Public Review Draft Cleanup Action Plan

Truck City Site
Mount Vernon, WA

Facility/Site ID: 2673
Cleanup Site ID: 5176

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1.0 INTRODUCTION

This Public Review Draft Cleanup Action Plan (CAP) presents the Washington State Department of Ecology's (Ecology) proposed cleanup action for the Truck City site ("Site") (Facility Site ID: 2673, Cleanup Site ID: 5176). The Site is located at 3216 Old Highway 99 South, Mount Vernon in Skagit County, Washington (Figure 1). The Site, in combination with other adjacent parcels, is proposed for construction of the Skagit County jail. The proposed jail property (Property) comprises the following five parcels: Skagit County parcels P29546 (Truck City parcel) and four adjoining undeveloped parcels to the south, P119262, P119263, P119265, and P119267 (Figure 2). The parcels are owned by various parties, and Skagit County (the "County") has executed purchase and sale agreement(s) for the parcels. The Truck City parcel comprises the entire Site based on data available at this time. As part of that effort, the County is pursuing a Prospective Purchaser Consent Decree with the Washington State Department of Ecology (Ecology).

This document has been prepared in accordance with the requirements of the Washington State Model Toxics Control Act (MTCA; Washington Administrative Code [WAC] 173-340-350). The cleanup action decision is based on the Remedial Investigation and Feasibility Study (RI/FS) (MFA, 2014) and other relevant documents in the administrative record (see Section 1.3).

This Public Review Draft CAP outlines the following:

- The history of operations, ownership, and activities at the Site;
- The nature and extent of contamination;
- Cleanup levels (CULs) for the Site that are protective of human health and the environment;
- The selected remedial action for the Site; and
- Compliance monitoring and institutional controls.

1.1 DECLARATION

Ecology has selected this remedy because it complies with the provisions of WAC 173-340-360. The selected cleanup action will be protective of human health and the environment, comply with cleanup standards and applicable state and federal laws, and provide for compliance monitoring. The selected cleanup action is also considered to use permanent solutions to the maximum extent practicable, provide for a reasonable restoration timeframe of less than five years, and will consider public concerns. Furthermore, the selected remedy is consistent with the preference of the State of Washington as stated in Revised Code of Washington (RCW) 70.105D.030(1)(b) for permanent solutions.

1.2 APPLICABILITY

CULs specified in this Public Review Draft CAP are applicable only to the Site. They were developed as a part of an overall remediation process under Ecology oversight, using the authority of MTCA, and should not be considered as setting precedents for other sites.

1.3 ADMINISTRATIVE RECORD

The documents used to make the decisions discussed in this Public Review Draft CAP are on file in the administrative record for the Site. Major documents are listed in the reference section. The entire administrative record for the Site is available for public review by appointment at Ecology's Northwest Regional Office (NWRO), located at 3190 160th Avenue SE, Bellevue, WA 98008. Appointments can be made by calling the NWRO resource contact at 425.649.7235 or sending an email to nwro_public_request@ecy.wa.gov. Results from applicable studies and reports are summarized to provide background information pertinent to this Public Review Draft CAP. The following is a list of relevant studies and reports for the Site:

Reports associated with the Site:

- Applied Geotechnology, Inc. conducted a hydrocarbon contamination assessment in 1989.
- Ecology completed an interim soil remedial cleanup action in 1993.
- Associated Environmental Group, LLC conducted a site characterization in 2005.
- Materials Testing & Consulting, Inc. conducted an initial Phase II environmental site assessment (ESA) in February 2014 and a supplemental ESA in March 2014.
- Maul Foster & Alongi, Inc. prepared a Public Review Remedial Investigation and Feasibility in November 2014.

1.4 CLEANUP PROCESS

Cleanup conducted under the MTCA process requires the preparation of specific documents either by a Potentially Liable Party (PLP), Ecology, or in this instance by Skagit County as a Prospective Purchaser. These procedural tasks and resulting documents, along with the MTCA section that requires their completion, are listed below with a brief description of each task.

- Remedial Investigation and Feasibility Study (RI/FS) —WAC 173-340-350
  The RI/FS documents the investigations and evaluations conducted at the Site from the discovery phase to the RI/FS document. The RI collects and presents information on the nature and extent of contamination, as well as the risks posed by the contamination. The FS presents and evaluates site cleanup alternatives and proposes a preferred cleanup alternative. The document is prepared by the Prospective Purchaser, is approved by Ecology, and undergoes public comment.
- Cleanup Action Plan (CAP)—WAC 173-340-380
  The CAP sets CULs and standards for the Site and the selected cleanup actions intended to achieve the CULs. The document is prepared by Ecology and undergoes public comment.
- Engineering Design Report (EDR), Construction Plans and Specifications—WAC 173-340-400. These reports outline details of the selected cleanup action, including any engineered

systems and design components from the CAP, and all procedurally exempt and required permits. These may include construction plans and specifications with technical drawings. The document is prepared by the Prospective Purchaser and approved by Ecology.

- Operation and Maintenance Plans (O&M)—WAC 173-340-400
  The O&M plans summarizes the requirements for inspection and maintenance of cleanup actions. It includes any actions required to operate and maintain equipment, structures, or other remedial systems. The document is prepared by the Prospective Purchaser and approved by Ecology.

- Cleanup Action Report—WAC 173-340-400
  The Cleanup Action Report is completed following implementation of the cleanup action, and provides details about the cleanup activities along with documentation of adherence to or variance from the CAP. The document is prepared by the Prospective Purchaser and approved by Ecology.

- Compliance Monitoring Plan—WAC 173-340-410
  Compliance Monitoring Plans provide details about monitoring activities required to ensure that the cleanup action is performing as intended. It is prepared by the Prospective Purchaser and approved by Ecology.

2.0 SITE BACKGROUND

2.1 SITE HISTORY AND OPERATIONS

Archival records indicate that the vicinity once was generally rural farmland with local residences. The Site was developed by 1953 and operated as a truck stop and restaurant until the truck stop burned in 1976. The parcel was redeveloped to its current configuration in 1978, and operations have not changed since then.

Figure 3 presents the Site's features and previous environmental investigation features.

The Site currently contains six buildings associated with the commercial operations of the gas station, truck stop and truck wash, restaurant, and retail store. The remainder of the Property is undeveloped rural grassland. The gas station pump islands, fueling facilities, and truck scale (weigh station) are located in the western area of the Truck City parcel. The diesel pump islands and the Truck City parcel's current operational underground storage tanks (USTs) are located in the central area of the parcel, adjacent south of the truck wash building. Long-term truck parking is designated in the east area of the parcel. Figure 4 presents the Site's current site features and recent investigation locations.

2.2 SITE INVESTIGATIONS AND INTERIM ACTIONS

Subsurface investigations have been conducted on the Site since 1989 to assess potential petroleum hydrocarbon impacts related to the operation of the retail gasoline station. Applied Geotechnology, Inc. (AGI) conducted a hydrocarbon assessment of the Site in 1989. AGI advanced eight borings, to approximately 15 to 20 feet below ground surface (bgs), adjacent to the northern, southern, and eastern UST nests; gasoline and diesel pump islands; and truck wash area. Six of the borings were

completed as 2-inch-diameter monitoring wells. AGI concluded that soil and ground water gasoline and diesel petroleum hydrocarbon contamination was present around the northern and southern UST nests, and the potential exists for their off-site migration of these indicator hazardous substances (IHS). Detected concentrations of gasoline- and diesel-range total petroleum hydrocarbons (TPH) and associated petroleum fuel VOCs, specifically benzene, toluene, and total xylenes, are above Ecology's current MTCA Method A cleanup levels (CULs). Ground water flow direction at the Site was assessed to be west to southwesterly (AGI, 1989).

Ecology conducted an interim action cleanup in 1993. Seven USTs, 5,000 gallons in capacity each and located in the northern and southern UST nests, were decommissioned and removed along with associated product lines. Two additional 500-gallon-capacity USTs, as well as a septic tank full of waste oil, were encountered during the contaminated-soil-excavation activities and were also removed. Ecology reported that, because the septic system had been used for waste oil disposal and was connected to the parcel's storm drain system, the septic tank may be one of the contaminant sources at this parcel (Ecology, 1993). The interim action removed 6,244 cubic yards of contaminated soil and 89,991 gallons of contaminated water. The impacted soil was placed on an on-site treatment pad in the northeastern area of the Site for aeration and biodegradation. Final confirmation samples from the stockpiled soil showed detections of gasoline-range TPH below CULs, with residual diesel-range TPH concentrations above CULs. The USTs were reported to be in good condition, with no holes. However, impacted soil was apparent in the excavation pit (sidewalls and base of the excavation). A petroleum sheen was also observed in ground water that had seeped into the pit. Ecology also reported the presence of free product in the form of fuel seeps from the excavation sidewalls (Ecology, 1993). The monitoring wells installed in the excavation area by AGI were destroyed during excavation activities. Ecology concluded that ground water contamination at the Site likely would be an ongoing issue.

Associated Environmental Group, LLC (AEG) conducted a site characterization of the Site in 2005. Eleven borings were advanced via a direct-push-probe drilling rig to depths ranging from approximately 5 to 8 feet bgs. The borings were placed in the perimeters north, east, and south of the pump islands and UST nests. Shallow soil and ground water samples were collected at all borings. Analytical results for all samples indicated no detectable presence of petroleum hydrocarbons (AEG, 2005).

In 2005, an unknown volume of diesel was spilled at the Site when a truck driver filling a rig allowed an unattended fueling nozzle to fall out of the tank during fueling activities. The spill spread to a ditch (known as Maddox Creek) which is located adjacent to and west of the Site and flows south parallel to Old Highway 99 South to Hickox Road (approximately 0.68 mile south of the Site). This spill went unreported until Ecology Spills Team traced the source back to the Truck City parcel (Ecology, Environmental Report Tracking System #546209, 2005). Sheen was observed in Maddox Creek. Ecology retained NRC Environmental Services to clean up the spill. Absorbent booms and pads were placed in Maddox Creek. Subsequently, MTC conducted sediment sampling within Maddox Creek, in the vicinity of the Site, to assess whether residual contamination remains in Maddox Creek. The fuel spill in 2005 was remediated, and sediment sampling in Maddox Creek at locales downgradient of the Site indicated cleanup activities were completed in accordance with MTCA. Based on current data the sediments in Maddox Creek no longer appears to be impacted by releases at the Site.

Materials Testing & Consulting, Inc. (MTC) conducted an initial Phase II environmental site assessment (ESA) in February 2014 and a supplemental ESA in March 2014. Eleven borings were

advanced, via a direct-push-probe drilling rig, to a maximum depth of 15 feet bgs. The borings were located in and outside of the former excavation remediation area. Soil samples were collected from all borings for laboratory analyses. One ground water sample was collected from a boring placed south of the former UST nests in the western area of the Truck City parcel. MTC assessed the condition of several remaining monitoring wells at the Site and concluded that most wells were inaccessible or unusable (MTC, 2014a). A secondary ground water sample was collected from an existing well located north of the truck scale. Three surficial soil samples were also collected at adjoining parcels to the south. MTC concluded that the remediated area contained localized, residual soil contaminated with petroleum at concentrations below MTCA Method A CULs. However, impacted soil, at concentrations above MTCA CULs for gasoline- and diesel-range TPH, was documented adjacent to the truck scale (MTC, 2014b). Laboratory analytical results for the two ground water samples indicated no detectable TPH in the gasoline and diesel ranges or associated VOCs, specifically benzene, toluene, ethylbenzene, and total xylenes (BTEX).

The following is a list of reports that have been completed in association with the evaluation of petroleum hydrocarbon impacts on the Site. Environmental concerns identified by MFA are discussed in the next section (Section 2.4).

- Hydrocarbon contamination assessment (AGI, 1989).
- Interim action cleanup report (Ecology, 1993).
- Site characterization (AEG, 2005).
- Phase II ESA—supplemental investigation (MTC, 2014b).
- Phase II ESA (MTC, 2014a).

2.3 Physical Site Characteristics

2.3.1 Site Location

The Truck City parcel is located at 3216 Old Highway 99 South, Mount Vernon in Skagit County, Washington in section 32, township 34 north, range 4 east, of the Willamette Meridian (figure 1). The Truck City parcel comprises the entire Site based on data available at this time. The Property, where the jail construction is proposed to take place, comprises five rectangular parcels: the Truck City parcel, an 8.01-acre tax parcel (parcel number P29546); two 1.0-acre tax parcels (parcel numbers P119262 and P119263); a 1.75-acre tax parcel (parcel number P119265); and a 1.88-acre tax parcel (parcel number P119267) (refer to Figure 2). The Site's surface topography is generally flat. Access to the Site is from Old Highway 99 South, adjacent to the west of the Site.

The Property is currently zoned "Public." Properties immediately adjacent to the Site are largely composed of similar, large-lot commercial, light industrial, and undeveloped cleared land uses.

- To the north: Residences, commercial storage, and Skagit Gardens (garden supply wholesalers).

- To the west: Old Highway 99, agricultural land, and railroad corridor. Maddox Creek is culverted along the western boundary of the property and day-lights at the south-west corner of the property.

- To the south: Undeveloped cleared land, Suzanne Lane, and Northwest Propane (propane distribution company).

- To the east: Northstar Stone & Landscaping (landscaping supply), paved parking lot, and the Interstate 5 corridor.

2.3.2 TOPOGRAPHY AND CLIMATE

The Site, located within the Skagit River floodplain, is at approximately 15 feet mean sea level elevation and is nearly flat topographically. The Site is located within the 100- year floodplain. The climate in the Puget Sound region is typified by cool and comparatively dry summers, and winters are mild, wet, and cloudy. The mean annual temperature is 50 degrees Fahrenheit and the mean annual precipitation is 30 inches (CH2MHILL, 2004).

2.3.3 GEOLOGY AND HYDROGEOLOGY

The Site and vicinity have been mapped as recent alluvium and artificial fill. Alluvium deposits encountered at the Site, at locations of investigation, consist of floodplain sequences ranging from fluvial silty sand and well sorted sand, to silt with intervening clay. Fill, comprising sandy gravel to gravelly silty sand, was generally present to approximately 3 to 5 feet bgs at the Truck City parcel, except in the former UST nests, where soil remedial cleanup action by Ecology in 1993 over excavated this area to depths of approximately 9.5 feet bgs. A cross section transect of the Site and corresponding geologic cross section are presented in Figures 5 and 6, respectively.

The matrix of the unconfined shallow aquifer appears to be silty sand. Depth to ground water, encountered during subsurface exploration activities, was variable throughout the Site, ranging approximately from 3.5 to 9.5 feet bgs. The static water level at completed monitoring wells TC-1 through TC-6, at the Truck City parcel, ranged approximately from 5.80 to 6.45 feet bgs during the ground water monitoring and sampling event conducted on July 18, 2014. The direction of ground water migration at the Site during the July 2014 ground water event, based on professionally surveyed elevations at monitoring wells TC-1 through TC-6, is generally to the south-southeast, with tangent to the west (refer to Figure 7).

AGI reported a west-to-southwesterly ground water flow direction at the Site during their investigation in October 1989, based on water levels measured from installed monitoring wells. Seasonal ground water flow direction fluctuations are expected at the Site and vicinity because of the shallow depth to ground water in the floodplain area. The local and regional discharge points in the area appear to be to the west-southwest, toward Britt Slough and the Skagit River. At its closest points, Britt Slough and the Skagit River are located approximately 0.5 mile and 1.5 mile, respectively, west of the Site. Maddox Creek is culverted along the western boundary of the property and day-lights at the south-west corner of the property then flows south parallel to Old Highway 99 South; intersects at Hickox Road; and flows west from this intersection.

3.0 REMEDIAL INVESTIGATION

Field Site assessment activities were conducted in July 2014 to characterize the current nature and extent of contamination in soil and ground water and to complete the RI. A summary of findings is presented below. A detailed discussion is presented in the RI/FS (MFA, 2014).

3.1 SOIL

Gasoline-range TPH is the common indicator hazardous substances (IHS) identified in soil media at the Truck City parcel. Ethylbenzene was also identified in soil. The impacted soil exhibited at TCBH-3 (8.5 feet bgs) is in the area of the soil remedial action conducted by Ecology in 1993. It appears that localized soil contamination remains adjacent south of the former northern UST nest. Additionally, soil contaminated with residual gasoline- and diesel-range TPH remains on the east side of the truck scale at approximately 4.5 to 10.5 feet bgs (Ecology, 1993; MTC, 2014b).

3.2 GROUND WATER

Gasoline-range TPH is the common IHS identified in ground water media at the Truck City parcel. Other IHSs identified include diesel-range TPH and benzene in ground water. Ground water contamination at the Truck City parcel appears to be localized—limited to areas adjacent to the former USTs and septic waste-oil tank. The gasoline- and diesel-range TPH and benzene concentrations exhibited are indicative of residual contamination in an area where an interim soil remedial action has been completed. Ground water analytical results from borings and monitoring wells located inferred downgradient of this area did not exhibit detections of the identified IHSs. Laboratory results also indicate no detectable concentrations of IHS at the remaining southern parcels of the Property. Figure 10 presents an overview of ground water investigation at the Truck City parcel.

Environmental concerns have been raised regarding the potential for off-Site migration of IHSs to areas west-southwest of the Truck City parcel because of fluctuations in local ground water flow direction from west-southwest to south-southeasterly. However, ground water analytical results from all borings and monitoring wells advanced along the western and southwestern property boundary of the Truck City parcel and at borings advanced on the ROW of Old Highway 99 South indicate no detectable concentrations of IHSs.

3.3 SURFACE WATER

The fuel spill in 2005 was remediated, and sediment sampling in Maddox Creek at locales downgradient of the Site indicated cleanup activities were completed in accordance with MTCA. Based on current data the sediments in Maddox Creek no longer appears to be impacted by releases at the Site.

3.4 RISKS TO HUMAN HEALTH AND THE ENVIRONMENT

The Truck City parcel/Site contains two buildings. The northern building is currently used as the convenience store for the gasoline station. The southern building is a café. The remaining parcels of the Property are undeveloped. The footprint of the proposed county jail encompasses the central area of the Truck City parcel and adjoining southern parcels of the Property. The northwestern portion of

the proposed jail will overlie a localized area of soil remediation for removal of historical residual contamination. Figure 11 presents an overlay of the proposed jail with respect to current residual impacted areas at the Site.

Therefore, it is possible that persons will occupy this area of the Site at some time in the foreseeable future. Any future development will need to be protective of persons at the Site.

There are currently no building structures at the localized impacted area at the Truck City parcel. Therefore, there are no current commercial workers potentially exposed to IHSs in soil. However, construction activities likely will be performed as part of site redevelopment. Construction workers could contact IHSs in soil at 0 to 15 feet bgs through incidental ingestion, dermal contact, and inhalation of impacted soil particulates.

In the future, persons may also be exposed to volatile contaminants via inhalation of chemicals migrating from vadose-zone soil or ground water in the vapor phase and into future buildings. Soil gas has the potential to migrate, and workers in nearby buildings may be exposed to IHSs that migrate into proposed buildings at the Site. Figure 12 presents a conceptual site model of potential exposure pathways. However, all contaminated soil will be excavated to a depth of 15 feet bgs, removed, and disposed of offsite at a regulated landfill. Moreover, impacts have not been detected in soil below approximately 8.5 feet bgs. Section 5 presents soil remedial action to ensure that the soil point of compliance, at 15 feet bgs, will be attained for the Site.

Ecology is unaware of any current drinking water use at or near the site. The impacted ground water is shallow and localized. Section 5 presents ground water remedial action to prevent future construction workers from potentially being exposed to the impacted shallow ground water through ingestion, dermal contact, and inhalation of chemicals volatilizing from ground water. Potable water to the Site may be provided by the Skagit County Public Utility District No. 1 ("PUD"), including for any future development.

4.0 CLEANUP STANDARDS

MTCA requires the establishment of cleanup standards for individual sites. The two primary components of cleanup standards are CULs and points of compliance (POCs). CULs determine the concentration at which a substance does not threaten human health or the environment. All environmental media that exceed a CUL are addressed through a remedy that prevents exposure. POCs represent the locations on the Site where CULs must be met.

4.1 OVERVIEW

The process for establishing CULs involves the following::

- Determining which MTCA Method to use;
- Developing CULs for individual contaminants in each medium;
- Determining which contaminants contribute most to the overall risk in each medium IHS; and

- Adjusting the CULs based on total site risk.

The MTCA Cleanup Regulation provides three options for establishing CULs: Methods A, B, and C.

- Method A may be used to establish CULs at routine sites or at sites with relatively few hazardous substances.

- Method B is the standard method for establishing CULs and may be used to establish CULs at any site.

- Method C is a conditional method used when a CUL under Method A or B is technically impossible to achieve or may cause significantly greater environmental harm. Method C also may be applied to qualifying industrial properties.

The MTCA administrative rules define the factors used to determine whether a substance should be retained as an indicator for the Site. When defining CULs at a site contaminated with several hazardous substances, Ecology may eliminate from consideration those contaminants that contribute a small percentage of the overall threat to human health and the environment. WAC 173-340-703(2) provides that a substance may be eliminated from further consideration based on:

- The toxicological characteristics of the substance which govern its ability to adversely affect human health or the environment relative to the concentration of the substance;

- The chemical and physical characteristics of the substance which govern its tendency to persist in the environment;

- The chemical and physical characteristics of the substance which govern its tendency to move into and through the environment;

- The natural background concentration of the substance;

- The thoroughness of testing for the substance;

- The frequency of detection; and

- The degradation by-products of the substance.

MTCA also considers the limits of analytical chemistry. If the practical quantitation limit (PQL) of a substance is greater than the risk-based CUL, then the CUL can be set equal to the PQL.

MTCA requires that the total risk from all contaminated media not exceed certain levels. The total site cancer risk shall not exceed $1x10^{-5}$, and the hazard index (calculated for chemicals with similar non-carcinogenic toxicity endpoints) shall not exceed 1. After the CUL for each medium is developed, the risks from each chemical and medium are summed. If the total site cancer risk and/or hazard index exceeds the levels listed above, then the CULs are adjusted downward until

cancer risk is less than $1x10^{-5}$ and the hazard index is less than or equal to 1 for each endpoint. MTCA does not specify how the risks can be adjusted, as long as the individual CUL standard for each chemical is not violated.

4.2 TERRESTRIAL ECOLOGICAL EVALUATION

WAC 173-340-7490 requires that sites perform a terrestrial ecological evaluation (TEE) to determine the potential effects of soil contamination on ecological receptors. Sites may be removed from further ecological consideration either by documenting an exclusion, using the criteria set forth in WAC 173-340-7491, or by conducting a simplified TEE procedure as set forth in WAC 173-340-7492. The simplified TEE provides an evaluation process that may be used to identify sites that do not have the potential to pose a substantial threat of significant adverse effects to terrestrial ecological receptors, and thus may be removed from further ecological consideration during the RI and cleanup process.

A terrestrial ecological evaluation (TEE) was performed for the Site, following the evaluation procedures outlined in WAC 173-340-7490 and 173-340-7493. The site-specific TEE includes problem formulation and an ecological screening evaluation.

The purpose of problem formulation is to determine if important terrestrial ecological receptors (e.g., native plants and wildlife) could potentially have significant exposure to site-related hazardous substances in upland soil. As described above, the Site has two buildings, and about one-fourth of the Site is paved (in the Truck City parcel). The rest of the Site is vegetated with grass, weeds, and shrubs. The density and diversity of plants on the site are low. The Property is expected to be developed as a county jail.

All contamination to a depth of 15 feet below ground surface (bgs), which is the point of compliance for soil, will be excavated and removed from the Site. Therefore the simplified TEE determined that the Site will not pose a substantial threat to potential ecological receptors (see Appendix A). Therefore, soil analytical results will not be compared to ecological screening values.

4.3 SITE CLEANUP LEVELS

Previous investigations documented the presence of contamination in soil and ground water at the Site. CULs were developed for both of these media.

The Site historically has been used for commercial purposes, and it is anticipated that it will be used for public purposes (as a county jail) in the future. Soil on the Site, at the Truck City parcel, is impacted mainly with TPH and ethylbenzene (Table 1). The impacts appear to be localized in extent.

The primary exposure mechanism for soil at the Site is direct contact. The soil-to-ground water pathway has been mitigated by the implementation of interim actions at the Truck City parcel, including petroleum-contaminated-soil removal and capping with asphalt pavement in the former UST and gasoline pump islands, which limits infiltration of stormwater and leaching of residual soil contamination. CULs were developed for soil based on a direct-contact exposure pathway. Terrestrial ecological CULs were not considered, based on the TEE exclusion. Method A CULs are deemed applicable at the Site.

These CULs are calculated to derive concentrations that are estimated to result in no acute or chronic toxic effects on human health from non-carcinogens, and concentrations for which the upper bound on the estimated excess cancer risk is less than or equal to one in one million (1×10^{-6}) for carcinogens.

Shallow ground water, only at the Truck City parcel, is impacted with TPH and benzene (Table 2). The impacts appear to be localized. Method A CULs are deemed applicable at the Site. Arsenic-impacted ground water was exhibited only at monitoring well TC-2. This elevated detection was due to the high sediments in the ground water sample collected, as indicated by laboratory analytical results for dissolved arsenic (Table 2).

4.4 POINT OF COMPLIANCE

The MTCA Cleanup Regulation defines the POC as the point or points where CULs shall be attained. Once CULs are met at the POC, the Site is no longer considered a threat to human health or the environment.

WAC 173-340-740(6) gives the POC requirements for soil. WAC 173-340-740(6) states that "for soil CULs based on the protection of ground water, the POC shall be established in the soils throughout the site," and/or for soil CULs based on direct contact, "the point of compliance shall be established in the soils throughout the Site from the ground surface to fifteen feet below the ground surface." Hence, all contaminated soil will be excavated to a depth of 15 feet bgs, removed, and disposed of offsite at a regulated landfill. This standard POC is applied to soil on the Site. Impacts have not been detected in soil below approximately 8.5 feet bgs.

For ground water, the POC is the point or points where the ground water CULs must be attained for a site to be in compliance with the cleanup standards. Ground water CULs shall be attained in all ground waters from the POC to the outer boundary of the hazardous substance plume. A conditional POC may be established if it is not practicable to meet the CULs throughout the site within a reasonable restoration timeframe (WAC 173-340-720(8)(c)). A conditional POC for ground water is not proposed for the Site at this time.

For surface water, the POC is where Maddox Creek daylights at the south west corner of the Site property boundary.

5.0 CLEANUP ACTION SELECTION

5.1 REMEDIAL ACTION OBJECTIVES

The remedial action objectives describe the actions necessary to protect human health and the environment through eliminating, reducing, or otherwise controlling risks posed through each exposure pathway and migration route. These objectives are developed by evaluating the characteristics of the contaminated media, the characteristics of the hazardous substances present, migration and exposure pathways, and potential receptor points.

As a result of past activities on the Truck City parcel, soil on this Site has been contaminated with TPH and ethylbenzene. Ground water has been contaminated by gasoline- and diesel-range TPH, and benzene. The potentially complete exposure pathway for COIs in soil is direct contact with contaminated soils by on-site workers. Future persons may also be exposed to volatile contaminants

migrating from the subsurface. Soil gas has the potential to migrate, and persons in nearby buildings may be exposed to IHSs that migrated into proposed buildings at the Site. Ecology is unaware of any drinking water use at or near the site. However, the impacted ground water is shallow. Future construction workers may be exposed to the impacted shallow ground water through ingestion, dermal contact, and inhalation of chemicals volatilizing from ground water.

The following remedial action objectives are intended to address the potential exposure pathways:

- Prevent and minimize direct contact or ingestion of contaminated soil by humans and ecological receptors;
- Prevent and minimize ingestion of contaminated ground water by humans and ecological receptors.

5.2 CLEANUP ACTION ALTERNATIVES

Cleanup alternatives are evaluated as part of the RI/FS. The feasibility study included the evaluation of two options for soil and ground water cleanup. Cleanup alternatives were scored and ranked using relevant criteria as described in WAC 173-340-360. Each of the considered alternatives includes a combination of one or more of the following remedial actions:

- Soil excavation
- In situ bioremediation and ground water treatment
- Ground water monitoring
- Monitored natural attenuation

These remedial action options were combined to develop two alternatives, each intended to address all contaminated media at the Site.

5.2.1 ALTERNATIVE 1: SOIL EXCAVATION AND IN SITU TREATMENT

This alternative presents one of two options for soil and ground water remediation, but both Alternatives 1 and 2 include the same proposed remedy for petroleum-hydrocarbon-contaminated soil and ground water. Alternative 1 includes the following actions:

- Petroleum-Hydrocarbon-Contaminated Soil and Ground water Remedial Action

  Excavation Tasks

  - Excavate impacted soil at the four residual localized impacted areas (including in the vicinity of borings TCBH-1 and TCBH-3 and monitoring well TC-5, and the east side of the truck scale) to approximately 14 feet bgs. Remove the truck scale and associated concrete pad prior to excavation activities. Characterize each area of excavation by collecting soil samples throughout the excavation to assess the lateral and vertical

extent of impact. Collect confirmation soil samples from each area of excavation. Collect representative stockpile soil samples and dispose of impacted soil at a permitted disposal facility. The initial area of excavation will be determined based on field screening results. The final excavation area will be determined by confirmation sampling of the excavation sidewalls and base of the excavation pit. Over excavation of petroleum-contaminated soil below the ground water table, in the smear zone, is necessary to remove the impacted zone. It is anticipated that removal of up to three monitoring wells will be necessary during soil excavation activities, as these wells are currently located in the vicinity of the proposed soil remedial action. Reinstallation of new monitoring wells in these excavated areas, after completion of this task, will be necessary.

Because the ground water is shallow, each excavation pit will be dewatered. Impacted water will be contained in an appropriately sized tank and will be remediated by cycling of water through granular reactivated carbon filters and sediment filters. Water samples will be collected from the storage tank and submitted for analysis of TPH and BTEX as well as measurement of the treated water's turbidity to ensure water quality prior to discharging water into the Site's stormwater system. A permit for discharge to the City of Mount Vernon's stormwater system will be obtained prior to discharge.

For cost estimating purposes, the total estimated volume of excavated soil, based on collective subsurface investigation results, is assumed to be 500 cubic yards and is assumed suitable for disposal at a RCRA Subtitle D landfill.

- Backfill the excavation area with clean, imported fill to existing ground surface elevation and compact consistent with construction specifications associated with the jail.

In Situ Bioremediation—Enhanced Aerobic Biodegradation Tasks

- The second phase of this remedial action involves using enhanced aerobic biodegradation to expedite the biodegradation of TPH and VOCs in soil and ground water by adding oxygen (as an electron acceptor). The addition of a controlled-release supplemental source of oxygen enables the indigenous microorganisms (bacteria) to expedite the biodegradation process. An industry standard oxygen release compound will be added as a soil amendment (dry powder) to the backfill material and applied to each excavation area. Installation of the backfill-mixed oxygen release material will account for the anticipated ground water smear zone. Installation of a bioremediation product that releases oxygen in the dissolved phase when it is hydrated will provides terminal electron acceptors to support the oxidative biodegradation of petroleum hydrocarbons and VOCs. It is anticipated that generous application of a bioremediation product throughout the smear zone at each localized residual impacted area will remediate both residual saturated soil and ground water contamination.

- Conduct a baseline ground water sampling event at the Site's monitoring wells before initiating the in situ bioremediation task. Conduct up to two years of consecutive quarterly ground water monitoring events, as necessary, to meet the following objectives: (1) confirm effectiveness of the bioremediation treatment; (2) collect the necessary data for compliance with consent decree, based on compliance with CULs; and (3) confirm that petroleum-hydrocarbon-impacted ground water is not migrating past the POC or downgradient of the Site boundary. Throughout this monitoring period, selected ground water samples will be analyzed for geochemical parameters (including nitrate, manganese, ferrous iron, sulfate, and methane) to continue assessment of the presence of electron acceptors during the biodegradation process and to evaluate the biodegradation of TPH and selected VOCs.

- The estimated cost for this alternative of $537,800 is presented in Table 3.

5.2.2 ALTERNATIVE 2: SOIL EXCAVATION AND MONITORED NATURAL ATTENUATION

Alternative 2 includes the same approach for remediation of petroleum-hydrocarbon-contaminated soil and ground water by over excavation of impacted soil through the smear zone, but excludes the in situ ground water treatment component. The task of subsequent ground water monitoring and sampling events is also consistent with Alternative 1. The estimated cost for this alternative of $506,000 is presented in Table 4.

5.3 REGULATORY REQUIREMENTS

The MTCA Cleanup Regulation sets forth the minimum requirements and procedures for selecting a cleanup action. A cleanup action must meet each of the minimum requirements specified in WAC 173-340-360(2), including certain threshold and other requirements. This section outlines these cleanup action requirements and procedures as set forth in the regulation. Section 5.4 provides an evaluation of the cleanup alternatives with respect to these criteria.

5.3.1 THRESHOLD REQUIREMENTS

WAC 173-340-360(2)(a) requires that the cleanup action:

- Protect human health and the environment;
- Comply with cleanup standards;
- Comply with applicable state and federal laws; and
- Provide for compliance monitoring.

5.3.2 OTHER REQUIREMENTS

In addition, WAC 173-340-360(2)(b) states that the cleanup action shall:

- Use permanent solutions to the maximum extent practicable;

- Provide for a reasonable restoration time frame; and

- Consider public concerns.

WAC 173-340-360(3) describes the specific requirements and procedures for determining whether a cleanup action uses permanent solutions to the maximum extent practicable. A permanent solution is defined as one where CULs can be met without further action being required at the Site other than the disposal of residue from the treatment of hazardous substances. To determine whether a cleanup action provides permanent solutions to the maximum extent practicable, a disproportionate cost analysis is conducted. This analysis compares the costs and benefits of the cleanup action alternatives and involves the consideration of several factors, including:

- Protectiveness;

- Permanent reduction of toxicity, mobility, and volume;

- Cost;

- Long-term effectiveness;

- Short-term risk;

- Implementability; and

- Consideration of public concerns.

The comparison of benefits and costs may be quantitative, but will often be qualitative and require the use of best professional judgment.

WAC 173-340-360(4) describes the specific requirements and procedures for determining whether a cleanup action provides for a reasonable restoration time frame.

5.3.3 Ground water Cleanup Action Requirements

For sites with contaminated ground water, WAC 173-340-360(2)(c) requires that the cleanup action meet certain additional requirements. Permanent cleanup actions shall be taken when possible, and if a nonpermanent action must be conducted, the regulation requires that the following two requirements be met:

1) Treatment or removal of the source of the release shall be conducted for liquid wastes, areas of high contamination, areas of highly mobile contaminants, or substances that cannot be reliably contained; and

2) Ground water containment (such as barriers) or control (such as pumping) shall be implemented to the maximum extent practicable.

5.3.4 CLEANUP ACTION EXPECTATIONS

WAC 173-340-370 sets forth the following expectations for the development of cleanup action alternatives and the selection of cleanup actions. These expectations represent the types of cleanup actions Ecology considers likely results of the remedy selection process; however, Ecology recognizes that there may be some sites where cleanup actions conforming to these expectations are not appropriate.

- Treatment technologies will be emphasized at sites with liquid wastes and areas with high concentrations of hazardous substances or with highly mobile and/or highly treatable contaminants;

- To minimize the need for long-term management of contaminated materials, hazardous substances will be destroyed, detoxified, and/or removed to concentrations below CULs throughout sites with small volumes of hazardous substances;

- Engineering controls, such as containment, may be required at sites with large volumes of materials with relatively low levels of hazardous substances where treatment is impracticable;

- To minimize the potential for migration of hazardous substances, active measures will be taken to prevent precipitation and runoff from coming into contact with contaminated soil or waste materials;

- When hazardous substances remain on site at concentrations that exceed CULs, they will be consolidated to the maximum extent practicable where it is necessary to minimize the potential for direct contact and migration of hazardous substances;

- For sites adjacent to surface water, active measures will be taken to prevent/minimize releases to that water; dilution will not be the sole method for demonstrating compliance;

- Natural attenuation of hazardous substances may be appropriate at sites where (1) source control is conducted to the maximum extent practicable, (2) leaving contaminants on site does not pose an unacceptable risk, (3) there is evidence that natural degradation is occurring and will continue to occur, and (4) appropriate monitoring is taking place; and

- Cleanup actions will not result in a significantly greater overall threat to human health and the environment than other alternatives.

5.3.5 APPLICABLE, RELEVANT, AND APPROPRIATE, AND LOCAL REQUIREMENTS

WAC 173-340-710(1) requires that all cleanup actions comply with all applicable state and federal law. It further states that the term "applicable state and federal laws" shall include legally applicable requirements and those requirements that the department determines "…are relevant and appropriate requirements." This section discusses applicable state and federal law, relevant and appropriate requirements, and local permitting requirements that were of primary importance in

selecting cleanup requirements. If other requirements are identified at a later date, they will be applied to the cleanup actions at that time.

At a minimum applicable permits or substantive requirements for the remediation of the Site may include:

- Washington State Department of Ecology, Construction Stormwater General Permit;
- City of Mount Vernon, Grading Permit;
- City of Mount Vernon, Building Permit;
- City of Mount Vernon, Floodplain Development Permit;
- City of Mount Vernon, Utility and Right-of-Way Permit; and
- City of Mount Vernon, Storm water discharge permit.

MTCA provides an exemption from the procedural requirements of several state laws and from any laws authorizing local government permits or approvals for remedial actions conducted under a consent decree, EO, or AO (RCW 70.105D.090). However, the substantive requirements of a required permit must be met. The procedural requirements of the following state laws are exempted:

- Ch. 70.94 RCW, Washington Clean Air Act and Puget Sound Clean Air Agency Regulations;
- Ch. 70.95 RCW, Solid Waste Management, Reduction, and Recycling;
- Ch. 70.105 RCW, Hazardous Waste Management;
- Ch. 75.20 RCW, Construction Projects in State Waters;
- Ch. 90.48 RCW, Water Pollution Control; and
- Ch. 90.58 RCW, Shoreline Management Act of 1971.

WAC 173-340-710(4) sets forth the criteria that Ecology evaluates when determining whether certain requirements are relevant and appropriate for a cleanup action. Table 6 lists the state and federal laws that contain ARARs that apply to the cleanup action at the Site. Local laws, which may be more stringent than specified state and federal laws, will govern where applicable.

5.4 Evaluation of Cleanup Action Alternatives

The requirements and criteria outlined in Section 5.3 are used to conduct a comparative evaluation of Alternatives 1 and 2 and to select a cleanup action from those alternatives. Table 5 provides a summary of the ranking of the alternatives against the various criteria.

5.4.1 THRESHOLD REQUIREMENTS

5.4.1.1 Protection of Human Health and the Environment and Compliance with Cleanup Standards

Protectiveness is a factor by which human health and the environment are protected by the cleanup action, including the degree to which existing risks are reduced; time required to reduce risk at the Site and attain cleanup standards; on-site and off-site risks resulting from implementing the cleanup action alternative; and improvement of the overall environmental quality. Alternatives 1 and 2 reduce or eliminate risk from contaminated soil and ground water through soil removal, in-situ treatment, and monitored natural attenuation. These remedial actions eliminate exposure pathways, protect human health and the environment, and comply with cleanup standards.

5.4.1.2 Compliance with State and Federal Laws

The selected CULs are consistent with MTCA. Additionally, local, state, and federal laws related to environmental protection, health and safety, transportation, and disposal apply to each proposed alternative. During remedial design, the selected alternative will be designed to comply with applicable, relevant, and appropriate requirements.

5.4.1.3 Provision for Compliance Monitoring

There are three types of compliance monitoring: protection, performance, and confirmational. Protection monitoring is designed to protect human health and the environment during the construction and operation and maintenance phases of the cleanup action. Performance monitoring confirms that the cleanup action has met cleanup and/or performance standards. Confirmational monitoring confirms the long-term effectiveness of the cleanup action once cleanup standards have been met or other performance standards have been attained. Both alternatives require all three types of compliance monitoring and therefore will meet this provision.

5.4.2 OTHER REQUIREMENTS

5.4.2.1 Use of Permanent Solutions to the Maximum Extent Practicable

As discussed previously, to determine whether a cleanup action uses permanent solutions to the maximum extent practicable, the disproportionate cost analysis specified in the regulation is used. The analysis compares the costs and benefits of the cleanup action alternatives and involves the consideration of several factors. The comparison of costs and benefits may be quantitative, but will often be qualitative and require the use of best professional judgment.

Costs are disproportionate to the benefits if the incremental costs of an alternative are disproportionate to the incremental benefits of that alternative. As noted above, Alternative 1 includes the completed interim actions which satisfy the threshold requirements of WAC 173-340-360(2)(a), in that they are protective to human health and the environment, comply with CULs and applicable state and federal laws, and provide for compliance monitoring.

Alternative 1, which has a slightly higher cost, but lower risk, is the preferred remedy for the Site. Table 5 presents the ranking of both alternatives with respect to the following risk factors consideration.

- Protectiveness

  Protectiveness measures the degree to which existing risks are reduced, the time required to reduce risk and attain cleanup standards, on- and off-site risks resulting from implementing the alternative, and improvement of overall environmental quality. Alternatives 1 and 2 would both be protective. All alternatives comply with applicable federal and state cleanup standards through permanent removal and natural attenuation.

  The alternatives prevent human and ecological exposure to soil exceeding cleanup levels through removal from the Site. Alternative 1 takes a more active approach to remediating impacts from ground water and therefore, receives the highest ranking for overall protectiveness. Alternative 2 relies on monitored natural attenuation and compliance monitoring to address ground water impacts and therefore, receives a lower ranking for overall protectiveness.

- Permanent Reduction of Toxicity, Mobility and Volume

  Permanence is a factor by which the cleanup action alternative permanently reduces the toxicity, mobility, and/or volume of hazardous substances. It takes into account the adequacy of the alternative in destroying the hazardous substances, the reduction or elimination of hazardous-substance releases and sources of releases, the degree of irreversibility of the waste-treatment process, and the characteristics and quantity of treatment residuals generated. Removal of soils is a permanent remedial action because it permanently eliminates the source of releases at the Site.

  Alternative 1 received a higher permanence ranking for ground water since ground water impacts are removed by in situ bioremediation treatment followed by natural attenuation. Alternative 2 relies on monitored natural attenuation. Both alternatives also receive equivalent permanence rankings for soil since these alternatives include the permanent removal of impacted soil by excavation from focused areas. In summary, the permanence ranking for ground water and soil is slightly higher for Alternative 1 than Alternative 2.

- Cleanup Costs

  Costs are approximated based on specific design assumptions for each alternative. Although the costs provided by consultants are estimates based on design assumptions that might change, the relative costs can be used for this evaluation.

  The estimated cost for Alternative 1 ($537,800) includes anticipated costs for soil removal, in-situ treatment, and compliance ground water monitoring/sampling. Alternative 2 ($506,000) includes costs for only soil removal and compliance ground water monitoring/sampling.

- Long-Term Effectiveness

  Long-term effectiveness includes the degree of certainty that the alternative will be successful; the reliability of the alternative for the expected duration of hazardous substances remaining on site at concentrations that exceed CULs; the magnitude of residual risk with the alternative in place; and the effectiveness of controls required to manage treatment residues or remaining wastes.

  Alternatives that include removal of greater volumes of contaminated soils would have greater long-term effectiveness because they would immediately be successful in achieving CULs, would represent lower residual risk. Soil actions that remove less contaminated soil would have reduced long-term effectiveness. Ground water actions will have a lower long-term effectiveness if they leave contaminants in ground water for a longer time (requiring management) or leave behind residual risk after implementation. Alternative 1 receives a high ranking for long-term effectiveness while Alternative 2 receives a slightly lower ranking for long-term effectiveness.

- Short-Term Risk

  Short-term risks to remediation workers, the public, and the environment are assessed under this criterion. Generally, short-term risks are expected to be linearly related to the amount of material handled, treated, and/or transported and disposed of (e.g., worker injury per cubic yard excavated [equipment failure], public exposure per cubic yard-mile transported [highway accident]).

  This factor addresses the risk to human health and the environment associated with the alternative during construction and implementation, and the effectiveness of measures that will be taken to manage such risks. Potential exposure via transport, handling, and excavation required each of the alternatives could lead to short-term risks. Alternatives 1 and 2 require the same amount of construction and implementation work; however, Alternative 1 involves application of in situ bioremediation and therefore receives a lower ranking for management of short-term risk management.

- Implementability

  Implementability considers whether the alternative is technically possible; the availability of necessary off-site facilities, services, and materials; administrative and regulatory requirements; scheduling; size; complexity; monitoring requirements; access for operations and monitoring; and integration with existing facility operations. Both alternatives include actions that are well proven and that have been employed at many sites throughout the United States. Alternative 1 and 2 receive an equal ranking for implementability.

- Consider Public Concerns

  This factor includes considering concerns from individuals; community groups; and local governments, tribes, federal and state agencies, and any other organization that may have an interest in or knowledge of the Site and that may have a preferred alternative. Each

alternative provides opportunity for members of the public to review and comment on plans.

5.4.2.2 Provide a Reasonable Restoration Time Frame

WAC 173-340-360(4) describes the specific requirements and procedures for determining whether a cleanup action provides for a reasonable restoration time frame, as required under subsection (2)(b)(ii). The factors that are used to determine whether a cleanup action provides a reasonable restoration time frame are set forth in WAC 173-340-360(4)(b) and include:

- Potential risks posed by the site to human health and the environment;
- Practicability of achieving a shorter restoration time frame;
- Current site use and nearby resources that are or may be affected by the site;
- Potential future use of the site and of nearby resources that are or may be affected by the site;
- Availability of alternative water supplies;
- Likely effectiveness and reliability of institutional controls;
- Ability to control and monitor migration of hazardous substances;
- Toxicity of hazardous substances; and
- Natural processes that reduce contaminant concentrations and that are documented to occur.

The alternatives rely on removal of soil containing contaminants exceeding CULs, providing flexibility for current and future site use and reduction in risk, and eliminate the need for institutional controls. Alternatives that only cap impacted soil on site rely on institutional controls, have residual risk, and increase the restoration time frame by leaving in place a potential ongoing source of contamination.

Both alternatives rely on soil removal, ground water recovery, and natural degradation of ground water impacts to achieve CULs. Alternative 1 allows remediation to occur while allowing business operations to continue on site with minimal disturbance, and would allow a restoration time frame of less than five years. Alternative 2 relies on natural attenuation of contaminants in ground water (after soil removal) and would likely require greater restoration time frame. In summary, Alternative 1 is ranked highest for restoration time frame.

5.4.3 GROUND WATER CLEANUP ACTION REQUIREMENTS

Cleanup actions that address ground water must meet the specific requirements described in Section 5.3.3 in addition to those listed above. Each alternative meets the threshold requirements under WAC 173-340-360(2)(a). Both alternatives meet the requirement through bioremediation (Alternative 1) or natural attenuation (Alternative 2), which is a form of treatment, and monitoring will provide evidence that degradation of contaminants is continuing to occur under natural processes.

5.4.4 CLEANUP ACTION EXPECTATIONS

Specific cleanup action expectations are outlined in WAC 173-340-370 and are described in Section 5.3.4. Alternatives 1 and 2 address these expectations in the following manner:

- Alternatives 1 and 2 include soil removal of contaminated soils and bioremediation and natural attenuation (Alternative 1) or only natural attenuation (Alternative 2). Natural attenuation is an effective ground water treatment because leaving contaminants on site will not pose an unacceptable risk, degradation has been demonstrated to occur at the Site, and regular monitoring will be conducted. The soil removal actions will eliminate the overall threat to human health and the environment. Previous ground water monitoring indicate that IHS concentrations in ground water, in the western area of the Site, had attenuated to non-detectable levels. Current sentinel wells, along the western and southern perimeters of the Site will provide early warning of changes in IHS concentrations downgradient of the localized remediation area. These actions meet the following cleanup expectations:

    - Treatment technologies will be emphasized at sites with liquid wastes and areas with high concentrations of hazardous substances or with highly mobile and/or highly treatable contaminants.

    - To minimize the potential for migration of hazardous substances, active measures will be taken to prevent precipitation and runoff from coming into contact with contaminated soil or waste materials.

    - Natural attenuation of hazardous substances may be appropriate at sites where (1) source control is conducted to the maximum extent practicable, (2) leaving contaminants on site does not pose an unacceptable risk, (3) there is evidence that natural degradation is occurring and will continue to occur, and (4) appropriate monitoring is taking place.

    - Cleanup actions will not result in a significantly greater overall threat to human health and the environment than other alternatives.

    - To minimize the need for long-term management of contaminated materials, hazardous substances will be destroyed, detoxified, and/or removed to concentrations below CULs throughout sites with small volumes of hazardous substances.

The following cleanup expectations are not applicable to the Site:

- When hazardous substances remain on site at concentrations that exceed CULs, they will be consolidated to the maximum extent practicable where it is necessary to minimize the potential for direct contact and migration of hazardous substances.

- Engineering controls, such as containment, will be used at sites with large volumes of materials with relatively low levels of hazardous substances where treatment is impracticable.

5.5 DECISION

Based on the analysis described above, Alternative 1 was the selected remedial action for the Site. Alternative 1 meets each of the minimum requirements for remedial actions and has the shortest restoration time frame. As noted above, Alternative 1 includes the soil removal and in situ bioremediation, which satisfies the threshold requirements of WAC 173-340-360(2)(a) in that they are protective of human health and the environment, comply with CULs and applicable state and federal laws, and provide for compliance monitoring. Alternative 2 also satisfies the threshold requirements but have a longer restoration time frame. Table 5 provides a summary of the relative ranking of these alternatives in the decision process.

6.0 SELECTED REMEDIAL ACTION

In order to meet CULs for TPH and ethylbenzene in soil, the proposed cleanup action for the contaminated soil on the Site, Alternative 1, incorporates the interim actions performed to date.

This remedy addresses ground water contamination by over excavation of petroleum-contaminated soil below the ground water table, in the smear zone, to remove the impacted zone. Ground water from each area of excavation will be dewatered, contained, and treated prior to discharge into the Site's stormwater system. A ground water compliance monitoring program relies on sentinel wells, remediation levels (RELs) for use at residual impacted area and sentinel wells, and contingency measures to be implemented should IHS concentrations are present in sentinel wells and increase to exceed applicable CULs (Appendix B). Existing Site wells and two of the three proposed replacement new wells will be used as sentinel wells for the compliance monitoring. RELs are based on MTCA Method A ground water cleanup levels (Appendix B). Compliance with RELs will ensure that CULs are not exceeded and monitoring of sentinel wells will provide early warning of contaminant migration toward the perimeters of the Site. Additionally, selected ground water samples will be analyzed for geochemical parameters (including nitrate, manganese, ferrous iron, sulfate, and methane) to continue assessment of the presence of electron acceptors during the biodegradation process and to evaluate the biodegradation of TPH and selected VOCs.

6.1 GROUND WATER MONITORING

Ground water monitoring is required to determine the effectiveness of remedial action and will include the quarterly ground water monitoring/sampling of all wells at the Site for the assessment of ground water IHSs in accordance with the ground water compliance monitoring plan (Appendix B). The goals of the ground water monitoring, as presented in Appendix B, are to:

- Measure the effectiveness of the cleanup after petroleum contaminated soil removal and in situ bioremediation treatment.

- Provide criteria for the decommissioning of monitoring wells and evaluating compliance.

- Identify contingencies for additional actions and provide criteria for the conditions that would trigger a contingent action.

- Demonstrate the eventual achievement of CULs and the criteria for cessation of monitoring.

6.2 Contingency Plan to Address Unknown Contamination

All data available at this time indicates that the Site is contained within the Truck City parcel boundary. Once the excavation process begins, there is the potential for finding previously undiscovered preferential pathways for hazardous substance migration beyond the Site boundary as currently defined. In the event this occurs, additional remedial action may be required by the County. Additional remedial action could include, but is not limited to excavation and removal of any contaminated soil.

6.3 Institutional Controls

Institutional controls are measures taken to limit or prohibit activities that may interfere with the integrity of a cleanup action or result in exposure to hazardous substances at a site. Such measures are required to assure both the continued protection of human health and the environment and the integrity of the cleanup action whenever hazardous substances remain at a site at concentrations exceeding applicable CULs. Institutional controls can include both physical measures and legal and administrative mechanisms. WAC 173-340-440 provides information on institutional controls and the conditions under which they may be removed.

Currently, there are no institutional controls for the Site or City of Mount Vernon codes which restricts Site use. The Property is zoned for public use.

6.4 Financial Assurances

WAC 173-340-440 requires financial assurance mechanisms at sites where the selected cleanup action includes engineered and/or institutional controls. Financial assurances are not required at the site because engineered controls are not included in the remedy.

6.5 Periodic Review

After ground water and soil CULs have been achieved, periodic reviews will not be required because institutional controls are not a part of the remedy.

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TABLES

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:		TC-1	TC-2	TC-2	TC-2	TC-3	TC-3	TC-4	TC-4	TC-5	TC-5
	Sample Name:		TC1-S2-8.5	TC2-S-6.5	TCDUP-S	TC2-S-15.0	TC3-S-9.7	TC3-S-15.0	TC4-S-7.0	TC4-S-15.0	TC5-S-9.5	TC5-S-15.0
	Collection Date:		7/15/2014	7/17/2014	7/17/2014	7/17/2014	7/17/2014	7/17/2014	7/16/2014	7/16/2014	7/17/2014	7/17/2014
	Collection Depth (ft bgs):		8.5	6.5	6.5	15	9.7	15	7	15	9.5	15
	MTCA Method A URLU	MTCA Method A Industrial										
TPH (mg/kg)												
Gasoline Range Hydrocarbons	30	30	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	--	--
Diesel Range Hydrocarbons	2000	2000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Motor Oil Range Hydrocarbons	2000	2000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	350	250 U
TPH Identification												
Gasoline Range Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
Diesel Range Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
Motor Oil Range Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
VOCs (mg/kg)												
1,1,1,2-Tetrachloroethane	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,1,1-Trichloroethane	2	2	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,1,2,2-Tetrachloroethane	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,1,2-Trichloroethane	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,1-Dichloroethane	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,1-Dichloroethene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,1-Dichloropropene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,2,3-Trichlorobenzene	NV	NV	0.25 U	--	--	--	0.25 U	0.25 U	--	--	--	--
1,2,3-Trichloropropane	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,2,4-Trichlorobenzene	NV	NV	0.25 U	--	--	--	0.25 U	0.25 U	--	--	--	--
1,2,4-Trimethylbenzene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,2-Dibromo-3-chloropropane	NV	NV	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--
1,2-Dibromoethane	0.005	0.005	0.005 U	--	--	--	0.005 UJ	0.005 U	--	--	--	--
1,2-Dichlorobenzene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,2-Dichloroethane	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,2-Dichloropropane	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,3,5-Trimethylbenzene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,3-Dichlorobenzene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,3-Dichloropropane	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
1,4-Dichlorobenzene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
2,2-Dichloropropane	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
2-Butanone	NV	NV	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--
2-Chlorotoluene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
2-Hexanone	NV	NV	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:		TC-1	TC-2	TC-2	TC-2	TC-3	TC-3	TC-4	TC-4	TC-5	TC-5
	Sample Name:		TC1-S2-8.5	TC2-S-6.5	TCDUP-S	TC2-S-15.0	TC3-S-9.7	TC3-S-15.0	TC4-S-7.0	TC4-S-15.0	TC5-S-9.5	TC5-S-15.0
	Collection Date:		7/15/2014	7/17/2014	7/17/2014	7/17/2014	7/17/2014	7/17/2014	7/16/2014	7/16/2014	7/17/2014	7/17/2014
	Collection Depth (ft bgs):		8.5	6.5	6.5	15	9.7	15	7	15	9.5	15
	MTCA Method A URLU	MTCA Method A Industrial										
4-Chlorotoluene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
4-Isopropyltoluene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
4-Methyl-2-pentanone	NV	NV	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--
Acetone	NV	NV	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--
Benzene	0.03	0.03	0.03 U	0.02 U	0.02 U	0.02 U	0.03 U	0.03 U	0.02 U	0.02 U	0.02 U	0.02 U
Bromobenzene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Bromodichloromethane	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Bromoform	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Bromomethane	NV	NV	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--
Carbon tetrachloride	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Chlorobenzene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Chloroethane	NV	NV	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--
Chloroform	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Chloromethane	NV	NV	0.5 UJ	--	--	--	0.5 UJ	0.5 UJ	--	--	--	--
cis-1,2-Dichloroethene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
cis-1,3-Dichloropropene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Dibromochloromethane	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Dibromomethane	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Dichlorodifluoromethane	NV	NV	0.5 UR	--	--	--	0.5 UR	0.5 UR	--	--	--	--
Ethylbenzene	6	6	0.05 U	0.02 U	0.02 U	0.02 U	0.05 U	0.05 U	0.02 U	0.02 U	0.02 U	0.04
Hexachlorobutadiene	NV	NV	0.25 U	--	--	--	0.25 U	0.25 U	--	--	--	--
Isopropylbenzene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
m,p-Xylene	NV	NV	0.1 U	--	--	--	0.1 U	0.1 U	--	--	--	--
Methyl tert-butyl ether	0.1	0.1	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Methylene chloride	0.02	0.02	0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--
Naphthalene	5	5	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
n-Hexane	NV	NV	0.25 U	--	--	--	0.25 U	0.25 U	--	--	--	--
n-Propylbenzene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
o-Xylene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
sec-Butylbenzene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Styrene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
tert-Butylbenzene	NV	NV	0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Tetrachloroethene	0.05	0.05	0.025 U	--	--	--	0.025 U	0.025 U	--	--	--	--

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

			Location:	TC-1	TC-2	TC-2	TC-2	TC-3	TC-3	TC-4	TC-4	TC-5	TC-5
			Sample Name:	TC1-S2-8.5	TC2-S-6.5	TCDUP-S	TC2-S-15.0	TC3-S-9.7	TC3-S-15.0	TC4-S-7.0	TC4-S-15.0	TC5-S-9.5	TC5-S-15.0
			Collection Date:	7/15/2014	7/17/2014	7/17/2014	7/17/2014	7/17/2014	7/17/2014	7/16/2014	7/16/2014	7/17/2014	7/17/2014
			Collection Depth (ft bgs):	8.5	6.5	6.5	15	9.7	15	7	15	9.5	15
	MTCA Method A URLU	MTCA Method A Industrial											
Toluene	7	7		0.05 U	0.02 U	0.02 U	0.02 U	0.05 U	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U
trans-1,2-dichloroethene	NV	NV		0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
trans-1,3-Dichloropropene	NV	NV		0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Trichloroethene	0.03	0.03		0.02 U	--	--	--	0.02 U	0.02 U	--	--	--	--
Trichlorofluoromethane	NV	NV		0.5 U	--	--	--	0.5 U	0.5 U	--	--	--	--
Vinyl chloride	NV	NV		0.05 U	--	--	--	0.05 U	0.05 U	--	--	--	--
Xylenes, Total	9	9		--	0.06 U	0.06 U	0.06 U	--	--	0.06 U	0.06 U	0.06 U	0.19
PAHs (mg/kg)													
1-Methylnaphthalene	NV	NV		0.01 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
2-Methylnaphthalene	NV	NV		0.011	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Acenaphthene	NV	NV		0.01 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Acenaphthylene	NV	NV		0.01 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Anthracene	NV	NV		0.01 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Benzo(a)anthracene	NV	NV		0.01 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Benzo(a)pyrene	0.1	2		0.1 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Benzo(b)fluoranthene	NV	NV		0.1 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Benzo(ghi)perylene	NV	NV		0.1 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Benzo(k)fluoranthene	NV	NV		0.1 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Chrysene	NV	NV		0.026	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Dibenzo(a,h)anthracene	NV	NV		0.1 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Fluoranthene	NV	NV		0.01 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Fluorene	NV	NV		0.01 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Indeno(1,2,3-cd)pyrene	NV	NV		0.1 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Naphthalene	5	5		0.01 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Phenanthrene	NV	NV		0.013	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Pyrene	NV	NV		0.01 U	--	--	--	--	--	0.01 U	0.01 U	--	0.01 U
Metals (mg/kg)													
Arsenic	20	20		--	6.34	--	6.94	2.9	1 U	--	--	--	--
Barium	NV	NV		--	26.1	--	51.5	30.4	6.69	--	--	--	--
Cadmium	2	2		--	1 U	--	1 U	1 U	1 U	--	--	--	--
Chromium	19[a]	19[a]		--	8.87	--	15.4	8.03	3.35	--	--	--	--
Lead	250	1000		--	3.12	--	4.85	2.49	1 U	--	--	--	--
Mercury	2	2		--	0.1 U	--	0.1 U	0.1 U	0.1 U	--	--	--	--

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

			Location:	TC-1	TC-2	TC-2	TC-2	TC-3	TC-3	TC-4	TC-4	TC-5	TC-5
			Sample Name:	TC1-S2-8.5	TC2-S-6.5	TCDUP-S	TC2-S-15.0	TC3-S-9.7	TC3-S-15.0	TC4-S-7.0	TC4-S-15.0	TC5-S-9.5	TC5-S-15.0
			Collection Date:	7/15/2014	7/17/2014	7/17/2014	7/17/2014	7/17/2014	7/17/2014	7/16/2014	7/16/2014	7/17/2014	7/17/2014
			Collection Depth (ft bgs):	8.5	6.5	6.5	15	9.7	15	7	15	9.5	15
	MTCA Method A URLU	MTCA Method A Industrial											
Selenium	NV	NV		--	1 U	--	1 U	1 U	1 U	--	--	--	--
Silver	NV	NV		--	1 U	--	1 U	1 U	1 U	--	--	--	--
EPH (mg/kg)				--	--	--	--	--	--	--	--	--	
C8-C10 Aliphatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	5.74 U
C10-C12 Aliphatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	5.74 U
C12-C16 Aliphatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	5.74 U
C16-C21 Aliphatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	5.74 U
C21-C34 Aliphatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	408
C8-C10 Aromatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	5.74 U
C10-C12 Aromatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	5.74 U
C12-C16 Aromatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	5.74 U
C16-C21 Aromatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	5.74 U
C21-C34 Aromatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	510

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:		TC-6	TC-6	TCBH-1	TCBH-2	**TCBH-3**	TCBH-3	TCBH-4	TCBH-4	TCBH-5	TCBH-5
	Sample Name:		TC6-S-7.0	TC6-S-15.0	TCBH1-S-8.5	TCBH2-S-15.0	**TCBH3-S-8.5**	TCBH3-S-14.5	TCBH4-S-6.0	TCBH4-S-15.0	TCBH5-S-4.5	TCBH5-S-15.0
	Collection Date:		7/17/2014	7/17/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/18/2014	7/18/2014
	Collection Depth (ft bgs):		7	15	8.5	15	8.5	14.5	6	15	4.5	15
	MTCA Method A URLU	MTCA Method A Industrial										
TPH (mg/kg)												
Gasoline Range Hydrocarbons	30	30	2 U	2 U	2 U	2 U	**2800**	2 U	2 U	2 U	2 U	2 U
Diesel Range Hydrocarbons	2000	2000	50 U	50 U	50 U	50 U	950	50 U	50 U	50 U	50 U	50 U
Motor Oil Range Hydrocarbons	2000	2000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
TPH Identification												
Gasoline Range Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
Diesel Range Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
Motor Oil Range Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
VOCs (mg/kg)												
1,1,1,2-Tetrachloroethane	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
1,1,1-Trichloroethane	2	2	--	--	--	--	0.05 U	--	--	--	--	--
1,1,2,2-Tetrachloroethane	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
1,1,2-Trichloroethane	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
1,1-Dichloroethane	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
1,1-Dichloroethene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
1,1-Dichloropropene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
1,2,3-Trichlorobenzene	NV	NV	--	--	--	--	0.25 U	--	--	--	--	--
1,2,3-Trichloropropane	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
1,2,4-Trichlorobenzene	NV	NV	--	--	--	--	0.25 U	--	--	--	--	--
1,2,4-Trimethylbenzene	NV	NV	--	--	--	--	0.34	--	--	--	--	--
1,2-Dibromo-3-chloropropane	NV	NV	--	--	--	--	0.5 U	--	--	--	--	--
1,2-Dibromoethane	0.005	0.005	--	--	--	--	0.005 UJ	--	--	--	--	--
1,2-Dichlorobenzene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
1,2-Dichloroethane	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
1,2-Dichloropropane	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
1,3,5-Trimethylbenzene	NV	NV	--	--	--	--	0.77	--	--	--	--	--
1,3-Dichlorobenzene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
1,3-Dichloropropane	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
1,4-Dichlorobenzene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
2,2-Dichloropropane	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
2-Butanone	NV	NV	--	--	--	--	0.5 U	--	--	--	--	--
2-Chlorotoluene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
2-Hexanone	NV	NV	--	--	--	--	0.5 U	--	--	--	--	--

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:		TC-6	TC-6	TCBH-1	TCBH-2	**TCBH-3**	TCBH-3	TCBH-4	TCBH-4	TCBH-5	TCBH-5
	Sample Name:		TC6-S-7.0	TC6-S-15.0	TCBH1-S-8.5	TCBH2-S-15.0	**TCBH3-S-8.5**	TCBH3-S-14.5	TCBH4-S-6.0	TCBH4-S-15.0	TCBH5-S-4.5	TCBH5-S-15.0
	Collection Date:		7/17/2014	7/17/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/18/2014	7/18/2014
	Collection Depth (ft bgs):		7	15	8.5	15	8.5	14.5	6	15	4.5	15
	MTCA Method A URLU	MTCA Method A Industrial										
4-Chlorotoluene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
4-Isopropyltoluene	NV	NV	--	--	--	--	0.47	--	--	--	--	--
4-Methyl-2-pentanone	NV	NV	--	--	--	--	0.5 U	--	--	--	--	--
Acetone	NV	NV	--	--	--	--	0.5 U	--	--	--	--	--
Benzene	0.03	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.03 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Bromobenzene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
Bromodichloromethane	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
Bromoform	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
Bromomethane	NV	NV	--	--	--	--	0.5 U	--	--	--	--	--
Carbon tetrachloride	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
Chlorobenzene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
Chloroethane	NV	NV	--	--	--	--	0.5 U	--	--	--	--	--
Chloroform	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
Chloromethane	NV	NV	--	--	--	--	0.5 UJ	--	--	--	--	--
cis-1,2-Dichloroethene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
cis-1,3-Dichloropropene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
Dibromochloromethane	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
Dibromomethane	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
Dichlorodifluoromethane	NV	NV	--	--	--	--	0.5 UR	--	--	--	--	--
Ethylbenzene	6	6	0.02 U	0.02 U	0.02 U	0.02 U	**7.8**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hexachlorobutadiene	NV	NV	--	--	--	--	0.25 U	--	--	--	--	--
Isopropylbenzene	NV	NV	--	--	--	--	1.7	--	--	--	--	--
m,p-Xylene	NV	NV	--	--	--	--	0.31	--	--	--	--	--
Methyl tert-butyl ether	0.1	0.1	--	--	--	--	0.05 U	--	--	--	--	--
Methylene chloride	0.02	0.02	--	--	--	--	0.5 U	--	--	--	--	--
Naphthalene	5	5	--	--	--	--	3.1	--	--	--	--	--
n-Hexane	NV	NV	--	--	--	--	4.9	--	--	--	--	--
n-Propylbenzene	NV	NV	--	--	--	--	7.4	--	--	--	--	--
o-Xylene	NV	NV	--	--	--	--	0.23	--	--	--	--	--
sec-Butylbenzene	NV	NV	--	--	--	--	1	--	--	--	--	--
Styrene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
tert-Butylbenzene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
Tetrachloroethene	0.05	0.05	--	--	--	--	0.025 U	--	--	--	--	--

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:		TC-6	TC-6	TCBH-1	TCBH-2	**TCBH-3**	TCBH-3	TCBH-4	TCBH-4	TCBH-5	TCBH-5
	Sample Name:		TC6-S-7.0	TC6-S-15.0	TCBH1-S-8.5	TCBH2-S-15.0	**TCBH3-S-8.5**	TCBH3-S-14.5	TCBH4-S-6.0	TCBH4-S-15.0	TCBH5-S-4.5	TCBH5-S-15.0
	Collection Date:		7/17/2014	7/17/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/18/2014	7/18/2014
	Collection Depth (ft bgs):		7	15	8.5	15	8.5	14.5	6	15	4.5	15
	MTCA Method A URLU	MTCA Method A Industrial										
Toluene	7	7	0.02 U	0.02 U	0.02 U	0.02 U	0.05 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
trans-1,2-dichloroethene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
trans-1,3-Dichloropropene	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
Trichloroethene	0.03	0.03	--	--	--	--	0.02 U	--	--	--	--	--
Trichlorofluoromethane	NV	NV	--	--	--	--	0.5 U	--	--	--	--	--
Vinyl chloride	NV	NV	--	--	--	--	0.05 U	--	--	--	--	--
Xylenes, Total	9	9	0.06 U	0.06 U	0.06 U	0.06 U	--	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
PAHs (mg/kg)												
1-Methylnaphthalene	NV	NV	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	NV	--	--	--	--	--	--	--	--	--	--
Acenaphthene	NV	NV	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	NV	NV	--	--	--	--	--	--	--	--	--	--
Anthracene	NV	NV	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	NV	NV	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.1	2	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	NV	NV	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene	NV	NV	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	NV	NV	--	--	--	--	--	--	--	--	--	--
Chrysene	NV	NV	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	NV	NV	--	--	--	--	--	--	--	--	--	--
Fluoranthene	NV	NV	--	--	--	--	--	--	--	--	--	--
Fluorene	NV	NV	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	NV	NV	--	--	--	--	--	--	--	--	--	--
Naphthalene	5	5	--	--	--	--	--	--	--	--	--	--
Phenanthrene	NV	NV	--	--	--	--	--	--	--	--	--	--
Pyrene	NV	NV	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)												
Arsenic	20	20	--	--	--	--	--	--	--	--	--	--
Barium	NV	NV	--	--	--	--	--	--	--	--	--	--
Cadmium	2	2	--	--	--	--	--	--	--	--	--	--
Chromium	19[a]	19[a]	--	--	--	--	--	--	--	--	--	--
Lead	250	1000	--	--	--	--	--	--	--	--	--	--
Mercury	2	2	--	--	--	--	--	--	--	--	--	--

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:		TC-6	TC-6	TCBH-1	TCBH-2	**TCBH-3**	TCBH-3	TCBH-4	TCBH-4	TCBH-5	TCBH-5
	Sample Name:		TC6-S-7.0	TC6-S-15.0	TCBH1-S-8.5	TCBH2-S-15.0	**TCBH3-S-8.5**	TCBH3-S-14.5	TCBH4-S-6.0	TCBH4-S-15.0	TCBH5-S-4.5	TCBH5-S-15.0
	Collection Date:		7/17/2014	7/17/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/15/2014	7/18/2014	7/18/2014
	Collection Depth (ft bgs):		7	15	8.5	15	8.5	14.5	6	15	4.5	15
	MTCA Method A URLU	MTCA Method A Industrial										
Selenium	NV	NV	--	--	--	--	--	--	--	--	--	--
Silver	NV	NV	--	--	--	--	--	--	--	--	--	--
EPH (mg/kg)			--	--	--	--	--	--	--	--	--	--
C8-C10 Aliphatic Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
C10-C12 Aliphatic Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
C12-C16 Aliphatic Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
C16-C21 Aliphatic Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
C21-C34 Aliphatic Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
C8-C10 Aromatic Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
C10-C12 Aromatic Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
C12-C16 Aromatic Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
C16-C21 Aromatic Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--
C21-C34 Aromatic Hydrocarbons	NV	NV	--	--	--	--	--	--	--	--	--	--

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

			Location:	TCBH-6	TCBH-7	TCBH-8	TCBH-8	TCBH-9	TCBH-9	TCBH-10	TCBH-11	TCBH-12	TCBH-13	TCBH-14
			Sample Name:	TCBH6-S-4.8	TCBH7-S-15.0	TCBH8-S-9.5	TCBH8-S-15.0	TCBH9-S-9.5	TCBH9-S-15.0	TCBH10-S-4.0	TCBH11-S-4.7	TCBH12-S-3.5	TCBH13-S-4.5	TCBH14-S-8.5
			Collection Date:	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/18/2014	7/18/2014	7/18/2014	7/18/2014	7/18/2014
			Collection Depth (ft bgs):	4.8	15	9.5	15	9.5	15	4	4.7	3.5	4.5	8.5
	MTCA Method A URLU	MTCA Method A Industrial												
TPH (mg/kg)														
Gasoline Range Hydrocarbons	30	30	--	2 U	2 U	2 U	2 U	2 U	--	--	--	--	--	
Diesel Range Hydrocarbons	2000	2000	--	50 U	50 U	50 U	50 U	50 U	--	--	--	--	--	
Motor Oil Range Hydrocarbons	2000	2000	--	250 U	250 U	250 U	250 U	250 U	--	--	--	--	--	
TPH Identification														
Gasoline Range Hydrocarbons	NV	NV	ND	--	--	--	--	--	ND	ND	ND	ND	ND	
Diesel Range Hydrocarbons	NV	NV	ND	--	--	--	--	--	ND	ND	ND	ND	ND	
Motor Oil Range Hydrocarbons	NV	NV	ND	--	--	--	--	--	ND	ND	ND	ND	ND	
VOCs (mg/kg)														
1,1,1,2-Tetrachloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,1,1-Trichloroethane	2	2	--	--	--	--	--	--	--	--	--	--	--	
1,1,2,2-Tetrachloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,1,2-Trichloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,1-Dichloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,1-Dichloroethene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,1-Dichloropropene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,2,3-Trichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,2,3-Trichloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,2,4-Trichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,2,4-Trimethylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dibromo-3-chloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dibromoethane	0.005	0.005	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,2-Dichloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,3,5-Trimethylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,3-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,3-Dichloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
1,4-Dichlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
2,2-Dichloropropane	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
2-Butanone	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
2-Chlorotoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--	
2-Hexanone	NV	NV	--	--	--	--	--	--	--	--	--	--	--	

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:		TCBH-6	TCBH-7	TCBH-8	TCBH-8	TCBH-9	TCBH-9	TCBH-10	TCBH-11	TCBH-12	TCBH-13	TCBH-14
	Sample Name:		TCBH6-S-4.8	TCBH7-S-15.0	TCBH8-S-9.5	TCBH8-S-15.0	TCBH9-S-9.5	TCBH9-S-15.0	TCBH10-S-4.0	TCBH11-S-4.7	TCBH12-S-3.5	TCBH13-S-4.5	TCBH14-S-8.5
	Collection Date:		7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/18/2014	7/18/2014	7/18/2014	7/18/2014	7/18/2014
	Collection Depth (ft bgs):		4.8	15	9.5	15	9.5	15	4	4.7	3.5	4.5	8.5
	MTCA Method A URLU	MTCA Method A Industrial											
4-Chlorotoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
4-Isopropyltoluene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Acetone	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Benzene	0.03	0.03	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Bromobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Bromodichloromethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Bromoform	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Bromomethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Chlorobenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Chloroethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Chloroform	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Chloromethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Dibromochloromethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Dibromomethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	6	6	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Hexachlorobutadiene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Isopropylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether	0.1	0.1	--	--	--	--	--	--	--	--	--	--	--
Methylene chloride	0.02	0.02	--	--	--	--	--	--	--	--	--	--	--
Naphthalene	5	5	--	--	--	--	--	--	--	--	--	--	--
n-Hexane	NV	NV	--	--	--	--	--	--	--	--	--	--	--
n-Propylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
o-Xylene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Styrene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	NV	NV	--	--	--	--	--	--	--	--	--	--	--
Tetrachloroethene	0.05	0.05	--	--	--	--	--	--	--	--	--	--	--

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

			Location:	TCBH-6	TCBH-7	TCBH-8	TCBH-8	TCBH-9	TCBH-9	TCBH-10	TCBH-11	TCBH-12	TCBH-13	TCBH-14
			Sample Name:	TCBH6-S-4.8	TCBH7-S-15.0	TCBH8-S-9.5	TCBH8-S-15.0	TCBH9-S-9.5	TCBH9-S-15.0	TCBH10-S-4.0	TCBH11-S-4.7	TCBH12-S-3.5	TCBH13-S-4.5	TCBH14-S-8.5
			Collection Date:	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/18/2014	7/18/2014	7/18/2014	7/18/2014	7/18/2014
			Collection Depth (ft bgs):	4.8	15	9.5	15	9.5	15	4	4.7	3.5	4.5	8.5
	MTCA Method A URLU	MTCA Method A Industrial												
Toluene	7	7		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
trans-1,2-dichloroethene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Trichloroethene	0.03	0.03		--	--	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Vinyl chloride	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Xylenes, Total	9	9		0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U	0.06 U
PAHs (mg/kg)														
1-Methylnaphthalene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Acenaphthene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Acenaphthylene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Anthracene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Benzo(a)anthracene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Benzo(a)pyrene	0.1	2		--	--	--	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Benzo(ghi)perylene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Chrysene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Fluoranthene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Fluorene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Naphthalene	5	5		--	--	--	--	--	--	--	--	--	--	--
Phenanthrene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Pyrene	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Metals (mg/kg)														
Arsenic	20	20		--	--	--	--	--	--	--	--	--	--	--
Barium	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Cadmium	2	2		--	--	--	--	--	--	--	--	--	--	--
Chromium	19[a]	19[a]		--	--	--	--	--	--	--	--	--	--	--
Lead	250	1000		--	--	--	--	--	--	--	--	--	--	--
Mercury	2	2		--	--	--	--	--	--	--	--	--	--	--

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

			Location:	TCBH-6	TCBH-7	TCBH-8	TCBH-8	TCBH-9	TCBH-9	TCBH-10	TCBH-11	TCBH-12	TCBH-13	TCBH-14
			Sample Name:	TCBH6-S-4.8	TCBH7-S-15.0	TCBH8-S-9.5	TCBH8-S-15.0	TCBH9-S-9.5	TCBH9-S-15.0	TCBH10-S-4.0	TCBH11-S-4.7	TCBH12-S-3.5	TCBH13-S-4.5	TCBH14-S-8.5
			Collection Date:	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/18/2014	7/18/2014	7/18/2014	7/18/2014	7/18/2014
			Collection Depth (ft bgs):	4.8	15	9.5	15	9.5	15	4	4.7	3.5	4.5	8.5
	MTCA Method A URLU	MTCA Method A Industrial												
Selenium	NV	NV		--	--	--	--	--	--	--	--	--	--	--
Silver	NV	NV		--	--	--	--	--	--	--	--	--	--	--
EPH (mg/kg)				--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aliphatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aliphatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	--	--
C12-C16 Aliphatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	--	--
C16-C21 Aliphatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	--	--
C21-C34 Aliphatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aromatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aromatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	--	--
C12-C16 Aromatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	--	--
C16-C21 Aromatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	--	--
C21-C34 Aromatic Hydrocarbons	NV	NV		--	--	--	--	--	--	--	--	--	--	--

Table 1
Summary of Soil Analytical Results
Truck City Site Property
Mount Vernon, Washington

NOTES:

Result values in **bold** font indicate exceedance of MTCA Method A cleanup level. Non-detect results are not evaluated against MTCA cleanup levels.

Analytes and sample names with exceedances are also in **bold** font.

-- = not analyzed.

EPH = extractable petroleum hydrocarbons.

ft bgs = feet below ground surface.

J = the result is an estimated value.

mg/kg = milligrams per kilogram.

MTCA Method A = Model Toxics Control Act Method A.

ND = not detected

NV = no value.

PAHs = polycyclic aromatic hydrocarbons.

R = roentgen

TPH = total petroleum hydrocarbons.

U = the result is non-detect.

URLU = unrestricted land use.

VOCs = volatile organic compounds.

[a]MTCA Method A CUL for Hexavalent Chromium.

Table 2
Summary of Groundwater Analytical Results
Truck City Site Property
Mount Vernon, Washington

Location:		TC-1	TC-1	**TC-2**	TC-3	TC-4	**TC-5**	TC-6	**TCBH-1**	TCBH-2
Sample Name:		TC1-W-10.0	TCDup-W-10.0	**TC2-W-10.0**	TC3-W-10.0	TC4-W-10.0	**TC5-W-10.0**	TC6-W-10.0	**TCBH1-W-8.5**	TCBH2-W-8.5
Collection Date:		7/17/2014	7/17/2014	7/18/2014	7/17/2014	7/18/2014	7/17/2014	7/18/2014	7/15/2014	7/15/2014
Collection Depth (ft bgs):		10	10	10	10	10	10	10	8.5	8.5
	MTCA Method A									
TPH (ug/L)										
Gasoline Range Hydrocarbons	800	100 U	100 U	100 U	380	100 U	**800**	100 U	100 U	100 U
Diesel Range Hydrocarbons	500	120 J	--	50 U	--	50 U	360 J	89 J	**790** J	50 U
Motor Oil Range Hydrocarbons	500	250 U	--	250 U	--	250 U	250 U	250 U	250 U	250 U
TPH Identification										
Gasoline Range Hydrocarbons	NV	--	--	--	--	--	--	--	--	--
Diesel Range Hydrocarbons	NV	--	--	--	--	--	--	--	--	--
Motor Oil Range Hydrocarbons	NV	--	--	--	--	--	--	--	--	--
VOCs (ug/L)										
1,1,1,2-Tetrachloroethane	NV	1 U	--	--	1 U	--	--	--	--	--
1,1,1-Trichloroethane	200	1 U	--	--	1 U	--	--	--	--	--
1,1,2,2-Tetrachloroethane	NV	1 U	--	--	1 U	--	--	--	--	--
1,1,2-Trichloroethane	NV	1 U	--	--	1 U	--	--	--	--	--
1,1-Dichloroethane	NV	1 U	--	--	1 U	--	--	--	--	--
1,1-Dichloroethene	NV	1 U	--	--	1 U	--	--	--	--	--
1,1-Dichloropropene	NV	1 U	--	--	1 U	--	--	--	--	--
1,2,3-Trichlorobenzene	NV	1 U	--	--	1 U	--	--	--	--	--
1,2,3-Trichloropropane	NV	1 U	--	--	1 U	--	--	--	--	--
1,2,4-Trichlorobenzene	NV	1 U	--	--	1 U	--	--	--	--	--
1,2,4-Trimethylbenzene	NV	1 U	--	--	23	--	--	--	--	--
1,2-Dibromo-3-chloropropane	NV	10 U	--	--	10 U	--	--	--	--	--
1,2-Dibromoethane	0.01	0.01 U	--	--	0.01 U	--	--	--	--	--
1,2-Dichlorobenzene	NV	1 U	--	--	1 U	--	--	--	--	--
1,2-Dichloroethane	NV	1 U	--	--	1 U	--	--	--	--	--
1,2-Dichloropropane	NV	1 U	--	--	1 U	--	--	--	--	--
1,3,5-Trimethylbenzene	NV	1 U	--	--	6.2	--	--	--	--	--
1,3-Dichlorobenzene	NV	1 U	--	--	1 U	--	--	--	--	--
1,3-Dichloropropane	NV	1 U	--	--	1 U	--	--	--	--	--
1,4-Dichlorobenzene	NV	1 U	--	--	1 U	--	--	--	--	--
2,2-Dichloropropane	NV	1 U	--	--	1 U	--	--	--	--	--

Table 2
Summary of Groundwater Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:	TC-1	TC-1	**TC-2**	TC-3	TC-4	**TC-5**	TC-6	**TCBH-1**	TCBH-2
	Sample Name:	TC1-W-10.0	TCDup-W-10.0	**TC2-W-10.0**	TC3-W-10.0	TC4-W-10.0	**TC5-W-10.0**	TC6-W-10.0	**TCBH1-W-8.5**	TCBH2-W-8.5
	Collection Date:	7/17/2014	7/17/2014	7/18/2014	7/17/2014	7/18/2014	7/17/2014	7/18/2014	7/15/2014	7/15/2014
	Collection Depth (ft bgs):	10	10	10	10	10	10	10	8.5	8.5
	MTCA Method A									
2-Butanone	NV	10 U	--	--	10 U	--	--	--	--	--
2-Chlorotoluene	NV	1 U	--	--	1 U	--	--	--	--	--
2-Hexanone	NV	10 U	--	--	10 U	--	--	--	--	--
4-Chlorotoluene	NV	1 U	--	--	1 U	--	--	--	--	--
4-Isopropyltoluene	NV	1 U	--	--	1 U	--	--	--	--	--
4-Methyl-2-pentanone	NV	10 U	--	--	10 U	--	--	--	--	--
Acetone	NV	10 U			10 U					
Benzene	5	0.35 U	1 U	1 U	1.2	1 U	**22**	1 U	1 U	1 U
Bromobenzene	NV	1 U	--	--	1 U	--	--	--	--	--
Bromodichloromethane	NV	1 U	--	--	1 U	--	--	--	--	--
Bromoform	NV	1 U	--	--	1 U	--	--	--	--	--
Bromomethane	NV	1 U	--	--	1 U	--	--	--	--	--
Carbon tetrachloride	NV	1 U	--	--	1 U	--	--	--	--	--
Chlorobenzene	NV	1 U	--	--	1 U	--	--	--	--	--
Chloroethane	NV	1 U	--	--	1 U	--	--	--	--	--
Chloroform	NV	1 U	--	--	1 U	--	--	--	--	--
Chloromethane	NV	10 U	--	--	10 U	--	--	--	--	--
cis-1,2-Dichloroethene	NV	1 U	--	--	1 U	--	--	--	--	--
cis-1,3-Dichloropropene	NV	1 U	--	--	1 U	--	--	--	--	--
Dibromochloromethane	NV	1 U	--	--	1 U	--	--	--	--	--
Dibromomethane	NV	1 U	--	--	1 U	--	--	--	--	--
Dichlorodifluoromethane	NV	1 UJ	--	--	1 UJ	--	--	--	--	--
Ethylbenzene	700	1 U	1 U	1 U	8.1	1 U	25	1 U	1 U	1 U
Hexachlorobutadiene	NV	1 U	--	--	1 U	--	--	--	--	--
Isopropylbenzene	NV	1 U	--	--	1 U	--	--	--	--	--
m,p-Xylene	NV	2 U	--	--	27	--	--	--	--	--
Methyl tert-butyl ether	20	1 U	--	--	1 U	--	--	--	--	--
Methylene chloride	5	5 U	--	--	5 U	--	--	--	--	--

Table 2
Summary of Groundwater Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:	TC-1	TC-1	**TC-2**	TC-3	TC-4	**TC-5**	TC-6	**TCBH-1**	TCBH-2
	Sample Name:	TC1-W-10.0	TCDup-W-10.0	**TC2-W-10.0**	TC3-W-10.0	TC4-W-10.0	**TC5-W-10.0**	TC6-W-10.0	**TCBH1-W-8.5**	TCBH2-W-8.5
	Collection Date:	7/17/2014	7/17/2014	7/18/2014	7/17/2014	7/18/2014	7/17/2014	7/18/2014	7/15/2014	7/15/2014
	Collection Depth (ft bgs):	10	10	10	10	10	10	10	8.5	8.5
	MTCA Method A									
Naphthalene	160	1 U	--	--	5.2	--	--	--	--	--
n-Hexane	NV	1 U	--	--	12	--	--	--	--	--
n-Propylbenzene	NV	1 U	--	--	2.8	--	--	--	--	--
o-Xylene	NV	1 U	--	--	5.6	--	--	--	--	--
sec-Butylbenzene	NV	1 U	--	--	1 U	--	--	--	--	--
Styrene	NV	1 U	--	--	1 U	--	--	--	--	--
tert-Butylbenzene	NV	1 U	--	--	1 U	--	--	--	--	--
Tetrachloroethene	5	1 U	--	--	1 U	--	--	--	--	--
Toluene	1000	1 U	1 U	1 U	1 U	1 U	1.7	1 U	1 U	1 U
trans-1,2-dichloroethene	NV	1 U	--	--	1 U	--	--	--	--	--
trans-1,3-Dichloropropene	NV	1 U	--	--	1 U	--	--	--	--	--
Trichloroethene	5	1 U	--	--	1 U	--	--	--	--	--
Trichlorofluoromethane	NV	1 U	--	--	1 U	--	--	--	--	--
Vinyl chloride	0.2	0.2 U	--	--	0.2 U	--	--	--	--	--
Xylenes, Total	1000	--	3 U	3 U	--	3 U	130	3 U	3 U	3 U
PAHs (ug/L)										
1-Methylnaphthalene	NV	0.1 U	--	--	0.28	--	0.77	--	--	--
2-Methylnaphthalene	NV	0.1 U	--	--	0.34	--	0.48	--	--	--
Acenaphthene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Acenaphthylene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Anthracene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Benzo(a)anthracene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Benzo(a)pyrene	0.1	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Benzo(b)fluoranthene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Benzo(ghi)perylene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Benzo(k)fluoranthene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Chrysene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--

Table 2
Summary of Groundwater Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:	TC-1	TC-1	**TC-2**	TC-3	TC-4	**TC-5**	TC-6	**TCBH-1**	TCBH-2
	Sample Name:	TC1-W-10.0	TCDup-W-10.0	**TC2-W-10.0**	TC3-W-10.0	TC4-W-10.0	**TC5-W-10.0**	TC6-W-10.0	**TCBH1-W-8.5**	TCBH2-W-8.5
	Collection Date:	7/17/2014	7/17/2014	7/18/2014	7/17/2014	7/18/2014	7/17/2014	7/18/2014	7/15/2014	7/15/2014
	Collection Depth (ft bgs):	10	10	10	10	10	10	10	8.5	8.5
	MTCA Method A									
Dibenzo(a,h)anthracene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Fluoranthene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Fluorene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Indeno(1,2,3-cd)pyrene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Naphthalene	160	0.1 U	--	--	0.83	0.1 U	8.6	--	--	--
Phenanthrene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Pyrene	NV	0.1 U	--	--	0.1 U	0.1 U	0.1 U	--	--	--
Total Metals (ug/L)										
Arsenic	5	--	--	**7.1** J	1.29	--	--	--	--	--
Barium	NV	--	--	125 J	85.3	--	--	--	--	--
Cadmium	NV	--	--	1 UJ	1 U	--	--	--	--	--
Chromium	NV	--	--	1.02 J	2.29	--	--	--	--	--
Lead	15	--	--	1 UJ	1 U	--	--	--	--	--
Manganese	NV	--	1300 J	--	708	--	--	--	--	--
Mercury	2	--	--	0.25 U	0.1 U	--	--	--	--	--
Selenium	NV	--	--	1 UJ	1 U	--	--	--	--	--
Silver	NV	--	--	1 UJ	1 U	--	--	--	--	--
Dissolved Metals (ug/L)										
Arsenic	5	--	--	1.37	--	--	--	--	--	--
Barium	NV	--	--	79.8	--	--	--	--	--	--
Cadmium	NV	--	--	1 U	--	--	--	--	--	--
Chromium	NV	--	--	1 U	--	--	--	--	--	--
Lead	15	--	--	1 U	--	--	--	--	--	--
Manganese	NV	1200	--	--	--	--	--	--	--	--
Mercury	2	--	--	0.1 U	--	--	--	--	--	--
Selenium	NV	--	--	1 U	--	--	--	--	--	--
Silver	NV	--	--	1 U	--	--	--	--	--	--
Dissolved Gases (ug/L)										

Table 2
Summary of Groundwater Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:	TC-1	TC-1	**TC-2**	TC-3	TC-4	**TC-5**	TC-6	**TCBH-1**	TCBH-2
	Sample Name:	TC1-W-10.0	TCDup-W-10.0	**TC2-W-10.0**	TC3-W-10.0	TC4-W-10.0	**TC5-W-10.0**	TC6-W-10.0	**TCBH1-W-8.5**	TCBH2-W-8.5
	Collection Date:	7/17/2014	7/17/2014	7/18/2014	7/17/2014	7/18/2014	7/17/2014	7/18/2014	7/15/2014	7/15/2014
	Collection Depth (ft bgs):	10	10	10	10	10	10	10	8.5	8.5
	MTCA Method A									
Methane	NV	7.1	--	--	48	--	--	--	--	--
Anions (mg/L)										
Nitrate	NV	0.329 J	--	--	1.47	--	--	--	--	--
Sulfate	NV	198	--	--	126	--	--	--	--	--
Ferrous Iron (mg/L)										
Ferrous Iron	NV	16.4	--	--	5.4	--	--	--	--	--
EPH (ug/L)										
C8-C10 Aliphatic Hydrocarbons	NV	80 U	--	--	--	--	213 U	--	--	--
C10-C12 Aliphatic Hydrocarbons	NV	80 U	--	--	--	--	213 U	--	--	--
C12-C16 Aliphatic Hydrocarbons	NV	80 U	--	--	--	--	213 U	--	--	--
C16-C21 Aliphatic Hydrocarbons	NV	80 U	--	--	--	--	213 U	--	--	--
C21-C34 Aliphatic Hydrocarbons	NV	162	--	--	--	--	271	--	--	--
C8-C10 Aromatic Hydrocarbons	NV	89.9 J	--	--	--	--	213 UJ	--	--	--
C10-C12 Aromatic Hydrocarbons	NV	80 UJ	--	--	--	--	213 UJ	--	--	--
C12-C16 Aromatic Hydrocarbons	NV	80 U	--	--	--	--	213 U	--	--	--
C16-C21 Aromatic Hydrocarbons	NV	86	--	--	--	--	676	--	--	--
C21-C34 Aromatic Hydrocarbons	NV	14500	--	--	--	--	49000	--	--	--
VPH (ug/L)										
C5-C6 Aliphatic Hydrocarbons	NV	10 U	--	--	214	--	--	--	--	--
C6-C8 Aliphatic Hydrocarbons	NV	10 U	--	--	80.7	--	--	--	--	--
C8-C10 Aliphatic Hydrocarbons	NV	10 U	--	--	44.3	--	--	--	--	--
C10-C12 Aliphatic Hydrocarbons	NV	10 U	--	--	99.2	--	--	--	--	--
C8-C10 Aromatic Hydrocarbons	NV	10 U	--	--	82.6	--	--	--	--	--
C10-C12 Aromatic Hydrocarbons	NV	10 U	--	--	117	--	--	--	--	--
C12-C13 Aromatic Hydrocarbons	NV	10 U	--	--	10 U	--	--	--	--	--
Benzene	5	5 U	--	--	5 U	--	--	--	--	--
Ethylbenzene	700	5 U	--	--	6.93	--	--	--	--	--
m,p-Xylene	NV	5 U	--	--	22.9	--	--	--	--	--
o-Xylene	NV	5 U	--	--	5 U	--	--	--	--	--
Methyl tert-butyl ether	20	5 U	--	--	5 U	--	--	--	--	--
Naphthalene	160	5 U	--	--	5 U	--	--	--	--	--
Toluene	1000	5 U	--	--	5 U	--	--	--	--	--

Table 2
Summary of Groundwater Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:	**TCBH-3**	TCBH-4	TCBH-5	TCBH-5	TCBH-6	TCBH-7	TCBH-8	TCBH-9	TCBH-10	TCBH-13
	Sample Name:	**TCBH3-W-8.5**	TCBH4-W-6.0	TCBH5-W-4.5 (1)	TCBH5-W-4.5 (2)	TCBH6-W-4.8	TCBH7-W-6.5	TCBH8-W-9.5	TCBH9-W-6.5	TCBH10-W-4.0	TCBH13-W-4.5
	Collection Date:	7/15/2014	7/15/2014	7/18/2014	7/18/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/18/2014	7/18/2014
	Collection Depth (ft bgs):	8.5	6	4.5	4.5	4.8	6.5	9.5	6.5	4	4.5
	MTCA Method A										
TPH (ug/L)											
Gasoline Range Hydrocarbons	800	**1900**	100 U	100 U	100 U	--	100 U	100 U	100 U	--	--
Diesel Range Hydrocarbons	500	**1100** J	120 J	210 J	210 J	--	56 J	50 U	50 U	--	--
Motor Oil Range Hydrocarbons	500	250 U	250 U	250 U	250 U	--	250 U	250 U	250 U	--	--
TPH Identification											
Gasoline Range Hydrocarbons	NV	--	--	--	--	ND	--	--	--	ND	ND
Diesel Range Hydrocarbons	NV	--	--	--	--	ND	--	--	--	ND	ND
Motor Oil Range Hydrocarbons	NV	--	--	--	--	ND	--	--	--	ND	ND
VOCs (ug/L)											
1,1,1,2-Tetrachloroethane	NV	1 U	--	--	--	--	--	--	--	--	--
1,1,1-Trichloroethane	200	1 U	--	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	NV	1 U	--	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	NV	1 U	--	--	--	--	--	--	--	--	--
1,1-Dichloroethane	NV	1 U	--	--	--	--	--	--	--	--	--
1,1-Dichloroethene	NV	1 U	--	--	--	--	--	--	--	--	--
1,1-Dichloropropene	NV	1 U	--	--	--	--	--	--	--	--	--
1,2,3-Trichlorobenzene	NV	1 U	--	--	--	--	--	--	--	--	--
1,2,3-Trichloropropane	NV	1 U	--	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	NV	1 U	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	NV	160	--	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	NV	10 U	--	--	--	--	--	--	--	--	--
1,2-Dibromoethane	0.01	0.01 U	--	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	NV	1 U	--	--	--	--	--	--	--	--	--
1,2-Dichloroethane	NV	1 U	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	NV	1 U	--	--	--	--	--	--	--	--	--
1,3,5-Trimethylbenzene	NV	54	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	NV	1 U	--	--	--	--	--	--	--	--	--
1,3-Dichloropropane	NV	1 U	--	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	NV	1 U	--	--	--	--	--	--	--	--	--
2,2-Dichloropropane	NV	1 U	--	--	--	--	--	--	--	--	--

Table 2
Summary of Groundwater Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:	**TCBH-3**	TCBH-4	TCBH-5	TCBH-5	TCBH-6	TCBH-7	TCBH-8	TCBH-9	TCBH-10	TCBH-13
	Sample Name:	**TCBH3-W-8.5**	TCBH4-W-6.0	TCBH5-W-4.5 (1)	TCBH5-W-4.5 (2)	TCBH6-W-4.8	TCBH7-W-6.5	TCBH8-W-9.5	TCBH9-W-6.5	TCBH10-W-4.0	TCBH13-W-4.5
	Collection Date:	7/15/2014	7/15/2014	7/18/2014	7/18/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/18/2014	7/18/2014
	Collection Depth (ft bgs):	8.5	6	4.5	4.5	4.8	6.5	9.5	6.5	4	4.5
	MTCA Method A										
2-Butanone	NV	10 U	--	--	--	--	--	--	--	--	--
2-Chlorotoluene	NV	1 U	--	--	--	--	--	--	--	--	--
2-Hexanone	NV	10 U	--	--	--	--	--	--	--	--	--
4-Chlorotoluene	NV	1 U	--	--	--	--	--	--	--	--	--
4-Isopropyltoluene	NV	2.1	--	--	--	--	--	--	--	--	--
4-Methyl-2-pentanone	NV	10 U	--	--	--	--	--	--	--	--	--
Acetone	NV	10 U	--	--	--	--	--	--	--	--	--
Benzene	5	4.2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromobenzene	NV	1 U	--	--	--	--	--	--	--	--	--
Bromodichloromethane	NV	1 U	--	--	--	--	--	--	--	--	--
Bromoform	NV	1 U	--	--	--	--	--	--	--	--	--
Bromomethane	NV	1 U	--	--	--	--	--	--	--	--	--
Carbon tetrachloride	NV	1 U	--	--	--	--	--	--	--	--	--
Chlorobenzene	NV	1 U	--	--	--	--	--	--	--	--	--
Chloroethane	NV	1 U	--	--	--	--	--	--	--	--	--
Chloroform	NV	1 U	--	--	--	--	--	--	--	--	--
Chloromethane	NV	10 U	--	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	NV	1 U	--	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	NV	1 U	--	--	--	--	--	--	--	--	--
Dibromochloromethane	NV	1 U	--	--	--	--	--	--	--	--	--
Dibromomethane	NV	1 U	--	--	--	--	--	--	--	--	--
Dichlorodifluoromethane	NV	1 UJ	--	--	--	--	--	--	--	--	--
Ethylbenzene	700	160	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Hexachlorobutadiene	NV	1 U	--	--	--	--	--	--	--	--	--
Isopropylbenzene	NV	21	--	--	--	--	--	--	--	--	--
m,p-Xylene	NV	50	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether	20	1 U	--	--	--	--	--	--	--	--	--
Methylene chloride	5	5 U	--	--	--	--	--	--	--	--	--

Table 2
Summary of Groundwater Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:	**TCBH-3**	TCBH-4	TCBH-5	TCBH-5	TCBH-6	TCBH-7	TCBH-8	TCBH-9	TCBH-10	TCBH-13
	Sample Name:	**TCBH3-W-8.5**	TCBH4-W-6.0	TCBH5-W-4.5 (1)	TCBH5-W-4.5 (2)	TCBH6-W-4.8	TCBH7-W-6.5	TCBH8-W-9.5	TCBH9-W-6.5	TCBH10-W-4.0	TCBH13-W-4.5
	Collection Date:	7/15/2014	7/15/2014	7/18/2014	7/18/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/18/2014	7/18/2014
	Collection Depth (ft bgs):	8.5	6	4.5	4.5	4.8	6.5	9.5	6.5	4	4.5
	MTCA Method A										
Naphthalene	160	95	--	--	--	--	--	--	--	--	--
n-Hexane	NV	41	--	--	--	--	--	--	--	--	--
n-Propylbenzene	NV	70	--	--	--	--	--	--	--	--	--
o-Xylene	NV	3.8	--	--	--	--	--	--	--	--	--
sec-Butylbenzene	NV	4.4	--	--	--	--	--	--	--	--	--
Styrene	NV	1 U	--	--	--	--	--	--	--	--	--
tert-Butylbenzene	NV	1 U	--	--	--	--	--	--	--	--	--
Tetrachloroethene	5	1 U	--	--	--	--	--	--	--	--	--
Toluene	1000	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-dichloroethene	NV	1 U	--	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	NV	1 U	--	--	--	--	--	--	--	--	--
Trichloroethene	5	1 U	--	--	--	--	--	--	--	--	--
Trichlorofluoromethane	NV	1 U	--	--	--	--	--	--	--	--	--
Vinyl chloride	0.2	0.2 U	--	--	--	--	--	--	--	--	--
Xylenes, Total	1000	--	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
PAHs (ug/L)											
1-Methylnaphthalene	NV	--	--	--	--	--	--	--	--	--	--
2-Methylnaphthalene	NV	--	--	--	--	--	--	--	--	--	--
Acenaphthene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Acenaphthylene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Anthracene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Benzo(a)anthracene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Benzo(a)pyrene	0.1	--	--	--	0.1 U	--	--	--	--	--	--
Benzo(b)fluoranthene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Benzo(ghi)perylene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Benzo(k)fluoranthene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Chrysene	NV	--	--	--	0.1 U	--	--	--	--	--	--

Table 2
Summary of Groundwater Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:	**TCBH-3**	TCBH-4	TCBH-5	TCBH-5	TCBH-6	TCBH-7	TCBH-8	TCBH-9	TCBH-10	TCBH-13
	Sample Name:	**TCBH3-W-8.5**	TCBH4-W-6.0	TCBH5-W-4.5 (1)	TCBH5-W-4.5 (2)	TCBH6-W-4.8	TCBH7-W-6.5	TCBH8-W-9.5	TCBH9-W-6.5	TCBH10-W-4.0	TCBH13-W-4.5
	Collection Date:	7/15/2014	7/15/2014	7/18/2014	7/18/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/18/2014	7/18/2014
	Collection Depth (ft bgs):	8.5	6	4.5	4.5	4.8	6.5	9.5	6.5	4	4.5
	MTCA Method A										
Dibenzo(a,h)anthracene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Fluoranthene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Fluorene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Naphthalene	160	--	--	--	0.1 U	--	--	--	--	--	--
Phenanthrene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Pyrene	NV	--	--	--	0.1 U	--	--	--	--	--	--
Total Metals (ug/L)											
Arsenic	5	--	--	--	--	--	--	--	--	--	--
Barium	NV	--	--	--	--	--	--	--	--	--	--
Cadmium	NV	--	--	--	--	--	--	--	--	--	--
Chromium	NV	--	--	--	--	--	--	--	--	--	--
Lead	15	--	--	--	--	--	--	--	--	--	--
Manganese	NV	--	--	--	--	--	--	--	--	--	--
Mercury	2	--	--	--	--	--	--	--	--	--	--
Selenium	NV	--	--	--	--	--	--	--	--	--	--
Silver	NV	--	--	--	--	--	--	--	--	--	--
Dissolved Metals (ug/L)											
Arsenic	5	--	--	--	--	--	--	--	--	--	--
Barium	NV	--	--	--	--	--	--	--	--	--	--
Cadmium	NV	--	--	--	--	--	--	--	--	--	--
Chromium	NV	--	--	--	--	--	--	--	--	--	--
Lead	15	--	--	--	--	--	--	--	--	--	--
Manganese	NV	--	--	--	--	--	--	--	--	--	--
Mercury	2	--	--	--	--	--	--	--	--	--	--
Selenium	NV	--	--	--	--	--	--	--	--	--	--
Silver	NV	--	--	--	--	--	--	--	--	--	--
Dissolved Gases (ug/L)											

Table 2
Summary of Groundwater Analytical Results
Truck City Site Property
Mount Vernon, Washington

	Location:	**TCBH-3**	TCBH-4	TCBH-5	TCBH-5	TCBH-6	TCBH-7	TCBH-8	TCBH-9	TCBH-10	TCBH-13
	Sample Name:	**TCBH3-W-8.5**	TCBH4-W-6.0	TCBH5-W-4.5 (1)	TCBH5-W-4.5 (2)	TCBH6-W-4.8	TCBH7-W-6.5	TCBH8-W-9.5	TCBH9-W-6.5	TCBH10-W-4.0	TCBH13-W-4.5
	Collection Date:	7/15/2014	7/15/2014	7/18/2014	7/18/2014	7/16/2014	7/16/2014	7/16/2014	7/16/2014	7/18/2014	7/18/2014
	Collection Depth (ft bgs):	8.5	6	4.5	4.5	4.8	6.5	9.5	6.5	4	4.5
	MTCA Method A										
Methane	NV	--	--	--	--	--	--	--	--	--	--
Anions (mg/L)											
Nitrate	NV	--	--	--	--	--	--	--	--	--	--
Sulfate	NV	--	--	--	--	--	--	--	--	--	--
Ferrous Iron (mg/L)											
Ferrous Iron	NV	--	--	--	--	--	--	--	--	--	--
EPH (ug/L)											
C8-C10 Aliphatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C10-C12 Aliphatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C12-C16 Aliphatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C16-C21 Aliphatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C21-C34 Aliphatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C8-C10 Aromatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C10-C12 Aromatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C12-C16 Aromatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C16-C21 Aromatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C21-C34 Aromatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
VPH (ug/L)											
C5-C6 Aliphatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C6-C8 Aliphatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C8-C10 Aliphatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C10-C12 Aliphatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C8-C10 Aromatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C10-C12 Aromatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
C12-C13 Aromatic Hydrocarbons	NV	--	--	--	--	--	--	--	--	--	--
Benzene	5	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	700	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	NV	--	--	--	--	--	--	--	--	--	--
o-Xylene	NV	--	--	--	--	--	--	--	--	--	--
Methyl tert-butyl ether	20	--	--	--	--	--	--	--	--	--	--
Naphthalene	160	--	--	--	--	--	--	--	--	--	--
Toluene	1000	--	--	--	--	--	--	--	--	--	--

Table 2
Summary of Groundwater Analytical Results
Truck City Site Property
Mount Vernon, Washington

NOTES:
Result values in **bold** font indicate exceedance of MTCA Method A cleanup level. Non-detect results are not evaluated against MTCA cleanup levels.
Analytes and sample names with exceedances are also in **bold** font.
-- = not analyzed.
EPH = extractable petroleum hydrocarbons.
ft bgs = feet below ground surface.
J = the result is an estimated value.
mg/L = milligrams per liter.
MTCA Method A = Model Toxics Control Act Method A.
ND = not detected
NV = no value.
PAHs = polycyclic aromatic hydrocarbons.
TPH = total petroleum hydrocarbons.
U = the result is non-detect.
ug/L = micrograms per liter.
VOCs = volatile organic compounds.
VPH = volatile petroleum hydrocarbons.
[a]MTCA Method A CUL for Hexavalent Chromium.

Table 3
Remedial Cost Estimate—Alternative 1: Soil Excavation and In Situ Treatment
Truck City Site
Mount Vernon, Washington

Remedy Components

1 Excavate petroleum hydrocarbon and associated VOCs-impacted soil and dispose of at regulated landfill.
2 In situ bioremediation of groundwater, using enhanced aerobic biodegradation.
3 Backfill with clean, imported material and compact.
4 Conduct groundwater monitoring for three years—quarterly the first two years and semi-annually the third year.

Assumptions

1 Density of soil = 1.85 tons/CY.
2 Density of select borrow = 1.85 tons/CY.
3 A total of four contaminated soil excavation areas, including removal of truck scale and demolition of concrete pad.
4 The estimated dimensions of impacted soil excavation at each area are 15 ft length by 15 ft width by 14 ft depth.
5 Excavated material will be characterized as non-hazardous and disposed at a Resource Conservation and Recovery Act Subtitle D landfill.
6 Excavation dewatering will be stored on-site and treated with GAC prior to permitted discharge to the municipal stormwater system.
7 An industry standard oxygen release compound will be mixed with backfill material.
8 The excavation area surfaces will be finished with compacted gravel.
9 30% contingency.

Item	Description	Quantity	Units	Unit Cost	Total Cost
Remedial Action					
	Preconstruction preparation	1	LS	$750	$750
	Erosion and sediment control	1	LS	$750	$750
	Petroleum contaminated soil excavation				
	Site temporary fencing, traffic control, and underground utilities survey	1	EA	$6,000	$6,000
	Removal of truck scale, demolition of concrete pad, and recycling of concrete	1	EA	$30,000	$30,000
	Mobilize excavator, excavate, and direct load impacted material (excavator and operator). Dewatering activities. Mix bioremediation products as part of backfill.	9	DAY	$3,700	$33,300
	Dewatering: 20,000 gal storage tank, pumps, GAC treatment system, sediment filtering—two weeks tank rental	1	EA	$20,000	$20,000
	Cleanout of storage tank and GAC removal/recycling	1	EA	$2,500	$2,500
	Characterization sampling during excavation	8	EA	$150	$1,200
	Confirmation sampling for four excavation areas	1	EA	$2,680	$2,680
	Lead TCLP analyses for petroleum-contaminated-soil disposal	4	EA	$95	$380
	Imported backfill	900	TON	$15	$13,500
	Mobilize equipment, backfill, and compact excavation	1	DAY	$2,500	$2,500
	Transport and disposal of excavated material	900	TON	$65	$58,500

Table 3
Remedial Cost Estimate—Alternative 1: Soil Excavation and In Situ Treatment
Truck City Site
Mount Vernon, Washington

Smear zone and groundwater treatment				
In situ bioremediation	1	EA	$20,000	$20,000
Reinstallation of up to three monitoring wells because of excavation activities and addition of two wells	1	EA	$22,000	$22,000
Groundwater monitoring/sampling events				
Monitoring	10	EA	$3,800	$38,000
Analytical	10	EA	$1,400	$14,000
Reporting	10	EA	$3,500	$35,000
Remedial Action Subtotal				**$301,100**
Professional Services				
Permitting and agency negotiations	1	LS	$4,000	$4,000
Environmental covenant	1	LS	$4,000	$4,000
Survey	1	LS	$15,000	$15,000
Remedial design	1	LS	$15,000	$15,000
Procurement	1	LS	$4,000	$4,000
Construction oversight	1	LS	$25,805	$25,805
Data analysis	1	LS	$7,630	$7,630
Reporting	1	LS	$25,000	$25,000
Project management/correspondence with Ecology and client; attend meetings	1	LS	$12,200	$12,200
Professional Services Subtotal				**$112,600**
Remedial Action and Professional Services Subtotal				**$413,700**
Contingency			**30%**	**$124,100**
TOTAL COST				**$537,800**

NOTES:
CY = cubic yard; EA = each; GAC = granular activated carbon; LS = lump sum; TCLP = toxicity characteristic leaching procedure; VOC = volatile organic compound.

Table 4
Remedial Cost Estimate—Alternative 2: Soil Excavation and Monitored Natural Attenuation
Truck City Site
Mount Vernon, Washington

Remedy Components

1 Excavate petroleum hydrocarbon and associated VOC-impacted soil and dispose of at regulated landfill.
2 Backfill with clean, imported material and compact.
3 Conduct groundwater monitoring for three years—quarterly the first two years and semi-annually the third year.

Assumptions

1 Density of soil = 1.85 tons/CY.
2 Density of select borrow = 1.85 tons/CY.
3 A total of four contaminated soil excavation areas, including removal of truck scale and demolition of concrete pad.
4 The estimated dimensions of impacted soil excavation at each area are 15 ft length by 15 ft width by 14 ft depth.
5 Excavated material will be characterized as non-hazardous and disposed at a Resource Conservation and Recovery Act Subtitle D landfill.
6 Excavation dewatering will be stored on-site and treated with GAC prior to permitted discharge to the municipal stormwater system.
7 The excavation area surfaces will be finished with compacted gravel.
8 30% contingency.

Item	Description	Quantity	Units	Unit Cost	Total Cost
Remedial Action					
	Preconstruction preparation	1	LS	$750	$750
	Erosion and sediment control	1	LS	$750	$750
	Petroleum contaminated soil excavation				
	Site temporary fencing, traffic control, and underground utilities survey	1	EA	$6,000	$6,000
	Removal of truck scale, demolition of concrete pad, and recycling of concrete	1	EA	$30,000	$30,000
	Mobilize excavator, excavate, and direct load impacted material (excavator and operator). Dewatering activities.	9	DAY	$3,200	$28,800
	Dewatering: 20,000 gal. storage tank, pumps, GAC treatment system, sediment filtering—two weeks tank rental	1	EA	$20,000	$20,000
	Clean out of storage tank and GAC removal/recycling	1	EA	$2,500	$2,500
	Characterization sampling during excavation	8	EA	$150	$1,200
	Confirmation sampling for four excavation areas	1	EA	$2,680	$2,680
	Lead TCLP analyses for petroleum-contaminated-soil disposal	4	EA	$95	$380
	Imported backfill	900	TON	$15	$13,500
	Mobilize equipment, backfill, and compact excavation	1	DAY	$2,500	$2,500
	Transport and disposal of excavated material	900	TON	$65	$58,500
	Reinstallation of up to three monitoring wells because of excavation work and addition of two wells	1	EA	$22,000	$22,000

Table 4
Remedial Cost Estimate—Alternative 2: Soil Excavation and Monitored Natural Attenuation
Truck City Site
Mount Vernon, Washington

Groundwater monitoring/sampling events				
Monitoring	10	EA	$3,800	$38,000
Analytical	10	EA	$1,400	$14,000
Reporting	10	EA	$3,500	$35,000
Remedial Action Subtotal				**$276,600**
Professional Services				
Permitting and agency negotiations	1	LS	$4,000	$4,000
Environmental covenant	1	LS	$4,000	$4,000
Survey	1	LS	$15,000	$15,000
Remedial design	1	LS	$15,000	$15,000
Procurement	1	LS	$4,000	$4,000
Construction oversight	1	LS	$25,805	$25,805
Data analysis	1	LS	$7,630	$7,630
Reporting	1	LS	$25,000	$25,000
Project management/correspondence with Ecology and client; attend meetings	1	LS	$12,200	$12,200
Professional Services Subtotal				**$112,600**
Remedial Action and Professional Services Subtotal				**$389,200**
Contingency			**30%**	**$116,800**
TOTAL COST				**$506,000**

NOTES:
CY = cubic yard; EA = each; GAC = granular activated carbon; LS = lump sum; TCLP = toxicity characteristic leaching procedure; VOC = volatile organic compound.

Table 5
Disproportionate-Cost Analysis
Truck City Site
Mount Vernon, Washington

Alternative	Description	Protectiveness	Permanence	Long-Term Effectiveness	Management of Short-Term Risks	Implementability	**Average**	Public Concerns	**Total Cost**
Alternative 1	Hot spot excavation and in situ treatment	5	5	5	4	5	**4.8**	TBD	**$ 537,800**
Alternative 2	Hot spot excavation and monitored natural attenuation	4	4	4	5	5	**4.4**	TBD	**$ 506,000**

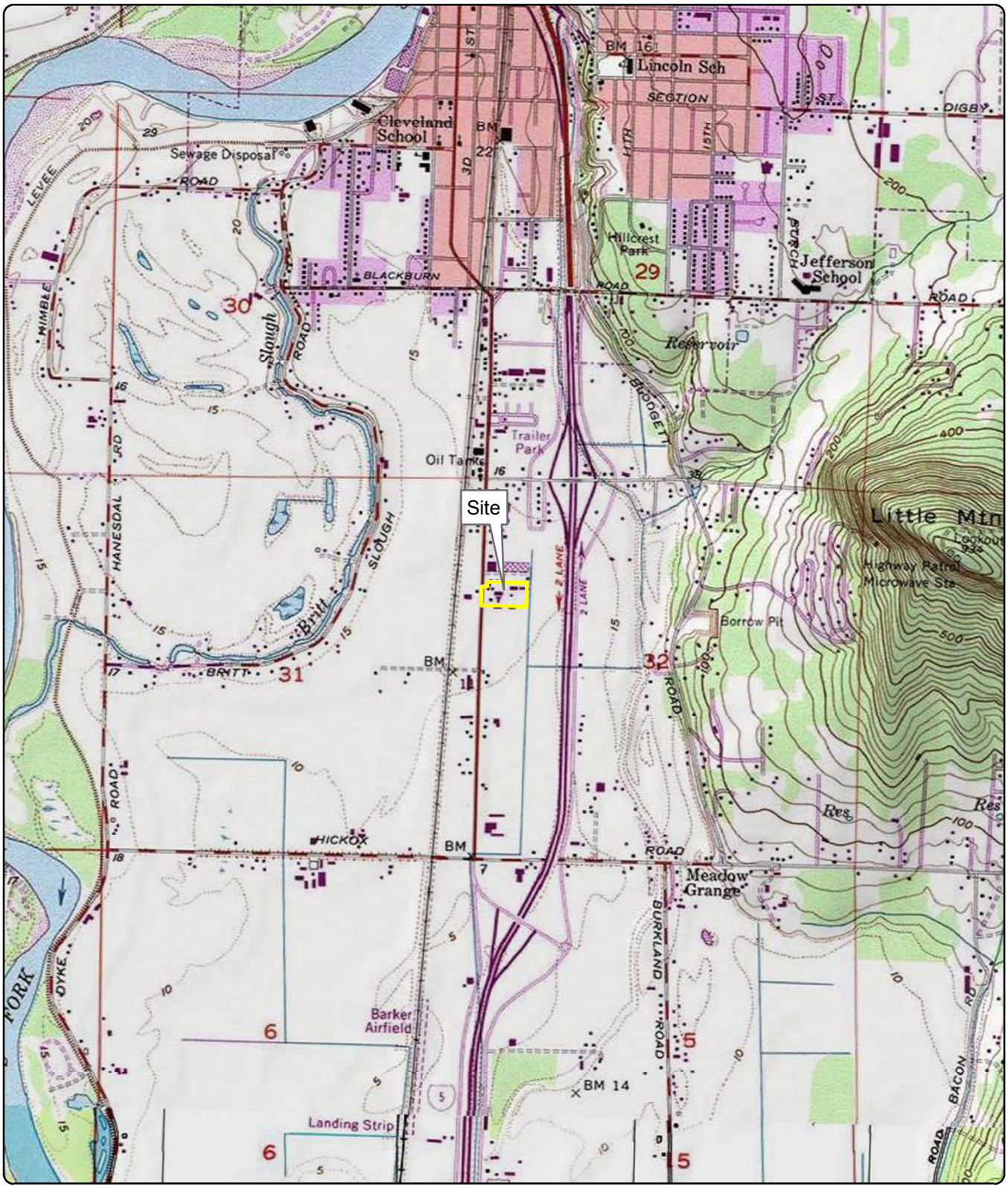
NOTE:
TBD = to be determined.

Table 6
Potential ARARs - Cleanup Levels
Truck City Site
Mount Vernon, Washington

Media	Standard	Citation	Comments
Soil	State cleanup levels for soils	Model Toxics Control Act (WAC 173-340, Section 740 and 745)	Applicable to the entire Site
Groundwater	State cleanup levels for groundwater	Model Toxics Control Act (WAC 173-340, Section 720)	Applicable to the entire Site
	Federal criteria for drinking water	Safe Drinking Water Act (40 CFR 141, 143)	Groundwater at Site will not be used as a potable source
	Ambient water quality criteria for the protection of aquatic organisms and human health.	Federal Water Pollution Control Act/Clean Water Act (CWA) (33 USC 1251–1376; 40 CFR 100–149) 40 CFR 13	Federal standards incorporated as ARAR under MTCA. Groundwater criteria applied to site must prevent exceedance of federal criteria at point of exposure.

NOTES:
ARAR=applicable, relevant, and appropriate requirements

FIGURES



Source: US Geological Survey (1990) 7.5-minute topographic quadrangle: Mount Vernon
Section 32, Township 34 North, Range 4 East

Figure 1
Site Location

Truck City Site
Mount Vernon, Washington

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0 1,000 2,000
Feet

Path: X:\0714.02 Skagit County Truck City\Projects\Fig_1 Site Location.mxd
Print Date: 10/30/2014
Approved By:
Produced By: gherbert
Project: 0714.02

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County.

Aerial Imagery Date: 1999

Legend

Site

Parcels

Figure 2
Site Parcels Map
Truck City Site
Mount Vernon, Washington

0 100 200
Feet

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Path: X:\0714.02 Skagit County Truck City\Projects\Fig_2 Site Parcels Map.mxd
Print Date: 10/30/2014
Approved By:
Produced By: gherbert
Project:

Figure 3
Site Features & Previous Environmental Investigations

Truck City Site
Mount Vernon, Washington

Legend

Previous Investigation

- Hand Auger - Surface Sediment Sample
- Soil Borings
- Active Monitoring Well
- Decommissioned - No Steel Monument
- Decommissioned - Steel Monument
- Former Soil Excavation Area
- USTs
- Septic System
- Parcel Boundary
- Catch Basin

Aerial Imagery Date: 2010

Notes:
1. Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc.
2. The locations of all features are approximate.

0 25 50
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County

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Path: X:\0714.02 Skagit County Truck City\Projects\Fig_3 Site Features and Previous Environmental Investigations.mxd
Print Date: 10/30/2014
Approved By:
Produced By: gherbert
Project: 0714.02

Figure 4
Site Features and Locations of Investigations

Truck City Site
Mount Vernon, Washington

Legend

MFA Investigation

- Boring
- Monitoring Well

Previous Investigation

- Existing Monitoring Well
- Former Soil Excavation Area
- Catch Basin

Underground Utilities

- Communications
- Electric
- Gas
- Water
- USTs
- Septic System
- Site Boundary
- Parcel Boundary

Aerial Imagery Date: 2010

Notes:
1. Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc. Utilities and well positions imported from survey by Pacific Geomatic Services in July 2014.
2. The locations of digitized features are approximate.

0 25 50
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County; well and utility positions from Pacific Geomatic Services, July 2014

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Print Date: 10/30/2014
Approved By:
Produced By: gherbert
Project: 0714.02

Figure 5
Cross Section Transect

Truck City Site
Mount Vernon, Washington

Legend

MFA Investigation

- Boring
- Monitoring Well

Previous Investigation

- Existing Monitoring Well
- Former Soil Excavation Area

- CrossSectionTransect
- USTs
- Site Boundary
- Parcel Boundary
- Catch Basin

Aerial Imagery Date: 2010

Notes:
1. Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc. Utilities and well positions imported from survey by Pacific Geomatic Services in July 2014.
2. The locations of digitized features are approximate.

0 25 50
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County; well and utility positions from Pacific Geomatic Services, July 2014

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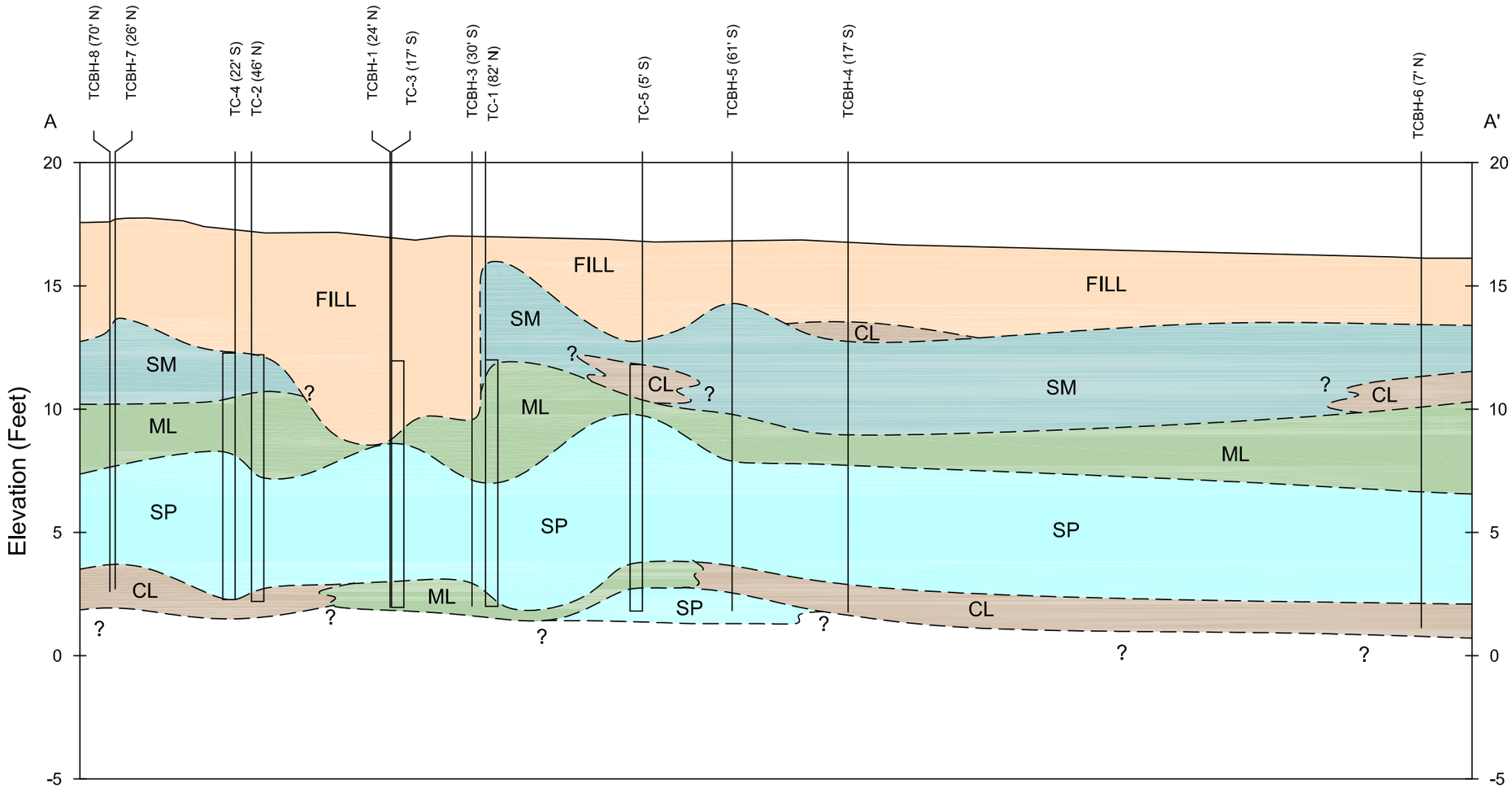
Approved By:
Produced By: gherbert
Project: 0714.02

Figure 6

Generalized Geologic Cross Section A-A'

Truck City
Mount Vernon, Washington



PROFILE VIEW OF SECTION
HORIZONTAL SCALE: 1" = 50' VERTICAL SCALE: 1" = 5'
VERTICAL EXAGGERATION: 10

LEGEND:

- FILL

RECENT ALLUVIUM (FLOOD PLAIN DEPOSITS)

- SILT (ML)
- SILTY SAND (SM)
- SAND (SP)
- CLAY (CL)

- MONITORING WELL (DISTANCE AND DIRECTION PROJECTED)
- SCREENED SECTION
- SOL BORINGS (DISTANCE AND DIRECTION PROJECTED)
- — — — INFERRED LITHOLOGIC CONTACT

0 50 100
Scale in Feet

MAUL FOSTER ALONGI

Filepath: G:\0714.02 Truck City\02_cross section\Cross section.dwg
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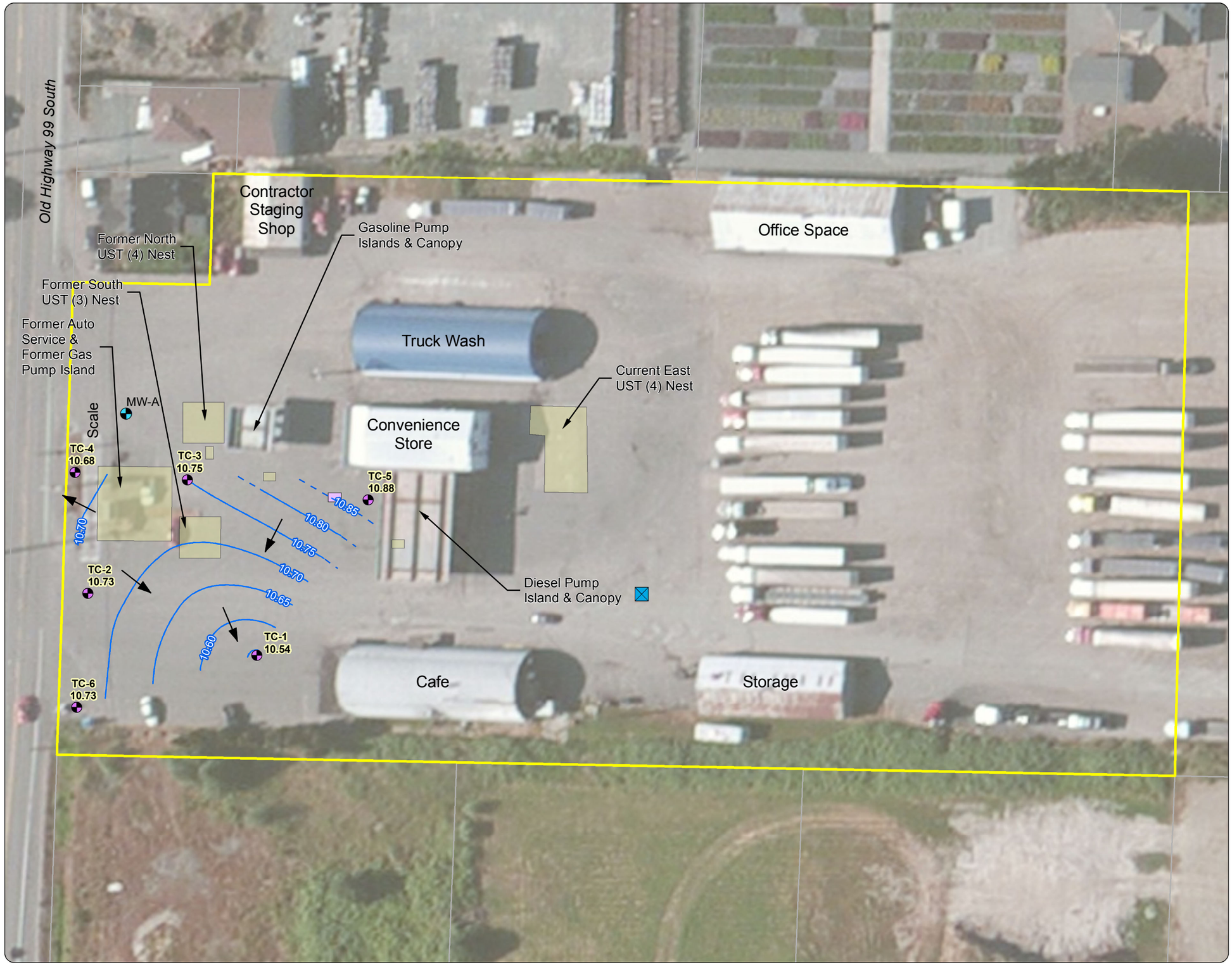
Date: 9/4/2014 12:30:15 PM

Figure 7
Groundwater Potentiometric Map - July 2014

Truck City Site
Mount Vernon, Washington



Legend

- Monitoring Well and elevation in feet (MSL)
- Groundwater Elevations
- Extrapolated GW Elevations
- Groundwater Flow Direction

Previous Investigation

- Existing Monitoring Well

- Catch Basin
- USTs
- Septic System
- Site Boundary
- Parcel Boundary

Aerial Imagery Date: 2010

Notes:
1. MSL = mean sea level.
2. Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc. Utilities and well positions imported from survey by Pacific Geomatic Services in July 2014.
3. Groundwater elevations were measured July 2014.

0 25 50
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County; well and utility positions from Pacific Geomatic Services, July 2014

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Project: 0714.02

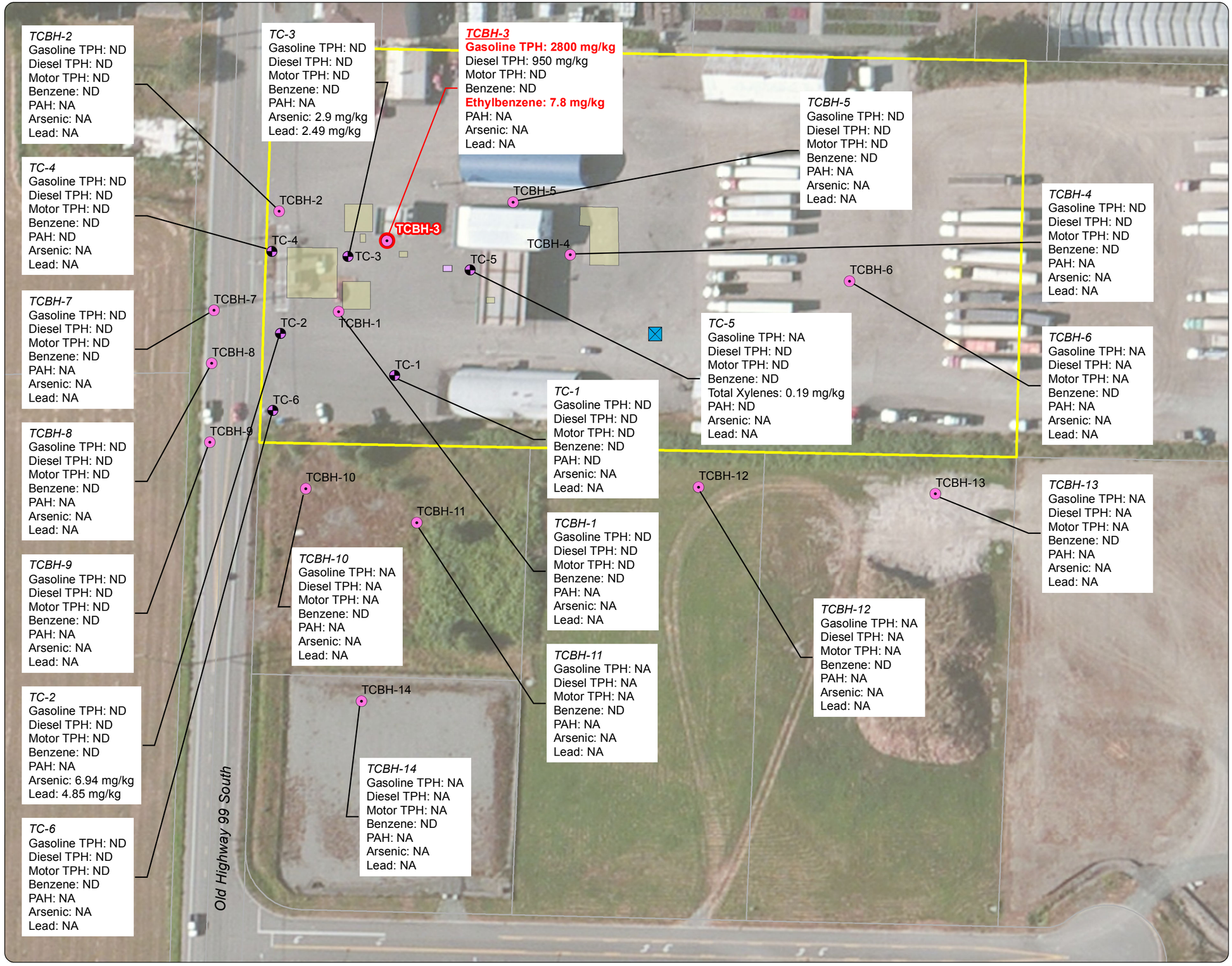

Figure 8
Soil Analytical Results

Truck City Site
Mount Vernon, Washington

Legend

MFA Investigation

- Boring
- Monitoring Well
- Catch Basin
- USTs
- Septic System
- Site Boundary
- Parcel Boundary

Notes:

Analysis Results:
NA = Not Analyzed.
ND = Not Detected.
mg/kg = Milligrams per Kilogram.
PAH = Polycyclic Aromatic Hydrocarbons.
TPH = Total Petroleum Hydrocarbons.

Results above Model Toxics Control Act (MCTA) Method A cleanup level are shown in **bold red**.

Refer to Table 1, Summary of Soil Analytical Results, for a complete summary of laboratory results.

Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc. Utilities and well positions imported from survey by Pacific Geomatic Services in July 2014.
The locations of digitized features are approximate.

Aerial Imagery Date: 2010

0 25 50
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County; well and utility positions from Pacific Geomatic Services, July 2014

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TCBH-2
Gasoline TPH: ND
Diesel TPH: ND
Motor TPH: ND
Benzene: ND
PAH: NA
Metals: NA

TC-3
Gasoline TPH: 380 ug/L
Diesel TPH: NA
Motor TPH: NA
Benzene: 1.2 ug/L
PAH: ND
Arsenic: 1.29 ug/L
Lead: ND

TCBH-3
Gasoline TPH: 1900 ug/L
Diesel TPH: 1100 ug/L
Motor TPH: ND
Benzene: 4.2 ug/L
PAH: NA
Metals: NA

TCBH-5
Gasoline TPH: ND
Diesel TPH: 210 ug/L
Motor TPH: ND
Benzene: ND
PAH: ND
Metals: NA

TC-4
Gasoline TPH: ND
Diesel TPH: ND
Motor TPH: ND
Benzene: ND
PAH: ND
Metals: NA

TCBH-4
Gasoline TPH: ND
Diesel TPH: 120 ug/L
Motor TPH: ND
Benzene: ND
PAH: NA
Metals: NA

TCBH-7
Gasoline TPH: ND
Diesel TPH: 56 ug/L
Motor TPH: ND
Benzene: ND
PAH: NA
Metals: NA

TC-5
Gasoline TPH: 800 ug/L
Diesel TPH: 360 ug/L
Motor TPH: ND
Benzene: 22 ug/L
PAH: ND
Metals: NA

TCBH-6
Gasoline TPH: NA
Diesel TPH: NA
Motor TPH: NA
Benzene: ND
PAH: NA
Metals: NA

TCBH-8
Gasoline TPH: ND
Diesel TPH: ND
Motor TPH: ND
Benzene: ND
PAH: NA
Metals: NA

TC-1
Gasoline TPH: ND
Diesel TPH: 120 ug/L
Motor TPH: ND
Benzene: ND
PAH: ND
Metals: NA

TCBH-9
Gasoline TPH: ND
Diesel TPH: ND
Motor TPH: ND
Benzene: ND
PAH: NA
Metals: NA

TCBH-13
Gasoline TPH: NA
Diesel TPH: NA
Motor TPH: NA
Benzene: ND
PAH: NA
Metals: NA

TC-2
Gasoline TPH: ND
Diesel TPH: ND
Motor TPH: ND
Benzene: ND
PAH: NA
Arsenic: 7.1 ug/L
Lead: ND

TCBH-1
Gasoline TPH: ND
Diesel TPH: 790 ug/L
Motor TPH: ND
Benzene: ND
PAH: NA
Metals: NA

TC-6
Gasoline TPH: ND
Diesel TPH: 89 ug/L
Motor TPH: ND
Benzene: ND
PAH: NA
Metals: NA

TCBH-10
Gasoline TPH: NA
Diesel TPH: NA
Motor TPH: NA
Benzene: ND
PAH: NA
Metals: NA

TCBH-2
TCBH-3
TCBH-5
TC-4
TC-3
TCBH-4
TC-5
TCBH-6
TCBH-7
TCBH-1
TC-2
TCBH-8
TC-1
TC-6
TCBH-9
TCBH-10
TCBH-11
TCBH-12
TCBH-13
TCBH-14
Old Highway 99 South

Figure 9
Groundwater Analytical Results

Truck City Site
Mount Vernon, Washington

Legend

MFA Investigation

- Boring
- Monitoring Well
- Catch Basin
- USTs
- Septic System
- Site Boundary
- Parcel Boundary

Notes:

Analysis Results:
NA = Not Analyzed.
ND = Not Detected.
PAH = Polycyclic Aromatic Hydrocarbons.
TPH = Total Petroleum Hydrocarbons.
ug/L = Micrograms per Liter.

Results above Model Toxics Control Act (MCTA) Method A cleanup level are shown in **bold red**.

Refer to Table 2, Summary of Groundwater Analytical Results, for a complete summary of laboratory results.

Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc. Utilities and well positions imported from survey by Pacific Geomatic Services in July 2014.
The locations of digitized features are approximate.

Aerial Imagery Date: 2010

0 25 50
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County; well and utility positions from Pacific Geomatic Services, July 2014

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Figure 10
Groundwater Investigation Overview

Truck City Site
Mount Vernon, Washington

Legend

Groundwater Exceedances

- Gasoline TPH
- Diesel TPH
- Benzene
- Arsenic[1]

Sample Locations

- Groundwater Exceedance
  MFA Borings/Wells:
  TCBH-1, TCBH-3, TC-2, TC-5.
- Historical Exceedance
  Historical AGI wells (1989):
  MW-1, MW-2, MW-4
- No Groundwater Exceedance Found
- Historical Monitoring Point - No Groundwater Exceedance
- Catch Basin
- USTs
- Septic System
- Site Boundary
- Parcel Boundary

Notes:

[1] Elevated Arsenic detection due to turbid sample (refer to Report).

TPH = Total Petroleum Hydrocarbons.

Aerial Imagery Date: 2010

0 30 60
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County; well and utility positions from Pacific Geomatic Services, July 2014

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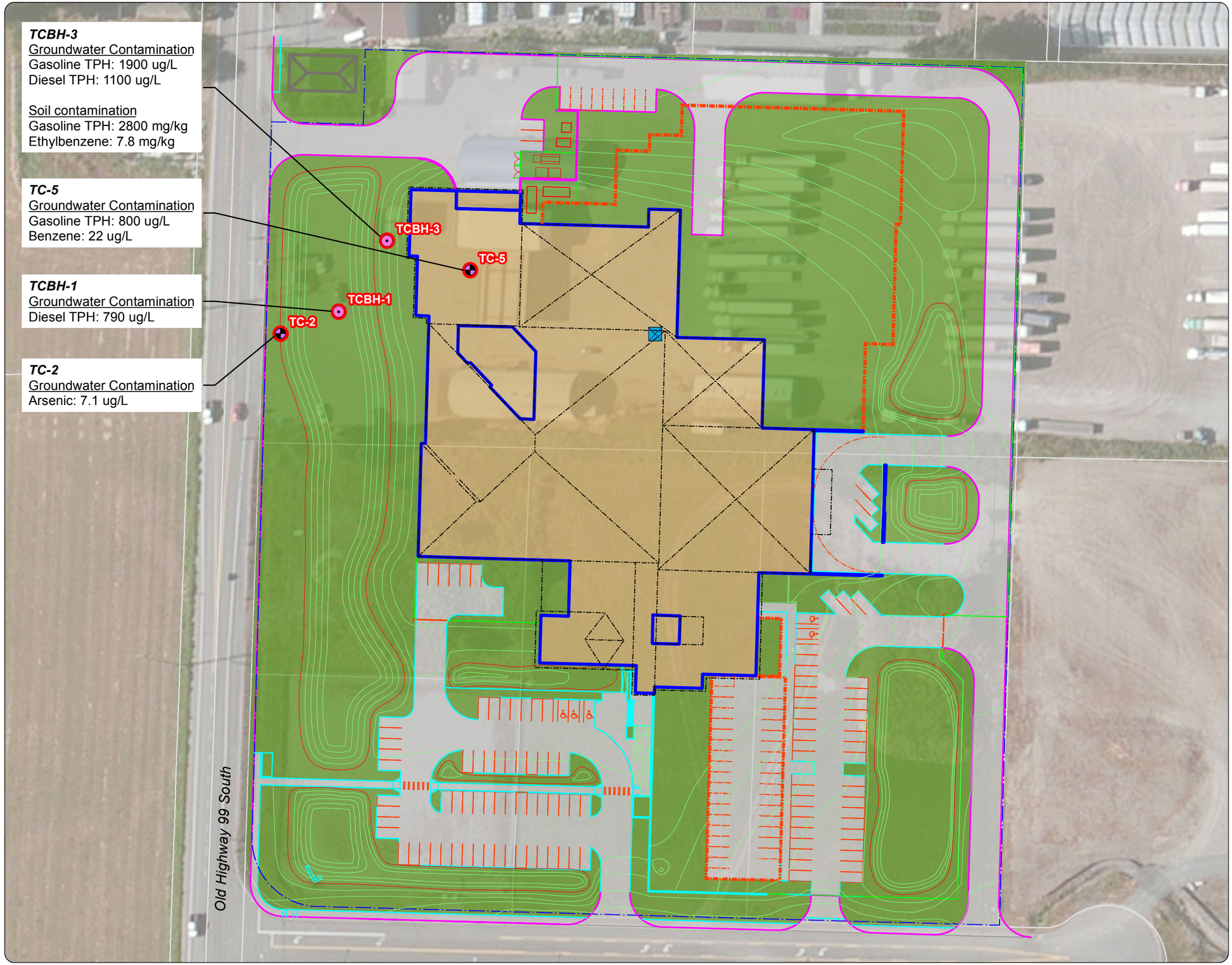

Figure 11
Proposed Skagit County Jail Site Conditions

Truck City Site
Mount Vernon, Washington

Legend

MFA Investigation

- Boring
- Monitoring Well
- Catch Basin
- Building
- Hard Surface
- Other
- Parcel Boundary

Notes:

Analysis Results:
mg/kg = Milligrams/Kilogram.
TPH = Total Petroleum Hydrocarbons.
ug/L = Micrograms per Liter.

Only results above Model Toxics Control Act (MTCA) Method A cleanup level are shown.

Refer to Table 1, Summary of Soil Analytical Results and Table 2, Summary of Groundwater Analytical Results, for a complete summary of laboratory results.

Site features were digitized from figures prepared by Materials Testing & Consulting, Inc., Associated Environmental Group, LLC, and Applied Geotechnology, Inc. Utilities and well positions imported from survey by Pacific Geomatic Services in July 2014.
The locations of digitized features are approximate.

Aerial Imagery Date: 2010

0 25 50
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; parcels obtained from Skagit County; well and utility positions from Pacific Geomatic Services, July 2014

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Figure 12
Conceptual Site Model of Potential Exposure Pathways
Truck City Site
Mount Vernon, Washington

Primary Source	Primary Release Mechanism	Secondary Sources	Secondary Release Mechanism	Point of Potential Contact	Exposure Route	Facility Receptors		
						Residential/Commercial Workers	Construction Workers	Ecological Receptors
Historical operation gasoline station / USTs / auto repair	→			Soil	Ingestion Dermal contact Inhalation (dust)	✓ ✓ ✓	✓ ✓ ✓	∅ ∅ ∅
	Leaching	Groundwater	Volatilization	Indoor air	Inhalation	✓	✓	∅
	Wastewater, drains, overland flow	Groundwater	Migration	Groundwater	Ingestion Dermal Contact Inhalation	✓ ✓ ✓	✓ ✓ ✓	∅ ∅ ∅
	Volatilization	Indoor air	⇢	Indoor air	Inhalation	✓	✓	∅

Notes:

Primary pathway →
Potential pathway ⇢
Potentially Complete exposure route ✓
Incomplete exposure route ∅
Insignificant exposure route I