SECTION 4

GROUNDWATER WELL INSTALLATION REPORT

Groundwater Monitoring Well Installation Report

Performed at:
Fife RV Center
3410 Pacific Highway East
Fife, Washington 98424

AEROTECH
Environmental Consulting Inc.

November 17, 2016

Anchorage Seattle Portland

Cost-effective environmental solutions
for the western United States and Alaska

www.AerotechEnvironmental.com

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Performed at:
Fife RV Center
3410 Pacific Highway East
Fife, Washington 98424

November 17, 2016

Performed by:
Aerotech Environmental Consulting, Inc.
13925 Interurban Avenue South, Suite No. 210
Seattle, Washington 98168
Fax (206) 402-3872
(866) 800-4030
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GROUNDWATER MONITORING WELL INSTALLATION REPORT

performed for:
MR. CHRIS LaVERDIERE
3410 Pacific Highway East
Fife, Washington 98424

Clients:	**MR. CHRIS LaVERDIERE** 3410 Pacific Highway East Fife, Washington 98424
Point of Contact:	Mr. Chris LaVerdiere Representative of Ownership Group
Property:	**FIFE RV CENTER** 3910 Pacific Highway East Fife, Washington 98424
County:	Pierce County, Washington Parcel Number: 0320111067
Commercial Activity:	RV Retail
Project Number:	216-8246
Licensed Geologist:	James McDermott (Washington State License No. 3063)
Report Date:	November 17, 2016

EXECUTIVE SUMMARY

The subject Property consists of one irregularly-shaped 3.76-acre Parcel of commercial land located on the south side of Pacific Highway East in Fife, Washington. One approximately 10,763 square foot, 2-story structure, occupied by *Fife RV Center*, is situated near the southeastern corner of the Property. Asphalt parking areas surround the structure on all sides and are utilized for the storage and display of the RV inventory. An approximately 0.77 acre gravel parking lot utilized to store RV inventory, and the subject of this investigation, is situated on the west side of the Property.

Adjoining to the south is a drainage ditch that appear to discharge to the east, followed by Interstate 5. The neighboring Parcel to the east includes approximately 5.24 acres, currently leased by the Fife RV Center for use as additional storage. The Puyallup River approaches the Site within 3,000 feet to the southwest, and the Blair Waterway and Commencement Bay are located over 3,500 feet to the north. Wapato Creek is situated 2,000 feet to the east and Hylobos Creek is located two miles to the east.

Formerly included within the same Parcel, and now adjoining to the north, is a Tahoma Express Gas Station and a Jack in the Box restaurant followed by Pacific Highway East and an *Econolodge*. The Tahoma Express Gas Station was listed on Ecology's Site Cleanup List as Site No. 5015. Petroleum hydrocarbons were documented at the Tahoma site prior to remediation, at concentrations above the State Cleanup Levels in soil and groundwater. Ecology issued a No Further Action determination for that site in 1993.

From the mid 1960's to the late 1980's a *Gasamet* gasoline station occupied the western portion of the western gravel paved lot on the Subject Property. Fuel dispenser islands were located south and southeast of the eastern terminus of the current restaurant drive-thru, with Underground Storage Tank Basins situated both to the east and west, and a building farther south. A triangular-shaped wooded water retention area (Bio-Swale) is located to the west. Test pit exploration conducted in 2000 indicated strong petroleum odor in soil both south and southeast of the current restaurant location, the bio-swale area, and the adjoining gravel lot.

In 2014, *Associated Earth Sciences*, Inc. conducted a *Supplemental Phase II Environmental Site Assessment* at the subject Property. Petroleum hydrocarbons were detected at concentrations above the Model Toxic Control Act ("MTCA") Method A Cleanup Levels in soil and groundwater samples in the vicinity of the former Gasamet pump islands and UST Basins. Based on these results, Mr. Chris LaVerdiere, the Client, requested *Langseth Environmental* ("Langseth") and *Aerotech Environmental Consulting, Inc.* ("Aerotech") initiate site remedial excavation and environmental consulting services to address petroleum impacted soils. 1,685.24 tons of petroleum impacted soil were removed to the LRI Landfill in Graham, Washington.

Groundwater Monitoring Well Installation: Conclusions & Recommendations:

Well Installation and Design: Aerotech Environmental Consulting, Inc. installed six 2-inch PVC Groundwater Monitoring Wells, north, west and southwest of the former *Gasamet* Pump island and UST areas. Two wells, MW-1 and MW-2, were installed in the probable upgradient groundwater flow direction to the north, and three wells, MW-4, MW-5, and MW-6, were installed in the probable downgradient direction, south and west. Well screens were placed between 4 and 15 feet bgs, in order to accommodate water level fluctuations related to daily tides and Puyallup River water level variations, as well as local recharge. One well, MW-3, was installed at a "hot spot" near the center of the excavated area.

Groundwater Flow Direction: Wellhead elevations were surveyed and groundwater flow was calculated to the west and southwest, toward the bio-swale and the adjoining drainage ditch, on November 11th and 14th, with a slight northwesterly flow to the north on November 11. These preliminary water levels and associated groundwater flow direction calculations may not represent equilibrium conditions. Additional measurements are planned.

Soil Analytical Results: Total Petroleum Hydrocarbons-Gasoline were detected above MTCA Method A Cleanup Levels for soil at MW-2, MW-4, and MW-5, at concentrations between 34 and 250 mg/kg (benzene at 0.061 to 0.530 mg/kg), and at MW-3 at 13,000 mg/kg (benzene at 9.3 mg/kg). Wells were developed by a block and surge method on November 11th and 14th and monitoring well sampling will occur on November 18th.

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INTRODUCTION

Aerotech Environmental Consulting, Inc., was retained by Mr. Chris LaVerdiere, the Client to install six recommended groundwater monitoring wells at the subject Property at 3410 Pacific Highway East in Fife, Washington, following the completion of remediation activities at the Site in October 2016. Groundwater monitoring wells were to be installed around the perimeter of fuel tanks and fuel dispenser pump islands associated with a former Gasamet retail station, formerly located at the western portion of the Fife RV Center gravel parking area.

SECTION I.

SITE DESCRIPTION

Property Exterior Description:

The subject Property consists of one irregularly-shaped 3.76-acre Parcel of commercial land located on the south side of Pacific Highway East in Fife, Washington. One approximately 10,763 square foot, 2-story structure, occupied by *Fife RV Center*, is situated near the southeastern corner of the Property. An approximately 1,000 square foot, 1-story structure is situated northeast of the main building along the eastern Property boundary. Asphalt parking areas surround the structure on all sides and are utilized for the storage and display of the RV inventory. An approximately 0.77 acre gravel parking lot, the subject of this investigation, and utilized to store RV inventory, is situated on the west side of the Property.

Adjoining to the south is a drainage that appears to discharge to the east and then south, followed by Interstate 5. The neighboring Parcel to the east includes approximately 5.24 acres, currently leased by the Fife RV Center for use as additional storage. The Puyallup River is approaches the Site within 3,000 feet to the southwest, and the Blair Waterway and Commencement Bay are located over 3,500 feet to the north. Wapato Creek is situated 2,000 feet to the east and Hylobos Creek is located two miles to the east.

Formerly included within the same Parcel, and now adjoining to the north, is a Tahoma Express Gas Station and a Jack in the Box restaurant followed by Pacific Highway East and an *Econolodge*. The Tahoma Express Gas Station was listed on Ecology's Site Cleanup List as Site No. 5015. Petroleum hydrocarbons were documented historically at the Tahoma site prior to remediation at concentrations above the State Cleanup Levels in soil and groundwater. Ecology issued a No Further Action determination in 1993.

Numerous utilities were located at the Site by private and public locators, included a water main oriented northwest ot southeast, extending from the northwest corner of the Property. Parallel and to the northeast, nearer the Tahoma building, are electrical and natural gas conduits, as well as a storm sewer line. Electrical lines also extend from a power pole along the southern perimeter of the Site toward both the restaurant and the Tahoma building. A storm sewer pipe also extends toward the southwestern corner of the gravel lot, from the vicinity of the Tahoma building. Fefer to the attached figures.

A wooded water retention pond, known as a bioswale, is situated west of the area of this investigation. The water level observed in the bioswale area is consistent with water levels and groundwater flow documented at the newly installed monitoring wells.

Recognized Environmental Conditions

Site Development Description:

From the mid 1960's until the late 1980's a *Gasamet* gasoline station occupied the southeast portion of the adjoining Jack in the Box Property and the western portion of the western gravel paved lot on the Subject Property. Based upon an as-built plan on file with the City of Fife, fuel dispenser islands were located between 5 and 65 feet south and southeast of the eastern terminus of the restaurant drive-thru, with Underground Storage Tank ("UST") Basins situated both to the east and west, and building farther south. A triangular-shaped wooded water retention area, known as a Bio-Swale, is located on the west corner of the Parcel. A qualitative account of test pit activities conducted in 2000 and available in the permit documents maintained by the City of Fife, indicated strong petroleum odor in soil above depths of four feet.

In 2014, *Associated Earth Sciences*, Inc. conducted a *Supplemental Phase II Environmental Site Assessment* at the subject Property. Petroleum hydrocarbons were detected at concentrations above the Model Toxic Control Act ("MTCA") Method A Cleanup Levels in soil and groundwater samples in the vicinity of the former Gasamet pump islands and UST Basins. Based on these results, Mr. Chris LaVerdiere, the Client, requested *Langseth Environmental* ("Langseth") and *Aerotech Environmental Consulting, Inc.* ("Aerotech") initiate site remedial excavation and environmental consulting services to petroleum impacted soils.

Previously Identified Contaminants of Concern:

Conclusions derived from previous investigations at the Site identified gasoline range petroleum constituents, benzene, ethyl benzene, toluene, and xylenes as Contaminants of Concern at the subject Property.

Site Observations and Reported Conditions:

With the exception of the above referenced environmental concern, there were no additional Recognized Environmental Conditions or concerns identified as potential impacts to the Property.

SECTION II.
FIELD WORK

Notifications - "Public" Utilities:

Due to the age and nature of the Site, a "public" utilities notification was performed prior to the start of work. Aerotech Environmental Consulting, Inc.[1] Performed the "public" utilities notification on November 7, 2016, and was issued Ticket Number163582276 by the Utilities Underground Location Center.

According to the Utilities Underground Location Center the utilities necessary for notification included:

Washington Ticket#: 16358276 2 FULL BUSINESS DAYS
Transmit Date: 11/07/16Time: 7:21 AM
Type of Work: 2 INCH MONITORING WELL INSTALLATION

Dig Site Location
County: PIERCE State: WA Place: FIFE
Address / Street: PACIFIC HIGHWAY EAST Nearest Intersection: PORT OF TACOMA RD
GRAVEL LOT LOCATED SOUTH OF TAHOMA STATION AND JACK IN THE BOX

Map Twp: 20N Rng: 3E Sect-Qtr: 2-SE,11-NE
Poly 1: NW Lat: 47.2426032 Lon: -122.3832543 SE Lat: 47.2419646 Lon: -122.3823155 Members Notified:

District	Company	Marking	Customer Service	Repair
ADTEL04	INTEGRA TELECOM	(800)762-0592	(866)468-3472	(866)468-3472
CC7711	COMCAST CABLE	(800)762-0592	(800)266-2278	(888)824-8289
FIFE01	CITY OF FIFE	(253)922-9315	(253)922-9315	(253)922-9315
MCCHRD01	MC CHORD PIPELINE COMPANY	(253)383-1651	(253)383-1651	(253)383-1651
OLYPE01	BP/OLYMPIC PIPE LINE COMPANY	(425)981-2517	(425)981-2517	(888)271-8880
PUGE07	PUGET SOUND ENERGY ELECTRIC	(888)728-9343	(888)225-5773	(888)225-5773
PUGG07	PUGET SOUND ENERGY GAS	(888)728-9343	(888)225-5773	(888)225-5773
QLNWA24	CTLQL-CENTURYLINK	(800)778-9140	(800)283-4237	(800)573-1311
TACPWR01	TACOMA PWR & CLICK NETWORK	(253)502-8263	(253)502-8600	(253)383-0982

Private Utilities Location

Additionally, Aerotech engaged personnel of Mountain View Locating Services of Bonney Lake, Washington to locate building and site utilities on November 8, 2016, prior to the start of the on Site drilling activities. No unanticipated or unexpected situations were discovered or encountered during the "private" locating activities.

Based in part upon pavement markings made by utility location technicians; the location of utility fixtures such as water, electrical, or manholes, and the presence of anomalies detected by induction or ground radar methodologies, monitoring well locations were chosen. Refer to Figure A for details regarding utility locations, well locations and other features.

Ground Penetrating Radar Survey:

A Ground Penetrating Radar ("GPR") Survey conducted by Mountain View Locating Services staff on November 8, 2016 in order to augment the induced current methodology, and to

[1] Aerotech Environmental Consulting, Inc., was previously issued a Contractor Identification Number by the non-profit Utilities Underground Location Center (www.callbeforeyoudig.com).

verify the presence of utility trenches such as sewer and water main trenches. Mr. Dave Schaff of Mountain View Locating Services, LLC employed Radar equipment utilizing Dual Frequency Antennae (300 MHz/800 MHz) manufactured by Geophysical Survey Systems. The locations of the water main and storm sewers were confirmed by means of GPR activities.

Site Activities:

Six groundwater monitoring wells were installed on November 10 and 11, 2016, under contract with Aerotech Environmental Consulting, Inc. All the work was performed during normal business hours No unusual or unforeseen circumstances occurred during the Site activities.

Drilling Activities:

Drilling operations employing a Track-mounted Hollow Stem Auger Drilling Rig, equipped with 2-foot stainless steel split spoon sampling tools.

The subsurface soil borings were performed by equipment owned by and operated by a Licensed Driller from Borehtech, Inc., of Spokane and Renton. The on Site drilling equipment was operated by personnel employed by Boretech, Mr. Carlos Gardea (State of Washington Department of Ecology Well Driller's License No. 3143). All subsurface work was overseen by State of Washington Licensed Geologist, Mr. James McDermott (State of Washington License No. 3063). The laboratory analytical services were performed by a State of Washington Licensed Lab, Advanced Analytical Labs in Redmond, Washington.

Soil Borings:

Approximately 5 to 6 feet of gravelly well-graded sand fill was generally underlain by 8 or more feet of silt or very fine sand and silt. Two 2- 4-foot thick poorly graded sand lens(es) were encountered above or below the silt encountered. Consistent with historical evidence, MW-3 and MW-4 appear to have been advanced within the sandy backfilled former underground tank basins situated west and east of the former pump island location. Refer to Figure 3c for a depiction of soils on Site in the form of a Hydrogeologic Cross-section.

A total of six soil borings were advanced and six groundwater monitoring wells were installed around the perimeter of the former fuel dispenser pump islands and two underground storage tank basins. Refer to Figure A.

Soil Sample Collection:

A total of 21 discrete soil samples were collected on November 10 and 11, 2016 at six soil boring locations. Olfactory indications believed to reflect the possible presence of petroleum-impacted soil were observed in association with significant PID responses at location MW-3 (PID: 880 ppm; LAB TPH-g: 13,000 ppm), MW-2 (PID 88 ppm; LAB TPH-g: 250 ppm), and MW-4 (PID 19 ppm; LAB TPH-g: 150 ppm).

Soils collected from each location were visually inspected for color quality and evidence of discoloration, and physically observed for the purpose of recording composition and noting odor, where distinctive. Each sample was handled with a fresh pair of clean latex gloves. Samples were placed in sterile four-ounce glass jars and/or 40cc glass vials preserved with 5ml methanol in accordance with procedures specified for USEPA Method 5035A.

Water samples were collected utilizing a fresh pair of nitrile gloves, utilizing a fresh disposable poly-bailer lowered to the middle of the available water column within temporary wells installed in boreholes, in order to permit suspended silt, where present, to be reduced.

Each sample was given a unique identifier number and placed in an iced cooler for sample preservation. Samples were held in the custody of the project manager, James McDermott, and ice was checked and replenished while samples were held in the evening, and maintained to the time of delivery to the lab. A Chain of Custody was maintained in order to record details associated with the collection and handling of each sample. The remaining soil samples were retained by the laboratory for analysis in the event that the soil samples selected for laboratory analysis revealed elevated levels of constituents. Following the production of the initial Site sample results for soil, no follow-up laboratory analyses were requested for the subject Site, as of the date of this report.

Installation and Design of Groundwater Monitoring Wells:

On November 10 and 11, 2016, groundwater monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6 were installed at the subject Site.

At each well location, a two-inch diameter Schedule 40 PVC groundwater monitoring well was installed to a depth between 14 and 15 feet bgs, with ten feet of 2-inch diameter no. 10 PVC slotted screen situated between depths of 4 and 10 feet bgs or 5 and 15 feet bgs, in order to accommodate a wider range of fluctuations in groundwater levels due to the proximity of the Site to boththe Puyallup River and Commencement Bay, where the magnitude of the difference in elevation between low and high tide often exceeds 10 feet.

The annular space in each case was completed with clean Colorado silica sand sized to the No. 10 screen (No. 10 to 20 grade), to a depth of one foot above the top of the well screen interval. The remaining annular space was sealed with bentonite chips to within one foot of the surface toprevent the infiltration of surface water or contaminants to the depth of the screened interval. The well was completed with a sealable pressure cap, and cement was placed above the bentonite to secure a flush mountedwell0-head monument. Two wells, MW-5 and MW-6 were installed near the top of the landscaped slope located south of the gravel lot. Narrow terraces were created at a level approximately two feet below the elevation of the adjoining gravel lot, and above-ground steel monuments were constructed, protected by four steel bollards.

Well design details are depicted in the attached Soil Boring Logs. The Department of Ecology does not permit groundwater to be collected from a newly installed groundwater well until the well system has been allowed to chemically equilibrate for a period of at least 72 hours. This delay is intended to permit the groundwater environment to return to its natural chemical and physical state.

Well Identification	Well Tag	Total Depth (feet bgs)	Approximate Screened Interval (feet bgs)	Elevation of Well Head (feet)P
MW-1	BIS 683	14.0	4-14 ft	7.02
MW-2	BIS 684	14.0	4-14 ft	6.83
MW-3	BIS 685	14.0	4-14 ft	7.15
MW-4	BIS 686	15.0	5-15 ft	6.58
MW-5	BIT 785	14.0	4-14 ft	6.32 **
MW-6	BIT786	14.0	4-14 ft	5.47 **

* Estimated relative to Mean Sea Level ("MSL"). Catch Basin along north Site/gravel lot perimeter. BGS = Below ground surface
** Above ground steel monument, otherwise flush mounted.

Equipment Decontamination:

All sample acquisition equipment was decontaminated before and after the completion of each borehole in order to eliminate the potential for cross-contamination between borings, as required. All reusable sampling equipment for soil sampling, drive rods, and probes were decontaminated after each sampling point by washing with an Alconox-distilled water solution and rinsing with distilled water.

Site Restoration:

Each borehole was completed with bentonite chips, and finished with a concrete concrete pad. No landscape restoration was necessary.

SECTION III.

GEOLOGY AND HYDROGEOLOGY

Site and Regional Topography and Hydrology:

The precise Property location is N 47 14' 34.44" / W 122 22' 58.80" as determined by DeLorme mapping data. The Site is located in Universal Transverse Mercator Zone 11, and has an elevation of approximately 9 to 12 feet above mean sea level. As observed during the Site visit and confirmed on the USGS topographic map, the subject Property is relatively flat, with graded gravel or adjoining paved surfaces in the study area sloping toward two storm water catch basins located near the north fence line. The surface within five to ten feet of the southern Property margin slopes markedly to the level of the ditch to the south, which may perhaps as much as 6 to 8 feet below the average grade of the gravel lot. Similarly, adjoining to the west is a triangular-shaped bioswale in which a pond was observed near its center. The water level in this pond appears to be situated at a depths of approaching 6 to 8 feet below the elevation of the gravel lot. Work at the Site in October and November 2016 was completed during a period of exceptionally high rainfall.

As is commonly the case in low-lying areas near sea level, many roads and properties appear to be elevated as much as four or more feet above the original grade. Evidence of the original grade may be seen in the decrease in elevation evident north of Pacific Highway East, north of the subject Property. The 1897 USGS 15-Minute topographic Map depicts Commencement Bay estuaries and tidelands as they existed prior to development with fill. The subject Site is depicted as located within a few hundred feet of a small embayment, representing the relatively close approach of the high tide mark during that period.

A ditch is located a few tens of feet south of the Property. A second tributary ditch is located east of the property adjoining to the east. Pacific Avenue East is elevated approximately four feet above the Site. A Storm Water Systems Map update, published by the city of Fife, suggests that the adjoining ditch to the south discharges to the east, and is directed via pipe to the south, underneath Interstate 5, and ultimately to a ditch system parallel to the east side of the Puyallup River levee system, and to Commencement Bay.

The regional topography within the Commencement Bay tidal flats is that of the nearly planar surface generated by the placement of artificial fill material in the later decades of the nineteenth century and the early years of the twentieth century. Elevations on ridges over one mile to the south increase to more than 200 feet MSL, at the northernmost margins of the south Tacoma upland area.

Geology - Regional and on-Site Conditions:

The Puget Sound lies within a tectonic trough situated between the Olympic Mountains to the west, and the northern Cascade Mountains to the east. This trough is characterized by fault zones accommodating north-south compressional rotation, commonly resulting in predominant north-south and northwest-southeast oriented faults and fault zones. Elliott Bay lies north of the Seattle Fault Zone, while Tacoma's Commencement Bay lies south of the northernmost Tacoma Fault zone rupture. A major fault is mapped below the bluffs on which central Tacoma was developed, along the western margin of Commencement Bay. Commencement Bay and the Puyallup River Basin lie on the down dropped side of the fault. The original Commencement Bay intertidal zone has been elevated by the emplacement of fill throughout the early20th century. The uppermost soils in the Puyallup River Valley are dominated by alluvial and fluvial sediments.

Volcanic mudflow-lahar deposits, commonly 50 to 135 feet in thickness, originating below the slopes of the Mount Rainier volcano 1,500 and 5,700 years bp, serve to provide a somewhat

extensive and uniform hydraulic barrier, separating the Holocene alluvial deposits into upper and lower hydraulic units. These alluvial deposits have been progressing northward over the last several millennia since the last ice sheet retreated, so much so that, approximately 6,000 years before present the estuary and Puget Sound inlet were located near Sumner, Washington. Isopach maps, depicting the thickness of the upper alluvial deposits, the thickness oft the Electron and Osceola mud flow deposits, and the lower alluvial aquifer (the latter deposited near the City of Puyallup andt o the southeast), are attached to an Appendix of this report.

Deep borehole data indicate a total of approximately 1,800 feet of unconsolidated glacial and interglacial sediments in the former tidal flats in the vicinity of the subject Property.

The subject Property and vicinity, south of the Blair Waterway, are mapped as Quaternary Alluvium. These soils are characterized as:

> "Gravel, sand, silt, and clay. Deposited chiefly by modern streams, but includes some swamp deposits. Includes marine deposits near the mouth of the Puyallup river .... thickness ranges from a few feet to as much as 600 feet. Yields small to moderate quantities of water to wells. Locally capable of large yields."

Hydrogeologic Framework, Groundwater Movement, and Water Budget in the Puyallup River Watershed and Vicinity, Pierce and King Counties, Washington, U.S. Geological Survey Scientific Investigations Report 2015-5068, Wendy B. Welch, et al, 2015.

Ground-Water Occurrence and Stratigraphy of Unconsolidated Deposits, Central Pierce County, Washington, Water Supply Bulletin No. 22, State of Washington, Department of Water Resources, Kenneth L. Walters and Grant E. Kimmel, 1968

Geologic Map of the Tacoma North 7.5' Quadrangle, King and Pierce Counties, Washington, US Geological Survey, unpublished draft.

Geologic Map of the City of Tacoma, Pierce County Washington, Mackey Smith, 1977, and unpublished maps on topographic base by Timothy J Walsh, Washington State Department of Natural Resources, circa 1987.

Groundwater Hydrology of the Tacoma-Puyallup Area, Pierce Country, Washington, USGS Water Resources Investigation 99-4013, M.A. Jones, L.A. Orr, J.C. Ebbert, and S.S. Sumioka, 1999.

The following soils were encountered during drilling activities: Approximately 5 to 6 feet of gravelly well-graded sand fill was generally underlain by 8 or more feet of silt or very fine sand and silt. Two 2- 4-foot thick poorly graded sand lens(es) were encountered above or below the silt encountered. Consistent with historical evidence, MW-3 and MW-4 appear to have been advanced within the sandy backfilled former underground tank basins situated west and east of the former pump island location. Refer to Figure 3c for a depiction of soils on Site in the form of a Hydrogeologic Cross-section.

A Washington Department of Transportation test boring advanced near the intersection of the Port of Tacoma Road and Interstate 5, documents the presence of gravel with sand and sand to a depth of 8 feet, underlain by at least 12 feet of silt or silt with sand. The shallow gravels may represent fill material placed atop natural fluvially and alluvially deposited silts and sandy silts. These fill materials may be expected underneath roadways and developed properties, and are often designed to elevate the surface above shallow groundwater and reduce susceptibility to flooding due to groundwater flooding during wet periods, and flooding due to heavy precipitation or breaches and overtopping of the levee system or the associated ditch systems.

Subsurface and Hydrogeological Characteristics - Groundwater Flow:

The principal aquifers in the Puget Sound Region occur within a series of units of glacial drift, hydraulically separated by less permeable deposits commonly including interglacial deposits. One exception, the Vashon till, serves as an aquitard as well, restricting the vertical and lateral migration of groundwater and of contaminants. These deposits underlie the Puget Lowlands basin to depths often approaching 2,000 feet or more. Sand and gravel units within the glacial drift form the principle aquifers. These aquifers receive ample recharge from the typically heavy precipitation characteristic of western Washington. The glacial drift in the Puget Sound region varies greatly in composition and water yielding capacity. Typically, wells in glacial drift tapping sand- or gravel-rich glacial deposits or till in the region above depths of 100 feet may have yields of 100 gallons or more per minute. Deeper wells tapping thick, confined aquifers of highly permeable gravel and coarse sand, often at depths greater than 250 feet, can yield over 1,000 gallons per minute.

Water levels in wells on Site were measured at depths between 1.5 and 5 feet, and may reflect the record precipitation total distinguishing the previous month. The calculated groundwater flow direction at the Site is to the west and southwest. Refer to Figures 3A and 3B, attached to this report. Flow lines based upon potentiometric surface map, indicate flow may be deflected toward the pond present within the bio-swale to the west, and more sharply deflected toward the ditch located Preliminary water levels and associated groundwater flow direction calculations may not represent equilibrium conditions. Additional measurements are planned.

Static water levels north and east of the subject Property have been recorded between depths of three to six feet bgs. During the AESI Phase II, water levels were reported to range from three to seven feet bgs on the subject Property. Ditches in the vicinity are estimated to be as much as four to five feet deep. Groundwater flow direction has been documented at the property to the north as flowing to the south-southwest; to the west and southwest at the current *Travelodge* property, adjacent to the east; and at the former Texaco Station, adjacent to the northwest, as flowing to the west-southwest, or to the south or southwest. Topography is not always a reliable basis for predicting groundwater flow direction, and flow may vary considerably from site to site, according to local influences such as the presence of production or irrigation wells and variations in geologic material and the geometry of distinct geologic units.

A groundwater divide, north of which groundwater flow may be expected to flow toward Commencement Bay, is likely present perhaps as near as a few hundred feet to the north of the Site; this groundwater divide may migrate considerable. The straightened and levi-bound Lower Puyallup River channel is located approximately 3,000 feet south west of the subject Property. Groundwater in the vicinity of the Site, based upon water level data may flow predominantly in the direction of the Puyallup River channel, but may also flow to the west or northwest where the groundwater system is influence by elevated Puyallup River water levels during flood stage or the wet winter seasons.

Components of an extensive ditch system are visible south of the Site, along the northern and southern margins of Interstate 5, and north of Pacific Highway East. Portions of the ditch system to the north may discharge to Wapato Creek to the east. Ditches to the south do not appear to be connected to the system to the north. The ditch adjoining the Site appears todischarge to the east, and then to the south via pipe underneath US 5. When the water table is low, during dry summer months, water entering ditches may, in part, infiltrate vertically to a seasonally low water table; when the water table is higher, during wet winter periods, groundwater may discharge to deeper drainage ditches.

Because tidal fluctuations approach 15 or more feet in the Tacoma area, rythmic fluctuations in ground water levels twice daily and flow direction may occur within some low lying areas near Commencement Bay. Tidal fluctuations may potentially influence groundwater flow at the subject Property, given its location approximately 3,000 feet from the Blair Waterway and approximately

3,000 feet northeast of the Puyallup River channel. Groundwater flow direction at low tide may potentially be diverted somewhat to the west or even northwest. The predominant groundwater flow direction south of this nearby section of Pacific Highway appears to be to the southwest or west.

Jones, Orr and Ebbert depict the shallow alluvial aquifer of Commencement Bay as hydraulically connected to adjoining glacial aquifers above; in general groundwater is expected to flow from the bluffs above, toward Commencement Bay and the Puyallup River, with a significant flow component in the direction of river flow, toward Commencement Bay.

The upper alluvial aquifer is characterized as a distinct hydrogeologic unit, hydraulically connected to more permeable sandy or gravelly units along the valley margins, often lying underneath glacial till:

> "Aquifer Qc1 [Jones 1999] is generally a confined aquifer except where it is exposed at the surface, where it is unconfined, or not completely saturated beneath Qvt [Vashon Till]. It consists largely of sand and gravel deposits but does contain silt and clay within the sand and gravel matrix. ... The altitude of the top of this aquifer ranges from 50 feet below sea level to 509 feet above sea level."

Groundwater Hydrology of the Tacoma-Puyallup Area, Pierce Country, Washington, USGS Water Resources Investigation 99-4013, M.A. Jones, L.A. Orr, J.C. Ebbert, and S.S. Sumioka, 1999.

Ground-Water Occurrence and Stratigraphy of Unconsolidated Deposits, Central Pierce County, Washington, Water Supply Bulletin No. 22, State of Washington, Department of Water Resources, Kenneth L. Walters and Grant E. Kimmel, 1968

Lower Duwamish Waterway, Phase I Remedial Investigation Report, Final, Lower Duwamish Waterway Group, and *Development of a Three-Dimensional, Numerical Groundwater Flow Model for the Duwamish River Basin,* Booth and Herman 1998.

Tidal Along-shore Groundwater Flow in a Coastal Aquifer, L. Li, D.A. Barry, F. Stagnitti, and J.Y. Parlange, Environmental Modeling and Assessment 4 (1999), pp 179-188.

The shallow gravel and sand fill is generally expected to readily transmit groundwater, and where present, groundwater contaminants, while the underlying silts and sandy silts are generally expected to impede both the vertical and horizontal flow of groundwater, and where present, groundwater contaminants. Where porous fill materials associated with utility trenches, such as those that may be present underneath Pacific Highway East, are present, these trenches may serve to intercept and divert shallow groundwater.

SUMMARY OF SAMPLE ACQUISITION

A total of 6 soil borings were advanced in the Area of Concern to a maximum depth of 17 feet below ground surface. Six groundwater monitoring wells were subsequently installed in boreholes to maximum depths between 14 to 17 feet bgs. Detailed descriptions of each boring location, observations made during the acquisition, sampling information, and the field screening process are documented in soil boring logs attached to this report.

SECTION IV.

ANALYTICAL RESULTS

Total Petroleum Hydrocarbons-Gasoline and other Gasoline Constituents:

Total Petroleum Hydrocarbons-Gasoline and Benzene were detected above MTCA Method A Cleanup Levels for soil at MW-2, MW-4, and MW-5, at concentrations between 34 and 250 mg/kg (benzene at 0.061 to 0.530 mg/kg), and at MW-3 at 13,000 mg/kg (benzene at 9.3 mg/kg). This pattern is consistent with isoconcentration contour maps presented in the Site Remedial Excavation Report, dated November 1, 2016 (Figures 6 and 7 are also attached to this report.) Refer to Figure 2C for a depiction of the hydrogeologic section with lab results indicated. A summary of these results may be found in an amended version of Table 1, including results associated with excavation and test pit activities during the previous month, and attached to this report.

APPLICABLE ANALYTICAL METHODOLOGIES AND PARAMETERS

The analytical parameters requested were chosen, based upon the results of previous investigations, including the Remedial Excavation Report dated November 1,2016, in order to provide a comprehensive characterization of the subsurface soils and groundwater present at the Site Areas of Concern and to comply with State of Washington recommendations.

Analytical Methodology:

Soil: **Gasoline Range Organics & Benzene, Ethylbenzene, Toluene, and Xylenes**
State of Washington NWTPH-Gx/8021B

State of Washington USEPA 8260B

Laboratory Analysis:

Laboratory analysis was provided by:

Advanced Analytical Laboratory
13256 NE 20 Street, Suite 8
Bellevue, WA 98005
425.747.7009
aachemlab@yahoo.com

STATEMENT OF QUALITY ASSURANCE

I have performed this Phase II Subsurface Investigation in accordance with generally accepted environmental practices, procedures, and regulatory requirements, as of the date of this Report. I have employed the degree of care and skill ordinarily exercised under similar circumstances by reputable environmental professionals practicing in this area.

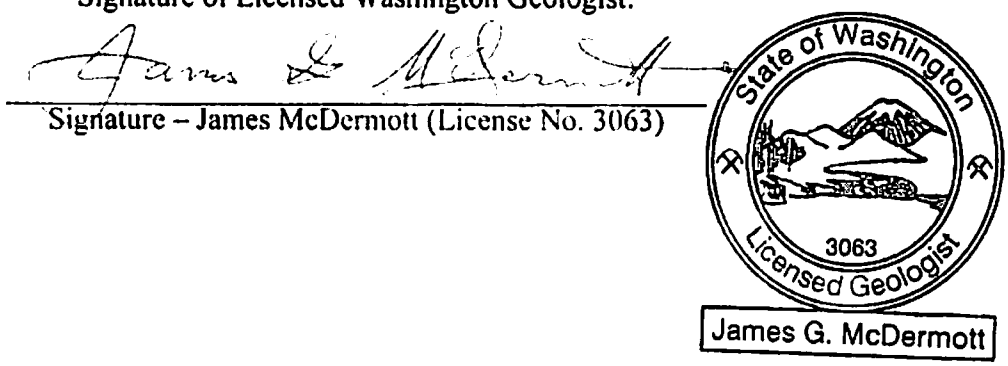
I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of this part. I have the specific qualifications based upon education, training, and experience necessary to plan and implement subsurface investigations.

STATEMENT OF THE LICENSED GEOLOGIST

As stipulated in the Regulatory Code of the State of Washington Title 18, Chapter 18.220, the undersigned is a licensed Geologist in the State of Washington, and has met the statutory requirements of RCW § 18.220.060 for such licensing including, but not limited to, educational requirements, work and field experience, examination proficiency, and acceptance by the State Licensing Board.

The undersigned Licensed Geologist has supervised the geological work performed as described in attached Report – a majority of said work being performed by employees of the firm which employs undersigned Licensed Geologist – as delineated in RCW Title 18, Chapter 18.220, Paragraph 190.

Signature of Licensed Washington Geologist:



Signature – James McDermott (License No. 3063)

DEFINITIONS SPECIFIC TO LIMITED & TARGETED PHASE II ASSESSMENT

Background Concentration..... the concentration of a target analyte in groundwater, surface water, air, soil gas, sediment, or soil at a referenced location near a release or potential release area under investigation, which is not attributable to the release under investigation. Background samples may contain the target analyte, due to either naturally occurring or manade sources, but not due to the release(s) in question. (See, E 1903-97, § 3.1.3).

Phase II Environmental Site Assessment.... This practice (ASTM E 1903-97, Reapproved 2002) defines a commercially practical process for sound Phase II investigation that includes sampling and chemical testing. Such Phase II investigation is performed, at a minimum, to confirm the actual presence of contamination in environmental media at a property where prior assessment had indicated that contaminants may occur due to releases or potential releases of substances to the environment at the property, or to demonstrate prior to property acquisition that contamination by targeted analytes is absent. (See, E 1903-97, § 1.1.1).

Phase II Environmental Site Assessment Limitations..... "This practice [ASTM E1903-97, Reapproved 2002] recognizes that the *Phase II ESA* process can be applied either to an overall assessment of a property with respect to all releases and potential releases at the property, or to an evaluation targeted to a specific release or potential release. It a property-wide assessment is not necessary to meet the particular *User* objective, then the Phase II investigation process described herein should be applied to generate sound information regarding the specific question of problem to be resolved. If a Phase II investigation does not address all releases and potential releases identified at a property, the report of the assessment must be denoted as a *"Targeted Phase II" Environmental Site Assessment.* [E 1903-97, § 1.1.3]"

Phase II Targeted Environmental Site Assessment.... This Phase II Site Assessment is "targeted" as defined by the ASTM *Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process*, Designation E 1903-97 (Reapproved 2002); "an assessment performed in accordance with the process described in this [E 1903-97] practice, which addresses only certain *releases* or potential *releases*, or certain *target analytes*, at a property as selcted by the *User* but which does not address all *releases*, potential *releases*, and *target analytes*.[E 1903-97, § 3.1.43]"

Prior Knowledge.... "This Standard Practice [ASTM E 1903-97, Reapproved 2002] assumes ... that all reasonably ascertainable information, including but not limited to prior Phase I Environmental Site Assessment Reports, will be considered in conducting a Phase II ESA and interpreting its results. [E 1903-97, § 1.1.2]."

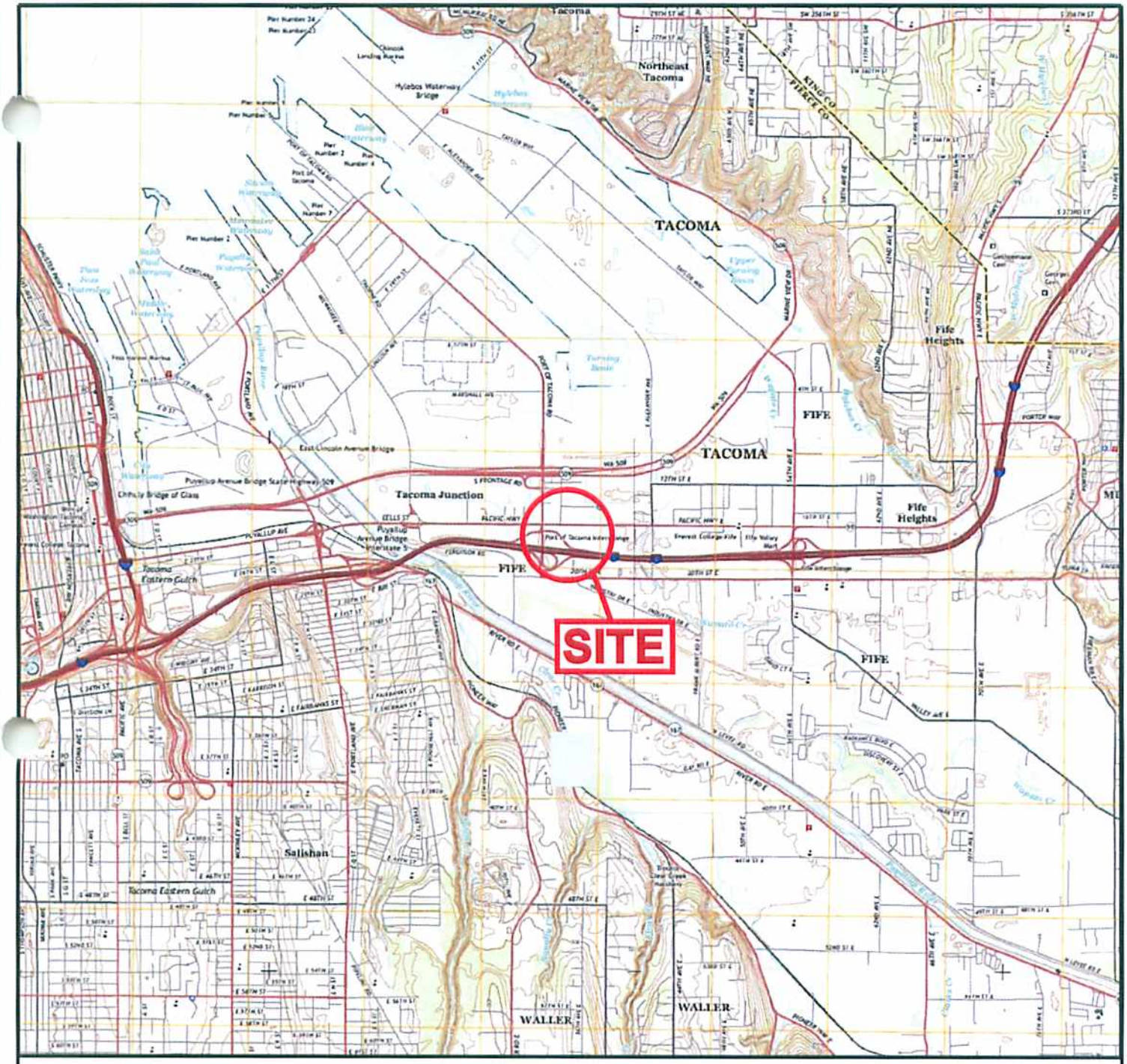
Targeted Analytes.... substances that have been released or potentially have been released to environmental media at the site, and which are of interest in the context of the particular Phase II ESA and its objectives, the presence of which will be sought and concentrations of which will be quantified through field screening or chemical testing. (See, E 1903-97, § 3.1.63).

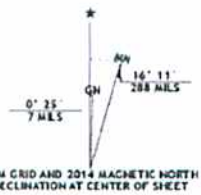
REPORT ENDNOTES

APPENDIX

- Site Location and Photographs
- Project Contract Documents
- Soil Boring Logs
- Laboratory Analytical Results and Chain of Custody
- Supporting Documentation

SITE LOCATION AND PHOTOGRAPHS





UTM GRID AND 2014 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE (mile)

CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

AEROTECH
ENVIRONMENTAL CONSULTING

USGS TOPOGRAPHIC MAP

Fife RV Center
3410 Pacific Highway East
Fife, Washington

Date: 10/30/16
By: Nick Gerkin
Figure: 1

EXPLANATION

Extents of Site Remedial Excavation Figures

Property Boundary

AEROTECH ENVIRONMENTAL CONSULTING

SITE VICINITY MAP

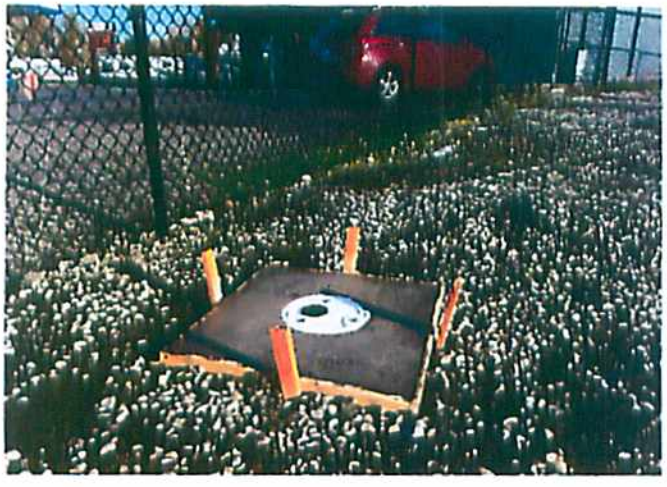
Fife RV Center
3410 Pacific Highway East
Fife, Washington

0 150 300
SCALE (feet)

Date: 10/30/16
By: Nick Gerkin
Figure: 2

PAGE 1 - FIFE RV CENTER: 3410 Pacific Hwy E, Fife, Wa Well Installation Nov 2016 - MW-1 (View NE)

MW-1 (View NE)



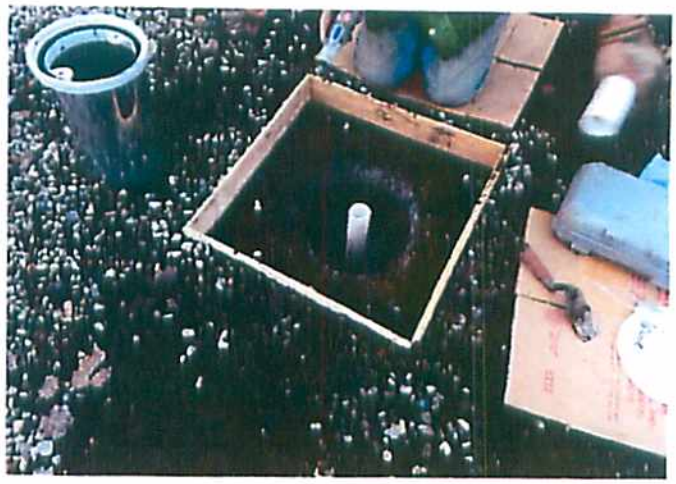
MW-1 (View NW)

MW-2 (View N-NW)

MW-2 Core Samples

MW-3 Core Sample

PAGE 2 - FIFE RV CENTER: 3410 Pacific Hwy E, Fife, Wa Well Installation Nov 2016 - MW-3 (View North)



MW-4

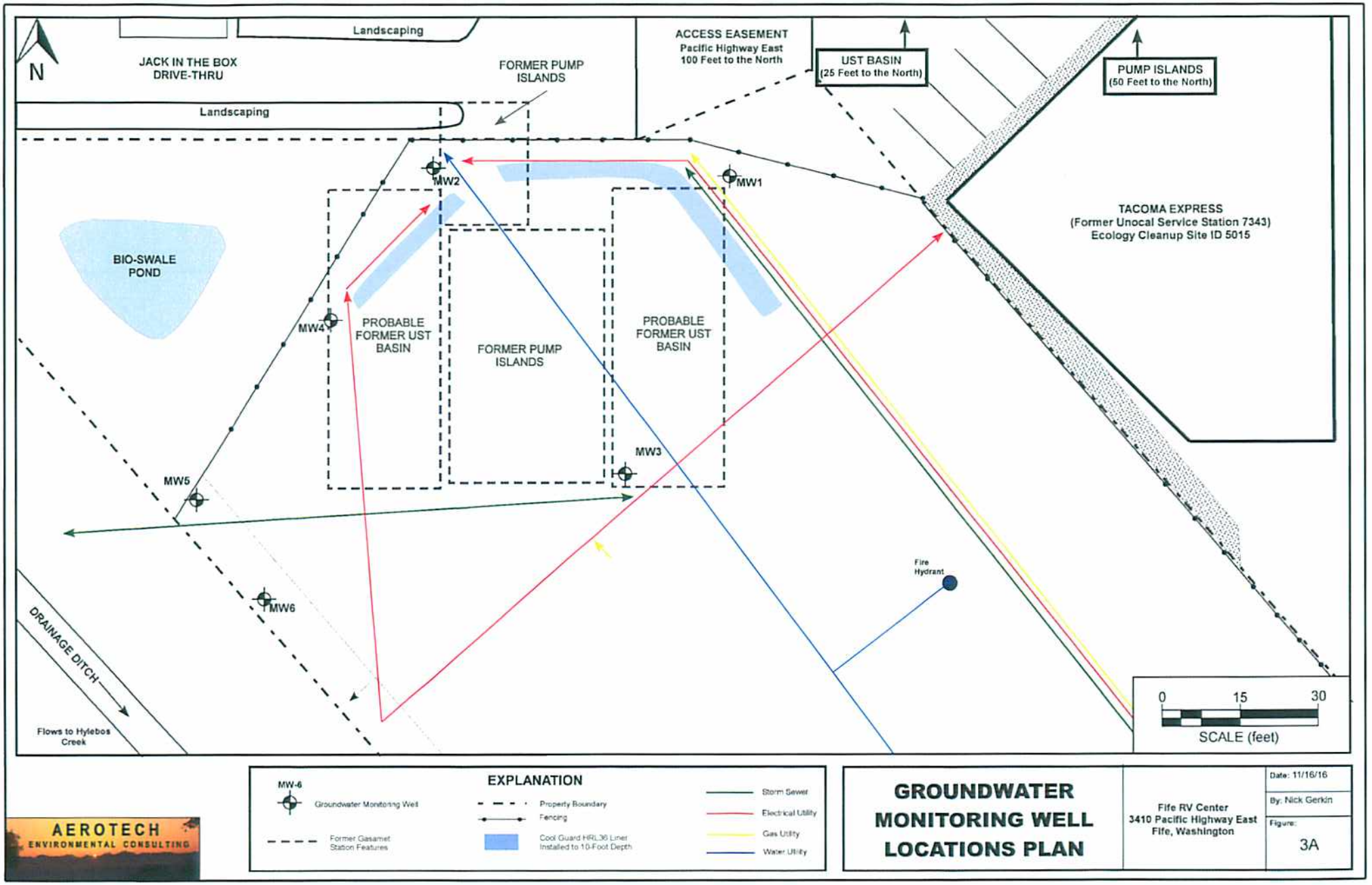
MW-5 (View West)

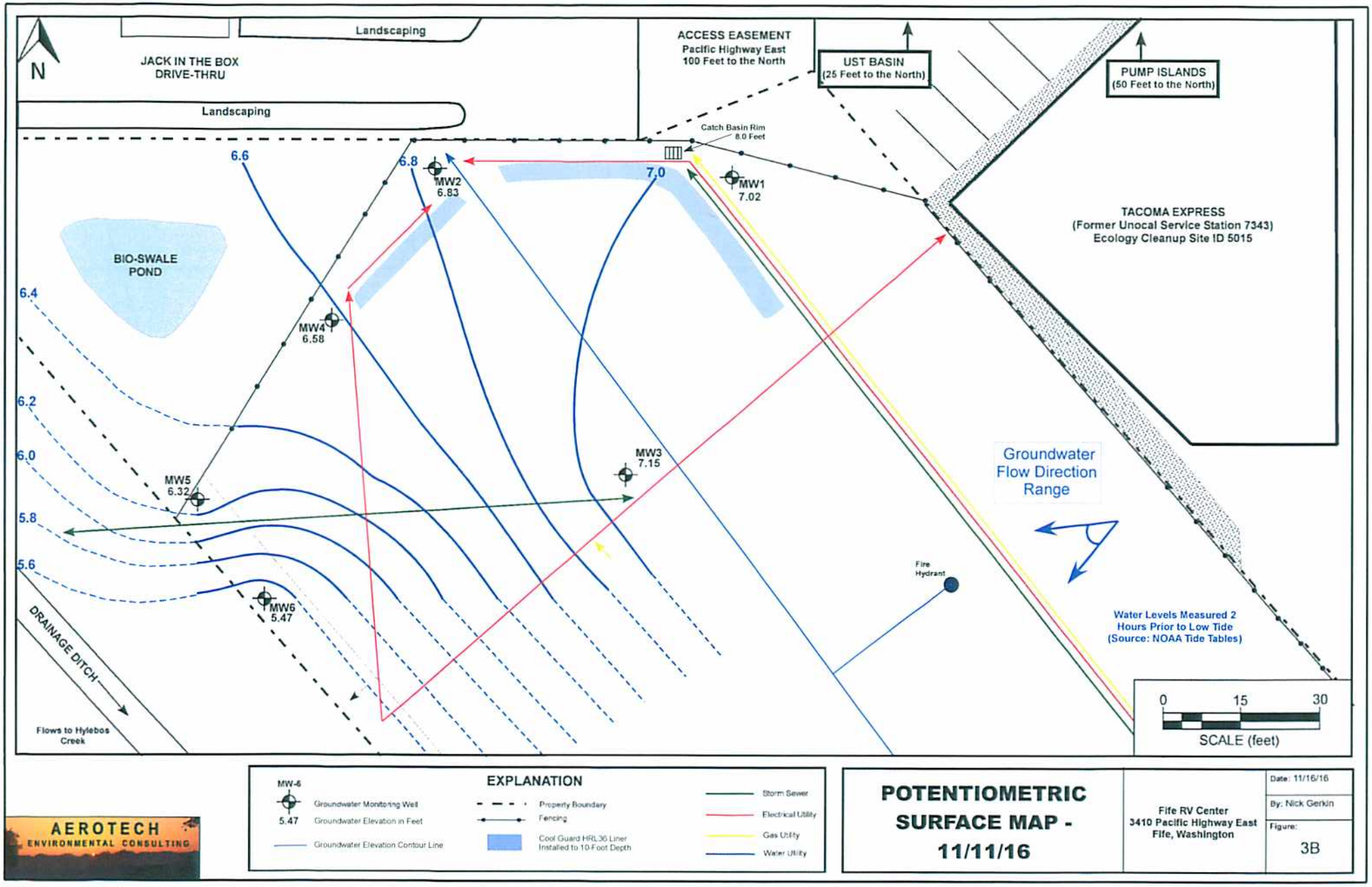
MW-5 Core Sample - Peat layers

MW-6 at 9 feet depth bgs - PEAT with silt and clay

MW-6 and MW-5 (View West)

FIGURES


N
Landscaping
JACK IN THE BOX
DRIVE-THRU
FORMER PUMP
ISLANDS
Landscaping
ACCESS EASEMENT
Pacific Highway East
100 Feet to the North
UST BASIN
(25 Feet to the North)
PUMP ISLANDS
(50 Feet to the North)
MW2
MW1
TACOMA EXPRESS
(Former Unocal Service Station 7343)
Ecology Cleanup Site ID 5015
BIO-SWALE
POND
MW4
PROBABLE
FORMER UST
BASIN
FORMER PUMP
ISLANDS
PROBABLE
FORMER UST
BASIN
MW3
MW5
Fire
Hydrant
MW6
DRAINAGE DITCH
Flows to Hylebos
Creek
0
15
30
SCALE (feet)
EXPLANATION
MW-6
Groundwater Monitoring Well
Former Gasamat
Station Features
Property Boundary
Fencing
Cool Guard HRL36 Liner
Installed to 10-Foot Depth
Storm Sewer
Electrical Utility
Gas Utility
Water Utility
AEROTECH
ENVIRONMENTAL CONSULTING
GROUNDWATER
MONITORING WELL
LOCATIONS PLAN
Fife RV Center
3410 Pacific Highway East
Fife, Washington
Date: 11/16/16
By: Nick Gerkin
Figure:
3A


N
Landscaping
JACK IN THE BOX
DRIVE-THRU
Landscaping
ACCESS EASEMENT
Pacific Highway East
100 Feet to the North
UST BASIN
(25 Feet to the North)
PUMP ISLANDS
(50 Feet to the North)
Catch Basin Rim
8.0 Feet
TACOMA EXPRESS
(Former Unocal Service Station 7343)
Ecology Cleanup Site ID 5015
BIO-SWALE
POND
6.6
6.8
7.0
6.4
6.2
6.0
5.8
5.6
MW1
7.02
MW2
6.83
MW3
7.15
MW4
6.58
MW5
6.32
MW6
5.47
Groundwater
Flow Direction
Range
Fire
Hydrant
Water Levels Measured 2
Hours Prior to Low Tide
(Source: NOAA Tide Tables)
DRAINAGE DITCH
Flows to Hylebos
Creek
0
15
30
SCALE (feet)
EXPLANATION
MW-6
Groundwater Monitoring Well
5.47
Groundwater Elevation in Feet
Groundwater Elevation Contour Line
Property Boundary
Fencing
Cool Guard HRL36 Liner
Installed to 10-Foot Depth
Storm Sewer
Electrical Utility
Gas Utility
Water Utility
AEROTECH
ENVIRONMENTAL CONSULTING
POTENTIOMETRIC
SURFACE MAP -
11/11/16
Fife RV Center
3410 Pacific Highway East
Fife, Washington
Date: 11/16/16
By: Nick Gerkin
Figure:
3B

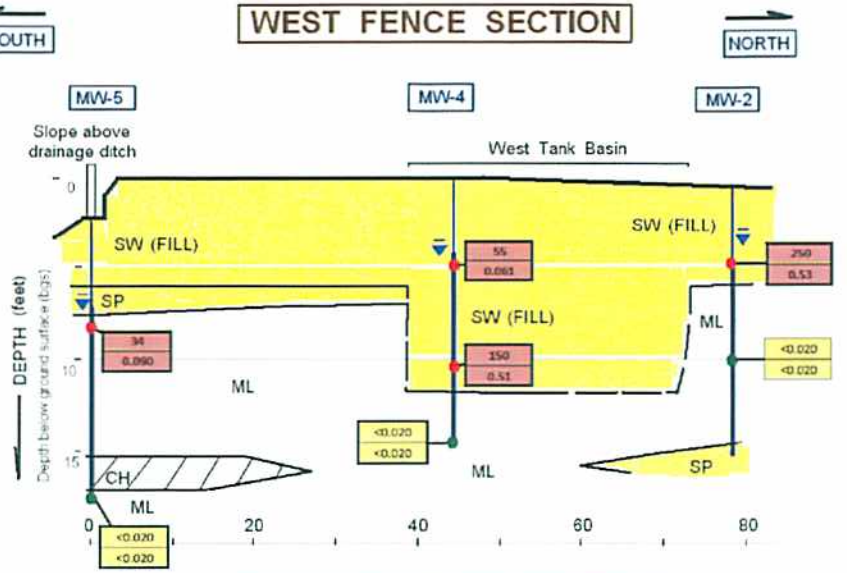
Aerotech Environmental Consulting, Inc
13925 Interurban Avenue South, Ste 210
Seattle, Washington
www.aerotechenvironmental.com

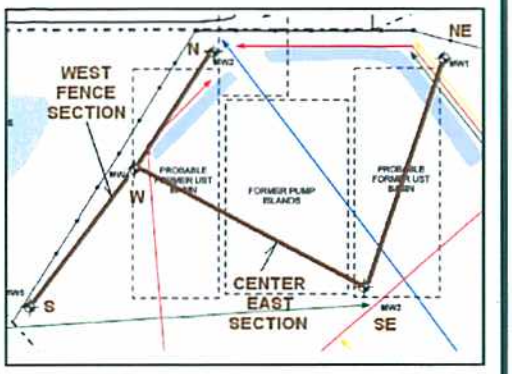
Drawing by McDermott Nov 2016

FIGURE 3C
HYDROGEOLOGICAL CROSS-SECTIONS
WITH LAB RESULTS

Fife RV Center
3410 Pacific Highway East
Fife, Washington 98424

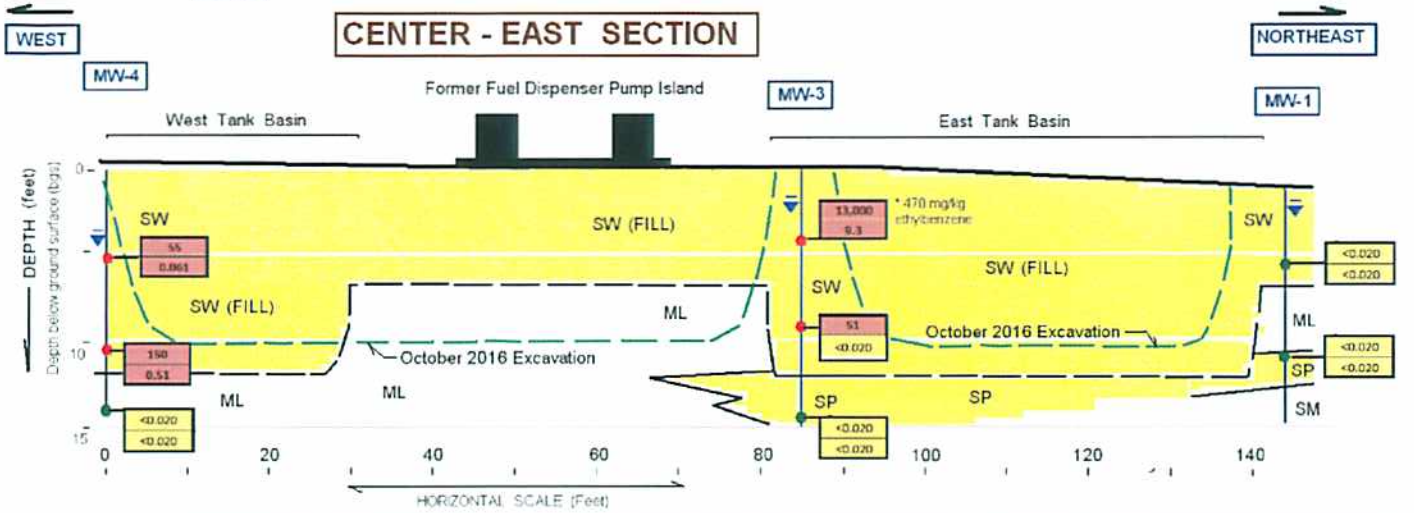
WEST FENCE SECTION





Geologic Cross-section Location Map
2 x Vertical Exageration

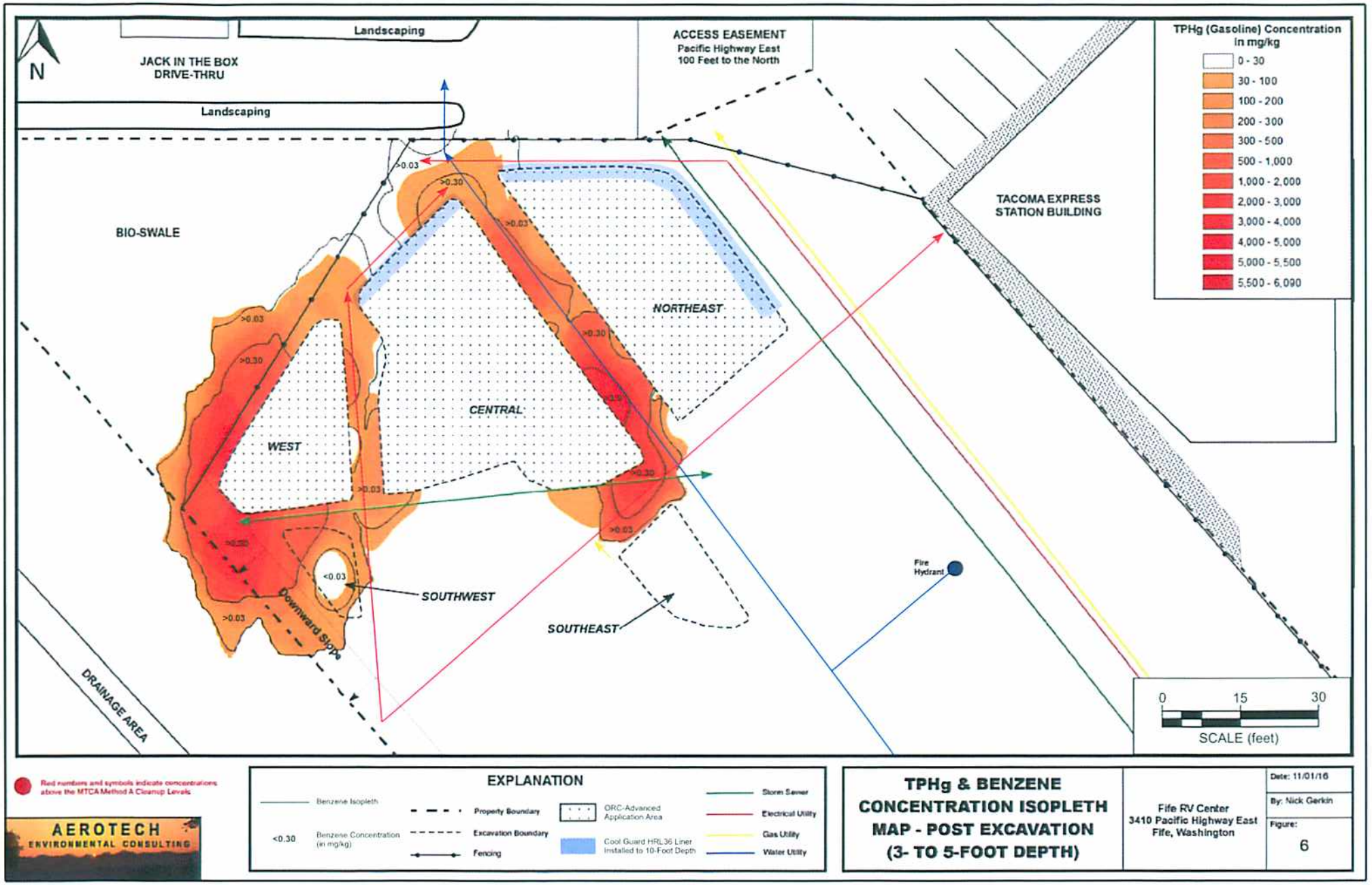
CENTER - EAST SECTION

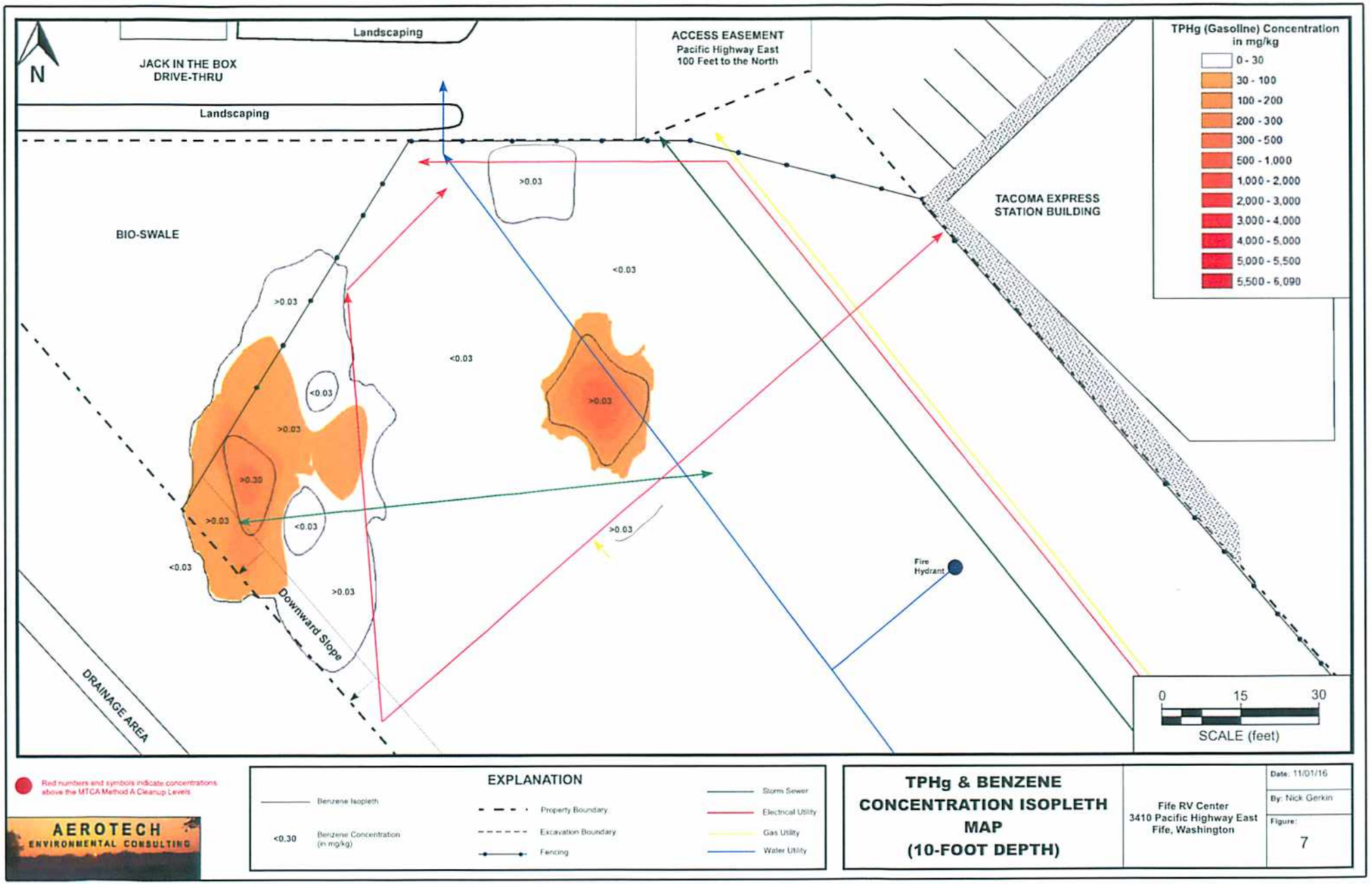


Petroleum Constituents	
E, X, D	Ethylbenzene, xylenes, and diesel Present below MTCA Method A Levels
	Gasoline constituent exceedance
	No gasoline constituent exceedances
	Visual or olfactory indications of petroleum impacted soil (orange: minor)

GW	Gravel, well graded
SP	Sand, poorly graded
SW	Sand, well graded
SM	Silty Sand
ML	Silt
CL	Clay, inorganic, low - medium plasticity
CH	InorganicClay, high plasticity
	Asphalt pavement

- Groundwater Depth in open Borehole
- Potentiometric Surface
- Groundwater Monitoring Well - Screened interval
- Bottom of borehole
- B-10 Borehole ID
- 51 TPH - Gasoline
- <0.020 Benzene
- mg/kg


N
Landscaping
JACK IN THE BOX
DRIVE-THRU
Landscaping
ACCESS EASEMENT
Pacific Highway East
100 Feet to the North
TACOMA EXPRESS
STATION BUILDING
BIO-SWALE
NORTHEAST
CENTRAL
WEST
SOUTHWEST
SOUTHEAST
Downward Slope
DRAINAGE AREA
Fire Hydrant
>0.03
>0.30
<0.03
TPHg (Gasoline) Concentration in mg/kg
0 - 30
30 - 100
100 - 200
200 - 300
300 - 500
500 - 1,000
1,000 - 2,000
2,000 - 3,000
3,000 - 4,000
4,000 - 5,000
5,000 - 5,500
5,500 - 6,090
0
15
30
SCALE (feet)
Red numbers and symbols indicate concentrations above the MTCA Method A Cleanup Levels
EXPLANATION
Benzene Isopleth
<0.30
Benzene Concentration (in mg/kg)
Property Boundary
Excavation Boundary
Fencing
ORC-Advanced Application Area
Cool Guard HRL36 Liner Installed to 10-Foot Depth
Storm Sewer
Electrical Utility
Gas Utility
Water Utility
AEROTECH
ENVIRONMENTAL CONSULTING
TPHg & BENZENE CONCENTRATION ISOPLETH MAP - POST EXCAVATION (3- TO 5-FOOT DEPTH)
Fife RV Center
3410 Pacific Highway East
Fife, Washington
Date: 11/01/16
By: Nick Gerkin
Figure:
6



Red numbers and symbols indicate concentrations above the MTCA Method A Cleanup Levels

AEROTECH
ENVIRONMENTAL CONSULTING

EXPLANATION

- Benzene Isopleth
- <0.30 Benzene Concentration (in mg/kg)
- Property Boundary
- Excavation Boundary
- Fencing
- Storm Sewer
- Electrical Utility
- Gas Utility
- Water Utility

TPHg & BENZENE CONCENTRATION ISOPLETH MAP (10-FOOT DEPTH)

Fife RV Center
3410 Pacific Highway East
Fife, Washington

Date: 11/01/16
By: Nick Gerkin
Figure: 7

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS
Fife RV Center
3410 Pacific Highway East
Fife, Washington

Aerotech Environmental Consulting, Inc. - Site Remedial Excavation Report - November 1, 2016

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
P1(10')	P1	10/03/16	10	9.0	<20	<50	**0.096**	<0.050	<0.050	<0.050	--
P2(5')	P2	10/03/16	5	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--
P3(10')	P3	10/03/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--
P4(5')	P4	10/03/16	5	8.5	<20	<50	<0.020	<0.050	0.10	<0.050	--
P5(5')	P5	10/03/16	5	**53**	<20	<50	**0.16**	0.071	0.84	0.15	7.8
P5(10')	P5	10/04/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--
P6(10')	P6	10/04/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--
P7(3')	P7	10/04/16	3	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--
P8(10')	P8	10/04/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	
P9(5')	P9	10/04/16	5	**110**	<20	<50	**0.15**	<0.050	5.1	<0.050	5.2
P9(10')	P9	10/04/16	10	23	<20	<50	<0.020	<0.050	0.34	<0.050	--
P10(10')	P10	10/04/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--
P11(10')	P11	10/04/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--
P12(5')	P12	10/05/16	5	**100**	<20	<50	**0.42**	0.18	1.7	0.54	--
P12(10')	P12	10/05/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--
P13(5')	P13	10/05/16	5	6.7	<20	<50	<0.020	<0.050	<0.050	<0.050	--
P13(10')	P13	10/05/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--
P14(5')	P14	10/05/16	5	**60**	<20	<50	**0.15**	0.17	0.096	0.16	--
P14(10')	P14	10/05/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--
P15(10')	P15	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P16(5')	P16	10/06/16	5	**1,100**	<20	<50	**0.72**	0.072	**7.5**	**32**	7.0
P16(10')	P16	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P17(5')	P17	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P17(10')	P17	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P18(5')	P18	10/06/16	5	**130**	--	--	**0.29**	<0.050	1.5	2.4	--
P18(10')	P18	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P19(5')	P19	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P19(10')	P19	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP1(5')	TP1	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP2(5')	TP2	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP2(10')	TP2	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP3(3')	TP3	10/06/16	3	**2,500**	--	--	**0.34**	0.35	**15**	**10**	--
TP3(5')	TP3	10/06/16	5	**650**	--	--	**0.53**	5.3	**7.5**	**7.3**	--
TP3(10')	TP3	10/06/16	10	27	--	--	<0.020	<0.050	0.18	0.25	--
TP4(3')	TP4	10/06/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP4(5')	TP4	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP4(10')	TP4	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP5(5')	TP5	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP5(10')	TP5	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP6(5')	TP6	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP6(10')	TP6	10/06/16	10	12	--	--	**0.071**	<0.050	<0.050	<0.050	--
TP7(5')	TP7	10/06/16	5	**690**	<20	<50	**0.90**	1.9	**32**	0.33	--
TP8(3')	TP8	10/06/16	3	**60**	--	--	<0.020	<0.050	1.2	<0.050	--
TP8(5')	TP8	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP9(5')*	TP9	10/06/16	5	**6,090**	<20	<50	**4.0**	4.0	**66**	**130**	--
TP9(10')*	TP9	10/06/16	10	**240**	--	--	**0.59**	1.5	1.6	3.7	--
TP11(5')	TP11	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP12(5')	TP12	10/06/16	5	18	--	--	<0.020	<0.050	<0.050	0.082	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	250

TABLE 1
SOIL ANALYTICAL RESULTS
Fife RV Center
3410 Pacific Highway East
Fife, Washington

Aerotech Environmental Consulting, Inc. - Site Remedial Excavation Report - November 1, 2016 (continued)

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TP13(5')	TP13	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP14(5')	TP14	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP14(10')	TP14	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP15(5')	TP15	10/07/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP15(10')	TP15	10/07/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP16(3')	TP16	10/07/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP16(5')	TP16	10/07/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP17(3')	TP17	10/07/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP17(5')	TP17	10/07/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP18(3')	TP18	10/07/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP19(3')	TP19	10/07/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
TP19(5')	TP19	10/07/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P20(5')	P20	10/20/16	5	**57**	--	--	**0.065**	0.101	0.15	0.16	--
P20(10')	P20	10/20/16	10	20	--	--	**0.24**	<0.050	0.09	0.084	--
P21(5')	P21	10/20/16	5	**1,200**	--	--	**0.65**	0.59	**8.1**	**24**	--
P21(10')	P21	10/20/16	10	**66**	--	--	**0.11**	0.14	0.34	0.74	--
P22(5')	P22	10/20/16	5	**1,100**	--	--	**0.83**	1.9	**20**	**7.9**	--
P22(10')	P22	10/20/16	10	**34**	--	--	0.029	<0.050	0.43	0.19	--
P22(12')	P22	10/20/16	12	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P23(5')	P23	10/20/16	5	**760**	--	--	**0.46**	0.74	4.8	2.4	--
P23(10')	P23	10/20/16	10	16	--	--	<0.020	<0.050	0.22	0.10	--
P24(5')	P24	10/20/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P24(10')	P24	10/20/16	10	**50**	--	--	**0.26**	<0.050	1.5	0.86	--
P25(5')	P25	10/21/16	5	**5,200**	--	--	**4.6**	**25**	**35**	**230**	--
P25(10')	P25	10/21/16	10	**350**	--	--	**0.16**	3.4	1.6	**16**	--
P26(10')	P26	10/21/16	10	12	--	--	<0.020	<0.050	<0.050	0.41	--
P27(5')	P27	10/21/16	5	**58**	--	--	<0.020	<0.050	0.095	0.39	--
P28(5')	P28	10/21/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P28(10')	P28	10/21/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P29(3')	P29	10/24/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P30(5')	P30	10/24/16	5	**200**	--	--	**0.086**	0.19	0.28	0.40	--
P30(10')	P30	10/24/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P31(10')	P31	10/24/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P32(3')	P32	10/24/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P33(3')	P33	10/24/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
P34(3')	P34	10/24/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	250

Aerotech Environmental Consulting, Inc. - Groundwater Monitoring Well Installation Report - November 17, 2016

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MW-1 (4.5')	MW-1	11/10/16	4.5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
MW-1 (10')	MW-1	11/10/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
MW-2 (4')	MW-2	11/10/16	4	**250**	--	--	**0.53**	0.54	3.8	0.84	--
MW-2 (9')	MW-2	11/10/16	9	24	--	--	<0.020	0.065	0.6	0.16	--
MW-3 (4.5')	MW-3	11/10/16	4.5	**13,000**	--	--	**9.3**	2.6	**470**	5.4	--
MW-3 (9')	MW-3	11/10/16	9	**51**	--	--	<0.020	<0.050	0.27	0.096	--
MW-3 (14.5')	MW-3	11/10/16	14.5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	250

TABLE 1
SOIL ANALYTICAL RESULTS
Fife RV Center
3410 Pacific Highway East
Fife, Washington

Aerotech Environmental Consulting, Inc. - Groundwater Monitoring Well Installation Report - November 17, 2016 (continued)

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MW-4 (5')	MW-4	11/10/16	5	**55**	--	--	**0.061**	0.27	0.22	0.2	--
MW-4 (10.5)	MW-4	11/10/16	10.5	**150**	--	--	**0.51**	1.2	1.1	1.7	--
MW-4 (14.5)	MW-4	11/10/16	14.5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
MW-5 (6')	MW-5	11/10/16	6	**34**	--	--	**0.090**	0.66	0.25	0.31	--
MW-5 (10')	MW-5	11/10/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
MW-6 (9')	MW-6	11/11/16	9	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
MW-6 (10.5')	MW-6	11/11/16	10.5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	250

MTCA = Model Toxic Control Act Cleanup Level (WAC173-340-900)
BGS = Below Ground Surface mg/kg = milligram of analyte per kilogram of soil
< = not detected at indicated Laboratory Detection Limits -- = not analyzed
Benzen , Toluene, Ethylbenzene, Xylenes by EPA Method 8021B
TPHg - Total Petroleum Hydrocarbons - Gasoline by NWTPH-Gx
TPHd - Total Petroleum Hydrocarbons - Diesel by NWTPH-Dx
TPHo - Total Petroleum Hydrocarbons - Motor Oil by NWTPH-Dx extended
Lead by EPA Method 7010
ND = Not Detected (minimum detection limit unknown)
Bolded numbers and red-shaded cells denote concentrations above the MTCA Method A Cleanup Levels for soil
* = Soil from which this sample originated was removed during the Remedial Excavation

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ELEVATION SURVEY DATA

FIELD CREW: NAG & RW	PROJECT NAME: Fife RV Center
DATE: 11/11/16	PROJECT ADDRESS: 3410 Pacific Highway East, Fife, WA

RIM ELEVATION SURVEY RECORD

Elevation Survey Using Catch Basin (CB) Elevation as the known value (8 Feet Above MSL)

MW1 Station 1 Rim Elevation Survey	MW1 Measurement (H1) Feet 4.679	CB Measurement (H2) Feet 5.452	ΔH Feet 0.773	ΔH + CB Elevation (H2) Feet 8.773	MW1 Rim Elevation: 8.77
MW2 Station 1 Rim Elevation Survey	MW2 Measurement (H1) Feet 3.633	CB Measurement (H2) Feet 5.452	ΔH Feet 1.819	ΔH + CB Elevation (H2) Feet 9.819	MW2 Rim Elevation: 9.82
MW3 Station 1 Rim Elevation Survey	MW3 Measurement (H1) Feet 3.660	CB Measurement (H2) Feet 5.452	ΔH Feet 1.792	ΔH + CB Elevation (H2) Feet 9.792	MW3 Rim Elevation: 9.79
MW4 Station 1 Rim Elevation Survey	MW4 Measurement (H1) Feet 2.920	CB Measurement (H2) Feet 5.452	ΔH Feet 2.532	ΔH + CB Elevation (H2) Feet 10.532	MW4 Rim Elevation: 10.53

WELLHEAD ELEVATION SURVEY RECORD

Elevation Survey Using Catch Basin (CB) Elevation as the known value (8 Feet Above MSL)

MW1 Station 1 Rim Elevation Survey	MW1 Measurement (H1) Feet 5.080	CB Measurement (H2) Feet 5.452	ΔH Feet 0.372	ΔH + CB Elevation (H2) Feet 8.372	MW1 Calculated Wellhead Elevation: 8.37
MW1 Station 2 Rim Elevation Survey	MW1 Measurement (H1) Feet 4.891	CB Measurement (H2) Feet 5.261	ΔH Feet 0.370	ΔH + CB Elevation (H2) Feet 8.370	
MW1 Station 3 Rim Elevation Survey	MW1 Measurement (H1) Feet 5.060	CB Measurement (H2) Feet 5.432	ΔH Feet 0.372	ΔH + CB Elevation (H2) Feet 8.372	
MW2 Station 1 Rim Elevation Survey	MW2 Measurement (H1) Feet 4.040	CB Measurement (H2) Feet 5.452	ΔH Feet 1.412	ΔH + CB Elevation (H2) Feet 9.412	MW2 Calculated Wellhead Elevation: 9.40
MW2 Station 2 Rim Elevation Survey	MW2 Measurement (H1) Feet 3.860	CB Measurement (H2) Feet 5.261	ΔH Feet 1.401	ΔH + CB Elevation (H2) Feet 9.401	
MW2 Station 3 Rim Elevation Survey	MW2 Measurement (H1) Feet 4.032	CB Measurement (H2) Feet 5.432	ΔH Feet 1.400	ΔH + CB Elevation (H2) Feet 9.400	
MW3 Station 1 Rim Elevation Survey	MW3 Measurement (H1) Feet 4.020	CB Measurement (H2) Feet 5.452	ΔH Feet 1.432	ΔH + CB Elevation (H2) Feet 9.432	MW3 Calculated Wellhead Elevation: 9.43
MW3 Station 2 Rim Elevation Survey	MW3 Measurement (H1) Feet 3.834	CB Measurement (H2) Feet 5.261	ΔH Feet 1.427	ΔH + CB Elevation (H2) Feet 9.427	
MW3 Station 3 Rim Elevation Survey	MW3 Measurement (H1) Feet 3.994	CB Measurement (H2) Feet 5.432	ΔH Feet 1.438	ΔH + CB Elevation (H2) Feet 9.438	

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ELEVATION SURVEY DATA

FIELD CREW: NAG & RW	**PROJECT NAME:** Fife RV Center
DATE: 11/11/18	**PROJECT ADDRESS:** 3410 Pacific Highway East, Fife, WA

MW4 Station 1 Rim Elevation Survey	MW4 Measurement (H1) Feet 3.315	CB Measurement (H2) Feet 5.452	ΔH Feet 2.137	ΔH + CB Elevation (H2) Feet 10.137	**MW4 Calculated Wellhead Elevation: 10.12**
MW4 Station 2 Rim Elevation Survey	MW4 Measurement (H1) Feet 3.144	CB Measurement (H2) Feet 5.261	ΔH Feet 2.117	ΔH + CB Elevation (H2) Feet 10.117	
MW4 Station 3 Rim Elevation Survey	MW4 Measurement (H1) Feet 3.311	CB Measurement (H2) Feet 5.432	ΔH Feet 2.121	ΔH + CB Elevation (H2) Feet 10.121	
MW5 Station 1 Rim Elevation Survey	MW5 Measurement (H1) Feet 2.161	CB Measurement (H2) Feet 5.452	ΔH Feet 3.291	ΔH + CB Elevation (H2) Feet 11.291	**MW5 Calculated Wellhead Elevation: 11.27**
MW5 Station 2 Rim Elevation Survey	MW5 Measurement (H1) Feet 1.994	CB Measurement (H2) Feet 5.261	ΔH Feet 3.267	ΔH + CB Elevation (H2) Feet 11.267	
MW5 Station 3 Rim Elevation Survey	MW5 Measurement (H1) Feet 2.160	CB Measurement (H2) Feet 5.432	ΔH Feet 3.272	ΔH + CB Elevation (H2) Feet 11.272	
MW6 Station 1 Rim Elevation Survey	MW6 Measurement (H1) Feet 3.401	CB Measurement (H2) Feet 5.452	ΔH Feet 2.051	ΔH + CB Elevation (H2) Feet 10.051	**MW6 Calculated Wellhead Elevation: 10.05**
MW6 Station 2 Rim Elevation Survey	MW6 Measurement (H1) Feet 3.260	CB Measurement (H2) Feet 5.261	ΔH Feet 2.001	ΔH + CB Elevation (H2) Feet 10.001	
MW6 Station 3 Rim Elevation Survey	MW6 Measurement (H1) Feet 3.386	CB Measurement (H2) Feet 5.432	ΔH Feet 2.046	ΔH + CB Elevation (H2) Feet 10.046	

Wellhead Elevations were calculated by averaging the 2 nearest measurements within 0.005 feet of one another.

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GROUNDWATER MONITORING WELL GAUGING RECORD

FIELD CREW: NAG & RHW	PROJECT NAME: Fife RV Center
DATE: 11/14/18	PROJECT ADDRESS: 3410 Pacific Highway East, Fife, Washington

Well ID	Time	Wellhead Elevation	Depth to Water	Groundwater Elevation	Depth of Well	Well Diameter	Comments
	hh:mm	Feet Above MSL	Feet Below TOC	Feet Above MSL	Feet Below TOC	Inches	
MW1	7:58	8.37	1.35	7.02	13.55	2	Well is new and in great condition
MW2	8:05	9.40	2.57	6.83	13.53	2	Well is new and in great condition
MW3	8:08	9.43	2.28	7.15	13.23	2	Well is new and in great condition
MW4	8:04	10.12	3.54	6.58	14.45	2	Well is new and in great condition
MW5	8:02	11.27	4.95	6.32	16.83	2	Well is new and in great condition
MW6	8:01	10.05	4.58	5.47	--	2	Well is new and in great condition

EXPLANATION
MSL = Mean Sea Level
TOC = Top of Casing
-- = Not Measured or Not Calculated

Excerpted Figures

Hydrogeologic Framework, Groundwater Movement,
and Water Budget in the Puyallup River Watershed and Vicinity,
Pierce and King Counties, Washington,

U.S. Geological Survey Scientific Investigations Report 2015-5068
Wendy B. Welch, et al, 2015.

And other sources
(As referenced on individual sheets)

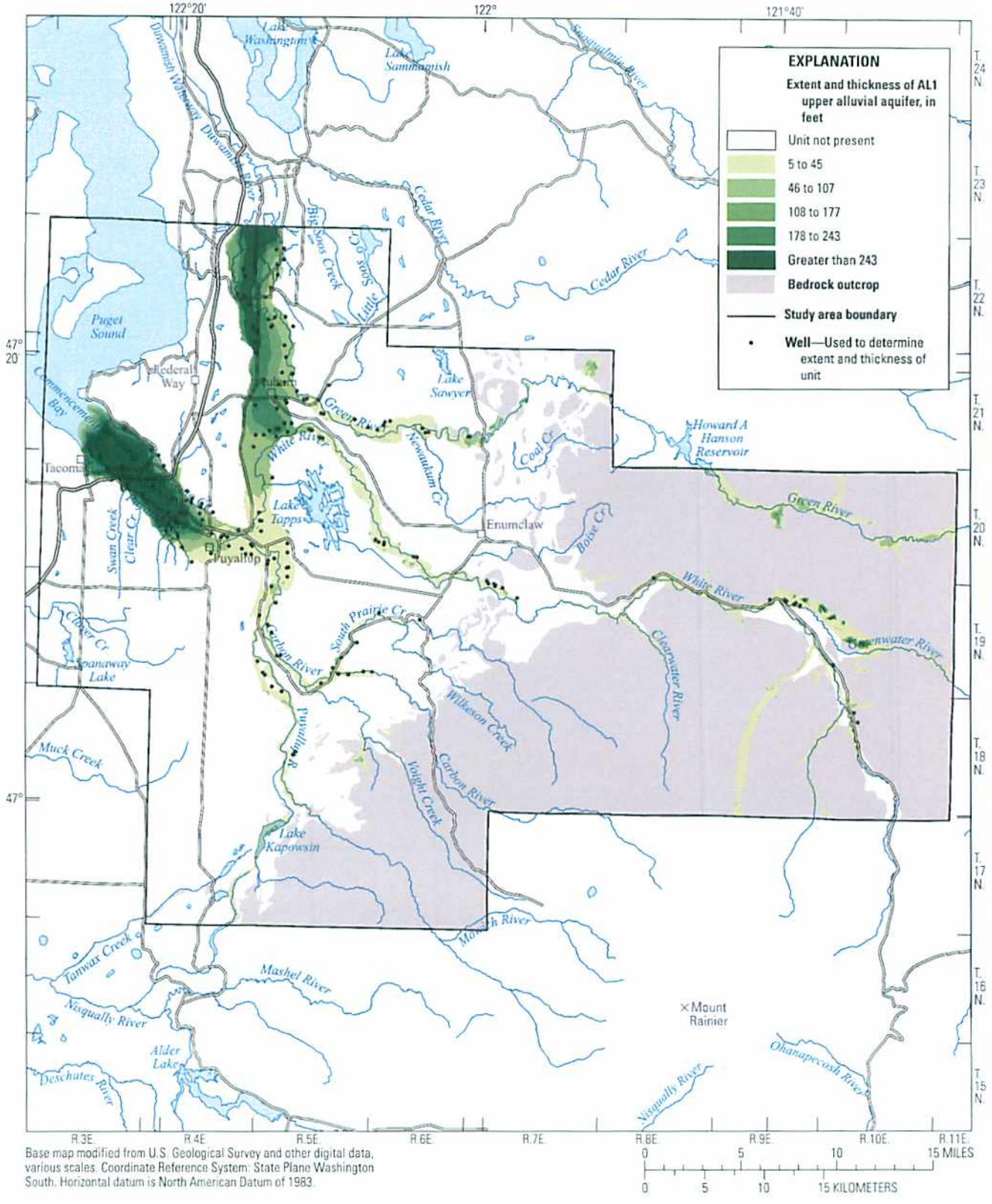


Figure 3. Extent and thickness of AL1 upper alluvial aquifer in Puyallup River Watershed and vicinity, Washington.

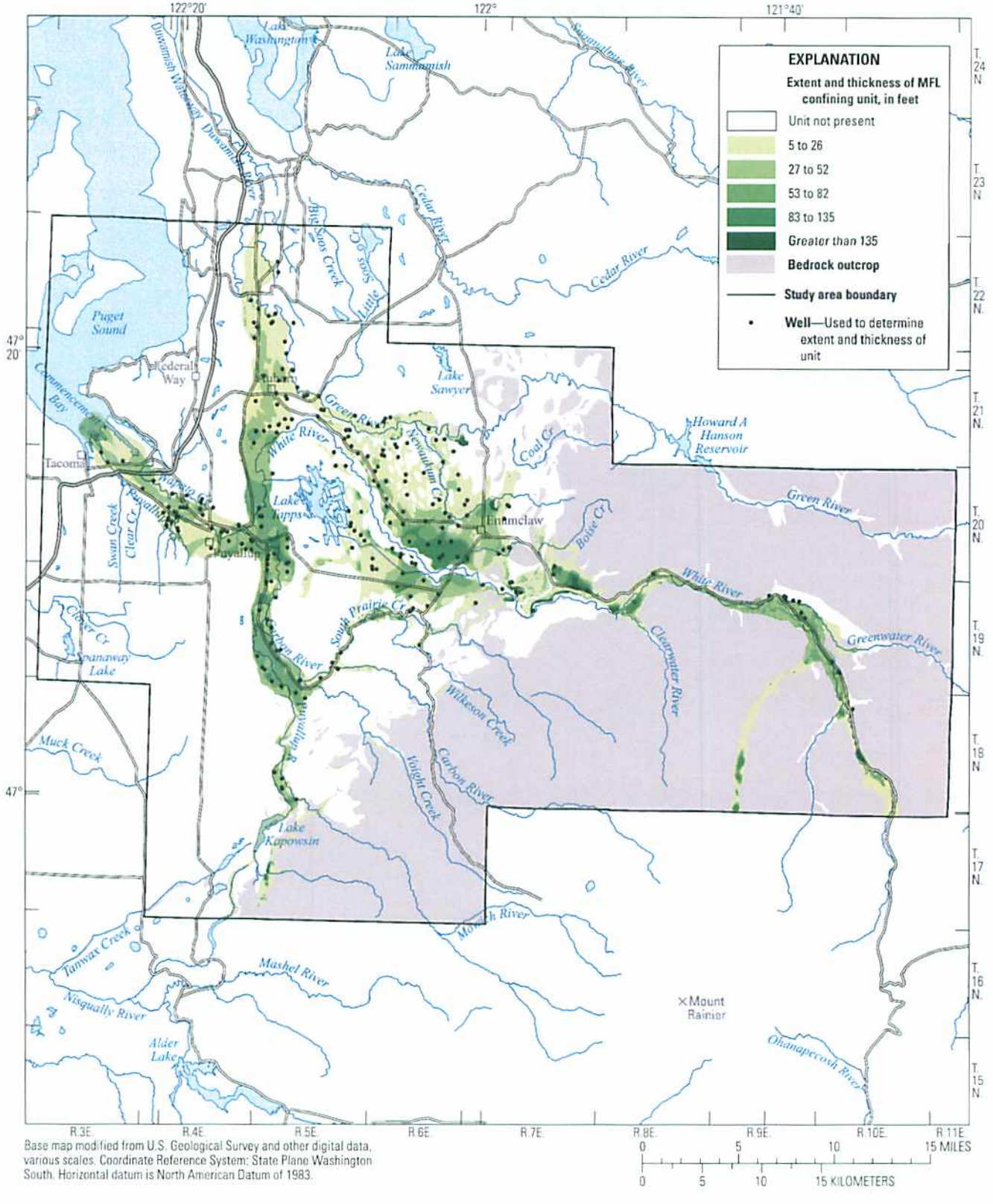


Figure 4. Extent and thickness of MFL confining unit in Puyallup River Watershed and vicinity, Washington.

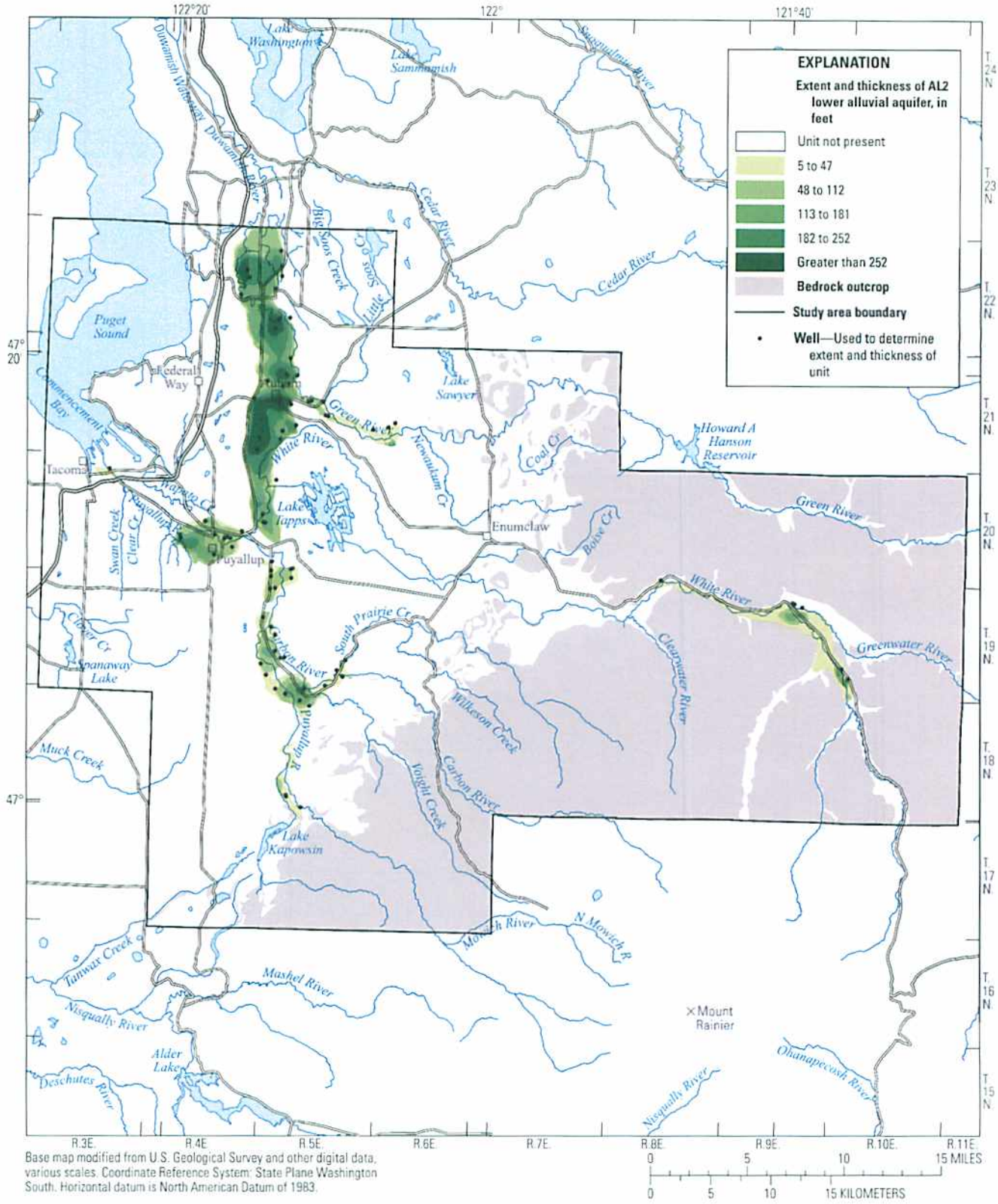


Figure 5. Extent and thickness of AL2 lower alluvial aquifer in Puyallup River Watershed and vicinity, Washington.

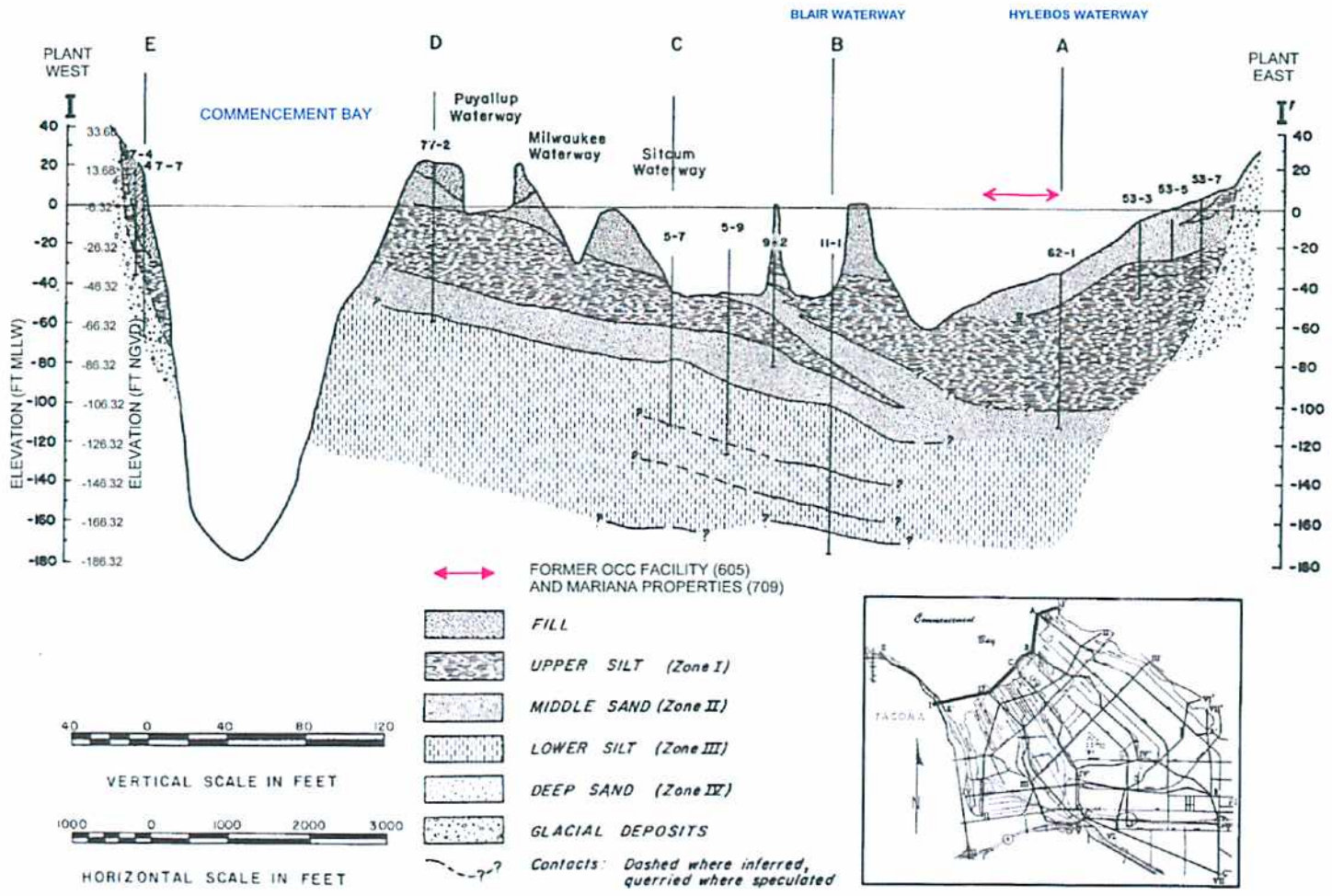


figure 3.10

HART CROWSER (1975) CROSS-SECTION I-I'

Occidental Chemical Corporation, Tacoma, Washington

SOURCE: HART CROWSER (1975)

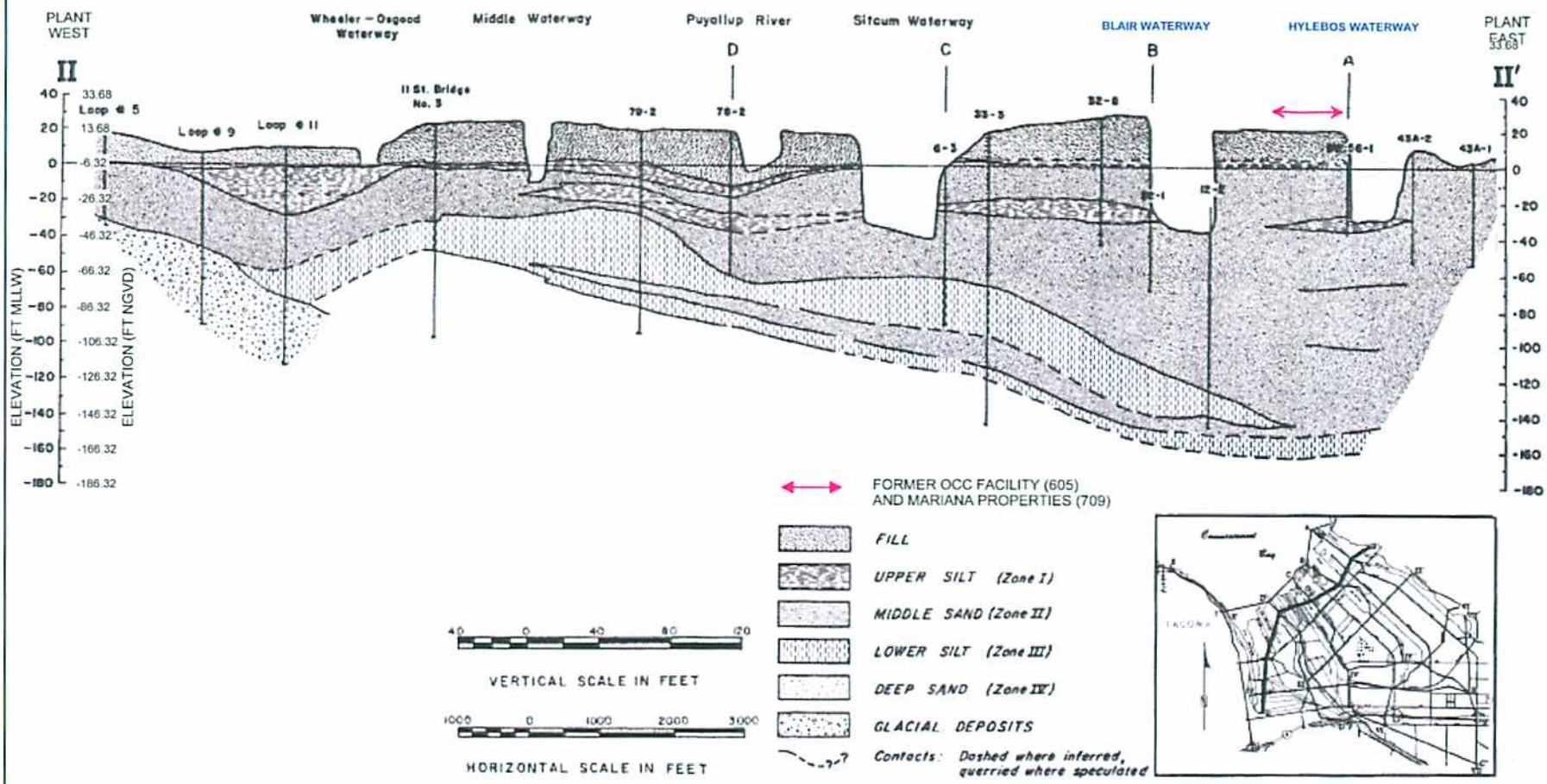
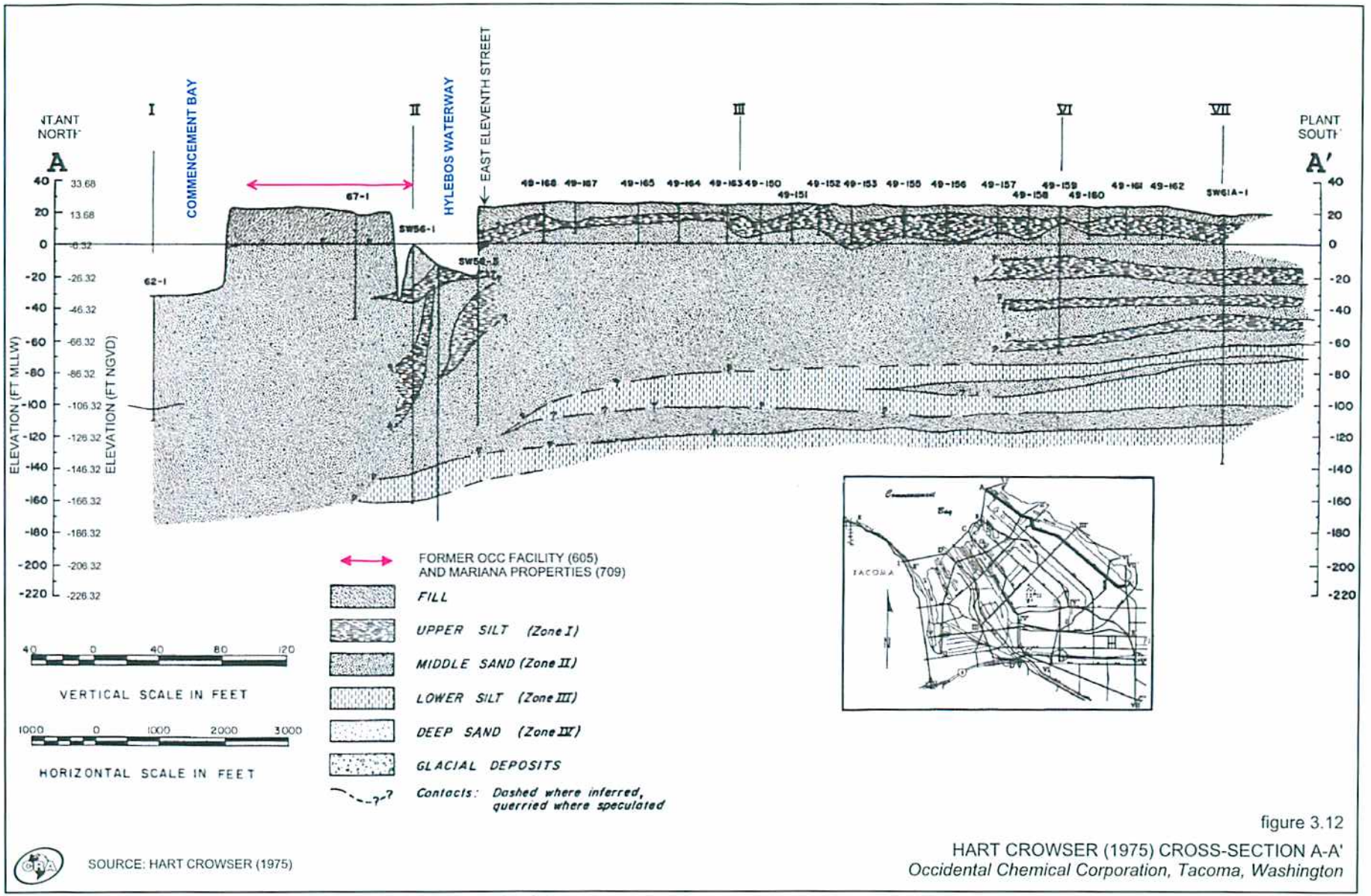


figure 3.11

HART CROWSER (1975) CROSS-SECTION II-II'

Occidental Chemical Corporation, Tacoma, Washington

SOURCE: HART CROWSER (1975)



SOURCE: HART CROWSER (1975)

figure 3.12

HART CROWSER (1975) CROSS-SECTION A-A'

Occidental Chemical Corporation, Tacoma, Washington

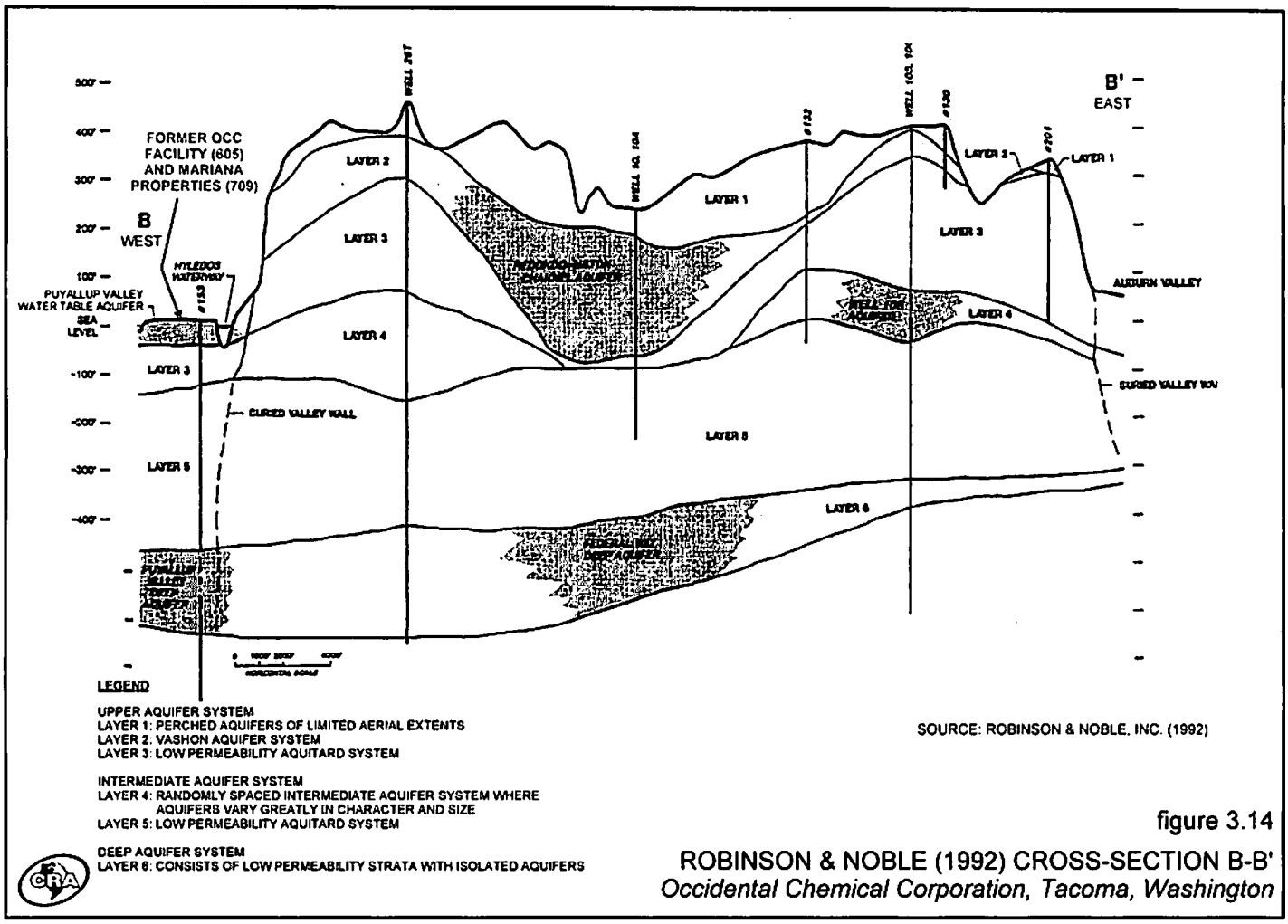


figure 3.14

ROBINSON & NOBLE (1992) CROSS-SECTION B-B'

Occidental Chemical Corporation, Tacoma, Washington

07843-A6(128)GN-WA-HYD (N:\HEG\07843\Report 128 Updated SCR\Figures\Section 3 Figures\Figure 3.14.srf) JUL 31/2014

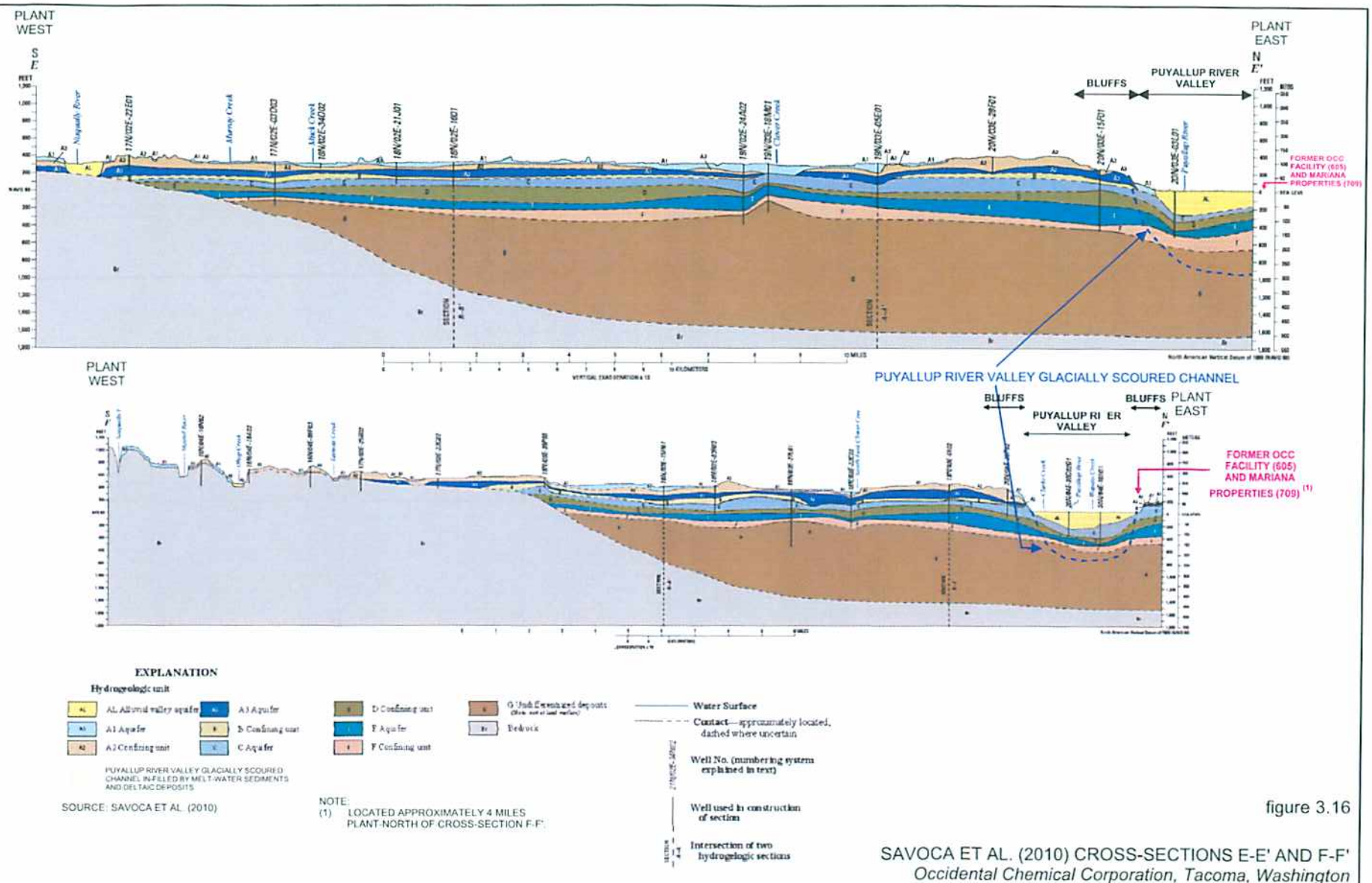
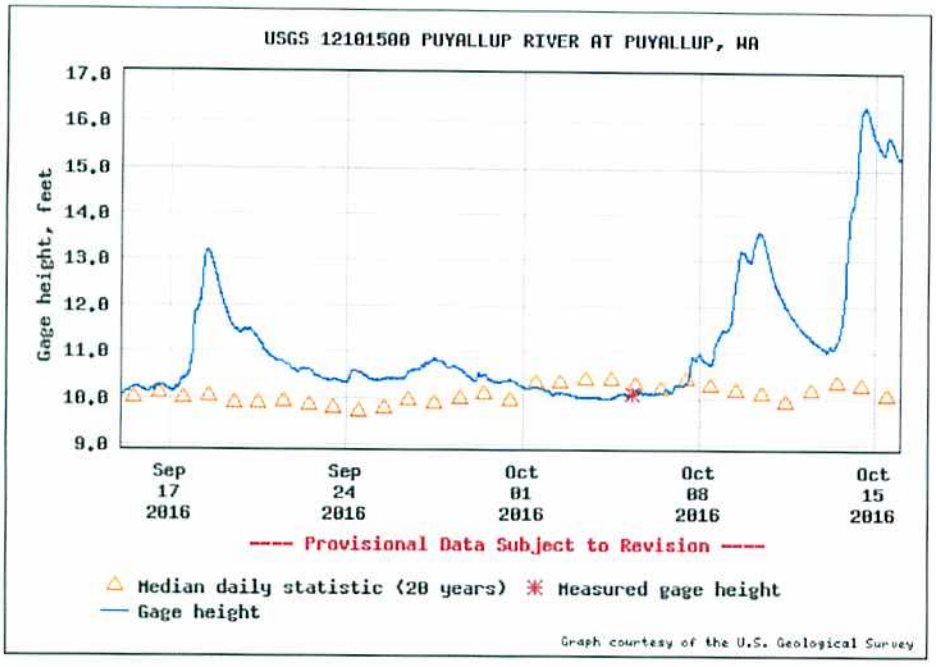
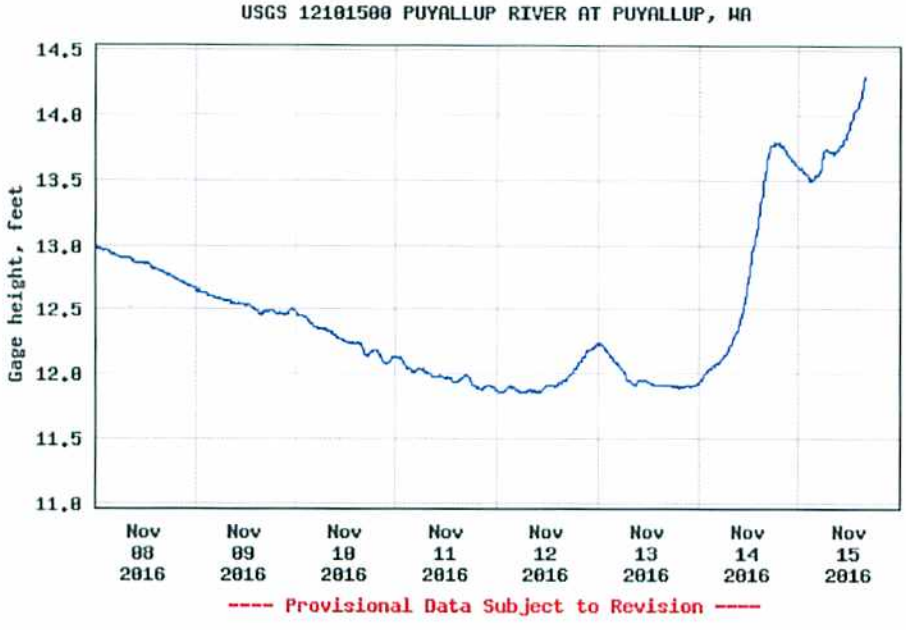


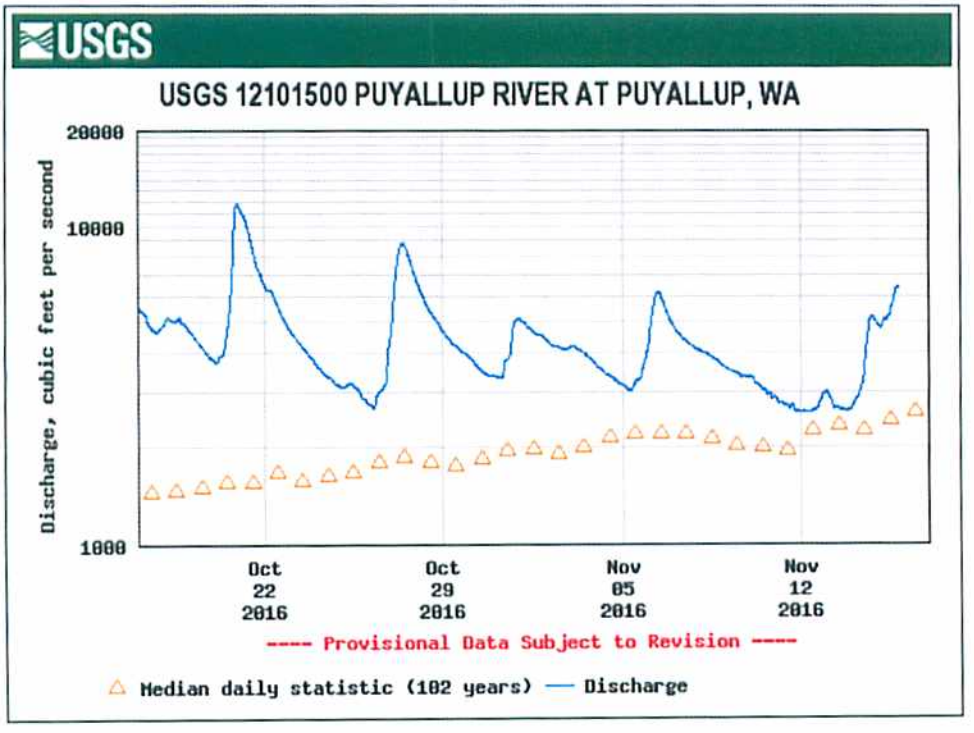
figure 3.16

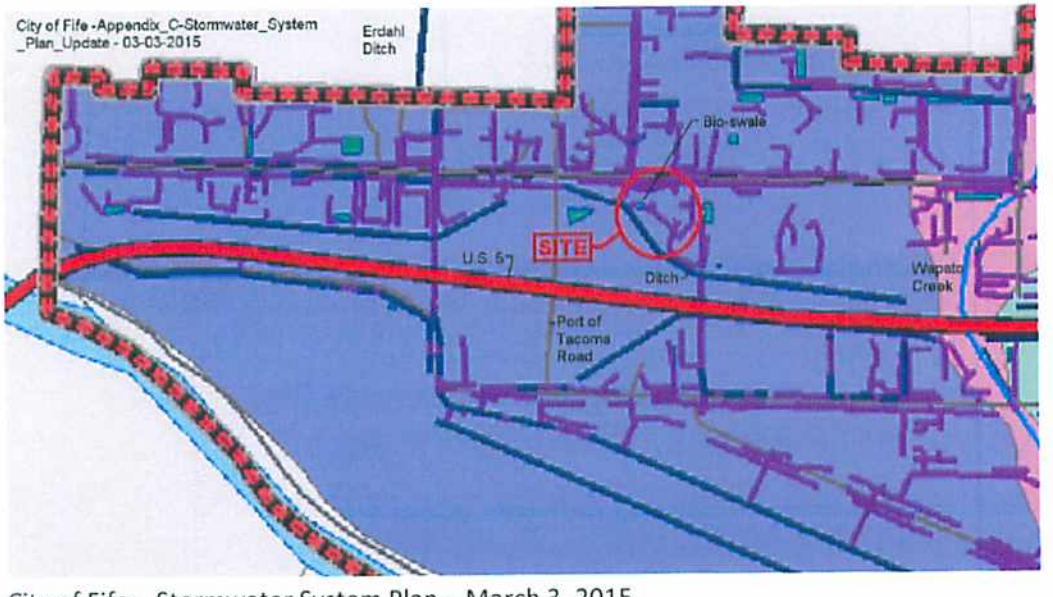
SAVOCA ET AL. (2010) CROSS-SECTIONS E-E' AND F-F'
Occidental Chemical Corporation, Tacoma, Washington

Commencement Bay and Puyallup River – Water Levels









City of Fife – Stormwater System Plan – March 3, 2015

Tacoma, Commencement Bay, Sitcum Waterway, WA StationId: 9446484

Daily Tide Prediction in **Feet**
Time Zone: **LST/LDT**
Datum: **MLLW**

◁ 2016/11/11 - 2016/11/12 ▷

Back to Station Listing
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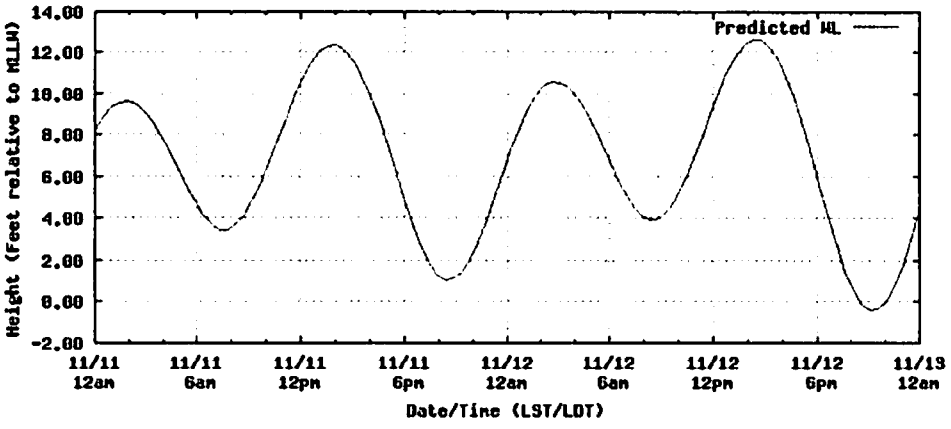

Daily Tide Prediction in **Feet**
Time Zone: **LST/LDT**
Datum: **MLLW**

◁ 2016/11/13 - 2016/11/14 ▷

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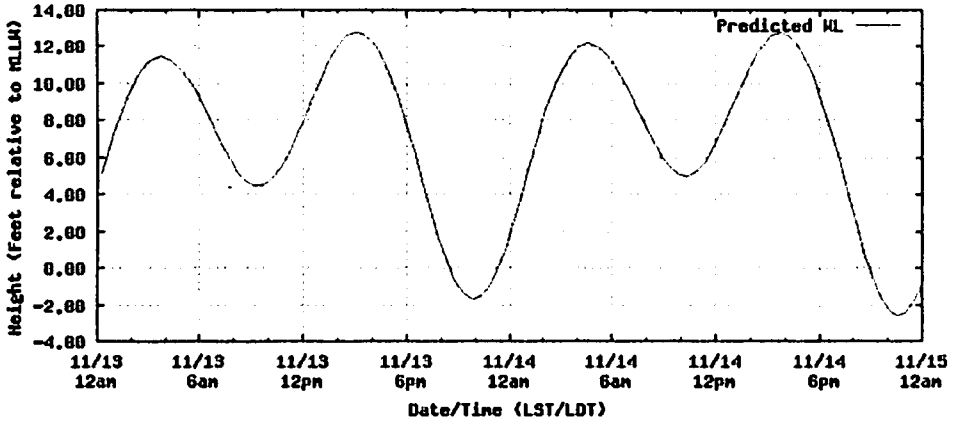

PROJECT CONTRACT DOCUMENTS

ENVIRONMENTAL CONTRACTOR'S CERTIFICATION

Fife RV Center
3410 Pacific Highway East
Fife, Washington 98424

1. Contractor's Name: Aerotech Environmental Consulting, Inc.

2. Contractor's Address: 13925 Interurban Avenue South, Suite 210, Seattle, Washington 98168

3. Name and title of person completing this certification: Alan T. Blotch / President

4. Answer the following questions about each employee that contractor will have perform the assessment or prepare the report showing the results of the inspection:

   a. Name and Title of Employee: Alan T. Blotch – Environmental Professional
   b. Length of experience doing environmental assessments: 32 years
   c. Education degrees received: Masters of Business Administration
      Juris Doctor – Environmental Law
   d. Relevant training received: ASTM E50 Environmental Assessment Committee Meetings

5. Identify any certifications and approvals issued to contractor pursuant to an official Federal, State of local program or policy to conduct environmental assessments: Registered Environmental Assessor
   Issued by State of California

6. Describe the generally recognized standards which the contractor will use to perform the assessment.
   Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process (ASTM E 1903)

7. Disclose the nature of any previous environmental inspections contractor has ever performed for the Owner of the property: Phase I Environmental Site Assessment

8. Disclose the nature of any affiliation or association contractor now has, or ever had, with the above referenced seller of the property, of the above referenced buyer of the property: N/A

9. Describe the liability insurance carried by contractor to cover claims in the event that ir fails to discover adverse environmental conditions during an environmental inspection.
   Professional Errors & Omissions Coverage $1,000,000 / claim and $1,000,000 aggregate liability

THE UNDERSIGNED HEREBY CERTIFIES, UNDER PENALTY OF THE CRIMINAL AND/OR CIVIL PENALTIES IN 18 U.S.C. § 1001 FOR FALSE STATEMENTS TO THE UNITED STATES GOVERNMENT, THAT THE ABOVE INFORMATION IS TRUE AND CORRECT.

Signature

11/17/16
Date

CURRICULUM VITAE

James McDermott

State of Washington Licensed Professional Geologist No. 3063

Mr. McDermott has 15 years experience in small business, and 9 years experience in environmental consulting with increasing scope, responsibility, innovation and effective results involving commercial and industrial properties spanning the country from the upper Midwestern states within glacial, alluvial or coastal geologic/hydrogeologic settings to complex bedrock, volcanic and glacial/fluvial settings in the northern Rocky Mountain states, the Pacific Northwest and Alaska. He has conducted field work and mapping in mountainous terrain in northern Wyoming and in central Utah where he has published: Utah Geologic Survey Geologic Quadrangle (Chriss Canyon 7.5 min.). These projects included extensive sampling of soils, rock, surface waters, groundwater, limited submarine sampling, soil borings, monitoring well installations, soil vapor extraction wells and systems, and dual-phase extraction and incineration. He is proficient in the application of aerial photographs, satellite imagery and on-line tools, and has limited surveying experience. His work has included compliance activities involving Superfund Sites, and waste remediation sites, as well as Phase I Environmental Site Assessments, Phase II Subsurface Investigations, hydrogeologic studies, pump tests, remediation system design, and groundwater monitoring. His work has required a familiarity with ASTM Phase I and Phase II Protocols, and other relevant ASTM Protocols as well as USEPA, CERCLA, RCRA regulations. He is familiar with Washington State MTCA regulations (hazardous assessments and independent remedial actions), as well as State of Oregon Risk Based Standards. His academic background has included work in organic chemistry and chemical engineering as well as an undergraduate engineering physics and calculus sequence.

Education

University of Illinois - Urbana, IL – BSci Geology – 1984 (Field Mapping: Sheridan, WY)

Northern Illinois University - DeKalb, IL – Graduate research/Published USGS Map, Utah).

Publications

Chriss Canyon 7.5-Min. Geologic Quadrangle, Utah, Coauthor, UGS Map 185, 2003

Professional History

Aerotech Environmental Consulting, Inc. Hydrogeologist/Environmental Professional (2011-Present)

James McDermott Consulting, Proprietor, Web Design-IT (1995-2010)
(Including work with Bank One, Xerox, and IGO Cars)

Earthscience Consulting, Proprietor, Hydrogeologist (1993-1994)

ATEC Environmental Associates, Inc., Hydrogeologist (1991-1993)

EIS Environmental, Inc., Staff Geoscientist (1989-1991)

Certifications

OSHA 40-hr Hazwoper, 8hr Refresher (2013)

Participation Certificate: Chlorinated Solvent Remediation - Sequential In-Situ Chemical Oxidation and Enhanced Anaerobic Biodegredation.

Organizations & Memberships

Geological Society of America – Cordilleran Section, Rocky Mountain Section, Environmental and Engineering Geology Division, Hydrogeology Division, Structural Geology and Tectonics Division.

Expertise

Mr. McDermott has performed over 150 Phase I and Phase II investigations including property transfers and LUST closures, conducted site reconnaissance, and prepared Phase I and Phase II Site Assessment reports. Phase II investigations included groundwater monitoring well design, installation and monitoring. He has participated in the design and monitoring of several remediation systems installed at selected Phase II project sites, contributed to RCRA landfill compliance monitoring projects and often the associated subsurface investigation and planning. He managed and planned a large number of these projects, implemented the investigations,

created both preliminary and final reports, and defined and implemented the additional investigation where required.

USGS GEOLOGIC MAPPING PROGRAM (Utah Geological Survey): He has contributed to the study and mapping of geologic units as a part of the related US Geological Survey program to complete national coverage of geologic maps at the 1:24,000 scale. He has mapped intrusive and volcanic bodies, faults, landslide hazards, mineral deposits, hydrothermal alteration, and springs. He has integrated data such as petroleum exploration well logs (gamma/SP), aerial and satellite imagery.

SUPERFUND SITE INVESTIGATIONS : He has performed subsurface characterization and hydrogeological assessments including the assembly and interpretation of soil boring and laboratory data, monitoring well design, well installation and groundwater monitoring well sampling plans.

RCRA COMPLIANCE : He has participated in the subsurface characterization and hydrogeological assessments on RCRA sites and has contributed to research and evaluation of previous investigations as well as pertinent public records.

UST SITE CHARACTERIZATION & REMEDIATION: He has performed Phase I, Phase II investigation, and planned and participated in successful Phase III remediation projects, including the management and on-site supervision of the removal of tanks at a 40-unit, 25,000 gallon pre-WWII aircraft engine tank farm site. Contaminants included fuels, solvents and lubricants, DNAPLs. He has performed numerous subsurface characterization and hydrogeological assessments including soil borings, split spoon, cores, monitoring well design and installation, remediation sampling, monitoring, pump testing, modeling /analysis.

REAL ESTATE TRANSFERS: He has performed Phase II Subsurface investigation / preliminary hydrogeological evaluations for the purpose of property transfers for lenders, property owners and prospective buyers.

GEOPHYSICAL SURVEYS: He has participated in the performance of a groundwater investigation for the Illinois Geological Survey designed to locate and define gravel channel aquifers in buried bedrock valleys.

BIOREMEDIATION APPLICATIONS: He has participated in a seminar devoted to groundwater bioremediation with particular attention to chlorinated solvents and the use of in-situ chemical oxidation and enhanced anaerobic biodegradation. This technique is being applied to contaminated industrial properties in Washington state.

Notable Projects and Innovations

His subsurface investigation experience has also included field studies and reports on projects such a Superfund property in an industrial park, several RCRA landfill compliance projects, a large underground tank farm (over 40 25,000-gal. tanks and a great variety of fuels, solvents and lubricants) at the location of a former WWII-era aircraft engine plant, a contaminant incineration remediation project at a major LUST site located within a sensitive urban area, the mapping and excavation of over 20,000 cubic yards of contaminated fluvial and alluvial sands in an aging 19th – 20th century riverside industrial complex, landslide mapping, risk assessment and an aquifer mapping project for a State Geological Survey.

Innovations and improvements he has introduced during his environmental consulting career

have included the composition and refinement of numerous Standard Operating Procedures including those related to monitoring well design and encompassing equipment maintenance, calibration and operation. An innovation at the time and place, he initiated the routine incorporation of documentation and analysis of utility and transportation conduits (sewer, storm water and tunnel plans) in considering groundwater and contaminant flow dynamics, and their potential as primary or secondary conduits for the transport of contaminants in groundwater or in surface runoff for Phase I, Phase II and other investigations. For example, in one case in the central Chicago business district where flammable vapors were reported in the basement of a landmark building, he utilized both sewer design plans and subway depth measurements to trace probable vapor pathways and successfully divert the unproven assignment of primary responsibility from his client. In another case he devised and implemented a simple incinerator design change which greatly reduced time and cost associated with automated emergency systems shutdowns. In routinely evaluating previous studies prior to incorporation into his reports, he occasionally discovered and corrected errors in groundwater flow calculations or elevation data. He discovered forged soil boring logs, accepting no external material without some verification where the economic and legal concerns of a client might be jeopardized.

Small Business Experience

He has fifteen years experience operating a web design and computer consulting business as a sole proprietor with several staff, meeting the unique needs and budgets of the small business and mid-sized business community, employing web design and marketing to increase the profits a of one small business by over 1000 percent.

SOIL BORING LOGS

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MONITORING WELL ID: **BORING LOG #: MW-1** **Page 1 of 1**

Project Name: FIFE RV, Fife, Wa **BIS 683**

Project Number: 216-8246

Drilling Information

Drilling Contractor:	Boretech, Bellevue
Drilling Method:	H.S.A.
Borehole Diameter:	8"
Sampler Type:	Stainless Steel Split Spoon Sampler

Driller: Carlos Gardea (Wa Lic No 3143)

Site Location: 3410 Pacific Hwy E, Fife, Wa (Gravel lot S of Tahoma Gas and Jack-in-the-Box)

Borehole Location: 3.5 ft S of N Fence + 10 ft from bend in fence + 60 east of NWX fence

Borehole Area (AOC): N-NE of eastern terminus of upgradient fabric / Former UST-Pump areas

Logged by: J. McDermott: Boring Depth: 14.5 feet

GW Encountered: YES Static GW Level: 5 ft bgs

Notes: Low tide Commencement Bay at 0700 - high tide at 1300 - per NOAA Tables
2 inch PVC GW Monitoring Well installed - No 10 screen at 4 to 14 ft bgs

Approx. Surface Elevation:

Start Date: 11-10-16 End Date: Same

Depth (ft)	Groundwater	PID	Visual or Olfactory Evidence	Blow Counts	Recovery	USCS Classification	Soil Classification/ Description	Well Construction
						GP	Gravel Pavement *Concrete pad atop bentonite seal -->*	
1							Air-knife 3.5 ft west of natural gas main / electrical / storm sewer	
2					Air Knife	SW	Air knife to 5.5 ft bgs	
							FILL - SAND, very fine to coarse, well graded, with silt, little to trace clay, little small to large subround tosubangular gravel, gray to olive gray,	
3							slightly moist, wet below 5 ft. Very slight but indistinct odor.	
			0824					
4		0.3	LAB			SW	Hand auger sample from beneath air knife hole	
5								
6				2				
				3		ML	SILT, trace very fine sand, wet. No foul odor.	
7			LAB	3				
		0.0	0905				*No. 10-20 Colorado Silica Sand in annular space -->*	
8								
				1				
9			0915	1			SILT, trace very fine sand, roots below 9 ft. very moist to wet. No foul	
10		0.1	LAB	1				
				3				
11				3		SP	SAND, very fine to fine, trace silt, gray, wet.	
		0.0		3				
12								
13								
				3				
14		0.1	0935	3		SM	SILT AND SAND, very fine to fine,gray, wet.	
			LAB	4			No foul odor.	
15							Note 11-12 ft deep tank basin to NE most likely penetrates silt	
							Also, former Gasamet Station UST basin to south.	
16							**WELL CONSTRUCTION DETAIL:**	
17							2 inch Sched 40 PVC - 10 ft No 10 slot PVC screen at 4-14ft bgs	
							5 x 50 lbs bags of No. 10-20 Silica Sand + 1bag grout (3ft thick)	
18							Finished with 4 sq ft concrete pad and flush-mount monument	
							Bottom of borehole at 14.5 feet	
19							Groundwater encountered at 5 feet. Well installed at 4 - 14 ft.	
							Borehole completed with bentonite chips.	
20								

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MONITORING WELL ID: I31 **Page 2 of**

Project Name:

Project Number:

Drilling Information

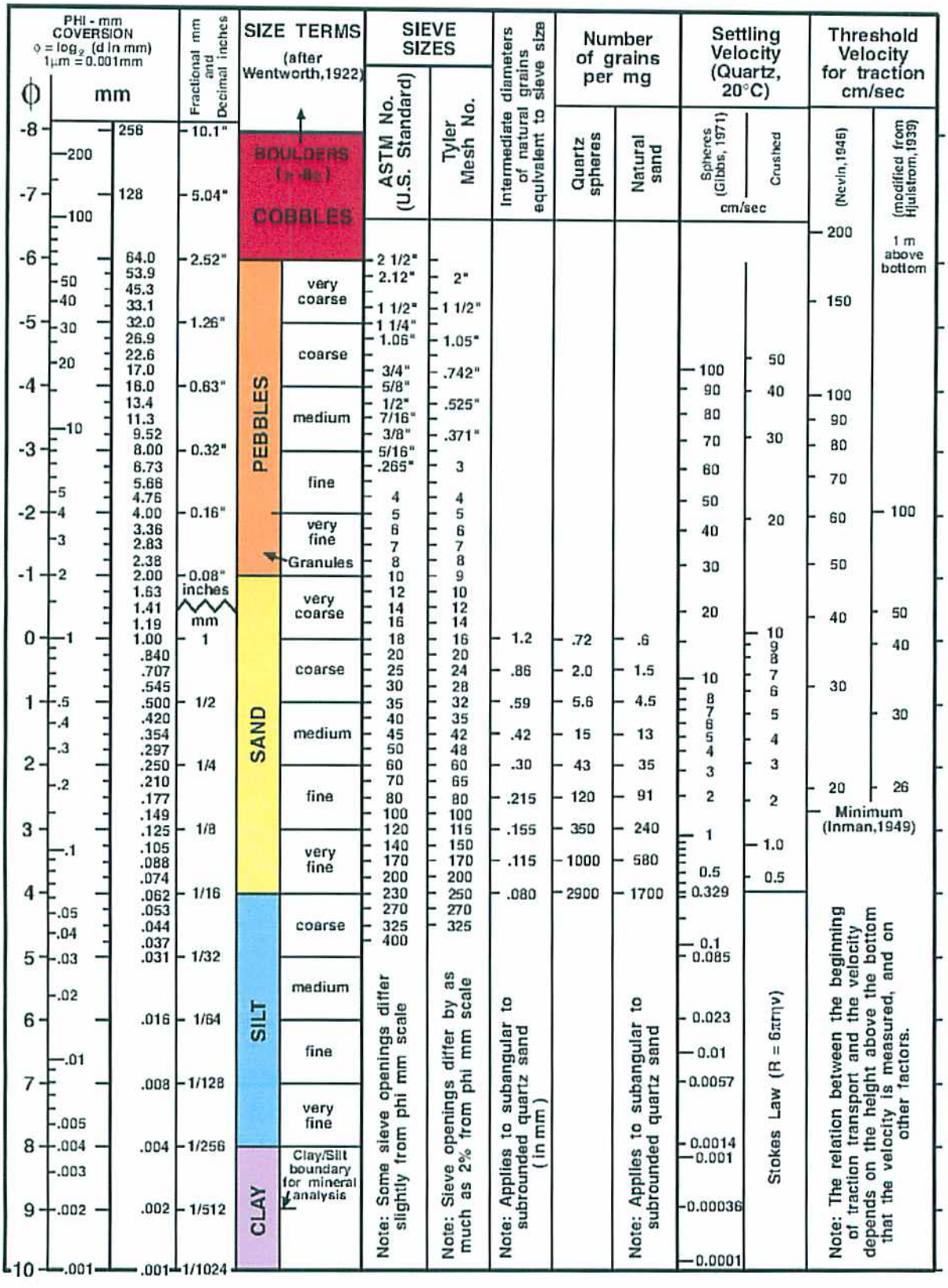
Drilling Contractor:

Logged by:

Start Date: End Date:

Depth (ft)	Groundwater		Visual or Olfactory Evidence	Blow Counts	Recovery		USCS Classification	Soil Classification/ Description **UNIFIED SOIL CLASSIFICATION SYSTEM EXPLANATION**	Well Construction
							GW	**GRAVELS**, well-graded* OR Gravel+Sand mix, little-no fines	
							GP	**GRAVELS**, poorly-graded* OR Gravel+Sand mix, little-no fines	
							GM	**GRAVELS**, silty OR Gravel-sand-silt mix	
							GC	**GRAVELS**, clayey OR Gravel-sand-clay mix	
							SW	**SAND**, well-graded OR **Gravelly Sands**, little-no fines	
							SP	**SAND**, poorly-graded OR **Gravelly Sands**, little-no fines	
							SM	**SAND**, silty OR Sand-silt mix	
							SC	**SAND**, clayey OR Sand-clay mix	
							ML	**SILT**, inorganic (very fine sands, rock flour, silty or clayey fine	
								sands) OR Clayey silts with slight plasticity	
							CL	**CLAY**, inorganic, low-med plasticity (gravelly, sandy, silty, lean)	
							OL	**SILT**, organic, AND **SILT-CLAY**, organic, low plasticity	
							MH	**SILT**, inorganic (micaceous or diatomaceous fn sndy/silty soils)	
								OR SILTY SOILS, elastic SILTS	
							CH	**CLAY**, inorganic, high plasticity, fat clays	
							OH	**CLAY**, organic, med-high plasticity OR Organic SILTS	
							PT	**PEAT** and other highly organic SOILS	
								Glacial Till - High density, USCS/color indicates grain size	

* **Terminology clarification**: The term "**Well graded**" is a synonym for "**Poorly sorted**," both meaning that a wide range of particle sizes are present. The former term is employed in geotechnical descriptions, while the latter is preferred by the USDA in characterizing topsoils and subsoils.



US Geological Survey

CALIFORNIA DEPARTMENT OF TRANSPORTATION (CALTRANS)

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)			
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
	Gravels with fines (More than 12% fines)	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	SW	Well-graded sands, gravelly sands, little or no fines
		SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with fines (More than 12% fines)	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)			
SILTS AND CLAYS Liquid limit less than 50%		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils

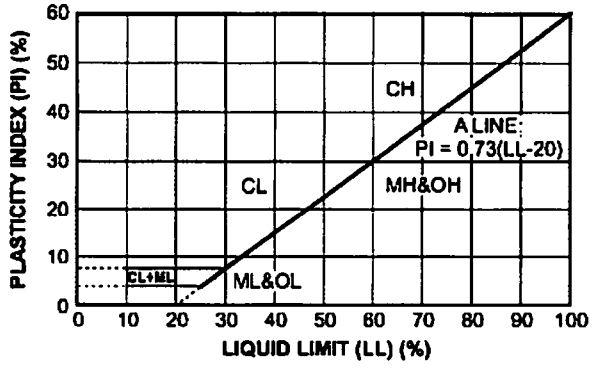
LABORATORY CLASSIFICATION CRITERIA

GW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
GP	Not meeting all gradation requirements for GW	
GM	Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols
GC	Atterberg limits above "A" line with P.I. greater than 7	
SW	$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3	
SP	Not meeting all gradation requirements for GW	
SM	Atterberg limits below "A" line or P.I. less than 4	Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
SC	Atterberg limits above "A" line with P.I. greater than 7	

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent ..... GW, GP, SW, SP
More than 12 percent ..... GM, GC, SM, SC
5 to 12 percent ..... Borderline cases requiring dual symbols

PLASTICITY CHART



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MONITORING WELL ID: **BORING LOG #: MW-2** **Page 1 of 1**

Project Name: FIFE RV, Fife, Wa **BIS 684**

Project Number: 216-8246

Drilling Information

Drilling Contractor:	Boretech, Bellevue
Drilling Method:	H.S.A.
Borehole Diameter:	8"
Sampler Type:	Stainless Steel Split Spoon Sampler

Driller: Carlos Gardea (Wa Lic No 3143)

Site Location: 3410 Pacific Hwy E, Fife, Wa (Gravel lot S of Tahoma Gas and Jack-in-the-Box)

Borehole Location: 5 ft east of west fence + 7 ft from NE lot corner post - Near NE corner of bioswale

Borehole Area (AOC): NW corner of tank and pump island area (NW corner of fenced lot)

Logged by: J. McDermott: Boring Depth: 14.5 feet

GW Encountered: YES Static GW Level: 3 ft bgs

Notes: 2 inch PVC GW Monitoring Well installed - No 10 screen at 4 to 14 ft bgs

Notes: Low tide Commencement Bay at 0700 - high tide at 1300 - per NOAA Tables

Approx. Surface Elevation:

Start Date: 11-10-16 End Date: Same

Depth (ft)	Groundwater	PID	Visual or Olfactory Evidence	Blow Counts	Recovery	USCS Classification	Soil Classification/ Description	Well Construction
						GP	Gravel Pavement	
1							Air knife to 5.5 ft bgs - Concrete fragment (8 in +) at 2 ft	
2					Air Knife	SW	FILL - SAND, very fine to coarse, well graded, with silt, little to trace clay, little small to large subround tosubangular gravel, gray to olive gray, slightly moist, wet below 5 ft. Moderate gasoline odor.	
3			0948					
4		82		LAB		SW	Hand auger sample from beneath air knife hole at 4-4.3 ft	
5			1037					
6		38	LAB	2		ML	SILT, some very fine sand, trace clay, wet. Strong gasoline odor at 5.5 ft.	
				2				
7				1				
8			1045					
9		16.9	LAB	1		ML	Same as above. Very moist to wet. Very slight gasoline odor above 9 ft. No foul odor below 9 ft	
				1				
10				1				
11							Silt is generally wet in upper portions; very moist to moist below.	
12							*Note 11-12 ft deep tank basin to NE very likely penetrates this generally thinner silt unit. Sand lenses may be present between intervals sampled by split spoon tool. Note: former Gasamet UST basin was situated to SE*	
13				1				
14			1050	2				
		1.1	LAB	3		SP	SAND, very fine to fine, poorly graded trace silt, gray, wet. No foul odor.	
15								
16							**WELL CONSTRUCTION DETAIL:** 2 inch Sched 40 PVC - 10 ft No 10 slot PVC screen at 4-14ft bgs	
17							6.5 x 50 lbs bags of No. 10-20 Silica Sand + 1bag grout (3ft thick) Finished with 4 sq ft concrete pad and flush-mount monument	
18							Bottom of borehole at 14.5 feet	
19							Groundwater encountered at 5 ft, rises to 3 ft. Well installed at 14 ft Borehole completed with bentonite chips.	
20								

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MONITORING WELL ID: **BORING LOG #: MW-3** **Page 1 of 1**

Project Name: FIFE RV, Fife, Wa **BIS 685**

Project Number: 216-8246

Site Location: 3410 Pacific Hwy E, Fife, Wa (Gravel lot S of Tahoma Gas and Jack-in-the-Box)

Borehole Location: 71ft south and 10 ft west of SW corner Tahoma Bldg (73 ft to Power Pole)

Borehole Area (AOC): UST Basin area

Logged by: J. McDermott: Boring Depth: 14.5 feet

GW Encountered: YES Static GW Level: 5ft bgs

Notes: 2 inch PVC GW Monitoring Well installed - No 10 screen at 4 to 14 ft bgs

Notes: Low tide Commencement Bay at 0700 - high tide at 1300 - per NOAA Tables

Drilling Information

Drilling Contractor:	Boretech, Bellevue
Drilling Method:	H.S.A.
Borehole Diameter:	8"
Sampler Type:	Stainless Steel Split Spoon Sampler

Driller: Carlos Gardea (Wa Lic No 3143)

Approx. Surface Elevation:

Start Date: 11-10-16 End Date: Same

Depth (ft)	Groundwater	PID	Visual or Olfactory Evidence	Blow Counts	Recovery	USCS Classification	Soil Classification/ Description	Well Construction
1						GP	Gravel Pavement	
							Air knife to 5.5 ft bgs - Concrete fragment (8 in +) at 2 ft	
2					Air Knife	SW	FILL - SAND, fine to coarse, well graded, trace silt, little small to large subround to subangular gravel, gray to olive gray, slightly moist, wet below 5 ft. Moderately strong gasoline odor.	
3								
4		VPH 662	1116	LAB		SW	Hand auger sample from beneath air knife hole at 4-4.3 ft	
5			1116					
6		1 870		3 1		SW	FILL- SAND, fine to coarse, well graded, trace silt, little small to large subround to subangular gravel, gray 6.9-7.0 ft, wet, strong to very strong gasoline odor.	
7				2				
8			1206					
9		LAB 203	LAB	1 1		SW	Same as above. Very moist to wet. No foul odor.	
10				2				
11							*PRESUMED FORMER GASAMET UST BASIN AREA- SILT UNIT ABSENT*	
12								
13				4			SAND, very fine to medium, few coarse, poorly graded, medium brown, bottom six inches dark brown, very moist to wet. No foul odor.	
14		9.5	1221 LAB	3 3		SP		
15								
16							**WELL CONSTRUCTION DETAIL:** 2 inch Sched 40 PVC - 10 ft No 10 slot PVC screen at 4-14ft bgs	
17							5 x 50 lbs bags of No. 10-20 Silica Sand + 1bag grout (3ft thick) Finished with 4 sq ft concrete pad and flush-mount monument	
18							Bottom of borehole at 14.5 feet	
19							Groundwater encountered at 5 ft. Well installed at 14 ft Borehole completed with bentonite chips.	
20								

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MONITORING WELL ID: **BORING LOG #: MW-4** **Page 1 of 1**

Project Name: FIFE RV, Fife, Wa **BIS 686**

Project Number: 216-8246

Site Location: 3410 Pacific Hwy E, Fife, Wa (Gravel lot S of Tahoma Gas and Jack-in-the-Box)

Borehole Location: 38 ft south of NW corner of fenced portion of lot; 4 ft east of west fence

Borehole Area (AOC):

Logged by: J. McDermott: Boring Depth: 14.5 feet

GW Encountered: YES Static GW Level: 5 ft

Notes:

Drilling Information

Drilling Contractor:	Boretech, Bellevue
Drilling Method:	H.S.A.
Borehole Diameter:	8"
Sampler Type:	Stainless Steel Split Spoon Sampler

Driller: Carlos Gardea (Wa Lic No 3143)

Approx. Surface Elevation:

Start Date: 11-10-16 End Date: Same

Depth (ft)	Groundwater	PID	Visual or Olfactory Evidence	Blow Counts	Recovery		USCS Classification	Soil Classification/ Description	Well Construction
								Gravel Pavement	
1									
2								FILL - SAND, very fine to coarse, well graded, with silt, little to trace clay, little small to large subround tosubangular gravel, gray to olive gray, moist. Slight gasoline odor.	
3									
4				49					
			1310	6					
5		16	LAB	8					
6								*This well adjoins the bio-swale area to the west and in which standing water is present (perhaps bottom of basin at 8 approx. ft bgs) - pre-development (post demo of Gasamet Station) test pits in this area indicated strong petrol odors - suspect extensive excavation of impacted soils prior to bio-swale construction, and extending to the vicinity of MW-4*	
7									
8									
9				2				Possible FILL - SAND, very fine to very coarse, well graded, some clay, trace subrounded gravel, heterogeneous mix of colors: dark brown, gray, and light brown,slight odor, very moist.	
			1335	1					
10		19	LAB	1				(Possible sluff- no silt present)	
11									
12									
13				2				SILT, some 1/2" fine sand lenses, and a few clay lenses, few plant fragments, light brown, very moist. No foul odor. .[Bottom 1.5" brown fine sand, poorly graded.]	
			1400	2					
14		0.2	LAB	4					
15								**WELL CONSTRUCTION DETAIL:**	
16								2 inch Sched 40 PVC - 10 ft No 10 slot PVC screen at 4-14ft bgs	
								5 x 50 lbs bags of No. 10-20 Silica Sand + 1bag grout (3ft thick)	
17								Finished with 4 sq ft concrete pad and flush-mount monument	
18								Bottom of borehole at 14.5 feet	
19								Groundwater encountered at 5 feet. well screened at 4-14 ft bgs. Borehole completed with bentonite chips.	
20									

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MONITORING WELL ID: **BORING LOG #: MW-5** **Page 1 of 1**

Project Name: FIFE RV, Fife, Wa **BIT 785**

Project Number: 216-8246

Drilling Information

Drilling Contractor:	Boretech, Bellevue
Drilling Method:	H.S.A.
Borehole Diameter:	8"
Sampler Type:	Stainless Steel Split Spoon Sampler

Driller: Carlos Gardea (Wa Lic No 3143)

Site Location: 3410 Pacific Hwy E, Fife, Wa (Gravel lot S of Tahoma Gas and Jack-in-the-Box)

Borehole Location: 5 ft north of south fence and 5 ft east of west fence - on slope below lot

Borehole Area (AOC): SW corner of Fenced area - SE of bioswale

Logged by: J. McDermott: Boring Depth: 14.5 feet

GW Encountered: YES Static GW Level: 4.5 ft bgs (approx 2 ft below lot level)

Notes: Gravel surface slopes down to north toward Catch Basins west of MW-3 at fence

Approx. Surface Elevation:

Start Date: 11-10-16 End Date: Same

Depth (ft)	Groundwater	PID	Visual or Olfactory Evidence	Blow Counts	Recovery	USCS Classification	Soil Classification/ Description	Well Construction
1		0.1		2 3 3		SW	FILL - SAND, fine to coarse, well graded, trace to little organic silt, trace small subrounded gravel, light brown, dry. No foul odor.	
2	Near low tide - 8am 11-11-16 water from TOC: 5.46 = approx 4 ft bgs terrace							
3							No foul odor in cutting 1.5 to 5 ft	
4								--
5						SP	SAND, very fine, poorly graded, gray, wet	--
6		4.1	1514 LAB	2 1 1		ML	SILT, little very fine sand, gray, trace wood and plant fragments, wet. No foul odor / possible VER faint gasoline odor.	--
7								--
8							Silt is wet in upper portions; very moist to moist below.	--
9								--
10		0.6	1522 LAB	1 1		ML PT	SILT, little very fine sand, common wood and plant fragments and rare peat layers less than 1/4 - 1/2 inch, very moist to wet.Organic odor near peat layers - approx 10 - 10.5 ft	--
11				1		ML		--
12								--
13			1535	2		CH	CLAY and SILT, trace very fine sand, gray, moist. No foul odor. Clay is highly plastic,	--
14		0.2	LAB	2 2		ML	SILT, little very fine sand, gray, moist. No foul odor.	--
15							**WELL CONSTRUCTION DETAIL:** Excavated a limited terrace on the slope SW of gravel lot	
16							2 inch Sched 40 PVC - 10 ft No 10 slot PVC screen at 4-14ft bgs 5 x 50 lbs bags of No. 10-20 Silica Sand + 1bag grout (3ft thick)	
17							Finished with 2 sq ft concrete 'base' and above-ground steel monument protected by four bollards	
18							Bottom of borehole at 4.5 feet	
19							Groundwater encountered at 4.5 feet. Well screen at 4 - 14 ft bgs Borehole completed with bentonite chips.	
20								

AEROTECH ENVIRONMENTAL CONSULTING

www.AerotechEnvironmental.com

MONITORING WELL ID: **BORING LOG #: MW-6** **Page 1 of 1**

Project Name: FIFE RV, Fife, Wa **BIT 786**

Project Number: 216-8246

Drilling Information

Drilling Contractor:	Boretech, Bellevue
Drilling Method:	H.S.A.
Borehole Diameter:	8"
Sampler Type:	Stainless Steel Split Spoon Sampler

Driller: Carlos Gardea (Wa Lic No 3143)

Site Location: 3410 Pacific Hwy E, Fife, Wa (Gravel lot S of Tahoma Gas and Jack-in-the-Box)

Borehole Location: 5 ft NE of SW perimeter fence and 32 feet north of west fence along prop line

Borehole Area (AOC): 24 feet east of MW-5 - downgradient perimeter of Property.

Logged by: J. McDermott: Boring Depth: 14.5 feet

GW Encountered: YES Static GW Level:

Notes:

Approx. Surface Elevation:

Start Date: 11-11-16 End Date: Same

Depth (ft)	Groundwater	PID	Visual or Olfactory Evidence	Blow Counts	Recovery	USCS Classification	Soil Classification/ Description	Well Construction
1								
2								
3						SW	No foul odor in cutting 1.5 to 4 ft	
4			0859				FILL - SAND, fine-coarse, well graded, brown, moist. No foul odor.	
		0.1	LAB	2		SC	FILL - SAND, SILT, little clay, brown. Moist to dry. No foul odor	
5				2		SP	FILL - SAND, fine-coarse, poorly graded, brown, moist. No foul odor.	
				1			SILT, with very fine sand, gray, wet. No foul odor.	
6								
7						ML	*Note base of ditch approx 30 ft south estimated near 5-7 ft bgs as recorded at location of MW-6 (7 - 9 ft bgs relative to gravel lot)*	
8							Same as above to 8.7 ft bgs	
9			0910					
		0.2	LAB	1		PT	PEAT, with silt and clay, gray. Very moist to wet. No foul odor.	
				1			SILT, with very fine sand, very moist to wet. No foul odor.	
10		0.1	LAB	1				
11			0915			ML		
12								
13			0925	4		SP	SAND, very fine, poorly graded, gray, wet. No foul odor.	
14		0.1	LAB	5				
				6				
15							**WELL CONSTRUCTION DETAIL:**	
							Excavated a limited terrace on the slope SW of gravel lot	
16							2 inch Sched 40 PVC - 10 ft No 10 slot PVC screen at 4-14ft bgs	
							5 x 50 lbs bags of No. 10-20 Silica Sand + 1bag grout (3ft thick)	
17							Finished with 2 sq ft concrete 'base' and above-ground steel	
							monument protected by four bollards	
18							All wellheads were sealed with twist-lock compression caps	
							Bottom of borehole at 14.5 feet	
19							Groundwater encountered at 5 feet. Well installed at14.5 ft bgs.	
							Borehole completed with bentonite chips.	
20								

LABORATORY ANALYTICAL RESULTS
AND CHAIN OF CUSTODY DOCUMENTS

ADVANCED ANALYTICAL

Environmental Testing Laboratory

November 16, 2016

James McDermott
Aerotech Environmental, Inc.
13925 Interurban Avenue South, Suite 210
Seattle, WA 98168

Dear Mr. McDermott:

Please find enclosed the analytical data report for the *Fife RV 216-8246 (C61111-1)* Project.

Samples were received on *November 11, 2016.* The results of the analyses are presented in the attached tables. Applicable reporting limits, QA/QC data and data qualifiers are included. A copy of the chain-of-custody and an invoice for the work is also enclosed.

ADVANCED ANALYTICAL LABORATORY appreciates the opportunity to provide analytical services for this project. Should there be any questions regarding this report, please contact me at (425) 702-8571.

It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,

V. Ivanov

Val G. Ivanov, Ph.D.
Laboratory Manager

4078 148 Ave NE■ Redmond, WA 98052
425.702-8571
E-mail: aachemlab@yahoo.com

Advanced Analytical Laboratory
(425) 702-8571

AAL Job Number:	C61111-1
Client:	Aerotech Environmental
Project Manager:	James McDermott
Client Project Name:	Fife RV
Client Project Number:	216-8246
Date received:	11/11/16

Advanced Analytical Laboratory
(425) 702-8571

AAL Job Number: C61111-1
Client: Aerotech Environmental
Project Manager: James McDermott
Client Project Name: Fife RV
Client Project Number: 216-8246
Date received: 11/11/16

Analytical Results

NWTPH-Gx / BTEX		MTH BLK	LCS	MW-1 (4.5')	MW-1 (10')	MW-2 (4')
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	11/14/16	11/14/16	11/14/16	11/14/16	11/14/16
Date analyzed	Limits	11/14/16	11/14/16	11/14/16	11/14/16	11/14/16
NWTPH-Gx, mg/kg						
Mineral spirits/Stoddard	5.0	nd		nd	nd	nd
Gasoline	5.0	nd		nd	nd	250
BTEX 8021B, µg/kg						
Benzene	20	nd	101%	nd	nd	530
Toluene	50	nd	102%	nd	nd	540
Ethylbenzene	50	nd		nd	nd	3,800
Xylenes	50	nd		nd	nd	840
Surrogate recoveries:						
Trifluorotoluene		102%	104%	92%	84%	104%
Bromofluorobenzene		96%	104%	99%	97%	105%

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
M - matrix interference
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 702-8571

AAL Job Number: C61111-1
Client: Aerotech Environmental
Project Manager: James McDermott
Client Project Name: Fife RV
Client Project Number: 216-8246
Date received: 11/11/16

Analytical Results

NWTPH-Gx / BTEX		MW-2 (9')	MW-3 (4.5')	MW-3 (9')	MW-3 (14.5')	MW-4 (5')
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	11/14/16	11/14/16	11/14/16	11/14/16	11/14/16
Date analyzed	Limits	11/14/16	11/14/16	11/14/16	11/14/16	11/14/16
NWTPH-Gx, mg/kg						
Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	24	13,000	51	nd	55
BTEX 8021B, µg/kg						
Benzene	20	nd	9,300	nd	nd	61
Toluene	50	65	2,600	nd	nd	270
Ethylbenzene	50	600	470,000	270	nd	220
Xylenes	50	160	5,400	96	nd	200
Surrogate recoveries:						
Trifluorotoluene		79%	123%	100%	88%	80%
Bromofluorobenzene		89%	122%	105%	105%	108%

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
M - matrix interference
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 702-8571

AAL Job Number: C61111-1
Client: Aerotech Environmental
Project Manager: James McDermott
Client Project Name: Fife RV
Client Project Number: 216-8246
Date received: 11/11/16

Analytical Results

NWTPH-Gx / BTEX		MW-4 (10.5')	MW-5 (6')	MW-5 (10')	MW-6 (9')	Dupl MW-6 (9')
Matrix	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	11/14/16	11/14/16	11/14/16	11/14/16	11/14/16
Date analyzed	Limits	11/14/16	11/14/16	11/14/16	11/14/16	11/14/16
NWTPH-Gx, mg/kg						
Mineral spirits/Stoddard	5.0	nd	nd	nd	nd	nd
Gasoline	5.0	150	34	nd	nd	nd
BTEX 8021B, µg/kg						
Benzene	20	510	90	nd	nd	nd
Toluene	50	1,200	660	nd	nd	nd
Ethylbenzene	50	1,100	250	nd	nd	nd
Xylenes	50	1,700	310	nd	nd	nd
Surrogate recoveries:						
Trifluorotoluene		95%	97%	88%	92%	94%
Bromofluorobenzene		110%	108%	101%	104%	104%

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
M - matrix interference
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 702-8571

AAL Job Number: C61111-1
Client: Aerotech Environmental
Project Manager: James McDermott
Client Project Name: Fife RV
Client Project Number: 216-8246
Date received: 11/11/16

Analytical Results

NWTPH-Gx / BTEX		MS	MSD	RPD	MTH BLK	LCS	MW-4 (14.5')
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	11/14/16	11/14/16	11/14/16	11/16/16	11/16/16	11/16/16
Date analyzed	Limits	11/14/16	11/14/16	11/14/16	11/16/16	11/16/16	11/16/16
NWTPH-Gx, mg/kg							
Mineral spirits/Stoddard	5.0				nd		nd
Gasoline	5.0				nd		nd
BTEX 8021B, µg/kg							
Benzene	20	93%	74%	23%	nd	84%	nd
Toluene	50	91%	73%	21%	nd	85%	nd
Ethylbenzene	50				nd		nd
Xylenes	50				nd		nd
Surrogate recoveries:							
Trifluorotoluene		120%	103%		114%	129%	116%
Bromofluorobenzene		99%	92%		98%	97%	102%

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
M - matrix interference
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

Advanced Analytical Laboratory
(425) 702-8571

AAL Job Number: C61111-1
Client: Aerotech Environmental
Project Manager: James McDermott
Client Project Name: Fife RV
Client Project Number: 216-8246
Date received: 11/11/16

Analytical Results

NWTPH-Gx / BTEX		MW-6 (10.5')
Matrix	Soil	Soil
Date extracted	Reporting	11/16/16
Date analyzed	Limits	11/16/16
NWTPH-Gx, mg/kg		
Mineral spirits/Stoddard	5.0	nd
Gasoline	5.0	nd
BTEX 8021B, µg/kg		
Benzene	20	nd
Toluene	50	nd
Ethylbenzene	50	nd
Xylenes	50	nd
Surrogate recoveries:		
Trifluorotoluene		107%
Bromofluorobenzene		97%

Data Qualifiers and Analytical Comments
nd - not detected at listed reporting limits
na - not analyzed
M - matrix interference
Results reported on dry-weight basis
Acceptable Recovery limits: 70% TO 130%
Acceptable RPD limit: 30%

ADVANCED ANALYTICAL

Chain of Custody Record

Laboratory Job #: C61111-01

(1)

Page 1 of 2

2821 152 Avenue NE
Redmond, WA 98052
(425) 497 0110 fax (425) 497-8089
aachemlab@yahoo.com

Client: AEROTECH ENVIRONMENTAL

Project Manager: J. MCDERMOTT

Address: 13925 Interurban Ave

Phone: (425) 686-0032 Fax:

Project Name: FIFE RV

Project Number: 216-8246

Collector: J. McDermott [signature]

Date of collection: 10 to 11 Nov 2016 (see left margin note)

NOV 10 ↓

	Sample ID	Time	Matrix	Container type	8260 Volatiles	8021B Volatiles	BTEX	BTEX/NWTPH-Gx	NWTPH-Gx	NWTPH Dx	NWTPH HCID	8270 Semivolatiles	8270 PAH	8082 PCBs	8081 Pesticides	RCRA 8 Metals	Lead				Notes, comments	# of containers
1	MW-1 (4.5')	0824	SOIL	1 4oz 1 40cc				X														
2	MW-1 (7')	0905	↓	↓																		
3	MW-1 (10')	0915						X														
4	MW-1 (14.5')	0935																				
5	MW-2 (4')	0948						X														
6	MW-2 (6')	1037																				
7	MW-2 (9')	1045						X														
8	MW-2 (14')	1050																				
9	MW-3 (4.5')	1118						X													* 40cc SAMPLE SENT WITH 'VPH' KIT to Test Amoreg Fife	
10	MW-3 (5.5')	1135																				
11	MW-3 (9')	1205						X														
12	MW-3 (14.5')	1221	↓	↓				X														

Relinquished by:	Date/Time	Received by:	Date/Time
James J. McDermott [signature]	11-11-16 1pm	[illegible signature]	11-11-16 1:00 pm
Relinquished by:	**Date/Time**	**Received by:**	**Date/Time**
[signature]	11/11/16 2:05	[signature] 02:05pm	11/11/16

Sample receipt info:

Total # of containers:

Condition (temp. °C)

Seals (intact?, Y/N)

Comments: HOLD CONTAINERS 4 WKS PURGE

Turnaround time:

Same day ○

24 hr ○

48 hr ○

Standard ☒

ADVANCED ANALYTICAL

Chain of Custody Record

Laboratory Job #: C611#1-01 ②

2821 152 Avenue NE
Redmond, WA 98052
(425) 497-0110 fax: (425) 497-8089
aachemlab@yahoo.com

Client: AEROTECH

Project Manager: J McDermott

Address:

Phone: (425) 686-0032 Fax:

Project Name: FIFE RV

Project Number: 3410 PACIFIC HWY EAST, FIFE, WA

Collector: J. McDermott [signature] (Sr. left margin rem)

Date of collection: 10 to 11 Nov 2016

Date	#	Sample ID	Time	Matrix	Container type	8260 Volatiles	8021B Volatiles	BTEX	BTEX/NWTPH-Gx	NWTPH-Gx	NWTPH-Dx	NWTPH-HCID	8270 Semivolatiles	8270 PAH	8082 PCBs	8081 Pesticides	RCRA 8 Metals	Lead				Notes, comments	# of containers
Nov 10	1	MW-4 (5')	1310	SOIL	[illegible]				X														
	2	MW-4 (10.5')	1335	↓					X														
	3	MW-4 (14.5')	1400						⊗														
	4	MW-5 (6')	1514						X													⊗ Added by	
	5	MW-5 (10')	1522						X													J McDermott	
	6	MW-5 (14.5')	1535																			11/15/16	
Nov 11	7	MW-6 (5')	0859																			VT	
	8	MW-6 (9')	0910						X														
	9	MW-6 (10.5')	0925	↓					⊗														
	10																						
	11																						
	12																						

Relinquished by:	Date/Time	Received by:	Date/Time
[signature]	11-11-16 1pm	[signature]	[illegible]
Relinquished by:	**Date/Time**	**Received by:**	**Date/Time**
[signature]	[illegible]	V [signature] 02:05	11/11/16

Sample receipt info:

Total # of containers:

Condition (temp. °C)

Seals (intact?, Y/N)

Comments:

Turnaround time:

Same day ○

24 hr ○

48 hr ○

Standard ⊘

SUPPORTING DOCUMENTS

Well Records

State of Washington Department of Ecology

RESOURCE PROTECTION WELL REPORT

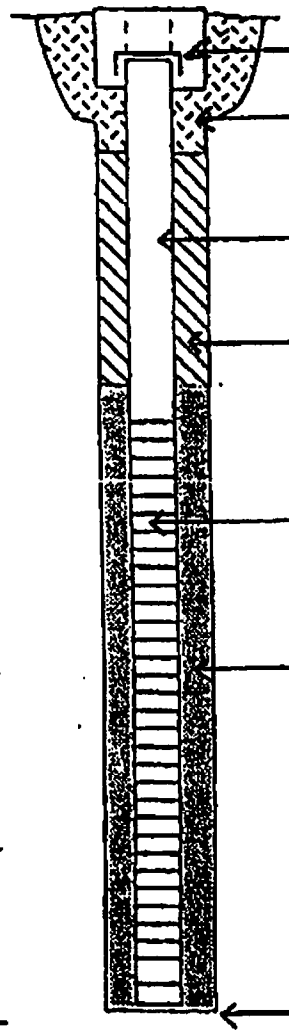
START CARD NO. 128584

PROJECT NAME: CAPPA PROPERTY
WELL IDENTIFICATION NO. AEG 211
DRILLING METHOD: HSA
DRILLER: Brent C. Maloy
FIRM: Cascade Drilling, Inc.
SIGNATURE:
CONSULTING FIRM: ACC ENVIR. MGMT.
REPRESENTATIVE: STEVE MARCZEWSKI

COUNTY: PIERCE
LOCATION: NE¼ NE¼ Sec 11 Twn 20N R 3E
STREET ADDRESS OF WELL: 3801 - 20th St East, Fife, WA
WATER LEVEL ELEVATION:
GROUND SURFACE ELEVATION: N/A
INSTALLED: 11-7-97
DEVELOPED: YES

7546

AS-BUILT



WELL DATA

WELL COVER
CONCRETE SURFACE SEAL
DEPTH = 1/ft
PVC BLANK 4"x 3'
BACKFILL 1 ft.
TYPE: BENT CHIPS
PVC SCREEN 4"x 7'
SLOT SIZE: .010
GRAVEL PACK 2 ft.
MATERIAL: 2/12
LONESTAR
WELL DEPTH 10'

FORMATION DESCRIPTION

0 - 2.5ft.
SANDY / GRAVEL

2.5 - 3 ft.
PEAT

3 - 10 ft.
SILTY FINE SAND

RECEIVED
97 DEC 18 AM 9:44

SCALE: 1" = _____ PAGE _____ OF _____

ECY 050-12 (Rev. 11/09)

The Department of Ecology uses this information for data entry and retrieval.

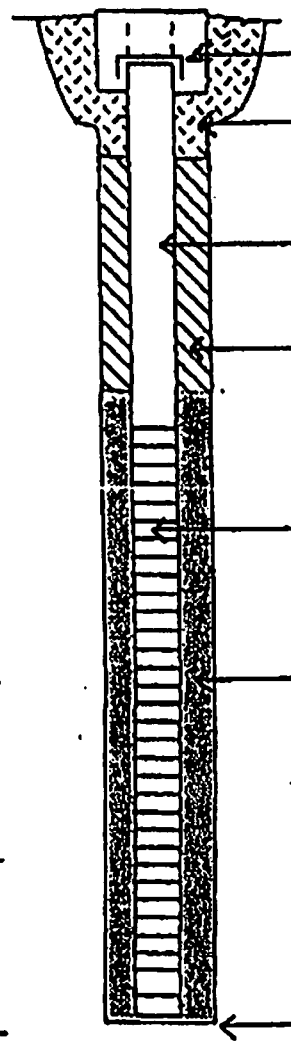
RESOURCE PROTECTION WELL REPORT

START CARD NO. R28584

PROJECT NAME: CAPPA PROPERTY
WELL IDENTIFICATION NO. AEO 212
DRILLING METHOD: HSA
DRILLER: Brent C. Maloy
FIRM: Cascade Drilling, Inc.
SIGNATURE:
CONSULTING FIRM: AEW ENVIR. MGMT.
REPRESENTATIVE: STEVE MARCZEWSKI

COUNTY: PIERCE
LOCATION: NE¼ NE¼ Sec 11 Twn 20N R 3E
STREET ADDRESS OF WELL: 3801 - 20th St East, Fife, WA
WATER LEVEL ELEVATION:
GROUND SURFACE ELEVATION: N/A
INSTALLED: 11-7-97
DEVELOPED: YES

7546

AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	WELL COVER CONCRETE SURFACE SEAL DEPTH = 1/ft PVC BLANK 2"x 3' BACKFILL 1 ft. TYPE: BENT CHIPS PVC SCREEN 2"x 7' SLOT SIZE: .010 GRAVEL PACK 2 ft. MATERIAL: 2/12 LONESTAR WELL DEPTH 10' "	0 - 3 ft. SAND / GRAVEL 3 - 4 ft. PEAT 4 - 10 ft. FINE SILTY SAND

SCALE: 1" = _____ PAGE _____ OF _____

ECY 050-12 (Rev. 11/89)

RESOURCE PROTECTION WELL REPORT

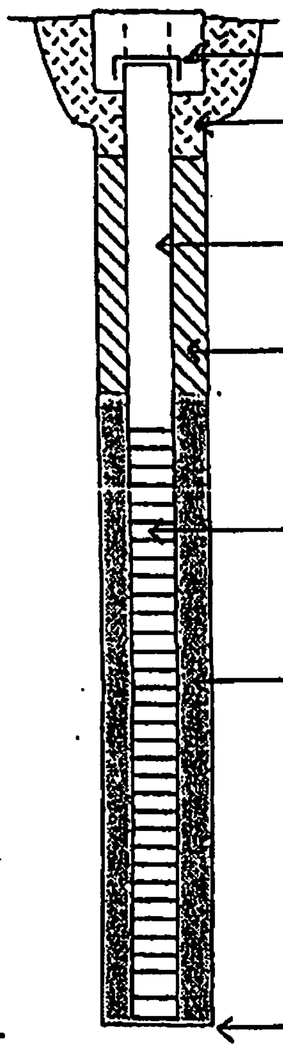
START CARD NO. R28584

PROJECT NAME: CAPPA PROPERTY
WELL IDENTIFICATION NO. AEB 213
DRILLING METHOD: HSA
DRILLER: Brent C. Maloy
FIRM: Cascade Drilling, Inc.
SIGNATURE:
CONSULTING FIRM: ACU ENVIR. MGMT.
REPRESENTATIVE: STEVE MARCZEWSKI

COUNTY: PIERCE
LOCATION: NE¼ NE¼ Sec 11 Twn 20N R 3E
STREET ADDRESS OF WELL: 3801 - 20th St East, Fife, WA
WATER LEVEL ELEVATION:
GROUND SURFACE ELEVATION: N/A
INSTALLED: 11-7-97
DEVELOPED: YES

7546

AS-BUILT	WELL DATA	FORMATION DESCRIPTION



WELL COVER

CONCRETE SURFACE SEAL DEPTH = 1/ft

PVC BLANK 2"x 3'

BACKFILL 1 ft.
TYPE: BENT CHIPS

PVC SCREEN 2"x 7'
SLOT SIZE: .010

GRAVEL PACK 2 ft.
MATERIAL: 2/12 LONESTAR

WELL DEPTH 10' "

FORMATION DESCRIPTION:

0 - 3 ft.
SANDY GRAVEL

3 - 3.5 ft.
PEAT

3.5 - 10 ft.
FINE SILTY SAND

SCALE: 1" =

PAGE ____ OF ____

ECY 050-12 (Rev. 11/89)

Please print, sign and return by mail to Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE03374

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301776 B-10

☐ Construction

☒ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* SE02483

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy

Unique Ecology Well ID

Tag No. _____

City Fife **County** Pierce

Select One ☒ EWM ☐ WWM

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson

Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 21869

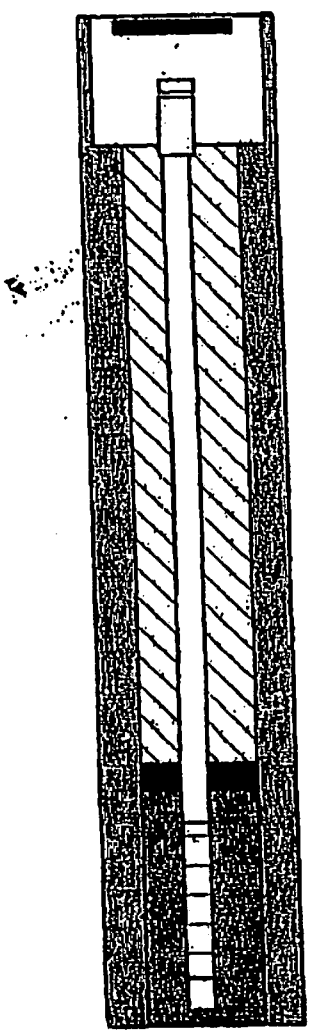
Tax Parcel No. _____

Cased or Uncased Diameter 2.25" **Static Level** _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

If trainee, licensed driller's Signature and License No. _____

Construction/Design	Well Data	Formation Description
	2.25" soil boring decommissioned from 0'-10' using 1 bag of bentonite chips	0'-3' mixed gravels 3'-10' sandy silts

RECEIVED

JUN 16 2008

DEPARTMENT OF ECOLOGY

Please print, sign and return by mail to Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE03374

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301775 B-9

☐ Construction

☒ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* SE02483

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy

Unique Ecology Well ID

Tag No.

City Fife **County** Pierce

Select One ☒ EWM ☐ WWM

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

☒ Driller ☐ Engineer ☐ Trainee **Name (Print)** Marcus Johnson

Driller/Engineer/Trainee Signature

Driller or Trainee License No. 2006

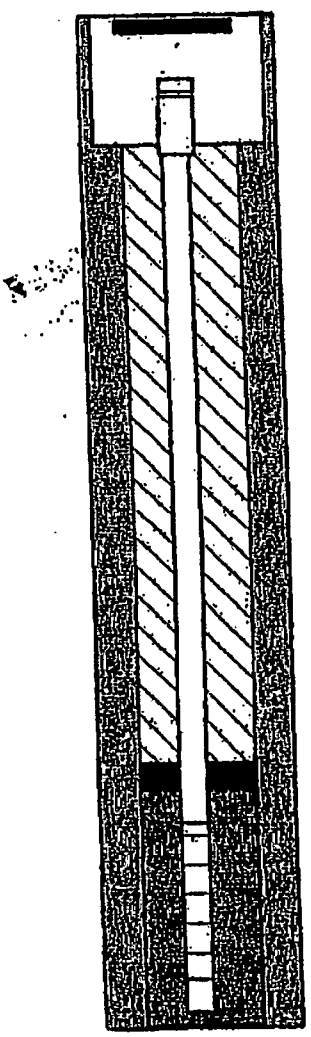
Tax Parcel No.

Cased or Uncased Diameter 2.25" **Static Level**

Work/Decommission Start Date 6-9-08

If trainee, licensed driller's Signature and License No.

Work/Decommission Completed Date 6-9-08

Construction/Design	Well Data	Formation Description
	2.25" soil boring decommissioned from 0'-10' using 1 bag of bentonite chips	0'-3' mixed gravels 3'-10' sandy silts

RECEIVED

JUN 18 2008

DEPARTMENT OF ECOLOGY

Please print, sign and return by mail to Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE03374

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission (*select one*) 301774 B-8

☐ Construction

☒ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* SE02483

Consulting Firm Golder

Unique Ecology Well ID Tag No.

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson

Driller/Engineer/Trainee Signature [signature]

Driller or Trainee License No. 2867

If trainee, licensed driller's Signature and License No.

Type of Well (*select one*)

☐ Resource Protection

☒ Geotech Soil Boring

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy

City Fife **County** Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

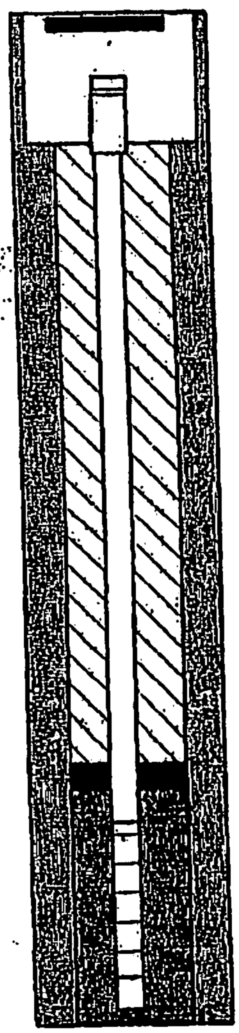
Lat/Long (s, t, r still REQUIRED) Lat Deg ___ Lat Min/Sec ___ Long Deg ___ Long Min/Sec ___

Tax Parcel No.

Cased or Uncased Diameter 2.25" **Static Level**

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

Construction/Design	Well Data	Formation Description
	2.25" soil boring decommissioned from 0'-10' using 1 bag of bentonite chips	0'-3' mixed gravels 3'-10' sandy silts

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE03374

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301773 B-7

☐ Construction

☒ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* SE02483

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy

Unique Ecology Well ID
Tag No. _____

City Fife **County** Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

☒ Driller ☐ Engineer ☐ Trainee **Name (Print)** Marcus Johnson

Driller/Engineer /Trainee Signature _____

Driller or Trainee License No. 21069

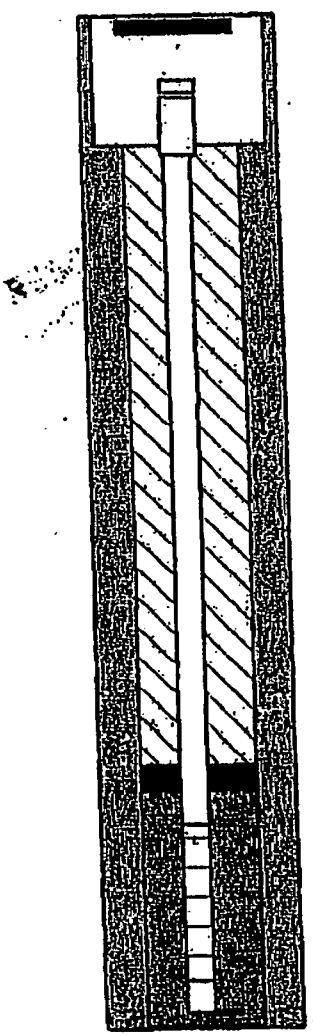
Tax Parcel No. _____

Cased or Uncased Diameter 2.25" **Static Level** _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

If trainee, licensed driller's Signature and License No. _____

Construction/Design	Well Data	Formation Description
	2.25" soil boring decommissioned from 0'-7' using 1 bag of bentonite chips	0'-3' mixed gravels 3'-7' sandy silts

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE03374

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301772 B-6

☐ Construction

☒ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* SE02493

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Unique Ecology Well ID

Tag No. _____

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy

City Fife **County** Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. _____

☒ Driller ☐ Engineer ☐ Trainee **Name (Print)** Marcus Johnson

Driller/Engineer /Trainee Signature _____

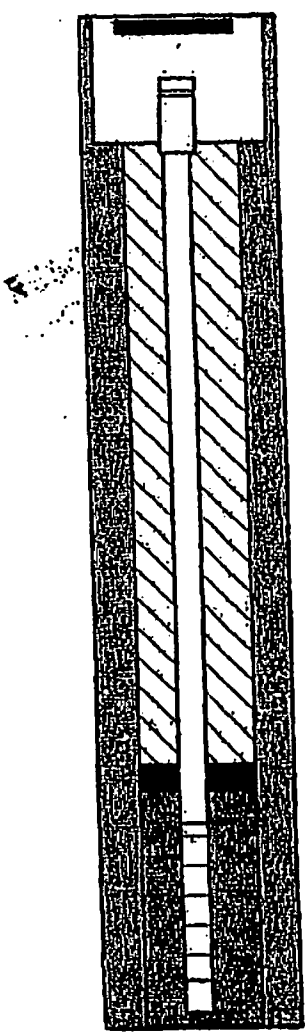
Driller or Trainee License No. 21069

Cased or Uncased Diameter 2.25" **Static Level** _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

If trainee, licensed driller's Signature and License No. _____

Construction/Design	Well Data	Formation Description
	2.25" soil boring decommissioned from 0'-7' using 1 bag of bentonite chips	0'-3' mixed gravels 3'-7' sandy silts

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE03374

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301771 B-5

☐ Construction

☒ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* SE02483

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Unique Ecology Well ID

Tag No. _____

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy

City Fife **County** Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

☒ Driller ☐ Engineer ☐ Trainee **Name (Print)** Marcus Johnson

Driller/Engineer /Trainee Signature _____

Driller or Trainee License No. 21060

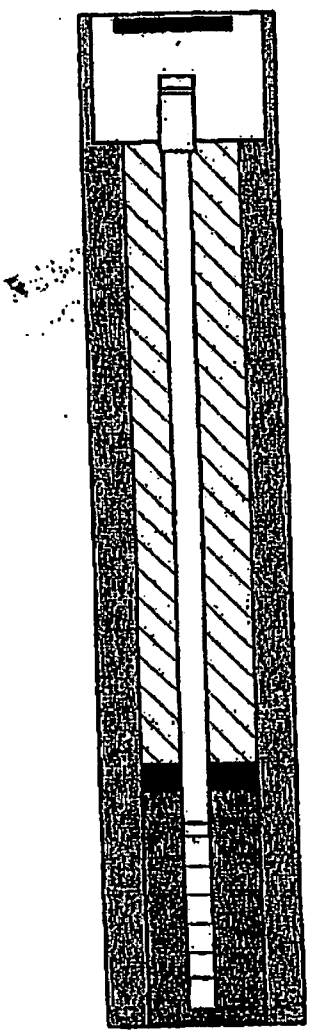
Tax Parcel No. _____

Cased or Uncased Diameter 2.25" **Static Level** _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

If trainee, licensed driller's Signature and License No. _____

Construction/Design	Well Data	Formation Description
	2.25" soil boring decommissioned from 0'-7' using 1 bag of bentonite chips	0'-3' mixed gravels 3'-7' sandy silts

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ECY 050-12 (Rev. 2/03) SCALE: 1"= __ Page__of__ Ecology is an Equal Opportunity Employ

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE03374

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301776 B-4

☐ Construction

☒ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* SE02483

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Unique Ecology Well ID

Tag No.

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy

City Fife **County** Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWH ☐ WWH

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson

Driller/Engineer/Trainee Signature

Driller or Trainee License No. 2176

If trainee, licensed driller's Signature and License No.

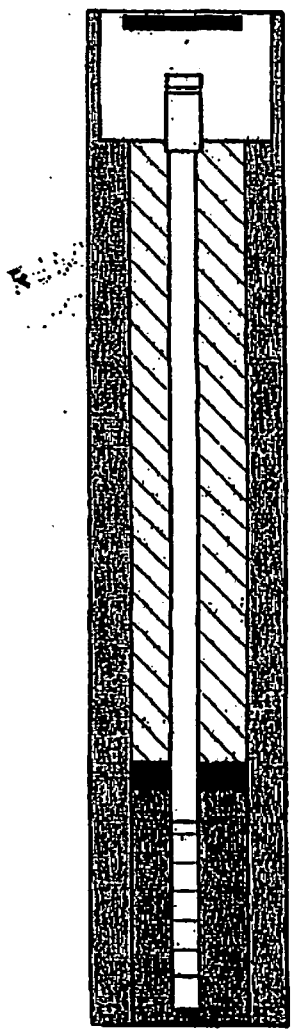
Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No.

Cased or Uncased Diameter 2.25" **Static Level**

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

Construction/Design	Well Data	Formation Description
	2.25" soil boring decommissioned from 0'-7' using 1 bag of bentonite chips	0'-3' mixed gravels 3'-7' sandy silts

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE03374

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301709 B-3
☐ Construction
☒ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* SE02483

Type of Well *(select one)*
☐ Resource Protection
☒ Geotech Soil Boring

Consulting Firm Golder

Unique Ecology Well ID
Tag No.

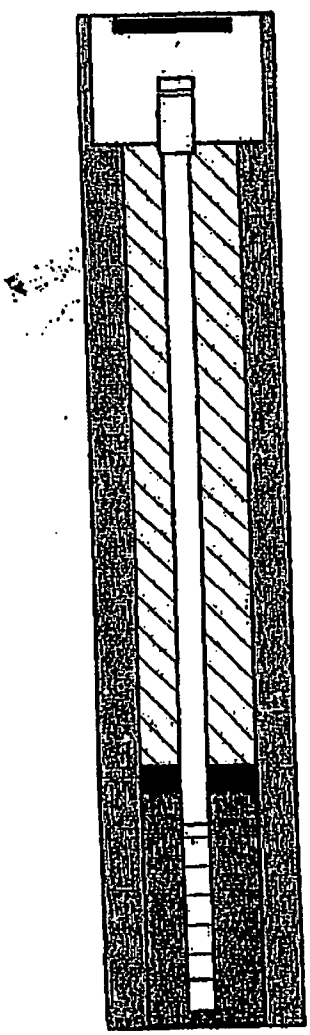
Property Owner Freddies Club Fife
Site Address 3410 Pacific Hwy
City Fife County Pierce
Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWN ☐ WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson
Driller/Engineer/Trainee Signature
Driller or Trainee License No. 2106

If trainee, licensed driller's Signature and License No.

Lat/Long (s, t, r still REQUIRED) Lat Deg Lat Min/Sec
Long Deg Long Min/Sec
Tax Parcel No.
Cased or Uncased Diameter 2.25" Static Level
Work/Decommission Start Date 6-9-08
Work/Decommission Completed Date 6-9-08

Construction/Design	Well Data	Formation Description
	2.25" soil boring decommissioned from 0'-7' using 1 bag of bentonite chips	0'-3' mixed gravels 3'-7' sandy silts

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE03374

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301748 B-2

☐ Construction

☒ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* SE02483

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy

Unique Ecology Well ID

Tag No.

City Fife **County** Pierce

Select One ☒ EWM ☐ WWM

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No.

☒ Driller ☐ Engineer ☐ Trainee **Name (Print)** Marcus Johnson

Driller/Engineer/Trainee Signature

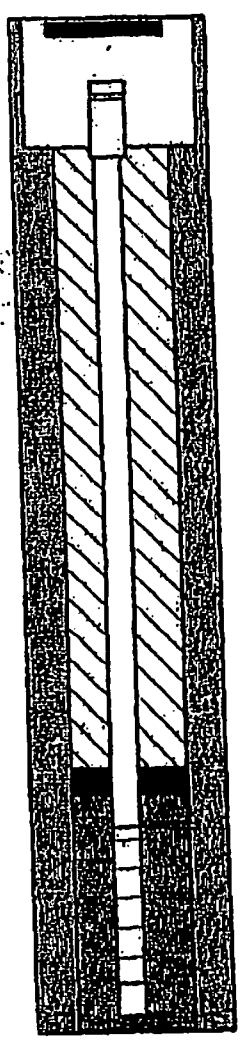
Driller or Trainee License No. 21067

Cased or Uncased Diameter 2.25" **Static Level**

Work/Decommission Start Date 6-9-08

If trainee, licensed driller's Signature and License No.

Work/Decommission Completed Date 6-9-08

Construction/Design	Well Data	Formation Description
	2.25" soil boring decommissioned from 0'-8' using 1 bag of bentonite chips	0'-3' mixed gravels 3'-8' sandy silts

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. AE03374

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301767 B-1

☐ Construction

☒ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* SE02483

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Unique Ecology Well ID

Tag No.

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy

City Fife County Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg Lat Min/Sec

Long Deg Long Min/Sec

Tax Parcel No.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson

Driller/Engineer /Trainee Signature

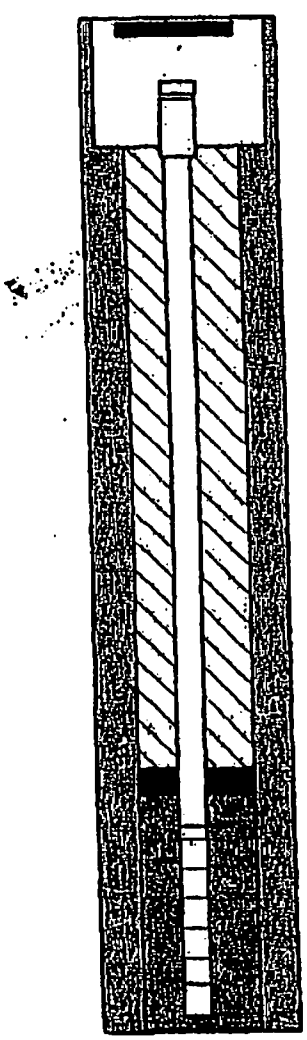
Driller or Trainee License No. 2062

Cased or Uncased Diameter 2.25" Static Level

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

If trainee, licensed driller's Signature and License No.

Construction/Design	Well Data	Formation Description
	2.25" soil boring decommissioned from 0'-8' using 1 bag of bentonite chips	0'-3' mixed gravels 3'-8' sandy silts

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. SEO 2483

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 3017660 B-11

☒ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Unique Ecology Well ID

Tag No. _____

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy E

City Fife County Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. _____

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson

Driller/Engineer /Trainee Signature _____

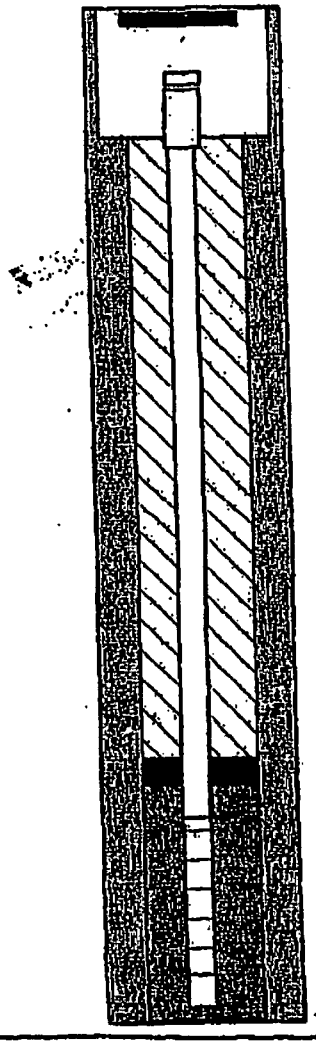
Driller or Trainee License No. 21616

Cased or Uncased Diameter 2.25" Static Level _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

If trainee, licensed driller's Signature and License No. _____

Construction/Design	Well Data	Formation Description
	2.25" Soil boring Constructed from 0'-10' using Push probe method	0'-3' mixed gravels 3'-10' sandy silts

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RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT Notice of Intent No. SE0 2483

Construction/Decommission *(select one)*
☒ Construction 301765 B-10
☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *(select one)*
☐ Resource Protection
☒ Geotech Soil Boring

Consulting Firm Golder

Unique Ecology Well ID

Tag No. _____

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy E.

City Fife County Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson

Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2166a7

If trainee, licensed driller's Signature and License No. _____

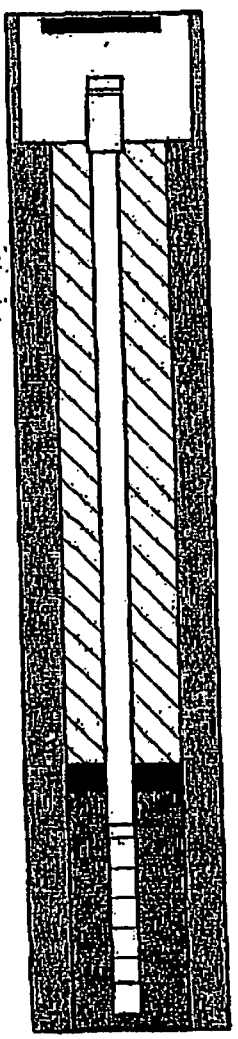
Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. _____

Cased or Uncased Diameter 2.25" Static Level _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

Construction/Design	Well Data	Formation Description
	2.25" Soil boring constructed from 0'-10' using Push probe method	0'-3' Mixed gravels 3'-10' Sandy Silts

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ECY 050-12 (Rev. 2/03) SCALE: 1"= __ Page __ of __ Ecology is an Equal Opportunity Employ

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. SE02483

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301764 B-9

☒ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Unique Ecology Well ID

Tag No. _____

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy E

City Fife **County** Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

☒ Driller ☐ Engineer ☐ Trainee **Name (Print)** Marcus Johnson

Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2016

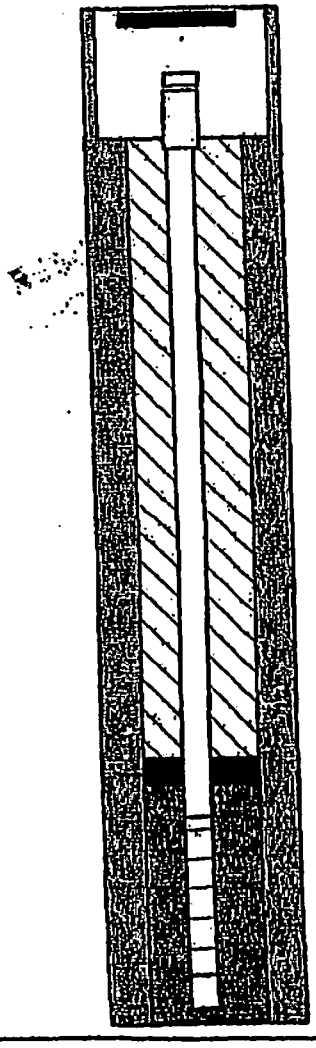
Tax Parcel No. _____

Cased or Uncased Diameter 2.25" **Static Level** _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

If trainee, licensed driller's Signature and License No. _____

Construction/Design	Well Data	Formation Description
	2.25" Soil boring Constructed from 0'-10' using Push probe method	0'-3' Mixed gravels 3'-10' Sandy Silts

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CURRENT Notice of Intent No. SE02483

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301743 B-8

☒ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Unique Ecology Well ID

Tag No. _____

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy E

City Fife County Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. _____

Cased or Uncased Diameter 2.25" Static Level _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

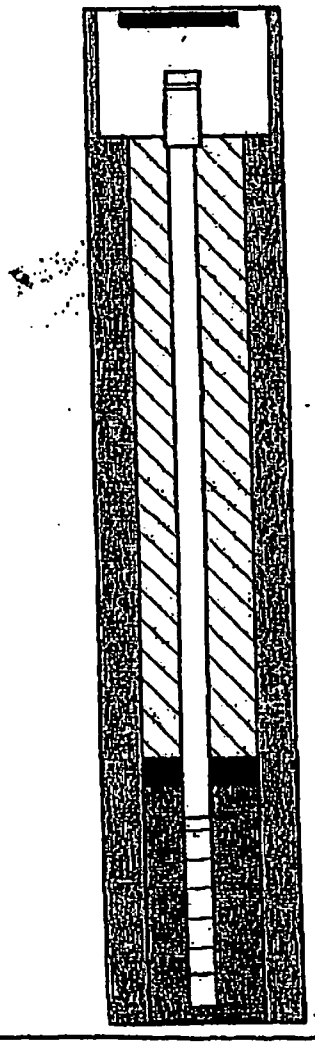
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson

Driller/Engineer /Trainee Signature _____

Driller or Trainee License No. 21016

If trainee, licensed driller's Signature and License No. _____

Construction/Design	Well Data	Formation Description
	2.25" Soil boring Constructed from 0'-10' using Push probe method	0'-3' Mixed gravels 3'-10' Sandy silts

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. SE 0 2483

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301762 B-7
☒ Construction
☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* ______

Consulting Firm: Golder

Unique Ecology Well ID Tag No. ______

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson

Driller/Engineer/Trainee Signature [signature]

Driller or Trainee License No. 2[illegible]

If trainee, licensed driller's Signature and License No. ______

Type of Well *(select one)*
☐ Resource Protection
☒ Geotech Soil Boring

Property Owner: Freddies Club Fife

Site Address: 3410 Pacific Hwy E

City: Fife County: Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

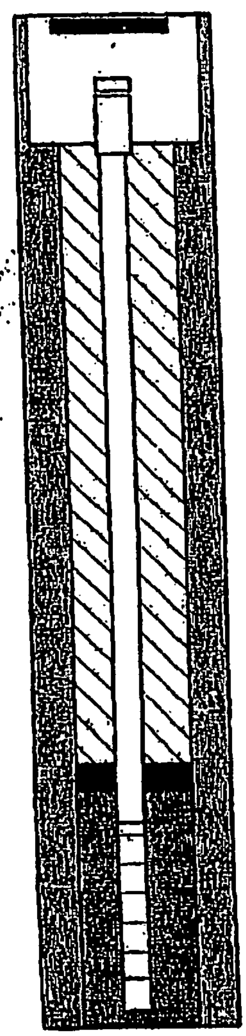
Lat/Long (s, t, r still REQUIRED) Lat Deg ______ Lat Min/Sec ______ Long Deg ______ Long Min/Sec ______

Tax Parcel No. ______

Cased or Uncased Diameter 2.25" Static Level ______

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

Construction/Design	Well Data	Formation Description
	2.25" Soil boring constructed from 0'-7' using Push probe method	0'-3' mixed gravels 3'-7' sandy silts

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. SE02483

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301761

[X] Construction B-6

[ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* ______

Type of Well *(select one)*

[ ] Resource Protection

[X] Geotech Soil Boring

Consulting Firm: Golder

Unique Ecology Well ID Tag No. ______

Property Owner: Freddies Club Fife

Site Address: 3410 Pacific Hwy E

City: Fife County: Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One [X] EWM [ ] WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg ______ Lat Min/Sec ______ Long Deg ______ Long Min/Sec ______

Tax Parcel No. ______

Cased or Uncased Diameter 2.25" Static Level ______

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

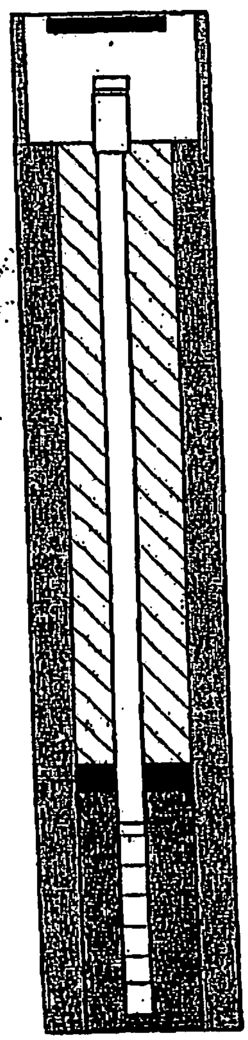
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

[X] Driller [ ] Engineer [ ] Trainee Name (Print) Marcus Johnson

Driller/Engineer/Trainee Signature [signature]

Driller or Trainee License No. 2867

If trainee, licensed driller's Signature and License No. ______

Construction/Design	Well Data	Formation Description
	2.25" Soil boring constructed from 0'-7' using Push probe method	0'-3' mixed gravels 3'-7' sandy silts

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JUN 16 2008

DEPARTMENT OF ECOLOGY

ECY 050-12 (Rev. 2/03) SCALE: 1"= __ Page __ of __ Ecology is an Equal Opportunity Employer

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. SE02483

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301760 B-5

☒ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Consulting Firm Golder

Unique Ecology Well ID

Tag No. _____

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy E

City Fife **County** Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. _____

Cased or Uncased Diameter 2.25" **Static Level** _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

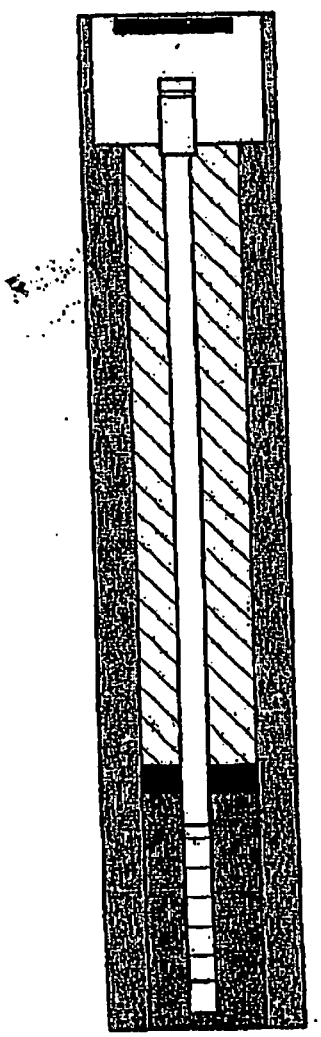
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson

Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2016

If trainee, licensed driller's Signature and License No. _____

Construction/Design	Well Data	Formation Description
	2.25" Soil boring Constructed from 0'-7' using Push probe method	0'-3' Mixed gravels 3'-7' Sandy silts

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DEPARTMENT OF ECOLOGY

ECY 050-12 (Rev. 2/03)

SCALE: 1"= __ Page__of__

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. SE0 2483

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301759 B-4

☒ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Unique Ecology Well ID

Tag No. _____

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy E

City Fife County Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson

Driller/Engineer /Trainee Signature _____

Driller or Trainee License No. 2867

If trainee, licensed driller's Signature and License No. _____

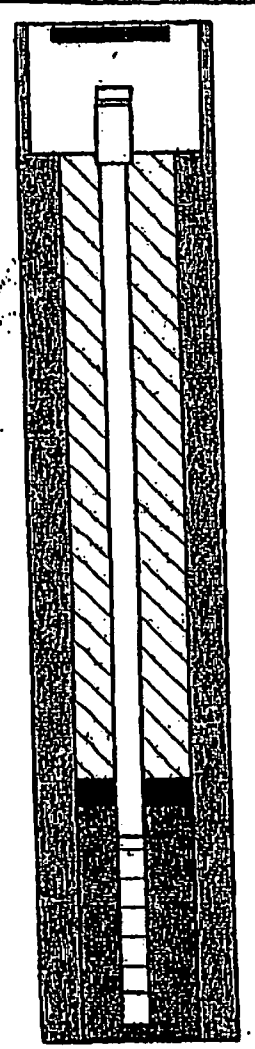
Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. _____

Cased or Uncased Diameter 2.25" Static Level _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

Construction/Design	Well Data	Formation Description
	2.25" Soil boring Constructed from 0'-7' using Push probe method	0'-3' Mixed gravels 3'-7' Sandy silts

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DEPARTMENT OF ECOLOGY

Please print, sign and return by mail to Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. SE0 2483

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301758 B-3

☒ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy E

City Fife **County** Pierce

Unique Ecology Well ID

Tag No. _____

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. _____

☒ Driller ☐ Engineer ☐ Trainee **Name (Print)** Marcus Johnson

Driller/Engineer /Trainee Signature _____

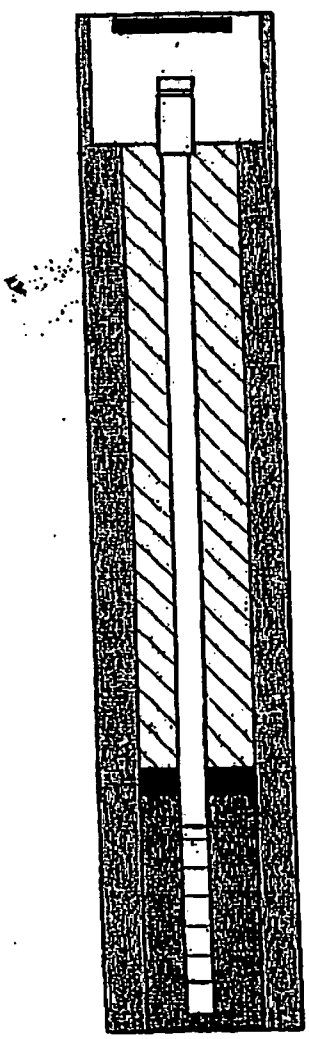
Driller or Trainee License No. 2067

Cased or Uncased Diameter 2.25" **Static Level** _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

If trainee, licensed driller's Signature and License No. _____

Construction/Design	Well Data	Formation Description
	2.25" Soil boring Constructed from 0'-7' using Push probe method	0'-3' Mixed gravels 3'-7' Sandy silts

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DEPARTMENT OF ECOLOGY

ECY 050-12 (Rev. 2/03) SCALE: 1"= __ Page__of__ Ecology is an Equal Opportunity Employ

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. SE02488

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301757 B-2

☒ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Unique Ecology Well ID

Tag No. _____

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy E

City Fife County Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson

Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2006

If trainee, licensed driller's Signature and License No. _____

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

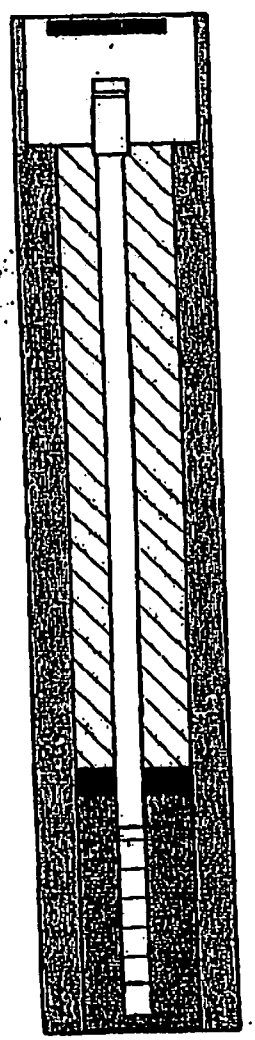
Long Deg _____ Long Min/Sec _____

Tax Parcel No. _____

Cased or Uncased Diameter 2.25" Static Level _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

Construction/Design	Well Data	Formation Description
	2.25" Soil boring Constructed from 0'-8' using Push probe method	0'-3' Mixed gravels 3'-8' Sandy silts

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DEPARTMENT OF ECOLOGY

ECY 050-12 (Rev. 2/03) SCALE: 1"= __ Page __ of __ Ecology is an Equal Opportunity Employ

Please print, sign and return by mail to Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. SE02483

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *(select one)* 301756 B-1

☒ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *(select one)*

☐ Resource Protection

☒ Geotech Soil Boring

Consulting Firm Golder

Unique Ecology Well ID

Tag No. _____

Property Owner Freddies Club Fife

Site Address 3410 Pacific Hwy E

City Fife County Pierce

Location NE 1/4-1/4 NE 1/4 Sec 11 Twn 20 R 3 Select One ☒ EWM ☐ WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Marcus Johnson

Driller/Engineer /Trainee Signature _____

Driller or Trainee License No. 21016

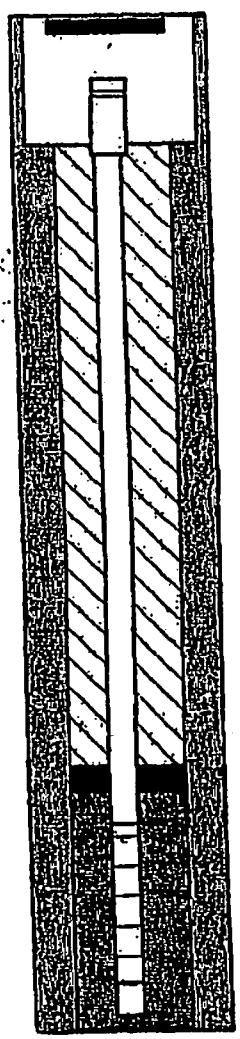
Tax Parcel No. _____

Cased or Uncased Diameter 2.25" Static Level _____

Work/Decommission Start Date 6-9-08

Work/Decommission Completed Date 6-9-08

If trainee, licensed driller's Signature and License No. _____

Construction/Design	Well Data	Formation Description
	2.25" Soil boring Constructed from 0'-8' using Push probe method	0'-3' Mixed gravels 3'-8' Sandy silts

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Water Resources Program
Department of Ecology

ECY 050-12 (Rev. 2/03) SCALE: 1"= __ Page __ of __ Ecology is an Equal Opportunity Employ

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. A72704

Construction/Decommission ("x" in circle)
- O Construction
- X Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 174642

Type of Well ("x" in circle)
- X Resource Protection
- O Geotech Soil Boring

Consulting Firm KANE ENVIRONMENTAL

Unique Ecology Well ID

Tag No:

Property Owner FREDDIE'S CLUB FIFE

Site Address 3410 PACIFIC HWY E

City FIFE County: PIERCE

Location NE¼ NE¼ Sec 11 Twp 20N R 3 (E/W) Circle one

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

X Driller ☐ Engineer Trainee Name (Print) ALEX FLINK

Driller/Engineer/Trainee Signature

Driller or Trainee License No. 2616

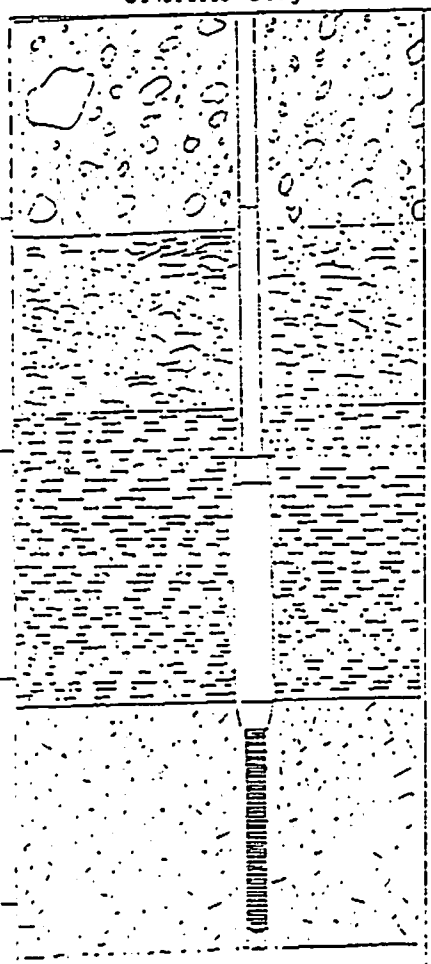
Tax Parcel No.

Cased or Uncased Diameter 2" Static Level 4'

Decommission Start Date 12-13-04

Work/Decommission Completed Date 12-13-04

If trainee, licensed driller's Signature and License no.

Construction/Design	Well Data	Formation Description
	Drove a retractable stainless steel screen down to depth and collected a water sample Boring depth: 8' Screened 4-8' Removed all rods from boring and backfilled with bentonite	SILTY SAND TO DEPTH

RECEIVED
JUN 22 2005
DEPARTMENT OF ECOLOGY

Scale 1"= ____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. A72704

Construction/Decommission ("x" in circle)

O Construction

X Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 174642

Consulting Firm KANE ENVIRONMENTAL

Unique Ecology Well ID

Tag No:

Type of Well ("x" in circle)

X Resource Protection

O Geotech Soil Boring

Property Owner FREDDIE'S CLUB F.F.E

Site Address 3410 PACIFIC HWY E

City FIFE County: PIERCE

Location NE 1/4 NE 1/4 Sec 11 Twn 20N R 3 (E/W) or WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No.

Cased or Uncased Diameter 2" Static Level 4'

Decommission Start Date 12-13-04

Work/Decommission Completed Date 12-13-04

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

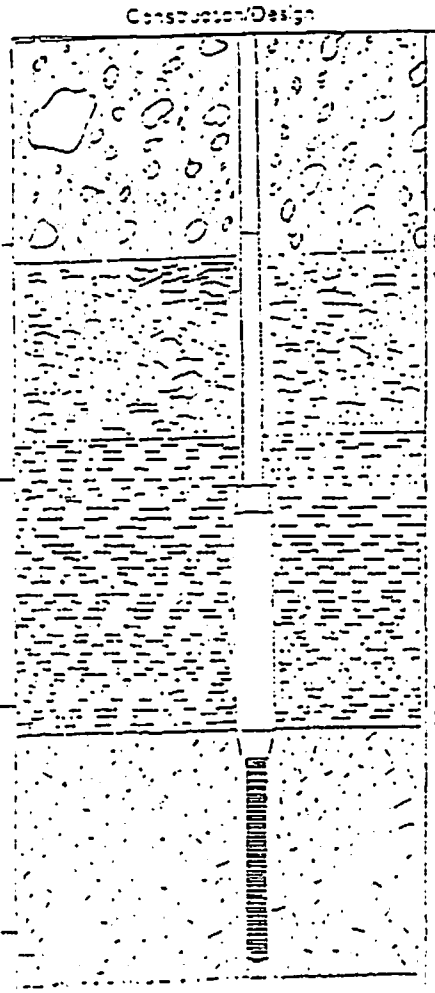
X Driller ☐ Engineer Trainee Name (Print) ALEX FLINK

Driller/Engineer/Trainee Signature

Driller or Trainee License No. 2616

If trainee, licensed driller's Signature and License no.

Construction/Design



Well Data

- Drove a retractable stainless steel screen down to depth and collected a water sample

Boring depth: 8'

Screened: 4-8'

- Removed all rods from boring and backfilled with bentonite

Formation Description

SILTY SAND TO DEPTH

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DEPARTMENT OF ECOLOGY

Scale 1"= ____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. A72704

Construction/Decommission ("x" in circle)

O Construction

X Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 174643

Consulting Firm KANE ENVIRONMENTAL

Unique Ecology Well ID

Tag No.

Type of Well ("x" in circle)

X Resource Protection

O Geotech Soil Boring

Property Owner FREDDIE'S CLUB FIFE

Site Address 3410 PACIFIC HWY E

City FIFE County: PIERCE

Location NE¼ NE¼ Sec 11 Twp 20N R 3 (E/W) Circle one or WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg Lat Min/Sec

Long Deg Long Min/Sec

Tax Parcel No.

Cased or Uncased Diameter 2" Static Level 4'

Work/Decommission Start Date 12-13-04

Work/Decommission Completed Date 12-13-04

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

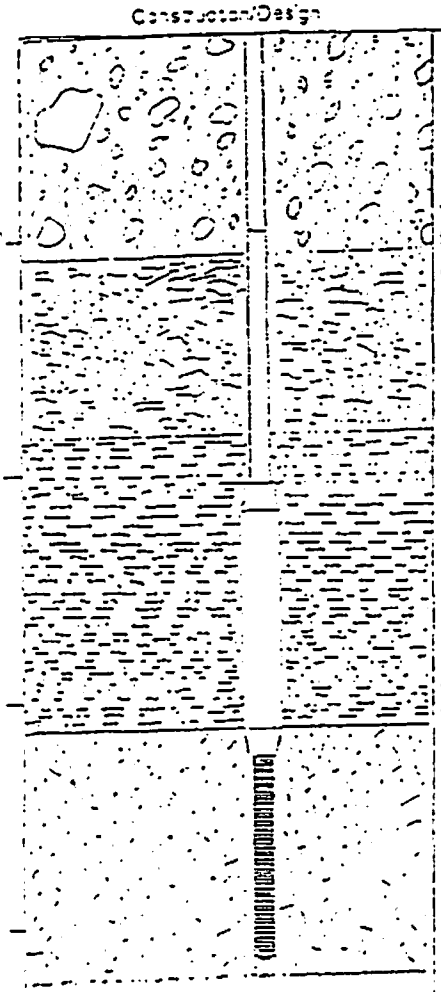
X Driller ☐ Engineer Trainee Name (Print) ALEX FLINK

Driller/Engineer/Trainee Signature

Driller or Trainee License No. 2616

If trainee, licensed driller's Signature and License no.

Construction/Design | Well Data | Formation Description



- Drove a retractable stainless steel screen down to depth and collected a water sample
- Boring depth 8'
- Screened 4-8'
- Removed all rods from boring and backfilled with bentonite

SILTY SAND TO DEPTH

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Scale 1" =

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. A72704

Construction/Decommission ("x" in circle)
- O Construction
- X Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 174644

Type of Well ("x" in circle)
- X Resource Protection
- O Geotech Soil Boring

Consulting Firm KANE ENVIRONMENTAL

Unique Ecology Well ID

Tag No:

Property Owner FREDDIE'S CLUB FIFE

Site Address 3410 PACIFIC HWY E

City FIFE County: PIERCE

Location NE¼ NE¼ Sec 11 Twn 20N R 3 (E/W) or WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No.

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

X Driller ☐ Engineer, Trainee Name (Print) ALEX FLINK

Driller/Engineer/Trainee Signature

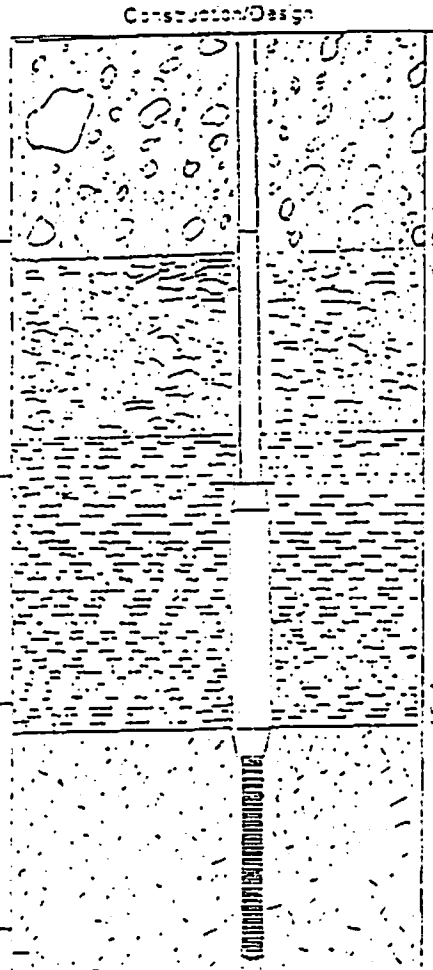
Driller or Trainee License No. 2616

If trainee, licensed driller's Signature and License no.

Cased or Uncased Diameter 2" Static Level 4'

X Decommission Start Date 12-13-04

Work/Decommission Completed Date 12-13-04

Construction/Design	Well Data	Formation Description
	-Drove a retractable stainless steel screen down to depth and collected a water sample Boring depth: 8' Screened 4-8' -Removed all rods from boring and backfilled with bentonite	SILTY SAND TO DEPTH

RECEIVED
JUN 22 2005
DEPARTMENT OF ECOLOGY

Scale 1"= ____

ECY 050-12 (Rev 09/1)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. A72704

Construction/Decommission *("x" in circle)*

O Construction

X Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 174645

Consulting Firm KANE ENVIRONMENTAL

Unique Ecology Well ID

Tag No:

Type of Well *("x" in circle)*

X Resource Protection

O Geotech Soil Boring

Property Owner FREDDIE'S CLUB FIFE

Site Address 3410 PACIFIC HWY E

City FIFE County: PIERCE

Location NE¼ NE¼ Sec 11 Twp 20N R 3 (E/W) Circle one WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No.

Cased or Uncased Diameter 2" Static Level 4'

Decommission Start Date 12-13-04

Work/Decommission Completed Date 12-13-04

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

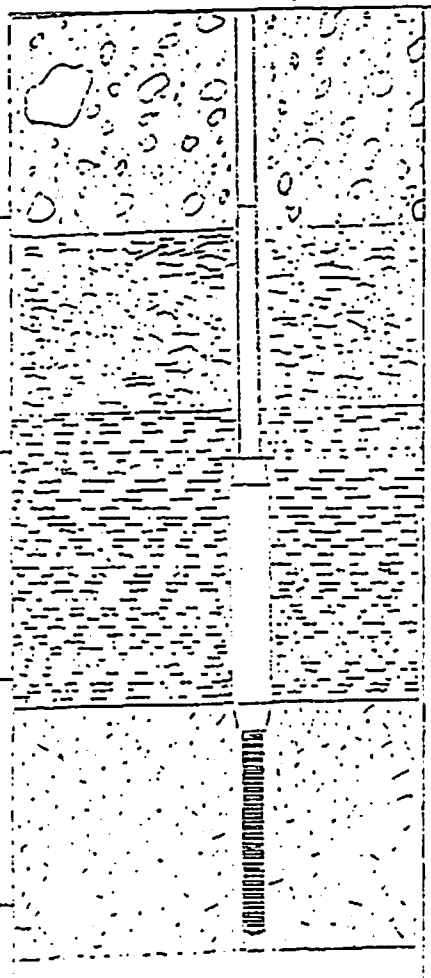
X Driller ☐ Engineer Trainee Name (Print) ALEX FLINK

Driller/Engineer/Trainee Signature

Driller or Trainee License No. 2616

If trainee, licensed driller's Signature and License no.

Construction/Design



Well Data

- Drove a retractable stainless steel screen down to depth and collected a water sample

Boring depth: 8'

Screened: 4-8'

- Removed all rods from boring and backfilled with bentonite

Formation Description

SILTY SAND TO DEPTH

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DEPARTMENT OF ECOLOGY

Scale 1" = ____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. A72704

Construction/Decommission ("x" in circle)
- O Construction
- X Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 174638

Type of Well ("x" in circle)
- X Resource Protection
- O Geotech Soil Boring

Consulting Firm KANE ENVIRONMENTAL

Unique Ecology Well ID
Tag No: _____

Property Owner FREDDIE'S CLUB FIFE

Site Address 3410 PACIFIC HWY E

City FIFE County: PIERCE

Location NE 1/4 NE 1/4 Sec 11 Twp 20N R 3 (E/W) or WWM

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

X Driller ☐ Engineer Trainee Name (Print) ALEX FLINK

Driller/Engineer/Trainee Signature _____

Tax Parcel No. _____

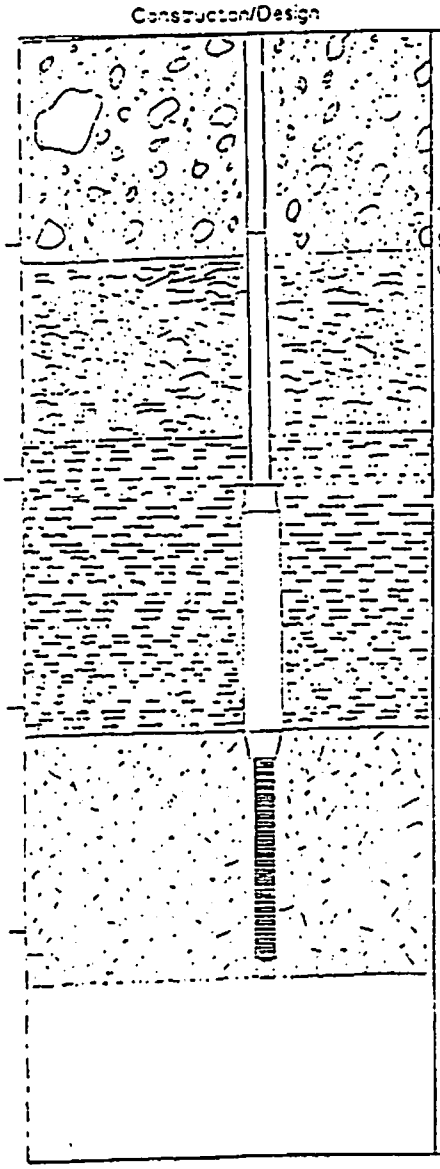
Driller or Trainee License No. 2616

Cased or Uncased Diameter 2" Static Level 4'

~~X~~ Decommission Start Date 12-13-04

Work/Decommission Completed Date 12-13-04

If trainee, licensed driller's Signature and License no. _____

Construction/Design	Well Data	Formation Description
	-Drove a retractable stainless steel screen down to depth and collected a water sample Boring depth: 8' Screened: 4-8' -Removed all rods from boring and backfilled with bentonite	SILTY SAND TO DEPTH

RECEIVED
JUN 22 2005
DEPARTMENT OF ECOLOGY

Scale 1"= _____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. A72704

Construction/Decommission *("x" in circle)*
- O Construction
- X Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 174639

Type of Well *("x" in circle)*
- X Resource Protection
- O Geotech Soil Boring

Consulting Firm KANE ENVIRONMENTAL

Unique Ecology Well ID
Tag No:

Property Owner FREDDIE'S CLUB FIFE

Site Address 3410 PACIFIC HWY E

City FIFE County: PIERCE

Location NE 1/4 NE 1/4 Sec 11 Twp 20N R. 3 (E/W) or WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No.

Cased or Uncased Diameter 2" Static Level 4'

Decommission Start Date 12-13-04

Work/Decommission Completed Date 12-13-04

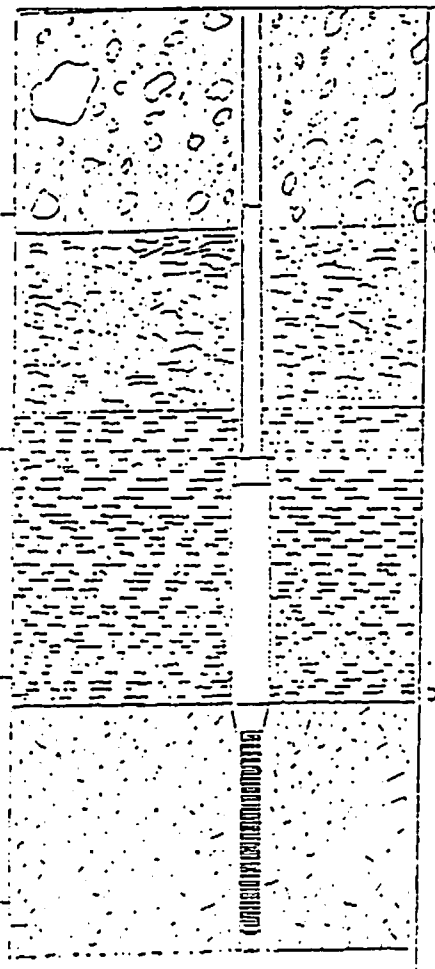
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

X Driller ☐ Engineer; Trainee Name (Print) ALEX FLINK

Driller/Engineer/Trainee Signature

Driller or Trainee License No. 2616

If trainee, licensed driller's Signature and License no.

Construction/Design	Well Data	Formation Description
	•Drove a retractable stainless steel screen down to depth and collected a water sample Boring depth: 8' Screened: 4-8' •Removed all rods from boring and backfilled with bentonite	SILTY SAND TO DEPTH

RECEIVED
JUN 22 2005
DEPARTMENT OF ECOLOGY

Scale 1" = ____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. A72704

Construction/Decommission ("x" in circle)
- O Construction
- X Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 174640

Type of Well ("x" in circle)
- X Resource Protection
- O Geotech Soil Boring

Consulting Firm KANE ENVIRONMENTAL

Unique Ecology Well ID

Tag No:

Property Owner FREDDIE'S CLUB FIFE

Site Address 3410 PACIFIC HWY E

City FIFE County: PIERCE

Location NE¼ NE¼ Sec 11 Twp 20N R 3 (E/W) or WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No.

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

X Driller ☐ Engineer, Trainee Name (Print) ALEX FLINN

Driller/Engineer/Trainee Signature

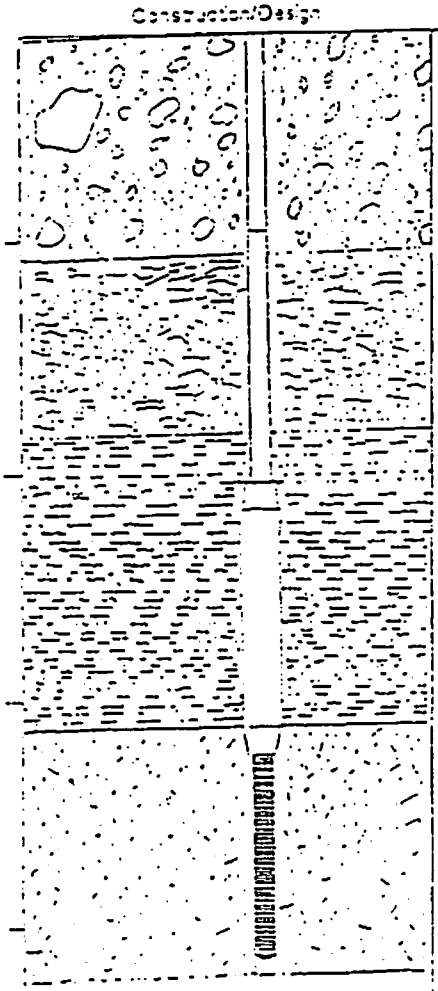
Driller or Trainee License No. 2616

Cased or Uncased Diameter 2" Static Level 4'

Decommission Start Date 12-13-04

Work/Decommission Completed Date 12-13-04

If trainee, licensed driller's Signature and License no.

Construction/Design	Well Data	Formation Description
	Drove a retractable stainless steel screen down to depth and collected a water sample Boring depth: 8' Screened: 4-8' Removed all rods from boring and backfilled with bentonite	SILTY SAND TO DEPTH

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Scale 1"=

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. A72704

Construction/Decommission *("x" in circle)*
- O Construction
- X Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 174641

Type of Well *("x" in circle)*
- X Resource Protection
- O Geotech Soil Boring

Consulting Firm KANE ENVIRONMENTAL

Unique Ecology Well ID

Tag No:

Property Owner FREDDIE'S CLUB FIFE

Site Address 3410 PACIFIC HWY E

City FIFE County: PIERCE

Location NE¼ NE¼ Sec 11 Twp 20N R 3 E/W or W/M

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No.

Cased or Uncased Diameter 2" Static Level 4'

Work/Decommission Start Date 12-13-04

Work/Decommission Completed Date 12-13-04

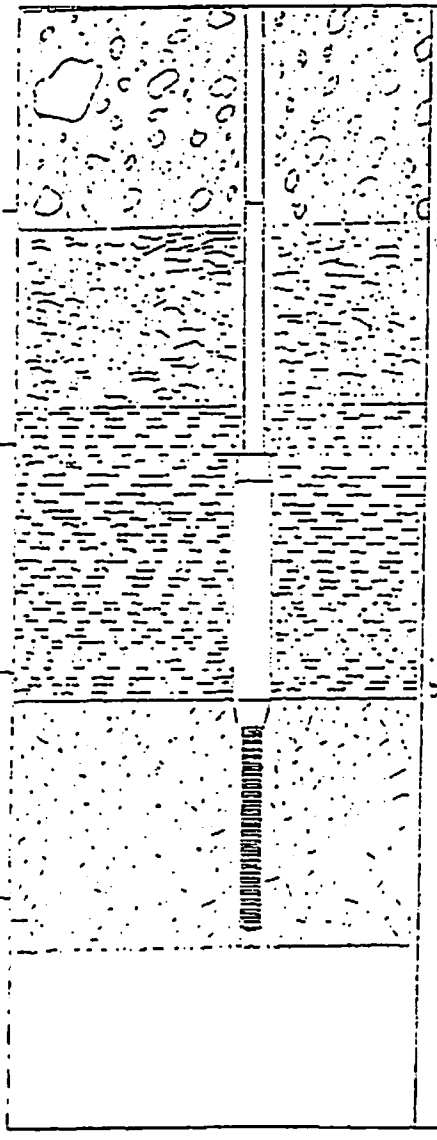
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

X Driller ☐ Engineer, Trainee Name (Print) ALEX FLINK

Driller/Engineer/Trainee Signature

Driller or Trainee License No. 2616

If trainee, licensed driller's Signature and License no.

Construction/Design	Well Data	Formation Description
	-Drove a retractable stainless steel screen down to depth and collected a water sample Boring depth: 8' Screened: 4-8' -Removed all rods from boring and backfilled with bentonite	SILTY SAND TO DEPTH

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JUN 22 2005
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Scale 1" = ____

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT
Notice of Intent No. A72704

Construction/Decommission *("x" in circle)*

- O Construction
- ☒ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 174646

Type of Well *("x" in circle)*

- ☒ Resource Protection
- O Geotech Soil Boring

Consulting Firm: KANE ENVIRONMENTAL

Unique Ecology Well ID Tag No: ______

Property Owner: FREDDIE'S CLUB FIFE

Site Address: 3410 PACIFIC HWY E

City: FIFE County: PIERCE

Location NE 1/4 NE 1/4 Sec 11 Twn 20N R 3 (EWM circle one or WWM)

Lat/Long (s, t, r still REQUIRED) Lat Deg ______ Lat Min/Sec ______ Long Deg ______ Long Min/Sec ______

Tax Parcel No. ______

Cased or Uncased Diameter 2" Static Level 4'

Work/Decommission Start Date 12-13-04

Work/Decommission Completed Date 12-13-04

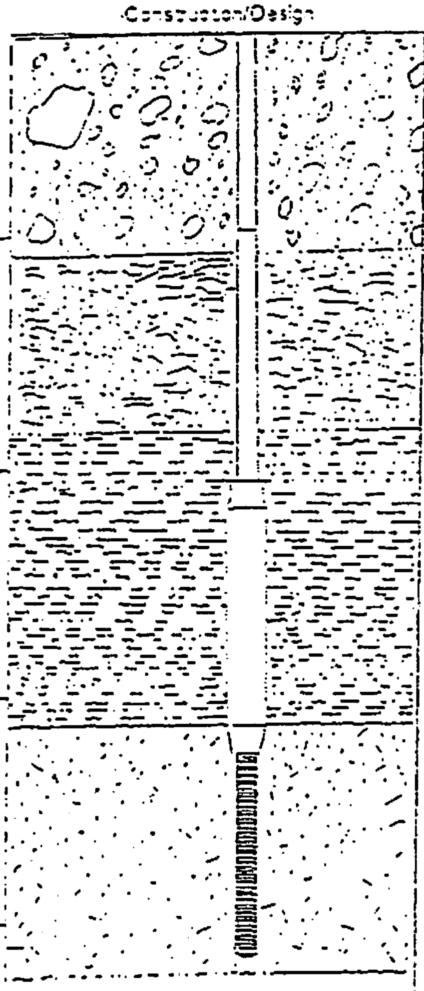
WELL CONSTRUCTION CERTIFICATION: *I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.*

☒ Driller ☐ Engineer ☐ Trainee Name (Print) ALEX FLING

Driller/Engineer/Trainee Signature [signature]

Driller or Trainee License No. 2616

If trainee, licensed driller's Signature and License no. ______

Construction/Design	Well Data	Formation Description
	-Drove a retractable stainless steel screen down to depth and collected a water sample Boring depth: 8' Screened: 4-8' -Removed all rods from boring and backfilled with bentonite	SILTY SAND TO DEPTH RECEIVED JUN 22 2005 DEPARTMENT OF ECOLOGY

Scale 1"= ______ Page 9 of 9 ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. S 29096

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

(X) Construction 296138

( ) Decommission *ORIGINAL INSTALLATION Notice of Intent Number* A 131930

Consulting Firm Golder Associates

Unique Ecology Well ID NA

Tag No: _____

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

(X) Driller ( ) Engineer ( ) Trainee Name (Print) Chris Nowak

Driller/Engineer/Trainee Signature Chris Nowak

Driller or Trainee License No. 2810

If trainee, licensed driller's Signature and License no. _____

Type of Well *("x" in circle)*

( ) Resource Protection

(X) Geotech Soil Boring

Property Owner KS FAMILY LLC

Site Address HOMOTEL Motel 3520 Pac Hwy

City Fife County: Pierce

Location NE 1/4 NE 1/4 Sec 11 Twn 20N R 3E (EWM) circle one WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

Tax Parcel No. 0320111049

Cased or (Uncased) Diameter 1 1/2" Static Level NA

Work/Decommission Start Date 4-18-08

Work/Decommission Completed Date 4-18-08

Construction/Design	Well Data	Formation Description
CPT-1 0 – 1 1/2" ϕ probe w 2" ϕ ring 10 – hole backfilled w/ bentonite 20	No well Installed RECEIVED APR 24 2008 DEPARTMENT OF ECOLOGY WELL DRILLING UNIT	silty Sand Sandy Silt Sand bottom of exploration 60'

Scale 1"= 20'

Page 1 of 1

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

CURRENT Notice of Intent No. S29096

Construction/Decommission ("x" in circle) 294139

(X) Construction

O Decommission ORIGINAL INSTALLATION Notice of Intent Number A131930

Consulting Firm Golder Associates

Unique Ecology Well ID NA

Tag No:

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Chris Nowak

Driller/Engineer/Trainee Signature [signature]

Driller or Trainee License No. 2810

If trainee, licensed driller's Signature and License no.

Type of Well ("x" in circle)

O Resource Protection

(X) Geotech Soil Boring

Property Owner KS FAMILY LLC

Site Address HO MOTEL Motel 3520 Pac Hwy

City Fife County: Pierce

Location NE 1/4 NE 1/4 Sec 11 Twn 20N R 3E EWM (circle one) or WWM

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No. 0320111049

Cased or (Uncased) Diameter 1½" Static Level NA

Work/Decommission Start Date 4-18-08

Work/Decommission Completed Date 4-18-08

Construction/Design	Well Data	Formation Description
CPT-2		silty Sand
20 – 1½"ø probe w 2"ø ring	No well Installed	Sandy Silt
40 – hole backfilled w/ bentonite		Sand
60		bottom of exploration 60'

Scale 1"= 20'

Page 1 of 1

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A131930

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

O Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 529096

B 799605

Consulting Firm GOLDER ASSOCIATES

Unique Ecology Well ID Tag No: N/A

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) CHRIS NOWAK

Driller/Engineer/Trainee Signature Chris Nowak

Driller or Trainee License No. 2810

If trainee, licensed driller's Signature and License no.

Type of Well *("x" in circle)*

O Resource Protection

⊗ Geotech Soil Boring

Property Owner KS FAMILY LLC

Site Address HOMOTEL MOTEL 3520 PACIFIC HWY

City FIFE County: PIERCE

Location NE 1/4 NE 1/4 Sec 11 Twn 20N R 3E (E)WM *(circle one)*

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No. 0320111049

Cased or Uncased Diameter 1/2" Static Level ____

Work/Decommission Start Date 4-18-08

Work/Decommission Completed Date 4-18-08

Construction/Design	Well Data	Formation Description
CPT-2 1½"Ø probe w 2"Ø ring hole backfilled w ~~bentonite~~	NO WELL INSTALLED	Silty Sand SANDY SILT SAND Bottom of exploration 60ft

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APR 14 2008
WA State Department of Ecology (SWRO)

Scale 1"= 20ft

Page 1 of 1

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. A131930

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

○ Construction

⊗ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 529096

B798004

Consulting Firm GOLDER ASSOCIATES

Unique Ecology Well ID Tag No: N/A

Type of Well *("x" in circle)*

○ Resource Protection

⊗ Geotech Soil Boring

Property Owner KS FAMILY LLC

Site Address HOMOTEL MOTEL 3520 PACIFIC HWY

City FIFE County: PIERCE

Location NE 1/4 NE 1/4 Sec 11 Twn 20N R 3E (EWM or WWM) *circle one*

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

Tax Parcel No. 0320111049

Cased or Uncased Diameter 1/2" Static Level _____

Work/Decommission Start Date 4-18-08

Work/Decommission Completed Date 4-18-08

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

⊗ Driller ☐ Engineer ☐ Trainee Name (Print) CHRIS NOWAK

Driller/Engineer/Trainee Signature Chris Nowak

Driller or Trainee License No. 2810

If trainee, licensed driller's Signature and License no. _____

Construction/Design	Well Data	Formation Description
CPT-1 1½"Ø probe w 2"ø ring hole backfilled w bentonite	NO WELL INSTALLED	Silty Sand SANDY SILT SAND Bottom of exploration 60ft

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MAY 1 2008
WA State Dept of Ecology (SWRO)

Scale 1"= 20ft

Page 1 of 1

ECY 050-12 (Rev 2/01)

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. E 004794

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

- (X) Construction
- ( ) Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Type of Well *("x" in circle)*

- (X) Resource Protection
- ( ) Geotech Soil Boring

Consulting Firm 145062 URS Corporation

Unique Ecology Well ID Tag No: Temporary Wells

Property Owner Morning Sun Printing

Site Address 3500 20th Street E

City Fife County: Pierce

Location NE 1/4 NE 1/4 Sec 11 Twp 20N R 3E (WM) or WWM *circle one*

Lat/Long (s, t, r still REQUIRED) Lat Deg X Lat Min/Sec X Long Deg ___ Long Min/Sec ___

Tax Parcel No. N/A

Cased or Uncased Diameter 8 1/2 Static Level 4

Work/Decommission Start Date 10/27/03

Work/Decommission Completed Date 10/27/03

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

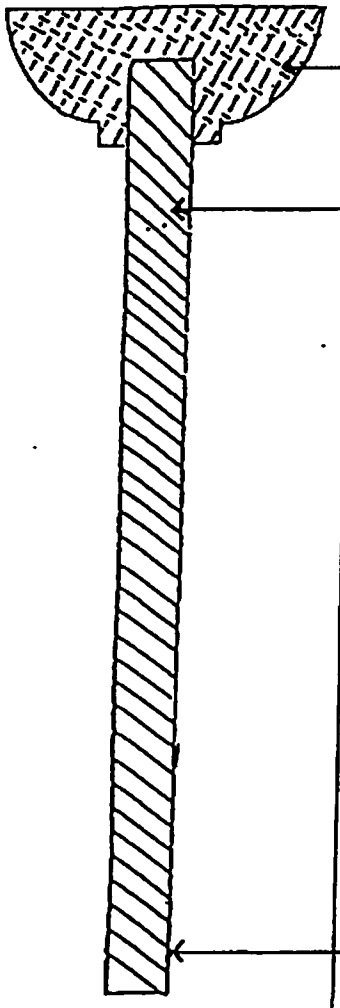
☐ Driller ☐ Engineer ☐ Trainee Name (Print) Andrew Flagan

Driller/Engineer/Trainee Signature _____

Driller or Trainee License No. 2551

If trainee, licensed driller's Signature and License no. /

Construction/Design — Well Data 3651 — Formation Description



CONCRETE SURFACE SEAL

BACKFILL w/bentchips

DEPTH OF BORING 10' 0"

0 - 10 ft. brown sand & gravels

— ft.

— ft.

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Washington State Department of Ecology

Scale 1"=_____ Page_____ of _____

ECY 050-12 (Rev 2/01)

The Department of Ecology does not warranty the data and/or the information on this well report.

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. E 004794

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

X Construction

O Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

145063

Consulting Firm URS Corporation

Unique Ecology Well ID Tag No: Temporary Wells

Type of Well *("x" in circle)*

X Resource Protection

O Geotech Soil Boring

Property Owner Morning Sun Printing

Site Address 3500 20th Street E

City Fife County: Pierce

Location NE 1/4 NE 1/4 Sec 11 Twp 20N R 3E (WM) or WWM *circle one*

Lat/Long (s, t, r still REQUIRED) Lat Deg X Lat Min/Sec X

Long Deg X Long Min/Sec X

Tax Parcel No. N/A

Cased or Uncased Diameter 8 1/2 Static Level 4

Work/Decommission Start Date 10/27/03

Work/Decommission Completed Date 10/27/03

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☑ Driller ☐ Engineer ☐ Trainee Name (Print) Andrew Flagan

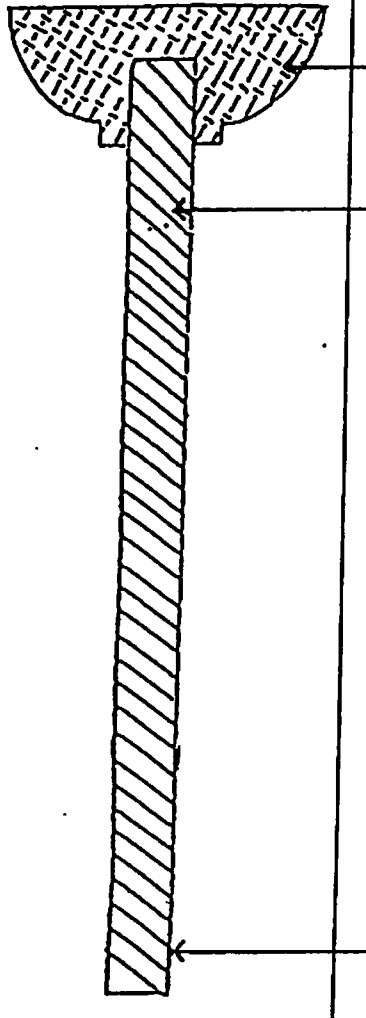
Driller/Engineer/Trainee Signature Andrew Flagan

Driller or Trainee License No. 2551

If trainee, licensed driller's Signature and License no. /

Well Data 3051

Construction/Design



CONCRETE SURFACE SEAL

BACKFILL w/bentchips

DEPTH OF BORING 10 '0 "

Formation Description

0 - 10 ft.
brown sand & gravels

— ft.

— ft.

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Scale 1"= _____ Page _____ of _____

ECY 050-12 (Rev 2/01)

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RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. E 004794

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in circle)*

X Construction

O Decommission *ORIGINAL INSTALLATION Notice of Intent Number*_____

Type of Well *("x" in circle)*

X Resource Protection

O Geotech Soil Boring

145064

Consulting Firm URS Corporation

Unique Ecology Well ID Tag No: Temporary Wells

Property Owner Morning Sun Printing

Site Address 3500 20th Street E

City Fife County: Pierce

Location NE 1/4 NE 1/4 Sec 11 Twn 20N R 3E (WM) or WWM circle one

Lat/Long (s, t, r still REQUIRED) Lat Deg X Lat Min/Sec X Long Deg X Long Min/Sec X

Tax Parcel No. N/A

Cased or Uncased Diameter 8 1/2 Static Level 4

Work/Decommission Start Date 10/27/03

Work/Decommission Completed Date 10/27/03

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

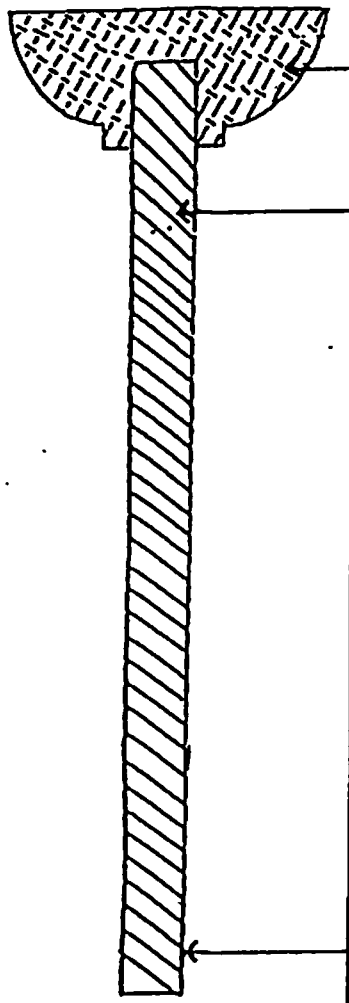
☑ Driller ☐ Engineer ☐ Trainee Name (Print) Andrew Hagan

Driller/Engineer/Trainee Signature [signature]

Driller or Trainee License No. 2551

If trainee, licensed driller's Signature and License no. /

Construction/Design — Well Data 3051 — Formation Description



CONCRETE SURFACE SEAL

BACKFILL w/bent. chips

DEPTH OF BORING 10'0"

0 - 10' ft. brown sand & gravels

— ft.

— ft.

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NOV 17 2003
Washington State Department of Ecology

Scale 1"=_____ Page_____ of _____

ECY 050-12 (Rev 2/01)

The Department of Ecology does not warranty data and/or the information on this well report.

GEOBORING & DEVELOPMENT, INC. 9415 S.R. 162 PUYALLUP, WA 98372 (206) 845-6700

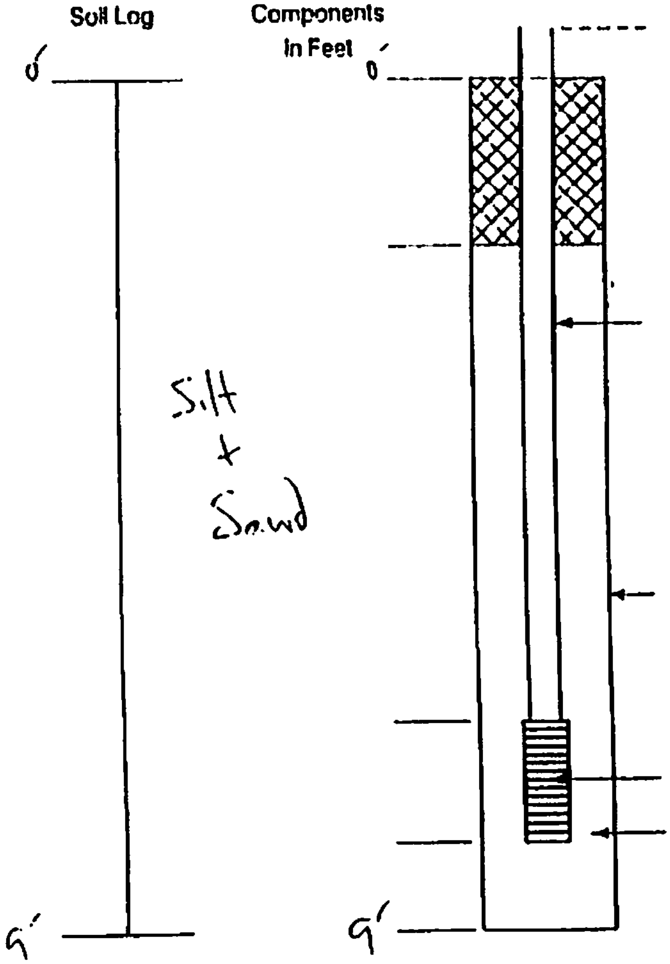
Resource Protection Well Report

Project Name MT Lott
Well Identification # B-3
Drilling Method 4" HSA
Driller Pat Turner
License # 1793
Job # 230

Date 12-6-94
County Pierce NE 1/4 NE 1/4
Section 11 T. 20 N R. 3E
Start Card A00521
Consulting Firm Geoengineers

Soil Log

Depth of Components in Feet



Stick up N/A on Monument Casing

Type of Surface Seal N/A
Amount

ID of Riser Pipe N/A
Type of Riser Pipe
Amount
Type of Connection

Type of Backfill ~~around Riser~~ Bentonite chip
Amount

Diameter of Borehole 9"

Screen Size or Type N/A

Type of Filter Material
Amount

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Remarks:

Signature Pat Turner

GEOBORING & DEVELOPMENT, INC. 9415 S.R. 162 PUYALLUP, WA 98372 (206) 845-6000

Resource Protection Well Report

Project Name	MT Lott	Date	12-6-94
Well Identification #	B-4	County	Pierce . NE 1/4 NE 1/4
Drilling Method	4" HSA	Section	11 T. 20 N R. 3E
Driller	Pat Terner	Start Card	A00521
License #	1793	Consulting Firm	Coweengineers
Job #	230		

Soil Log

0'

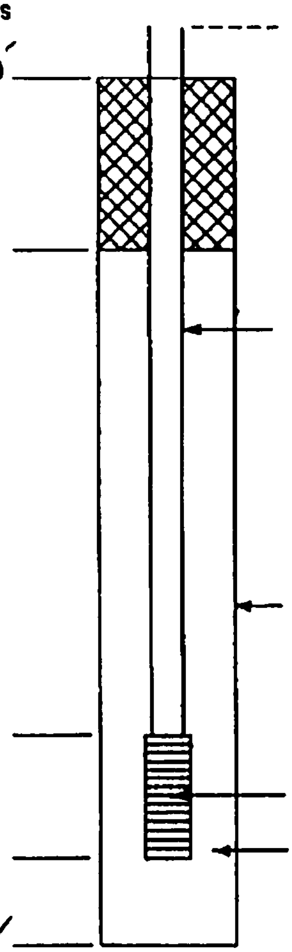
Silt + Sand

29'

Depth of Components in Feet

0'

29'



Stick up N/A on Monument Casing

Type of Surface Seal N/A
Amount N/A

ID of Riser Pipe N/A
Type of Riser Pipe N/A
Amount N/A
Type of Connection N/A

Type of Backfill ~~around Riser~~ Bentonite chip
Amount 29'

Diameter of Borehole 9"

Screen Size or Type N/A

Type of Filter Material N/A
Amount N/A

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94 DEC 30 A8:50
SW REGIONAL OFFICE

Remarks:

Signature Pat Terner

The Department of Ecology does NOT Warrant the Data and/or the Information on this Well Report.

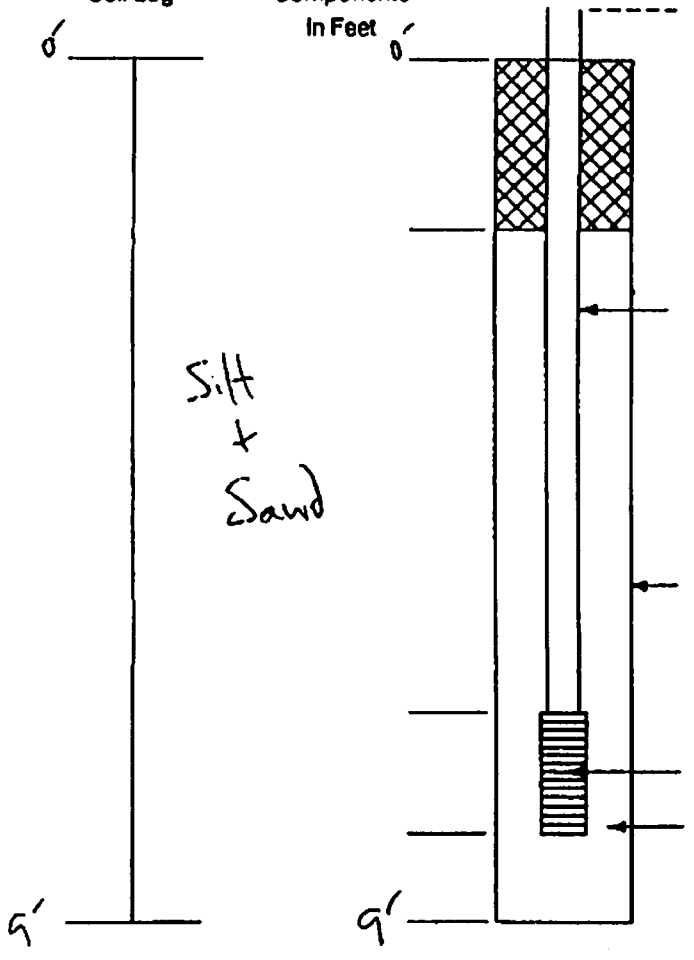
GEOBORING & DEVELOPMENT, INC. 9415 S.R. 162 PUYALLUP, WA. 98372 (206) 845-6908

Resource Protection Well Report

Project Name "MT" Lott
Well Identification # B-2
Drilling Method 4" HSA
Driller Pat Tenneé
License # 1793
Job # 230

Date 12-6-94
County Pierce NE 1/4 NE 1/4
Section 11 T. 20 N R. 3E
Start Card A00521
Consulting Firm Geoengineers

Soil Log | Depth of Components In Feet



Stick up N/A on Monument Casing

Type of Surface Seal
Amount N/A

ID of Riser Pipe
Type of Riser Pipe N/A
Amount
Type of Connection

Type of Backfill ~~around Riser~~ Bentonite chip
Amount

Diameter of Borehole 9"

Screen Size or Type N/A
Type of Filter Material
Amount

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94 DEC 30 A8:50
WASHINGTON STATE DEPARTMENT OF ECOLOGY

Remarks:

Signature Pat Tenney

The Department of Ecology does not warrant the data and/or the interpretation on this well report.

GEOBORING & DEVELOPMENT, INC. 9415 S.R. 162 PUYALLUP, WA. 98372 (206) 845-6990

Resource Protection Well Report

Project Name: MT Lott

Well Identification #: B-1

Drilling Method: 4" HSA

Driller: Pat Turner

License #: 1793

Job #: 230

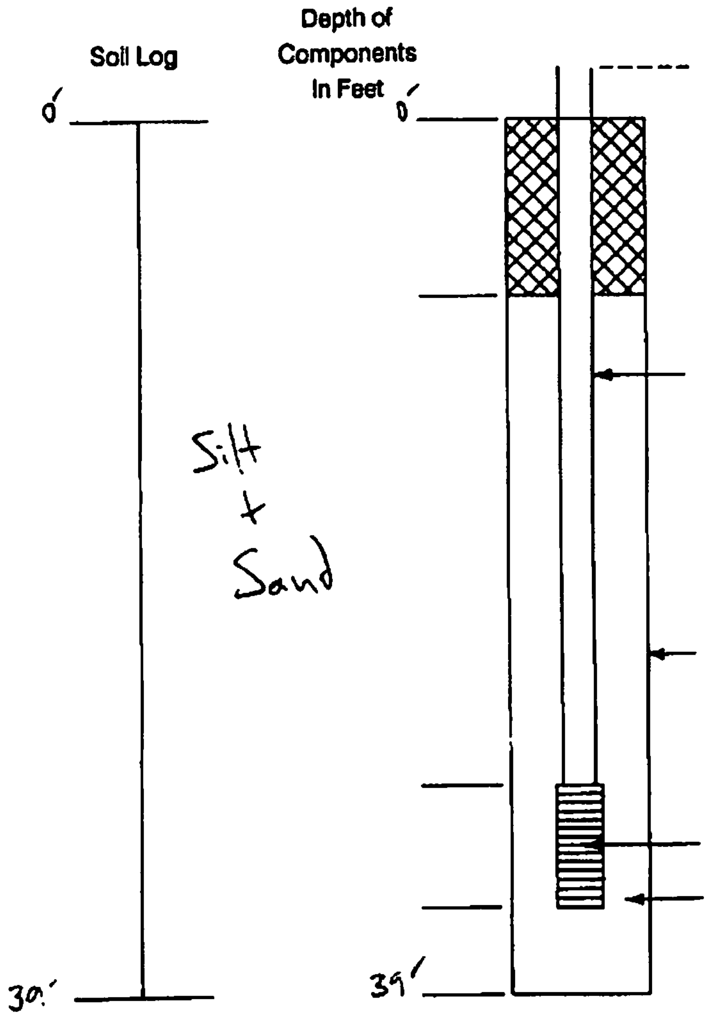
Date: 12-6-94

County: Pierce, NE 1/4 NE 1/4

Section: 11 T. 20 N R. 3E

Start Card: A 02521

Consulting Firm: Geoengineers



Stick up: N/A on Monument Casing

Type of Surface Seal: N/A

Amount: N/A

ID of Riser Pipe: N/A

Type of Riser Pipe: N/A

Amount: N/A

Type of Connection: N/A

Type of Backfill ~~around Riser~~: Bentonite chip

Amount: 30'

Diameter of Borehole: 9"

Screen Size or Type: N/A

Type of Filter Material: N/A

Amount: N/A

RECEIVED '94 DEC 30 AM 8:50

Remarks:

Signature: Pat Turner

LOG OF TEST BORING

Washington State Department of Transportation

HOLE No. H-2-99

Sheet 3 of 4

PROJECT SR 5 Port of Tacoma Road Interchange

Job No. OL 3463

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
	14			4 10 10 (20)		D-13		Well graded fine to coarse SAND, horizontal bedding, medium dense, reddish gray, moist. Recovered: 1.3 ft.		
	15									
50				4 6 8 (14)		D-14		Fine to medium SAND, horizontal bedding, reddish gray, medium dense, wet. Recovered: 1.5 ft.		
	16									
55	17			7 8 8 (16)		D-15		Fine to medium SAND, horizontal bedding, medium dense, reddish gray, wet. Recovered: 1.5 ft.		
	18									
60				4 8 9 (17)		D-16		Gravelly SAND with fine to coarse and one mud ball, rotten wood, horizontal bedding, medium dense, reddish gray, moist. Recovered : 1.5 ft.		
	19									
65	20			6 8 8 (16)		D-17	GS	SP-SM Poorly graded SAND with silt, horizontal bedding, reddish gray, medium dense, moist, homogeneous. Recovered: 1.5 ft.		
	21									
70										

LOG OF TEST BORING

Washington State Department of Transportation

HOLE No. H-2-99

PROJECT SR 5 Port of Tacoma Road Interchange

Sheet 4 of 4

Job No. OL 3463

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
				4 3 4 (7)		D-18	GS	SM SILT with sand and horizontal bedding, laminae silt, 2" silt in sampler bit, loose, reddish gray, wet. Recovered: 1.1 ft.		
	22									
75	23			5 7 9 (16)		D-19		Sandy SILT, fine sand, horizontal bedding, interbedded laminae, medium dense, dark gray, moist. Recovered: 1.5 ft.		
								End of Test Hole Boring at 76.5 feet below ground elevation. Water table elevation not determined. This is a summary Log of Test Boring. Soil/Rock descriptions are derived from visual field identifications and laboratory test data.		
	24									
80										
	25									
85	26									
	27									
90										
	28									
95										

D0E

LOG OF TEST BORING

Washington State Department of Transportation

HOLE No. H-2-99

PROJECT SR 5 Port of Tacoma Road Interchange — Job No. OL 3483

MP 136.53 to 136.09 — S.R. 5

Station 3+140 — Offset CL — C.S. 2719

Equipment — Casing HQNW-76' — Ground El 0.0 (0.00 m)

Method of Boring wet rotary

Start Date February 23, 1999 — Completion Date — Sheet 1 of 4

Depth (ft)	Meters (m)	Profile	Standard Penetration Blows/ft (10 20 30 40)	SPT Blows/6" (N)	Sample Type	Sample No. (Tube No.)	Lab Tests	Description of Material	Groundwater	Instrument
								1 ft.=0.3048 m.		
	1			0 1 1 (2)		D-1		Silty SAND with grass roots and fibers, loose, dark brown, wet, homogeneous. Recovered: 1.5 ft.		
5				0/18 (0/18")		D-2		Organic elastic SILT with organic material, very soft, gray, wet, homogeneous. Recovered: 1.5 ft.		
	2			0/18 (0/18")		D-3	GS MC	ML, MC=51% Organic SILT, very soft, gray, wet, homogeneous. Recovered: 1.5 ft.		
10	3			A B C		U-4		Interbedded SILT with sand, very loose, gray, wet. Recovered: 1.5 ft.		
	4			1 1 1 (2)		D-5	GS MC	ML, MC=42% Sandy SILT with some laminating silt, horizontal bedding, very loose, gray, wet. Recovered: 1.5 ft.		
15				0/18 (0/18")		D-6		Organic elastic SILT with fibers of wood, very soft, gray, wet. Recovered: 1.5 ft.		
	5					U-7		No recovery		
20	6									

LOG OF TEST BORING

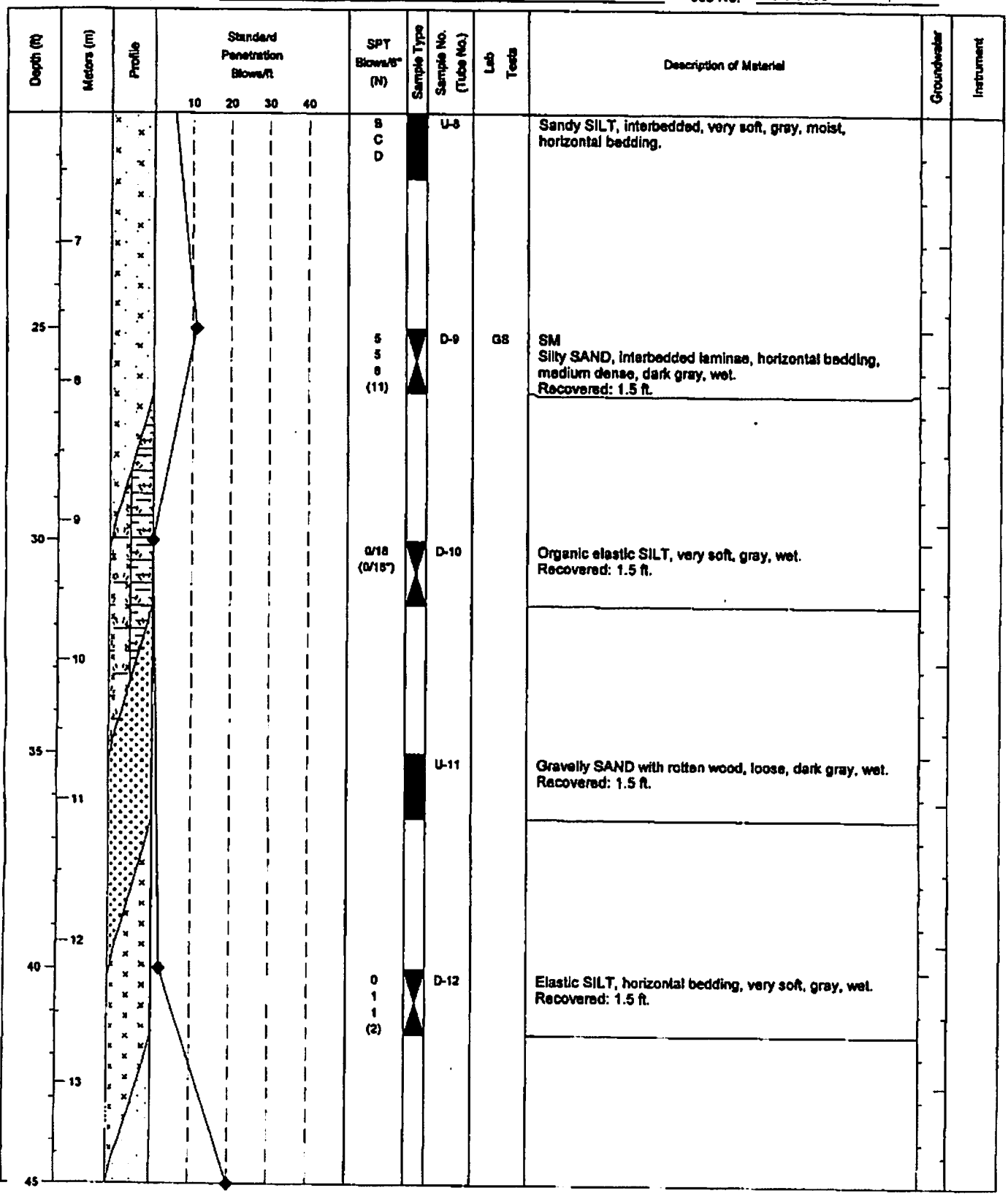
Washington State Department of Transportation

HOLE No. H-2-99

Sheet 2 of 4

PROJECT SR 5 Port of Tacoma Road Interchange

Job No. OL 3463



SOIL OL3463-1.GPJ SOIL.GDT 6/16/99 9:43:50 AM

2011 ANNUAL GROUNDWATER MONITORING REPORT

SHELL-BRANDED WHOLESALE FACILITY
3251 PACIFIC HIGHWAY EAST
FIFE, WASHINGTON

SAP CODE 121109
INCIDENT NO. 90880165
AGENCY NO. 77832375

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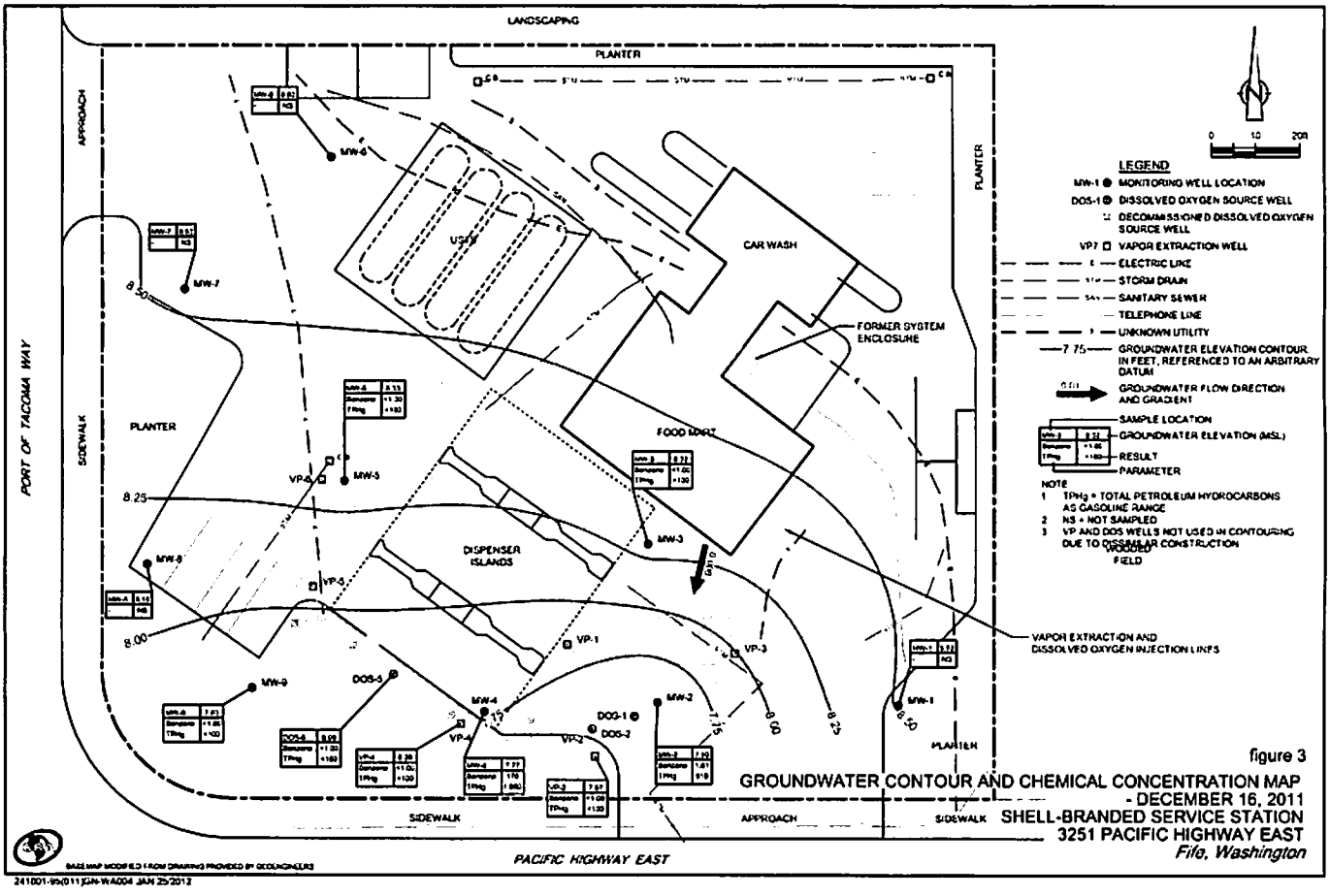

figure 3

GROUNDWATER CONTOUR AND CHEMICAL CONCENTRATION MAP
- DECEMBER 16, 2011
SHELL-BRANDED SERVICE STATION
3251 PACIFIC HIGHWAY EAST
Fife, Washington

241001-93(011)GN-WA004 JAN 25/2012