STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

December 12, 2011

Mr. Peter Schmidt
36515 249th Avenue
Enumclaw, WA 98022

Re: Further Action at a Property associated with a Site:

- Property Address: 26719 Highway 410 East, Buckley
- Facility/Site No.: 83113674
- Cleanup Site ID No.: 1131
- VCP Project No.: SW0814

Dear Mr. Schmidt:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of a Property associated with the Shear Trucking facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issues Presented and Opinion

1. Is further remedial action necessary at the Property to clean up contamination associated with the Site?

   YES. Ecology has determined that further remedial action is necessary at the Property to clean up contamination associated with the Site.

2. Is further remedial action also necessary elsewhere at the Site?

   YES. Ecology has determined that further remedial action is also necessary elsewhere at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Property and the Site

This opinion applies only to the Property and the Site described below. This opinion does not apply to any other sites that may affect the Property. Any such sites, if known, are identified separately below.

1. Description of the Property.

The Property includes the following tax parcel that was affected by the Site and addressed by your cleanup:

- Pierce County Tax Parcel #0619053015

Enclosure A includes a legal description of the Property. The location of the Property within the Site is illustrated in **Enclosure B.**

2. Description of the Site.

The Site is defined by the nature and extent of contamination associated with the following releases:

- Petroleum hydrocarbons and related constituents, metals, and potentially other contaminants associated with illegal recycling and dumping in soil and groundwater.

Those releases have affected more than one parcel of real property, including the parcel identified above.

Enclosure B includes a detailed description and diagram of the Site, as currently known to Ecology.

3. Identification of Other Sites that may affect the Property.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the Property is affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. Groundwater Characterization Report, Schmidt Property (Former Shear Transport Facility), 26719 State Route 410 East, Buckley, WA, dated October 6, 2011 by Blue Sage Environmental.

2. Schmidt Property Groundwater Study, dated June 1, 2011 by Blue Sage Environmental.

3. Schmidt Property Groundwater Study, dated September 18, 2010 by Blue Sage Environmental.

Those documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that **further remedial action** is necessary at the Property to clean up contamination associated with the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is not sufficient to establish cleanup standards for the Site and select a cleanup for the Property.

Characterization of the entire Site could not be conducted due to a lack of cooperation from the adjacent property owner and operator of the former Buckley Recycling Center (BRC). It is assumed that contamination exists beyond the Property boundary to the west on the former BRC property.

Soil samples were collected from the Property in September 2002 by Tacoma-Pierce County Health Department (TPCHD), and in October 2007 by Blue Sage Environmental (BSE). TPCHD identified concentrations of carcinogenic polycyclic aromatic hydrocarbons (cPAHs) and chromium in soil above MTCA cleanup levels along the Property boundary, adjacent to the former BRC property. However, soil samples collected by BSE in 2007 from this area, and from 14 other test pit locations throughout the Property, did not detect any contaminants above MTCA cleanup levels, except for a sludge sample collected from a concrete stormwater collector basin near the former diesel aboveground storage tank (AST). This sample contained heavy oil-range petroleum hydrocarbons at 2,700 milligrams per kilogram (mg/kg). Reportedly, all sludge from this concrete basin has since been cleaned out and disposed off Site.

In July 2010, BSE installed five monitoring wells (PS-MW1 through PS-MW5) throughout the Property, including two wells (PS-MW2 and PS-MW3) along the western Property boundary adjacent to BRC. Soil samples were collected from locations PS-MW2 and PS-MW3, and a soil vapor sample was collected PS-MW3. The soil samples were analyzed in accordance with MTCA Table 830-1 for gasoline- and diesel-range organics (GRO and DRO), and the vapor sample was analyzed for GRO, DRO, and volatile organic compounds (VOCs). None of the contaminants analyzed for were detected at concentrations exceeding MTCA cleanup levels for soil or screening levels for air *(see attached Table 2)*.

Between July 2010 and July 2011, all five monitoring wells were sampled quarterly in accordance with MTCA Table 830-1, with a few exceptions: 1) sampling of PS-MW1 (determined to be an upgradient well) was discontinued after two quarters of non-detects per Ecology approval; 2) sampling for cPAHs was discontinued after one quarter of non-detects per Ecology approval; 3) sampling for gasoline additives (ethylene dibromide, ethylene dichloride, etc.) was discontinued after two quarters of non-detects per Ecology approval; and 4) wells PS-MW3, PS-MW4, and PS-MW5 were resampled shortly after the third quarter data was received indicating anomalously high benzene and lube oil concentrations that were presumed to be due to standing water and wood debris around the well casings.

Analytical results of the groundwater samples are summarized in attached Tables 3, 4, and 5. The only contaminant consistently detected above MTCA cleanup levels was arsenic, both total and dissolved *(see attached Table 5)*. It was present in all wells, except PS-MW1, above the MTCA cleanup level of 5 micrograms per liter (µg/L), which is based on natural background.

Based on a review of the data collected to date, Ecology has the following comments:

1. The source of the arsenic in the groundwater is unknown. BSE has suggested that it is likely naturally occurring; however, their October 2011 Groundwater Characterization Report does not offer rationale to support that theory. As noted above, the MTCA Method A cleanup level of 5 µg/L is based on natural background, and total and dissolved arsenic have been detected as high as 43 µg/L and 21 µg/L, respectively. If the arsenic was naturally occurring, one would expect to see it present in all wells; however, it was non-detect in PS-MW1 (upgradient well) the one time that well was sampled for arsenic, which was during the last monitoring event. Further, based on the direction of groundwater flow beneath the Property (consistently to the northeast), the potential for it to be coming from sources on the BRC property cannot be ruled out. As such, additional arsenic data needs to be collected from groundwater to try to identify a source and determine whether concentrations are remaining consistent. **At least two additional rounds of groundwater data should be collected from all five monitoring wells for analysis for total and dissolved arsenic.** If total and dissolved arsenic concentrations remain consistent after data collection, sufficient documentation (such as geologic references, nearby well data, etc.) will need to be provided to support the rationale the arsenic is naturally occurring versus being attributable to on-Site sources (likely on the BRC property). If Ecology determines the background rationale is not justified and that the source of arsenic is more likely from on-Site sources, Ecology would be unable to provide a Property-Specific No Further Action letter for the Schmidt Property until the arsenic in groundwater is remediated and engineered controls implemented along the western Property boundary to prevent recontamination of the Property in the future. Prior to remediation, the full extent of the distribution of arsenic beneath the Property would need to be defined.

2. As a reminder, in accordance with WAC 173-340-7490, a Terrestrial Ecological Evaluation (TEE) needs to be completed for the Property. Please fill out the TEE form and submit it (along with supporting documents, as appropriate) to Ecology for review and approval. The form can be found on our website at http://www.ecy.wa.gov/biblio/ecy090300.html.

3. Also as a reminder, in accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements), data generated for Independent Remedial Actions shall be submitted simultaneously in both a written and electronic format. For additional information regarding electronic format requirements, see the website http://www.ecy.wa.gov/eim. Be advised that according to the policy, any reports containing sampling data that are submitted for Ecology review are considered incomplete until the electronic data has been entered. Please ensure that data generated during on-Site activities is submitted pursuant to this policy. **Data must be submitted to Ecology in this format for Ecology to issue a No Further Action determination.** Please be sure to submit all soil and groundwater data collected to date, as well as any future data, in this format. Data collected prior to August 2005 (effective date of this policy) is not required to be submitted; however, you are encouraged to do so if it is available. Be advised that Ecology requires up to two weeks to process the data once it is received.

2. Establishment of cleanup standards for the Site.

Ecology has determined the cleanup levels you established for the Site meet the substantive requirements of MTCA; however, the points of compliance do not.

MTCA Method A cleanup levels for unrestricted land use were used at the Site for soil and groundwater.

Standard points of compliance are being used for the Site. The point of compliance for protection of groundwater will be established in the soils throughout the Site. For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance shall be established in the soils throughout the Site from the ground surface to 15 feet below ground surface (bgs). In addition, the point of compliance for the groundwater is established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site.

Additional data is required as noted above to determine the source of arsenic beneath the Site and to potentially define the extent of arsenic in groundwater. As a result, points of compliance have not been fully established.

3. **Selection of cleanup for the Property.**

Ecology has determined the cleanup you selected for the Property does not meet the substantive requirements of MTCA.

Additional data is required as noted above to determine the source of arsenic beneath the Site and to potentially define the extent of arsenic in groundwater. As a result, selection of a final cleanup alternative is premature.

4. **Cleanup of the Property.**

Ecology has determined the cleanup you performed does not meet the applicable Site cleanup standards within the Property.

To date, cleanup activities conducted on the Property have included the removal and off-Site disposal of the diesel AST, an unknown volume of potentially contaminated surface soil and construction debris, and an unknown volume of oily sludge from a concrete, stormwater collection basin.

Additional data is required as noted above to determine the source of arsenic beneath the Site and to potentially define the extent of arsenic in groundwater. As a result, selection of a final cleanup alternative is premature.

Limitations of the Opinion

1. **Opinion does not settle liability with the state.**

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Change the boundaries of the Site.
- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. **Opinion does not constitute a determination of substantial equivalence.**

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-

supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Contact Information

Thank you for choosing to clean up your Property under the Voluntary Cleanup Program (VCP). After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion, please contact me at (360) 407-6347 or via email at sros461@ecy.wa.gov.

Sincerely,

Scott Rose, L.G.
Acting Unit Manager
SWRO Toxics Cleanup Program

SIR/ksc:Shear Trucking Property Further Action SW0814

Enclosures (2): A – Legal Description of the Property
B – Description and Diagram of the Site

By certified mail: (7010 0780 0002 3403 2735)

cc: Alex Koch – Blue Sage Environmental, Inc
Sharon Bell – Tacoma-Pierce County Health Department
Dolores Mitchell – Ecology (w/o enclosures)

Enclosure A

Legal Description of the Property

The Property is located at 26719 Highway 410 East, Buckley, Washington. This property is identified as Pierce County parcel no. 0619053015. It is zoned R10, rural uses at a rural density, and further described by Pierce County property use code 6600, contractor services.

The Property is contained in Section 05, Township 19 North, Range 06 East, Quarter 31, W.M., Pierce County, Washington. The Legal/Tax description, as found in the Pierce County Assessor-Treasurer records, is Section 05, Township 19, Range 06, Quarter 31: NW of NE of SW, excluding roads.

Enclosure B

Description and Diagrams of the Site
(including the Property)

Site Description

The Shear Trucking (a.k.a. Schmidt Property, and Shear Transport) site is located at 26719 Highway 410 East in Buckley, Pierce County, Washington. The site comprises two adjacent parcels, 0619053015 and 0619053030, located along the north side of Highway 410. Both parcels are zoned R10 (rural residential). Parcel #0619053030 is the 6.73-acre, western portion of the site and Parcel #0619053015 is the 9.07-acre, eastern portion. The site is bounded to the north by Entwhistle Road and residential properties, to the south by Highway 410 and undeveloped land, and to the east and west by residential properties.

The entrance onto this unpaved site is from Highway 410 into Parcel #0619053015. This portion of the site housed a wooden frame structure, two metal pole buildings, and a mobile home. The wooden structure was used for offices and the metal buildings were used for storage and formerly for the maintenance of heavy equipment, trucks, etc. The mobile home was also used as an office. This parcel was also formerly used for the fueling and storage of company trucks, heavy equipment, assorted vehicles, and an industrial wood chipper. The fueling station consisted of two single-walled, diesel fuel aboveground storage tanks (ASTs) located on unpaved ground without benefit of cover or secondary containment. A stormwater drain is located near the former fueling operation and contains an oil/water separator that drains into a series of three retention ponds. A storm drain outside the former repair shop is also connected to the retention ponds. Reportedly, all stormwater is collected and directed via storm drains and pipes into the retention ponds on site. The easternmost pond is culverted to the county-maintained stormwater ditch on the south side of Entwhistle Road. Stockpiles of various types of construction and demolition debris, as well as tires, were formerly located on this parcel and have since been removed. Parcel #0619053030 contains large piles of chipped land-clearing material with several areas of ponded water between piles.

The natural grade has been altered by the addition of fill material on Parcel #0619053030 such that it is now 10 to 15 feet above the natural grade, with the elevation increasing towards the western site boundary. The alteration of grade includes a berm, approximately 10 feet high, running along the south and west sides of Parcel #0619053030, and along the entire northern site boundary spanning both parcels. Stormwater is collected into a series of three retention ponds located about midway along the north side of the site. The retention ponds drain into a roadside ditch on the south side of Entwhistle Road via a culvert through the berm on the north side of the site. The ditch running along the south side of Entwhistle Road is a county-maintained stormwater ditch that eventually drains into Lake Tapps via the Printz Flume.

The area of the site is generally level and dominated by the Buckley soil series formed in the Osceola Mudflow on uplands. The Buckley soil series consists of gravelly sandy clay that does not drain well. Because water ponds for very long periods in Buckley soils, the area is also rich in wetlands habitat. The Osceola mudflow is characterized as an important aquitard due to its low permeability. The thickness of the mudflow at this site is not known but is typically about 30 feet. In this location, the mudflow is likely to be underlain by till.

Ms. Mary Rae Schmidt is listed as the sole owner of Parcel #0619053015 (Schmidt Property), where the business buildings and former stockpiles of construction and demolition debris are located. Mr. Ronald Shear is currently listed as owner of Parcel #0619053030 (Shear Property), which is occupied by Buckley Recycling Center, Inc. where stockpiles of contaminated, chipped land-clearing debris

are currently located.

Mr. Shear purchased the eastern parcel in 1994 from Mr. Bob Haney who operated a commercial shake mill on the site. In 1996, Mr. Shear purchased the western parcel in conjunction with R. Sterley and began operating a business to haul in and recycle land-clearing debris, grinding it on site for resale as fuel. Reportedly, hauling services for demolition, asphalt, concrete, sand, and gravel were also conducted.

Inspections conducted by the Tacoma-Pierce County Health Department (TPCHD), Pierce County Planning and Land Services (PALS), Washington State Department of Ecology (Ecology), and Puget Sound Clean Air Agency (PSCAA) over the years have noted the following materials stockpiled on the Shear site: Asphalt, concrete, and scrap metal; soil, street sweepings, and miscellaneous trash; wood waste and bark; construction and demolition debris; and tires.

Since the startup of business in 1996, Mr. Shear has violated numerous codes and regulations. Documented violations include:

- Illegal fill and grade.
- Illegal filling of wetlands.
- Unpermitted buildings and clearing.
- Conducting a business in violation of zoning.
- Operation of an unpermitted solid waste recycling and transfer station.
- Operation of an unpermitted compost pile.
- Illegal handling of asbestos waste.
- Unpermitted stormwater discharge.

The TPCHD issued a cease and desist order on 11/7/96 for operation of an illegal recycling business and provided Mr. Shear with application material for a solid waste permit to operate a recycling business. Mr. Shear continued to operate illegally. TPCHD issued additional citations on 7/3/97, 8/21/97, 5/18/00, 12/19/00, and 1/18/01 for the illegal recycling operation, to no avail.

In April 2000, TPCHD conducted an Initial Investigation (II) of the site in response to a complaint of oil, and possibly sewage, in the county ditch along Entwhistle Road (ERTS# S510267). An inspection of the site revealed what was then a single retention pond that collected all stormwater runoff. The retention pond was impacted with petroleum hydrocarbons, displaying an oil sheen on the surface and a black ring above the waterline. Soil was sampled above the waterline in the retention pond on the subject property and diesel and oil were found in concentrations significantly above Model Toxics Control Act (MTCA) Method A cleanup levels (9,100 milligrams per kilogram [mg/kg] and 28,000 mg/kg, respectively). No formal cleanup addressing the contamination was documented. As a result, the site was added to Ecology's database of Confirmed or Suspected Contaminated Sites in January 2002.

A fire erupted at the site on 3/08/02, apparently originating in the piles of composting wood waste. Pierce County Fire District (PCFD) 12 battled the fire for several days, with intense smoke causing several neighboring homes to be evacuated. Ecology responded to the fire on 3/10/02 at the request of PCFD 12 and determined that using water to fight the fire would cause significant detrimental impact to groundwater and surrounding surface waters. As a result, additional water was not used

from that point forward. A report filed by Ecology's fire response indicated that puddles both in the immediate area of the fire as well as puddles and soil some distance away appeared to have petroleum-like sheens. During the early part of the following week, employees of Shear Transport used heavy equipment in an attempt to smother the fire with material at hand in the stockpiles. Sporadic breakthroughs of smoke and flame continued to occur. A site inspection conducted on 3/28/02 by TPCHD noted the piles were still smoldering in places with a very hot fire burning underground.

Inspections were conducted in response to the fire by a variety of agencies. The TPCHD, PSCAA, and Ecology noted the presence of various off-spec components within the wood waste piles: asbestos, roofing, tile, polyvinyl chloride (PVC) pipe, metal, laminates such as Formica, trash, tires, and construction debris. The Pierce County Solid Waste Program added the site to its Dirty Dozen illegal dump sites in May 2002 because of the repeated reports of violations.

After repeated court delays, the Pierce County Superior Court heard the case against Shear Transport in June 2002 and ordered the property owner to immediately cease business operations, including receipt or transport of solid waste. A trial date was set for November 2002. After several continuances, the actual trial occurred on 5/21/03 and the court ruled the property a public nuisance which must be abated.

A joint inspection of the site occurred on 7/10/02. Present during the inspection were Mr. Shear's lawyer, as well as TPCHD, PALS, PSCAA, Pierce County Solid Waste staff, and a Pierce County Prosecuting Attorney. There were many thousands of cubic yards of solid waste material stockpiled throughout the site. Field sampling conducted by PSCAA identified asbestos mixed in with the waste piles. The only other obvious contamination issues noted were some limited soil staining near the fueling station, and a stockpile of what appeared to be slag. A slag sample was taken and submitted for laboratory analysis for total metals. Arsenic and cadmium were not detected, but total chromium was present in the slag sample at a concentration of 8,260 mg/kg.

Subsequent to the joint inspection conducted in July 2002, PSCAA received an anonymous complaint alleging that Mr. Shear had deliberately buried an unknown quantity of unknown material in several places on site. A map was provided that indicated where the buried material was thought to have been placed. This information was referred to TPCHD for follow-up.

Potential sources of contamination discovered at the site include the following:

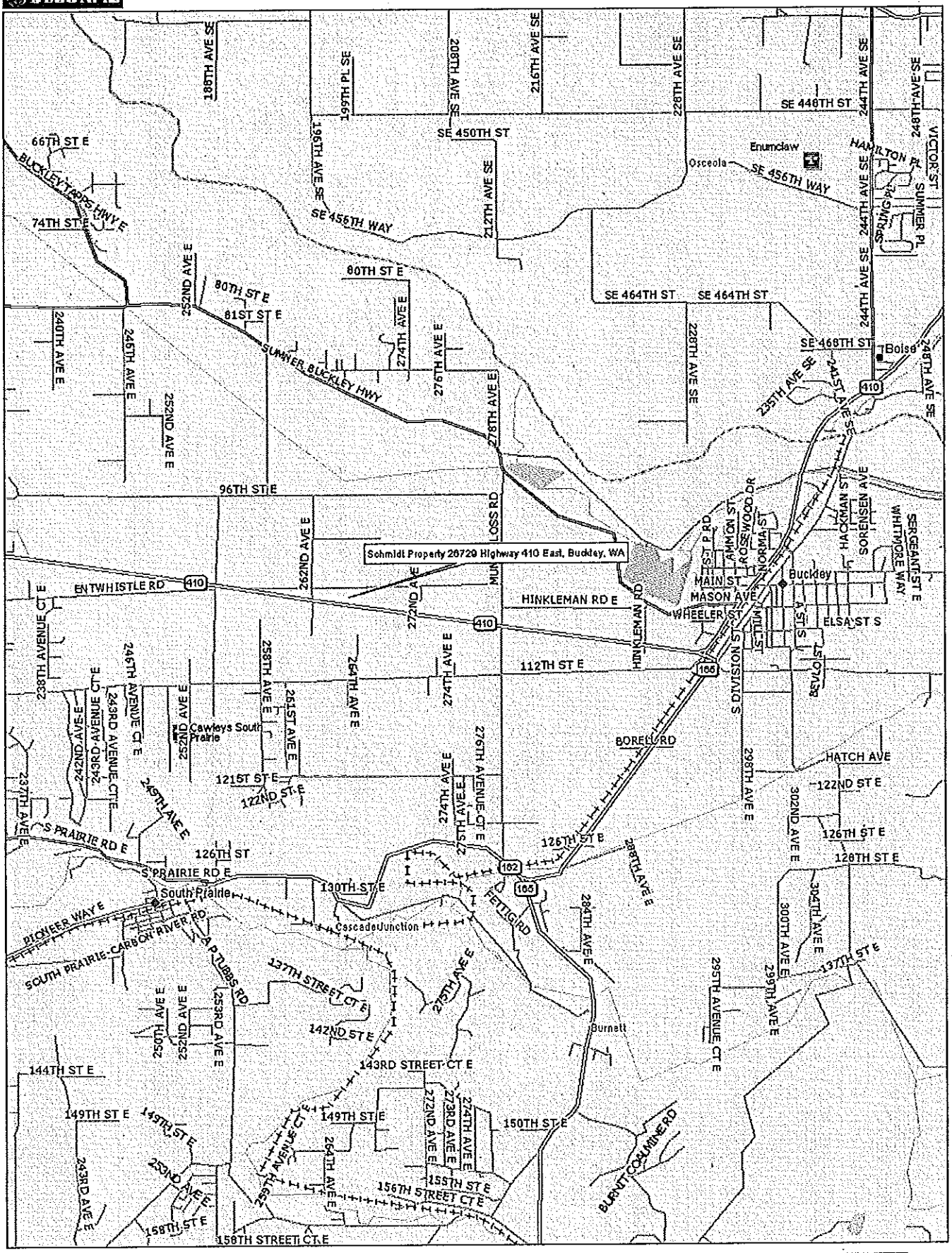
- On-site fueling with unpaved surfaces and no secondary containment; some surface soil staining indicates spillage occurred.
- Pressure washing of vehicles with discharge to a storm drain connected to the on-site retention ponds with possible impact to both surface water and groundwater.
- Heavy equipment, trucks, and other vehicles leaking automotive fluids to the unpaved ground surface.
- Allegations of buried material of an unknown nature.
- Solid waste stored in stockpiles on unpaved ground surface contributing contaminants through leachate.
- Incomplete combustion products resulting from the fire.
- Slag material containing elevated levels of chromium.

In August 2003, Mr. Shear defaulted on the real estate contract with Mr. Bob Haney and ownership of Parcel #0619053015 was forfeited back to Mr. Haney. Mr. Haney subsequently sold the property to Ms. Mary Rae Schmidt in August 2006.

In December 2006, Mr. Peter Schmidt entered the Schmidt Property (Parcel #0619053015) into the Voluntary Cleanup Program (VCP). Mr. Schmidt indicated that he could not get Mr. Shear to cooperate in addressing contamination throughout the Shear Trucking site; however, Mr. Schmidt expressed a willingness to at least address any potential contamination on his half of the site. Ecology accepted the application with the caveat that Ecology could not provide a No Further Action (NFA) for the site as a whole (both parcels) until the entire site was cleaned up.

DeLORME

Street Atlas USA® 2007



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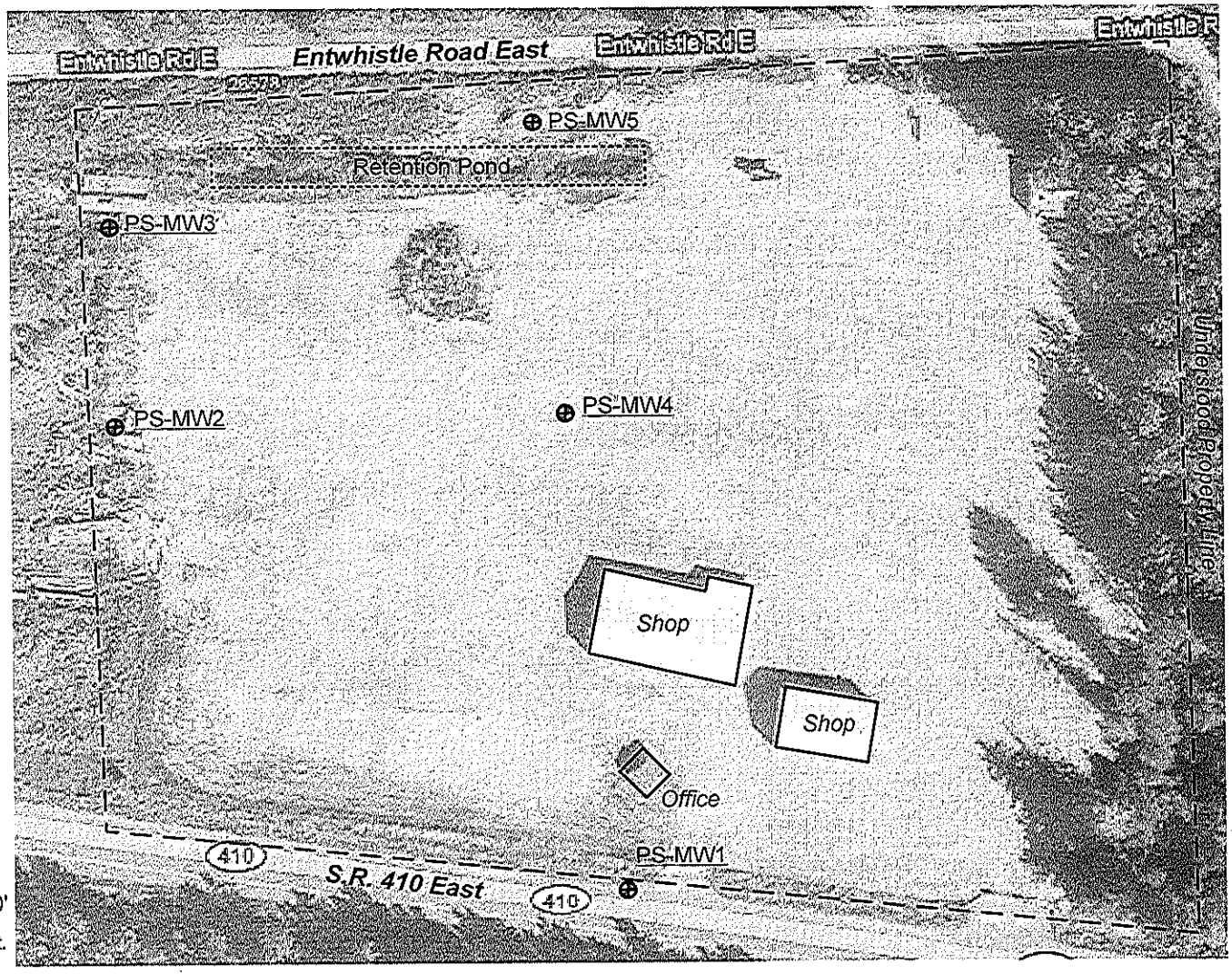


Note: This figure contains information in color. Black & white photocopies may not be suitable for review.

Legend

⊕ Monitoring Well Locations

Approximate Drawing Scale: 1" = 100'

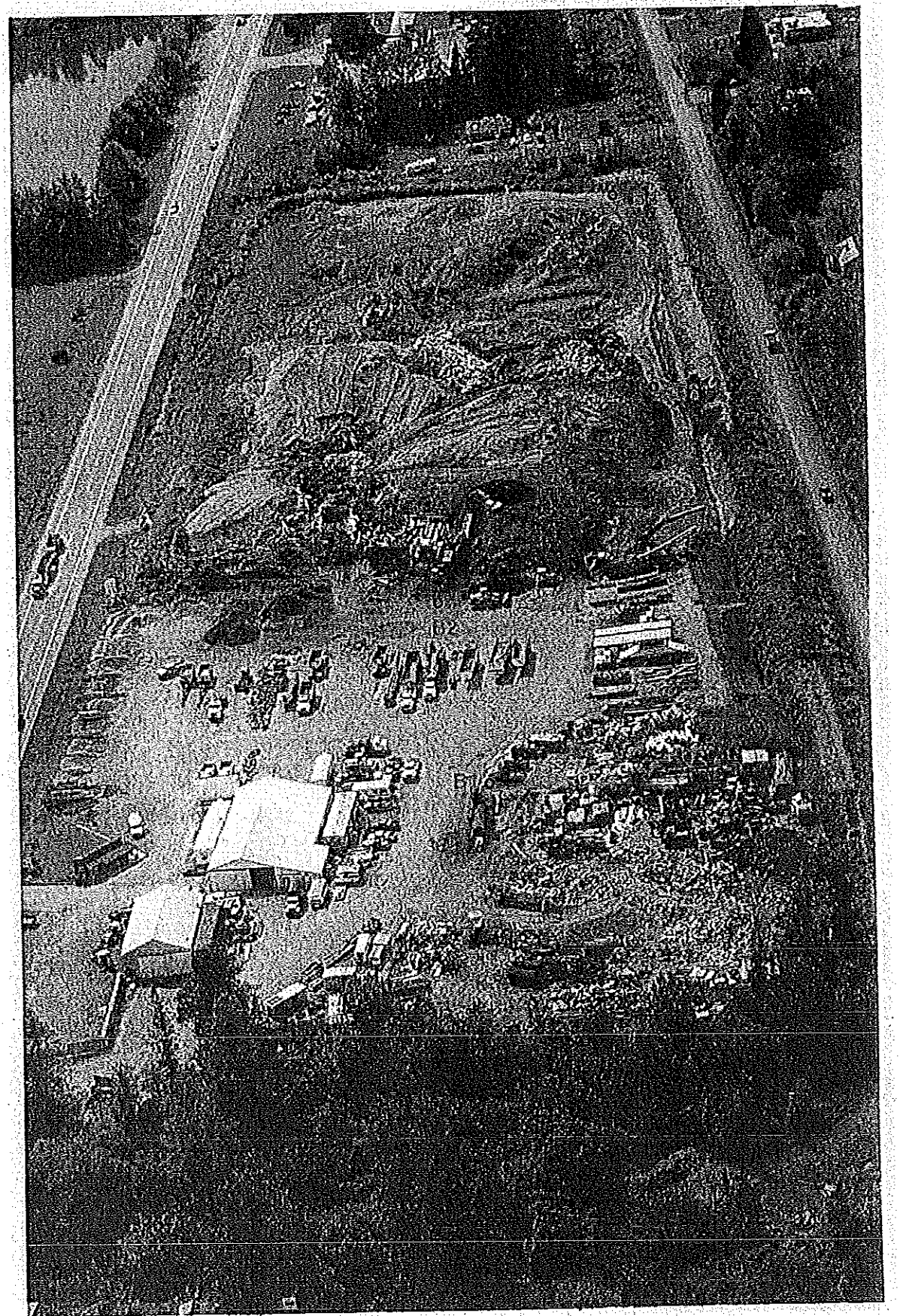
0 ft. 60 ft. 100 ft. 200 ft.

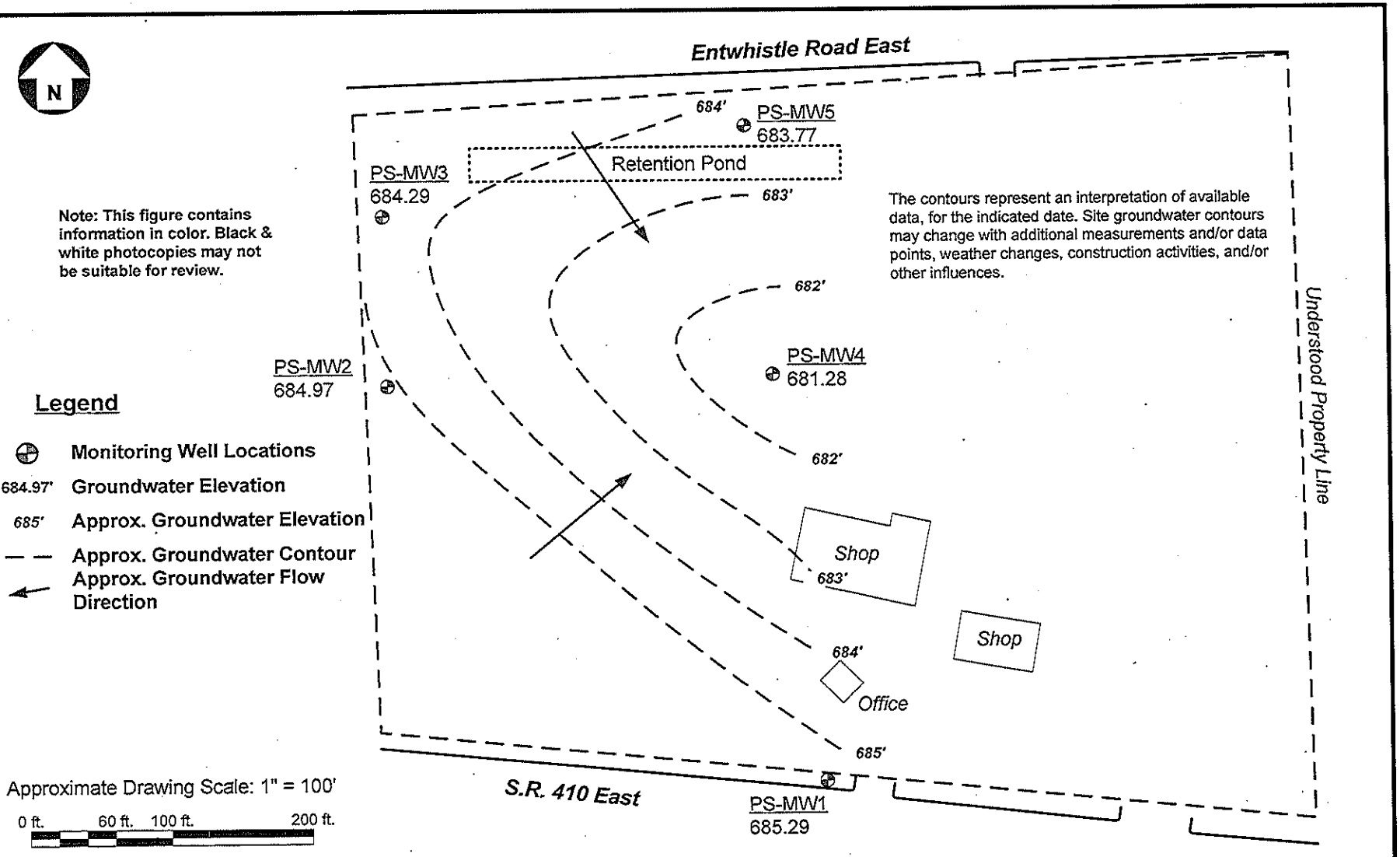
BLUE SAGE ENVIRONMENTAL, INC. KENNEWICK, WA	***Site Diagram*** ***Schmidt Property Groundwater Study*** ***26719 Highway 410 East*** ***Buckley, Washington***	Figure 2

Project File: ***01-0696-A-F2.vsd***

Mapping Reference: Holmvig, Dewitt & Associates Inc. Survey, Google Maps & Blue Sage Environmental Site Visits

Shear Transport Inc., 26719 Highway 410 E., Buckley
Sample Locations, 9.20.02

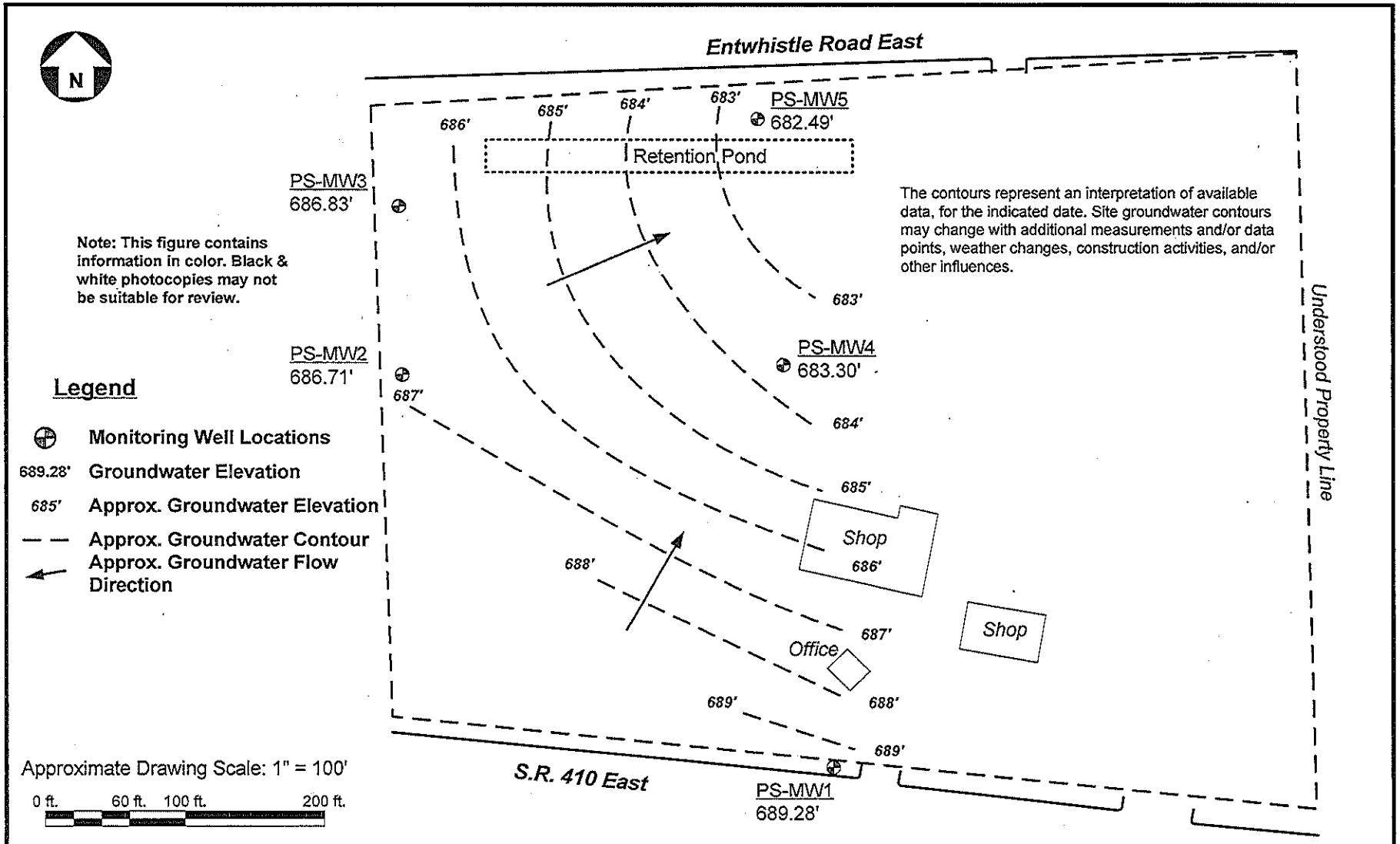




BLUE SAGE ENVIRONMENTAL, INC. KENNEWICK, WA	***Groundwater Contour Map, 07/31/10*** ***Schmidt Property Groundwater Study*** ***26719 Highway 410 East*** ***Buckley, Washington***	Figure 3

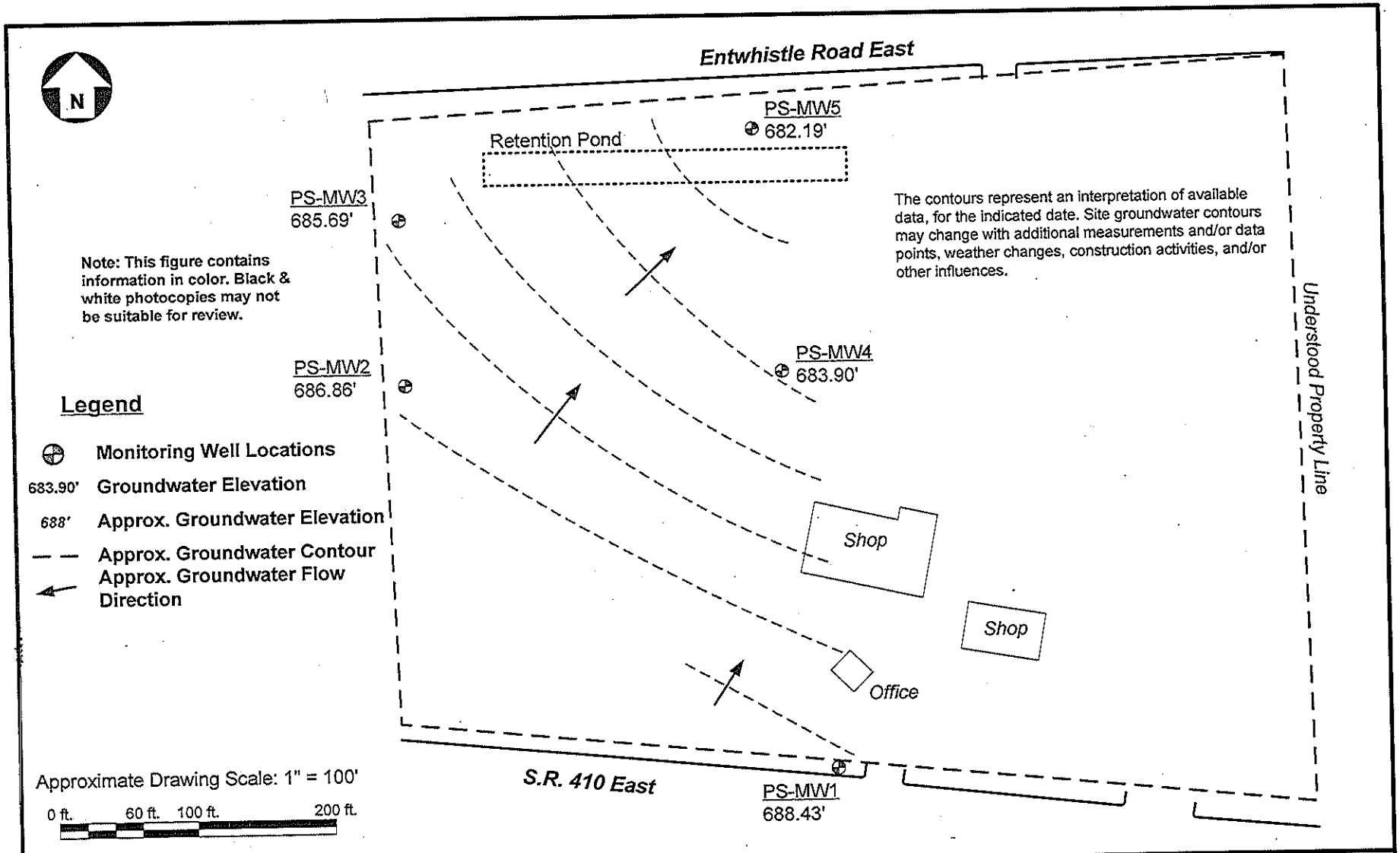
Project File:
01-0696-A-F3.vsd

Mapping Reference: Holmvig, Dewitt & Associates Inc. Survey & Blue Sage Environmental Site Visits



Project File: *01-0696-A-F4.vsd*	*BLUE SAGE ENVIRONMENTAL, INC. KENNEWICK, WA*	***Groundwater Contour Map, 12/11/10*** *Schmidt Property Groundwater Study* *26719 Highway 410 East* *Buckley, Washington*	Figure 4

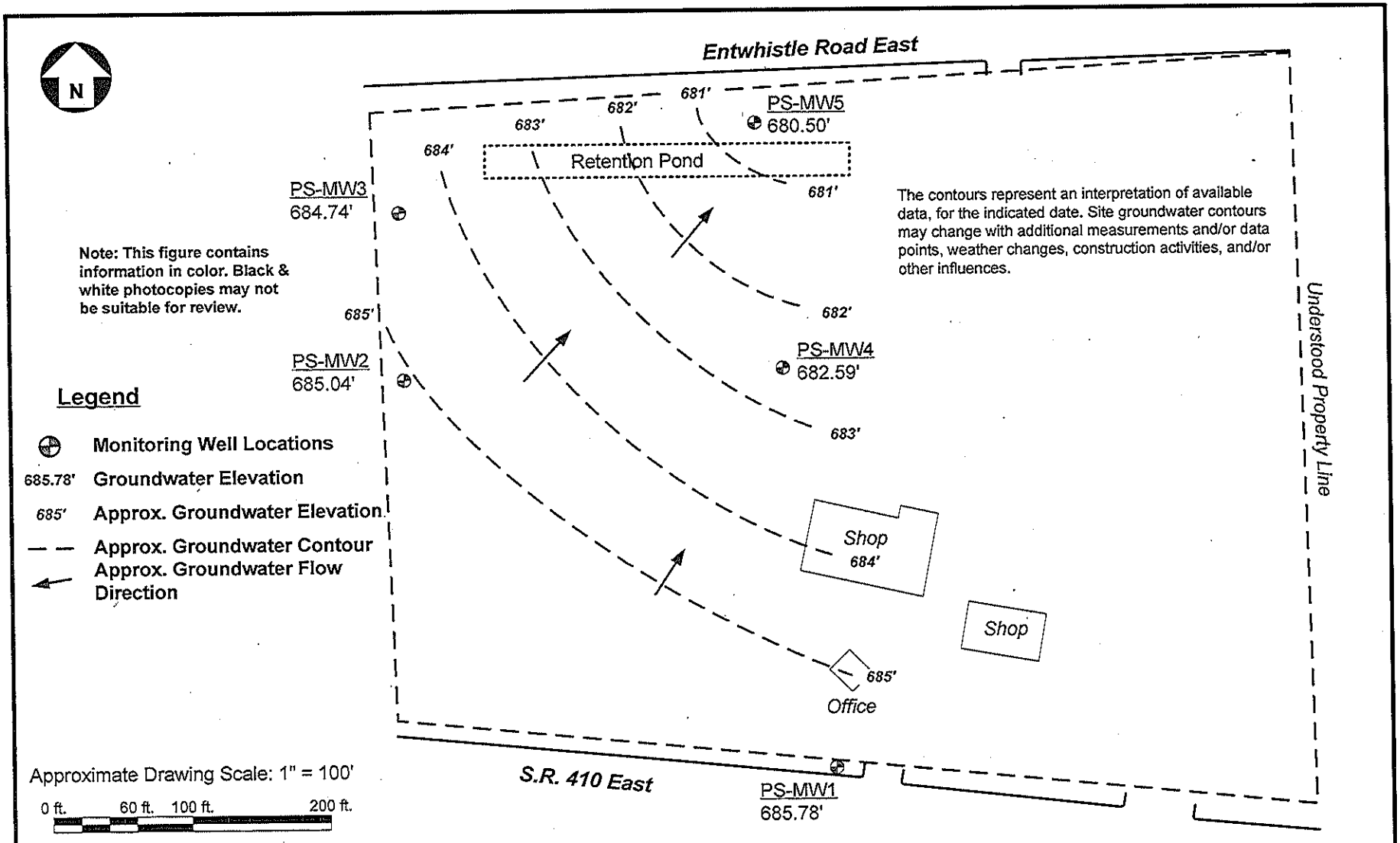
Mapping Reference: Holmvig, Dewitt & Associates Inc. Survey & Blue Sage Environmental Site Visits



Project File: 01-0696-A-F5.vsd	BLUE SAGE ENVIRONMENTAL, INC. KENNEWICK, WA	**Groundwater Contour Map, 3/19/11** Schmidt Property Groundwater Study 26719 Highway 410 East Buckley, Washington

Figure 5

Mapping Reference: Holmvig, Dewitt & Associates Inc. Survey & Blue Sage Environmental Site Visits



BLUE SAGE ENVIRONMENTAL, INC. KENNEWICK, WA	**Groundwater Contour Map, 7/23/11** Schmidt Property Groundwater Study 26719 Highway 410 East Buckley, Washington	Figure 7

Project File: 01-0696-A-F7.vsd

Mapping Reference: Holmvig, Dewitt & Associates Inc. Survey & Blue Sage Environmental Site Visits

TABLE 1
Groundwater Elevation Measurements
Peter Schmidt Property - Buckley, WA

Location Designation	Well Installation Date	Ecology Well Tag No.	Elevation to Top of Casing (ft.)*	Depth to Top of Screen (ft.)	Depth to Botton of Screen (ft.)	Well Diameter (in.)	Date Measured	Depth to Water (ft.)	Calculated Elevations (ft.)
PS-MW1	7/17/2010	BBS-001	689.37	7	17	2	7/31/10	4.08	685.29
							12/11/10	0.09	689.28
							3/19/11	0.94	688.43
							7/23/11	3.59	685.78
PS-MW2	7/17/2010	BBS-002	690.04	6	16	2	7/31/10	5.07	684.97
							12/11/10	3.33	686.71
							3/19/11	3.18	686.86
							7/23/11	5.00	685.04
PS-MW3	7/17/2010	BBS-003	690.40	4.5	15.5	2	7/31/10	6.11	684.29
							12/11/10	3.57	686.83
							3/19/11	4.71	685.69
							7/23/11	5.66	684.74
PS-MW4	7/17/2010	BBS-005	687.83	4	14	2	7/31/10	6.55	681.28
							12/11/10	4.53	683.30
							3/19/11	3.93	683.90
							7/23/11	5.24	682.59
PS-MW5	7/17/2010	BBS-004	687.06	6.5	16.5	2	7/31/10	3.29	683.77
							12/11/10	4.57	682.49
							3/19/11	4.87	682.19
							7/23/11	6.56	680.50

Notes:

* Elevations based on Holmvig, Dewitt & Associates Survey Mapping, 11/11/10

TABLE 2
Soil & Vapor Sample Results
Monitoring Well Installation
Peter Schmidt Property - Buckley, WA

Exploration Location	Sample Date	Depth bgs (ft)	Media	Result Units	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	EDB	EDC	Naphthalene	Lube Oil
PS-MW2	7/17/2010	5 - 6 ft	Soil	mg/kg	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
PS-MW3	7/17/2010	5 - 6 ft	Soil	mg/kg	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
MTCA Method A Soil Cleanup Level for Unrestricted Land Use				mg/kg	varies	2000	0.03	7	6	9	0.1	0.005	na	5	2000
PS-MW2	7/17/2010	5 ft	Vapor	-	-	-	-	-	-	-	-	-	-	-	-
PS-MW3	7/17/2010	5 ft	Vapor	ug/L	20	nd	nd	0.4	nd	nd	nd	nd	nd	nd	nd

Exploration Location	Sample Date	Depth bgs (ft)	Media	Result Units	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) flouranthene	Benzo(k) flouranthene	Dibenzo(a,h) anthracene	Indeno(1,2,3-cd)pyrene	Lead	Cadmium	Chromium	Arsenic	Mercury
PS-MW2	7/17/2010	5 - 6 ft	Soil	mg/kg	nd	nd	nd	nd	nd	nd	27	1	27	nd	nd
PS-MW3	7/17/2010	5 - 6 ft	Soil	mg/kg	nd	nd	nd	nd	nd	nd	9.8	nd	12	nd	nd
MTCA Method A Soil Cleanup Level for Unrestricted Land Use				mg/kg	0.1	*	*	*	*	*	250	2	2000	20	2

Notes:

bgs	Below ground surface
nd	Not Detected, concentration less than the laboratory method detection limit.
-	Not Analyzed, Tedlar bag lost integrity
27	Bold number(s) indicates contaminant detected.
2.5	Bold number(s) and shading indicates concentration exceeds MTCA Cleanup Level.
*	0.1 mg/kg is the total concentration that all carcinogenic PAHs must meet using the toxicity equivalency methodology in WAC 173-340-708(8).

TABLE 3
Groundwater Sample Analysis - GRO/DRO/VOC
Peter Schmidt Property - Buckley, WA

Exploration Location	Sample Date	Depth TOC (ft)	Media	Result Units	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	EDB	EDC	Naphthalene	Lube Oil	
PS-MW1	7/31/2010	4.08	Water	ug/L	-	nd	nd	nd	nd	nd	-	-	-	-	nd	
	12/11/2010	0.09	Water	ug/L	-	nd	nd	nd	nd	nd	-	-	-	-	nd	
	3/19/2011	0.94	Water	ug/L	-	-	-	-	-	-	-	-	-	-	-	
	7/23/2011	3.59	Water	ug/L	-	-	-	-	-	-	-	-	-	-	-	
PS-MW4	7/31/2010	6.55	Water	ug/L	-	nd	nd	**1.6**	nd	nd	-	-	-	-	nd	
	12/11/2010	4.53	Water	ug/L	-	nd	**21**	nd	nd	nd	-	-	-	-	nd	
	3/19/2011	3.93	Water	ug/L	-	nd	**2.1**	nd	nd	nd	-	-	-	-	**47000**	
resample	5/21/2011	4.65	Water	ug/L	-	nd	-	-	-	-	-	-	-	-	nd	
	7/23/2011	5.24	Water	ug/L	-	nd	nd	nd	nd	nd	-	-	-	-	nd	
PS-MW5	7/31/2010	3.29	Water	ug/L	-	nd	nd	**27**	nd	nd	-	-	-	-	-	
	12/11/2010	4.57	Water	ug/L	-	nd	nd	**160**	**1.2**	nd	-	-	-	-	-	
	3/19/2011	4.87	Water	ug/L	-	nd	**33**	nd	nd	nd	-	-	-	-	nd	
resample	4/23/2011	6.49	Water	ug/L	-	-	nd	-	-	-	-	-	-	-	-	
	7/23/2011	6.56	Water	ug/L	-	nd	nd	nd	nd	nd	-	-	-	-	nd	
PS-MW2	7/31/2010	5.07	Water	ug/L	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd		
	12/11/2010	3.33	Water	ug/L	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd		
	3/19/2011	3.18	Water	ug/L	nd	nd	nd	nd	nd	nd	-	-	-	-	nd	
	7/23/2011	5.00	Water	ug/L	nd	nd	nd	nd	nd	nd	-	-	-	-	nd	
PS-MW3	7/31/2010	6.11	Water	ug/L	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd		
	12/11/2010	3.57	Water	ug/L	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd		
	3/19/2011	4.71	Water	ug/L	nd	nd	nd	nd	nd	nd	-	-	-	-	**24000**	
resample	4/23/2011	4.65	Water	ug/L	-	nd	-	-	-	-	-	-	-	-	nd	
	7/23/2011	5.66	Water	ug/L	nd	nd	nd	nd	nd	nd	-	-	-	-	nd	
MTCA Method A Groundwater Cleanup Level				ug/L	varies	500	5	1000	700	1000	20	0.01	5	160	500	
Laboratory PQL				ug/L	100	250	1	1	1	3	1	0.02	1	1	250	

Table 3 Notes:

TOC	Top of Casing
nd	Not Detected, concentration less than the laboratory method detection limit.
-	Not Analyzed
27	Bold number(s) indicates contaminant detected.
2.5	Bold number(s) and shading indicates concentration exceeds MTCA Cleanup Level.
*	0.1 mg/kg is the total concentration that all carcinogenic PAHs must meet using the toxicity equivalency methodology in WAC 173-340-708(8).
nd	2nd Quarter 2011 resample of monitoring well for specific analyte

TABLE 4
Groundwater Sample Analysis - c-PAH Results
Monitoring Wells
Peter Schmidt Property - Buckley, WA

Exploration Location	Sample Date	Depth TOC (ft)	Media	Result Units	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) flouranthene	Benzo(k) flouranthene	Dibenzo(a,h) anthracene	Indeno(1,2,3-cd)pyrene
PS-MW2	7/31/2010	5.07	Water	ug/L	nd	nd	nd	nd	nd	nd
PS-MW3	7/31/2010	6.11	Water	ug/L	nd	nd	nd	nd	nd	nd
MTCA Method A Groundwater Cleanup Level				ug/L	**0.1**	*	*	*	*	*
Laboratory PQL				ug/L	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**	**0.1**

Notes:

TOC	Top of Casing
nd	Not Detected, concentration less than the laboratory method detection limit.
-	Not Analyzed
27	Bold number(s) indicates contaminant detected.
2.5	Bold number(s) and shading indicates concentration exceeds MTCA Cleanup Level.
*	0.1 mg/kg is the total concentration that all carcinogenic PAHs must meet using the toxicity equivalency methodology in WAC 173-340-708(8).

TABLE 5
Groundwater Sample Analysis - Metals
Monitoring Wells
Peter Schmidt Property - Buckley, WA

Exploration Location	Sample Date	Depth TOC (ft)	Media	Result Units	Lead	Cadmium	Chromium	Arsenic	Arsenic (dissolved)	Mercury
PS-MW1	7/23/2011	3.59	Water	ug/L	-	-	-	nd	-	-
PS-MW2	7/31/2010	5.07	Water	ug/L	nd	nd	**20**	**5.6**	**4**	nd
	12/11/2010	3.33	Water	ug/L	nd	nd	nd	**13**	-	nd
	3/19/2011	3.18	Water	ug/L	nd	nd	nd	**27**	**21**	nd
	7/23/2011	5.00	Water	ug/L	nd	nd	**18**	**30**	-	nd
PS-MW3	7/31/2010	6.11	Water	ug/L	**4.8**	nd	**13**	**10**	**10**	nd
	12/11/2010	3.57	Water	ug/L	**3.4**	nd	nd	**2.7**	-	nd
	3/19/2011	4.71	Water	ug/L	**3.4**	nd	nd	**13**	**5**	nd
	7/23/2011	5.66	Water	ug/L	nd	nd	**21**	**15**	-	nd
PS-MW4	5/21/2011	4.65	Water	ug/L	-	-	-	**16**	-	-
	7/23/2011	5.24	Water	ug/L	-	-	-	**43**	-	-
PS-MW5	3/19/2011	4.87	Water	ug/L	-	-	-	**19**	**13**	-
	4/23/2011	6.49	Water	ug/L	-	-	-	**15**	-	-
	7/23/2011	6.56	Water	ug/L	-	-	-	**17**	-	-
MTCA Method A Groundwater Cleanup Level				ug/L	**15**	**5**	**50**	**5**	**5**	**2**
Laboratory PQL				ug/L	**2**	**2**	**10**	**2**	**2**	**1**

Notes:

TOC	Top of Casing
nd	Not Detected, concentration less than the laboratory method detection limit.
-	Not Analyzed
27	Bold number(s) indicates contaminant detected.
2.5	Bold number(s) and shading indicates concentration exceeds MTCA Cleanup Level.