CONCEPTUAL SITE MODEL
CHEVRON BULK PLANT NO. 352300
State Route 274
Tekoa, Washington

November 30, 2011

Prepared for:

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, California 94583

Prepared by:

SAIC Energy, Environment & Infrastructure, LLC
405 South 8th Street, Suite 301
Boise, Idaho

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1. INTRODUCTION

SAIC Energy, Environment, & Infrastructure, LLC (SAIC), prepared this conceptual site model (CSM) report on behalf of Chevron Environmental Management Company (Chevron EMC), for the Chevron Bulk Plant No. 352300, located in Tekoa, Washington (Figure 1). The CSM was prepared to indentify known and suspected sources of soil and groundwater contamination, exposure pathways which contamination can travel, and human receptors that might be affected by the contamination.

1.2 SITE LOCATION AND DESCRIPTION

The site is located east of the City of Tekoa, in Whitman County, Washington at State Route 274 in a shallow valley formed by Little Hangman Creek. The site is located within Section 18 of Township 20 North and Range 46 East at an approximate elevation of 2,490 feet (ft) above mean sea level (msl). According to the Whitman County Tax Assessor, the site is identified as Parcel No. 2-0000-46-20-18-3901 and currently consists of approximately 1.14 acres of vacant, not paved land.

Major local topographic features are composed of:

- rolling Palouse hills to the north, east, and south, rising to approximately 2,600 ft above msl;
- Tekoa Mountain to the northwest, rising to an elevation of approximately 4,000 ft above msl; and
- the shallow valley formed by the main branch of Hangman Creek to the west and southwest.

The site is bounded by Little Hangman Creek, agricultural land, and State Highway 274 to the north; by the former Union Pacific Railroad line (tracks and ties have been removed) and agricultural land to the south; and by agricultural land to the east and west. The property is accessible via a short roadway leading south from State Route 274. The site is currently undeveloped. The only site features are perimeter chain-link fencing, one electrical utility pole, and a concrete bridge over Little Hangman Creek.

2. BACKGROUND

The site was purchase by Standard Oil Company in 1917 and operated as a petroleum-based fuels bulk storage facility until 1975, when it was closed. The tax assessment records, from the 1960s and 1970s, provide a list of buildings and storage tanks on the site at that time. The records indicate that three (3) above ground 19,995-gallon tanks, of unknown contents, were formerly located on the site. There was also an 18,137-gallon tank present; however, the construction details and location of tank are unknown. Based on the tax assessor document dated 1977, the storage tanks were removed from the site upon closure of the plant. However, a CBRES e-mail dated October 1999, with the subject line "Tekoa/San Diego," states that "once the buildings are flatlotted and the tanks are pulled, etc. we may require environmental work," but it is unclear whether this refers to the Tekoa property or a San Diego property. There is, therefore, some ambiguity pertaining to the removal details of all tanks located at the site. The site was leased by Cash Hardware Company from the late 1970s to 2004 and used to store John

Deere farm equipment. Buildings associated with the plant, including a garage, warehouse, office, and pump house, were removed in 2005 under Chevron direction.

2007

In October 2007, AECOM Environment (AECOM; formerly ENSR Corporation [ENSR]), conducted an initial environmental investigation and completed fourteen (14) soil borings (SB-1 through SB-14) onsite ranging in depth from 9.5 to 12.5 ft below ground surface (bgs) and eight (8) temporary monitoring points (TMW-1 through TMW-8). Locations of the borings and monitoring points are presented on Figure 2. Maximum concentration of total petroleum hydrocarbons as gasoline (TPH-G) (1,400 milligrams per kilogram [mg/kg]) in soil was detected in the sample collected from boring SB-9 at 3-4 ft bgs. Concentrations of TPH-G greater than Model Toxic Control Act (MTCA) Method A cleanup level for soil were also detected at the southeastern portion of the site near the former warehouse, loading rack, office, pump house, and aboveground storage tanks (ASTs) (SB-2, SB-4, SB-5, SB-7, SB-9, and SB-10). Additionally, concentrations of benzene and total xylenes greater than their respective MTCA Method A cleanup levels for soil were detected in soil boring SB-9.

Maximum concentrations of TPH-G (2,700 micrograms per liter [µg/L]) and benzene (23 µg/L) in groundwater were detected in temporary monitoring point TMW-2 (soil boring SB-4). TPH-G, total petroleum hydrocarbons as diesel (TPH-D), and benzene concentrations greater than their respective MTCA Method A cleanup levels for groundwater were detected in groundwater samples collected in four out of the eight monitoring points, located at the southeastern portion of the site and at the north central portion of the site near the former garage (TMW-2, TMW-3, TMW-4, and TMW-8).

Additional information on these activities can be found in the 2008 AECOM report (ENSR, 2008a).

2008

In August 2008, seven (7) groundwater monitoring wells (MW-1 through MW-7) were installed by AECOM. The groundwater monitoring wells were installed to further define the lateral extent of petroleum hydrocarbon concentrations in soil and groundwater beneath the site.

Analytical results indicated that concentrations of petroleum hydrocarbon greater than the MTCA Method A cleanup levels were present at the southeastern portion of the site. The maximum concentration of TPH-G (1,400 mg/kg) in soil was detected in MW-6 at approximately 6.75 ft. bgs. TPH-G and/or benzene at concentrations greater than their respective MTCA Method A cleanup levels were also detected in MW-2, MW-6, and MW-7 at depths between 6.75 to 7.5 ft bgs.

Concentrations of TPH-G (2,700 µg/L) and TPH-D (3,100 µg/L) greater than MTCA Method A cleanup levels for groundwater were detected only in well MW-7; however, three of the newly installed wells were dry.

A steel drum was encountered near the center of the site. The drum was left in place and covered with pea gravel.

Additional information on these activities can be found in the 2008 AECOM report (ENSR, 2008b).

CURRENT GROUNDWATER CONDITIONS

There are currently seven (7) groundwater monitoring wells (MW-1 through MW-7) at the site (Figure 2). Groundwater monitoring of the onsite wells was performed during third quarter of 2008; first quarter of 2009; first, second, and third quarters of 2010; and first quarter of 2011. However, five of the seven wells were not accessible during the 2009 sampling event and well MW-6 was sampled only two times due to it being dry or inaccessible.

Based on groundwater elevation data collected to date, groundwater flow trends toward the northwest with an estimated gradient of approximately 0.02 foot/foot. Depth to groundwater has ranged from 0.29 to 7.19 ft bgs. Groundwater elevation contours from monitoring wells measured during the first quarter 2011 (SAIC, 2011) sampling event, as well as comprehensive groundwater elevation, analytical data, and hydrographs are provided in Appendix A.

3. RISK-BASED ASSESSMENT

Analytical results were evaluated by comparison to MTCA Method A cleanup levels. The MTCA Method A cleanup levels are the standard formula values listed in the state regulation that are applicable as cleanup criteria at relatively simple sites. MTCA Method A cleanup levels are utilized as these levels represent a well-known benchmark for comparison purposes.

3.1 CONCEPTUAL SITE MODEL

A CSM is a summary of the contaminant source, exposure pathway(s), and potential receptors that represent current site conditions. Generally, potential contaminant sources are first identified through a historical review of site use or activities, and confirmed during later phases of assessment through collection of samples for analytical testing.

The pathways that are evaluated for soil include: soil ingestion, dermal contact and inhalation; volatilization to outdoor air; vapor intrusion into buildings; and leaching to groundwater. The pathways that are evaluated for groundwater include: ingestion and inhalation from tap water; volatilization to outdoor air; vapor intrusion into buildings; and groundwater in excavations.

Potential receptors that are evaluated include residential, urban residential, occupational, construction, and excavation workers. Initially, a CSM must consider all potential sources, pathways, and receptors.

As information is obtained through site assessment activities, the CSM is refined to the scenarios that are reasonably likely to result in risk. A detailed discussion of the CSM components is provided in the remaining portions of Section 5.

3.2 CONTAMINANT SOURCE

A review of available historical data indicates that the site has operated as a fuel bulk storage facility between 1917 and 1975. During the history of bulk plant operations, several potential sources of releases were identified, including leaks from transfer pumps, leaks from AST valves, and spills associated with truck loading and unloading. The primary sources of the contamination have been removed from the site in 2005.

During the 2007 and 2008 site assessment activities, petroleum hydrocarbon-affected soils and groundwater were observed at the southeastern portion of the site near the former warehouse, loading rack, office, pump house, and ASTs.

3.3 RECEPTORS AND EXPOSURE PATHWAYS

Five potential receptor scenarios and exposure through direct and indirect pathways were considered for the CSM. During the initial stages of evaluating risk, the receptor scenarios that were considered included residential, urban residential, occupational, construction, and excavation workers; and exposure pathways include inhalation, ingestion, and dermal contact.

In addition, surface water and terrestrial exposure pathways were considered due to the property location.

As the CSM was refined, receptor scenarios and exposure pathways have been reassessed to determine if they are complete or incomplete. When a pathway is determined to be complete, it is retained for further evaluation. When a pathway is found to be incomplete, risk does not exist and that pathway is eliminated from the CSM.

3.3.1 Potential Receptors

The current zoning of the property is defined in the Whitman County Code as Agricultural District. The purpose of the Agricultural District is to provide standards for areas of general agricultural land use including requirement for single-family dwelling and accessory dwelling units. Agriculture is intended to be the primary use in this district.

No potential receptors have been identified for the current site use because it is a vacant and fenced lot. Based on zoning and likely future land use for the site and adjacent properties, the potential receptors retained for evaluation include:

- Adults and children in a residential scenario.
- Adults in an occupational scenario.
- Adults in a construction-worker scenario.
- Adults in an excavation-worker scenario.

In addition, the Little Hangman Creek (EPA Waterbody ID WA1170758472242_0.274) is adjacent to the site to the north.

3.3.2 Exposure Pathways

Current Receptors and Exposure Pathways

Surface Water

Surface water-associated pathways are considered incomplete. Hydrocarbon-affected soil and groundwater lateral extent is delineated toward Little Hangman Creek. All hydrocarbon concentrations detected between the creek and residual hydrocarbon-affected soil/groundwater are below MTCA Method A cleanup levels. In addition, the Little Hangman Creek is not used as a source of drinking water or for recreational purposes.

Terrestrial

A simplified Terrestrial Ecological Evaluation (TEE) was completed was the site based on Washington State Department of Ecology (Ecology) Guidance for Remediation of Petroleum Contaminated Sites. Based on the TEE, all current terrestrial exposure pathways are considered incomplete. The TEE documentation form is provided in Appendix B.

Surface Soils (<15 feet)

All current associated soil-exposure pathways are considered incomplete. Hydrocarbon-affected soils were detected at depths between 3 and 8 ft bgs; however, the site is a vacant and fenced lot. In addition, the leaching to groundwater pathway is not considered complete because the underlying groundwater is not considered a source of drinking water.

Groundwater

All groundwater exposure pathways are considered incomplete. There are no water production wells located on or downgradient of the site. In addition, there are no domestic wells located within the City limits.

Based on a search of the State of Washington Water Well Reports and communication with the City of Tekoa Water Superintendent, there are three municipal wells located approximately 0.85 miles south of the site, one irrigation well located approximately 0.45 miles south of the site, and one domestic/irrigation well located approximately 0.7 miles east of the site.

The existing water supply wells vary in depths from 115 to 300 ft bgs. The water well boring logs are provided as Appendix C. All these wells are either located upgradient or crossgradient to the site and therefore the exposure pathway is considered incomplete. In addition, the onsite shallow depth to water ranges from 0.29 to 7.19 ft bgs and bedrock has been observed from approximately 8.5 to 11 ft bgs.

Future Receptors and Exposure Pathways

Current receptors and exposure pathways are considered incomplete; however, if the site is redeveloped and site conditions change (site use, location of structures and/or significant excavation), the following receptors and exposure pathways require further evaluation:

- Inhalation of contaminants of interest (COIs) that have volatilized to outdoor air by a resident or an occupational worker.
- Inhalation of COIs that have volatilized to indoor air by a resident or an occupational worker.

- COI affected soil ingestion, dermal contact, and inhalation by a resident, an occupational worker, and a construction/excavation worker.

In identifying the potential exposure pathways at the site, all reasonable means by which receptors might come into contact with the secondary sources were considered. The potential receptors were determined based on current and future land and water use data.

3.4 CONTAMINANTS OF POTENTIAL CONCERN

The list of COIs includes all of the analytes that were detected in samples collected during past field activities, as summarized in Tables 1 through 6. The COIs were compared to MTCA Method A cleanup levels for the applicable medium (soil and groundwater). When a COI was detected at a concentration below its cleanup level, it was eliminated from further review as a potential risk. COIs that were eliminated from further review include: toluene, ethylbenzene, 1,2-dibromomethane (EDB), and methyl tert-butyl ether (MTBE).

COIs that had concentrations equal to or greater than the cleanup level were retained for further evaluation as a contaminant of potential concern (COPC). These COPCs include TPH-G, TPH-D, total petroleum hydrocarbons as heavy oil (TPH-O), benzene, total xylenes, total lead, naphthalene, and 1,2-Dichloroethane (EDC).

3.4.1 MTCA Method A Cleanup Levels Concentration Comparison

The COPC concentrations detected in analytical data of soil and groundwater samples collected during the 2007 and 2008 assessments as well as from the last four groundwater monitoring events of existing site monitoring wells were compared to their respective MTCA Method A cleanup levels and are summarized in Tables 1 through 6. The detected concentrations are below cleanup levels with the exception of the samples discussed in more detail below.

Soil

TPH-G exceeded the MTCA Method A cleanup level in the following samples:

- TPH-G was detected during the 2007 investigation from soil borings SB-2 at depths between 7.5 and 8 ft bgs, SB-4 at depths between 6 and 7 ft bgs, SB-7, and SB-10 at depths between 6 and 6.5 ft bgs, and SB-9 at depths between 3 and 6.5 ft bgs. The soil borings were located in the vicinity of the former pad, former dock, and former pump house at the southeastern portion of the site. Maximum concentration detected was 1,400 mg/kg (SB-9 at depths between 3 and 4 ft bgs).
- TPH-G was detected during the 2008 investigation from soil samples MW-2 at a depth of 6.75 ft bgs, located north of the former pad; MW-6 at a depth of 7.5 ft bgs, located in the area of the former tanks; and MW-7 at a depth of 6.75 ft bgs, located in the area of the former warehouse, east of the former dock. Maximum concentration detected was 1,400 mg/kg (MW-6).

Benzene exceeded MTCA Method A cleanup level in the following samples:

- Benzene was detected during the 2007 investigation from soil boring SB-9 at depths between 6 and 6.5 ft bgs at a concentration of 0.039 mg/kg.

- Benzene was detected during the 2008 investigation from soil samples MW-6 at a depth of 7.5 ft bgs and MW-7 at a depth of 6.75 ft bgs. Maximum concentration detected was 0.1 mg/kg (MW-7).

Total xylenes exceeded MTCA Method A cleanup level in the following samples:

- Total xylenes were detected during the 2007 investigation from soil boring SB-9 at depths between 6 and 6.5 ft bgs at a concentration of 31 mg/kg.

Groundwater

TPH-G exceeded the MTCA Method A cleanup level in the following samples:

- TPH-G was detected in groundwater samples collected during three monitoring events from monitoring well MW-2, located north of the former pad. The maximum concentration detected was 1,800 µg/L (second quarter 2010).
- TPH-G was detected in groundwater samples collected during the first quarter 2010 monitoring events in monitoring well MW-4, located at the northeast corner of the former garage. However, concentrations of TPH-G during the last three quarter were below MTCA Method A cleanup level and laboratory reporting limit.
- TPH-G was detected in groundwater samples collected during three monitoring events in monitoring well MW-7, located in the area of former warehouse, east of former dock. The maximum concentration detected was 5,100 µg/L (first quarter 2011).
- TPH-G was detected in the groundwater sample collected from temporary well points TMW-2 (soil boring SB-4) located at the northwest corner of the former pumphouse; TMW-3 (soil boring SB-6) locate north of the former pad; TMW-8 (soil boring SB-10) located between the former warehouse and former office building; and TMW-4 (soil boring SB-11) located west of the former garage. The maximum detected concentration of TPH-G was 2,700 µg/L (TMW-2).

TPH-D exceeded MTCA Method A cleanup level in the following samples:

- TPH-D was detected in groundwater samples collected during each of the past four monitoring events from monitoring well MW-2, located north of the former pad. The maximum detected concentration of TPH-D during this period was 1,300 µg/L (second quarter 2010).
- TPH-D was detected in groundwater samples collected during one monitoring event from monitoring well MW-4, located at the northeast corner of the former garage. However, concentrations of TPH-D during the last three quarter were below MTCA Method A cleanup level.
- TPH-D was detected in groundwater samples collected during three monitoring events from monitoring well MW-7, located in the area of former warehouse, east of former dock. The maximum detected concentration of TPH-D during this period was 4,600 µg/L (first quarter 2011).
- TPH-D was detected in the groundwater sample collected from temporary well points TMW-2 (soil boring SB-4) located at the northwest corner of the former pump house;

TMW-3 (soil boring SB-6) locate north of the former pad; TMW-8 (soil boring SB-10) located between the former warehouse and former office building; and TMW-4 (soil boring SB-11) located west of the former garage. The maximum detected concentration of TPH-D was 2,400 µg/L (TMW-8).

TPH-O exceeded MTCA Method A cleanup level in the following samples:

- TPH-O was detected in groundwater samples collected during fourth quarter 2010 monitoring event from monitoring well MW-5, located north of former ASTs.

Benzene exceeded MTCA Method A cleanup level in the following samples:

- Benzene was detected in groundwater samples collected during two monitoring events from monitoring well MW-7, located in the area of former warehouse, east of the former dock. The maximum detected concentration of benzene during this period was 7 µg/L (second quarter 2010).
- Benzene was detected in the groundwater sample collected from temporary well points TMW-2 (soil boring SB-4) and TMW-8 (soil boring SB-10), located at the northwest corner of the former pump house, and between the former warehouse and former office building, respectively.

Total lead exceeded MTCA Method A cleanup level in the following samples:

- Total lead was detected in groundwater samples collected during three monitoring events from monitoring well MW-1, located west of the former warehouse and docks. The maximum detected concentration of total lead during this period was 223 µg/L (third quarter 2010).
- Total lead was detected in groundwater samples collected during two monitoring events from monitoring well MW-3, located west of the former garage. The maximum detected concentration of total lead during this period was 46.4 µg/L (second quarter 2010).
- Total lead was detected in groundwater samples collected during three monitoring events from monitoring well MW-4, located at the northeast corner of the former garage. The maximum detected concentration of total lead during this period was 80.2 µg/L (third quarter 2010).
- Total lead was detected in groundwater samples collected during three monitoring events from monitoring well MW-5, located north of former ASTs. The maximum detected concentration of total lead during this period was 194 µg/L (first quarter 2010).
- Total lead was detected in groundwater samples collected during each of the past four monitoring events from monitoring well MW-7, located in the area of former warehouse, east of former dock. The maximum detected concentration of total lead during this period was 85.6 µg/L (second quarter 2010).

Naphthalene exceeded MTCA Method A cleanup level in the following samples:

- Naphthalene was detected in groundwater samples collected from the temporary monitoring point TMW-2 (soil boring SB-4), located at the northwest corner of the former pump house.

EDC exceeded MTCA Method A cleanup level in the following samples:

- EDC was detected in groundwater samples collected from the temporary monitoring point TMW-8 (soil boring SB-10), located between the former warehouse and former office building.

4. CONCLUSIONS

Based on CSM results, exposure pathways for existing site use were incomplete because the site is currently a fenced vacant lot. However, if the site is redeveloped and site conditions change (site use, location of structures and/or significant excavation), potential future receptor scenarios and potential future exposure pathways should be further evaluated.

The CSM identified the following potential future receptor and exposure pathway scenarios:

- Inhalation of COPCs that have volatilized to outdoor air by a resident or an occupational worker.
- Inhalation of COPCs that have volatilized to indoor air by a resident or an occupational worker.
- COPC-affected soil ingestion, dermal contact, and inhalation by a resident, an occupational worker, and a construction or excavation worker.

Residual hydrocarbon-affected soil and groundwater concentrations exceed MTCA Method A cleanup levels for COPCs in the vicinity of the former bulk plant facilities (warehouse building and associated docks, loading rack, pump house, and ASTs).

Based on the current site use; limited extent of residual hydrocarbon-affected soil and groundwater (Figures 3 and 4), and shallow depth to groundwater (Figures 5 through 7); enhanced biodegradation or excavation are technically viable alternatives to reduce residual hydrocarbons. Dual-phase extraction, and air sparge with soil vapor extraction were evaluated; however, these alternatives are not feasible due to mechanical remediation limitations and implementation costs.

5. RECOMENDATIONS

Based on the review of residual hydrocarbon concentrations, potential future exposure pathways, and potential future receptors, the following is the recommended path forward for the site. The objective is to reduce residual soil and groundwater concentrations below Washington State Department of Ecology MTCA Method A cleanup levels and subsequently obtain site closure.

Proposed Scope of Work

Complete soil borings at the center and southeastern portion of the site to further delineate the lateral extent of residual hydrocarbon-affected soil. Data will be used to evaluate two remedial options:

- Application of sulfate enhancement bioremediation technology.
- Remedial excavation.

In addition, one groundwater monitoring and sampling event is proposed to assess the application of sulfate enhancement bioremediation. During site assessment activities, the existing drum of unknown contents identified during the 2008 field activities, is proposed to be removed and disposed.

6. LIMITATIONS

- This technical document was prepared on behalf of Chevron and is intended for its sole use and for use by the local, state or federal regulatory agency that the technical document was sent to by SAIC. Any other person or entity obtaining, using, or relying on this technical document hereby acknowledges that they do so at their own risk, and that SAIC Energy, Environment & Infrastructure, LLC (SAIC) shall have no responsibility or liability for the consequences thereof.

- Site history and background information provided in this technical document are based on sources that may include interviews with environmental regulatory agencies and property management personnel and a review of acquired environmental regulatory agency documents and property information obtained from CEMC and others. SAIC has not made, nor has it been asked to make, any independent investigation concerning the accuracy, reliability, or completeness of such information beyond that described in this technical document.

- Recognizing reasonable limits of time and cost, this technical document cannot wholly eliminate uncertainty regarding the vertical and lateral extent of impacted environmental media.

- Opinions and recommendations presented in this technical document apply only to site conditions and features as they existed at the time of SAIC's site visits or site work and cannot be applied to conditions and features of which SAIC is unaware and has not had the opportunity to evaluate.

- All sources of information on which SAIC has relied in making its conclusions (including direct field observations) are identified by reference in this technical document or in appendices attached to this technical document. Any information not listed by reference or in appendices has not been evaluated or relied upon by SAIC in the context of this technical document. The conclusions, therefore, represent our professional opinion based on the identified sources of information.

7. REFERENCES

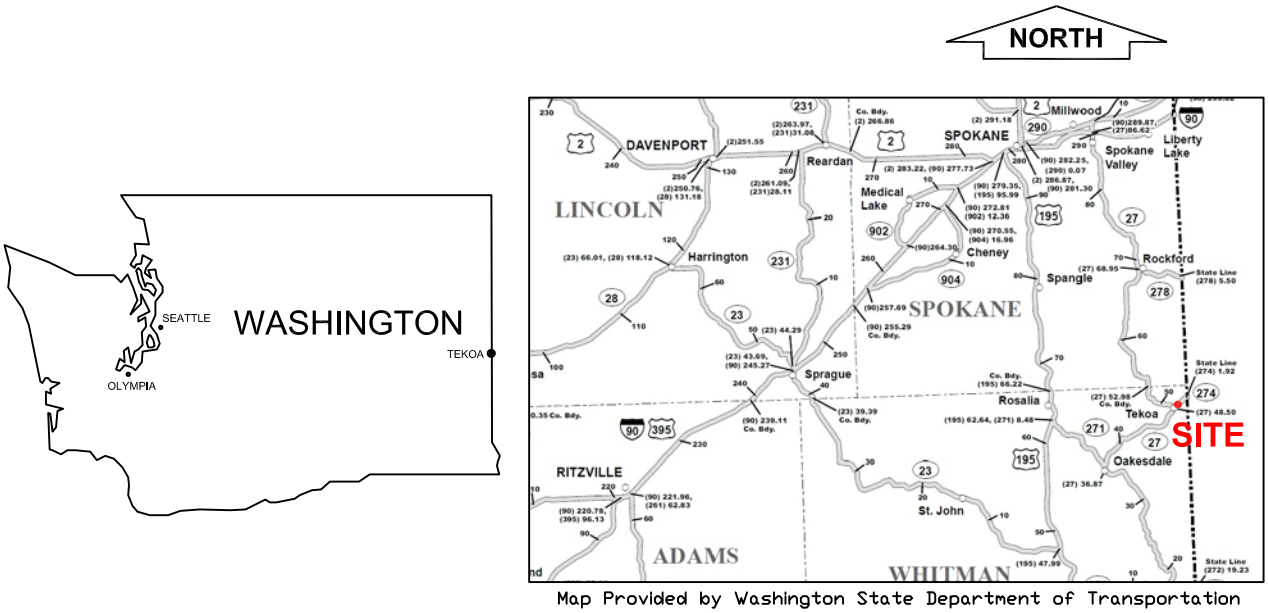
Ecology, 2011. Guidance for Remediation of Petroleum Contaminated Sites. Ecology September 2011.

ENSR, 2008a. Soil and Groundwater Investigation. ENSR February 2008.

ENSR, 2008b. Well Installation Report. ENSR November 2008.

SAIC, 2011. First Quarter 2011 Groundwater Monitoring and Sampling Report. SAIC June 8, 2011.

Figures



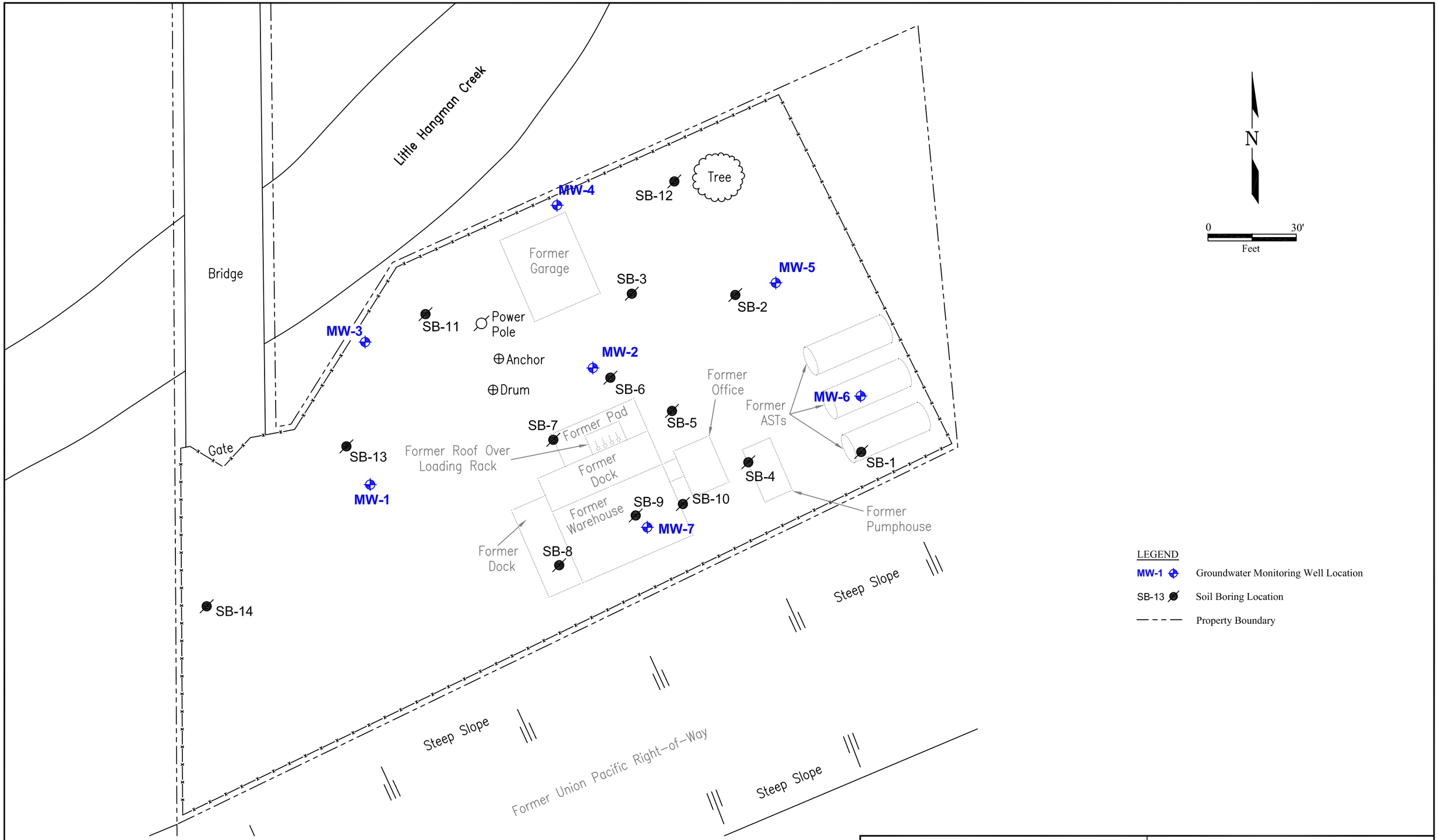
Map Provided by Washington State Department of Transportation

Chevron Station No. 352300
State Route 274
Tekoa, Washington

FIGURE 1
Vicinity Map

DATE: 11/29/2011

FILE NAME: 352300 Vicinity Map.dwg



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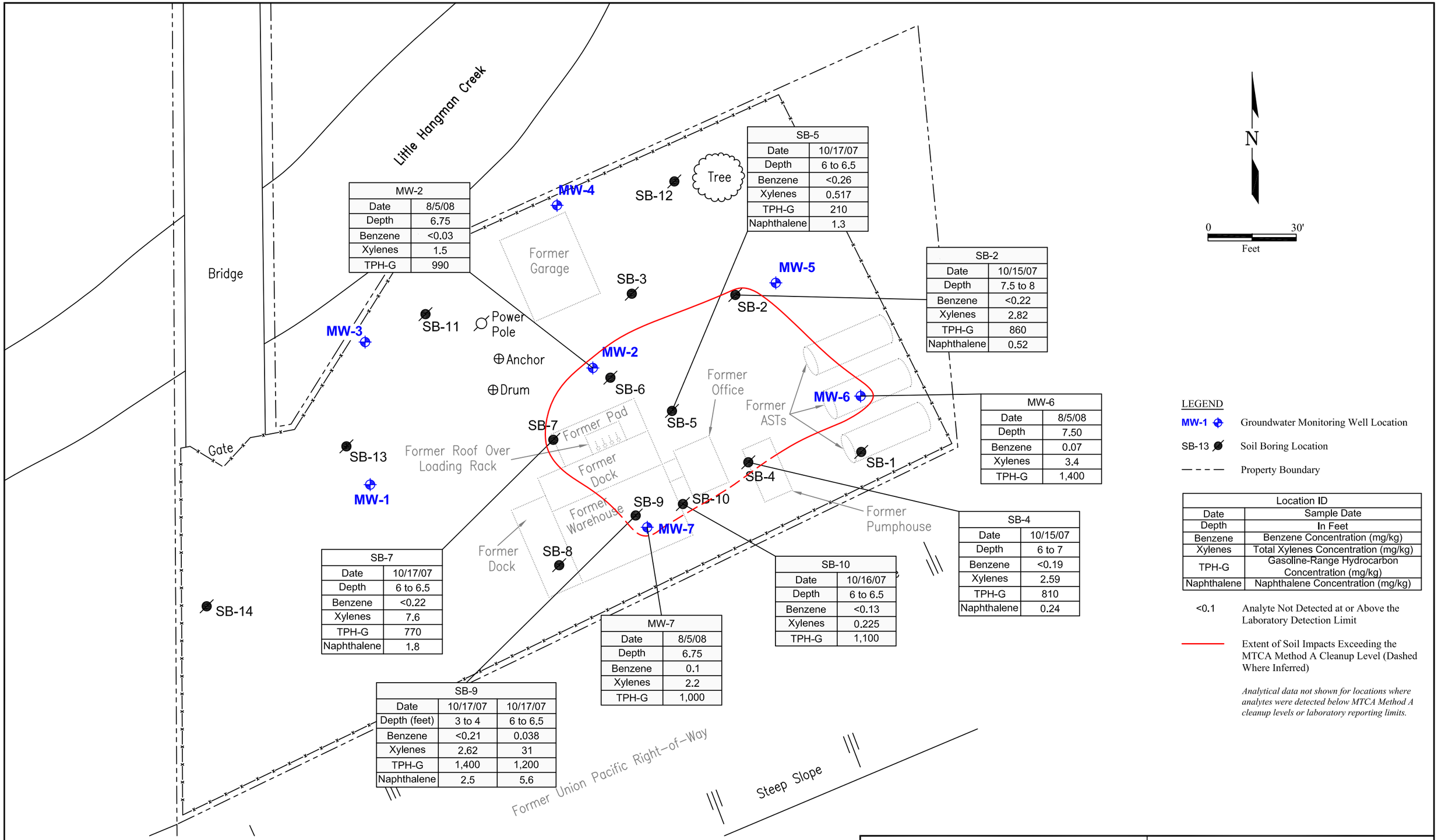
Chevron Station No. 352300
State Route 274
Tekoa, Washington

FIGURE 2
Site Plan with Soil Boring and Monitoring Well Locations

DATE: 11/21/2011 | DRAWING: 352300 Site Map.dwg



MW-2	
Date	8/5/08
Depth	6.75
Benzene	<0.03
Xylenes	1.5
TPH-G	990

SB-5	
Date	10/17/07
Depth	6 to 6.5
Benzene	<0.26
Xylenes	0.517
TPH-G	210
Naphthalene	1.3

SB-2	
Date	10/15/07
Depth	7.5 to 8
Benzene	<0.22
Xylenes	2.82
TPH-G	860
Naphthalene	0.52

MW-6	
Date	8/5/08
Depth	7.50
Benzene	0.07
Xylenes	3.4
TPH-G	1,400

SB-4	
Date	10/15/07
Depth	6 to 7
Benzene	<0.19
Xylenes	2.59
TPH-G	810
Naphthalene	0.24

SB-10	
Date	10/16/07
Depth	6 to 6.5
Benzene	<0.13
Xylenes	0.225
TPH-G	1,100

MW-7	
Date	8/5/08
Depth	6.75
Benzene	0.1
Xylenes	2.2
TPH-G	1,000

SB-7	
Date	10/17/07
Depth	6 to 6.5
Benzene	<0.22
Xylenes	7.6
TPH-G	770
Naphthalene	1.8

SB-9		
Date	10/17/07	10/17/07
Depth (feet)	3 to 4	6 to 6.5
Benzene	<0.21	0.038
Xylenes	2.62	31
TPH-G	1,400	1,200
Naphthalene	2.5	5.6

LEGEND

MW-1 Groundwater Monitoring Well Location

SB-13 Soil Boring Location

Property Boundary

Location ID	
Date	Sample Date
Depth	In Feet
Benzene	Benzene Concentration (mg/kg)
Xylenes	Total Xylenes Concentration (mg/kg)
TPH-G	Gasoline-Range Hydrocarbon Concentration (mg/kg)
Naphthalene	Naphthalene Concentration (mg/kg)

<0.1 Analyte Not Detected at or Above the Laboratory Detection Limit

Extent of Soil Impacts Exceeding the MTCA Method A Cleanup Level (Dashed Where Inferred)

Analytical data not shown for locations where analytes were detected below MTCA Method A cleanup levels or laboratory reporting limits.

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Chevron Station No. 352300
State Route 274
Tekoa, Washington

FIGURE 3
Soil Analytical Results

DATE: 11/22/2011 | DRAWING: 352300 Site Map.dwg

MW-4	3/8/10	5/17/10	9/28/10	3/29/11
TPH-G	2,700	<50	<50	<50
TPH-D	830	57	230	44
TPH-O	<68	<73	280	81
B	3	<0.5	<0.5	<0.5
T	<0.5	<0.5	<0.5	0.5
E	14	<0.5	<0.5	<0.5
X	16	<0.5	<0.5	<0.5
LEAD	53.0	21.0	80.2	1.9

MW-5	3/8/10	5/17/10	9/28/10	3/29/11
TPH-G	71	<50	<50	<50
TPH-D	450	220	240	140
TPH-O	<700	470	510	290
B	<0.5	<0.5	<0.5	<0.5
T	<0.5	<0.5	<0.5	<0.5
E	<0.5	<0.5	<0.5	<0.5
X	<0.5	<0.5	<0.5	<0.5
LEAD	194	63.4	--	41.5

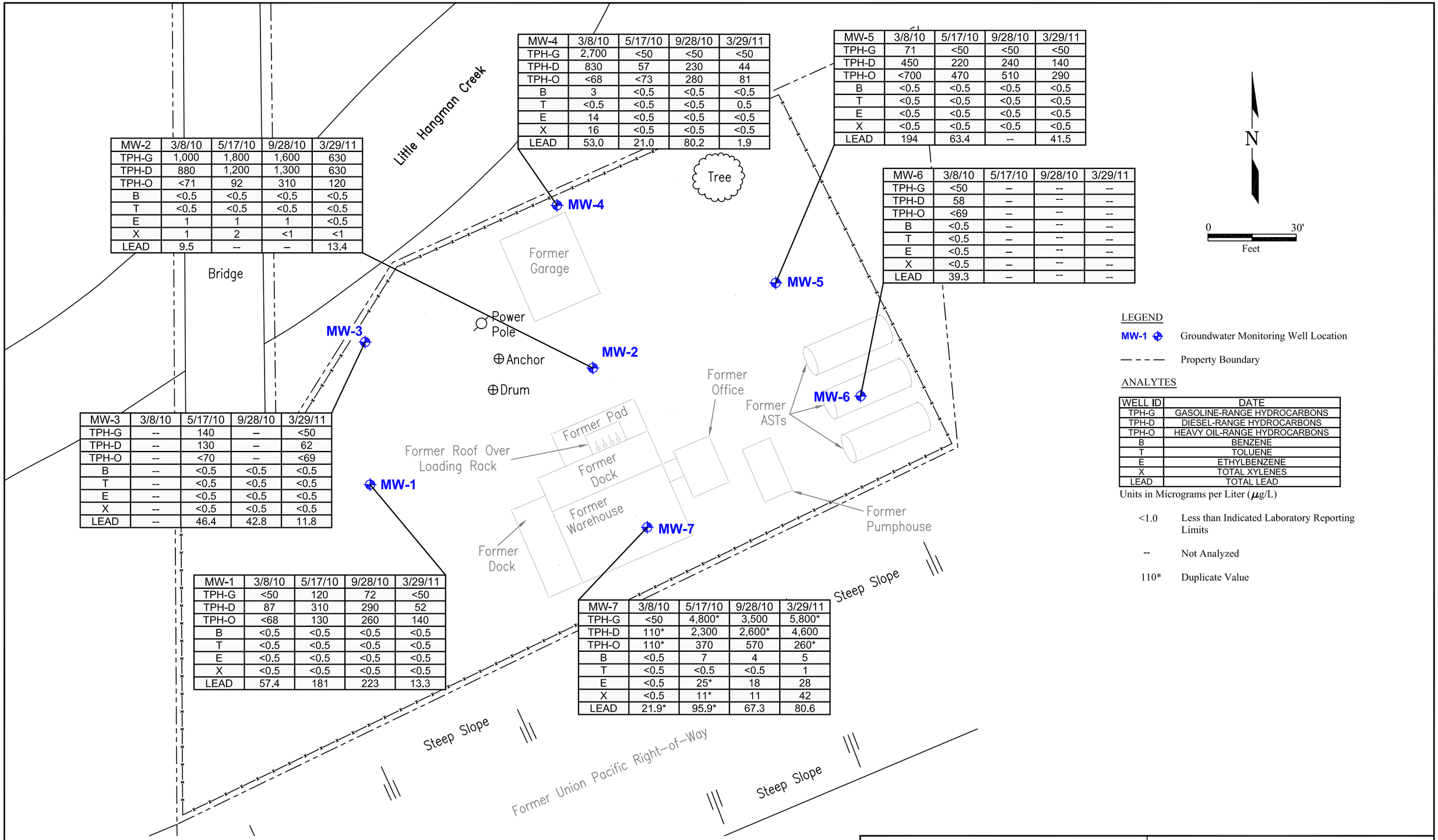
MW-6	3/8/10	5/17/10	9/28/10	3/29/11
TPH-G	<50	–	--	--
TPH-D	58	–	--	--
TPH-O	<69	–	--	--
B	<0.5	–	--	--
T	<0.5	–	--	--
E	<0.5	–	--	--
X	<0.5	–	--	--
LEAD	39.3	–	--	--

MW-2	3/8/10	5/17/10	9/28/10	3/29/11
TPH-G	1,000	1,800	1,600	630
TPH-D	880	1,200	1,300	630
TPH-O	<71	92	310	120
B	<0.5	<0.5	<0.5	<0.5
T	<0.5	<0.5	<0.5	<0.5
E	1	1	1	<0.5
X	1	2	<1	<1
LEAD	9.5	--	–	13.4

MW-3	3/8/10	5/17/10	9/28/10	3/29/11
TPH-G	--	140	–	<50
TPH-D	--	130	–	62
TPH-O	--	<70	–	<69
B	--	<0.5	<0.5	<0.5
T	--	<0.5	<0.5	<0.5
E	--	<0.5	<0.5	<0.5
X	--	<0.5	<0.5	<0.5
LEAD	--	46.4	42.8	11.8

MW-1	3/8/10	5/17/10	9/28/10	3/29/11
TPH-G	<50	120	72	<50
TPH-D	87	310	290	52
TPH-O	<68	130	260	140
B	<0.5	<0.5	<0.5	<0.5
T	<0.5	<0.5	<0.5	<0.5
E	<0.5	<0.5	<0.5	<0.5
X	<0.5	<0.5	<0.5	<0.5
LEAD	57.4	181	223	13.3

MW-7	3/8/10	5/17/10	9/28/10	3/29/11
TPH-G	<50	4,800*	3,500	5,800*
TPH-D	110*	2,300	2,600*	4,600
TPH-O	110*	370	570	260*
B	<0.5	7	4	5
T	<0.5	<0.5	<0.5	1
E	<0.5	25*	18	28
X	<0.5	11*	11	42
LEAD	21.9*	95.9*	67.3	80.6



LEGEND

MW-1 ⊕ Groundwater Monitoring Well Location

— - - — Property Boundary

ANALYTES

WELL ID	DATE
TPH-G	GASOLINE-RANGE HYDROCARBONS
TPH-D	DIESEL-RANGE HYDROCARBONS
TPH-O	HEAVY OIL-RANGE HYDROCARBONS
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
LEAD	TOTAL LEAD

Units in Micrograms per Liter (μg/L)

<1.0 Less than Indicated Laboratory Reporting Limits

-- Not Analyzed

110* Duplicate Value

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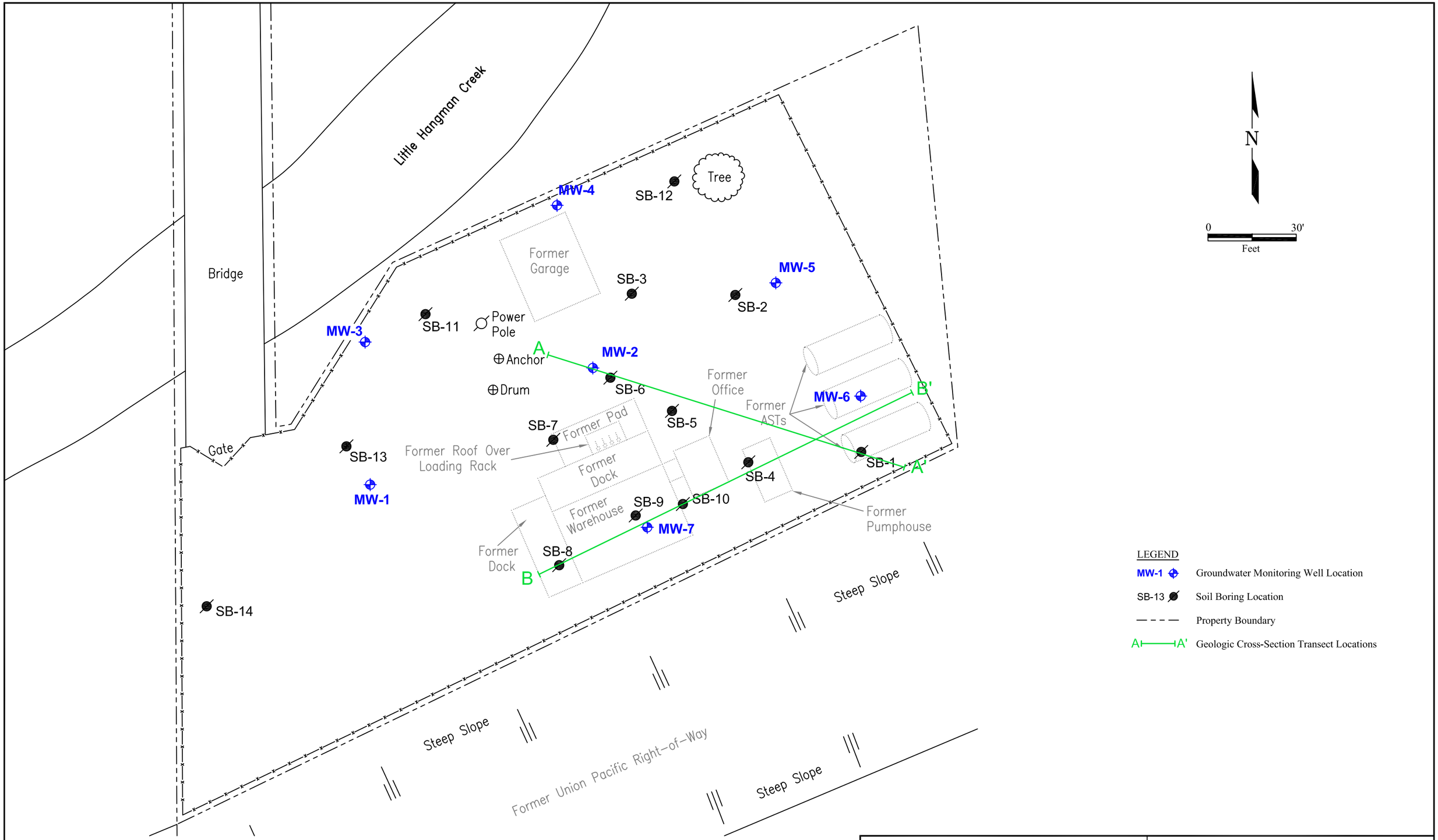
Chevron Station No. 352300
State Route 274
Tekoa, Washington

FIGURE 4
Groundwater Analytical Results

DATE: 11/22/2011 | DRAWING: 352300 Site Map.dwg



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State Route 274
Tekoa, Washington

FIGURE 5
Geologic Cross-Section Transect Locations

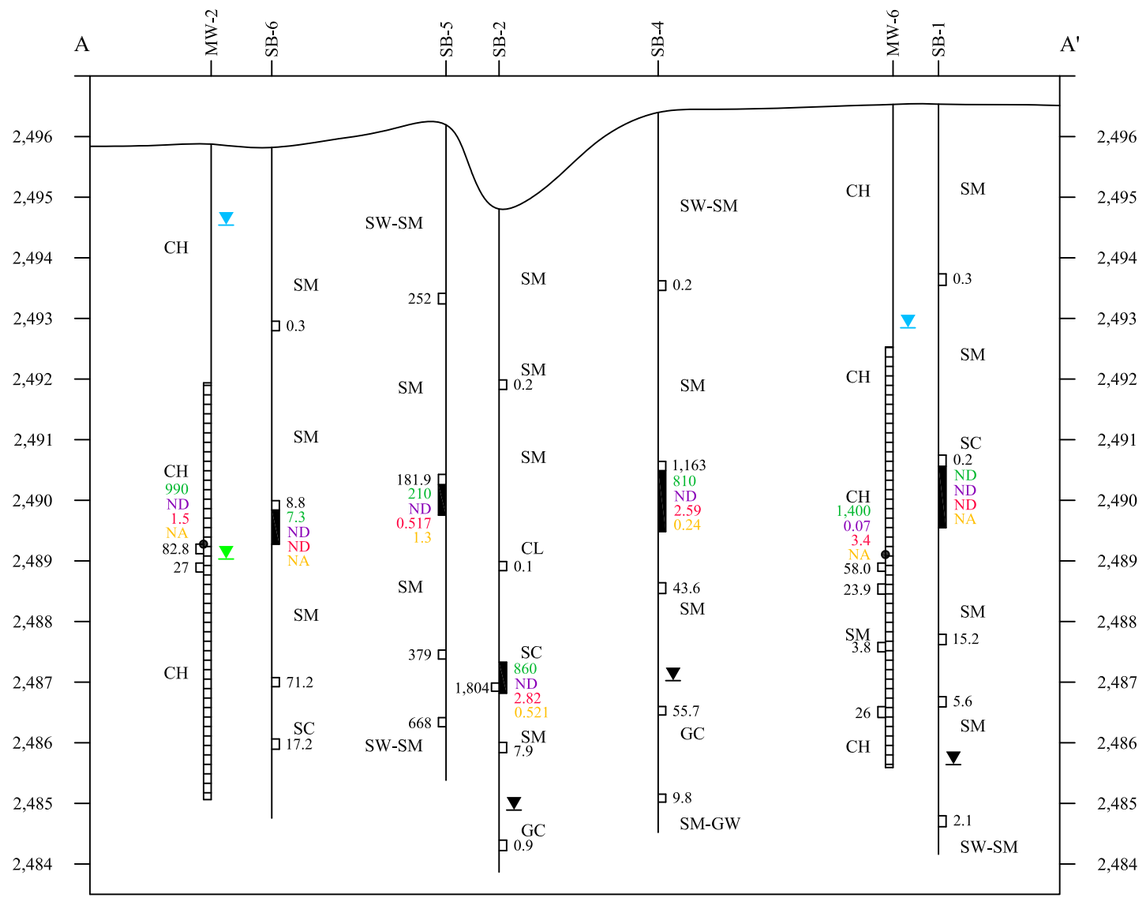
DATE: 11/21/2011 | DRAWING: 352300 Site Map.dwg

LEGEND:

- Boring
- Screened interval
- Highest recorded groundwater elevation
- Groundwater level at installation
- Lowest recorded groundwater elevation
- 140 — Photoionization detector (PID) reading in parts per million (ppm)
- Soil analytical sample location
- 990 — Gasoline-range hydrocarbon concentration in milligrams per kilogram (mg/kg)
- 0.038 — Benzene concentration in mg/kg
- 2.59 — Total xylenes concentration in mg/kg
- 0.24 — Naphthalene concentration in mg/kg
- ND — Analytes not detected at or above laboratory detection limit
- NA — Not analyzed

SOIL/ROCK CLASSIFICATION LEGEND:

CM	Fat CLAY with sand / sandy fat CLAY / fat CLAY
SM	Silty SAND with gravel / silty SAND
SC	Clayey SAND
SW-SM	Well graded SAND with silt
GC	Clayey GRAVEL with sand
SM-GW	Well graded GRAVEL with silt and sand
SW	Well graded SAND with gravel
SP-SM	Poorly graded SAND with silt
CL	Sandy lean CLAY



0 5 10 20 40

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2.5'

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Chevron Station No. 352300
State Route 274
Tekoa, Washington

FIGURE 6
Geologic Cross Section A-A'

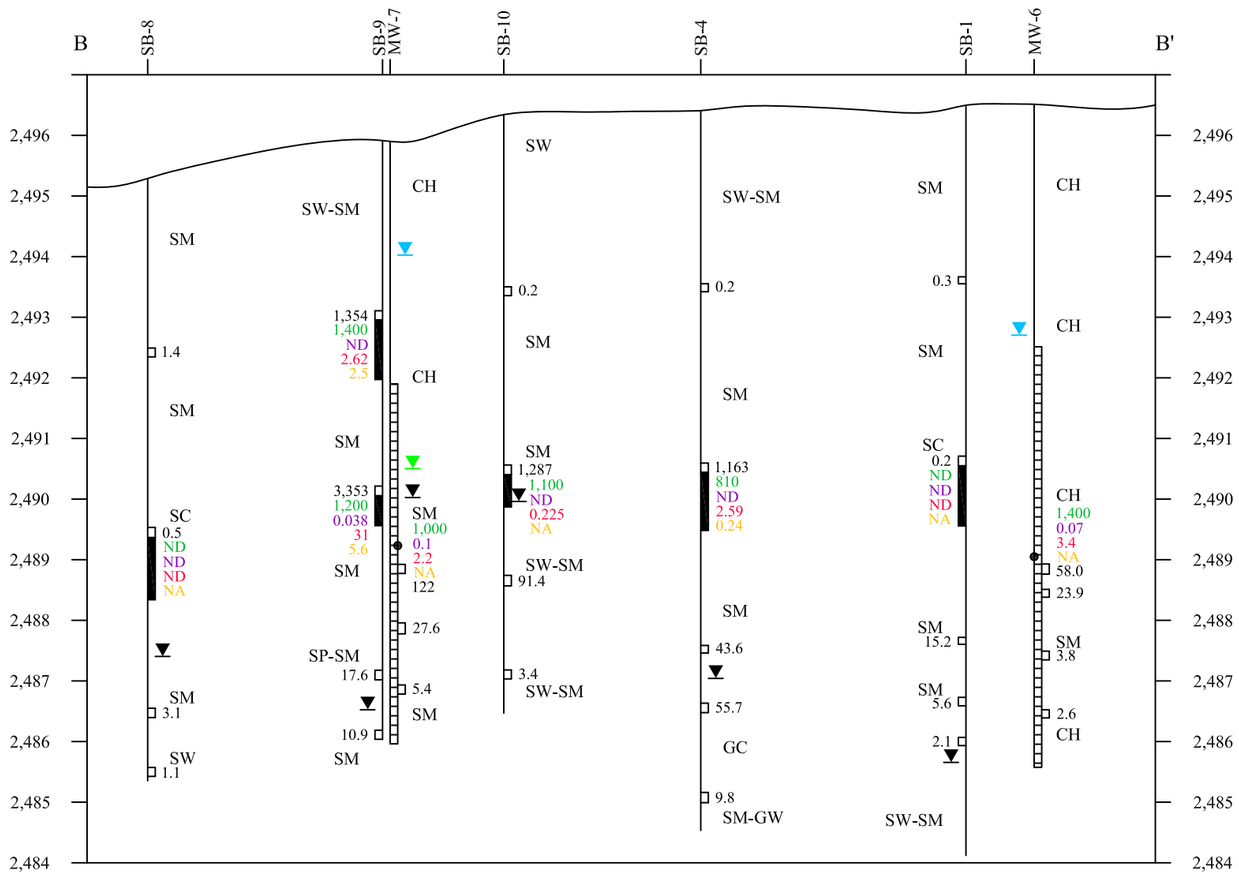
DATE: 11/28/2011 | DRAWING: 352300 X-Sections.dwg

LEGEND:

- Boring
- Screened interval
- Highest recorded groundwater elevation
- Groundwater level at installation
- Lowest recorded groundwater elevation
- 140 — Photoionization detector (PID) reading in parts per million (ppm)
- Soil analytical sample location
- 990 — Gasoline-range hydrocarbon concentration in milligrams per kilogram (mg/kg)
- 0.038 — Benzene concentration in mg/kg
- 2.59 — Total xylenes concentration in mg/kg
- 0.24 — Naphthalene concentration in mg/kg
- ND — Analytes not detected at or above laboratory detection limit
- NA — Not analyzed

SOIL/ROCK CLASSIFICATION LEGEND:

CM	Fat CLAY with sand / sandy fat CLAY / fat CLAY
SM	Silty SAND with gravel / silty SAND
SC	Clayey SAND
SW-SM	Well graded SAND with silt
GC	Clayey GRAVEL with sand
SM-GW	Well graded GRAVEL with silt and sand
SW	Well graded SAND with gravel
SP-SM	Poorly graded SAND with silt
CL	Sandy lean CLAY



0 5 10 20 40

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2.5'

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State Route 274
Tekoa, Washington

FIGURE 7
Geologic Cross Section B-B'

DATE: 11/28/2011 | DRAWING: 352300 X-Sections.dwg

Tables

TABLE 1
SOIL ANALYTICAL DATA - BTEX, PETROLEUM HYDROCARBONS, AND LEAD
CHEVRON BULK PLANT FACILITY NO. 352300
State Route 274, Tekoa, Washington
Concentrations reported in mg/kg

Sample ID /Depth (ft)	Date Sampled	Sample Depth (ft)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-G	TPH-D	TPH-O	Lead
	MTCA Method A Cleanup Level		0.03	7	6	9	100/30	2,000	2,000	250
SB-1	10/15/07	6-7	<0.22	<0.22	<0.22	<0.44	<5.0[1]	<7.0	<30	--
SB-2	10/15/07	7.5-8	<0.22	<0.22	0.62	2.82	**860**	94	<30	7.58
SB-3	10/16/07	5.1-6.4	0.0008 J	0.011	0.006	0.006	<5.0[1]	<7.0	<30	--
SB-4	10/15/07	6-7	<0.19	<0.19	0.26	2.59	**810**	230	<360	9.89
SB-5	10/17/07	6-6.5	<0.26	<0.26	0.086 J	0.517 J	210	43	<30	--
SB-6	10/16/07	6-6.5	<0.25	<0.25	<0.25	<0.25	7.3[1]	<7.0	<30	--
SB-7	10/17/07	6-6.5	<0.22	<0.22	1	7.6	**770**	180	<30	9.17
SB-8	10/16/07	6-7	<0.02[1]	<0.02[1]	<0.02[1]	<0.05[1]	<5.0[1]	<7.0	<30	--
SB-9	10/17/07	3-4	<0.21	<0.21	0.21 J	2.62	**1,400**	3.2 J	<30	--
SB-9	10/17/07	6-6.5	**0.038 J**	<0.25	2	**31**	**1,200**	--	--	8.37
SB-10	10/16/07	6-6.5	<0.13	<0.13	0.13	0.225 J	**1,100[1]**	93	<360	--
SB-11	10/16/07	5.8-6.2	<0.25	<0.25	<0.25	<0.25	<5.0[1]	<7.0	<30	--
SB-12	10/16/07	6-6.4	0.0006 J	0.012	0.006	0.006	<5.0[1]	<7.0	<30	--
SB-13	10/16/07	6-6.5	<0.004	<0.004	<0.004	<0.008	<5.0[1]	<7.0	<30	17.5
SB-14	10/16/07	6-6.5	0.0007 J	0.017	0.006	0.007	<5.0[1]	<7.0	<30	--
MW-1	08/05/08	6.00	<0.008	<0.008	<0.008	<0.02	<1.6	<3.8	<13	--
MW-2	08/05/08	6.75	<0.03[2]	<0.03[2]	<0.3[2]	1.5	**990**	130	<13	--
MW-3	08/05/08	6.50	<0.008	<0.008	<0.008	<0.02	<1.5	<4.0	<13	--
MW-4	08/05/08	6.50	<0.006	<0.006	<0.006	<0.02	<1.3	<3.8	<13	--
MW-5	08/05/08	3.50	<0.007	<0.007	<0.007	<0.02	<1.5	16	200	--
MW-6	08/05/08	7.50	**0.07[2] J**	<0.6[2]	<1.3[2]	3.4[2]	**1,400**	500	<26	--
MW-7	08/05/08	6.75	**0.1[2]**	<0.5[2,3]	0.5[2]	2.2[2]	**1,000**	430	140	--

TABLE 1
SOIL ANALYTICAL DATA - BTEX, PETROLEUM HYDROCARBONS, AND LEAD
CHEVRON BULK PLANT FACILITY NO. 352300
State Route 274, Tekoa, Washington
Concentrations reported in mg/kg

EXPLANATIONS:

Bolding indicates a contaminant concentration detected above the MTCA Method A cleanup level.
Laboratory analysis completed by Lancaster Laboratories of Lancaster, PA.

BTEX = Benzene, toluene, ethylbenzene, and total xylenes
ft = feet
mg/kg = milligrams per kilogram
MTCA = Model Toxic Control Act
TPH = Total petroleum hydrocarbons
TPH-D = TPH as diesel-range organics
TPH-G = TPH as gasoline-range organics
TPH-O = TPH as heavy oil-range organics
USEPA = United States Environmental Protection Agency
-- = not analyzed
< = Analyte is not detected at or above the laboratory reporting limit. The laboratory reporting limit is listed.

ANALYTICAL METHOD:

BTEX analyzed by USEPA Method 8260B or 8021B.
TPH-G analyzed by Northwest Method NWTPH-Gx.
TPH-D and TPH-O analyzed by Northwest Method NWTPH-Dx, with acid/silica-gel cleanup.
Lead analyzed by USEPA 6000/7000 Series Method.
1 The analysis was requested with insufficient time remaining in the hold time. The sample was analyzed two days outside the methos hold time.
2 Due to the nature of the sample matrix, normal reporting limits were not attained.
3 Due to the presence of an interference near its retention time, the normal reporting limit was not attained for toluene. The presence or concentration of this compound cannot be determined due to
J Laboratory estimated value.

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TABLE 2
SOIL ANALYTICAL DATA - VOCs
CHEVRON BULK PLANT FACILITY NO. 352300
State Route 274, Tekoa, Washington
Concentrations reported in mg/kg

Sample ID/ Depth (ft)	Date Sampled	Sample Depth (ft)	Acetone	Ethanol[1]	n-Butyl-benzene	sec-Butyl-benzene	EDB	EDC	MTBE	Isopropyl-benzene	p-Isopropyl-benzene	Naph-thalene	n-Propyl-benzene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene
MTCA Method A Cleanup Level			NL	NL	NL	NL	0.005	NL	0.1	NL	NL	5	NL	NL	NL
SB-1	10/15/07	6-7	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-2	10/15/07	7.5-8	<0.88	5.9 J	0.86	0.60	<0.22	<0.22	<0.22	0.63	0.89	0.52	1.2	5.6	2.5
SB-3	10/16/07	5.1-6.4	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-4	10/15/07	6-7	<0.77	5.0 J	<0.19	0.079 J	<0.19	<0.19	<0.19	0.051 J	0.13 J	0.24	0.24	2.4	1.0
SB-5	10/17/07	6-6.5	<1.1	6.4 J	0.33	0.26 J	<0.26	<0.26	<0.26	0.21 J	0.36	1.3	0.44	2.4	0.94
SB-6	10/16/07	6-6.5	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-7	10/17/07	6-6.5	<0.88	5.8 J	1.7	1.2	<0.22	<0.22	<0.22	1.5	1.8	1.8	2.1	11	4.3
SB-8	10/16/07	6-7	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-9	10/17/07	3-4	<0.85	5.6 J	1.5	1.7	<0.21	<0.21	<0.21	1.4	2.2	2.5	1.9	8.3	3.5
SB-9	10/17/07	6-6.5	<0.98	6.7 J	3.2	2.9	<0.25	<0.25	<0.25	4.1	3.5	**5.6**	5.2	26	8.0
SB-10	10/16/07	6-6.5	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-11	10/16/07	5.8-6.2	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-12	10/16/07	6-6.4	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-13	10/16/07	6-6.5	0.053	<0.42	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004	<0.004
SB-14	10/16/07	6-6.5	--	--	--	--	--	--	--	--	--	--	--	--	--

EXPLANATIONS:
Bolding indicates a contaminant concentration detected above the MTCA Method A cleanup level.
Laboratory analysis completed by Lancaster Laboratories of Lancaster, PA.

EDB = 1,2-Dibromoethane
EDC = 1,2-Dichloroethane
ft = feet
J = Laboratory estimated value
mg/kg = milligrams per kilogram
MTBE = Methyl tert-butyl ether
MTCA = Model Toxic Control Act
NL = No limit available
USEPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds
-- = not analyzed
< = Analyte is not detected at or above the laboratory reporting limit. The laboratory reporting limit is listed.

ANALYTICAL METHOD:
VOCs analyzed by USEPA Method 8260B.

1 Ethanol was detected at varying concentrations for each sample in the method blank and was not substucted from the analytical result.

TABLE 3
SOIL ANALYTICAL DATA - PAHs
CHEVRON BULK PLANT FACILITY NO. 352300
State Route 274, Tekoa, Washington
Concentrations reported in mg/kg

Sample ID /Depth (ft)	Date Sampled	Sample Depth (ft)	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b) fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeo(1,2,3-cd)pyrene	2-Methylnaphthalene	Naphthalene	Phenenthrene	Pyrene
MTCA Method A Cleanup Level			NL	NL	NL	NL	0.1	NL	NL	NL	NL	NL	NL	NL	NL	5	NL	NL
SB-1	10/15/07	6-7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-2	10/15/07	7.5-8	0.015	<0.0090	0.0016 J	<0.0017	<0.0017	<0.0017	<0.0017	0.00051 J	<0.0017	0.00079 J	0.052	<0.0017	--	0.23	0.033	0.00088 J
SB-3	10/16/07	5.1-6.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-4	10/15/07	6-7	0.032	<0.015	0.015	0.0067	0.0073	0.012	0.0055	0.012	0.0014 J	0.023	0.10	0.0047	--	0.20	0.27	0.022
SB-5	10/17/07	6-6.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-6	10/16/07	6-6.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-7	10/17/07	6-6.5	0.015	<0.010	0.0044	<0.0017	<0.0017	0.00099 J	<0.0017	0.0011 J	<0.0017	0.0017 J	0.048	<0.0017	1.6	0.79	0.036	0.0021
SB-8	10/16/07	6-7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-9	10/17/07	3-4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-9	10/17/07	6-6.5	0.0021 J	<0.0033	0.00081 J	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	<0.0033	0.0062	<0.0033	--	0.33	0.043	<0.0033
SB-10	10/16/07	6-6.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-11	10/16/07	5.8-6.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-12	10/16/07	6-6.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-13	10/16/07	6-6.5	<0.0017	0.0012 J	<0.0017	<0.0017	<0.0017	0.00073 J	0.0012 J	0.00080 J	<0.0017	0.00073 J	<0.0017	<0.0017	--	0.0011 J	0.0010 J	0.00085 J
SB-14	10/16/07	6-6.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

EXPLANATIONS
Laboratory analysis completed by Lancaster Laboratories of Lancaster, PA.

ft = feet
J = Laboratory estimated value.
mg/kg = milligrams per kilogram
MTCA = Model Toxic Control Act
NL = No limit available
USEPA = United States Environmental Protection Agency
PAHs = Polynuclear Aromatic Hydrocarbons
-- = not analyzed
< = Analyte is not detected at or above the laboratory reporting limit. The laboratory reporting limit is listed.

ANALYTICAL METHOD:
PAHs analyzed by USEPA Method 8270C SIM.

TABLE 4
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS - BTEX, PETROLEUM HYDROCARBONS, AND LEAD
CHEVRON BULK PLANT FACILITY NO. 352300
State Route 274, Tekoa, Washington
Concentrations reported in µg/L

Well ID TOC (feet)	Date Sampled	DTW (feet)	Groundwater Elevation (feet)	TPH-D	TPH-O	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Dissolved Lead	Total Lead
MW-1	11/10/08	6.13	2488.46	170	<73	140	1	<0.5	<0.5	<1.0	<0.5	<0.050	2.8
2494.59	02/09/09	3.24	2491.35	47	<66	82	<0.5	<0.5	<0.5	<1.0	<0.5	<0.050	**0.36**
	03/08/10	4.41	2490.18	87	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.15	**57.4**
	05/17/10	6.13	2488.46	310	130	120	<0.5	<0.5	<0.5	<0.5	<0.5	0.052	**181**
	09/28/10	6.46	2488.13	290	260	72	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052	**223**
	03/29/11	1.95	2492.64	52	140	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052	13.3
MW-2	11/10/08	6.74	2488.52	**2,500**	420	**2,400**	0.9	<0.5	2	5	<0.5	--	--
2495.26	02/09/09	INACCESSIBLE											
	03/08/10	5.67	2489.59	**880**	<71	**1,000**	<0.5	<0.5	1	1	<0.5	<0.050	9.5
	05/17/10	5.99	2489.27	**1,200**	92	**1,800**	<0.5	<0.5	1	2	<0.5	<0.050	--
	09/28/10	6.76	2488.50	**1,300**	310	**1,600**	<0.5	<0.5	1	<1	<0.5	--	--
	03/29/11	1.41	2493.85	**630**	120	630	<0.5	<0.5	<0.5	<1	<0.5	<0.052	13.4
MW-3	11/10/08	6.40	2487.55	400	100	170	<0.5	<0.7	<0.8	<1.6	<0.5	<0.050	**54.2**
2493.95	02/09/09	INACCESSIBLE											
	03/08/10	3.48	2490.47	--	--	--	--	--	--	--	--	--	--
	05/17/10	6.00	2487.95	130	<70	140	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050	**46.4**
	09/28/10	6.62	2487.33	--	--	--	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052	**42.8**
	03/29/11	2.08	2491.87	62	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052	11.8
MW-4	11/10/08	6.53	2487.57	360	77	230	1	<0.5	<0.5	<1.0	<0.5	<0.050	**57.7**
2494.1	02/09/09	INACCESSIBLE											
	03/08/10	4.99	2489.11	**830**	<68	**2,700**	3	<0.5	14	16	<0.5	0.14	**53.0**
	05/17/10	5.33	2488.77	57	<73	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050	**21.0**
	09/28/10	6.64	2487.46	230	280	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052	**80.2**
	03/29/11	0.29	2493.81	44	81	<50	<0.5	0.5	<0.5	<0.5	<0.5	0.082	1.9
MW-5	11/10/08	6.63	2488.53	**1,700**	**1,600**	240	0.6	<0.5	<0.5	<1.0	<0.5	--	--
2495.16	02/09/09	0.92	2494.24	180	230	<50	<0.5	<0.5	<0.5	<1.0	<0.5	0.093	2
	03/08/10	5.87	2489.29	450	<700	71	<0.5	<0.5	<0.5	<0.5	<0.5	0.074	**194**
	05/17/10	5.15	2490.01	220	470	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050	**63.4**
	09/28/10	7.19	2487.97	240	**510**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
	03/29/11	0.75	2494.41	140	290	<50	<0.5	<0.5	<0.5	<0.5	<0.5	4.3	**41.5**

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TABLE 4
GROUNDWATER MONITORING DATA AND ANALYTICAL RESULTS - BTEX, PETROLEUM HYDROCARBONS, AND LEAD
CHEVRON BULK PLANT FACILITY NO. 352300
State Route 274, Tekoa, Washington
Concentrations reported in µg/L

Well ID TOC (feet)	Date Sampled	DTW (feet)	Groundwater Elevation (feet)	TPH-D	TPH-O	TPH-G	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Dissolved Lead	Total Lead
MW-6	11/10/08	5.66	2490.38	570	140	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--	**649**
2496.04	02/09/09	INACCESSIBLE											
	03/08/10	5.74	2490.30	58	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050	**39.3**
	05/17/10	3.79	2492.25	--	--	--	--	--	--	--	--	--	--
	09/28/10	DRY	--	--	--	--	--	--	--	--	--	--	--
	03/29/11	INACCESSIBLE											
MW-7	11/10/08	5.12	2490.54	**2,500**	400	**4,400**	2	2	25	49	<0.5	0.063	**95.2**
2495.66	02/09/09	INACCESSIBLE											
	03/08/10	4.77	2490.89	56	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.059	**18.1**
	03/08/10(D)	--	--	110	110	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050	**21.9**
	05/17/10	5.28	2490.38	**1,600**	230	**3,400**	**7**	<0.5	23	10	<0.5	<0.050	**85.6**
	05/17/10(D)	--	--	**2,300**	370	**4,800**	**7**	<0.5	25	11	<0.5	<0.050	**95.9**
	09/28/10	5.47	2490.19	**2,100**	490	**3,500**	4	<0.5	18	11	<0.5	<0.052	**67.3**
	09/28/10(D)	--	--	**2,600**	**570**	**2,700**	3	<0.5	16	10	<0.5	--	--
	03/29/11	1.85	2493.81	**4,600**	<350	**5,100**	**5**	1	28	42	<0.5	0.069	**80.6**
	03/29/11(D)	--	--	**2,700**	260	**5,800**	**5**	1	28	40	<0.5	<0.052	**76.2**
MTCA Method A Cleanup Levels				500	500	800	5	1,000	700	1,000	20	--	15

EXPLANATIONS:

Bolding indicates a contaminant concentration detected above the MTCA Method A cleanup level.

D = Duplicate
DTW = Depth to water
MTCA = Model Toxic Control Act
USEPA = United States Environmental Protection Agency
BTEX = Benzene, toluene, ethylbenzene, and total xylenes
MTBE = Methyl tetr-butyl ether
TOC = Top of casing elevation relative to assigned benchmark
TPH = Total petroleum hydrocarbons

TPH-D = TPH as diesel-range organics
TPH-G = TPH as gasoline-range organics
TPH-O = TPH as heavy oil-range organics
-- = not analyzed
< = Analyte is not detected at or above the laboratory reporting limit. The laboratory reporting limit is listed.
µg/L = micrograms per liter

ANALYTICAL METHOD:

BTEX and MTBE analyzed by USEPA Method 8260B or 8021B.
TPH-G analyzed by Northwest Method NWTPH-Gx.
TPH-D and TPH-O analyzed by Northwest Method NWTPH-Dx, with acid/silica-gel cleanup.
Lead analyzed by USEPA 6000/7000 Series Method.

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TABLE 5
GROUNDWATER ANALYTICAL RESULTS – VOCs
CHEVRON BULK PLANT FACILITY NO. 352300
State Route 274, Tekoa, Washington
Concentrations reported in µg/L

Well ID/ Date	Bromodichloromethane	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloroform	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Isopropylbenzene	p-Isopropyltoluene	Naphthalene	n-Propylbenzene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
MW-1																	
11/10/08[1]	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
02/09/09	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
03/08/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
05/17/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
09/28/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	0.096	<1	<0.8	<0.8	<1	<1	<1
03/29/11	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
MW-2																	
11/10/08	<1	2[2]	7	<1	<0.8	<0.8	<0.8	<0.8	17	10	16	22	<0.8	<0.8	<1	130	39
02/09/09	INACCESSIBLE																
03/08/10	<1	1	5	<1	<0.8	<0.8	<0.8	<0.8	8	3	4	10	<0.8	<0.8	<1	27	<1
05/17/10	<1	2	9	1	<0.8	<0.8	<0.8	<0.8	16	7	7	21	<0.8	<0.8	<1	69	21
09/28/10	<1	1	9	1	<0.8	<0.8	<0.8	<0.8	13	<1	--	19	<0.8	<0.8	<1	16	<1
03/29/11	<1	<1	3	<1	<0.8	<0.8	<0.8	<0.8	3	<1	<1	3	<0.8	<0.8	<1	4	<1
MW-3																	
11/10/08[3]	<1	<1	1[2]	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
02/09/09	INACCESSIBLE																
03/08/10[7]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
05/17/10	<1	<1	2	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
09/28/10	<1	<1	2	<1	<0.8	<0.8	<0.8	<0.8	<1	0.28	<1	<1	<0.8	<0.8	<1	<1	<1
03/29/11	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
MW-4																	
11/10/08	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
02/09/09	INACCESSIBLE																
03/08/10	<1	2	10	<1	<0.8	<0.8	<0.8	<0.8	22	5	4	24	<0.8	<0.8	<1	69	10
05/17/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
09/28/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	0.051	<1	<0.8	<0.8	<1	<1	<1
03/29/11	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1

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TABLE 5
GROUNDWATER ANALYTICAL RESULTS – VOCs
CHEVRON BULK PLANT FACILITY NO. 352300
State Route 274, Tekoa, Washington
Concentrations reported in µg/L

Well ID/ Date	Bromodichloromethane	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloroform	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Isopropylbenzene	p-Isopropyltoluene	Naphthalene	n-Propylbenzene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
MW-5																	
11/10/08	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
02/09/09	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
03/08/10[5]	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
05/17/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
09/28/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	--	<1	<0.8	<0.8	<1	<1	<1
03/29/11	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
MW-6																	
11/10/08	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
02/09/09	INACCESSIBLE																
03/08/10[6]	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
05/17/10[7]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09/28/10[7]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
03/29/11[7]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7																	
11/10/08[4]	<1	5	11	1[2]	<0.8	<0.8	<0.8	<0.8	29	13	12	38	<0.8	<0.8	<1	150	59
02/09/09	INACCESSIBLE																
03/08/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
03/08/10(D)	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
05/17/10	<1	3	12	1	<0.8	<0.8	<0.8	<0.8	29	9	2	38	<0.8	<0.8	<1	42	3
05/17/10(D)	<1	3	13	1	<0.8	<0.8	<0.8	<0.8	30	10	2	39	<0.8	<0.8	<1	44	3
09/28/10	<1	2	13	1	<0.8	<0.8	<0.8	<0.8	24	6	<0.0098	34	<0.8	<0.8	<1	59	2
09/28/10(D)	<1	2	11	1	<0.8	<0.8	<0.8	<0.8	21	5	NA	27	<0.8	<0.8	<1	48	3
03/29/11	<1	8	19	1	<0.8	<0.8	<0.8	<0.8	40	23	11	55	<0.8	<0.8	<1	210	57
03/29/11(D)	<1	8	18	2	<0.8	<0.8	<0.8	<0.8	35	22	12	56	<0.8	<0.8	<1	210	57

TABLE 5
GROUNDWATER ANALYTICAL RESULTS – VOCs
CHEVRON BULK PLANT FACILITY NO. 352300
State Route 274, Tekoa, Washington
Concentrations reported in µg/L

EXPLANATIONS:
D = Duplicate
USEPA = United States Environmental Protection Agency
VOCs = Volatile Organic Compounds
-- = not analyzed
< = Analyte is not detected at or above the laboratory reporting limit. The laboratory reporting limit is listed.
µg/L = micrograms per liter

ANALYTICAL METHOD:
VOCs analyzed by USEPA Method 8260B

1 Laboratory report indicates Carbon Disulfate was detected at 1 µg/L (estimated value).
2 Laboratory report indicates estimated value.
3 Laboratory report indicates Carbon Disulfate was detected at 2 µg/L (estimated value).
4 Laboratory report indicates 1,2-Dichloroethane was detected at 4 µg/L and Acetone was detected at 23 µg/L.
5 Laboratory report indicates Carbon Disulfate was detected at 2 µg/L.
6 Laboratory report indicates Carbon Disulfate was detected at 1 µg/L.
7 Obstruction in well.

TABLE 6
GROUNDWATER ANALTYICAL RESULTS – PAH
CHEVRON BULK PLANT FACILITY NO. 352300
State Route 274, Tekoa, Washington
Concentrations reported in µg/L

Well ID/ Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (b) Fluoranthene	Benzo (g,h,i) Perylene	Benzo (k) Fluoranthene	Chrysene	Dibenz (a,h) Anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) Pyrene	Naphthalene	Phenanthrene	Pyrene
MW-1																
11/10/08[2]	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.12[3]	<0.011	<0.011
02/09/09	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
03/08/10	<0.0099	0.12	0.14	0.18	0.32	0.51	0.33	0.22	0.23	0.084	0.42	<0.0099	0.34	0.028	0.29	0.33
05/17/10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.20	<0.050	<0.050
09/28/10	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097
03/29/11	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098
MW-2																
11/10/08[2]	0.041[1]	<0.011	0.049[1]	<0.011	<0.011	<0.011	<0.011	<0.011	0.013[1]	<0.011	0.020[1]	0.058	<0.011	12	0.018[1]	0.016[1]
02/09/09	INACCESSIBLE															
03/08/10	0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	<0.10	10	<0.10	<0.10
05/17/10[5]	<0.050	<0.050	0.12	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.059	<0.050	8.5	<0.050	<0.050
09/28/10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
03/29/11	<0.010	0.34	0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.26	<0.010	0.67	0.010	<0.010
MW-3																
11/10/08[2]	0.013[1]	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.17[3]	0.014[1]	<0.011
02/09/09	INACCESSIBLE															
03/08/10[6]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
05/17/10[5]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
09/28/10	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	0.28	<0.0098	<0.0098
03/29/11	<0.010	<0.010	0.013	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.015
MW-4																
11/10/08[2]	<0.011	<0.011	0.016[1]	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.089	0.017[1]	<0.011
02/09/09	INACCESSIBLE															
03/08/10	0.13	<0.025[4]	0.035	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.015	0.23	<0.0095	4.5	0.079	0.012
05/17/10[5]	<0.0099	<0.0099	0.018	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	0.036	<0.0099	<0.0099
09/28/10	<0.0099	<0.0099	0.018	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	0.051	<0.0099	<0.0099
03/29/11	<0.0098	<0.0098	0.015	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	0.011	<0.0098

TABLE 6
GROUNDWATER ANALTYICAL RESULTS – PAH
CHEVRON BULK PLANT FACILITY NO. 352300
State Route 274, Tekoa, Washington
Concentrations reported in µg/L

Well ID/ Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (b) Fluoranthene	Benzo (g,h,i) Perylene	Benzo (k) Fluoranthene	Chrysene	Dibenz (a,h) Anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) Pyrene	Naphthalene	Phenanthrene	Pyrene
MW-5																
11/10/08[2]	0.044[1]	0.31	0.29	0.63	1.2	2.0	0.64	0.62	0.92	0.20	1.5	0.064	0.67	0.29	0.98	1.2
02/09/09	<0.010	0.013[1]	0.037[1]	0.011[1]	0.014[1]	0.018[1]	0.021[1]	0.014[1]	0.013[1]	<0.010	0.024[1]	<0.010	0.017[1]	<0.010	0.020[1]	0.017[1]
03/08/10[5]	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.025	<0.0095	<0.0095
05/17/10	0.017	0.44	0.32	0.55	1.1	1.6	0.97	0.77	0.87	0.24	1.6	0.035	0.91	0.090	0.80	0.93
09/28/10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
03/29/11	<0.0098	0.10	0.13	0.14	0.17	0.16	0.24	0.15	0.15	<0.098	0.28	<0.098	0.20	<0.29	0.23	0.23
MW-6																
11/10/08[2]	<0.011	0.055	0.029[1]	0.044[1]	0.12	0.13	0.090	0.057	0.079	0.020[1]	0.21	0.020[1]	0.076	0.12	0.15	0.20
02/09/09	INACCESSIBLE															
03/08/10[5]	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.25	<0.10	<0.10
05/17/10[6]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
09/28/10[6]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
03/29/11[6]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7																
11/10/08	0.18	<0.040[4]	0.041[1]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010[1]	0.33	<0.010	6.7	0.057	0.014[1]
02/09/09	INACCESSIBLE															
03/08/10	<0.0095	<0.0095	0.015	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.042	<0.0095	<0.0095
03/08/10(D)	<0.0095	<0.0095	0.015	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	0.063	<0.0095	<0.0095
05/17/10[5]	0.21	<0.060[4]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.62	<0.050	3.1	0.12	<0.050
05/17/10(D)	INSUFFICENT WATER TO SAMPLE															
09/28/10	0.042	0.022	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	0.064	<0.0098	<0.0098	<0.0098	<0.0098
09/28/10(D)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
03/29/11	0.13	0.017	0.035	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.012	0.18	<0.010	1.8	0.026	<0.010
03/29/11(D)	0.15	0.018	0.042	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	0.014	0.41	<0.0099	3.9	0.041	0.010

TABLE 6
GROUNDWATER ANALTYICAL RESULTS – PAH
CHEVRON BULK PLANT FACILITY NO. 352300
State Route 274, Tekoa, Washington
Concentrations reported in µg/L

EXPLANATIONS:
-- = not analyzed
< = Analyte is not detected at or above the laboratory reporting limit. The laboratory reporting limit is listed.
µg/L = micrograms per liter
D = Duplicate
USEPA = United States Environmental Protection Agency
PAHs = Polynuclear Aromatic Hydrocarbons

PAHs analyzed by USEPA Method 8270C
1 Laboratory report indicates estimated value.
2 Laboratory report indicates that due to insufficient sample, the reporting limits for the GC/MS semivalatile compounds were raised.
3 Laboratory report indicates that due to the presence of an interference near the retention time of naphthalene, the reporting limits were raised.
4 Laboratory report indicates that due to the presence of an interference near the retention time of acenaphthylene, the reporting limits were raised.
5 Laboratory report indicates that due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.
6 Obstruction in well.

Appendix A:

June 8, 2011

Ms. Marlea Harmon
Chevron Environmental Management Company
6101 Bollinger Canyon Road, Room 5228
San Ramon, California, 94583-5186

Subject: First Quarter 2011 Groundwater Monitoring and Sampling Report
Chevron Service Station No. 352300
State Route 274, Tekoa, Washington

Dear Ms. Harmon:

SAIC Energy, Environment & Infrastructure, LLC (hereafter, SAIC) submits this report on behalf of Chevron Environmental Management Company (CEMC), to present the First Quarter 2011 groundwater monitoring and sampling results for Chevron Service Station No. 352300 in Tekoa, Washington. Quarterly groundwater monitoring and sampling was conducted by Gettler-Ryan, Inc. on March 29, 2011. The Gettler-Ryan Groundwater Monitoring and Sampling Data Package is presented as Attachment A. SAIC is performing environmental services under contract to Chevron Environmental Management Company (Chevron).

FIELD ACTIVITIES

On March 29, 2011, the depth to groundwater was measured in MW-1 through MW-5, and MW-7 (MW-6 had an obstruction in the well casing and could not be gauged or sampled). The groundwater elevation ranged from 2,491.87 (MW-3) to 2,494.41 (MW-5) feet above mean sea level. Groundwater elevation increased from 3.62 ft (MW-7) to 6.44 ft (MW-5). Groundwater flow is to the northwest at a gradient of approximately 0.017 ft/ft.

Once the depth to groundwater was measured at the wells, the wells were purged using Low-Flow (minimal drawdown) technique as discussed in United States Environmental Protection Agency (EPA) Ground Water Issue, publication number EPA/540/S-95/504 April 1996 ("Low-Flow Minimal Drawdown Ground-Water Sampling Procedures"), followed by collection of groundwater samples from Wells MW-1 through MW-5, and MW-7. A duplicate sample was collected from MW-7 and labeled DUP. A sample was not collected from MW-6 due to an obstruction in the well casing. All samples were collected in accordance with the sampling procedures described in Attachment A, and shipped under chain-of-custody protocol to Lancaster Laboratories, Inc. in Lancaster, Pennsylvania. Groundwater samples were submitted for the following analyses:

- Diesel- and heavy oil-range hydrocarbons by Washington State Department of Ecology (WDOE) Method NWTPH-Dx with silica gel clean-up;
- Gasoline-range hydrocarbons by WDOE Method NWTPH-Gx;

- Dissolved lead and total lead using EPA Method 6020;
- Polynuclear aromatic hydrocarbons (PAHs) using EPA Method 8270C SIM; and
- Volatile Organic Compounds (VOCs) including benzene, toluene, ethylbenzene, total xylenes (BTEX), and naphthalene using EPA Method 8260.

Laboratory analytical results are included as Attachment B and a potentiometric map is shown on Figure 1. Figure 2 is a monitoring well concentration map. Hydrograph figures depicting concentration trends of contaminants of interest over time for selected monitoring wells are provided as Attachment C.

RESULTS

The results of the First Quarter 2011 sampling event indicate dissolved-phase hydrocarbon concentrations detected at the groundwater monitoring wells follow a decreasing trend. In addition, the groundwater elevation, flow direction, and gradient are consistent with historical measurements.

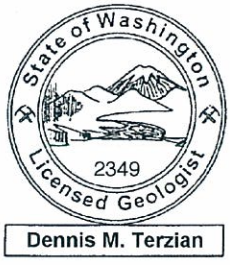
Please call Ronald Santos at (208) 429-3772 if you have any questions regarding the contents of this letter.

Sincerely,

SAIC Energy, Environment & Infrastructure, LLC

Chris Wildt
Environmental Scientist

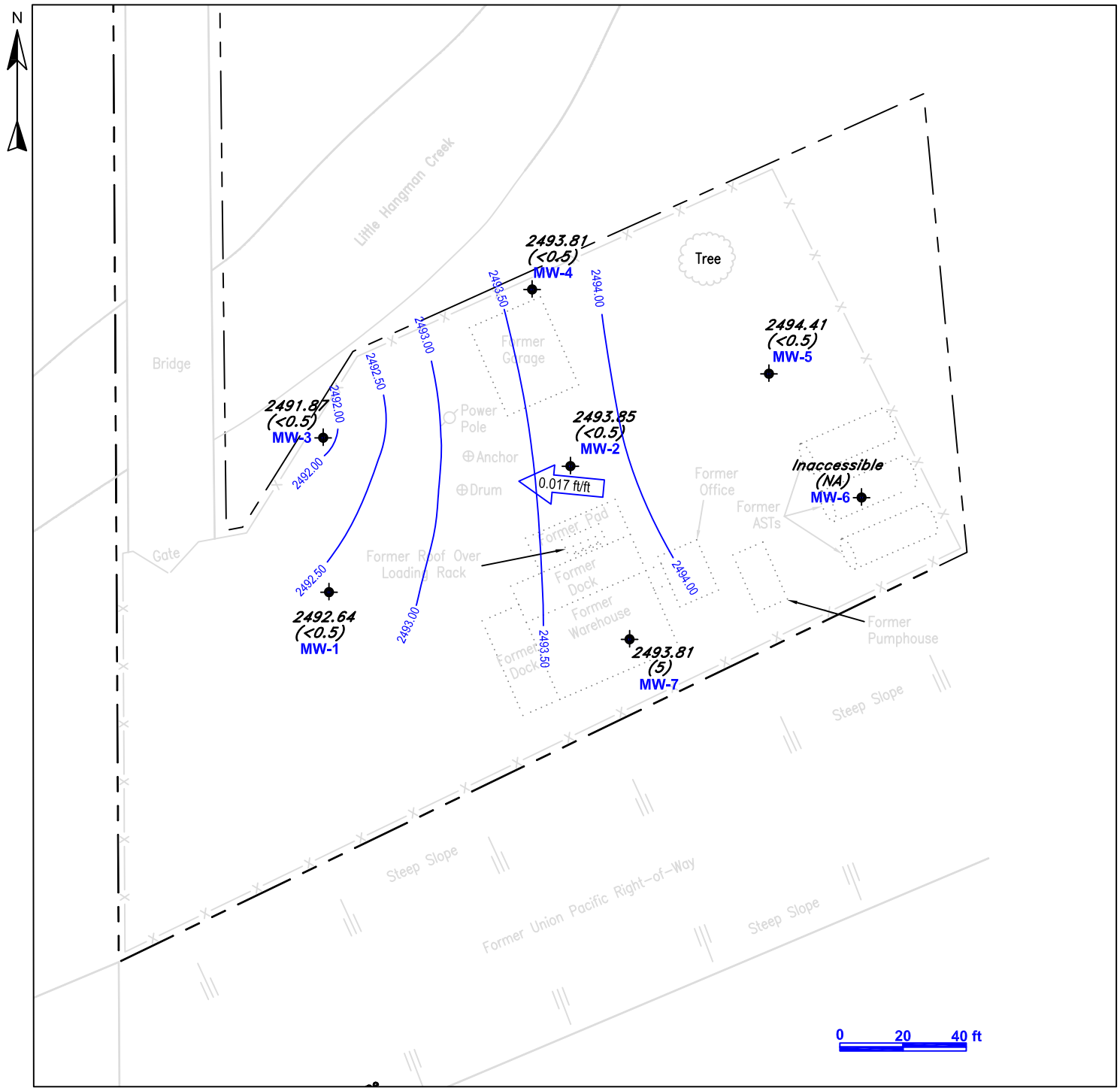
Ronald Santos
Project Manager



Dennis Terzian, LG
Sr. Project Manager

Enclosures:
Attachment A: Gettler-Ryan "Groundwater Monitoring and Sampling Data Package"
Attachment B: Laboratory Analytical Package
Attachment C: Hydrographs

cc: Patty Carter, WA Department of Ecology, Spokane WA.



LEGEND

= Monitoring Well Location

= Abandoned Monitoring Well Location

0.017 ft/ft = Approximate Groundwater Flow Direction and Gradient

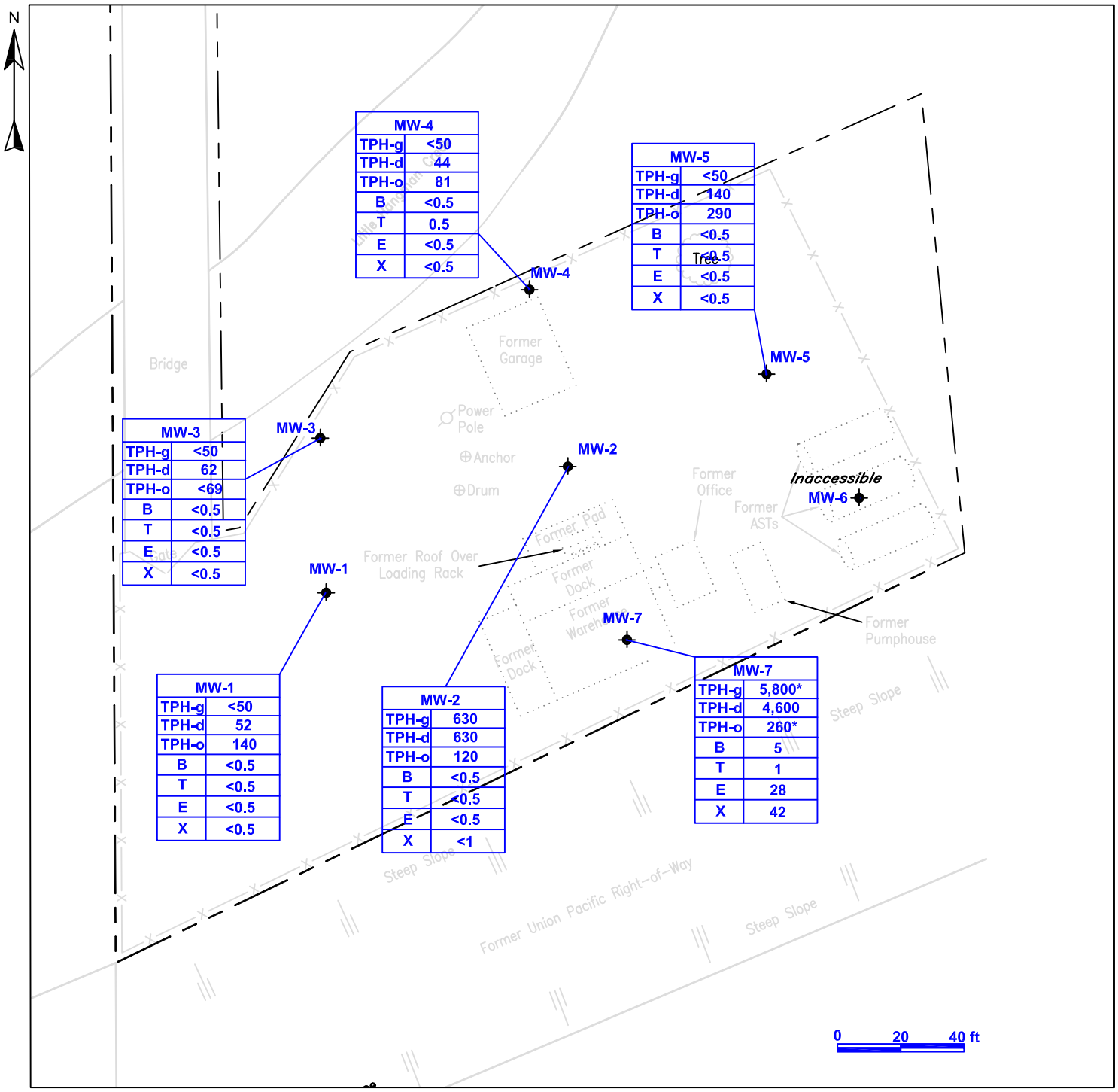
99.99 = Groundwater Elevation in feet referenced to an assigned benchmark

(50) = Benzene concentration in ug/L

--99.99-- = Groundwater elevation contour

SAIC From Science to Solutions

Potentiometric/Benzene Concentration Map	FIGURE 1
Chevron Station 352300 State Route 274, Tekoa, Washington	
Date: 5-24-11 Drawn By: CMW	



LEGEND

MW-1	
TPH-g	<50
TPH-d	52
TPH-o	140
B	<0.5
T	<0.5
E	<0.5
X	<0.5

= Monitoring Well Designation
= Total Petroleum Hydrocarbons as gasoline
= Total Petroleum Hydrocarbons as diesel
= Total Petroleum Hydrocarbons as oil
= Benezene
= Toluene
= Ethylbenzene
= Total Xylenes

⊠ = Monitoring Well Location

5,800* = Duplicate value used

Note: All concentrations listed in ug/l

SAIC From Science to Solutions

Monitoring Well Concentration Map

Chevron Station 352300
State Route 274, Tekoa, Washington

Date: 6-9-11 Drawn By: CMW

FIGURE 2

TABLE 1
GROUNDWATER ELEVATIONS, BTEX, AND MTBE ANALYTICAL RESULTS SUMMARY
CHEVRON FACILITY NO. 352300
State Route 274
Tekoa, Washington

Identification (toc)	Date Sampled	DTW (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)
MW-1	11/10/08	6.13	0.00	2488.46	170	<73	140	0.6[1]	<0.5	<0.5	<1.0	<0.5	<0.050	2.8
2494.59	2/9/09	3.24	0.00	2491.35	47	<66	82	<0.5	<0.5	<0.5	<1.0	<0.5	<0.050	0.36
	3/8/10	4.41	0.00	2490.18	87	<68	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.15	57.4
	5/17/10	6.13	0.00	2488.46	310	130	120	<0.5	<0.5	<0.5	<0.5	<0.5	0.052	181
	9/28/10	6.46	0.00	2488.13	290	260	72	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052	223
	3/29/11	**1.95**	**0.00**	**2492.64**	**52**	**140**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052	**13.3**
MW-2	11/10/08	6.74	0.00	2488.52	2,500	420	2,400	0.9[1]	<0.5	2[1]	4.8[1]	<0.5	--	--
2495.26	2/9/09	INACCESSIBLE						--	--	--	--	--	--	--
	3/8/10	5.67	0.00	2489.59	880	<71	1,000	<0.5	<0.5	1	1	<0.5	<0.050	9.5
	5/17/10	5.99	0.00	2489.27	1,200	92	1,800	<0.5	<0.5	1	2	<0.5	<0.050	--
	9/28/10	6.76	0.00	2488.50	1,300	310	1,600	<0.5	<0.5	1	<1	<0.5	--	--
	3/29/11	**1.41**	**0.00**	**2493.85**	**630**	**120**	**630**	<0.5	<0.5	<0.5	<1	<0.5	<0.052	**13.4**
MW-3	11/10/08	6.40	0.00	2487.55	400	100	170	<0.5	<0.7	<0.8	<1.6	<0.5	<0.050	54.2
2493.95	2/9/09	INACCESSIBLE						--	--	--	--	--		
	3/8/10	3.48	0.00	2490.47					--	--	--	--		
	5/17/10	6.00	0.00	2487.95	130	<70	140	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050	46.4
	9/28/10	6.62	0.00	2487.33				<0.5	<0.5	<0.5	<0.5	<0.5	<0.052	42.8
	3/29/11	**2.08**	**0.00**	**2491.87**	**62**	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052	**11.8**
MW-4	11/10/08	6.53	0.00	2487.57	360	77	230	1[1]	<0.5	<0.5	<1.0	<0.5	<0.050	57.7
2494.1	2/9/09	INACCESSIBLE						--	--	--	--	--	--	--
	3/8/10	4.99	0.00	2489.11	830	<68	2,700	3	<0.5	14	16	<0.5	0.14	53.0
	5/17/10	5.33	0.00	2488.77	57	<73	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050	21.0
	9/28/10	6.64	0.00	2487.46	230	280	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.052	80.2
	3/29/11	**0.29**	**0.00**	**2493.81**	**44**	**81**	<50	<0.5	**0.5**	<0.5	<0.5	<0.5	**0.082**	**1.9**
MW-5	11/10/08	6.63	0.00	2488.53	1,700	1,600	240	0.6[1]	<0.5	<0.5	<1.0	<0.5	--	--
2495.16	2/9/09	0.92	0.00	2494.24	180	230	<50	<0.5	<0.5	<0.5	<1.0	<0.5	0.093	2
	3/8/10	5.87	0.00	2489.29	450	<700	71	<0.5	<0.5	<0.5	<0.5	<0.5	0.074	194
	5/17/10	5.15	0.00	2490.01	220	470	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050	63.4
	9/28/10	7.19	0.00	2487.97	240	510	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
	3/29/11	**0.75**	**0.00**	**2494.41**	**140**	**290**	<50	<0.5	<0.5	<0.5	<0.5	<0.5	**4.3**	**41.5**

SAIC From Science to Solutions

TABLE 1
GROUNDWATER ELEVATIONS, BTEX, AND MTBE ANALYTICAL RESULTS SUMMARY
CHEVRON FACILITY NO. 352300
State Route 274
Tekoa, Washington

Identification (toc)	Date Sampled	DTW (feet)	SPH Thickness (feet)	Groundwater Elevation (feet)	TPH-DRO (µg/L)	TPH-HRO (µg/L)	TPH-GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Dissolved Lead (µg/L)	Total Lead (µg/L)
MW-6	11/10/08	5.66	0.00	2490.38	570	140	<50	<0.5	<0.5	<0.5	<1.0	<0.5	--	649
2496.04	2/9/09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--
	3/8/10	5.74	0.00	2490.30	58	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050	39.3
	5/17/10	3.79	0.00	2492.25	--	--	--	--	--	--	--	--	--	--
	9/28/10	DRY	0.00	--	--	--	--	--	--	--	--	--	--	--
	3/29/11	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--
MW-7	11/10/08	5.12	0.00	2490.54	2,500	400	4,400	2[1]	2[1]	25	49	<0.5	0.063	95.2
2495.66	2/9/09	INACCE	0.00	--	--	--	--	--	--	--	--	--	--	--
	3/8/10	4.77		2490.89	56	<69	<50	<0.5	<0.5	<0.5	<0.5	<0.5	0.059	18.1
	3/8/10(D)	--		--	110	110	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.050	21.9
	5/17/10	5.28	0.00	2490.38	1,600	230	3,400	7	<0.5	23	10	<0.5	<0.050	85.6
	5/17/10(D)	--	0.00	--	2,300	370	4,800	7	<0.5	25	11	<0.5	<0.050	95.9
	9/28/10	5.47	0.00	2490.19	2,100	490	3,500	4	<0.5	18	11	<0.5	<0.052	67.3
	9/28/10(D)	--	--	--	2,600	570	2,700	3	<0.5	16	10	<0.5	--	--
	3/29/11	**1.85**	**0.00**	**2493.81**	**4,600**	<350	**5,100**	**5**	**1**	**28**	**42**	<0.5	**0.069**	**80.6**
	3/29/11(D)	**--**	**--**	**--**	**2,700**	**260**	**5,800**	**5**	**1**	**28**	**40**	<0.5	<0.052	**76.2**
QA		--	--	--				<0.5	<0.5	<0.5	<0.5	--		
MTCA Method A Cleanup Levels					500	500	800	5	1,000	700	1,000	20	--	15

EXPLANATIONS:

toc = Top of casing elevation relative to assigned benchmark (feet)
D = Duplicate
DTW = Depth to water
SPH = Separate-phase hydrocarbons
µg/L = micrograms per liter
BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes (Analysis using EPA Method 8260B or 8021B)
MTBE = Methyl tert-butyl ether (Analysis using EPA Method 8260B)
- = Not measured, not analyzed, not sampled, or not applicable
<0.5 = Indicates analyte not detected at or above detection limit shown
Bold = Analyte detected above method detection limit
NA = Not Analyzed
a = Value listed is for total xylenes
QA = Trip blank sample

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TABLE 2
GROUNDWATER ANALTYICAL RESULTS –PAH
CHEVRON SERVICE STATION NO. 35-2300
(Former Standard Oil Bulk Plant #1001152)
Tekoa, Washington
State Route 274
Concentrations reported in µg/L

Well ID/ Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (b) Fluoranthene	Benzo (g,h,i) Perylene	Benzo (k) Fluoranthene	Chrysene	Dibenz (a,h) Anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) Pyrene	Naphthalene	Phenanthrene	Pyrene
MW-1																
11/10/08[2]	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.12[3]	<0.011	<0.011
2/9/09	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
3/8/10	<0.0099	**0.12**	**0.14**	**0.18**	**0.32**	**0.51**	**0.33**	**0.22**	**0.23**	**0.084**	**0.42**	<0.0099	**0.34**	**0.028**	**0.29**	**0.33**
5/17/10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.20**	<0.050	<0.050
9/28/10	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0097
3/29/11	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.029	<0.0098	<0.0098
MW-2																
11/10/08[2]	**0.041**[1]	<0.011	**0.049**[1]	<0.011	<0.011	<0.011	<0.011	<0.011	**0.013**[1]	<0.011	**0.020**[1]	**0.058**	<0.011	**12**	**0.018**[1]	**0.016**[1]
2/9/09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/8/10	**0.10**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	**0.11**	<0.10	**10**	<0.10	<0.10
5/17/10[5]	<0.050	<0.050	**0.12**	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.059	<0.050	**8.5**	<0.050	<0.050
9/28/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/29/11	<0.010	**0.34**	**0.020**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.26**	<0.010	**0.67**	**0.010**	<0.010
MW-3																
11/10/08[2]	**0.013**[1]	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.17[3]	**0.014**[1]	<0.011
2/9/09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/8/10[6]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/17/10[5]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
9/28/10	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	0.28	<0.0098	<0.0098
3/29/11	<0.010	<0.010	**0.013**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.030	<0.010	**0.015**
MW-4																
11/10/08[2]	<0.011	<0.011	**0.016**[1]	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	<0.011	0.089	0.017[1]	<0.011
39853	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/8/10	**0.13**	<0.025[4]	**0.035**	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	**0.015**	**0.23**	<0.0095	**4.5**	**0.079**	**0.012**
05/17/10[5]	<0.0099	<0.0099	**0.018**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	**0.036**	<0.0099	<0.0099
09/28/10	<0.0099	<0.0099	**0.018**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	**0.051**	<0.0099	<0.0099
3/29/11	<0.0098	<0.0098	**0.015**	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.029	**0.011**	<0.0098

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TABLE 2
GROUNDWATER ANALTYICAL RESULTS –PAH
CHEVRON SERVICE STATION NO. 35-2300
(Former Standard Oil Bulk Plant #1001152)
Tekoa, Washington
State Route 274
Concentrations reported in µg/L

Well ID/ Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (b) Fluoranthene	Benzo (g,h,i) Perylene	Benzo (k) Fluoranthene	Chrysene	Dibenz (a,h) Anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) Pyrene	Naphthalene	Phenanthrene	Pyrene
MW-5																
11/10/08[2]	**0.044**[1]	**0.31**	**0.29**	**0.63**	**1.2**	**2.0**	**0.64**	**0.62**	**0.92**	**0.20**	**1.5**	**0.064**	**0.67**	**0.29**	**0.98**	**1.2**
2/9/09	<0.010	**0.013**[1]	**0.037**[1]	**0.011**[1]	**0.014**[1]	**0.018**[1]	**0.021**[1]	**0.014**[1]	**0.013**[1]	<0.010	0.024[1]	<0.010	0.017[1]	<0.010	**0.020**[1]	0.017[1]
3/8/10[5]	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	**0.025**	<0.0095	<0.0095
5/17/10	**0.017**	**0.44**	**0.32**	**0.55**	**1.1**	**1.6**	**0.97**	**0.77**	**0.87**	**0.24**	**1.6**	**0.035**	**0.91**	**0.090**	**0.80**	**0.93**
9/28/10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/29/11	<0.0098	**0.10**	**0.13**	**0.14**	**0.17**	**0.16**	**0.24**	**0.15**	**0.15**	<0.098	**0.28**	<0.098	**0.20**	<0.29	**0.23**	**0.23**
MW-6																
11/10/08[2]	<0.011	**0.055**	**0.029**[1]	**0.044**[1]	**0.12**	**0.13**	**0.090**	**0.057**	**0.079**	**0.020**[1]	**0.21**	**0.020**[1]	**0.076**	**0.12**	**0.15**	**0.20**
2/9/09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/8/10[5]	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.25	<0.10	<0.10
5/17/10	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--	--	--	--	--
9/28/10	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--	--	--	--	--
3/29/11	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7																
11/10/08	**0.18**	<0.040[4]	**0.041**[1]	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.010**[1]	**0.33**	<0.010	**6.7**	**0.057**	**0.014**[1]
2/9/09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/8/10	<0.0095	<0.0095	**0.015**	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	**0.042**	<0.0095	<0.0095
3/8/10(D)	<0.0095	<0.0095	**0.015**	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	**0.063**	<0.0095	<0.0095
5/17/10[5]	**0.21**	<0.060[4]	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	**0.62**	<0.050	**3.1**	**0.12**	<0.050
5/17/10(D)	INSUFFICENT WATER TO SAMPLE				--	--	--	--	--	--	--	--	--	--	--	--
09/28/10	**0.042**	**0.022**	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	**0.064**	<0.0098	**<0.0098**	<0.0098	<0.0098
9/28/10(D)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3/29/11	**0.13**	**0.017**	**0.035**	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	**0.012**	**0.18**	<0.010	**1.8**	**0.026**	<0.010
3/29/11(D)	**0.15**	**0.018**	**0.042**	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	**0.014**	**0.41**	<0.0099	**3.9**	**0.041**	**0.010**

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Table 2

Groundwater Analytical Results - PAHs

Chevron Service Station #352300

(Former Standard Oil Bulk Plant #1001152)

State Route 274

Tekoa, Washington

EXPLANATIONS

(µg/L) = Micrograms per liter

PAHs = Polynuclear Aromatic Hydrocarbons

(D) = Duplicate

ANALYTICAL METHODS:

PAHs by EPA Method 8270C

[1] Laboratory report indicates estimated value.

[2] Laboratory report indicates due to insufficient sample, the reporting limits for the GC/MS semivolatile compounds were raised.

[3] Laboratory report indicates due to the presence of an interferent near the retention time of naphthalene, the reporting limit was raised. This was due to the fact that the interferent had a significant abundance of ions at or near the mass of naphthalene.

[4] Laboratory report indicates due to the presence of an interferent near the retention time of acenaphthylene, the reporting limit was raised. This was due to the fact that the interferent had a significant abundance of ions at or near the mass of acenaphthylene.

[5] Laboratory report indicates due to the nature of the sample matrix, a reduced aliquot was used for analysis. The reporting limits were raised accordingly.

[6] Obstruction in well.

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TABLE 3
GROUNDWATER ANALYTICAL RESULTS–VOCs
CHEVRON SERVICE STATION NO. 35-2300
(Former Standard Oil Bulk Plant #1001152)
State Route 274
Tekoa, Washington
Concentrations reported in µg/L

Well ID/ Date	Bromodichloromethane	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloroform	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Isopropylbenzene	p-Isopropyltoluene	Naphthalene	n-Propylbenzene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
MW-1																	
11/10/08[1]	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
2/9/09	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
3/8/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
5/17/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
9/28/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	**0.096**	<1	<0.8	<0.8	<1	<1	<1
3/29/11	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
MW-2																	
11/10/08	<1	**2**[2]	**7**	<1	<0.8	<0.8	<0.8	<0.8	**17**	**10**	**16**	**22**	<0.8	<0.8	<1	**130**	**39**
2/9/09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/8/10	<1	**1**	**5**	<1	<0.8	<0.8	<0.8	<0.8	**8**	**3**	**4**	**10**	<0.8	<0.8	<1	**27**	<1
5/17/10	<1	**2**	**9**	**1**	<0.8	<0.8	<0.8	<0.8	**16**	**7**	**7**	**21**	<0.8	<0.8	<1	**69**	**21**
9/28/10	<1	**1**	**9**	**1**	<0.8	<0.8	<0.8	<0.8	**13**	<1	NA	**19**	<0.8	<0.8	<1	**16**	<1
3/29/11	<1	<1	**3**	<1	<0.8	<0.8	<0.8	<0.8	**3**	<1	<1	**3**	<0.8	<0.8	<1	**4**	<1
MW-3																	
11/10/08[3]	<1	<1	1[2]	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
2/9/09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/8/10[7]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
5/17/10	<1	<1	**2**	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
9/28/10	<1	<1	**2**	<1	<0.8	<0.8	<0.8	<0.8	<1	**0.28**	<1	<1	<0.8	<0.8	<1	<1	<1
3/29/11	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
MW-4																	
11/10/08	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
2/9/09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/8/10	<1	2	10	<1	<0.8	<0.8	<0.8	<0.8	**22**	**5**	**4**	**24**	<0.8	<0.8	<1	**69**	**10**
5/17/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
9/28/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	**0.051**	<1	<0.8	<0.8	<1	<1	<1
3/29/11	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1

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TABLE 3
GROUNDWATER ANALYTICAL RESULTS–VOCs
CHEVRON SERVICE STATION NO. 35-2300
(Former Standard Oil Bulk Plant #1001152)
State Route 274
Tekoa, Washington
Concentrations reported in µg/L

Well ID/ Date	Bromodichloromethane	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Chloroform	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Isopropylbenzene	p-Isopropyltoluene	Naphthalene	n-Propylbenzene	Tetrachloroethene	1,1,1-Trichloroethane	Trichloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene
MW-5																	
11/10/08	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
2/9/09	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
3/8/10[5]	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
5/17/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
9/28/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	NA	<1	<0.8	<0.8	<1	<1	<1
3/29/11	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
MW-6																	
11/10/08	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
2/9/09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/8/10[6]	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
5/17/10	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--	--	--	--	--	--
9/28/10	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/29/11	OBSTRUCTION IN WELL			--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-7																	
11/10/08[4]	<1	**5**	**11**	**1**[2]	<0.8	<0.8	<0.8	<0.8	**29**	**13**	**12**	**38**	<0.8	<0.8	<1	**150**	**59**
2/9/09	INACCESSIBLE		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/8/10	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
3/8/10(D)	<1	<1	<1	<1	<0.8	<0.8	<0.8	<0.8	<1	<1	<1	<1	<0.8	<0.8	<1	<1	<1
5/17/10[8]	<1	**3**	**12**	**1**	<0.8	<0.8	<0.8	<0.8	**29**	**9**	**2**	**38**	<0.8	<0.8	<1	**42**	**3**
5/17/10[8] (D)	<1	**3**	**13**	**1**	<0.8	<0.8	<0.8	<0.8	**30**	**10**	**2**	**39**	<0.8	<0.8	<1	**44**	**3**
9/28/10	<1	**2**	**13**	**1**	<0.8	<0.8	<0.8	<0.8	**24**	**6**	<0.0098	**34**	<0.8	<0.8	<1	**59**	**2**
9/28/10(D)	<1	**2**	**11**	**1**	<0.8	<0.8	<0.8	<0.8	**21**	**5**	NA	**27**	<0.8	<0.8	<1	**48**	**3**
3/29/11	<1	**8**	**19**	**1**	<0.8	<0.8	<0.8	<0.8	**40**	**23**	**11**	**55**	<0.8	<0.8	<1	**210**	**57**
3/29/11(D)	<1	**8**	**18**	**2**	<0.8	<0.8	<0.8	<0.8	**35**	**22**	**12**	**56**	<0.8	<0.8	<1	**210**	**57**

Table 3

Groundwater Monitoring Data and Analytical Results - VOCs

Chevron Service Station #352300
(Former Standard Oil Bulk Plant #1001152)
State Route 274
Tekoa, Washington

EXPLANATIONS

(µg/L) = Micrograms per liter
VOC = Volatile Organic Compounds
(D) = Duplicate

♦ **All other VOCs by EPA Method 8260B were less than the reporting limit unless noted.**

[1] Laboratory report indicates Carbon Disulfide was detected at 1 µg/L (estimated value).
[2] Laboratory report indicates estimated value.
[3] Laboratory report indicates Carbon Disulfide was detected at 2 µg/L (estimated value).
[4] Laboratory report indicates 1,2 - Dichloroethane was detected at 4 µg/L and Acetone was detected at 23 µg/L.
[5] Laboratory report indicates Carbon Disulfide was detected at 2 µg/L.
[6] Laboratory report indicates Carbon Disulfide was detected at 1 µg/L.
[7] Obstruction in well.

ANALYTICAL METHODS:

VOCs by EPA Method 8260B

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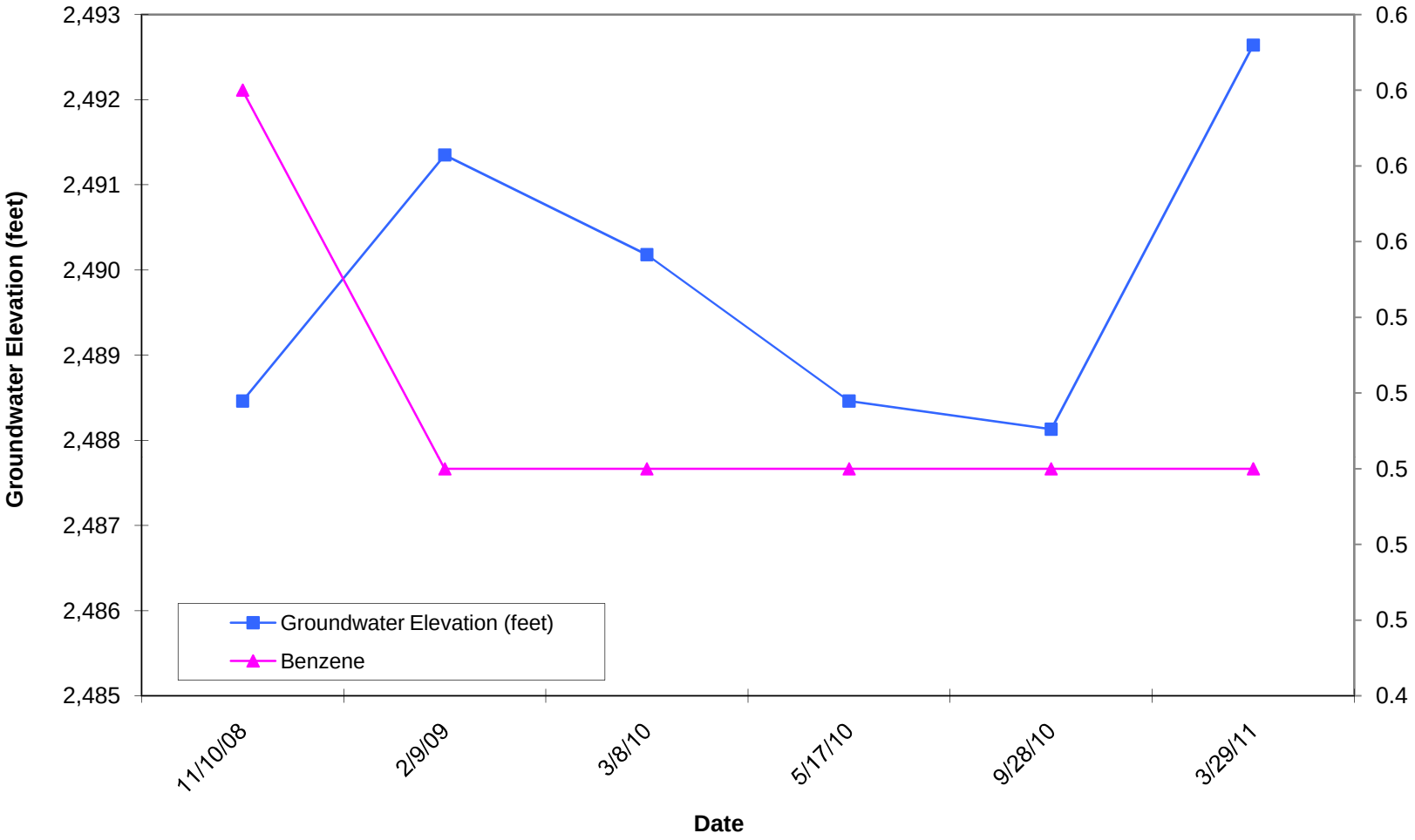
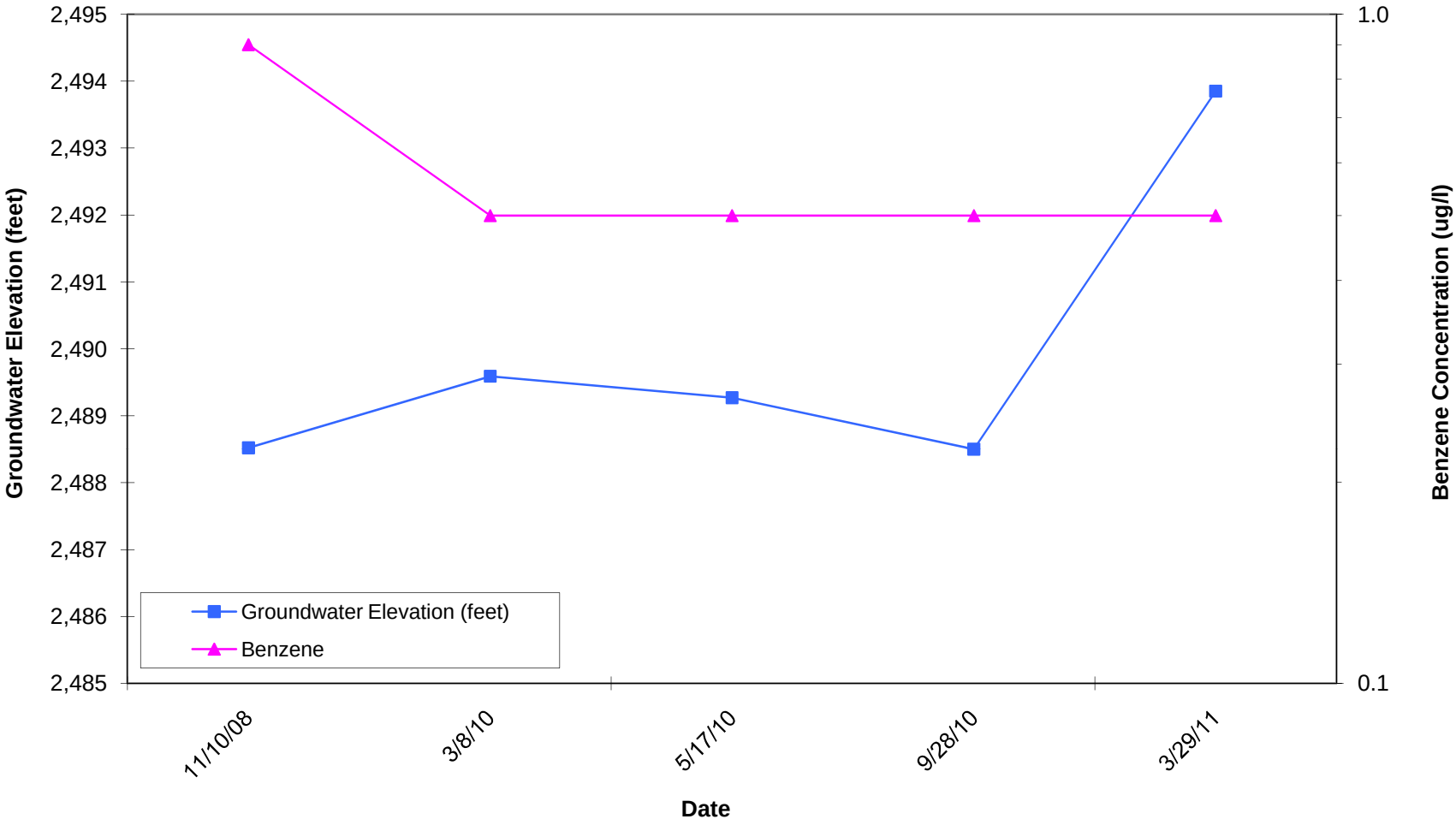
Attachment C:
Hydrographs

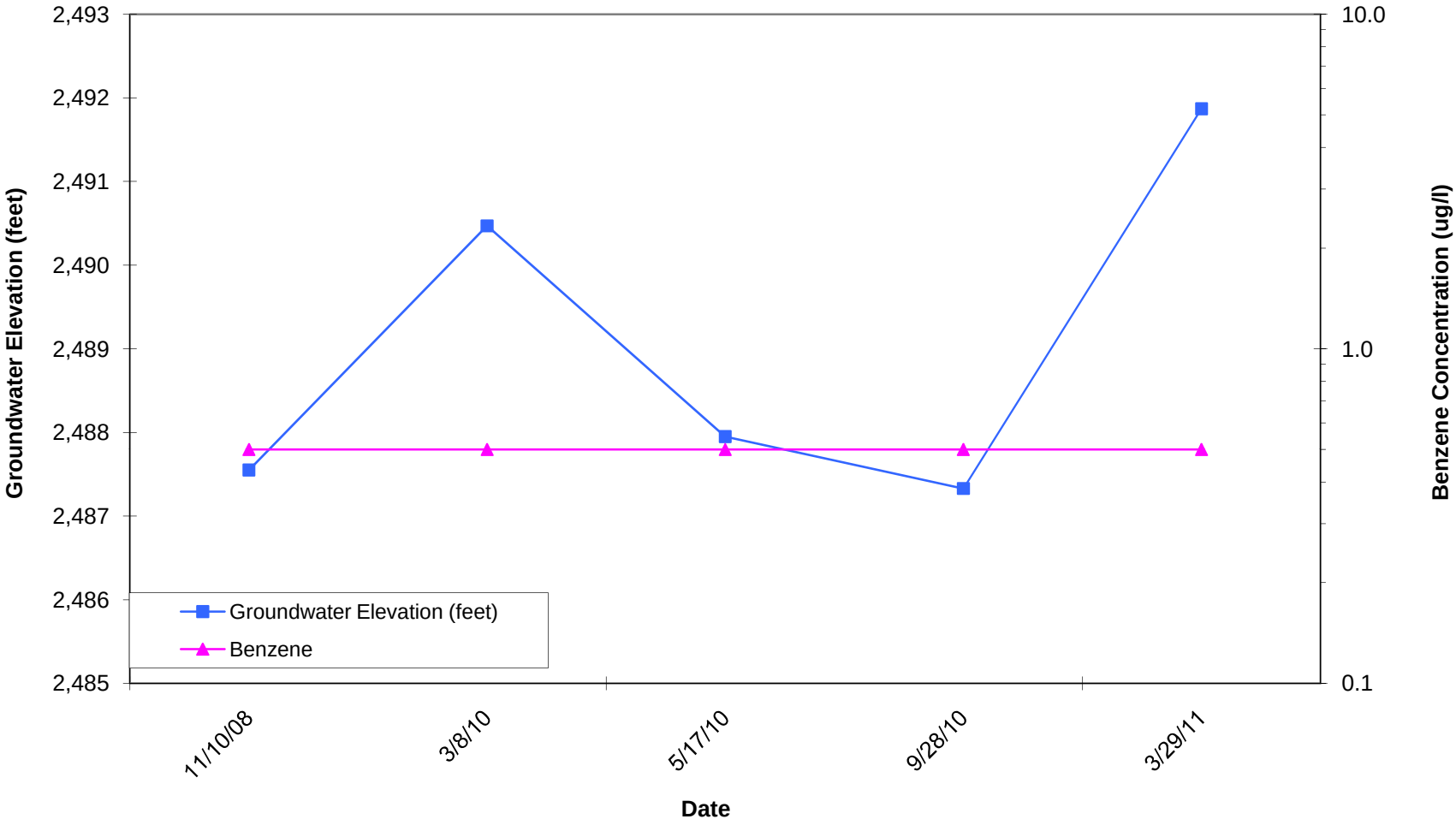
Well MW-1 Hydrograph
Chevron Station No. 352-300
State Route 274, Tekoa, Washington



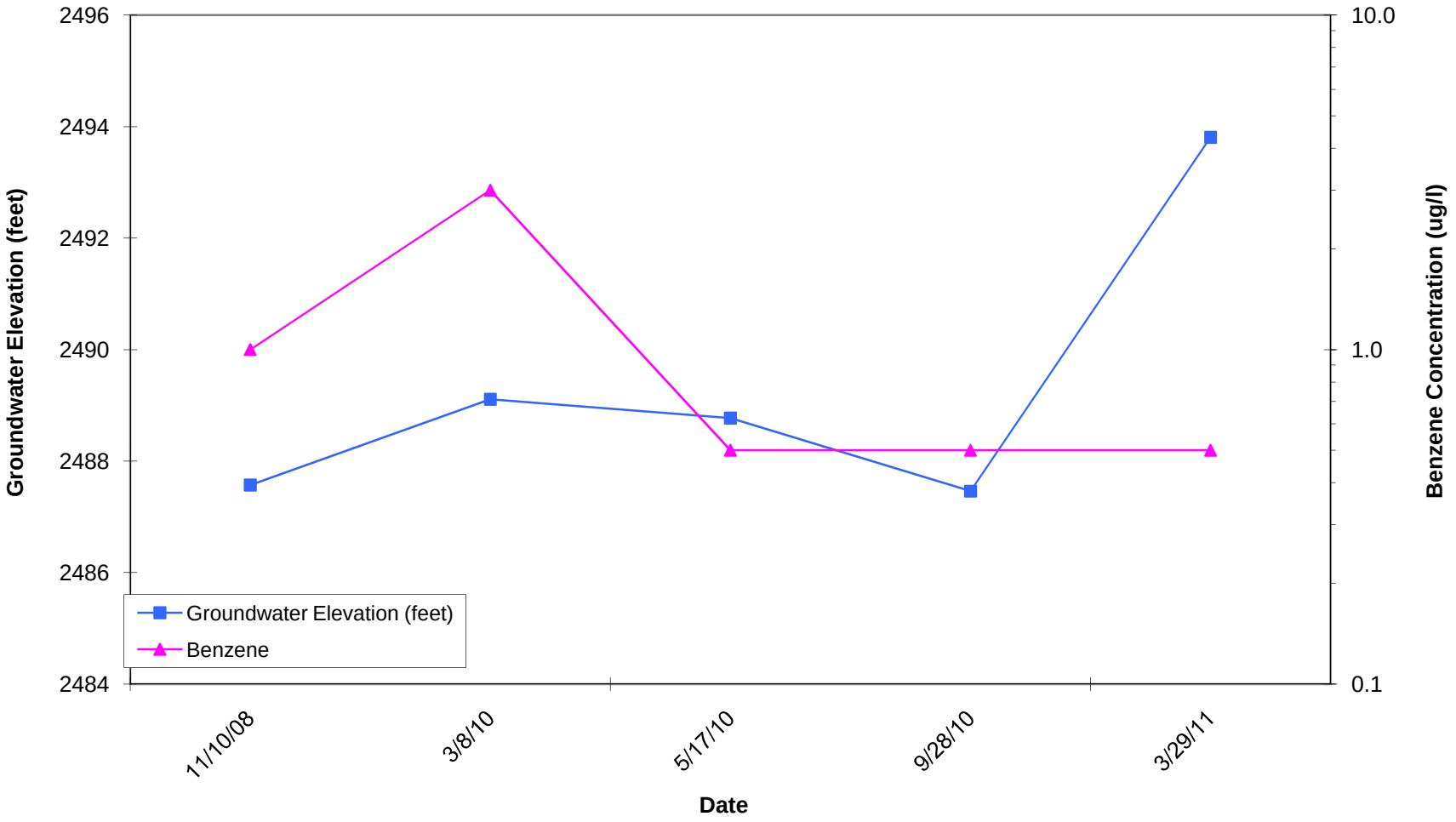
Well MW-2 Hydrograph
Chevron Station No. 352-300
State Route 274, Tekoa, Washington



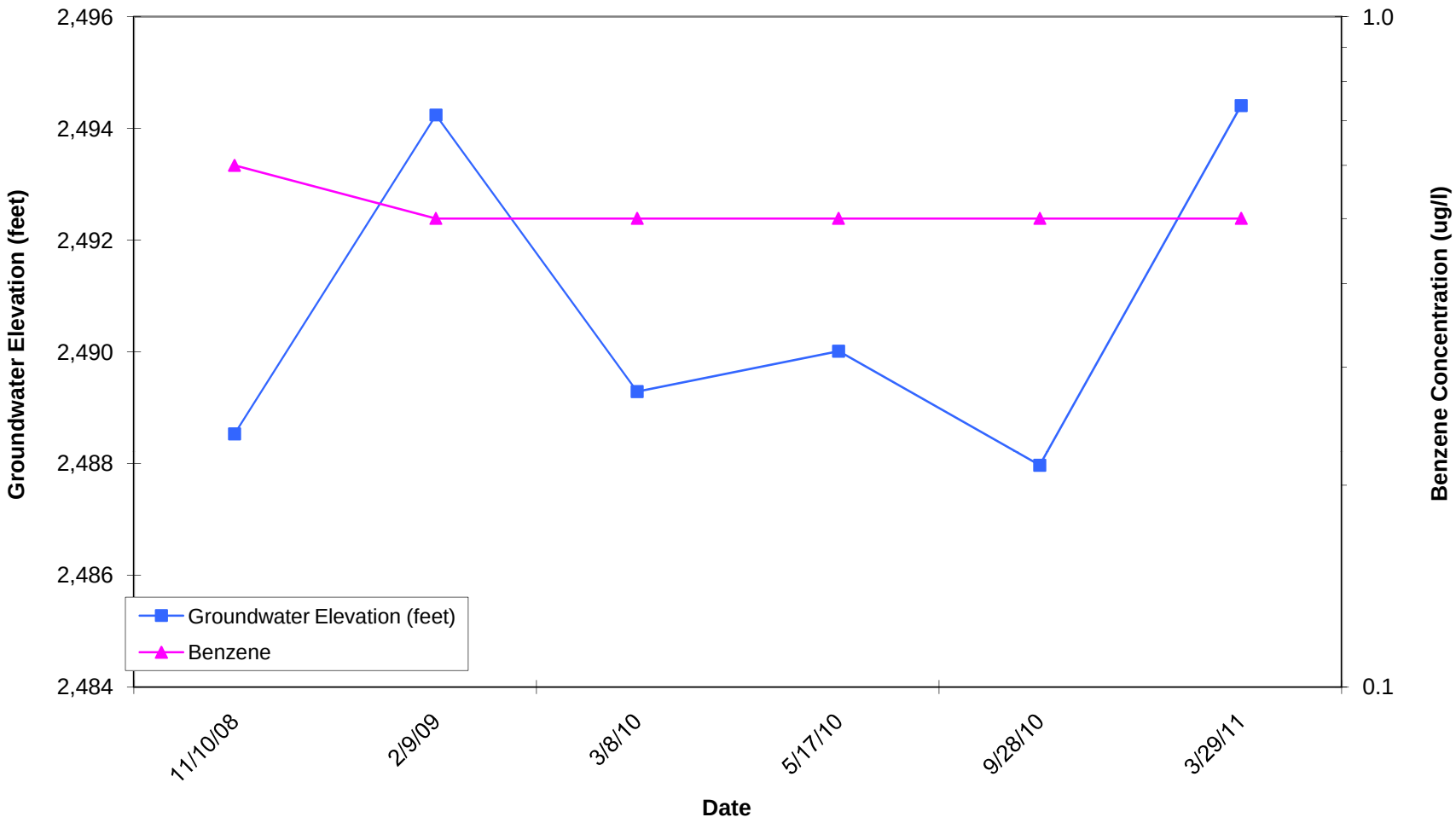
Well MW-3 Hydrograph
Chevron Station No. 352-300
State Route 274, Tekoa, Washington



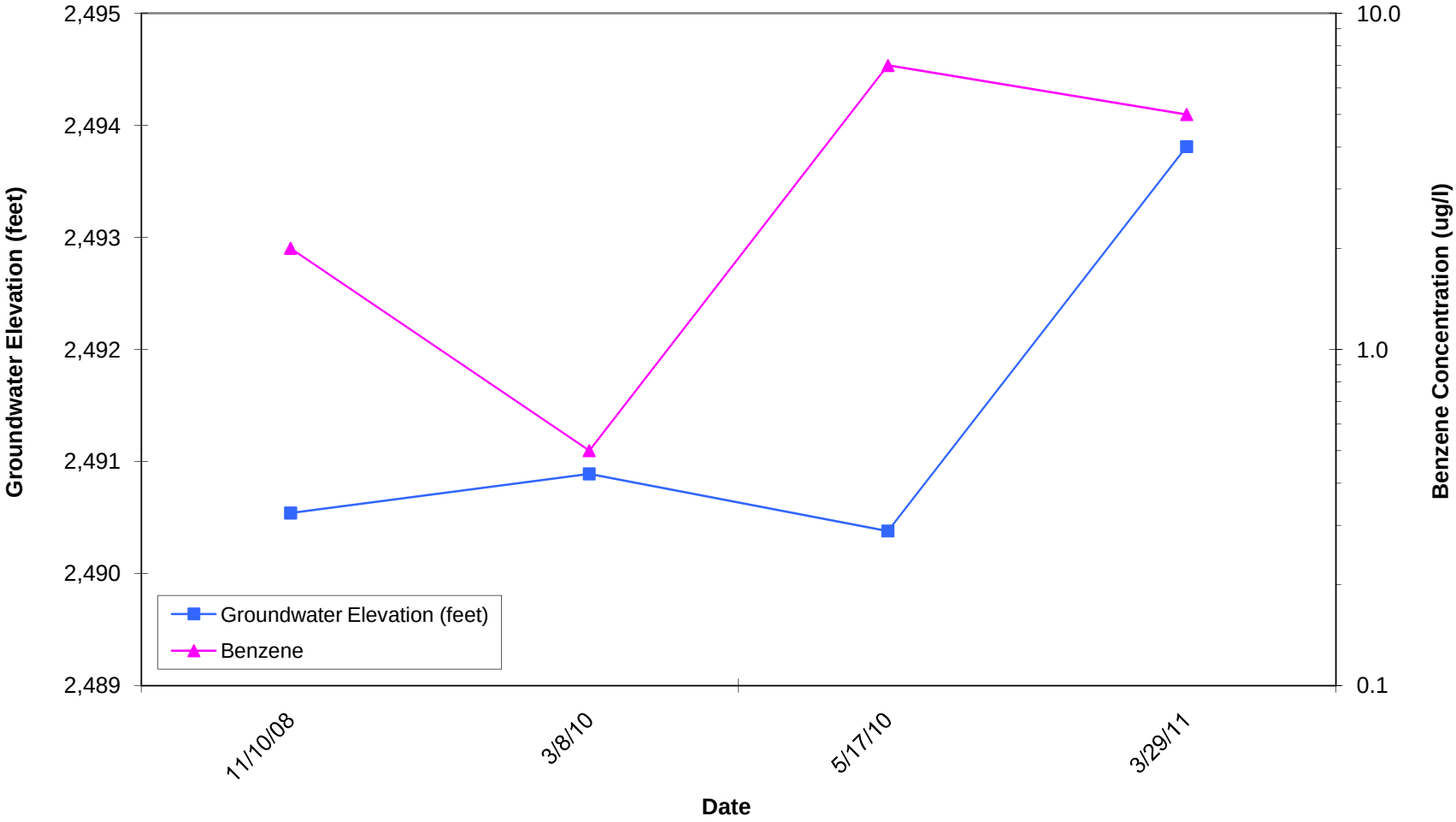
Well MW-4 Hydrograph
Chevron Station No. 352-300
State Route 274, Tekoa, Washington



Well MW-5 Hydrograph
Chevron Station No. 352-300
State Route 274, Tekoa, Washington



Well MW-7 Hydrograph
Chevron Station No. 352-300
State Route 274, Tekoa, Washington



Appendix B:

Washington State Department of Ecology
Toxics Cleanup Program

Terrestrial Ecological Evaluation Process- Simplified Evaluation

Documentation Form

Criteria # (Concern)	Criteria	Response (Circle One)
1 (exposure)	Is the total area of soil contamination at the site less than or equal to 350 square feet	**Yes (End TEE) / No**
2 (exposure)	Does land use at the site and surrounding area make substantial wildlife exposure unlikely based on completion of Table 749-1?	**Yes (End TEE) / No**
3 (pathway)	Is there a potential exposure pathway from soil contamination to soil biota, plants, or wildlife?	**Yes / No (End TEE)**
4 (contaminant)	Are the hazardous substances at your site listed in Table 749-2 and is (or will) their location in the soil at your site be at a depth not exceeding the point of compliance, and at concentrations that do not exceed the values provided in Table 749-2.	**Yes (End TEE) / No** **Note: You must perform bioassays for contaminants at your site if no table value is provided.**
5 (contaminant)	Will hazardous substances listed in Table 749-2 be present in the soil at your site within 6 feet of the ground surface at concentrations likely to be toxic, or with the potential to bioaccumulate, based on bioassays using methods approved by the department.	**Yes / No (End TEE)**

[Exclusions Main] [TEE Definitions] [Simplified or Site-Specific?] [Simplified Ecological Evaluation] [Site-Specific Ecological Evaluation] [WAC 173-340-7493] [Index of Tables]

[TEE Home]

Table 749-1

Simplified Terrestrial Ecological Evaluation-Exposure Analysis Procedure

Estimate the area of contiguous (connected) undeveloped land on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre).	
1) From the table below, find the number of points corresponding to the area and enter this number in the field to the right.	
Area (acres) / Points 0.25 or less / 4 0.5 / 5 1.0 / 6 1.5 / 7 2.0 / 8 2.5 / 9 3.0 / 10 3.5 / 11 4.0 or more / 12	6
2) Is this an industrial or commercial property? If yes, enter a score of 3. If no, enter a score of 1	1
3)[a] Enter a score in the box to the right for the habitat quality of the site, using the following rating system[b]. High=1, Intermediate=2, Low=3	1
4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2.[c]	1
5) Are there any of the following soil contaminants present: Chlorinated dioxins/furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.	4
6) Add the numbers in the boxes on lines 2-5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified evaluation may be ended.	7

Notes for Table 749-1

[a] It is expected that this habitat evaluation will be undertaken by an experienced field biologist. If this is not the case, enter a conservative score of (1) for questions 3 and 4.

[b] **Habitat rating system.** Rate the quality of the habitat as high, intermediate or low based on your professional judgment as a field biologist. The following are suggested factors to consider in making this evaluation:

> **Low:** Early successional vegetative stands; vegetation predominantly noxious, nonnative, exotic plant species or weeds. Areas severely disturbed by human activity, including intensively cultivated croplands. Areas isolated from other habitat used by wildlife.

High: Area is ecologically significant for one or more of the following reasons: Late-successional native plant communities present; relatively high species diversity; used by an uncommon or rare species; priority habitat (as defined by the Washington Department of fish and Wildlife); part of a larger area of habitat where size or fragmentation may be important for the retention of some species.

Intermediate: Area does not rate as either high or low.

[c] Indicate "yes" if the area attracts wildlife or is likely to do so. Examples: Birds frequently visit the area to feed; evidence of high use b mammals (tracks, scat, etc.); habitat "island" in an industrial area; unusual features of an area that make it important for feeding animals; heavy use during seasonal migrations.

[Area Calculation Aid] [Aerial Photo with Area Designations] [TEE Table 749-1] [Index of Tables]

[Exclusions Main] [TEE Definitions] [Simplified or Site-Specific?] [Simplified Ecological Evaluation] [Site-Specific Ecological Evaluation] [WAC 173-340-7493]

[TEE Home]

Appendix C:

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. ....
Permit No. G3 25643

(1) OWNER: Name CITY OF TEKOA Address TEKOA WASHINGTON

(2) LOCATION OF WELL: County WHITMAN NE NE ¼ SW ¼ Sec 24 T 20 N., R 45 W.M.
Bearing and distance from section or subdivision corner 340' W - 70' S of Center

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) ....
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 16" inches.
Drilled 1400 ft. Depth of completed well 1400 ft.

(6) CONSTRUCTION DETAILS: 0 — 25FT

Casing installed: 16" Diam. from +2 ft. to 636 ft.
Threaded ☐ 12" Diam. from 901 ft. to 1025 ft.
Welded ☒ 10" Diam. from 971 ft. to 1281 ft.

Perforations: Yes ☒ No ☐
Type of perforator used TORCH CUT
SIZE of perforations ¼ in. by 4 in.
300 perforations from 965 ft. to 995 ft.
540 perforations from 1100 ft. to 1145 ft.
480 perforations from 1200 ft. to 1240 ft.
360 1250 1280

Screens: Yes ☐ No ☒
Manufacturer's Name ....
Type .... Model No. ....
Diam. .... Slot size .... from .... ft. to .... ft.
Diam. .... Slot size .... from .... ft. to .... ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: ....
Gravel placed from .... ft. to .... ft.

Surface seal: Yes ☒ No ☐ To what depth? 45 ft.
Material used in seal CEMENT GROUT
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? .... Depth of strata ....
Method of sealing strata off ....

(7) PUMP: Manufacturer's Name ....
Type: .... H.P. ....

(8) WATER LEVELS: Land-surface elevation above mean sea level 2520
Static level 32 ft. below top of well Date 3-24-78
Artesian pressure .... lbs. per square inch Date ....
Artesian water is controlled by .... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? CONTRACTOR
Yield: 3196 gal./min. with 183 ft. drawdown after 2 hrs.
" 2545 " 142 " 3 "
" 1520 " 75 " 8 "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
0	107	10 min	65		
6 min	73	45 min	45		
	69				

Date of test 4-10-78
Bailer test .... gal./min. with .... ft. drawdown after .... hrs.
Artesian flow .... g.p.m. Date ....
Temperature of water 65° Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
TOP SOIL	0	5
BASALT HARD	5	104
GREEN CLAY + SAND ★	104	140
BASALT BLACK MED	140	306
GREY SAND ★	306	332
CLAY BROWN	332	363
BASALT BLACK MED	363	455
SANDY CLAY SOME WOOD	455	473
BROWN SANDY CLAY	473	614
BASALT BLACK HARD	614	908
SAND STONE BROWN MED	908	971
QUARTZITE GREY FRAC. ★	971	1015
QUARTZITE GRAVEL + CLAY	1015	1056
CLAY RED	1056	1091
QUARTZITE ★	1091	1218
QUARTZITE FRAC. ★	1218	1229
QUARTZITE + CLAY ★	1229	1239
ANDESITE GRAVEL ★	1239	[redacted]
WELL ROUNDED		1297
	[redacted]	
QUARTZITE GRAV	1297	1375
QUARTZITE FRAC. ★	1375	1400

9/1/41
3000
2000
Mun

★WATER

Tekoa 7/12

Work started 2-15 19 78 Completed 3-24 19 78

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME HOLMAN DRILLING CORP (Person, firm, or corporation) (Type or print)

Address E 3410 9th AVE SPOKANE WN

[Signed] Arnold E. Holman PRES. (Well Driller)

License No. 0189 Date 4-24 19 78

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

WATER WELL REPORT
FOR AN EXISTING WELL

WASHINGTON STATE DEPARTMENT OF ECOLOGY

INSTRUCTIONS:
Use this form only if an original water well report was NEVER filed or is MISSING from Ecology records. Your well must be properly tagged prior to submitting this form. Please fill in all blanks as completely as possible. If information is not known, leave blank. After completing, mail the original form to: Wa State Dept of Ecology, PO Box 47600, Olympia, WA, 98504-7600, ATTN: Marian Bruner.

CURRENT USE: ☐ Domestic ☐ Industrial ☒ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other_____

DIMENSIONS: Diameter of well 6 inches. Depth of completed well 115 ft. if known.

CONSTRUCTION DETAILS
Liner Installed ☒ Yes ☐ No ☐ Unknown
TYPE: ☐ PVC ☒ Steel ☐ Concrete Liner ☐ Other ☐ Unknown

Perforations: ☐ Yes ☐ No ☒ Unknown
SIZE of perfs____in. by____in. and no. of perfs____ from____ft. to____ft.

Screens: ☒ Yes ☐ No ☐ Unknown Mfr's Name_____
TYPE: ☒ Stainless Steel ☐ PVC ☐ Other
Diam. 6" Slot Size_____ from 110 ft. to 115 ft.

Gravel/Filter packed: ☐ Yes ☐ No ☒ Unknown
Materials placed from_____ft. to_____ft.

Surface Seal: ☒ Yes ☐ No ☐ Unknown If known, to what depth_____ft
Materials used if known: ☐ Bentonite ☒ Cement

PUMP: ☒ Yes ☐ No Mfr's Name Westinghouse
Type: TURBINE H.P. 30

WATER LEVELS: Land-surface elevation above mean sea level 2,492 ft.
Static level 21 ft. below top of casing Date measured 9-15-06
Artesian pressure 0 lbs. per square inch Date measured 9-15-06
Well head has cap? ☐ Yes ☐ No pump Shut off valve? ☒ Yes ☐ No

WELL TESTS: Drawdown is amount water level is lowered below static level.
Was a pump test made? ☒ Yes ☐ No If yes, attach copy ☐ Unknown
Yield: 200 gal./min. with 10 ft. drawdown after 1 hrs.

Unique Ecology Well ID Tag No. AGG 172
Water Right? If yes, attach copy ☒ Yes ○ No
Property Owner Name City of Tekoa
Well Street Address 400 N. Washington St.
City Tekoa County: Whitman
Tax Parcel No. _____

LOCATION
An accurate location of your well is very important. The Township, Range, Section and 1/4, 1/4 can be found on your legal description or through your county asessor's office.

Sec 24 Twn 20 R 45 (E W WM) circle one

D	C	B	A
E	F	(G)	H
M	L	K	J
N	P	Q	R

This square represents one section of land, which is approx 640 acres. Within this section, circle the letter that best represents the location of the well within this section.

Latitude/Longitude NOTE: Section, Township, Range still REQUIRED
Lat Deg N 47° Lat Min/Sec 13.543
Long Deg W 117° Long Min/Sec 04.512
☒ GPS ☐ Survey ☐ Topographic Map ☐ Computer Generated

Additional Information, if available:
☐ Location marked on topographic map (please attach)
☐ Location marked on air photo (please attach)

CERTIFICATION: The information reported above is true to the best of my knowledge and belief.

RECEIVED
MAR - 5 2007
DEPARTMENT OF ECOLOGY
EASTERN REGIONAL OFFICE

☐ Driller ☐ Engineer ☐ Property Owner ☒ Other

Name James Thompson
Signature James Thompson
Driller License No. _____
Date Signed 3-1-07

Drilling Company _____
Address of person completing this form: PO Box 927
City, State, Zip Tekoa WA 99033

Original - Ecology

Ecology is an Equal Opportunity Employer.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

RECEIVED
SEP 11 1979
DEPARTMENT OF ECOLOGY
SPOKANE REGIONAL

State of Washington
DEPARTMENT OF ECOLOGY
East 103 Indiana
SPOKANE, WA. 99207

PROOF OF APPROPRIATION OF WATER

APPLICATION NUMBER

PERMIT NUMBER
G3-25643P

NAME OF PERMITTEE
City of Tekoa

POST OFFICE ADDRESS: P. O. Box 220 | (CITY) Tekoa | (STATE) Washington | (ZIP CODE) 99033

ACTUAL SOURCE OF APPROPRIATION
three wells

PURPOSE OR PURPOSES WATER IS USED FOR
Municipal Supply

DATE WATER WAS COMPLETELY APPLIED TO PERMITTED USE
May 16, 1979

IF USED FOR IRRIGATION: NUMBER OF ACRES ACTUALLY IRRIGATED

IF SOURCE IS A WELL, IS AN ACCESS PORT NOW INSTALLED
[X] YES [ ] NO

MONTHS DURING WHICH WATER IS USED
Continuously

PUMP SIZE
New Pump (Well #4) is 100 Hp; others are 20 Hp and 25 Hp

ACTUAL AMOUNT WITHDRAWN OR DIVERTED FROM PERMANENT SYSTEM
New Well (#4) = 1,000
Wells #1 and #2 = 550
[X] GPM [ ] CFS Total = 1,550

HAVE ALL PROVISIONS AS REQUIRED BY PERMIT BEEN ACCOMPLISHED
[X] YES [ ] NO

IF NO, EXPLAIN

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED (USE ADDITIONAL SHEET IF NECESSARY)

Area served by the City of Tekoa, within Sections 13 and 24 T. 20N., R. 45 E.W.M., and Sections 18 and 19, T. 20N., R. 46 E.W.M.

OK FOR PA
MAILED PROOF DATE.

STATE OF WASHINGTON,
County of Spokane } ss.

I, James C. Baker, being first duly sworn, depose and say that I have read the above and foregoing proof of appropriation; that I know the contents thereof; and that the facts therein stated are true.

IN WITNESS WHEREOF, I have hereunto set my hand this 7th day of September 19 79.

James C. Baker

Subscribed and sworn to before me this 7th day of SEPTEMBER 19 79.

Notary Public

ECY 070-25

AGRI-SERVICE, INC.

WELL TEST LOG

Test No. ____________ Date April 19 1978

Place Town of [illegible] Well Size ____________ Static Level 32 ft.

Pump Setting 600 ft. Air Line 580 ft. Well Depth ____________

Start Time	RPM Check	GPM Reading	Electric Sounder Read	Orifice Reading		Comments
9:35 /	/	[illegible]	32 ft.	/		mirky H_2O
9:45 /	1150	1860	82 ft. 57'	275	32.5	mirky H_2O
9:50 /	1550	2116	110 ft. 78'	371	27.5	mirky H_2O
10:00 /	1560	2400	130 ft. 90'	575	24.5	white clay like
10:15 /	1600	2535	140 ft. 114'	58	22.5	white
10:35 /	1600	2512	150 ft. 118'	58	21.4	white H_2O
10:40 /	1660	2525	180 ft. 148'	71	19.2	white H_2O
11:15 /	1800	2825	185 ft. 153'	77	19.1	white (clearing)
12:00	1800	2902	[illegible] ft. 157'	70	18.2	white (clearing)
12:15	[illegible]	3205	200 ft. 176'	[illegible]	18.3	white (clearing)
12:45	[illegible]	3195	210 ft. 178'	[illegible]	18.0	milky to cloudy clearing
[illegible]	1950	3195	215 ft. 183'	[illegible]	17.8	milky to cloudy clearing
[illegible]	[illegible]	3196	215 ft. 183'	[illegible]	17.8	milky to cloudy clearing
[illegible]	Reduced to 1600	2519	—	[illegible]		[illegible]

AGRI-SERVICE, INC.

WELL TEST LOG

Test No. _____ Date April 10, 1978

Place Town of Tahoe Well Size _____ Static Level 32 ft.

Pump Setting 600 ft. Air Line 580 ft. Well Depth _____

Start Time	RPM Check	GPM Reading	Electric sounder reading	Orifice Reading		Comments
1:25	1600	251.5	196 ft. 117	51	17.2	Still cloudy but clearer
2:00	1600	251.5	194 ft. 112	51	17.2	clearer
2:30	1600	251.5	194 ft. 112	51	17.2	clearer
2:45	Reduced to 1525	2005	144 ft. 92	38	17.2	clearer
3:00	1525	2010	140 ft. 106	39	18.2	clear completely
3:15	1525	2010	139 ft. 107	39	19.2	clear completely
3:30	1525	2010	139 ft. 107	39	19.2	clear completely
3:31	Reduced to 1025	1500	114 ft. 82	17.5	18.2	clear completely
3:40 1025	1025	1500	112 ft. 80	17.5	18.2	clear completely
3:50	1025	1500	111 ft. 79	17.5	19.2	clear completely
4:00	1025	1500	110 ft. 78	17.5	19.2	clear completely
4:15	1025	1520	109 ft. 77	18	19.2	clear completely
5:00	1025	1580	107 ft. 75	18	20.2	clear completely
5:30	1025	1520	107 ft. 75	18	20.2	clear completely
5:31	shut down					Electricsounder reading: recovered in 1 min. 73 3 min. 69 ft. 10 min. 65 ft. 45 min. 43 ft.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

RECEIVED
SEP 14 1979
DEPARTMENT OF ECOLOGY
SPOKANE REGIONAL OFFICE

State of Washington
DEPARTMENT OF ECOLOGY
East 100 Indiana
SPOKANE, WA 99207

PROOF OF APPROPRIATION OF WATER

APPLICATION NUMBER

PERMIT NUMBER
69-25643P

NAME OF PERMITTEE
City of Tekoa

POST OFFICE ADDRESS
P. O. Box 220

(CITY)
Tekoa

(STATE)
Washington

(ZIP CODE)
99033

ACTUAL SOURCE OF APPROPRIATION
three wells

PURPOSE OR PURPOSES WATER IS USED FOR
Municipal Supply

DATE WATER WAS COMPLETELY APPLIED TO PERMITTED USE
May 16, 1979

IF USED FOR IRRIGATION: NUMBER OF ACRES ACTUALLY IRRIGATED

IF SOURCE IS A WELL, IS AN ACCESS PORT NOW INSTALLED
[X] YES [ ] NO

MONTHS DURING WHICH WATER IS USED
Continuously

PUMP SIZE
New Pump (Well #4) is 100 Hp; others are 20 Hp and 25 Hp

ACTUAL AMOUNT WITHDRAWN OR DIVERTED FROM PERMANENT SYSTEM
New Well (#4) = 1,000
Wells #1 and #2 = 550
[X] GPM [ ] CFS Total = 1,550

HAVE ALL PROVISIONS AS REQUIRED BY PERMIT BEEN ACCOMPLISHED
[X] YES [ ] NO

IF NO, EXPLAIN

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED (USE ADDITIONAL SHEET IF NECESSARY)

Area served by the City of Tekoa, within Sections 13 and 24 T. 20N., R. 46 E.W.M., and Sections 18 and 19, T. 20N., R. 46 E.W.M.

OK FOR PA
MAILED PROOF DFC.

STATE OF WASHINGTON,
County of Spokane } ss.

I, James C. Baker, being first duly sworn, depose and say that I have read the above and foregoing proof of appropriation; that I know the contents thereof; and that the facts therein stated are true.

IN WITNESS WHEREOF, I have hereunto set my hand this 7th day of September, 19 79

James C. Baker

Subscribed and sworn to before me this 7th day of SEPTEMBER, 1979.

Notary Public

ECY 070-25

WATER WELL REPORT
FOR AN EXISTING WELL

WASHINGTON STATE DEPARTMENT OF ECOLOGY

INSTRUCTIONS:
Use this form only if an original water well report was NEVER filed or is MISSING from Ecology records. Your well must be properly tagged prior to submitting this form. Please fill in all blanks as completely as possible. If information is not known, leave blank. After completing, mail the original form to: Wa State Dept of Ecology, PO Box 47600, Olympia, WA, 98504-7600, ATTN: Marian Bruner.

CURRENT USE: ☐ Domestic ☐ Industrial ☒ Municipal
☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

DIMENSIONS: Diameter of well 4 inches.
Depth of completed well 180 ft. if known.

CONSTRUCTION DETAILS
Liner Installed ☒ Yes ☐ No ☐ Unknown
TYPE: ☐ PVC ☒ Steel ☐ Concrete Liner ☐ Other ☐ Unknown

Perforations: ☐ Yes ☐ No ☒ Unknown
SIZE of perfs ____ in. by ____ in. and no. of perfs ____ from ____ ft. to ____ ft.

Screens: ☒ Yes ☐ No ☐ Unknown Mfr's Name _____
TYPE: ☒ Stainless Steel ☐ PVC ☐ Other
Diam. 4" Slot Size ? from ? ft. to ? ft.

Gravel/Filter packed: ☐ Yes ☐ No ☒ Unknown
Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No ☐ Unknown If known, to what depth ? ft
Materials used if known: ☐ Bentonite ☒ Cement

PUMP: ☒ Yes ☐ No Mfr's Name US MOTORS
Type: TURBINE H.P. 20

WATER LEVELS: Land-surface elevation above mean sea level 2,492 ft.
Static level 21 ft. below top of casing Date measured 9-15-06
Artesian pressure 0 lbs. per square inch Date measured 9-15-06
Well head has cap? ☐ Yes ☐ No (pump) Shut off valve? ☒ Yes ☐ No

WELL TESTS: Drawdown is amount water level is lowered below static level.
Was a pump test made? ☐ Yes ☐ No If yes, attach copy
☒ Unknown
Yield: 75 gal./min. with 10 ft. drawdown after 1 hrs.

Unique Ecology Well ID Tag No. AGG 173
Water Right? If yes, attach copy ☒ Yes ○ No
Property Owner Name City of Tekoa
Well Street Address 400 N. Washington St.
City Tekoa County: Whitman
Tax Parcel No. _____

LOCATION
An accurate location of your well is very important. The Township, Range, Section and 1/4, 1/4 can be found on your legal description or through your county asessor's office.

Sec 24 Twn 20 R 45 (EWM) or WWM — circle one

D	C	B	A
E	F	(G)	H
M	L	K	J
N	P	Q	R

This square represents one section of land, which is approx 640 acres. Within this section, circle the letter that best represents the location of the well within this section.

Latitude/Longitude NOTE: Section, Township, Range still REQUIRED
Lat Deg N 47° Lat Min/Sec 13.543
Long Deg W 117° Long Min/Sec 04.512
☒ GPS ☐ Survey
☐ Topographic Map ☐ Computer Generated

Additional Information, if available:
☐ Location marked on topographic map (please attach)
☐ Location marked on air photo (please attach)

RECEIVED
MAR - 5 2007
DEPARTMENT OF ECOLOGY
EASTERN REGIONAL OFFICE

CERTIFICATION: The information reported above is true to the best of my knowledge and belief.

☐ Driller ☐ Engineer ☐ Property Owner ☒ Other

Name James Thompson
Signature James Thompson
Driller License No. _____
Date Signed 3-1-07

Drilling Company _____
Address of person completing this form PO Box 927
City, State, Zip TEKOA WA 99033

Original - Ecology

Ecology is an Equal Opportunity Employer.

206588

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

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

☒ Construction

○ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

CURRENT

Notice of Intent No. W248802

Unique Ecology Well ID Tag No. AAU 279

Water Right Permit No. G3-25643

Property Owner Name City Of Tekoa

Well Street Address Tekoa Golf Course

City Tekoa County Whitman

Location SW 1/4-1/4 NW 1/4 Sec 19 Twn 20 R 46 (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. _____

PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☒ Irrigation ☐ Test Well ☐ Other _____

TYPE OF WORK: Owner's number of well (if more than one) _____

☒ New well ☐ Reconditioned ☐ Deepened *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Cable ☐ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 8 inches, drilled 180 ft. Depth of completed well 180 ft.

CONSTRUCTION DETAILS

Casing installed: ☒ Welded 8 " Diam. from +2 ft. to 45 ft. ☒ Liner installed 6 " Diam. from 10 ft. to 180 ft. ☐ Threaded _____ " Diam. from _____ ft. to _____ ft.

Perforations: ☒ Yes ☐ No

Type of perforator used Drilled

SIZE of perfs 1 in. by 1 in. and no. of perfs 60 from 110 ft. to 160 ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 45 ft. 45

Material used in seal Bentonite

Did any strata contain unusable water? ☒ Yes ☐ No

Type of water? Surface Depth of strata 26

Method of sealing strata off Bentonite Seal 8/25/06

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 21 ft. below top of well Date 8/25/06

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by Cap (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest 300+ gal./min. with stem set at 160 ft. for 4 hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water 48° Was a chemical analysis made? ☐ Yes ☒ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
12". brown Dirt	0 ft	8 ft
12" BrownClay	8 ft	18 ft
12" Dark Brown Clay	18 ft	26 ft
12" Broken Black basalt	26 ft	33 ft
12" Hard black basalt	33 ft	45 ft
8" Hard basalt	45 ft	105 ft
8" Medium hard fractured basalt	105 ft	140 ft
8" Broken basalt	140 ft	158 ft
8" Hard basalt	158 ft	172 ft
8" White course sand	172 ft	180 ft

RECEIVED SEP 25 2006 DEPARTMENT OF ECOLOGY WELL DRILLING UNIT

RECEIVED SEP 27 2006 DEPARTMENT OF ECOLOGY EASTERN REGIONAL OFFICE

OK to route SEP 27 2006

Start Date August 21, 2006 Completed Date Aug. 23, 2006

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) Stanley K. Wolfe

Driller/Engineer/Trainee Signature Stanley K Wolfe

Driller or trainee License No. 2108

Drilling Company All-Ways Drilling, Inc.

Address 100 Endova Lane

City, State, Zip St. Maries, Idaho 83861

Contractor's Registration No. ALLWAD1077 JG Date 9/16/06

If TRAINEE,

Driller's Licensed No. _____

Driller's Signature _____

Ecology is an Equal Opportunity Employer.

ECY 050-1-20 (Rev 3/05) **The Department of Ecology does NOT warranty the Data and/or Information on this Well Report.**

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

WRC 751

Application No. 12296

Permit No. G3-00167P

(1) OWNER: Name Howard E. [illegible] Address [illegible], Wash.

(2) LOCATION OF WELL: County Whitman 650 ft S & 180 ft E ___ ¼ W ¼ Sec. 18 T. 20 N., R. 44E W.M.

Bearing and distance from section or subdivision corner ?

(3) PROPOSED USE: Domestic ☒ Industrial ☐ Municipal ☐ Irrigation ☒ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) ___ New well ☒ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

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(5) DIMENSIONS: Diameter of well 6 inches. Drilled ___ ft. Depth of completed well 120 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6" Diam. from 0 ft. to 21 ft.
Threaded ☐ ___" Diam. from ___ ft. to ___ ft.
Welded ☐ ___" Diam. from ___ ft. to ___ ft.

Perforations: Yes ☐ No ☒
Type of perforator used ___
SIZE of perforations ___ in. by ___ in.
___ perforations from ___ ft. to ___ ft.
___ perforations from ___ ft. to ___ ft.
___ perforations from ___ ft. to ___ ft.

Screens: Yes ☐ No ☒
Manufacturer's Name ___
Type ___ Model No. ___
Diam. ___ Slot size ___ from ___ ft. to ___ ft.
Diam. ___ Slot size ___ from ___ ft. to ___ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: ___
Gravel placed from ___ ft. to ___ ft.

Surface seal: Yes ☒ No ☐ To what depth? 21 ft.
Material used in seal Cement & bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ___ Depth of strata ___
Method of sealing strata off ___

(7) PUMP: Manufacturer's Name ___
Type: ___ H.P. ___

(8) WATER LEVELS: Land-surface elevation above mean sea level ___ ft.
Static level ___ ft. below top of well Date ___
Artesian pressure 10 lbs. per square inch Date ___
Artesian water is controlled by Valve (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom? ___
Yield: ___ gal./min. with ___ ft. drawdown after ___ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
Constant flow of approx. 50 gals. per minute					

Date of test ___
Bailer test ___ gal./min. with ___ ft. drawdown after ___ hrs.
Artesian flow 150 g.p.m. Date Feb 71
Temperature of water 51 Was a chemical analysis made? Yes ☒ No ☐

OK TMD 2-7-73

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Clay	0	12
[illegible] basalt	12	20
solid black basalt	20	120
[illegible]	120	121

COPY FROM WR FILE

Work started ___ 19___ Completed ___ 19___

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Findley Well Drilling (Person, firm, or corporation) (Type or print)

Address 285 [illegible] [illegible]

[Signed] Bill E. Findley (Well Driller)

License No. 62 Date Feb., 1971

(USE ADDITIONAL SHEETS IF NECESSARY)

E.F. No. 1120-O3—(Rev. 6-71)