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**PHASE I AND LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT  
REPORT OF FINDINGS  
WOODINVILLE HEIGHTS A.K.A. VINTERRA  
15025 124<sup>TH</sup> AVENUE NORTHEAST  
WOODINVILLE, KING COUNTY, WASHINGTON 98072**

**Prepared for:**

**SSHI, LLC  
12910 TOTEM LAKE BOULEVERAD  
SUITE 220  
KIRKLAND, WASHINGTON 98034**

**Prepared by:**

**TETRA TECH, INC.  
2901 WILCREST DRIVE  
SUITE 410  
HOUSTON, TEXAS 77042**

**TETRA TECH PROJECT 103P12361201WA0452D**

**JUNE 17, 2013**

DEVELOPMENT SERVICES	
Permit #:	<u>PPA12003</u>
Project:	<u>Vinterra</u>
<input type="checkbox"/> Structural:	_____ Date: _____
<input type="checkbox"/> Bldg:	_____ Date: _____
<input type="checkbox"/> Planning:	_____ Date: _____
<input type="checkbox"/> Fire:	_____ Date: _____
<input checked="" type="checkbox"/> Public Works:	_____ Date: _____

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**JUN 17 2013**

**CITY OF WOODINVILLE  
DEVELOPMENT SERVICES**



TETRA TECH, INC.

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June 17, 2013

Mr. Edward R. Perez  
Vice President and Environmental Manager  
D.R. Horton, Inc.  
301 Commerce Street, Suite 500  
Fort Worth, Texas 76102

**Subject: PHASE I & PHASE II ENVIRONMENTAL SITE ASSESSMENT  
REPORT OF FINDINGS-**  
Woodinville Heights a.k.a. Vinterra  
15025 124<sup>th</sup> Avenue Northeast  
Woodinville, King County, Washington 98072  
Tetra Tech Project: 103P12361201WA0452D

Dear Mr. Perez:

Tetra Tech, Inc. (Tetra Tech) is pleased to submit this Phase I and Limited Phase II Environmental Site Assessment (ESA) Report of Findings (ROF) for the 31.17 acres of land known as Woodinville Heights also known as (a.k.a.) Vinterra (target property) located in Woodinville, King County, Washington.

This report is intended for the use of SSHI, LLC which is providing this ROF to the City of Woodinville, Washington, for the purposes of evaluating the property in relation to a pending preliminary plat approval. Tetra Tech EM, Inc. does not extend or grant reliance of this report to recipients beyond SSHI, LLC.

The findings and recommendations contained herein are based upon the data that was reviewed and documented at the time of the investigation of the target property for purposes of characterizing the general site and adjacent property conditions relative to environmental concerns and to identify obvious actual and potential environmental concerns.

We appreciate the opportunity to be of service to you. Please call us if you have any questions or if we may be of further service.

Sincerely,  
**TETRA TECH, INC.**

Gregg Pawlak  
Deputy Program Manager

Julie Helfrich  
Scientist

## 1.0 INTRODUCTION

In consideration of various real estate transaction practices and consistent with company due diligence requirements, SSSI, LLC engaged Tetra Tech, Inc. (Tetra Tech) to conduct various environmental consulting activities for the proposed Woodinville Heights a.k.a. Vinterra residential development (target property) between the periods of July and September 2012.

## 2.0 SITE AND AREA RECONNAISSANCE

At the time of the July 2012 site and area reconnaissance, the target property consisted of approximately 31.28 acres of land operated as a plant nursery (Vibrant Plants, Inc.) improved with various support structures and appurtenances including an office, a maintenance building, a distribution building, a storage shed, a mixing building, four water wells, two pump houses, a concrete-lined pond, two storm water detention ponds, a settlement pond, and multiple greenhouses and plant storage areas.

The concrete-lined pond is located in the central portion of the target property and is used to treat on-site water (both well water and storm water) with fertilizers prior to irrigating the nursery inventory. The main detention pond located to the north of the mixing pond collects storm water and irrigation run-off water from a series of ditches and piping located throughout the target property. The detention pond, which is also used for recycle/ make-up water, discharges to a plastic-lined sediment basin and then through a culvert to a City of Woodinville storm water drain. A smaller storm water detention pond located in the southwestern corner of the property is used to store surplus storm water and run-off during the summer months, which is then pumped to the main storm water detention pond when needed. During the winter months, this pond is allowed to discharge off-site to a municipal storm water drain along 124<sup>th</sup> Avenue Northeast.

The nursery office is located in the south-central portion of the target property. The maintenance building is located northwest of the office. North of these two buildings is the distribution building. A portable storage shed and mixing building are both located directly south of the concrete-lined pond in the central portion of the target property. The mixing building contains a water well; the portable storage shed is locked as it contains herbicides, pesticides, and application equipment, and is where these materials are mixed prior to application. Two water pumping houses are located adjacent to the main storm water detention pond and the concrete-lined pond, respectively. A former septic drain is located north of maintenance building, and a new septic drain is located approximately 75 feet northwest of the maintenance building. On-site soils were placed in a swale located in the southwestern portion of the target property, and soil from the excavation of the main detention pond was stored in the northwestern portion of the target property. A diesel aboveground storage tank (AST) used for fueling equipment was observed on a wheeled trailer at the target property.

Four water wells are located on the target property. Water well A is located near the office, but is currently not in use; well B is located in the mixing building and is actively used to supply water to the concrete-lined pond; well C is located adjacent to the mixing building but is no longer in use; and water well D is located under the floor of the maintenance building. The existence of well D was not confirmed during Tetra Tech's site reconnaissance. Additionally, three water pumps distribute irrigation water throughout the target property.

### 3.0 SITE HISTORICAL REVIEW

Tetra Tech's review of historical aerial photographs indicates initial nursery operations appearing in the 1965 aerial photograph. Historical photographs in subsequent years indicate gradual expansion of nursery operations through 2005 when the target property appears to be fully developed.

### 4.0 SITE RECORDS REVIEW

Tetra Tech conducted a review of regulatory agency records for the target property which were compiled, published, and made available through a publication source known as Environmental Data Resources (EDR). The EDR Report dated September 2012 identified the following regulatory database listings for the target property:

- Vibert Nursery, Inc., the target property, is listed in the ALLSITES, the Confirmed or Suspected Contaminated Sites List (CSCSL) No Further Action (NFA), Underground Storage Tank (UST), Independent Cleanup Reports (ICR), and Facility Index System/Facility Registry System (FINDS) databases. The property is listed on the ALLSITES database for its inclusion in the Leaking Underground Storage Tank (LUST), and UST databases. The EDR Report cites the existence of a steel UST installed at the target property on December 31, 1964. The LUST incident involved soil contaminated with petroleum products discovered during the tank removal. The release notification date is listed as January 22, 1990. The contaminants of concern listed were: petroleum gas and benzene, toluene, ethylbenzene, and total xylenes (BTEX); however, only soil media was affected. According to the NFA Determination issued by Washington Department of Ecology (DOE) dated February 10, 2012, the site met the criteria for the Method A Cleanup levels and the property owner conducted an independent cleanup. Washington DOE received a final cleanup report on May 25, 2000 and the LUST incident received a NFA status on October 3, 2011. Tetra Tech conducted further soil sampling in the area of the former UST during the Limited Phase II investigation. Results of sampling indicate no exceedances; no further assessment is warranted for the former UST.

### 5.0 ON-SITE CONDITIONS

Tetra Tech identified the following on-site conditions during assessment of the target property:

- The concrete-lined pond located in the central portion of the target property is used to treat on-site water (both well water and storm water) with fertilizers prior to irrigating the nursery inventory. The main detention pond collects storm water and irrigation run-off water from a series of ditches and piping throughout the target property. The detention pond, which is also used for recycle/ make-up water, discharges into a plastic lined sediment basin which then discharges to a City of Woodinville storm water drain. A smaller storm water detention pond located in the southwestern corner of the property is used to store surplus storm water and run-off during the summer months. During the

winter months, this pond is allowed to discharge through a culvert to 124<sup>th</sup> Avenue Northeast.

- A historical LUST incident was associated with the removal of a former UST. The release notification date is listed as January 22, 1990. Contaminates of concern were listed as: petroleum gas and BTEX; however, only soil was affected. According to the NFA Determination letter from Washington Ecology dated February 10, 2012, the site met the criteria for the Method A Cleanup levels and the property owner conducted an independent cleanup. Washington Ecology received a final cleanup report on May 25, 2000, and the LUST incident received NFA status on October 3, 2011.
- Surface soils, subsurface soils, and sediment may contain amounts of fertilizers, herbicides, pesticides, and petroleum hydrocarbons.

## 6.0 OFF-SITE CONDITIONS

Tetra Tech did not identify any off-site RECs or environmental concerns to the target property.

## 7.0 LIMITED PHASE II

Tetra Tech conducted a Limited Phase II ESA to determine if on-site surface and subsurface soils contain fertilizers, herbicides, pesticides and/or petroleum hydrocarbons at concentrations exceeding Washington State Department of Ecology (Washington Ecology) standards.

Field activities included the following:

### August 2012

- Installation of two soil borings in the area of a former UST and associated soil excavation that received a Washington Ecology NFA determination in October 2003. One soil sample was collected from each boring.
- Collection of two surface soil samples in the area of the mixing and storage buildings.
- Installation of eight soil borings in locations across the target property. Soil samples were collected from each boring at depths ranging from 2 to 6 feet below ground surface (bgs).
- Subdivide the target property into fifteen areas. Subdivided areas were chosen based on conditions observed in historical aerial photographs as well as current and historical uses of the target property. One composite soil sample was collected from each of the fifteen subdivided areas.
- Collection of one sediment sample from the following locations: the settlement pond, the main detention pond outfall, the southwestern detention pond, the culvert from the settlement pond, the culvert along the southern target property boundary, and an area adjacent to the storm water catch basin.

- Collection of two sediment samples from the main detention pond. No sediment sample was collected from the mixing pond, as no sediment had accumulated in the pond.

All August 2012 samples were analyzed for organophosphorus pesticides by EPA Method 8270D SIM, organochlorine pesticides by EPA Method 8081A, chlorinated herbicides by EPA Method 8151A, and metals by EPA Method 6010B. The soil samples collected from the area of the former UST and the soil samples collected from the mixing area and chemical storage area were additionally analyzed for gasoline-range total petroleum hydrocarbons by Method NWTPH-Gx and volatile organic compounds (VOCs) by EPA Method 8260B. The September 2012 sediment and surface soil samples were analyzed for arsenic by EPA Method 6010B.

Soil and sediment analytical data was compared to Washington State Model Toxics Control Act (MTCA) Method B Cleanup Levels for unrestricted/residential land use. The MTCA Method B formula values were obtained from the Washington Ecology Cleanup Levels and Risk Calculation Database (CLARC, <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>).

- Analytical results from the August 2012 Limited Phase II Investigation indicate that no chemicals of concern were detected at concentrations exceeding laboratory detection limits or Washington Ecology standards in surface or subsurface soil samples collected from the target property.
- Arsenic was detected in one sediment sample (SC-SED2 [Ref. Figure 2]) collected in the vicinity of the culvert along the southern property boundary above the Washington Ecology MTCA Method B Cleanup Level of 20 mg/kg and the naturally occurring background level of 7 mg/kg for the Puget Sound Area. The arsenic concentration in the sediment sample was 44 milligrams per kilograms (mg/kg).

#### September 2012

- Subsequent collection of nine surface soil samples and one sediment sample to delineate the extent of arsenic affected soil in the vicinity of the culvert along the southern property boundary.
- Tetra Tech inspected the culvert area along the southern property boundary where storm water from the southern portion of the target property and an area along the Tolt Pipeline Trail drain. The culvert discharges to the southwest, and iron staining was observed in the channel upstream of the culvert (along the Tolt Pipeline Trail).

Analytical results from the September 2012 supplemental sampling activities for the Limited Phase II Investigation indicate that no chemicals of concern were detected at concentrations exceeding Washington Ecology standards in surface soil or sediment samples collected from the area adjacent to the culvert along the southern target property boundary where the isolated exceedance of arsenic was detected in August 2012. Therefore, the concentration of arsenic detected in the sediment sample in the vicinity of the culvert along the southern property boundary during the August 2012 is localized.

## 8.0 CONCLUSIONS AND RECOMMENDATIONS

Tetra Tech performed this assessment in general conformance with the scope and limitations of the ASTM guidelines in effect at the time of the assessment to identify any RECs in connection with the target property, including the presence, or likely presence, of any hazardous substances or petroleum products on the target property under conditions that indicate an existing release, a past release, or a material threat of a release into the ground or structures on the target property. The assessments included an evaluation to the extent practicable of the past and present land uses at the target property and on adjacent properties.

The following on-site RECs were observed during Tetra Tech's assessment of the target property:

- Analytical results for surface soils, subsurface soils, and sediment samples collected from the target property during Tetra Tech's August and September Limited Phase II ESA indicate that localized sediment in the vicinity of the culvert along the southern property boundary contain arsenic at concentrations exceeding Washington Ecology MTCA Method B Cleanup Levels for unrestricted/residential land use. Although the sediment concentrations appear to be localized, Tetra Tech recommends the excavation, removal and off-site disposal of affected sediment as a non-hazardous waste prior to land development activities. Complete removal of sediments containing arsenic at concentrations exceeding Washington Ecology MTCA Method B Cleanup Levels for unrestricted/residential land use should be verified through confirmation sampling in such areas.
- Please note that although the post-excavation soils/sediment have not been affected by chemicals of concern at concentrations exceeding Washington Ecology MTCA Method B Cleanup Levels and are therefore suitable for on-site use, additional characterization should be performed if these soils are to be excavated and removed from the target property during development.

The following housekeeping and/or developmental conditions were noted during the site reconnaissance of the target property:

- Tetra Tech recommends that each of the four wells be plugged and abandoned in accordance to applicable state and local regulations.
- Tetra Tech recommends that the subsurface septic system be decommissioned and removed in accordance with applicable federal, state, and local regulations.

**FIGURES**

Date: 6/5/2013 Path: S:\EM Shared\Projects Directory\Private Sector - Houston\103DP445 - DR Horton\Projects\1236\_12 (2012 Projects)\West\WA045 Woodinville Heights\GIS Files\Figure\_2\_Woodinville\_rev.JLH060513.mxd

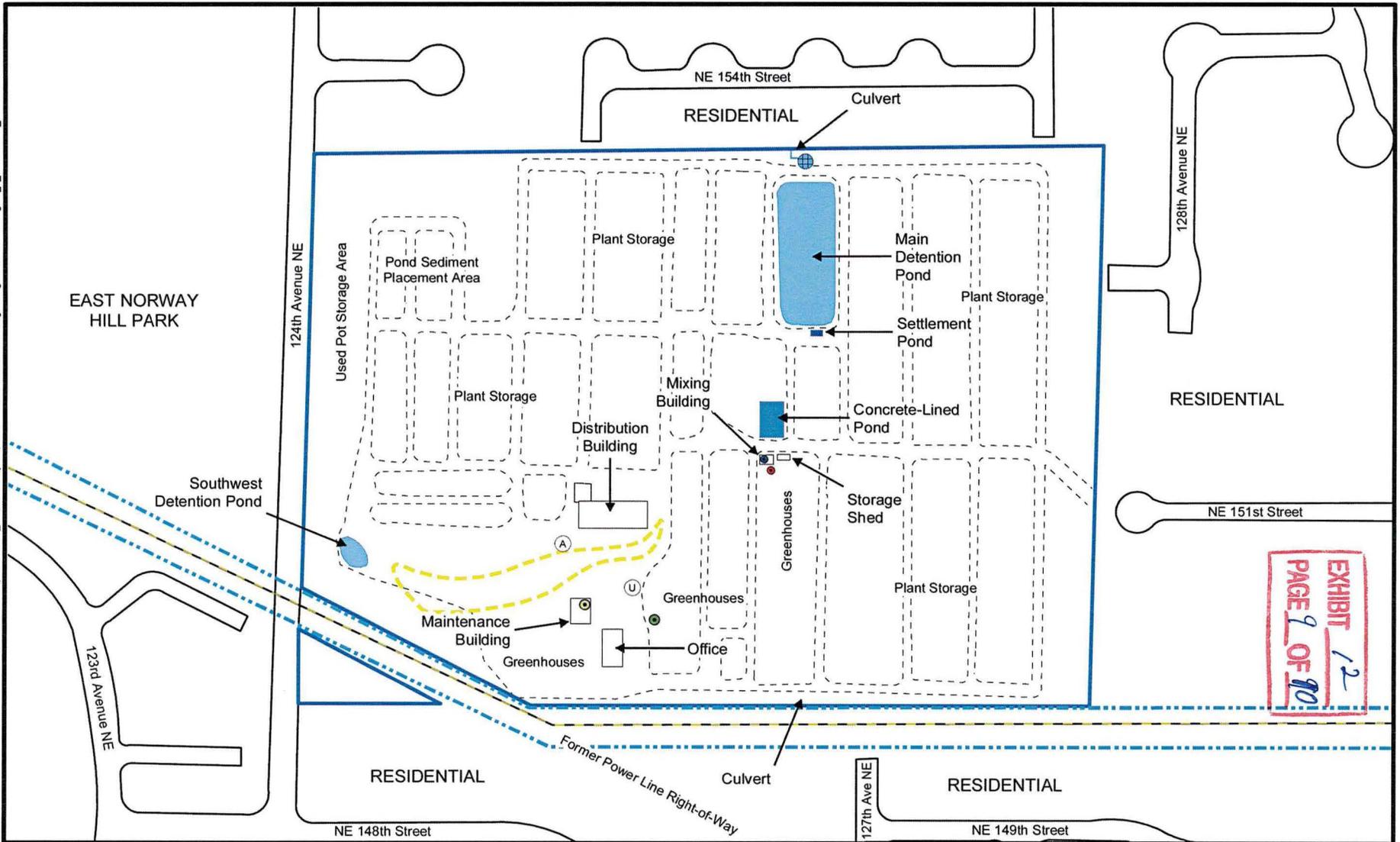
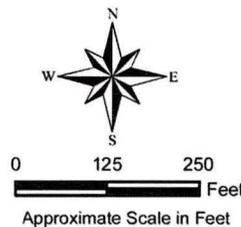


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- |                              |                            |
|------------------------------|----------------------------|
| TARGET PROPERTY BOUNDARY     | DUG WELL (NEVER COMPLETED) |
| TOLT WATER PIPELINE          | DIESEL AST                 |
| TOLT WATER PIPELINE EASEMENT | FORMER GASOLINE UST        |
| UNPAVED ROAD                 | BERMED OUTFALL TO SEWER    |
| FILL AREA                    |                            |
| PRIMARY PRODUCTION WELL      |                            |
| SECONDARY PRODUCTION WELL    |                            |
| CAPPED INACTIVE WELL         |                            |



**SITE MAP**  
WOODINVILLE HEIGHTS  
15025 124TH AVENUE NORTHEAST  
KING COUNTY  
WOODINVILLE, WASHINGTON

**D-R-HORTON**

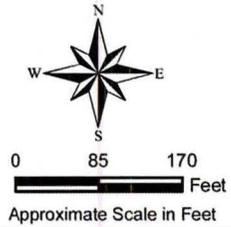
Tetra Tech EM Inc. Project 103P12361201WA0451A

FIGURE 1

Date: 6/5/2013 User: callin.andersen Path: S:\EMM\Shared\Projects\Private Sector - Houston\103DP4445 - DR Horton\Projects\1236\_12 (2012 Projects)\West\VA045 Woodinville Heights\Figures\GIS Files\Figure\_2B\_Woodinville\_For\_City.mxd



- TARGET PROPERTY BOUNDARY
- SOIL BORING LOCATION
- SEDIMENT SAMPLE LOCATION
- SOIL SAMPLE HAND AUGER LOCATION



GRAB SAMPLE LOCATIONS  
 WOODINVILLE NURSERY  
 15025 124TH AVENUE NORTHEAST  
 KING COUNTY  
 WOODINVILLE, WASHINGTON

**D·R·HORTON**  
 Tetra Tech EM Inc. Project 103P12361201WA0451A

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FIGURE 2