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October 10, 2014

Ms. Donna Musa  
Washington State Department of Ecology, Northwest Regional Office  
3190 160<sup>th</sup> Avenue Southeast  
Bellevue, Washington 98008

**BY E-MAIL ONLY**

**RE: FACILITY SITE # 62855932  
RESPONSE TO ECOLOGY MAY 28, 2014 EARLY NOTICE LETTER  
HANGAR 3 FACILITY  
3100 112<sup>TH</sup> STREET SOUTHWEST  
EVERETT, WASHINGTON  
FARALLON PN: 1045-002**

Dear Ms. Musa:

Taurus Aerospace Holdings, LLC (Taurus), as the former lessee and sublessor of the Hangar 3 property at 3100 112<sup>th</sup> Street Southwest in Everett, Washington (herein referred to as the Site) (Figure 1), is submitting this letter to the Washington State Department of Ecology (Ecology) in response to the above-referenced letter (Attachment A). This response updates Site ownership information and summarizes the remedial investigation completed for the Site.

**SITE OWNERSHIP CHANGE**

Since Taurus submitted the release notification letter dated January 29, 2013, its interest in the Site has been sold to The Boeing Company (Boeing). The Site is located on the southern portion of Paine Field (also known as Snohomish County Airport) and is owned by Snohomish County, which leases the ground to Boeing. Future Ecology correspondence should be sent to Paine Field c/o Mr. Arif Ghose, Airport Director at 3220 100<sup>th</sup> Street Southwest, Everett, Washington 98204.

**REMEDIAL INVESTIGATION**

Multiple phases of remedial investigation have been conducted at the Site by Farallon Consulting, L.L.C. (Farallon) on behalf of Taurus and by Landau Associates, Inc. (Landau) on behalf of Boeing.

During March 2011, a soil gas investigation was conducted by Landau to establish baseline conditions prior to Boeing entering into a sublease on portions of Hangar 3. Soil gas samples were collected on March 1, 2011 from a total of 14 locations, including beneath the Hangar 3 building slab and proximate areas outside the Hangar 3 building.



Trichloroethene (TCE) was detected in two soil gas samples collected from a localized area beneath the central portion of Hangar 3. Volatile organic compounds (VOCs), including TCE, were not detected at concentrations at or exceeding the laboratory practical quantitation limit in the remaining soil vapor samples collected at the Site. During the soil gas investigation, an ambient indoor air sample was collected inside the central portion of Hangar 3 to assess the potential exposure pathway for soil vapor intrusion to indoor air. VOCs were non-detect at the laboratory practical quantitation limit in the ambient indoor air sample collected. These data demonstrate that the soil vapor to indoor air exposure pathway is incomplete at Hangar 3.

The results of a remedial investigation conducted at the Site by Farallon in September and October 2011 confirmed the presence of the halogenated volatile organic compound (HVOC) TCE at concentrations exceeding the Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A soil cleanup level of 0.03 milligrams per kilogram (mg/kg) in soil samples collected beneath the center of the hangar. All the parties with an interest in the premises were notified and Farallon submitted a release notification letter to Ecology on behalf of Taurus. The December 28, 2011 notification documented the discovery of a release of a hazardous substance that had occurred beneath what is now the middle of the 320,000-square-foot hangar.

The results of the subsurface investigation conducted by Farallon in September and October 2011 confirmed that concentrations of TCE exceeded the MTCA Method A cleanup level in soil samples collected from borings IW-1 and IW-3 at depths ranging from 10 feet below ground surface (bgs) to the maximum depth explored of 50 feet bgs in a localized area beneath the Hangar 3 building (Figure 2). Groundwater was not encountered during the 2011 subsurface investigation, and borings advanced on the periphery of the Hangar 3 building did not show obvious signs of contamination. In addition, soil samples collected from these borings were reported non-detect for VOCs.

Additional subsurface investigation was conducted by Farallon and Landau during 2012, which included advancement of a series of deep borings to characterize soil and groundwater conditions at the Site. A deep groundwater-bearing zone was encountered in the Esperance Sand at depths approximately 120 feet bgs at the Site. Monitoring wells LAI-MW1 through LAI-MW4, LAI-MW6, and LAI-MW7 were installed in the deep groundwater-bearing zone at the Site to characterize groundwater quality and flow direction (Figure 3). Groundwater contours for the deep groundwater-bearing zone at the Site were developed using elevations calculated from water levels measured on December 21, 2012 in the Site wells and three additional deep wells, DW-1 through DW-3, installed on the northeast-adjacent property identified as the former All-Fab facility (Figure 3). The groundwater contours for December 21, 2012 indicate a groundwater flow direction to the north-northeast, which is consistent with prior monitoring conducted at the adjacent All-Fab facility. Isolated shallow perched groundwater-bearing zones were also encountered at depths of less than 20 feet bgs in several locations on the Site. Monitoring well LAI-MW-5 was installed in a shallow perched groundwater-bearing zone encountered on the southeast portion of the Site (Figure 3).



TCE was detected at concentrations ranging from 2,200 to 3,100 micrograms per liter (ug/l) in groundwater samples collected in December 2012 from deep monitoring well LAI-MW7, which was installed proximate to the TCE source area identified beneath Hangar 3 (Figure 3). Additional HVOCs, including cis-1,2-dichloroethene (DCE) and 1,1-DCE, were also detected in groundwater samples collected from monitoring well LAI-MW-7. TCE was reported non-detect at the laboratory practical quantitation limit in groundwater samples collected from the remaining deep wells installed both up-gradient and down-gradient of Hangar 3. Benzene and arsenic were detected at concentrations exceeding MTCA Method A cleanup levels in a groundwater sample collected from the isolated shallow perched groundwater-bearing zone encountered in monitoring well LAI-MW5 on the southeast corner of the Site. The likely source of benzene and arsenic at monitoring well LAI-MW5 is the release and migration in shallow perched groundwater from confirmed sources on the east, adjacent Former Washington Air National Guard property.

Soil samples were also collected during installation of the deep wells. TCE was detected at concentrations ranging from 9.9 mg/kg to 0.036 mg/kg at depths of 50 and 130 feet bgs, respectively, in soil samples collected from well boring LAI-MW7, exceeding the MTCA Method A cleanup level. TCE was reported non-detect or less than the MTCA Method A cleanup level in soil samples collected from 131 and 136 feet bgs (Figure 2). TCE was reported non-detect or less than the MTCA Method A cleanup level in soil samples collected from the remaining deep well borings LAI-MW1 through LAI-MW4, and LAI-MW6. These data indicate a localized area of TCE contamination in soil and deep groundwater beneath Hangar 3, which is bounded both laterally and vertically on the Site.

The exact nature of the source of TCE detected in the soil and groundwater samples beneath Hangar 3 is not known. However, Paine Field was developed and used by the U.S. military during World War II and the Korean Conflict. The Hangar 3 facility was constructed in the early 1990s and current operations include primarily aircraft assembly by Boeing. Details regarding historical operations on the southern portion of Paine Field prior to the construction of the Hangar 3 facility have not been fully documented, although it has been determined that a dry cleaner for the military base was located proximate to the central portion of Hangar 3 as shown on Figure 2. Following military operations at Paine Field, some of the former military buildings proximate to Hangar 3 were leased to a variety of commercial tenants by Paine Field prior to construction of Hangar 3. According to tenant lists provided by Paine Field, the commercial tenants included several metal fabricators identified as Evergreen Industries and All-Fab. According to information provided by Paine Field, numerous underground storage tanks (USTs) used to store heating oil, gasoline, waste oil, and/or unknown contents proximate to the Hangar 3 facility and ramp area associated with historical military operations on the southern portion of Paine Field were decommissioned during the 1980s and early 1990s prior to construction of Hangar 3, which in some areas included the excavation of soil contaminated with petroleum hydrocarbons related to releases from the operation of the former USTs.

Based on the results of the remedial investigation completed to date at the Site by Farallon and Landau, the nature and extent of the localized source of TCE present in soil gas, soil, and



groundwater in the central portion of the Site has been adequately characterized, and no immediate threat to human health or the environment has been identified. Until the Potentially Liable Persons (PLPs) responsible for the release are identified, it is premature to opine on work to further address the TCE contamination or whether the PLPs would characterize and/or remediate TCE contamination at the Site through the Ecology Voluntary Cleanup Program.

Please contact Mr. Arif Ghose, Paine Field Airport Director at 3220 100<sup>th</sup> Street Southwest, Everett, Washington 98204 if you have questions or require further information regarding the release of TCE at the Site.

Sincerely,

**Farallon Consulting, L.L.C.**

J. Riley Conkin, L.G., L.H.G.  
Principal Geologist

Attachments: Figure 1, *Site Vicinity Map*  
Figure 2, *Soil Vapor and Soil Analytical Results for TCE*  
Figure 3, *Groundwater Elevation Contour and Trichloroethene Concentrations Map*  
Attachment A, Ecology Early Notice Letter

cc: Mr. Arif Ghose, Paine Field (by e-mail)  
Mr. Don Cook, Taurus Aerospace Holdings, LLC (by e-mail)  
Mr. Lawrence B. Burke, Davis Wright Tremaine LLP (by e-mail)  
Mr. Andrew C. Rardin, Paine Field (by email)  
Mr. Dan McCormack, The Boeing Company (by e-mail)

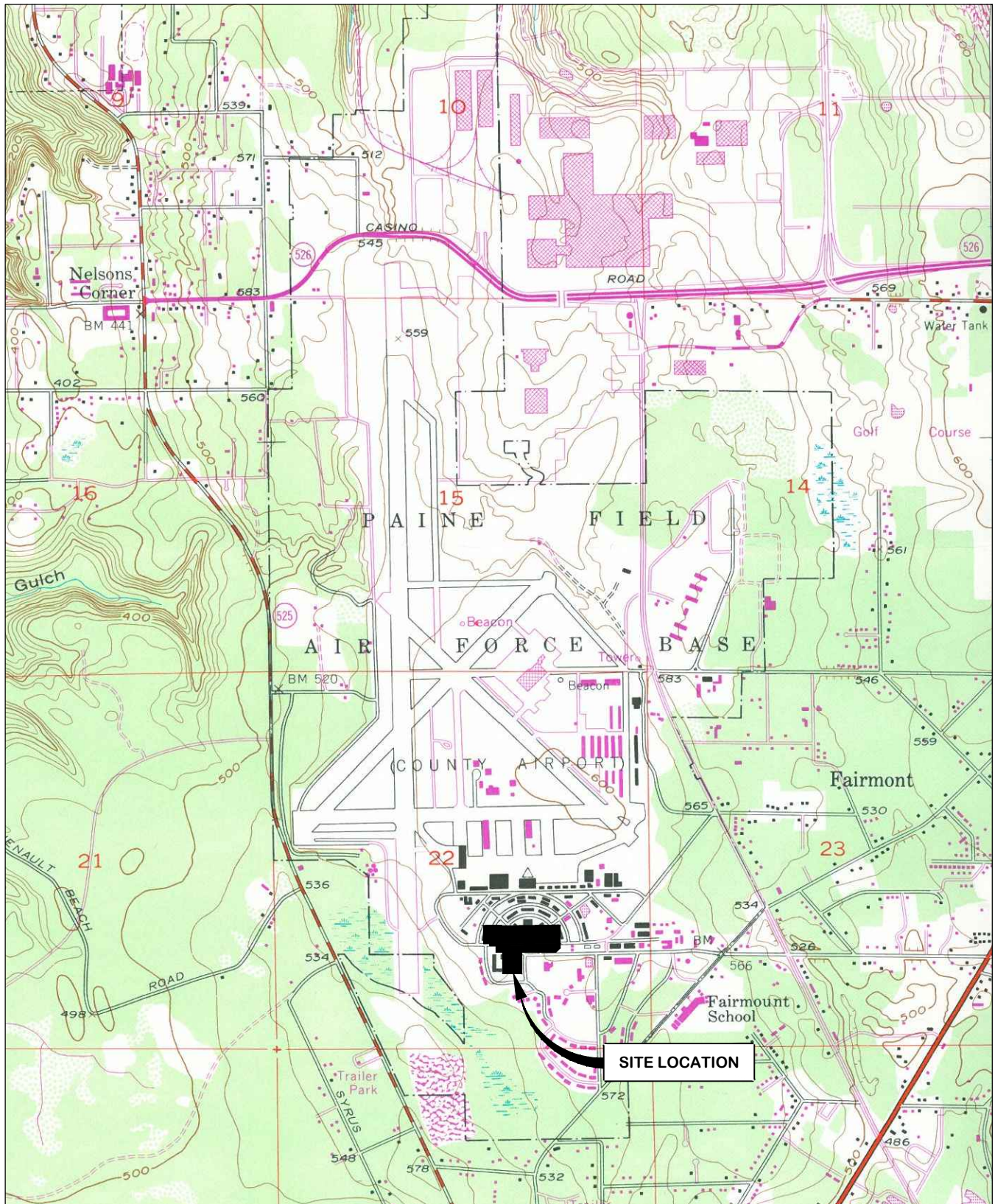
JRC:tlc

## **FIGURES**

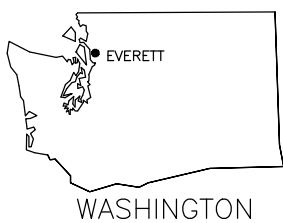
FACILITY SITE # 62855932  
RESPONSE TO ECOLOGY MAY 28, 2014 EARLY NOTICE LETTER  
Hangar 3 Facility  
3100 112th Street Southwest  
Everett, Washington

Farallon PN: 1045-002





REFERENCE: 7.5 MINUTE USGS QUADRANGLE MUCKILTEO, WASHINGTON. DATED 1953 AND PHOTOREVISED 1981



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**FARALLON**  
CONSULTING

Quality Service for Environmental Solutions | farallonconsulting.com

**FIGURE 1**  
SITE VICINITY MAP  
HANGAR 3  
EVERETT, WASHINGTON

FARALLON PN: 1045-002

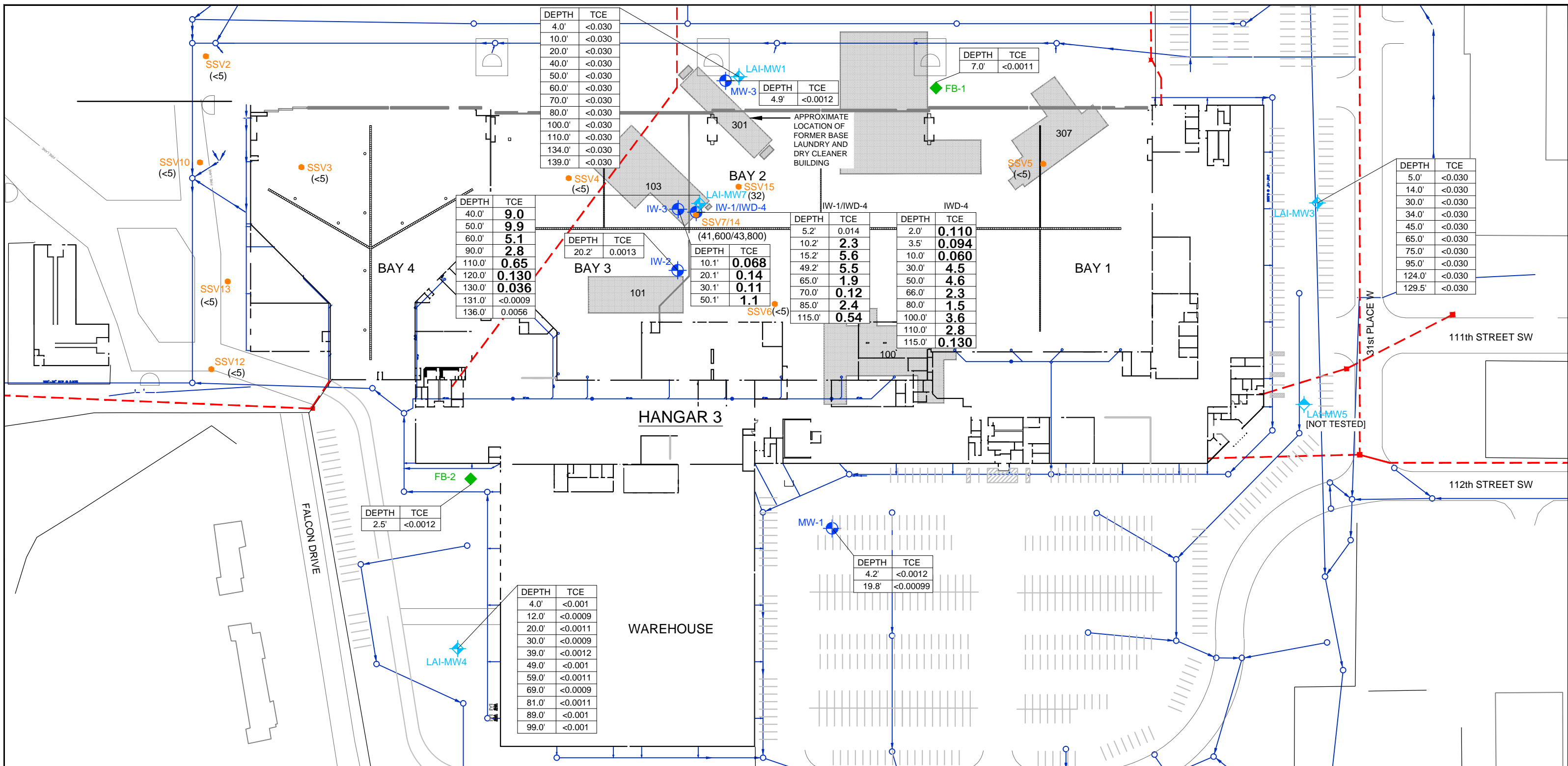
Drawn By: DEW

Checked By: RC

Date: 9/24/2014

Disk Reference: 1045002



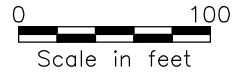


**LEGEND**

- STORMWATER LINE
- FIBER OPTIC LINE
- TRENCH DRAIN
- MW-1 DRY MONITORING WELL (FARALLON CONSULTING)
- LAI-MW1 DEEP MONITORING WELL (LANDAU ASSOCIATES)
- LAI-MW5 SHALLOW MONITORING WELL (LANDAU ASSOCIATES)
- FB-1 BORING (FARALLON CONSULTING)
- SSV4 SUB-SLAB SOIL VAPOR SAMPLE LOCATION (LANDAU ASSOCIATES)
- APPROXIMATE LOCATION OF FORMER UNDERGROUND STORAGE TANK (UNKNOWN CONTENT)
- APPROXIMATE LOCATION OF FORMER BUILDING STRUCTURE AND BUILDING ID NUMBER

DEPTH	TCE
4.9'	<0.0012

(32) TCE CONCENTRATION IN SOIL VAPOR IN MICROGRAMS PER CUBIC METER  
 DEPTH IN FEET BELOW GROUND SURFACE AND  
 SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM  
 TCE = TRICHLOROETHENE  
**BOLD** = INDICATES CONCENTRATIONS EXCEED WASHINGTON STATE MODEL  
 TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVEL  
 < = INDICATES CONCENTRATIONS NOT DETECTED AT OR ABOVE THE STATED  
 LABORATORY PRACTICAL QUANTITATION LIMIT



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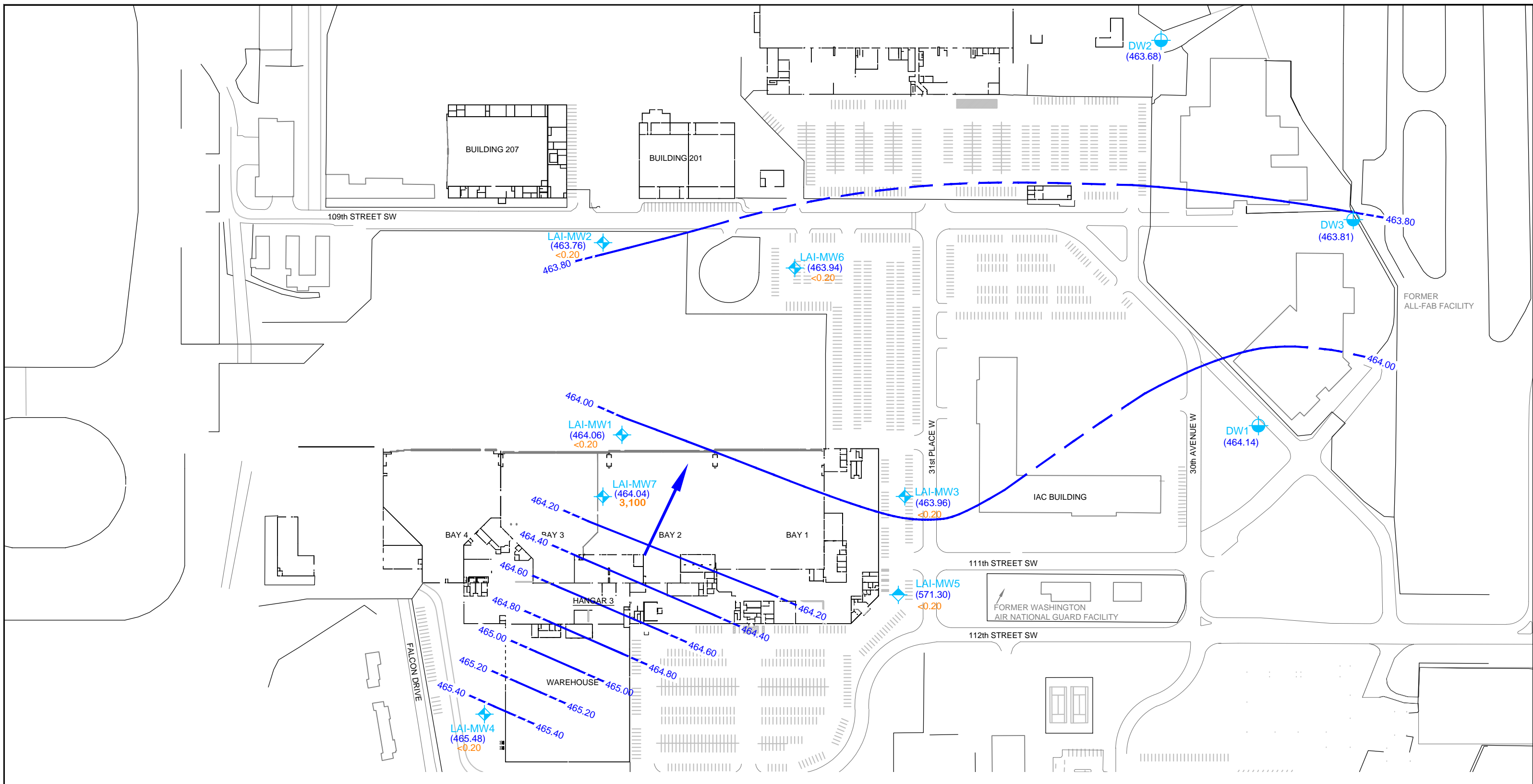
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**FIGURE 2**  
 SOIL VAPOR AND  
 SOIL ANALYTICAL RESULTS FOR TCE  
 HANGAR 3  
 EVERETT, WASHINGTON



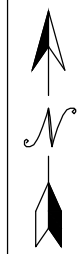
**LEGEND**

- ◆ LAI-MW1 DEEP MONITORING WELL (LANDAU ASSOCIATES)
- ◆ LAI-MW5 SHALLOW MONITORING WELL (LANDAU ASSOCIATES)
- ◆ DW1 DEEP MONITORING WELL (CDM)
- (464.06) GROUNDWATER ELEVATION 12/21/2012 (LANDAU ASSOCIATES)
- 464.00 ——— GROUNDWATER ELEVATION CONTOUR
- ← GROUNDWATER FLOW DIRECTION

**3,100** = TRICHLOROETHENE IN GROUNDWATER IN MICROGRAMS PER LITER (OCTOBER-DECEMBER 2012)

**BOLD** = INDICATES CONCENTRATIONS EXCEED WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD A CLEANUP LEVEL

**<=** = INDICATES CONCENTRATIONS NOT DETECTED AT OR ABOVE THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT



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**FIGURE 3**

GROUNDWATER ELEVATION CONTOUR AND  
TRICHLOROETHENE CONCENTRATIONS MAP  
HANGAR 3  
EVERETT, WASHINGTON

FARALLON PN: 1045-002

Date: 9/24/2014    Disk Reference: 1045002

Drawn By: DEW    Checked By: RC



**ATTACHMENT A  
ECOLOGY EARLY NOTICE LETTER**

FACILITY SITE # 62855932  
RESPONSE TO ECOLOGY MAY 28, 2014 EARLY NOTICE LETTER  
Hangar 3 Facility  
3100 112th Street Southwest  
Everett, Washington

Farallon PN: 1045-002



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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

May 28, 2014

Taurus Aerospace Holdings, LLC  
Taurus Aerospace Group, Inc  
3121 109th St SW  
Everett, WA 98204

Re: **EARLY NOTICE LETTER:** Facility Site # 62855932  
Hangar 3  
3100 112<sup>th</sup> St SW  
Everett, WA 98204  
Cleanup Site # 12381

Dear Sir or Madam:

This letter is sent to you concerning information that the Department of Ecology (Ecology) has gathered regarding the above referenced property. As part of the process under the Model Toxics Control Act (MTCA), Ecology maintains a list of known or suspected contaminated sites. Based on available information in the department's files, it is Ecology's decision to add this property to the list as a site known to be contaminated by hazardous substances.

Enclosed is a data summary report containing information we believe reflects the current site status. You may also access the electronic records Ecology has available for this site, here: <https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=12381>. Please note that inclusion on the list **does not** mean that Ecology has determined you to be a potentially liable person responsible for cleanup under MTCA. However, this letter is a notification that an area of contamination exists on this property. Further investigation or cleanup action will need to be done to comply with Washington State laws and regulations.

Because of considerable potential liability, please be advised to carefully consider any investigation or cleanup actions and to carefully document steps taken independent of Ecology's involvement. Guidance documents to help conduct an independent cleanup are available if you are interested in this option. In proceeding with an independent cleanup, please be aware there are requirements in State law which must be met. Some of these requirements are addressed in WAC 173-340-120(8)(B) and -300(4). Ecology will use the appropriate requirements contained throughout MTCA in its evaluation of the adequacy of any independent remedial (cleanup) actions performed.

Ecology has a strong commitment to work cooperatively with individuals to accomplish prompt and effective investigations and site cleanups. However, due to limited resources and requirements in State law, we are not able to provide all the assistance requested. Your cooperation in planning or conducting a cleanup action is not an admission of guilt or liability.



If an independent cleanup action is undertaken, and a formal review of the work is desired, a report may be submitted to Ecology through the Voluntary Cleanup Program. This program was established in response to the public's need for Ecology to more rapidly review cleanup actions. A fee has been established to support this review process. Guidance documents to help conduct an independent cleanup are available on our website (<http://www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm>) if you are interested in this option.

If a cleanup action is undertaken and a formal review of the work is not desired at this time, then the information should be submitted to Ecology in order to document any assessment or cleanup activities. If no report is available, but work is in progress or anticipated, a description of these plans would be helpful in updating the site record.

If an independent cleanup action does not occur on this property, Ecology will conduct a more detailed inspection at a future time that may include testing for contamination. After that, Ecology will assess what action is needed and establish a priority for that work under the formal MTCA cleanup process. At that time, the potentially liable person(s) would be determined and would be responsible for cleanup costs, including State oversight.

Should you have any questions regarding this letter or if you would like a copy of Chapter 70.105D RCW (The Model Toxics Control Act), the implementing regulations, Chapter 173-340 WAC, that detail these requirements, or a guidance document, please contact Donna Musa at (425) 649-7136 or [donna.musa@ecy.wa.gov](mailto:donna.musa@ecy.wa.gov). Thank you in advance for your cooperation.

Sincerely,



Louise Bardy  
Voluntary Cleanup Unit Supervisor  
Toxics Cleanup Program

By Certified Mail [7011 0470 0003 3682 3182]

**SNOHOMISH COUNTY**

SITE I

**Hangar 3**

CleanupSite ID: **12381**

FS ID: **62855932**

Alternate Name(s): Aviation Technical Services Hangar 3, Aviation Technical Services Hangars 1&3, Hangar 3

LOCATION:

Address: **3100 112th St SW** **98204**

Lat/Long: **47.89571** **-122.27881**  
Township/Range/Section: **28N** **4E** **22**

[View Vicinity Map](#)

Legislative District: **21**  
Congressional District: **2**

STATUS:

Ecology Status: **Awaiting Cleanup**  
WARM BIN#:

Responsible Unit: **Northwest**  
Site Manager: **Musa, Donna**  
Statute: **MTCA**

Is Brownfield?  
Environmental Covenant?  
Is PSI Site?

[View Site Web Page](#)

UST Site ID:  
WRIA ID: **8**

NFA Received? NFA Date:

NFA Reason:

ASSOCIATED CLEANUP UNIT(S)

cuID	Cleanup Unit Name	Unit Type	Process Type	Unit Status	Size (Acres)	ERTS ID
13018	Hangar 3	Upland	Independent Action	Awaiting Cleanup		631204

SITE ACTIVITIES:

Applies to:	Related ID (Unit-LUST-VCP)	Activity Display Name	Status	Start Date	End Date	Legal Mechanism	Performed By	Project Manager
CleanupSite		Site Discovery/Release Report Received			9/30/2012			Musa, Donna
CleanupSite		Initial Investigation / Federal Preliminary Assessment	Completed	12/30/2011	3/29/2012		Ecology	Musa, Donna
CleanupSite		Early Notice Letter(s)			5/28/2014			Musa, Donna
Upland		Ind - Report Received			12/28/2011			
Upland		Ind - Report Received			1/29/2013			

AFFECTED MEDIA & CONTAMINANTS:

Media:



Contaminant:	Ground Water	Surface Water	Soil	Sediment	Air	Bedrock
Halogenated Solvents			C			
<p><b>Key:</b>            B - Below Cleanup Level            C - Confirmed Above Cleanup Level            S - Suspected            R - Remediated            RA - Remediated-Above            RB - Remediated-Below</p>						