

TECHNICAL MEMORANDUM

TO: Jim Bet, Boeing Company

FROM: Sarah Fees and Eric Weber, L.Hg.

DATE: December 16, 2014

RE: **PRIVATE WELL SURVEY
BOEING AUBURN FACILITY
AUBURN, WASHINGTON**

INTRODUCTION

This technical memorandum presents the findings of a survey of private wells within the vicinity of The Boeing Company's (Boeing's) Auburn fabrication facility located at 700 15th Street Southwest, Auburn, Washington (facility). The facility is located within Auburn and Algona, Washington; Pacific, Washington bounds the facility to the south. The location of the facility and municipal boundaries are shown on the vicinity map on Figure 1.

The objective of this technical memorandum is to identify the location and characteristics of private and Group B¹ water system wells within the study area (as described below) that may be screened in the upper aquifer. The upper aquifer consists of alluvial deposits above the Osceola mudflow aquitard. Generally the upper aquifer deposits occur from the ground surface to a depth of about 100 feet (ft). The upper aquifer is the area of concern because this is the unit that contains the groundwater plumes of the volatile organic compounds (VOCs) trichloroethene (TCE) and its breakdown components: cis-1,2-dichloroethene and vinyl chloride. The upper aquifer has been subdivided into three groundwater zones based on depth beneath ground surface (BGS): a shallow zone (0 to 30 ft BGS), an intermediate zone (40 to 60 ft BGS), and a deep zone (80 to 100 ft BGS).

The study area is defined to include the known area of the groundwater plumes that extend from the facility to the north and northwest. The study area is bounded to the west by West Valley Highway and to the east by C Street. The study area is bounded to the south by 1st Avenue North. The northern boundary of the study area is approximately 3,000 ft north of West Main Street. The boundaries of the study area are conservatively defined to include the known area of the plumes. For example, the northern study area boundary is about 1,000 ft north of the northern extent of the intermediate zone plume². The intermediate zone TCE plume and the study area are shown on Figure 2.

¹ A Group B well is defined by the Washington State Department of Health (WDOH) as providing water to fewer than 15 connections and fewer than 25 people.

² The intermediate zone TCE plume extends farther north than either the shallow or deep zones.

The city of Auburn supplies municipal water to residents in Auburn and Algona. An additional objective of this technical memorandum is to review property addresses identified by the cities of Auburn and Algona that are within city boundaries, but are not being served by the Auburn municipal water system.

BACKGROUND

A technical memorandum *Critical Area/Wellhead Protection Ordinance Review* was completed by Landau Associates in April 2010 (Landau Associates 2010). This document summarized the location and characteristics of municipal and private Group A³ wells within a mile of the facility. Group A wells within a mile of the facility include city of Auburn and city of Pacific wells, South Auburn Water Association wells, a well operated by the Danner Corporation, and a well at the Auburn Mobile Park. The review included a determination that releases from the facility are not threatening or likely to threaten any of the identified Group A wells.

In January 2012, WDOH prepared a health consultation associated with groundwater contamination from the facility (WDOH 2012). In this health consultation, WDOH recommended that Boeing complete a private well survey to identify locations of private wells that may exist in the known area of the plumes. WDOH also recommended that exact locations of Group B wells located downgradient of the plume be identified. Exact locations of Group B wells were not determined because they were all located outside of the study area; however, the approximate locations of the Group B wells, as identified by WDOH, are presented on Figure 3. Since there are no Group B wells in the study area, they are not discussed further in this document. The survey of private wells in the study area is presented below.

PRIVATE WELL IDENTIFICATION

Online database and map research of wells in the study area was performed using the U.S. Geological Survey (USGS) National Water Information System (USGS website 2014), the King County iMAP (King County website 2014), and the Washington State Department of Ecology (Ecology) well log database (Ecology website 2014). Research of wells identified in the state Water-Supply Bulletin No. 28 (Luzier 1969) and the South King County Groundwater Management Plan (South King County Ground Water Advisory Committee 1991) was also completed. These reports provided information about older wells that were located in the study area. The city water departments of Auburn and Algona were also contacted for information about private wells within city limits.

³ A Group A well is defined by the WDOH as providing water to 15 or more connections or at least 25 people.

Identified wells were evaluated based on location, ownership, and water usage information to determine if wells are in the study area, are likely screened in the upper aquifer, and are likely used for potable water supply. Wells that do not appear to be screened in the upper aquifer based on well depth (i.e., depth greater than 200 ft BGS) were not considered for further review. Resource protection wells, test wells, dewatering wells, and decommissioned wells were also not considered for further review because they are not used for drinking water.

Database Search

Ecology Well Log Database

The Ecology well log database initially identified 52 water wells in the study area. Further research on these well logs determined that the majority of these wells were incorrectly labeled as water wells and should have been identified as resource protection wells or dewatering wells. Thirteen of the wells were identified as resource protection or test wells. Twenty-nine of the wells were identified as dewatering wells or decommission logs of dewatering wells. Two of the well logs were determined to be abandonment logs for wells located in Federal Way instead of Auburn based on the street address provided on the well log. Five of the wells are owned by the railroad and it is assumed that these wells are not currently used for drinking water. One well is owned by the city of Auburn (Well 3B). This well is screened more than 300 ft BGS. Since this well was not screened in the upper aquifer, it was not retained for further review.

The remaining two wells from the Ecology database search are identified as a well owned by Frank Lockridge (21N/04E-24F01) and a well owned by S. Murakami (21N/04E-23B01). These wells were identified in the state Water-supply Bulletin No. 28 as being irrigation wells. These wells are not expected to be used for drinking water, since the original purpose appears to be irrigation. The well owned by Frank Lockridge (21N/04E-24F01) also appears to have an abandonment log on the Ecology database. The well logs for both wells and the abandonment log for the well owned by Frank Lockridge are presented in Attachment 1. These two well locations are also presented on Figure 4. Additional information about these wells is provided in Table 1.

King County/U.S. Geological Survey Databases

The King County database identified 16 wells in the study area and the USGS database identified 14 wells in the study area. Twelve of these wells appear to be included in both databases. One well is in a similar location on both databases, but is identified differently (USGS: 21N/04E-12Q01, King County: 21N/04E-12P01). Both these entries list the well depth as 282 ft BGS; consequently, they are assumed to be the same well. This well is identified on the King County database as the T-9 test well (i.e., not used

for drinking water) and is screened beneath the upper aquifer; therefore, this well is not retained for further review.

The USGS database identifies one well that is not included on the King County database. This well (21N/04E-14R01) is listed at a depth of 130.5 ft BGS. The bottom depth of this well is below the typical depth associated with the upper aquifer; however, there is no additional information about this well including the length of the screen, so it is retained as a possible private well of concern. This well is apparently located in the interchange between State Route (SR) 167 and SR 18 (Figure 4), so it most likely does not exist anymore. Additional information about this well is provided in Table 1.

The King County database identifies three wells that are not identified on the USGS database. One well was identified as the city of Auburn T-8 well. T-8 has been determined to be a boring that was not installed as a well, as described in the memorandum *T-8 Boeing on the Auburn 400 Corporate Park Property* (Landau Associates 2014). One well is located on The Outlet Collection property and appears to coincide with a dewatering well log shown on the Ecology well log database. One well has been identified as the city of Auburn T-11 test well. This well is not used for drinking water; therefore, this well is not discussed further.

Of the 12 wells that are identified on both databases, 4 of these wells were determined to be in the wrong location. They appear to be in Range 5E instead of in Range 4E based on the well identification and the surface elevation. One of the 12 wells has a depth of 247 ft BGS; since this well was not screened in the upper aquifer, it is not discussed further. Seven wells are identified as potential private wells. Two of these wells were the same wells as identified on the Ecology database [the decommissioned well owned by Frank Lockridge (21N/04E-24F01) and the irrigation well owned by S. Murakami (21N/04E-23B01)]. The seven potential private wells identified in the USGS and King County databases are described in Table 1 and presented on Figure 4.

State and South King County Groundwater Management Plan Reports

The seven wells identified in the King County and USGS databases were cross-referenced with state Water-Supply Bulletin 28 (Luzier 1969). Based on this cross-reference, three of the seven wells were identified as irrigation wells. Another three of the seven wells were identified in the water supply-bulletin as domestic wells. The remaining well (21N/04E-25E01) was identified in the South King County Groundwater Management Plan (South King County Ground Water Advisory Committee 1991) as being installed in 1975; however, no additional information about the use of this well could be found. Since three of the seven wells were identified as irrigation wells, these are not considered potential private wells of concern. The four remaining wells are either domestic or unidentified use wells; these four wells are potential private wells of concern.

Two additional wells that are located in the study area were identified in the state Water-Supply Bulletin 28 (Luzier 1969), but were not included in the USGS, King County, or Ecology databases. These wells are 21N/04E-24C01 and 21N/04E-26B01. Both of these wells are identified as domestic wells. The description of these two possible private wells of concern is provided in Table 1 and the locations of these wells are shown on Figure 4.

Two additional wells located in the study area were also identified in the South King County Groundwater Management Plan. These wells are 21N/04E-24B02 and 21N/04E-24B03. The well 21N/04E-24B03 has the same well depth, diameter, and water level measurements as well 21N/04E-24C01 (Luzier 1969). It is assumed that these two well identifiers refer to the same well and the name was misidentified in the South King County Groundwater Management Plan report. The other well (21N/04E-24B02) is identified as having a well diameter of 36 inches and a depth of 98 ft. The description of this well is provided in Table 1. The well location could not be determined; therefore, the well is plotted in the center of the quarter/quarter/section on Figure 4.

Auburn Private Wells

The city of Auburn identified 30 physical addresses that are not being served by any municipal Auburn water system. It is possible that the domestic water source for these addresses is private wells. These addresses are located north of the study area and are at least 6,000 ft from the area impacted by VOCs (Figure 5).

Algona Private Wells

The city of Algona reported knowledge of two wells within city limits (Figure 6). Both of these wells are outside of the study area. One of these wells (132 Seattle Boulevard South) is confirmed abandoned by the city of Algona (Griess, J. 2014). The second well was sampled by WDOH on April 2, 2013. Water quality testing of the well determined that there were no detections of any VOCs. This well was hand-drilled to a completed depth of approximately 60 ft BGS with a 3-ft screen from 57 to 60 ft, in the late 1980s. Water from the well is not used for drinking, but for irrigation of plants and fruit trees, and for filling a small Koi pond. Based on the site visit and analytical results, WDOH concluded that the well is not drawing contaminated water and there is no health threat from exposure to VOCs by using this well. Documents related to this investigation are included in Attachment 2.

CONCLUSIONS

Eleven wells within the study area cannot be identified as resource protection wells, dewatering wells, decommissioned wells, or wells that draw water from beneath the upper aquifer (Figure 4). Three

of the eleven wells were identified as wells used for only irrigation. The remaining eight wells are possible private wells of concern. These eight wells are unlikely to be currently used for drinking water due to their ages and locations. Most of the wells were installed before 1961⁴ and the most recent well was installed in 1975. Most of the private wells of concern in Auburn are located on commercial or undeveloped property. The developed commercial properties are identified as using the public water supply. The private wells of concern in Algona are located on parcels that are identified as using the public water supply. All private wells that are known and identified by the cities of Auburn and Algona are outside of the study area. Based on our evaluation of private wells in the vicinity of the Boeing Auburn facility and our understanding of the extent of the VOC plumes, releases from the facility are not threatening or likely to threaten any existing private domestic or Group B water system wells in Auburn or Algona.

SEF/EFW/jrc

REFERENCES

- Ecology website. 2014. Well logs. <https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/WellConstructionMapSearch.aspx>. Washington State Department of Ecology, Accessed March 19, 2014.
- Griess, J. 2014. Personal communication (telephone conversation with Sarah Fees, Landau Associates). Jimmy Griess, Public Works Director, City of Algona. Re: *Private Wells in Algona*. March 17.
- King County website. 2014. iMAP – Groundwater Program. <http://www5.kingcounty.gov/iMAP/viewer.htm?mapset=GroundWater>. Accessed March 19, 2014.
- Landau Associates. 2014. Memorandum: *T-8 Boring on the Auburn 400 Corporate Park Property, Boeing Auburn Project, Auburn, Washington*. From Jennifer Wynkoop and Sarah Fees, to James Bet, The Boeing Company. February 10.
- Landau Associates. 2010. Technical Memorandum: *Critical Area/Wellhead Protection Ordinance Review*. From Eric Weber, to Jim Bet, The Boeing Company. April 14.
- Luzier, J. E. 1969. *Water-Supply Bulletin No. 28*. Geology and Ground-Water Resources of Southwestern King County, Washington. Prepared in cooperation with U. S. Geological Survey Water Resources Division.
- South King County Ground Water Advisory Committee. 1991. *South King County Ground Water Management Plan, Grant No. 1, Background Data Collection and Management Issues, Volume II*. April.
- USGS website. 2014. National Water Information System: Mapper. <http://maps.waterdata.usgs.gov/mapper/index.html>. United States Geological Survey, Accessed March 19, 2014.

⁴ Even though construction dates were not provided for the majority of the wells, water levels were collected at most of the wells in 1961; therefore, the wells were constructed before 1961.

WDOH. 2012. *Evaluation of Groundwater Contamination, Boeing Commercial Airlines Fabrication Division, Auburn, King County, Washington State*. Prepared by Washington State Department of Health under cooperative agreement with the Agency for Toxic Substance and Disease Registry. January 4.

ATTACHMENTS

Figure 1: Vicinity Map

Figure 2: Study Area with Intermediate Zone TCE Plume (December 2013)

Figure 3: Group B Well Systems

Figure 4: Possible Private Wells in the Study Area

Figure 5: Addresses in City of Auburn Not Served by Auburn Water System

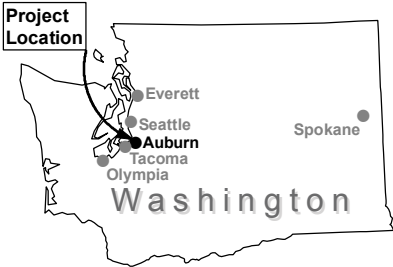
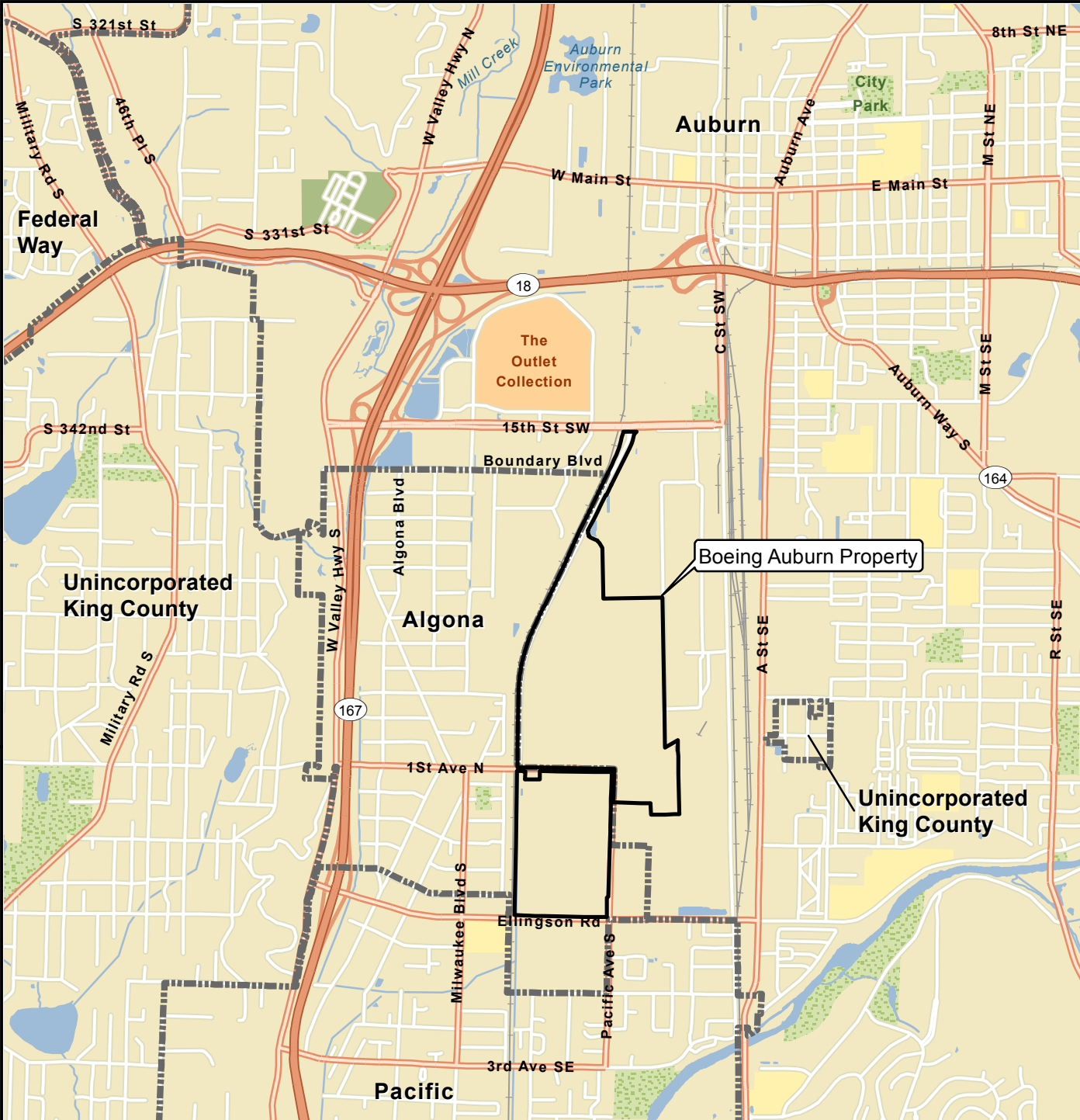
Figure 6: Private Wells in City of Algona

Table 1: Possible Private Wells of Concern

Attachment 1: Well Logs and Abandonment Log for Identified Private Wells in the Study Area

Attachment 2: Washington State Department of Health Groundwater Sampling of Private Well in Algona

G:\Projects\025164\110111\Private Well Survey\F01VicinityMap.mxd 7/17/2014 NAD 1983 StatePlane Washington North FIPS 4601 Feet



Data Source: Esri 2012



Boeing Auburn
Auburn, Washington

Vicinity Map

Figure
1

**TABLE 1
POSSIBLE PRIVATE WELLS OF CONCERN
BOEING AUBURN FACILITY**

Well ID	Information Source	Owner	Year Constructed	Type of Well	Elevation (ft)	Depth of Well (ft)	Year Water Level collected	Water Level (ft BGS)	Diameter of well (inches)	Use	Notes
21N/04E-13F01	2,3,4	J. A. Sumpter	--	Dn	70	53	2/23/1961	Flowing	1 1/2	Domestic	
21N/04E-13P01	2,3,4,5	P. Schoordyke	--	Dn	73	50	1961	1	2	Domestic, Stock	
21N/04E-14R01	3	--	--	--	73	130.5	--	--	--	--	
21N/04E-23B01	1,2,3,4,5	S. Murakami	6/25/1953	Dr	100	43	1/26/1961	1.10	12	Irrigation	
21N/04E-23B02	2,3,4,5	A. M. Wells	--	Dn	75	30	1/26/1961	1.00	2	Domestic	
21N/04E-24B02	5	--	1924	--	77	98	1925	18.00	36	--	
21N/04E-24C01	4	B. Maquez	--	Dr	76	135	5/9/1961	6.59	6	Domestic	Believed to be the same as well identified as 21N/04E-24B03 in reference #5 because all of the same information is provided.
21N/04E-24F01	1,2,3,4	Frank Lockridge	4/15/1951	Dr	77	20	1951	6.00	8	Irrigation	Believed to be decommissioned.
21N/04E-25E01	2,3,5	--	8/19/1975	Dr	100	65	8/15/1975	1.35	10	--	
21N/04E-26B01	4	C.E. Lane	--	Dn	80	42	1961	0	1 1/2	Domestic	
21N/04E-26H01	2,3,4,5	C. D. Richards	--	Dn	80	40	2/16/1961	Flowing	1 1/2	Irrigation	

1 = Ecology Well Log Database
2 = King County Database
3 = USGS Database
4 = USGS Water-Supply Bulletin
5 = South King County Groundwater Management Plan

Dr = Drilled
Dn = Driven
-- = Unknown
ft = Feet/Foot
BGS = Below Ground Surface

Well Logs and Abandonment Log for Identified Private Wells in the Study Area

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
AND DEVELOPMENT

WELL LOG

No Appli. 2005

Date April 16, 19 51

Cert. 738-A

Record by James J. Bell

Source Driller's Record

Location State of WASHINGTON

County King

Area _____

Map _____

SE 1/4 NW 1/4 sec 24 T 21 N, R 4 E

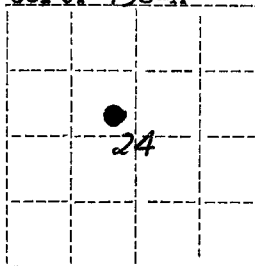


DIAGRAM OF SECTION

Drilling Co James J. Bell & son

Address _____

Method of Drilling _____ Date April 15 19 51

Owner Frank Lockridge

Address Auburn, Wash.

Land surface, datum _____ ft above
below _____

CORRE- LATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
------------------	----------	---------------------	-----------------

(Transcribe driller's terminology literally but paraphrase as necessary in parentheses if material water bearing so state and record static level if reported Give depths in feet below land surface datum unless otherwise indicated Correlate with stratigraphic column if feasible Follow log of materials list all casings perforations screens etc)

	<u>Subsoil</u>	<u>3</u>	<u>3</u>
	<u>Sand</u>	<u>3</u>	<u>6</u>
	<u>Rottenwood</u>	<u>4</u>	<u>10</u>
	<u>Hard sand</u>	<u>5</u>	<u>15</u>
	<u>Coarse rock, sand & gravel</u>	<u>5</u>	<u>20</u>
	<u>Pump Test:</u>		
	<u>Dim: 20' x 8" Drilled</u>		
	<u>SWL: 6'</u>		
	<u>DD: 9'</u>		
	<u>Yield: 200 g.p.m.</u>		
	<u>Casing: 8" dia. from 0 to 19'</u>		
	<u>Perforations:</u>		
	<u>No information</u>		

Turn up _____

Sheet _____ of _____ sheets

of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

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

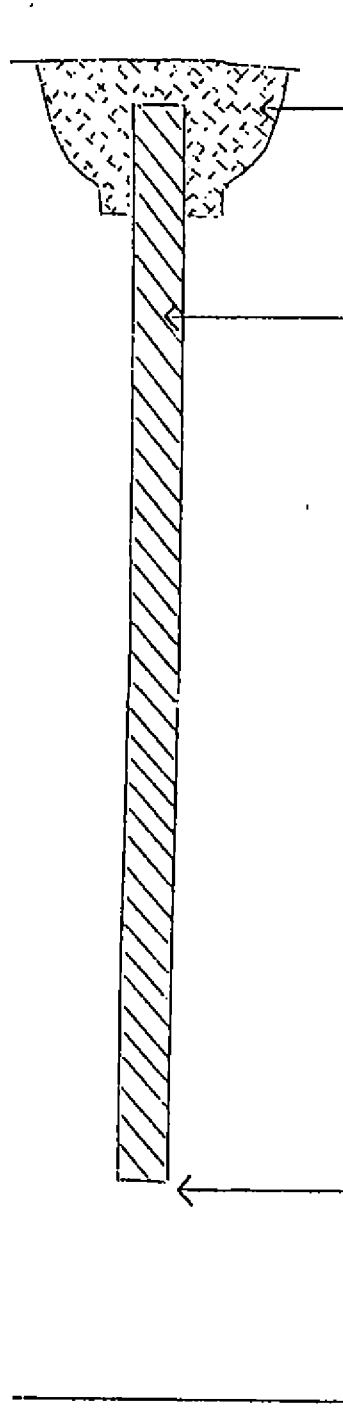
ENTERED RESOURCE PROTECTION WELL REPORT

21/4/24F
START CARD NO. A17642

PROJECT NAME: Auburn 400 Corp. Park
WELL IDENTIFICATION NO. ~1a
DRILLING METHOD: ABANDON
DRILLER: Michael Colbert
FIRM: Cascade Drilling, Inc.
SIGNATURE: Michael Colbert
CONSULTING FIRM: Schnitzer Steel
REPRESENTATIVE: Tim Todd

COUNTY: King
LOCATION: SE 1/4 NW 1/4 Sec 24 Twp 21N R 4E
STREET ADDRESS OF WELL: 101st & Industrial Dr. SW - Auburn
WATER LEVEL ELEVATION: N/A
GROUND SURFACE ELEVATION: N/A
~~INSTALLED:~~ Abandoned 7/1/96
DEVELOPED: N/A

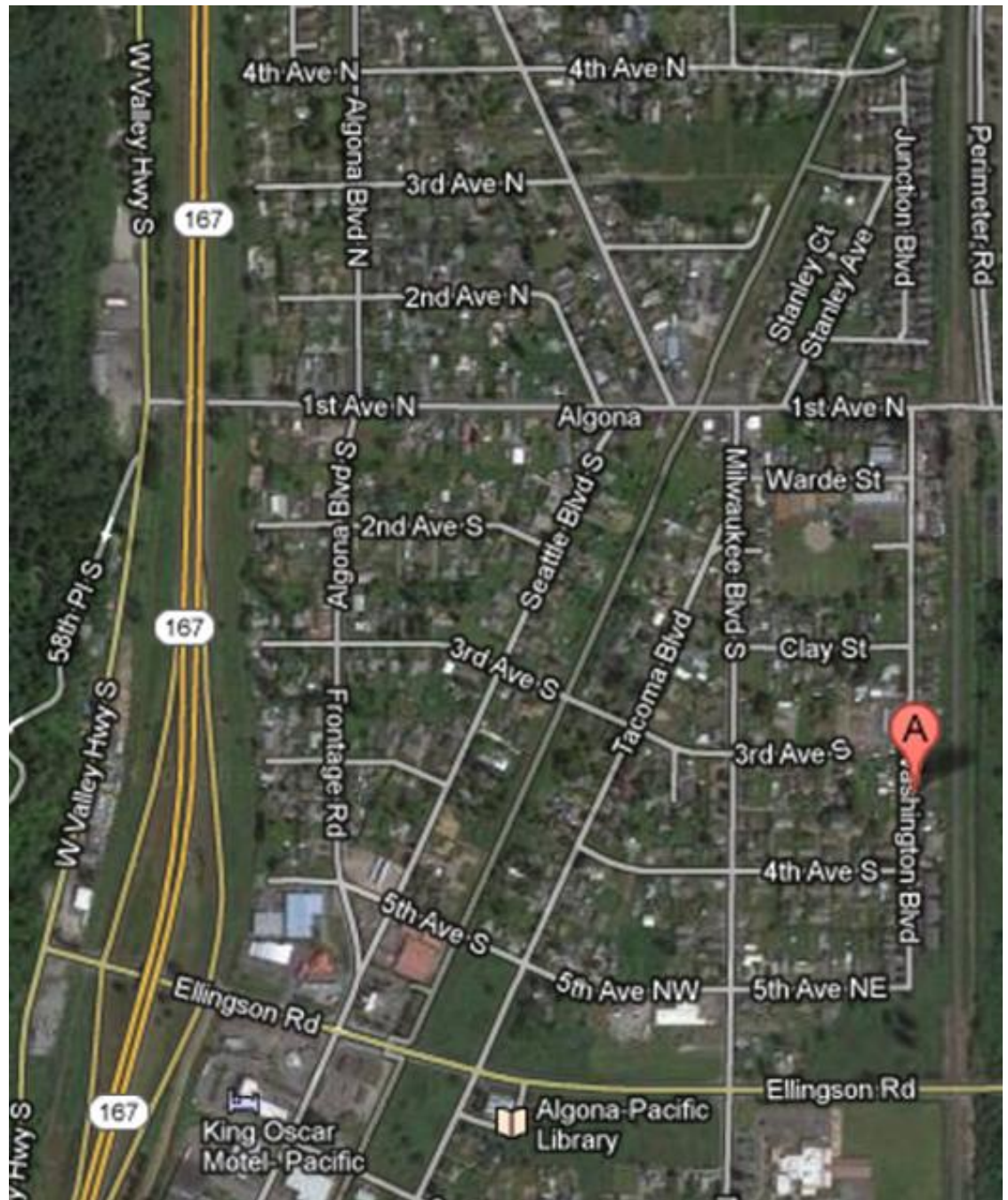
6291

AS-BUILT	WELL DATA	FORMATION DESCRIPTION
	<p>CONCRETE SURFACE SEAL</p> <p>BACKFILL <u>BENT</u> <u>CHIP</u></p> <p>DEPTH OF BORING <u>17</u> ' "</p>	<p><u>0 - 17</u> ft. <u>ABANDONED</u> <u>WITH BENT</u> <u>CHIP</u></p> <p><u>-</u> ft.</p> <p><u>0 - 17</u> ft.</p>

RECEIVED
JUL 17 1996
DEPT. OF ECOLOGY

**Washington State Department of Health
Groundwater Sampling of Private Well in Algona**

Location of
320 Washington Blvd S
in Algona



320 Washington Blvd S



Old Algona
Well Location

320 Washington Blvd S

320 Washington Blvd S

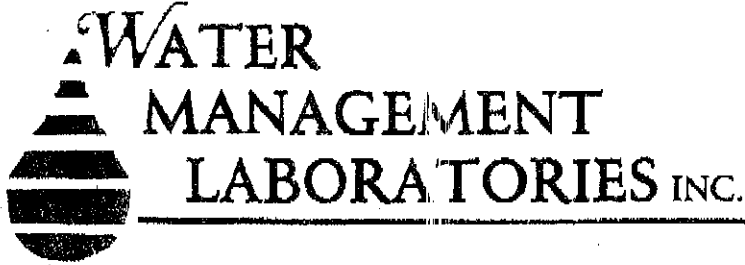


Pump location in small outhouse on side of property

Koi pond

Fruit Trees & Garden

Washington Blvd



1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

FAX - FAX - FAX - FAX - FAX - FAX

Date: 3-29-13

Time: _____

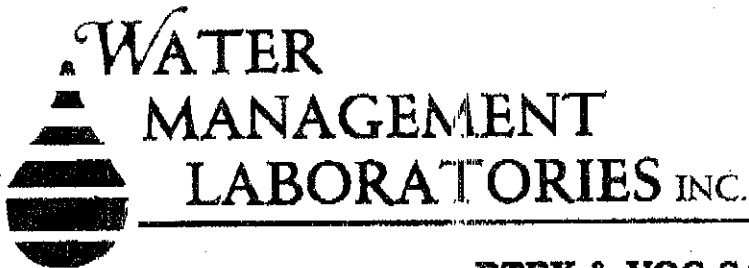
TO: WA Dept. of Health
ATTN: Rhonda

Fax Number: 1-360-236-2251

RE: VOC sampling Instructions

FROM: Candi
Water Management Laboratories, Inc.
253-531-3121 / Fax # 253-531-5287

Number of pages (including cover sheet) 2



1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

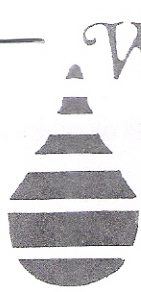
**BTEX & VOC SAMPLING
BY METHOD 524.2**

This kit contains 3 vials (two clear, one amber) in a foam holder. The amber vial is filled with pure laboratory water used as a FIELD BLANK. This vial should travel with you to the sampling site. **DO NOT OPEN THE FIELD BLANK**, this is for quality control.

1. Samples must be collected in duplicate (both clear vials must be filled).
2. Take the sample as close to the source as possible. If treated, pull after treatment and before going into the distribution system.
3. **Do not rinse the sampling vials**. They contain the preservative Ascorbic Acid. The preservative is not hazardous but please use caution to avoid splashing.
4. If sampling from a tap or faucet, turn it on and let it run for 10 minutes to allow the water temperature to stabilize. Turn flow down to a thin, steady stream. Fill the two clear vials completely. Fill the cap with water then close. There should be no air bubbles or large headspace in the vials.
5. If sampling a pond, stream, or lake, dip a clean 1 quart glass bottle 6 to 12 inches below the surface, then fill the vials completely with no air bubbles or large headspace.
6. Shake the vials until all the preservative is dissolved.

Sample must be kept at 4°C during storage and shipment. Any sample older than 7 days, that has an expired field blank, air bubbles, or that is not received cold will be rejected.

**1515 80th St E * Tacoma, WA 98404
(253) 531-3121**



WATER MANAGEMENT LABORATORIES INC.

RECEIVED
MAR 13 2013
CITY OF ALGONA

1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

VOLATILE ORGANIC CHEMICALS (VOC's) ANALYSIS REPORT

EPA TEST METHOD - 524.2

WA DOH TEST PANEL: VOC1

System ID No.: N/A		System Name: Ken Dehnart	
Lab/Sample No.: 08972314		Date Collected: 02/28/13	
Multiple Source Nos.: N/A		Sample Type: B	
DOH Source No.: N/A		Sample Purpose: I	
Date Received: 02/28/13		Date Analyzed: 03/04/13	
Analyst: LHL		Supervisor: <i>JMB</i>	
Date Reported: 03/05/13		Group: Private	
County: King		Sample Location: 320 Washington Blvd	
Send To: City of Algona 402 Warde St. Algona, WA 98001		Remarks:	

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	Trigger?	MCL?
EPA REGULATED									
45	Vinyl Chloride	ND	ug/L	0.5	0.5	2		NO	NO
46	1,1 - Dichloroethylene	ND	ug/L	0.5	0.5	7		NO	NO
47	1,1,1 - Trichloroethane	ND	ug/L	0.5	0.5	200		NO	NO
48	Carbon Tetrachloride	ND	ug/L	0.5	0.5	5		NO	NO
49	Benzene	ND	ug/L	0.5	0.5	5		NO	NO
50	1,2 - Dichloroethane	ND	ug/L	0.5	0.5	5		NO	NO
51	Trichloroethylene	ND	ug/L	0.5	0.5	5		NO	NO
52	1,4 - Dichlorobenzene	ND	ug/L	0.5	0.5	75		NO	NO
56	Dichloromethane	ND	ug/L	0.5	0.5	5		NO	NO
57	trans-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	100		NO	NO
60	cis-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	70		NO	NO
63	1,2 - Dichloropropane	ND	ug/L	0.5	0.5	5		NO	NO
66	Toluene	ND	ug/L	0.5	0.5	1000		NO	NO
67	1,1,2 - Trichloroethane	ND	ug/L	0.5	0.5	5		NO	NO
68	Tetrachloroethylene	ND	ug/L	0.5	0.5	5		NO	NO
71	Chlorobenzene	ND	ug/L	0.5	0.5	100		NO	NO
73	Ethylbenzene	ND	ug/L	0.5	0.5	700		NO	NO
76	Styrene	ND	ug/L	0.5	0.5	100		NO	NO
84	1,2 - Dichlorobenzene	ND	ug/L	0.5	0.5	600		NO	NO
95	1,2,4 - Trichlorobenzene	ND	ug/L	0.5	0.5	70		NO	NO
160	Total Xylenes	ND	ug/L	0.5	0.5	10000		NO	NO
74	m/p Xylenes (MCL for Total)	ND	ug/L	0.5	0.5			NO	
75	o - Xylene (MCL for Total)	ND	ug/L	0.5	0.5			NO	
TRihalOMETHANES									
27	Chloroform	ND	ug/L	0.5	0.5			NO	
28	Bromodichloromethane	ND	ug/L	0.5	0.5			NO	
29	Chlorodibromomethane	ND	ug/L	0.5	0.5			NO	
30	Bromoform	ND	ug/L	0.5	0.5			NO	
31	TOTAL Trihalomethanes	ND	ug/L	NA	NA	80			NO

Water Management Laboratories, Inc.
1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	Trigger?	MCL?
EPA UNREGULATED (Continued)									
53	Chloromethane	ND	ug/L	0.5	0.5		NO		
54	Bromomethane	ND	ug/L	0.5	0.5		NO		
58	1,1 - Dichloroethane	ND	ug/L	0.5	0.5		NO		
72	1,1,1,2 - Tetrachloroethane	ND	ug/L	0.5	0.5		NO		
78	Bromobenzene	ND	ug/L	0.5	0.5		NO		
79	1,2,3 - Trichloropropane (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO		
81	o - Chlorotoluene	ND	ug/L	0.5	0.5		NO		
85	Fluorotrichloromethane	ND	ug/L	0.5	0.5		NO		
86	Bromochloromethane	ND	ug/L	0.5	0.5		NO		
89	1,3,5 - Trimethylbenzene	ND	ug/L	0.5	0.5		NO		
91	1,2,4 - Trimethylbenzene	ND	ug/L	0.5	0.5		NO		
92	s - Butylbenzene	ND	ug/L	0.5	0.5		NO		
93	p - Isopropyltoluene	ND	ug/L	0.5	0.5		NO		
94	n - Butylbenzene	ND	ug/L	0.5	0.5		NO		
96	Napthalene	ND	ug/L	0.5	0.5		NO		
102	EDB (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO		
103	DBCP (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO		
162	Dichlorodifluoromethane	ND	ug/L	0.5	0.5		NO		
N/A	MTBE	ND	ug/L	0.5	0.5		NO		

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level may need to take additional samples. Contact your regional DOH office for further information.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

< : Indicates less than.

Comments:

A maximum contaminant level of 80 ug/L total Trihalomethanes (Compounds 27-30) is allowed.

Method 524.2: VOC's