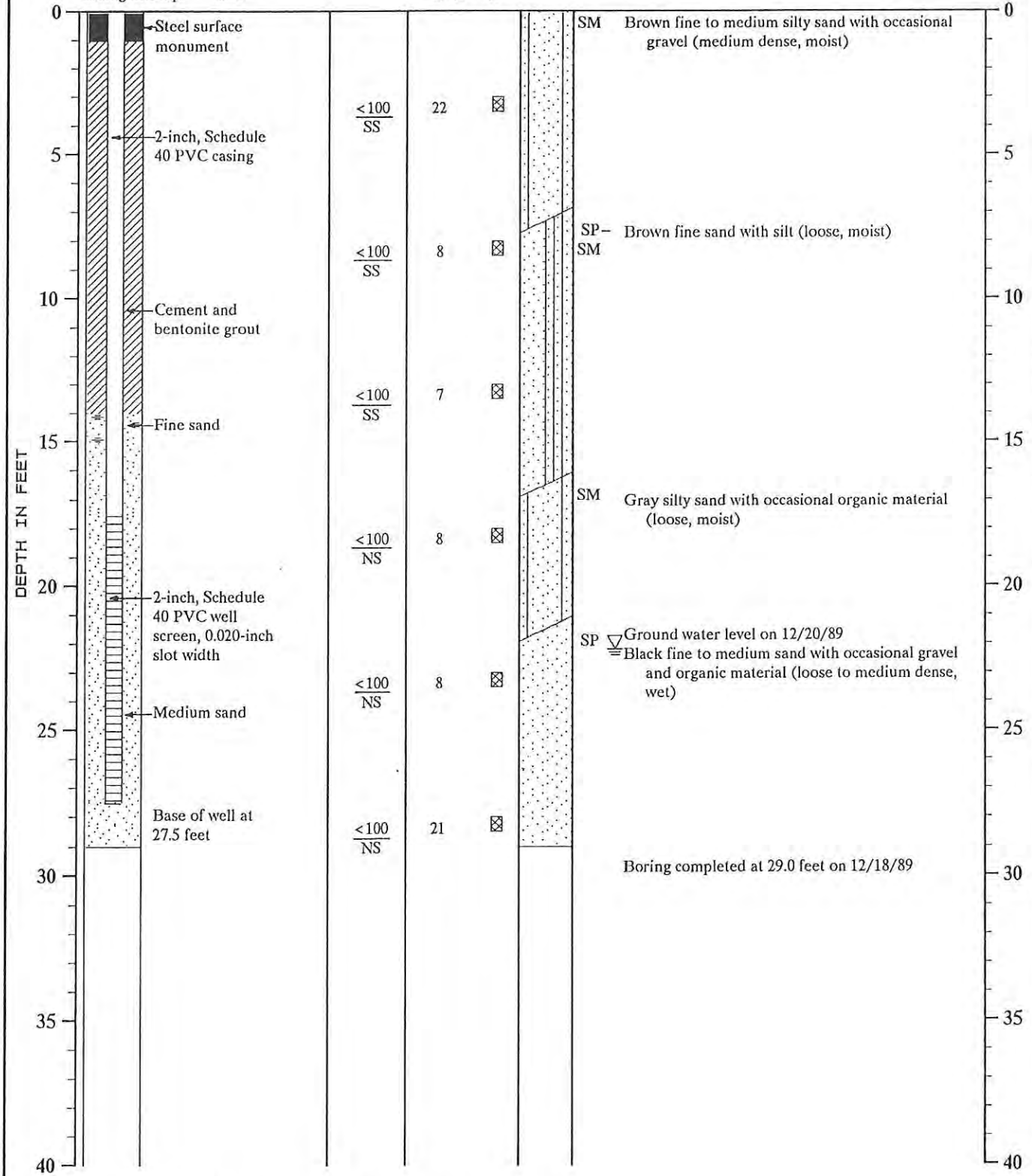
Log of Monitor Well

Figure A-19

:OKP:CDO 2/10/90

0894-005-B04

MONITOR WELL NO. MW-18



Note: See Figure A-2 for explanation symbols

Geo Engineers

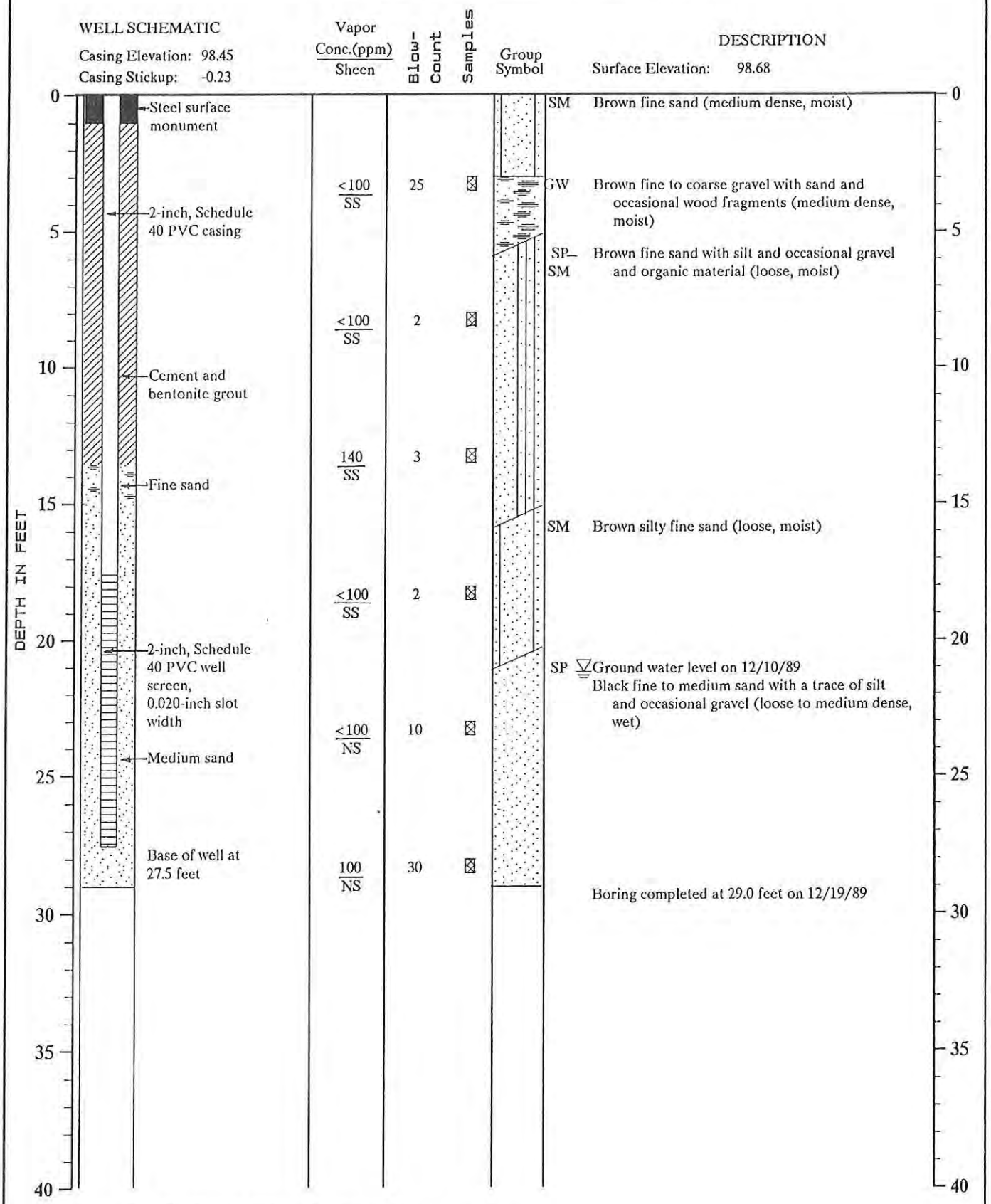
Log of Monitor Well

Figure A-20

:OKP:CDO 2/10/90

0894-005-B04

MONITOR WELL NO. MW-19



Note: See Figure A-2 for explanation symbols

Geo Engineers

Log of Monitor Well

Figure A-21

Project	Job Number	Location
Olympic Pipe Line Kent Block Valve Release	0894-005-01	Kent, WA

Date Drilled	09/07/99	Logged By	BP	Contractor	Holt Drilling
Drill Method	Hollow Stem Auger 4" ID	Equipment		Drill Bit	
Sample Method	D&M	Hammer Data	300 lb hammer, 30" drop	X-coordinate: Y-coordinate:	Not Determined Not Determined
Total Depth (ft)	30	Elevation (ft)	Not Measured	Datum: System:	Not Determined Not Determined
Total Well Depth (ft)	30	Monument Elevation Stickup (ft)		Casing Elevation Stickup (ft)	97.96

DEPTH IN FEET	WELL SCHEMATIC	Sample No.	Blows per foot	Sample	Graphic Log	USCS Group Symbol	Material Description	Headspace Vapor (ppm)	Sheen	Other Tests And Notes	DEPTH IN FEET
0	Steel surface monument Concrete surface seal					SM	Brown silty fine sand with occasional gravel (medium dense, moist)				0
		1	14					–	SS		
5											5
10	Bentonite seal										10
		2	9				Brown gray silty fine sand (loose, moist)	240	NS		
15											15
	2-inch Schedule 40 PVC well casing	3	4				Brown silty fine sand (very loose, moist)	400	NS		
20	Sand backfill					SP-SM	Black fine to medium sand interbedded with brown silty fine sand (very loose, wet)				20
		4	3					▽ 380	NS	CA	
25	2-inch Schedule 40 PVC screen, 0.020-inch slot width										25
		5	9				Black fine to medium sand with occasional gravel and a trace of silt (loose, wet)	250	NS		
30	Base of well at 30.0 feet						Boring completed at 30.0 feet on 07/07/99 Ground water encountered at 24.0 feet during drilling Well installed				30
35											35

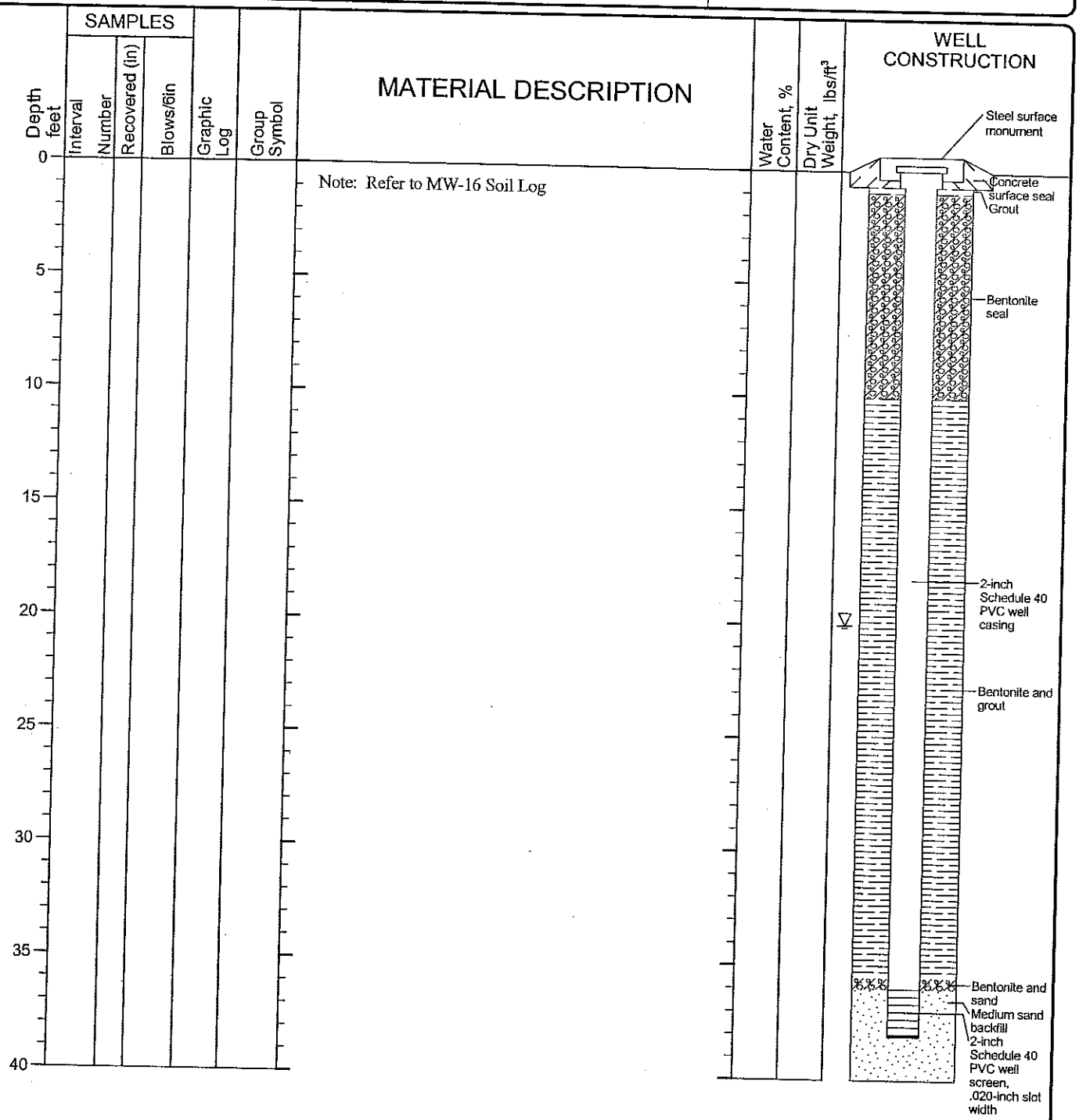
GEI WELL LOG 0894005.GPJ GEI_CORP.GDT 10/1/99 0894-005-01

Geo Engineers

LOG OF MONITORING WELL MW-17A

FIGURE A-3

Date(s) Drilled	06/26/03	Logged By	MET	Checked By	TMK
Drilling Contractor	Holt Drilling	Drilling Method	Hollow-stem Auger	Sampling Methods	N/A
Total Boring Depth (ft)	40	Hammer Data		Drilling Equipment	Truck-mounted Rig
Well Depth (ft)	38	Top of Well Elevation (ft)		Groundwater Level (ft. bgs)	
System/ Datum					



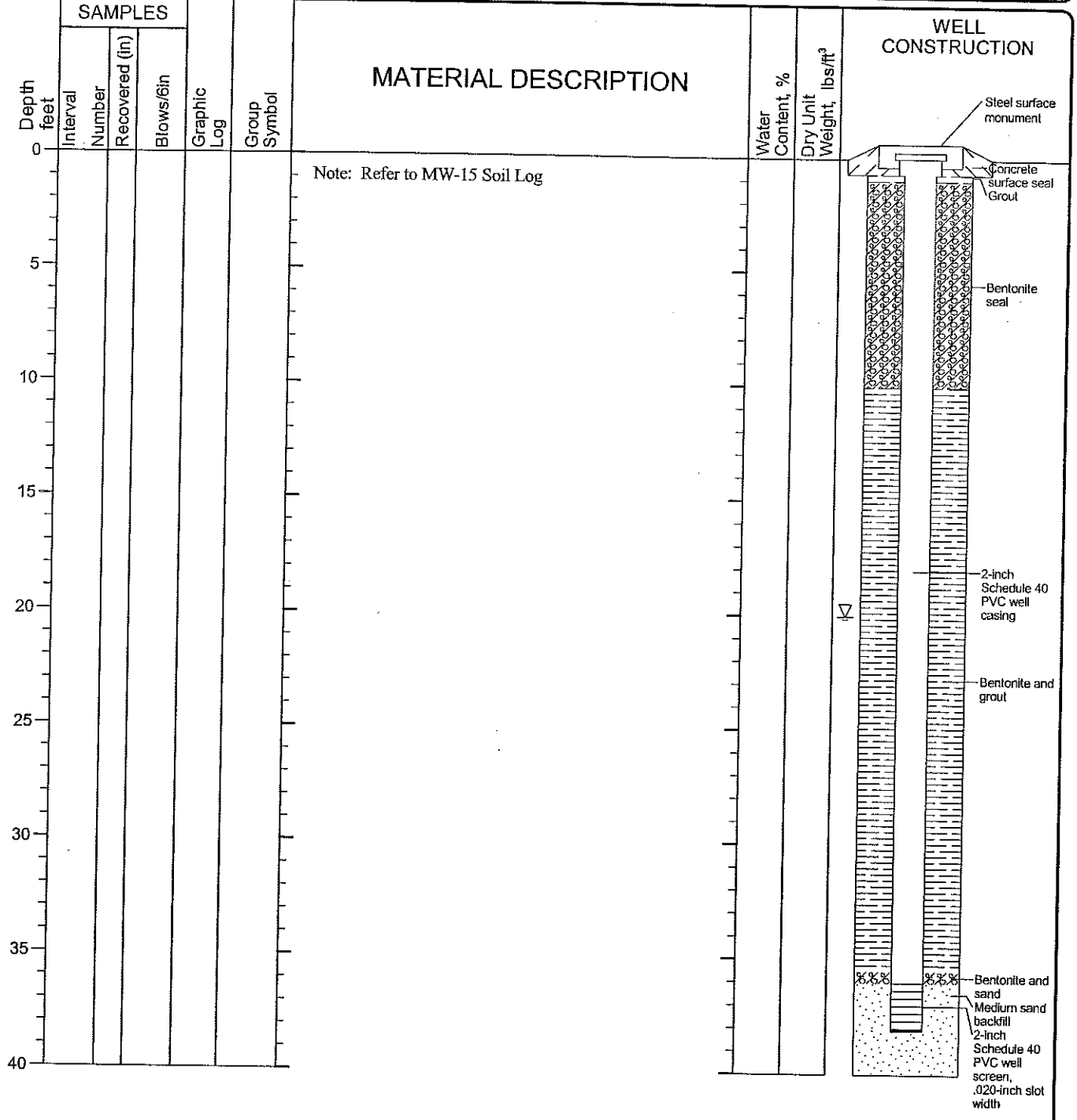
LOG OF AIR SPARGE WELL BS-1

Geo Engineers

Project: OPLC Kent Block Valve
Project Location: Kent, Washington
Project Number: 0894-005-03

Figure: C-1
Sheet 1 of 1

Date(s) Drilled	06/26/03	Logged By	MET	Checked By	TMK
Drilling Contractor	Holt Drilling	Drilling Method	Hollow-stem Auger	Sampling Methods	N/A
Total Boring Depth (ft)	40	Hammer Data		Drilling Equipment	Truck-mounted Rig
Well Depth (ft)	38	Top of Well Elevation (ft)		Groundwater Level (ft. bgs)	
System/ Datum					



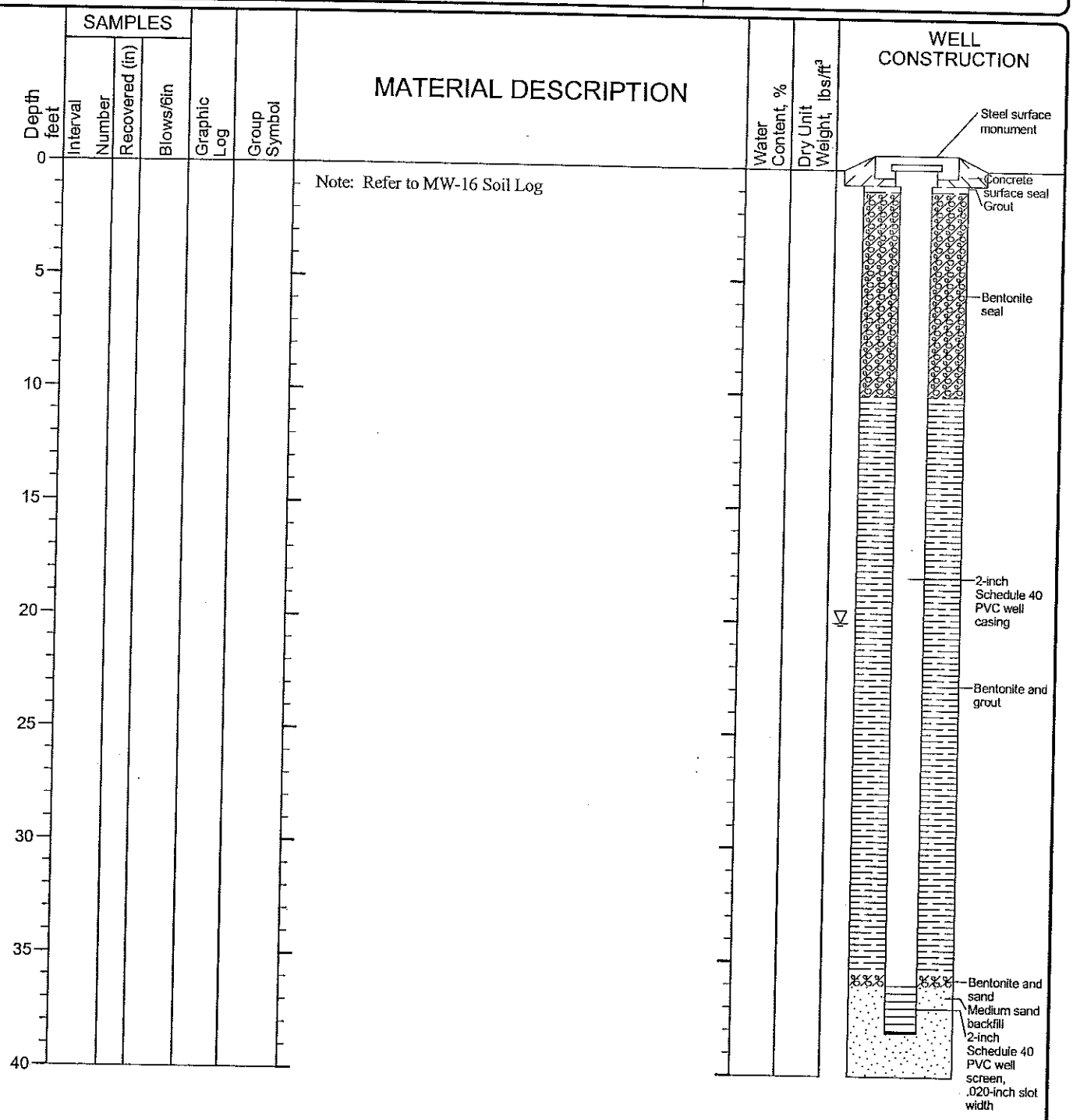
LOG OF AIR SPARGE WELL BS-2

Geo Engineers

Project: OPLC Kent Block Valve
Project Location: Kent, Washington
Project Number: 0894-005-03

Figure: C-2
Sheet 1 of 1

Date(s) Drilled	06/26/03	Logged By	MET	Checked By	TMK
Drilling Contractor	Holt Drilling	Drilling Method	Hollow-stem Auger	Sampling Methods	N/A
Total Boring Depth (ft)	40	Hammer Data		Drilling Equipment	Truck-mounted Rig
Well Depth (ft)	38	Top of Well Elevation (ft)		Groundwater Level (ft. bgs)	
System/ Datum					



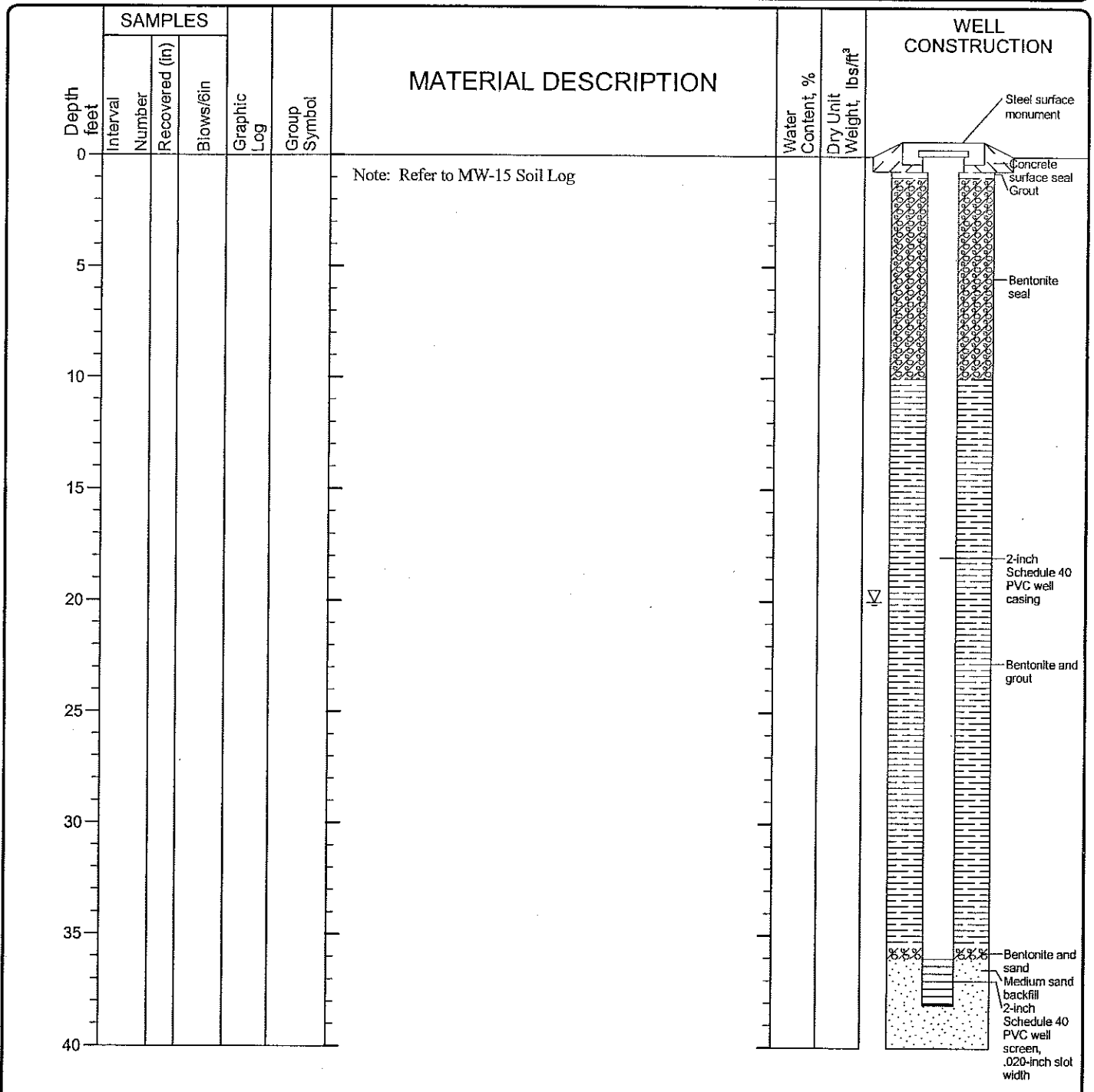
LOG OF AIR SPARGE WELL BS-3

GeoEngineers

Project: OPLC Kent Block Valve
Project Location: Kent, Washington
Project Number: 0894-005-03

Figure: C-3
Sheet 1 of 1

Date(s) Drilled	06/27/03	Logged By	MET	Checked By	TMK
Drilling Contractor	Holt Drilling	Drilling Method	Hollow-stem Auger	Sampling Methods	N/A
Total Boring Depth (ft)	40	Hammer Data		Drilling Equipment	Truck-mounted Rig
Well Depth (ft)	38	Top of Well Elevation (ft)		Groundwater Level (ft. bgs)	
System/ Datum					



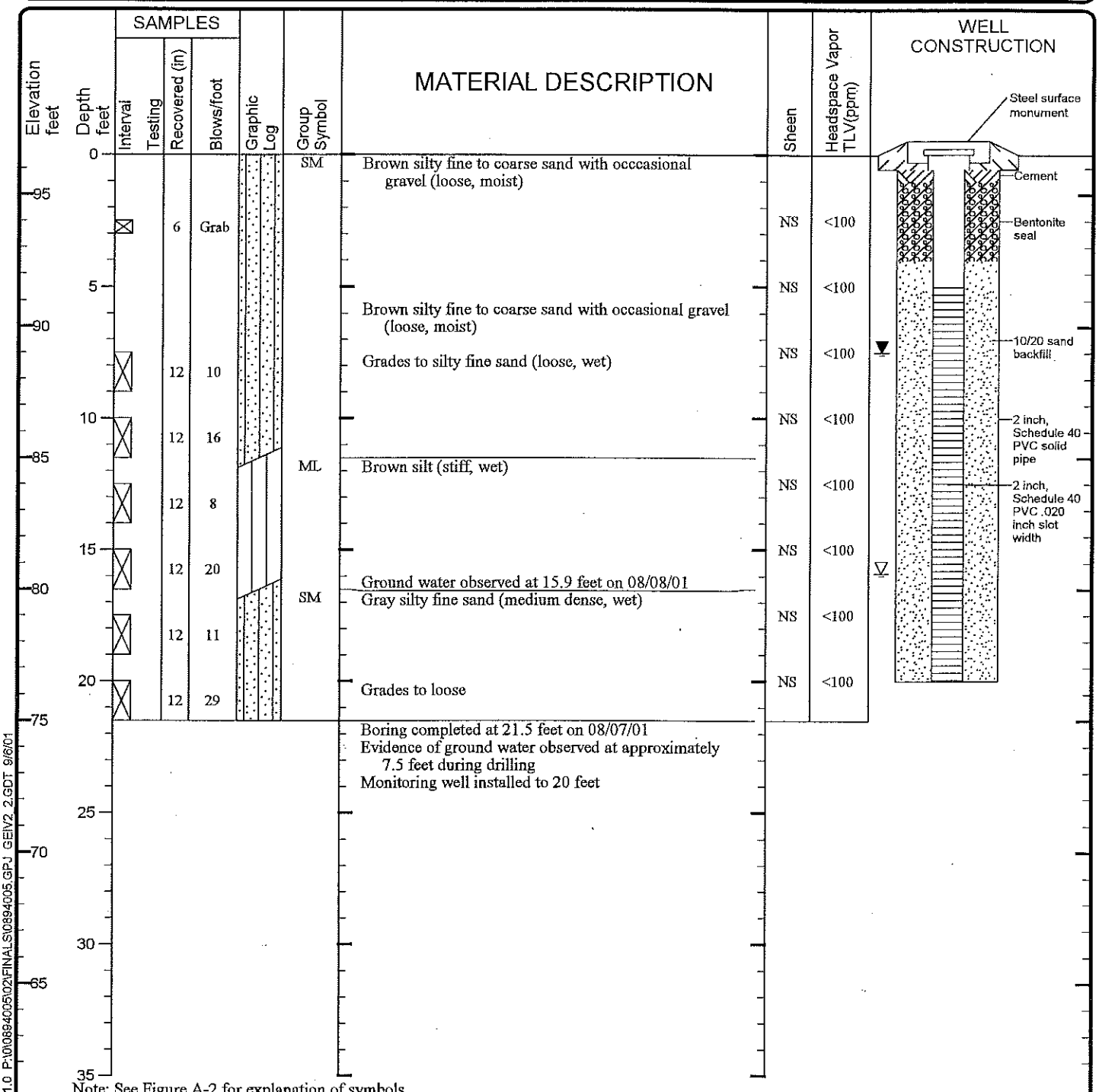
LOG OF AIR SPARGE WELL BS-4

Geo Engineers

Project: OPLC Kent Block Valve
Project Location: Kent, Washington
Project Number: 0894-005-03

Figure: C-4
Sheet 1 of 1

Date(s) Drilled	08/07/01	Logged By	GJA	Checked By	DLC
Drilling Contractor	Cascade Drilling	Drilling Method	HSA	Sampling Methods	Dames & Moore
Total Boring Depth (ft)	21.5	Hammer Data	140 (lb) hammer/ 30 (in) drop	Drilling Equipment	Limited Access Drill Rig
Well Depth (ft)	20	Top of Well Elevation (ft)	96.50	Ground Water Elevation (ft)	
System/ Datum	N/A	Easting	Not determined	Northing	Not determined



Note: See Figure A-2 for explanation of symbols

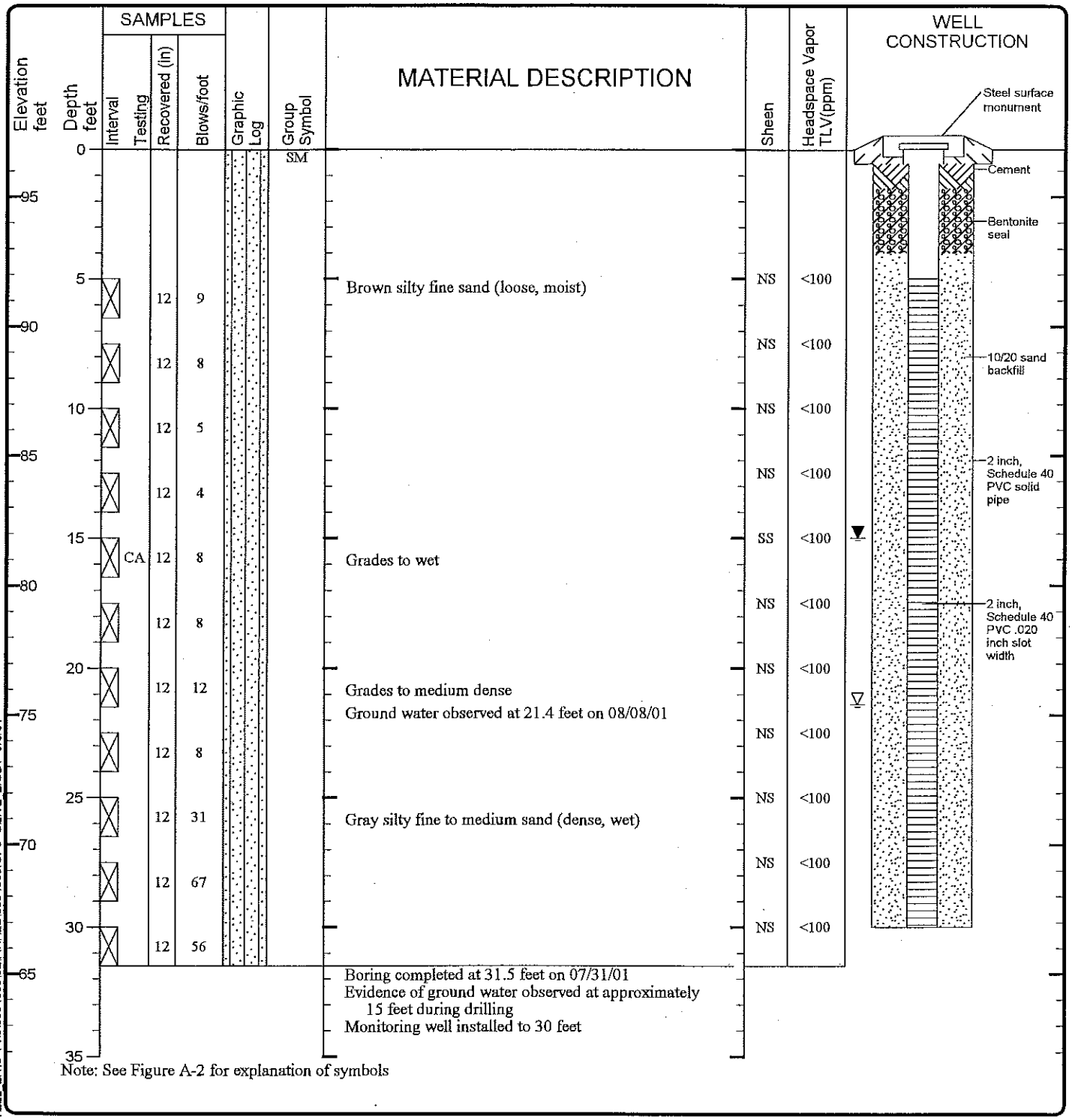
LOG OF BORING MW-20

Geo Engineers

Project: OPLC Kent Block Valve
Project Location: Kent, Washington
Project Number: 0894-005-02

Figure: A-3
Sheet 1 of 1

Date(s) Drilled	07/31/01	Logged By	GJA	Checked By	DLC
Drilling Contractor	Cascade Drilling	Drilling Method	HSA	Sampling Methods	Dames & Moore
Total Boring Depth (ft)	31.5	Hammer Data	300 (lb) hammer/ 30 (in) drop	Drilling Equipment	Truck-mounted Drill Rig
Well Depth (ft)	30	Top of Well Elevation (ft)	96.82	Ground Water Elevation (ft)	
System/ Datum	N/A	Easting	Not determined	Northing	Not determined



Note: See Figure A-2 for explanation of symbols

LOG OF BORING MW-21

Geo Engineers

Project: OPLC Kent Block Valve
Project Location: Kent, Washington
Project Number: 0894-005-02

Figure: A-4
Sheet 1 of 1

0894-005-02 GEI ENVWELL 2.1.0 P:\0\0894005\02\FINALS\0894005.GPJ GEIV2_2.GDT 9/6/01

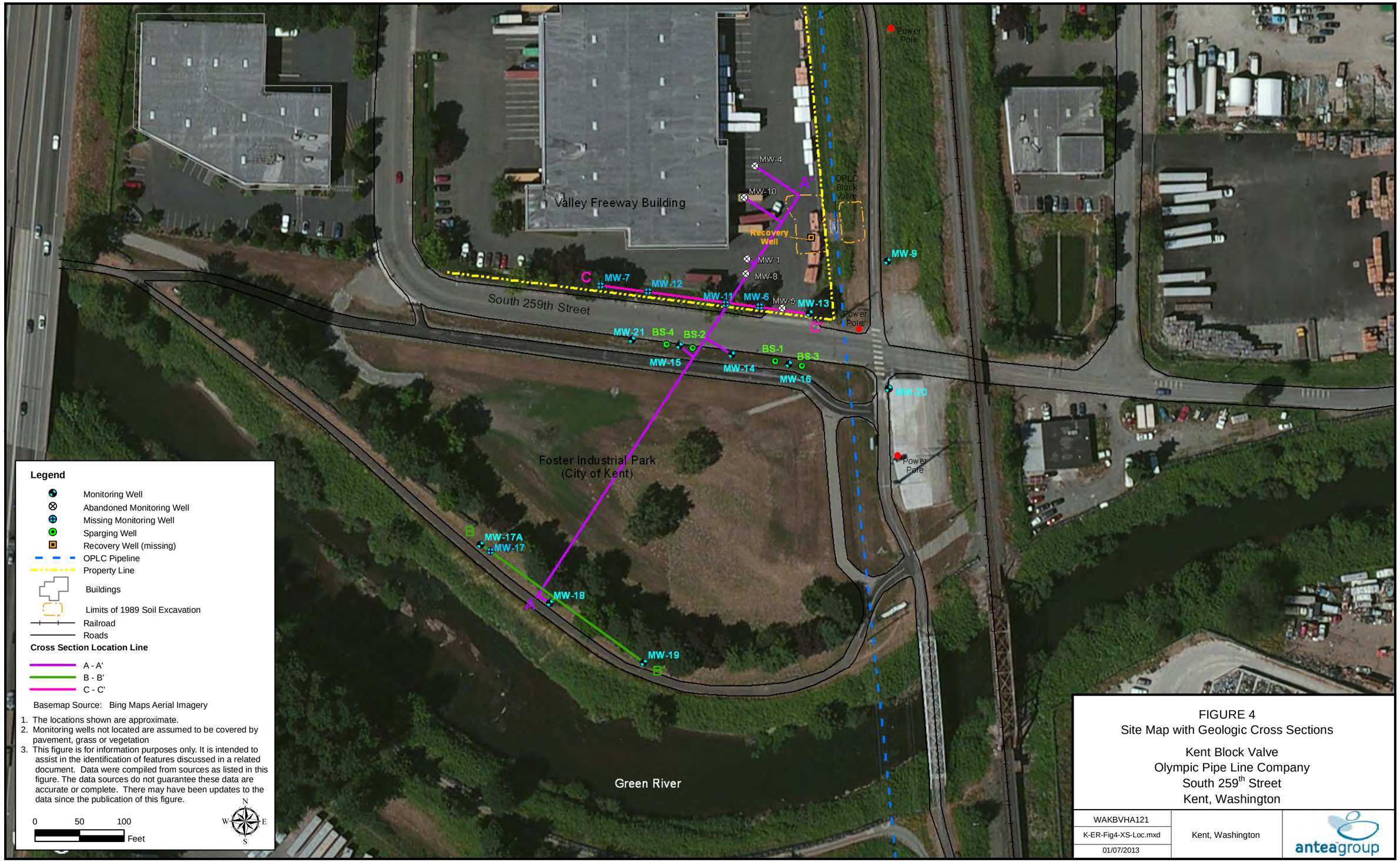
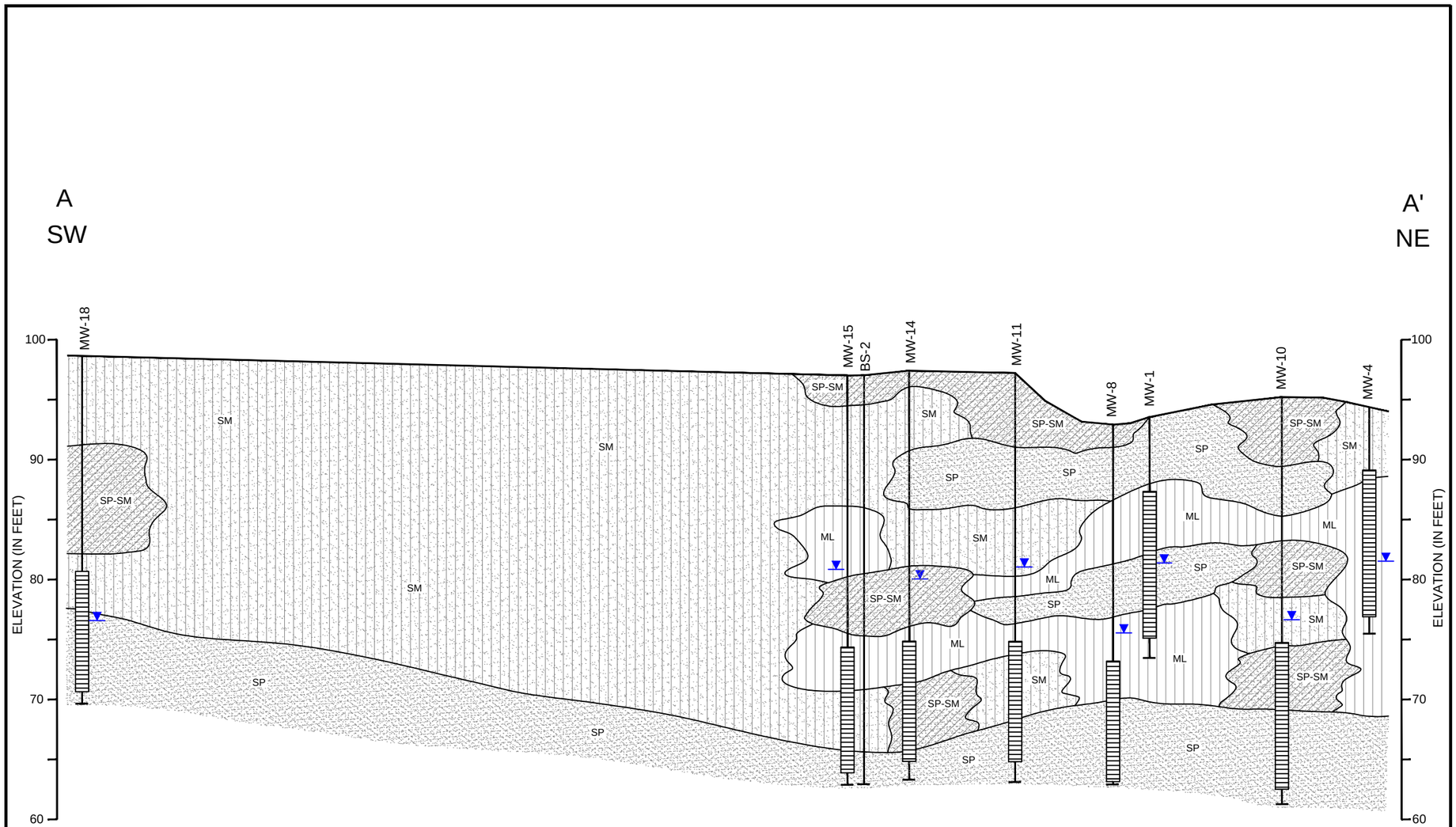


FIGURE 4
Site Map with Geologic Cross Sections

Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

WAKBVHA121	Kent, Washington	anteagroup
K-ER-Fig4-XS-Loc.mxd		
01/07/2013		



LEGEND

- SCREENED INTERVAL
- GROUNDWATER LEVEL AT TIME OF DRILLING
- (SP) POORLY GRADED SAND
- (SM) SILTY SAND
- (SP-SM) SAND WITH SILT
- (ML) SILT

VERTICAL SCALE (IN FEET): 10

HORIZONTAL SCALE (IN FEET): 50

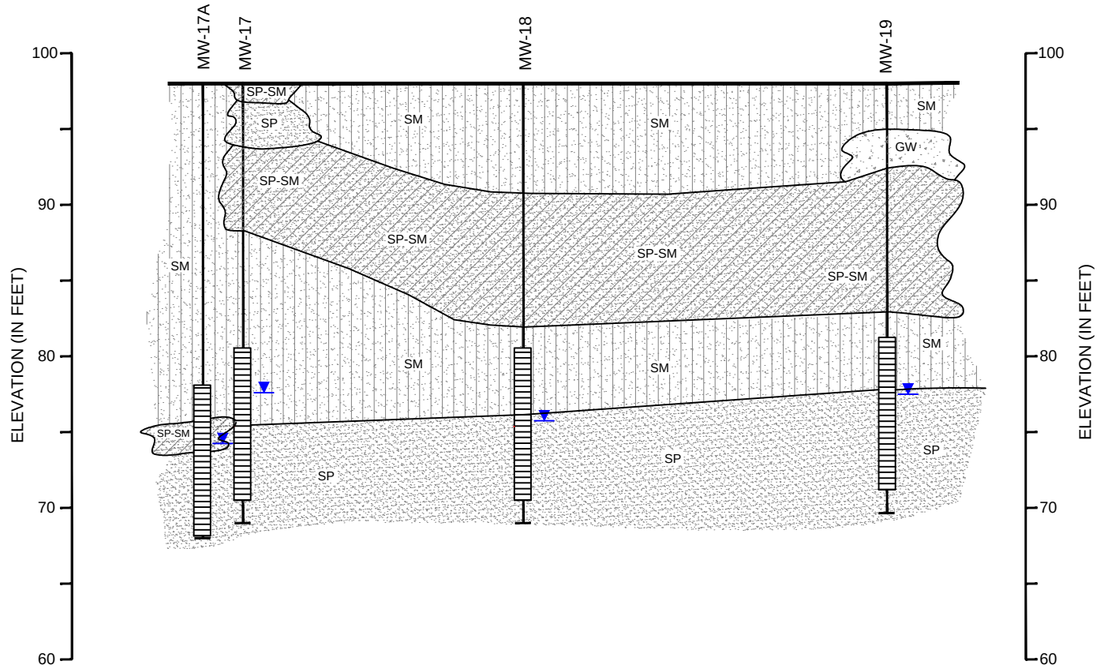
Figure 5
Geologic Cross Section A-A'
Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

PROJECT NO.	PREPARED BY	DRAWN BY
WAKBVHA121	J.KC	PM/ND
DATE	REVIEWED BY	FILE NAME
01/07/2013		Fig5-XSec-A.dwg

antea group

B
NW

B'
SE



LEGEND

SCREENED INTERVAL

GROUNDWATER LEVEL
AT TIME OF DRILLING

(SP) POORLY GRADED SAND

(SM) SILTY SAND

(SP-SM) SAND WITH SILT

(GW) WELL GRADED GRAVEL

VERTICAL SCALE
(IN FEET)
10

50
HORIZONTAL SCALE
(IN FEET)

Figure 6
Geologic Cross Section B-B'
Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

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WAKBVHA121	J.KC	PM/ND	antea group
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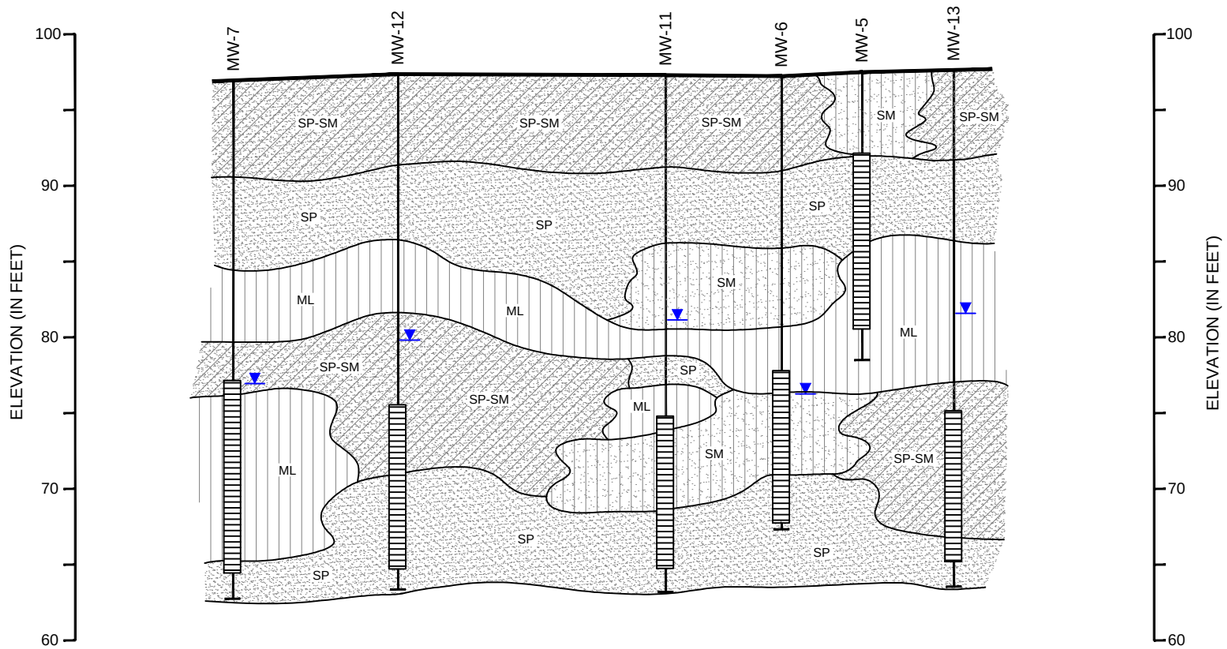
C
West

C'
East



LEGEND

SCREENED INTERVAL

GROUNDWATER LEVEL
AT TIME OF DRILLING

(SP) POORLY GRADED SAND

(SM) SILTY SAND

(SP-SM) SAND WITH SILT

(ML) SILT

VERTICAL SCALE
(IN FEET)
10

50
HORIZONTAL SCALE
(IN FEET)

Figure 7
Geologic Cross Section C-C'
Kent Block Valve
Olympic Pipe Line Company
South 259th Street
Kent, Washington

PROJECT NO.	PREPARED BY	DRAWN BY	
WAKBVHA121	J.KC	PM/ND	antea group
DATE	REVIEWED BY	FILE NAME	
01/07/2013		Fig7-XSec-C.dwg	

Appendix H

Field and Work Plan Contingencies

FIELD AND WORK PLAN CONTINGENCIES

Preparations for varying field conditions and potential change-in-conditions during field activities have been reviewed and planned for as referenced below:

- Historical distribution lines, pea gravel or fill material may be encountered during pre-clearance activities requiring boring re-location;
- Boring locations may need to be moved or relocated based on identified subsurface utilities or surface structures in the immediate area of planned borings, and borings may be terminated at shallower or deeper depths than designated in this work plan based on field conditions;
- Soil sample collection techniques, depths and locations may be altered based on field conditions, and soil samples within the first 6.5 feet bgs may be collected directly from the boring cleared with the vacuum truck and air knife;
- Soil borings may be added, eliminated or increased in depth and completed as temporary or permanent monitoring wells based on field conditions or RM guidance;
- Scope changes to this work plan have been reviewed and have been planned for based on field conditions and typical drilling conditions. If site work is terminated based on unpredicted field conditions, a management of change (MOC) will be required prior to rescheduling site work or new site work will be addressed as a new project with a modified work plan.