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CLEANUP ACTION PLAN

AGRI-TECH AND YAKIMA STEEL FABRICATORS
6 AND 10½ EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

Submitted by:
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For:
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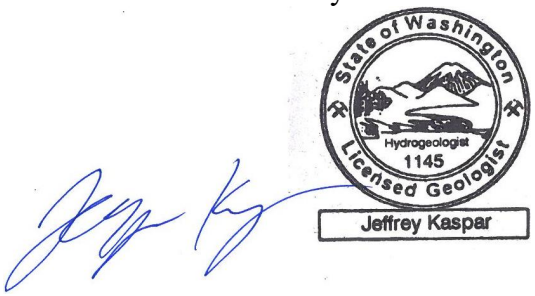

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ACRONYMS AND ABBREVIATIONS

4,4-DDD	4,4-dichlorodiphenyldichloroethane
4,4-DDE	dichlorodiphenyldichloroethene
Agreed Order	Agreed Order No. DE 6091 entered into by the Washington State Department of Ecology and Yakima Steel Fabricators, Inc. pursuant to the authority of the Washington State Model Toxics Control Act Cleanup Regulation, as established in Section 050(1) of Chapter 70.105D of the Revised Code of Washington, with an effective date of October 27, 2008.
Agri-Tech, Inc	Agri-Tech
Agri-Tech Building	the single-story warehouse building on the Agri-Tech property consisting of Yakima County Parcel No. 19133141409
ARARs	applicable or relevant and appropriate requirements
Bay Chemical	Bay Chemical Company
Bay Chemical Site	the property west-adjacent to the Site, Yakima County Tax Parcel No. 19133141010, that was previously was owned by Northern Pacific Railroad, predecessor of the current owner, BNSF Railway
bgs	below ground surface
BNSF	BNSF Railway Company
CAP	Cleanup Action Plan
cis-1,2-DCE	cis-1,2-dichloroethene
Cleanup Alternative	cleanup action alternative consisting of remedial technologies with the potential to achieve cleanup standards for each medium of concern
COCs	constituents of concern
compliance monitoring	the collection, analysis, and reporting of environmental data to determine the short- and long-term effectiveness of a cleanup action, and whether protection is being achieved in accordance with cleanup objectives
DRO	total petroleum hydrocarbons as diesel-range organics

Ecology	Washington State Department of Ecology
Farallon	Farallon Consulting, L.L.C.
FS	feasibility study
HVOCs	halogenated volatile organic compounds
Metals Source Technical Memorandum	Technical Memorandum Regarding Metals Source Evaluation, Agri-Tech and Yakima Steel Fabricators Site, Yakima Steel Fabricators, Yakima, Washington dated June 9, 2017 from Messrs. Eric Buer and Jeff Kaspar of Farallon Consulting, L.L.C. to Mr. Chris Wend of Washington State Department of Ecology
mg/kg	milligrams per kilogram
µg/l	micrograms per liter
MNA	monitored natural attenuation
MTCA	Washington State Model Toxics Control Act Cleanup Regulation
PCE	tetrachloroethene
PCULs	preliminary cleanup levels
Revised RI Report	*Revised Remedial Investigation Report, Agri-Tech & Yakima Steel Fabricators, 6 and 10½ East Washington Avenue, Yakima, Washington* dated June 10, 2004 prepared by Farallon Consulting, L.L.C.
RCW	Revised Code of Washington
RI	remedial investigation
Site	the area that includes the portions of the properties at 6 and 10½ East Washington Avenue in Yakima, Washington where constituents of concern have come to be located at concentrations exceeding cleanup levels
TCE	trichloroethene
WAC	Washington Administrative Code
Wetland Evaluation	

Technical Memorandum	Wetland Evaluation Technical Memorandum, Agri-Tech and Yakima Steel Fabricators Site, Yakima, Washington dated July 17, 2017 from Messrs. Eric Buer and Jeff Kaspar of Farallon Consulting, L.L.C. to Mr. Chris Wend of Washington State Department of Ecology
YSF	Yakima Steel Fabricators, Inc.
YSF Building	the single-story building on the YSF property consisting of Yakima County Parcel No. 19133141009

1.0 INTRODUCTION

Farallon Consulting, L.L.C. (Farallon) has prepared this Cleanup Action Plan (CAP) on behalf of Yakima Steel Fabricators, Inc. (YSF) for the YSF and Agri-Tech facilities located at 6 and 10½ East Washington Avenue in Yakima, Washington (herein referred to as the Site) (Figure 1). The Site comprises Yakima County Tax Parcel Nos. 19133141009 and 19133141409 totaling 6.24 acres of land (Figure 2). Historical operations on the Site included operation of a lime and sulfur formulating plant and operation of a fruit packing supplies and equipment company. The Site currently is operated as a steel fabrication facility. Historical operations on the Site and on the west-adjacent property resulted in the release of the constituents of concern (COCs), including metals, halogenated volatile organic compounds (HVOCs), carcinogenic polycyclic aromatic hydrocarbons, chlorinated pesticides, and chlorinated herbicides, that have contaminated Site soil and groundwater. The "site" as defined under the Washington State Model Toxics Control Act Cleanup Regulation (MTCA) comprises the portions of the Site where COCs have come to be located at concentrations exceeding their respective MTCA cleanup levels.

This CAP was prepared to satisfy Agreed Order No. DE 6091 with an effective date of October 27, 2008 (Agreed Order) entered into by the Washington State Department of Ecology (Ecology) (2008; 2016) and YSF pursuant to the authority of MTCA, as established in Section 050(1) of Chapter 70.105D of the Revised Code of Washington (RCW 70.105D),. The Agreed Order was issued in accordance with the provisions of MTCA, as established in Chapter 173-340 of the Washington Administrative Code (WAC 173-340). The Agreed Order was amended with the First Amendment to Agreed Order No. DE 6091 dated October 17, 2016, which specified additional characterization and reporting requirements for the remedial investigation (RI) for the Site, conducted by Farallon between 1997 and 2018. The RI was summarized in the *Revised Remedial Investigation Report, Agri-Tech & Yakima Steel Fabricators, 6 and $10^{1}/_{2}$ East Washington Avenue, Yakima, Washington* dated June 15, 2004 prepared by Farallon. A feasibility study (FS) was completed and summarized in the *Feasibility Study Report, Agri-Tech and Yakima Steel Fabricators, 6 and 10-1/2 East Washington Avenue, Yakima, Washington* dated February 20, 2020 prepared by Farallon.

1.1 PURPOSE

The purpose of the CAP is to document and describe the selected cleanup action in accordance with MTCA (WAC 173-340-350 through WAC 173-340-390). The purpose of the cleanup action is to protect human health and the environment and to meet the requirements for Ecology to issue a written opinion stating that no further remedial action is necessary at the Site.

1.2 ORGANIZATION

The report has been organized into the following sections:

- **Section 2, Site Description,** provides descriptions of the Site and the west-adjacent property owned by BNSF Railway Company (BNSF) and formerly leased by the Bay Chemical Company (Bay Chemical) (Bay Chemical Site), historical uses of the Site and

the Bay Chemical Site, area geology and hydrogeology, and a summary of the RI completed for the Site.

- **Section 3, Cleanup Action Alternatives,** describes the methods used to screen cleanup technologies to evaluated in the FS (Farallon 2020) and presents the cleanup action alternatives retained for further analysis and the evaluation criteria and methods used to compare the cleanup action alternatives.
- **Section 4**, **Selected Cleanup Action,** provides a description of the cleanup action; establishes cleanup standards; establishes applicable relevant and appropriate requirements (ARARs); and describes the restoration time frame and implementation schedule, compliance monitoring program, and public participation.
- **Section 5, References,** provides a list of the source materials used in preparing this CAP.
- **Section 6, Limitations,** presents Farallon's standard limitations associated with conducting the work reported herein and preparing this CAP.

2.0 SITE DESCRIPTION

This section provides descriptions of the Site and the adjacent Bay Chemical Site, historical uses of the Site and the Bay Chemical Site, area geology and hydrogeology, and a summary of the RI completed for the Site.

2.1 SITE DESCRIPTION AND HISTORICAL USAGE

The Site consists of Yakima County Parcel Nos. 19133141009 (YSF property) and 19133141409 (Agri-Tech property), together totaling 6.24 acres of land (Figure 2). Two structures are present at the Site: a single-story building on the YSF property used for steel fabrication and as business offices (YSF Building); and a single-story warehouse building on the Agri-Tech property (Agri-Tech Building). The Agri-Tech Building is leased by the operator of YSF and is used for steel fabrication. The YSF Building floor is finished with asphalt in the eastern and central portions, and a 2-inch poured concrete slab in the western third of the building. The Agri-Tech Building floor is a 2-inch poured concrete slab that extends a few feet east of the Agri-Tech Building footprint (Figure 2). The areas east and south of the YSF Building are used for storage of steel and equipment.

The Site is zoned for industrial use. Historical Site uses include the following:

- Construction and operation of a lime- and sulfur-formulating plant by Yakima Farmers Supply on the Agri-Tech property from approximately 1960 through 1971. The formulating plant was demolished between 1978 and 1982.
- Operation of a fruit-packing supplies and equipment company on the Agri-Tech property from 1982 through 1989.
- Operation of a steel-fabrication facility on the YSF property from approximately 1980 to the present.

Additional details of historical Site and adjacent property uses are provided in the *Revised Remedial Investigation Report, Agri-Tech & Yakima Steel Fabricators, 6 and 10 1/2 East Washington Avenue, Yakima, Washington* dated June 10, 2004 prepared by Farallon (2004) (Revised RI Report); and the Technical Memorandum regarding Metals Source Evaluation, Agri-Tech and Yakima Steel Fabricators Site, Yakima Steel Fabricators, Yakima, Washington dated June 9, 2017, from Messrs. Eric Buer and Jeff Kaspar of Farallon to Mr. Chris Wend of Ecology (2017a) (Metals Source Technical Memorandum). Based on historical uses and physical characteristics of the Site, four areas of investigation at the Site have been established (Figure 2):

- Area 1 includes the former Yakima Farmer Supply lime- and sulfur-processing plant and the area of the processing plant waste pit (also referred to as the Area 1 waste pit), currently located under the YSF and Agri-Tech Buildings (Figure 2).
- Area 2 consists of the central and eastern portions of the YSF property between the YSF Building and the automobile recycling facility east-adjacent to the Site. Area 2 is suspected of previously containing stockpiles of bulk lime and sulfur.

- Area 3 consists of the portion of the Site south and southwest of the YSF Building. Ecology identified Area 3 as a potential area of metals contamination due to activities historically conducted at the west-adjacent property formerly leased to Bay Chemical Company. Area 3 also includes the Site wetland buffer area.
- Area 4 consists of the topographically distinct (i.e., 3 to 5 feet below surrounding Site topography) wetland on the southern portion of the Site. Area 4 has unique environmental conditions, including seasonal standing water and saturated surface soil, and is subject to sediment criteria that do not apply to other portions of the Site.

2.2 BAY CHEMICAL SITE DESCRIPTION AND HISTORICAL USAGE

The property west-adjacent to the Site, Yakima County Parcel No. 19133141010, previously was owned by Northern Pacific Railroad, predecessor of current owner BNSF, and was leased to Bay Chemical, a manufacturer of liquid zinc sulfate, from 1963 to late 1975 or early 1976 (Figure 2). The BNSF-owned property makes up a portion of an Ecology-listed facility herein referred to as the Bay Chemical Site. Additional details regarding historical Bay Chemical zinc sulfate production practices, raw materials storage, and associated impacts on the Site are provided in the Metals Source Technical Memorandum.

According to the *Former Bay Chemical Site Remedial Investigation Report, Volume 1* dated March 1997 prepared by ERC and Pacific Groundwater Group (1997), metals associated with flue dust at the Bay Chemical Site are arsenic, antimony, cadmium, chromium, copper, lead, manganese, mercury, and zinc. These metals have been detected in soil and groundwater at the Bay Chemical Site and at the Site.

2.3 GEOLOGY AND HYDROGEOLOGY

The Area 1 ground surface, including the portion that overlies the Area 1 waste pit, is capped with asphalt between buildings. Concrete slabs are present in the western third of the YSF Building, and in the entire Agri-Tech Building (Figure 2). Subsurface stratigraphy in Area 1 comprises primarily poorly graded sand and gravel with discontinuous silt lenses to the maximum depth explored of 27 feet below ground surface (bgs). In the Area 1 waste pit, granular yellow sulfur-bearing soil was observed at a depth of approximately 2 to 3 feet bgs overlying a thick caulk-like substance ranging in color from green-gray to yellow-gray mixed with native soil observed to a maximum depth of approximately 8 feet bgs. The thick caulk-like substance was inferred to be lime and sulfur residue that was drained into the Area 1 waste pit during the period the lime- and sulfur-formulating plant was operated by Yakima Farmers Supply on the Agri-Tech property from approximately 1960 through 1971.

The Area 2 and Area 3 ground surface is hardpacked gravel. The Area 4 ground surface comprises soft organic soils that are seasonally saturated with occasional standing water (Farallon 2017b). Subsurface stratigraphy in Areas 2, 3, and 4 comprises dense, poorly graded sand and gravel with discontinuous brown to gray silt beds ranging in thickness from 2 to 5 feet to the maximum depth explored of 32.5 feet bgs in monitoring well MW-7B. Fill material previously was placed along the western portion of Area 3 to a maximum depth of 6 feet bgs as part of the cleanup action

performed at the Bay Chemical Site (Figure 3). Additional fill material, including quarry spalls, was observed intermittently in the central portion of Area 3 (grid cells B, C, D, G, and I; Figure 3) from the ground surface to depths ranging from 1.5 to 7 feet bgs.

Groundwater was encountered at the Site at depths of approximately 3 to 10 feet bgs, and flows approximately south-southeast with a gradient of between 0.003 and 0.005 foot per foot (Figure 4). Monitoring wells at the Site are installed at a shallow depth interval of 15 feet bgs or less and at a deep depth interval of 15 to 30 feet bgs within the same aquifer. Groundwater monitoring data collected from the monitoring well pair MW-7A (shallow) and MW-7B (deep) in June 2011 indicated a slight downward vertical gradient between the shallow and deep intervals of approximately 0.018 foot at this location.

Previous investigations documented in the Revised RI Report indicated that regional groundwater flow direction does not vary seasonally, and shows no significant response to seasonal irrigation, which has diminished in recent years. Quarterly monitoring performed by Farallon (2004) in 1997 and 1998 indicated that groundwater elevations fluctuate approximately 3 feet seasonally, from a low in March to a high in September. Seasonal irrigation associated with local irrigation ditches for agricultural use that had historically occurred prior to the early 2000s resulted in higher regional groundwater elevations during spring and summer seasonal conditions and lower groundwater elevations during the fall and winter seasons. Rising groundwater levels were believed to be a source of surface water present at Area 4 along with seasonal precipitation. The decline of regional irrigation practices has resulted in the wetland area shrinking over time and surface water presence diminishing to minor seasonal occurrences.

Publicly available groundwater monitoring data for the west-adjacent Bay Chemical Site indicated that the measured depth to groundwater on the western boundary of the Site ranged from approximately 4.5 to 9 feet bgs during monitoring events conducted in 2017 and 2018 (Farallon 2018a).

2.4 SUMMARY OF REMEDIAL INVESTIGATION

The RI was completed by Farallon in several phases, which included characterization of soil and groundwater between 1997 and 2018. The results for the RI are contained in the following documents:

- Revised RI Report;
- Metals Source Technical Memorandum;
- Wetland Evaluation Technical Memorandum, Agri-Tech and Yakima Steel Fabricators Site, Yakima, Washington dated July 17, 2017 from Messrs. Buer and Kaspar of Farallon to Mr. Wend of Ecology (Farallon 2017b); and
- Conceptual Site Model Technical Memorandum, Agri-Tech and Yakima Steel Fabricators Site, Yakima Steel Fabricators, Yakima Washington dated November 14, 2018 from Messrs. Buer and Kaspar of Farallon to Mr. Wend of Ecology (Farallon 2018b).

The conceptual site model (Farallon 2017b) identified the following sources to soil and groundwater contamination at the Site:

- Area 1 waste pit soil with concentrations of HVOCs and chlorinated pesticides exceeding preliminary cleanup levels (PCULs) that were acting as a source of HVOCs and chlorinated pesticides to shallow groundwater beneath the Area 1 waste pit;
- Residual shallow soil with concentrations of metals exceeding PCULs remaining beneath the YSF and Agri-Tech Buildings in Area 1 that were not remediated during the cleanup at the Bay Chemical Site;
- A shallow, localized volume of soil in Area 3 proximate to test pit I-TP3 to a depth of approximately 7 feet bgs with concentrations of total petroleum hydrocarbons as diesel-range organics (DRO) exceeding applicable cleanup levels; and
- Shallow soil in Area 3 with concentrations of metals, aldrin, and/or dieldrin exceeding applicable cleanup levels.

Arsenic, suspected to be naturally occurring, was the only constituent of potential concern detected in groundwater samples collected from Area 3 monitoring wells MW-7A and MW-7B at concentrations that exceed PCULs. Total and dissolved cadmium and zinc were detected at concentrations that exceed PCULs in Area 3 monitoring well MW-11. The source of these metals on a more-likely-than-not basis is the Bay Chemical Site. Area 4 was evaluated separately from Areas 1 through 3 in accordance with Washington State Sediment Management Standards (WAC 173-204-520), documented in the wetland evaluation (Farallon 2017b). Results from the evaluation of Area 4 indicated that Area 4 does not qualify as a site.

Farallon used historical Site soil and groundwater data collected through 2011 to evaluate the following potential routes of migration for COCs at the Site:

- Leaching from soil to groundwater;
- Lateral and vertical transport in groundwater;
- Discharge from groundwater to surface water; and
- Volatilization from soil gas, soil, and groundwater to ambient air.

Results from Farallon's evaluation indicated that HVOC leaching from Area 1 waste pit soil to groundwater is occurring at a slow rate, which has resulted in a limited area of shallow groundwater with concentrations of HVOCs exceeding PCULs beneath the YSF Building and, on a more-likely-than-not basis, the Agri-Tech Building. Results from groundwater monitoring at Area 1 wells WDOE-6, MW-2, and MW-6 indicated that reductive dechlorination of tetrachloroethene (PCE) to vinyl chloride is occurring in groundwater proximate to and down-gradient of the Area 1 waste pit. Low concentrations of HVOCs in shallow groundwater at the Area 1 waste pit that are not fully degraded prior to transport along the groundwater flow path to the south are diluted and dispersed, and in the case of cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride, potentially biodegraded aerobically beyond the anaerobic environment of the waste pit, prior to commingling with the dissolved-phase HVOC groundwater plume migrating onto the

Site from the up-gradient Yakima Railroad Area over 2 miles up-gradient of the Site. The up-gradient Yakima Railroad Area groundwater plume is suspected to be the source of HVOCs in groundwater that are periodically detected in deep monitoring wells MW-1 and MW-7B and potentially deep monitoring wells MW-3 and MW-4 (Figure 4). Reported concentrations of PCE in groundwater as high as 13 micrograms per liter (µg/l) were reported for up-gradient wells at the Cameron Yakima Site, approximately 5,000 feet up-gradient of the Site, in 2017 (Ecology 2018a).

Chlorinated pesticides detected in Area 1 waste pit soil are expected to attenuate slowly and continue to have the potential to leach to shallow groundwater based on historical monitoring results. Historical monitoring results have indicated that pesticide concentrations in Area 1 are attenuating and do not appear to extend beyond the southern boundary of the YSF and Agri-Tech Buildings (Farallon 2018a). Chlorinated pesticides were not reported at concentrations exceeding PCULs in groundwater in Areas 2 through 4.

The limited area of DRO exceeding the applicable cleanup level in soil at test pit TP3 in Area 3 soil between depths of approximately 3 and 7 feet bgs is expected to remain stable and continue to slowly biodegrade over time (Farallon 2018a). The potential for DRO to leach to groundwater was not assessed. However, groundwater sampling at monitoring well MW-5 was conducted during the RI and DRO was not detected in groundwater at that location cross-gradient of the DRO source in soil. The compacted gravel surface cap in Area 3 reduces the potential for DRO to leach to groundwater.

Metals, aldrin, and/or dieldrin were detected at concentrations slightly exceeding applicable cleanup levels in shallow soil at a limited number of locations in Area 3 (Farallon 2018a), although Area 3 groundwater monitoring analytical results do not indicate that metals are leaching into groundwater. Aldrin and/or dieldrin in Area 3 soil are expected to continue to degrade and attenuate over time; metals detected in Area 3 soil are expected to remain in-situ into the foreseeable future. Based on historical groundwater monitoring analytical results, metals in Area 3 soil are not expected to migrate to groundwater at concentrations exceeding cleanup levels. The compacted gravel surface cap in Area 3 also reduces the potential for metals and chlorinated pesticides to leach to groundwater.

Historical transport of metals in groundwater migrating onto the Site from the west-adjacent Bay Chemical Site represents a potential for groundwater to impact surface water. The evaluation of the wetland area in Area 4 confirmed the presence of the metals manganese, cadmium, and zinc in porewater and sediment (Farallon 2017b). However, as noted in Section 2.3, surface water occurrence at the Site has diminished with the cessation of regional irrigation and groundwater elevations have decreased. Surface water occurrence at the Site has more recently been associated with wet seasonal conditions in the winter and spring, with precipitation being a primary source of surface water. The influx of precipitation and runoff is more likely to result in temporary infiltration of standing surface water, resulting in downward migration of metals in soil and sediment to groundwater.

3.0 CLEANUP ACTION ALTERNATIVES

This section describes the methods used to screen cleanup technologies evaluated in the FS (Farallon 2020), presents the cleanup action alternatives retained for further analysis, and describes the evaluation criteria and methods used to compare the cleanup action alternatives.

3.1 INITIAL SCREENING OF CLEANUP TECHNOLOGIES

As part of the FS, Farallon (2020) performed a preliminary screening of potential remediation technologies typically applied to sites contaminated with the same or comparable COCs, to eliminate technologies that did not meet the minimum requirements of implementability, effectiveness, and cost, and to identify technologies that would be most-favorable for application, considering current and potential future conditions at the Site. A total of 13 cleanup technologies were screened during the FS. Each cleanup technology was evaluated based on the media and COCs with which the cleanup technology would be effective and the following criteria:

- Protectiveness;
- Permanence;
- Effectiveness;
- Implementability; and
- Cost.

Each cleanup technology was assigned a score for each of the above criteria and the combined scores were used to rank the cleanup technologies. The highest scoring cleanup technologies were retained and used to develop four Site-wide cleanup action alternatives for further evaluation.

3.2 CLEANUP ACTION ALTERNATIVES

Four Site-wide cleanup alternatives were developed and evaluated in the FS (Farallon 2020) using a combination of the cleanup technologies that were retained after the technology screening process. The four Site-wide cleanup alternatives evaluated in the FS included:

- Cleanup Alternative 1 – No action;
- Cleanup Alternative 2 – Limited source removal, institutional and engineered controls, and monitored natural attenuation (MNA):
- Cleanup Alternative 3 – In-situ chemical reduction, limited source removal, institutional and engineered controls, and MNA; and
- Cleanup Alternative 4 – Complete source removal and MNA.

3.3 DETAILED EVALUATION OF ALTERNATIVES

The cleanup alternatives developed during the FS were evaluated against the threshold criteria specified in WAC 173-340-360(2)(a):

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

In addition to meeting the threshold criteria, cleanup actions under MTCA must meet the following additional requirements specified in WAC 173-340-360(2)(b):

- Provide for a reasonable restoration time frame based on the factors provided in WAC 173-340-360(4)(b);
- Use permanent solutions to the maximum extent practicable based on the criteria defined in WAC 173-340-360(3)(f); and
- Consider public concerns raised during public comment on the CAP (WAC 173-340-600).

Each cleanup alternative was scored and weighted based on the above criteria. The detailed evaluation of Cleanup Alternatives 1 through 4 using the above criteria, including scoring and a disproportionate cost analysis, are provided in the FS (Farallon 2020). Based on the results of the evaluation of each cleanup alternative and the disproportionate cost analysis, Cleanup Alternative 2 – limited source removal, institutional and engineered controls, and MNA was selected as the preferred cleanup alternative for the Site.

4.0 SELECTED CLEANUP ACTION

This section provides a description of the cleanup action; establishes cleanup standards for each medium of concern; establishes ARARs; and describes the restoration timeframe, compliance monitoring program, implementation schedule, and public participation.

4.1 DESCRIPTION OF CLEANUP ACTION

The cleanup action includes limited source removal of soil in select portions of Area 3 where COCs exceed cleanup levels established in Section 4.2.3, Cleanup Levels; use of engineered controls to cap and eliminate direct contact with shallow soil contamination at Areas 1 and 3, and to limit surface water infiltration through contaminated soil; compliance groundwater sampling to monitor natural attenuation of HVOCs and pesticides; and institutional controls to protect ecological and human receptors from exposure to COCs remaining in shallow soil and groundwater (Figure 5). Farallon has requested a variance for four locations, including G-TP1, G-TP-2, G-TP3, and N-TP1, which are inside the Area 4 buffer and have reported concentrations of metals and/or dieldrin that exceed their respective cleanup levels but do not exceed soil concentrations for priority contaminants of ecological concern for industrial sites (WAC 173-340-900, Table 749-2). No action will be taken in Areas 2 and 4.

Limited source excavation, installation of an asphalt surface as an engineered barrier in Area 3, and sealing of the existing asphalt surface in Area 1 would limit potential exposure pathways and minimize risk to human health and environment. Based on historical groundwater measurements, PCE and trichloroethene (TCE) concentrations in groundwater collected from monitoring well WDOE-6 have declined by over 90 percent in the past 20 years. Additional attenuation of parent HVOCs in the Area 1 waste pit over the next 15 years is expected to reduce concentrations in groundwater sufficiently to meet cleanup levels. Concentrations of HVOC degradation products, including cis-1,2-DCE and vinyl chloride in groundwater, are expected to decline with reductions in the parent HVOCs.

Engineered controls would include the existing building concrete floor slabs and surrounding impervious asphalt surfaces, and a new asphalt cap constructed in Area 3 to prevent exposure to residual soil with concentrations of metals exceeding cleanup levels (Figure 5). Institutional controls would include an environmental covenant citing where residual soil contamination exists, maintenance requirements for the capped areas, and restricting use of shallow groundwater. The environmental covenant may also include mitigation measure requirements for addressing vapor intrusion, if applicable.

4.2 CLEANUP STANDARDS

As defined in WAC 173-340-700, cleanup standards include establishing cleanup levels and the points of compliance at which the cleanup levels are to be attained. The cleanup standards for the Site have been established in accordance with WAC 173-340-700 through 173-340-760 to be protective of human health and the environment.

4.2.1 Media of Concern

Soil and groundwater are media of concern on the Site. Results from sampling of shallow groundwater at monitoring well MW-11, proximate to Area 4, indicated that surface water, when present, may be an affected media, and therefore has been retained as a medium of concern, but has not been confirmed as such. Soil gas and indoor air also have been retained as media of concern, although neither were evaluated during the RI work due to the absence of regulatory criteria requiring evaluation of these media or associated migration or exposure pathways at the time the RI was completed.

4.2.2 Constituents of Concern

The COCs include the constituents of potential concern that have been detected in one or more Site media at concentrations exceeding PCULs or are suspected to exceed PCULs for pathways that have not been fully evaluated (i.e., surface water, soil gas, and/or indoor air) and will require cleanup. COCs are identified below by medium of concern.

4.2.2.1 Soil

The HVOCs PCE, TCE, cis 1,2-DCE, and 1,2-dichloropropane; the chlorinated pesticides aldrin and dieldrin; DRO; and the metals cadmium, copper, lead, mercury, and zinc have been identified as COCs for soil.

4.2.2.2 Groundwater

The HVOCs PCE, TCE, cis-1,2-DCE, vinyl chloride, and 1,2-dichloropropane; and the chlorinated pesticides 4,4-dichlorodiphenyldichloroethane (4,4-DDD), 4,4-dichlorodiphenyldichloroethene (4,4-DDE), and dieldrin have been identified as COCs for groundwater. Metals have not been retained as COCs for groundwater based on historical groundwater analytical data (Farallon 2020).

4.2.2.3 Surface Water

The metals arsenic, cadmium, copper, lead, manganese, mercury, and zinc have been identified as COCs for Area 4 surface water (when present) based on groundwater analytical results from Bay Chemical monitoring wells located near Area 4 and information regarding historical metals associated with Bay Chemical flue dust (Farallon 2020).

4.2.2.4 Soil Gas and Indoor Air

The HVOCs PCE, TCE, and vinyl chloride have been identified as COCs for soil gas and indoor air based on historical soil and groundwater data from the Area 1 waste pit (Farallon 2020).

4.2.3 Cleanup Levels

The cleanup levels are the concentrations of COCs that are to be met for each medium of concern at the points of compliance defined for the Site. PCULs were based on MTCA standard formula

values[1] for industrial properties, where appropriate; lower values such as the concentrations presented in MTCA Table 749-2, *Priority Contaminants of Ecological Concern for Sites that Qualify for the Simplified Terrestrial Ecological Evaluation Procedure*, were selected where warranted according to the exposure assessment presented in the conceptual site model (Farallon 2018b).

4.2.3.1 Soil

The selected cleanup levels for COCs in soil at the Site are:

- HVOCs
  - 0.05 milligrams per kilogram (mg/kg) for PCE;
  - 0.025 mg/kg for TCE;
  - 0.078 mg/kg for cis-1,2-DCE;
  - 0.025 mg/kg for 1,2-dichloropropane;
- Chlorinated pesticides
  - 0.34 mg/kg for 4,4-DDD;
  - 0.45 mg/kg for 4,4-DDE;
  - 0.0028 mg/kg for dieldrin;
- Total petroleum hydrocarbons
  - 2,000 mg/kg for DRO;
- Metals
  - 0.69 mg/kg for cadmium;
  - 284 mg/kg for copper;
  - 220 mg/kg for lead;
  - 2.09 mg/kg for mercury; and
  - 570 mg/kg for zinc.

[1] As of November 14, 2018.

4.2.3.2 Groundwater

The selected cleanup levels for COCs in groundwater at the Site are:

- Volatile organic compounds
  - 5.0 µg/l for PCE;
  - 5.0 µg/l for TCE;
  - 16 µg/l for cis-1,2-DCE;
  - 0.20 µg/l for vinyl chloride;
  - 1.22 µg/l for 1,2-dichloropropane;
- Chlorinated pesticides
  - 0.36 µg/l for 4,4-DDD;
  - 0.26 µg/l for 4,4-DDE; and
  - 0.0055 µg/l for dieldrin.

4.2.3.3 Surface Water

The selected cleanup levels for COCs in surface water at the Site are as follows:

- Metals
  - 150 µg/l for arsenic;
  - 0.25 µg/l for cadmium;
  - 9.0 µg/l for copper;
  - 2.5 µg/l for lead;
  - 0.012 µg/l for mercury; and
  - 100 µg/l for zinc.

4.2.3.4 Indoor Air

The selected cleanup levels for COCs in indoor air at the Site are as follows:

- 9.62 micrograms per cubic meter for PCE;
- 0.37 micrograms per cubic meter for TCE; and
- 0.28 micrograms per cubic meter for vinyl chloride.

4.2.4 Points of Compliance

The point(s) of compliance are defined in WAC 173-340-200 as the location(s) where cleanup levels established in accordance with WAC 173-340-720 through 173-340-760 will be attained. The points of compliance for the Site were established in accordance with WAC 173-340-740(6) and 173-340-7490 for soil, and WAC 173-340-720(8) for groundwater.

4.2.4.1 Soil

The point of compliance for soil for the Site was established to be protective of the direct contact, groundwater, and vapor intrusion exposure pathways and terrestrial ecological receptors. Use of the standard point of compliance for soil throughout the Site is not possible because of the shallow localized areas of metals, aldrin, and/or dieldrin that will remain in soil following completion of the limited source removal excavations during implementation of the cleanup action.

A conditional point of compliance was established for soil that will remain in-situ at the bottom of the proposed engineered control (engineered barrier) after implementation of the cleanup action. For soil that will be excavated as part of the cleanup action, the conditional point of compliance was set at the bottom of the biologically active zone for sites with institutional controls (a depth of 6 feet bgs), in compliance with WAC 173-340-7490(4)(a). Farallon has requested a variance for four sample locations inside the Area 4 buffer, including G-TP1, G-TP-2, G-TP3, and N-TP1, with detections of metals and/or dieldrin that exceed their cleanup levels (Farallon 2020).

The disproportionate cost analysis completed in the FS (Farallon 2020) supports and confirms the use of a conditional point of compliance at the Site because the vast majority of the Site will be covered with an engineered barrier of concrete and/or asphalt preventing direct contact with residual contaminated soil. All remaining contamination in soil will be contained within the Site boundaries. The conditional point of compliance for soil will be managed by recording an environmental covenant on the property deed.

4.2.4.2 Groundwater

The standard point of compliance for groundwater is defined as the uppermost level of the saturated zone extending vertically to the lowest depth that potentially could be impacted by the COCs throughout the Site (WAC 173-340-720[8]).

Where it can be demonstrated under WAC 173-340-350 through 173-340-390 that it is not practicable to meet the cleanup level throughout the Site within a reasonable restoration time frame, a conditional point of compliance may be approved by Ecology. The cleanup action includes a restriction on groundwater use (via an environmental covenant). The conditional points of compliance have been set as close as practicable to sources of hazardous substances, including the Area 1 waste pit. Groundwater monitoring wells that will be used as conditional points of compliance are existing monitoring wells MW-2, MW-4, and MW-7A, and new monitoring wells MW-8 and MW-9, which will be installed down-gradient of the Area 1 waste pit (Figure 5).

4.3 REGULATORY FRAMEWORK

This CAP was developed in accordance with WAC 173-340-380. Applicable permits, such as clearing and grading permits, associated with the limited source removal and installation of the

engineered barrier will be obtained from the appropriate regulatory agencies. The environmental covenant will be recorded to the deed for the Site.

Soil removed as a part of limited source removal activities that contain COCs at concentrations exceeding cleanup levels established for the Site will be disposed of at Subtitle C and D landfills, as applicable, in accordance with the Washington State Dangerous Waste Regulation (WAC 173-303).

4.3.1 Preparatory Actions

The following activities will be conducted prior to initiation of the cleanup action:

- Evaluation of the soil gas to indoor air pathway through subslab soil gas sampling in the Agri-Tech Building.
- An additional round of groundwater monitoring at the Site to assess current concentrations and serve as a baseline groundwater monitoring event prior to implementing the cleanup action.
- Preparation of a Compliance Monitoring Plan and a Sampling and Analysis Plan for performance, protection, and confirmation monitoring per WAC 173-340-410 for the cleanup actions performed.
- Preparation of an Environmental Media Management Plan to govern the handling of contaminated environmental media during cleanup action activities and future redevelopment or utility work, as necessary, and general worker protection. The Environmental Media Management Plan will include a Sampling and Analysis Plan developed per WAC 173-340-810.

If concentrations of COCs in subslab soil gas at the Agri-Tech Building exceed preliminary screening levels, measures could be implemented to mitigate the soil gas to indoor air exposure pathway or indoor air may be directly evaluated to assess whether mitigation measures are necessary. Mitigation measures may comprise active measures such as subslab depressurization, or passive measures such as venting. Soil gas to indoor air mitigation measures, if confirmed to be necessary, would be documented in an addendum to the CAP to be prepared for the Site unless more immediate actions are required as an interim action.

Groundwater monitoring has not been performed at the Site since 2011. Proposed monitoring wells MW-8 and MW-9 (Figure 5) will be installed prior to conducting a baseline groundwater monitoring event at the Site. Monitoring wells MW-8 and MW-9 will be located down-gradient of the Area 1 waste pit as close as practicable to the YSF Building southern boundary.

4.3.2 Limited Source Removal

Prior to initiating the cleanup action, the necessary permits will be obtained, including but not limited to a clearing and grading permit, associated with planned excavation activities. A Site access agreement will be negotiated with the current operator of the YSF business prior to mobilization and preparing the Site for the cleanup action. Once the access agreement is finalized,

materials and equipment in areas subject to cleanup will be relocated, and erosion- and runoff-control measures will be implemented as needed prior to excavation.

Soil with COC concentrations exceeding cleanup levels will be excavated and removed from the Site. Select portions of Area 3 will be excavated to depths ranging from 3 to 6 feet bgs (Figure 5). A 1:1 slope to excavation sidewalls is assumed for each remedial excavation area. No shoring is anticipated for the shallow soil excavation activities.

Excavated soil containing COCs at concentrations exceeding cleanup levels will be disposed of at a Subtitle C or D landfill and/or an approved facility authorized to accept metals- and/or petroleum-contaminated soil. For the purposes of this CAP, it was assumed that approximately 450 tons of soil will be excavated, transported, and disposed of at a Subtitle C landfill, and approximately 3,100 tons of soil will be disposed of at a Subtitle D landfill.

Backfill material will be imported and compacted prior to restoring the ground surface to match the surrounding grade in preparation of placement of an asphalt cap.

4.3.3 Engineered Controls

The entirety of Area 3 will be paved, excluding the Area 4 buffer (approximately 84,000 square feet), with approximately 4 inches of asphalt to provide a physical engineered barrier to eliminate direct contact with residual soil with concentrations of COCs that exceed cleanup levels, and to minimize surface water infiltration.

The existing 85,000-square-foot asphalt-paved area in Area 1 will be sealed to eliminate direct contact with residual soil with concentrations of COCs that exceed cleanup levels, and to minimize surface water infiltration.

4.3.4 Monitored Natural Attenuation

Semiannual groundwater monitoring events will be conducted for the first year, and annual groundwater monitoring events will be conducted for Years 2 through 5. Biennial groundwater monitoring events will be conducted for Years 6 through 15. Wells would be monitored for indicator COCs and natural attenuation geochemical parameters. The environmental covenant will reference and require implementation of a Compliance Monitoring Plan.

4.3.5 Institutional Controls.

Institutional controls will be implemented per WAC 173-340-440, and will include an environmental covenant recorded on the property deed. The environmental covenant will include the following:

- A Compliance Monitoring Plan and an associated Sampling and Analysis Plan for performance, protection, and confirmation monitoring per WAC 173-340-410;
- Locations of all media of concern that exceed the cleanup levels established for the Site;
- Restrictions on disturbing or excavating contaminated soil to prevent direct contact and inhalation exposure;

- Restrictions on use and/or contact with shallow groundwater;
- Restrictions on contact with surface water in Area 4 (when present);
- Stipulated requirements for inspections and maintenance of the engineered barrier and asphalt cap at an 18-month frequency for 5 years; and
- Maintenance of vapor intrusion mitigation measures, if required.

4.3.6 Reporting

Annual progress reports will be prepared documenting cleanup action activities completed to date and those that are still in the planning phase, and summarizing compliance groundwater monitoring results.

4.4 APPLICABLE, RELEVANT, AND APPROPRIATE REQUIREMENTS

The cleanup action will be conducted in accordance with MTCA under the Agreed Order. The primary ARARs relating to the cleanup action include:

- MTCA, RCW 70.105D;
- MTCA Cleanup Regulations, WAC 173-340;
- Washington State Solid Waste Management Laws and Regulations, RCW 70.95, WAC 173-351, and WAC 173-304;
- Dangerous Waste Regulations, WAC 173-303;
- Guidance for Remediation of Petroleum Contaminated Sites (Ecology 2011);
- Water Quality Standards for Surface Waters of the State of Washington, WAC 173-201A;
- Protection of Upper Aquifer Zones, WAC 173-154; and
- The Yakima County Critical Areas Ordinance, Title 16C of the Yakima County Code.

These primary ARARs are anticipated to be the most applicable to the cleanup action because they provide the framework for the cleanup action, including applicable and relevant regulatory guidelines, cleanup standards, waste disposal criteria, references for additional ARARs, and standards for documentation of the cleanup action.

Other applicable ARARs and guidance documents for cleanup of the Site may include:

- Occupational Safety and Health Act, Part 1910 of Title 29 of the Code of Federal Regulations;
- Washington State General Occupational Health Standards, WAC 296-62;
- Safety Standards for Construction Work, WAC 296-155;
- Accreditation of Environmental Laboratories, WAC 173-50.
- Minimum Standards for Construction and Maintenance of Wells, WAC 173-160;

- The Underground Injection Control Program, WAC 173-218; and
- Applicable local permits and ordinances required by the City of Yakima Municipal Code.

All necessary state and local permits will be obtained before implementing the cleanup action.

4.5 RESTORATION TIME FRAME AND IMPLEMENTATION SCHEDULE

Groundwater cleanup standards are expected to be attained within approximately 15 years of completion of source area excavations. Achievement of cleanup standards for chlorinated pesticides and HVOCs in soil outside the source area excavations will be monitored as natural attenuation processes occur in Area 1. Soil with COCs that exceed cleanup levels established herein that is not directly excavated will be contained within the boundaries of the property comprising the Site. The conditional point of compliance for soil and groundwater would be managed by recording an environmental covenant on the property deed. The restoration time frame is considered reasonable under MTCA, as additional protective controls, inspections, and monitoring will be employed, no off-Site effects of COCs from source areas at the Site have been identified, and cleanup levels for shallow groundwater will be attained in a reasonable restoration time frame.

The active excavation elements of the cleanup action will be implemented over the period of approximately 1 month. The environmental covenant recorded on the property deed will be developed over the course of up to 6 months, and long-term institutional and engineered controls would be implemented and maintained until cleanup levels have been demonstrated to have been achieved. Monitoring, inspections, and maintenance activities are assumed to be completed in Year 5.

4.6 COMPLIANCE MONITORING

Compliance monitoring will be conducted during excavation in accordance with a Compliance Monitoring Plan, as specified in WAC 173-340-410, which will include protection, performance, and confirmation soil sampling. The post-remediation Groundwater Monitoring Plan will include sampling of groundwater monitoring wells semiannually for 1 year, annually for 4 years through Year 5, and biennially for Years 6 through 15 following completion of the source area excavations (Figure 5).

4.7 PUBLIC PARTICIPATION

The public will be notified of the cleanup action in accordance with MTCA (WAC 173-340-600). Public comments will be considered and addressed by Ecology prior to implementation of the cleanup action.

5.0 REFERENCES

ERC and Pacific Groundwater Group. 1997. *Former Bay Chemical Site Remedial Investigation Report, Volume 1*. March.

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———. 2018a. *Yakima Railroad Area, PCE Contamination, Groundwater Quality Performance Monitoring Data Summary 2017*. Toxics Cleanup Program. Publication No. 18-03-027. July.

6.0 LIMITATIONS

6.1 GENERAL LIMITATIONS

The conclusions contained in this report/assessment are based on professional opinions with regard to the subject matter. These opinions have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location. The conclusions contained herein are subject to the following inherent limitations:

- **Accuracy of Information**. Farallon obtained, reviewed, and evaluated certain information used in this report/assessment from sources that were believed to be reliable. Farallon's conclusions, opinions, and recommendations are based in part on such information. Farallon's services did not include verification of its accuracy or authenticity. Should the information upon which Farallon relied prove to be inaccurate or unreliable, Farallon reserves the right to amend or revise its conclusions, opinions, and/or recommendations.

Reconnaissance and/or Characterization. Farallon performed a reconnaissance and/or characterization of the Site that is the subject of this report/assessment to document current conditions. Farallon focused on areas deemed more likely to exhibit hazardous materials conditions. Contamination may exist in other areas of the Site that were not investigated or were inaccessible. Site activities beyond Farallon's control could change at any time after the completion of this report/assessment.

For the foregoing reasons, Farallon cannot and does not warrant or guarantee that the Site is free of hazardous or potentially hazardous substances or conditions, or that latent or undiscovered conditions will not become evident in the future. Farallon's observations, findings, and opinions can be considered valid only as of the date of the report.

This report/assessment has been prepared in accordance with the contract for services between Farallon and Yakima Steel Fabricators, Inc. and currently accepted industry standards. No other warranties, representations, or certifications are made.

6.2 LIMITATION ON RELIANCE BY THIRD PARTIES

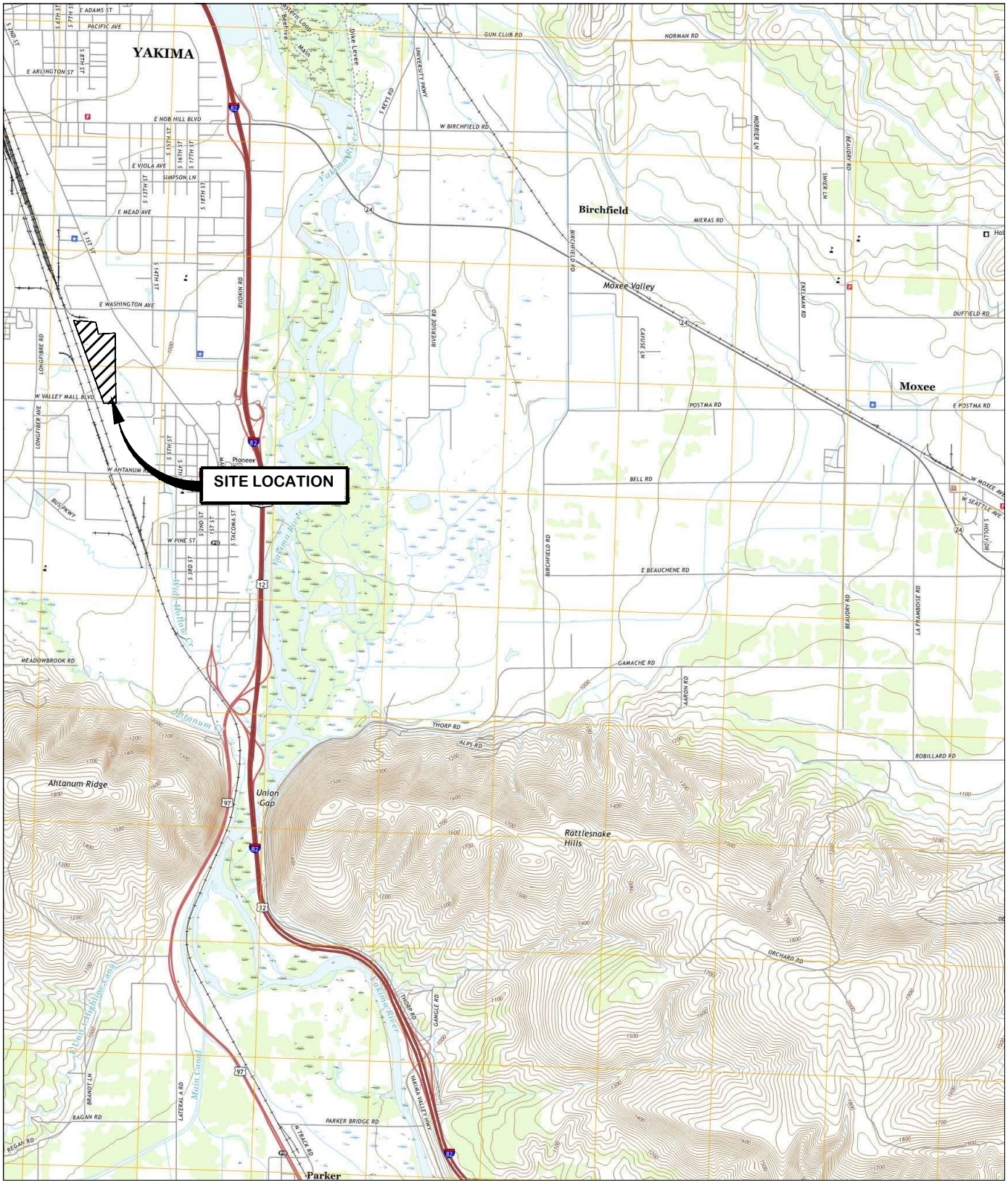
Reliance by third parties is prohibited. This report/assessment has been prepared for the exclusive use of Yakima Steel Fabricators, Inc. to address the unique needs of Yakima Steel Fabricators, Inc. at the Yakima Steel Site at a specific point in time.

This is not a general grant of reliance. No one other than Yakima Steel Fabricators, Inc. may rely on this report unless Farallon agrees in advance to such reliance in writing. Any unauthorized use, interpretation, or reliance on this report/assessment is at the sole risk of that party and Farallon will have no liability for such unauthorized use, interpretation, or reliance.

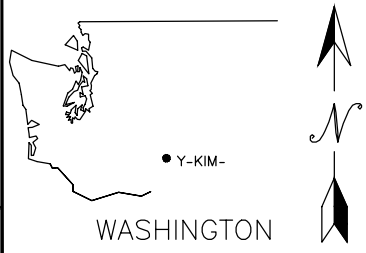
FIGURES

CLEANUP ACTION PLAN
AGRI-TECH AND YAKIMA STEEL FABRICATORS
6 AND 10½ EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

Farallon PN: 765-001



R= =R=NC=: 7.5 MINUT= USGS QUADRANGL= YAKIMA =AST, WASHINGTON. DAT=D 03-11-2020



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Oakland | Folsom | Irvine

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FIGURE 1

SITE VICINITY MAP
AGRI-TECH AND YAKIMA STEEL FABRICATORS
6 & 10 ½ EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

FARALLON PN: 765-001

Drawn By: NM | Checked By: JM | Date: 5/7/2020 | Disk Reference: 765001A

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LEGEND

- AREA BOUNDARY
- SITE BOUNDARY
- TAX PARCEL BOUNDARY
- FENCE
- RAILROAD
- BAY CHEMICAL CLEANUP AREA
- APPROXIMATE BOUNDARY OF FORMER YAKIMA FARMERS SUPPLY WASTE PIT
- AREA = 1 — FORMER YAKIMA FARMERS SUPPLY WASTE PIT LOCATION
- AREA = 2 — FORMER YAKIMA FARMER SUPPLY LIME AND SULFUR STOCKPILE LOCATIONS
- AREA = 3 — YAKIMA STEEL STORAGE YARD AND WETLAND AREA
- AREA = 4 — FORMER POND / CURRENT WETLANDS AREA
- EXISTING CONCRETE SLAB
- EXISTING ASPHALT SURFACE
- 75' WETLAND BUFFER

- MW-7 — SHALLOW MONITORING WELL INSTALLED BY FARALLON (2002)
- MW-7B — DEEP MONITORING WELL INSTALLED BY FARALLON (2002)
- MW-2 — SHALLOW MONITORING WELL INSTALLED BY AGRA EARTH & ENVIRONMENTAL, INC. (1997)
- MW-4 — DEEP MONITORING WELL INSTALLED BY AGRA EARTH & ENVIRONMENTAL, INC. (1997)
- WDOE-6 — MONITORING WELL INSTALLED BY ECOLOGY (1992)
- MW-1 — BAY CHEMICAL MONITORING WELL (2009)
- MW-5 — DECOMMISSIONED MONITORING WELL

NOTE:

1. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION

FORMER BAY CHEMICAL FLUE DUST STOCKPILE AREA

FORMER BAY CHEMICAL SLUDGE SETTLING POND AREA

PARCEL # 19133141010
BAY CHEMICAL SITE

PARCEL # 19133141408

PARCEL # 19133141409

ASPHALT

- AREA 1 -

MW-10

ASPHALT

OFFICES

FABRICATION AREA

YAKIMA STEEL FABRICATORS BUILDING

WASTE PIT

CONCRETE

AGRI-TECH BUILDING
(FORMER LIME SULFUR FORMULATING PLANT LOCATION)

CONCRETE

MW-1

WDOE-6

EAST WASHINGTON AVENUE

BUILDING
(FORMER YAKIMA FARMERS SUPPLY MAIN WAREHOUSE)

PARCEL # 19133141005

- ASPHALT -

(FORMER YAKIMA FARMERS SUPPLY LEASED WAREHOUSE)

PARCEL # 19133141011
BUILDING

- ASPHALT -

BNSF RAILROAD SPUR

PARCEL # 19133114003

MW-5

- AREA 3 -

CANOPY

FABRICATION AND LOADING AREA

MW-6

MW-2

ASPHALT

STEEL STORAGE AREA

- AREA 2 -

MW-11

- DITCH -

75' WETLAND BUFFER

MATERIALS STORAGE AREA

- GRAVEL -

- AREA 4 -

FORMER POND / CURRENT WETLANDS AREA

OLD BARB WIRE FENCE

PARCEL # 19133141009

- GRAVEL -

- GRAVEL -

ROAD

MW-4

MW-3

- DITCH -

- DITCH -

PARCEL # 19133232408

PARCEL # 19133232433

CASCADE AUTO RECYCLING

PARCEL # 19133141406

PARCEL # 19133233009

0 100

APPROXIMATE SCALE IN FEET

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FIGURE 2

SITE PLAN AND TAX PARCEL LOCATIONS
AGRI-TECH AND YAKIMA STEEL FABRICATORS
6 & 10 ½ EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

FARALLON PN: 765-001

Drawn By: LT | Checked By: EB | Date: 5/7/2019 | Disk Reference: 765001a

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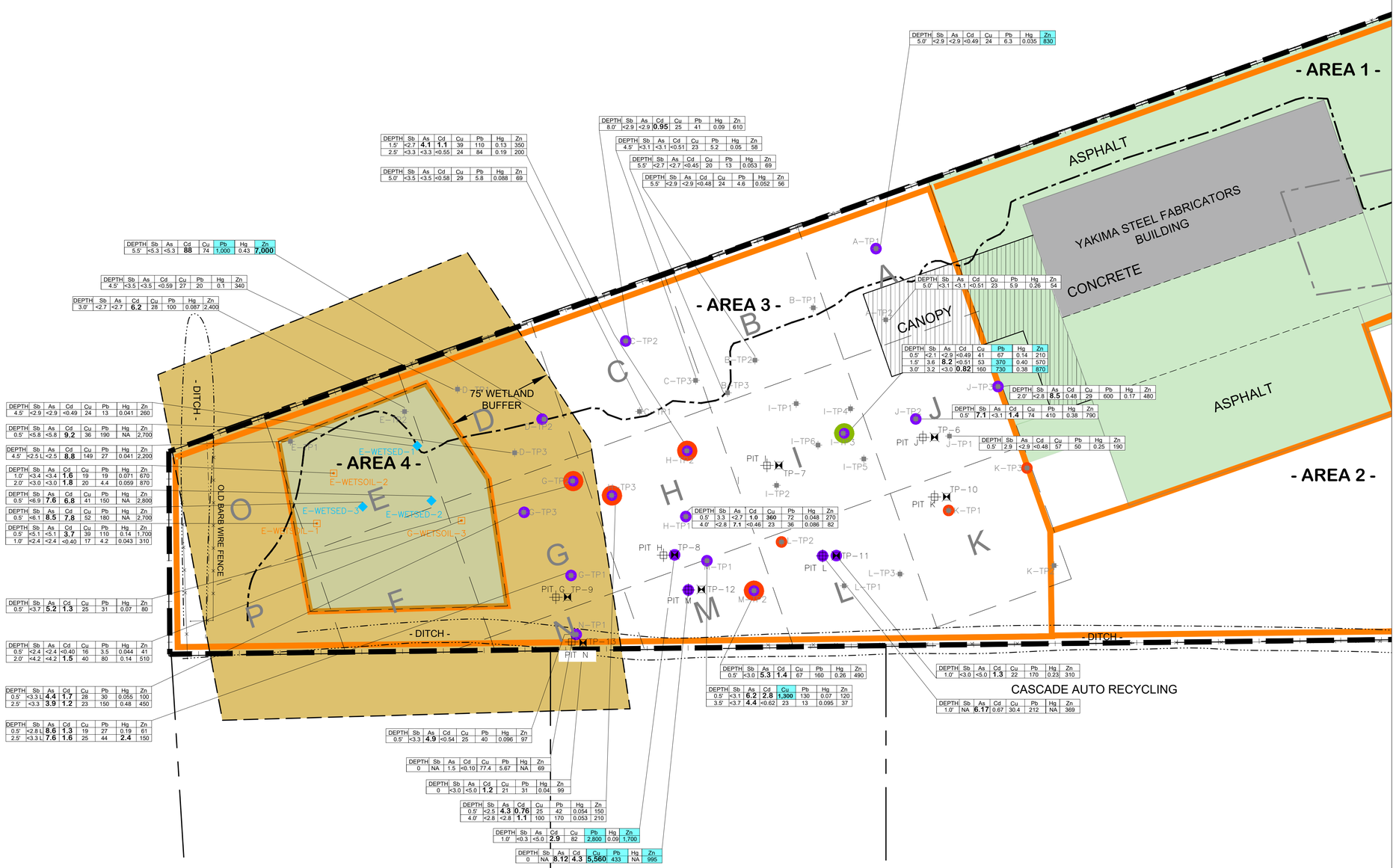

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
5.0'	<2.9	<2.9	<0.49	24	6.3	0.035	830

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
1.5'	<2.7	**4.1**	**1.1**	39	110	0.13	350
2.5'	<3.3	<3.3	<0.55	24	84	0.19	200

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
8.0'	<2.9	<2.9	**0.95**	25	41	0.09	610

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
4.5'	<3.1	<3.1	<0.51	23	5.2	0.05	58

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
5.5'	<2.7	<2.7	<0.45	20	13	0.053	69

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
5.0'	<3.5	<3.5	<0.58	29	5.8	0.088	69

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
5.5'	<2.9	<2.9	<0.48	24	4.6	0.052	56

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
5.5'	<5.3	<5.3	**88**	74	1,000	0.43	**7,000**

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
4.5'	<3.5	<3.5	<0.59	27	20	0.1	340

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
3.0'	<2.7	<2.7	**6.2**	28	100	0.087	2,400

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
5.0'	<3.1	<3.1	<0.51	23	5.9	0.26	54

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<2.1	<2.9	<0.49	41	67	0.14	210
1.5'	3.6	**8.2**	<0.51	53	370	0.40	570
3.0'	3.2	<3.0	**0.82**	160	730	0.38	870

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
2.0'	<2.8	**8.5**	0.48	29	600	0.17	480

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	**7.1**	<3.1	**1.4**	74	410	0.38	790

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	2.9	<2.9	<0.48	57	50	0.25	190

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
4.5'	<2.9	<2.9	<0.49	24	13	0.041	260

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<5.8	<5.8	**9.2**	36	190	NA	2,700

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
4.5'	<2.5	L <2.5	**8.8**	149	27	0.041	2,200

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
1.0'	<3.4	<3.4	**1.6**	19	19	0.071	670
2.0'	<3.0	<3.0	**1.8**	20	4.4	0.059	870

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<6.9	**7.6**	**6.8**	41	150	NA	2,800

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<6.1	**8.5**	**7.8**	52	180	NA	2,700

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<5.1	<5.1	**3.7**	39	110	0.14	1,700
1.0'	<2.4	<2.4	<0.40	17	4.2	0.043	310

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<3.7	**5.2**	**1.3**	25	31	0.07	80

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<2.4	<2.4	<0.40	16	3.5	0.044	41
2.0'	<4.2	<4.2	**1.5**	40	80	0.14	510

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<3.3	**4.4**	**1.7**	28	30	0.055	100
2.5'	<3.3	**3.9**	**1.2**	23	150	0.48	450

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<2.8 L	**8.6**	**1.3**	19	27	0.19	61
2.5'	<3.3 L	**7.6**	**1.6**	25	44	**2.4**	150

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	3.3	<2.7	**1.0**	**360**	72	0.048	270
4.0'	<2.8	**7.1**	<0.46	23	36	0.086	82

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<3.1	**6.2**	**2.8**	**1,300**	130	0.07	120
3.5'	<3.7	**4.4**	<0.62	23	13	0.095	37

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<3.0	**5.3**	**1.4**	67	160	0.26	490

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
1.0'	<3.0	<5.0	**1.3**	22	170	0.23	310

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
1.0'	NA	**6.17**	0.67	30.4	212	NA	369

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<3.3	**4.9**	<0.54	25	40	0.096	97

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0	NA	1.5	<0.10	77.4	5.67	NA	69

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0	<3.0	<5.0	**1.2**	21	31	0.04	99

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0.5'	<2.5	**4.3**	**0.76**	25	42	0.054	150
4.0'	<2.8	<2.8	**1.1**	100	170	0.053	210

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
1.0'	<0.3	<5.0	**2.9**	82	**2,800**	0.09	**1,700**

DEPTH	Sb	As	Cd	Cu	Pb	Hg	Zn
0	NA	**8.12**	**4.3**	**5,560**	433	NA	995

LEGEND

- AREA BOUNDARY
- SITE BOUNDARY
- TAX PARCEL BOUNDARY
- FENCE
- BAY CHEMICAL CLEANUP AREA
- APPROXIMATE BOUNDARY OF FORMER YAKIMA FARMERS SUPPLY WASTE PIT
- **AREA 1** FORMER YAKIMA FARMERS SUPPLY WASTE PIT LOCATION
- **AREA 2** FORMER YAKIMA FARMERS SUPPLY LIME AND SULFUR STOCKPILE LOCATIONS
- **AREA 3** YAKIMA STEEL STORAGE YARD
- **AREA 4** FORMER POND / CURRENT WETLANDS AREA
- D–TP3 TEST PIT LOCATION FARALLON CONSULTING (2011)
- E–WETSED–1 WET SEDIMENT SAMPLE LOCATION FARALLON CONSULTING (2011)
- E–WETSOIL–2 WET SOIL SAMPLE LOCATION FARALLON CONSULTING (2011)
- PIT B WASHINGTON STATE DEPARTMENT OF ECOLOGY (ECOLOGY) TEST PIT (2007)
- TP–2 ENVIRONMENTAL PARTNERS, INC. TEST PIT (2007)
- M ECOLOGY SAMPLING GRID DESIGNATION
- AREA OF EXISTING ASPHALT CAP
- AREA OF EXISTING CONCRETE CAP
- 75' WETLAND BUFFER

Sb = ANTIMONY
As = ARSENIC
Cd = CADMIUM
Cu = COPPER
Pb = LEAD
Hg = MERCURY
Zn = ZINC
NA = NOT ANALYZED
< = INDICATES CONCENTRATIONS NOT DETECTED AT OR ABOVE THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT

SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM
DEPTH IN FEET (') BELOW GROUND SURFACE (BGS)

ANALYTE HIGHLIGHTED IN BLUE EXCEEDS CLEANUP LEVEL BASED ON PRIORITY CONTAMINANTS OF ECOLOGICAL CONCERN FOR SOIL LESS THAN 6' BGS

CLEANUP LEVELS PROTECTIVE OF GROUNDWATER

Sb	As	Cd	Cu	Pb	Hg	Zn
5.42	2.92	0.69	284	3,000	2.09	5,970

CLEANUP LEVELS FOR CONTAMINANTS OF ECOLOGICAL CONCERN IN BIOLOGICALLY ACTIVE ZONE

Sb	As	Cd	Cu	Pb	Hg	Zn
NA	20	36	550	220	9	570

BOLD = INDICATES CONCENTRATIONS EXCEED WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION METHOD B CLEANUP LEVELS PROTECTIVE OF GROUNDWATER.

NA = NOT APPLICABLE

PCUL = PRELIMINARY CLEANUP LEVEL

- > PCUL FOR DRO
- > PCUL FOR DIELDRIN/ALDRIN
- > PCUL FOR METALS

FARALLON IS REQUESTING AN EXCEPTIONS FOR THREE SOIL SAMPLES, INCLUDING G-TP1, G-TP3, AND M-TP3 WHICH ARE EITHER INSIDE THE AREA 4 BUFFER OR SO CLOSE THAT EXCAVATION IS IMPRACTICAL WITHOUT DISTURBING THE BUFFER.

NOTE:

1. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

N

0 40
APPROXIMATE SCALE IN FEET

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FIGURE 3

SOIL ANALYTICAL RESULTS
FOR METALS
AGRI-TECH AND YAKIMA STEEL FABRICATORS
6 & 10 ½ EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

FARALLON PN: 765-001

Drawn By: NM Checked By: JM Date: 5/7/2020 Disk Reference: 765-001a

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LEGEND

- AREA BOUNDARY
- SITE BOUNDARY
- TAX PARCEL BOUNDARY
- FENCE
- RAILROAD
- APPROXIMATE BOUNDARY OF FORMER YAKIMA FARMERS SUPPLY WASTE PIT
- GROUNDWATER ANALYTICAL RESULTS ARE IN MICROGRAMS PER LITER
- PCE = TETRACHLOROETHENE
- TCE = TRICHLOROETHENE
- CIS-1,2-DCE = CIS 1,2-DICHLOROETHENE
- VC = VINYL CHLORIDE
- VOCs = VOLATILE ORGANIC COMPOUNDS
- -- = NOT ANALYZED
- < = INDICATES CONCENTRATIONS NOT DETECTED AT OR ABOVE THE STATED LABORATORY PRACTICAL QUANTITATION LIMIT

CLEANUP LEVELS	PCE	TCE	CIS-1,2-DCE	VC
	5	5	16	0.20

ANALYTE HIGHLIGHTED IN BLUE EXCEEDS CLEANUP LEVEL INDICATED IN TABLE ABOVE.

- MW-7- SHALLOW MONITORING WELL INSTALLED BY FARALLON (2002)
- MW-7B DEEP MONITORING WELL INSTALLED BY FARALLON (2002)
- MW-2 SHALLOW MONITORING WELL INSTALLED BY AGRA EARTH & ENVIRONMENTAL, INC. (1997)
- MW-4 DEEP MONITORING WELL INSTALLED BY AGRA EARTH & ENVIRONMENTAL, INC. (1997)
- MW-5 DECOMMISSIONED WELL DURING BAY CHEMICAL CLEANUP (2007)
- =-6 MONITORING WELL INSTALLED BY ECOLOGY (1992)
- MW-10 BAY CHEMICAL MONITORING WELL (2009)
- AREA OF EXISTING ASPHALT SURFACE
- AREA OF EXISTING CONCRETE SLAB
- (995.68) GROUNDWATER ELEVATION IN FEET (JUNE , 2011) RELATIVE TO NAVD 29 DATUM
- 995.50 GROUNDWATER ELEVATION CONTOUR DASHED WHERE INFERRED
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW

NOTE:

1. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION

DATE	PCE	TCE	CIS-1,2-DCE	VC
12/3/97	<1.0	1.51	12.4	2.42
3/3/98	1.59	1.46	3.21	<1.0
6/3/98	<1.0	<1.0	7.13	<1.0
9/2/98	1.27	3.06	17.6	<1.0
12/4/02	<2	<2	15	<2.0
6/1/11	1.6	1.5	8.9	0.025

DATE	PCE	TCE	CIS-1,2-DCE	VC
12/3/97	3.64	<1.0	<1.0	<1.0
3/3/98	3.39	<1.0	<1.0	<1.0
6/3/98	6.5	1.18	<1.0	<1.0
9/2/98	4.22	0.71	0.25	<1.0
12/3/02	6	<2	<2	<2
6/2/11	3.2	0.31	0.10	<0.020

DATE	PCE	TCE	CIS-1,2-DCE	VC
5/92	420	430	270	<10
12/3/97	---	---	---	---
3/3/98	49.6	108	83.7	4.24
6/3/98	75.6	60.4	45.6	<1.0
9/2/98	20.8	18.7	11.4	<1.0
12/3/02	<2	<2	14	<2
6/1/11	5.7	31	300	37

DATE	PCE	TCE	CIS-1,2-DCE	VC
6/2/11	1.8	0.10	<0.10	<0.020

DATE	PCE	TCE	CIS-1,2-DCE	VC
6/2/11	1.6	0.22	<0.10	<0.020

DATE	PCE	TCE	CIS-1,2-DCE	VC
12/3/02	2	<2	12	<2
6/2/11	1.9	0.44	3.8	<0.020

DATE	PCE	TCE	CIS-1,2-DCE	VC
12/3/02	<2	<2	4	<2
6/2/11	<0.10	<0.10	<0.10	<0.020

DATE	PCE	TCE	CIS-1,2-DCE	VC
12/3/97	3.32	<1.0	5.23	<1.0
3/3/98	3.78	<1.0	1.64	<1.0
6/3/98	3.86	<1.0	3.25	<1.0
9/2/98	3.12	0.84	4.34	<1.0
12/4/02	5	<2	5	<2
6/1/11	2.2	0.29	0.87	<0.020

DATE	PCE	TCE	CIS-1,2-DCE	VC
12/3/97	<1.0	<1.0	7.68	<1.0
3/3/98	<1.0	<1.0	13.2	<1.0
6/3/98	<1.0	<1.0	13.3	<1.0
9/2/98	<1.0	0.33	7.08	<1.0
12/4/02	6	74	270	4
6/1/11	<0.10	<0.10	6.6	0.20

DATE	PCE	TCE	CIS-1,2-DCE	VC
12/3/97	6.06	1.07	<1.0	<1.0
3/3/98	4.44	<1.0	<1.0	<1.0
6/3/98	4.52	<1.0	<1.0	<1.0
9/2/98	5.37	0.81	0.22	<1.0
12/4/02	6	<2	<2	<2
6/1/11	3.2	0.23	<0.10	<0.020

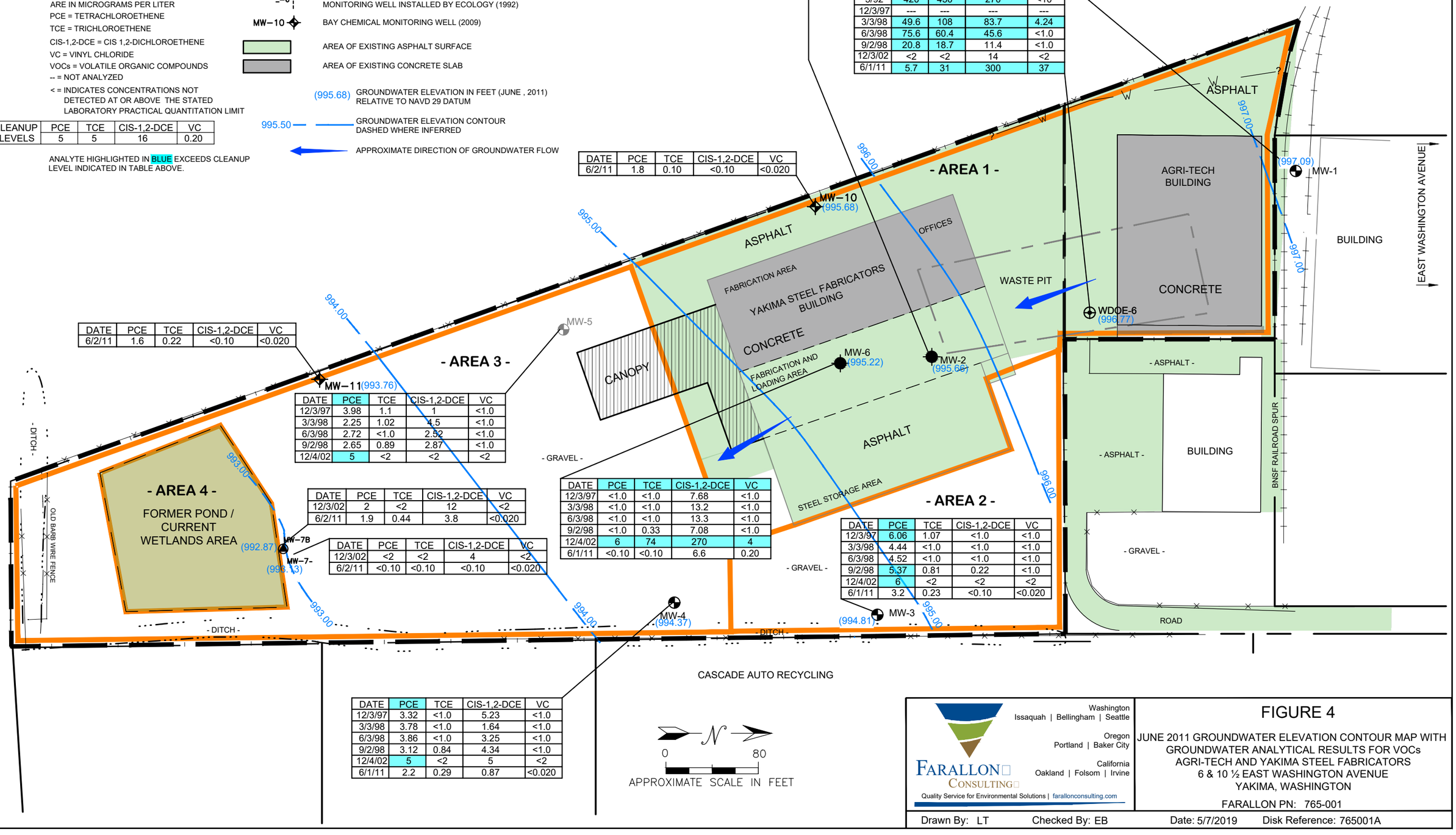

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FIGURE 4

JUNE 2011 GROUNDWATER ELEVATION CONTOUR MAP WITH GROUNDWATER ANALYTICAL RESULTS FOR VOCs
AGRI-TECH AND YAKIMA STEEL FABRICATORS
6 & 10 ½ EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

FARALLON PN: 765-001

Drawn By: LT | Checked By: EB | Date: 5/7/2019 | Disk Reference: 765001A

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LEGEND

- AREA BOUNDARY
- SITE BOUNDARY
- TAX PARCEL BOUNDARY
- FENCE
- RAILROAD
- BAY CHEMICAL CLEANUP AREA
- APPROXIMATE BOUNDARY OF FORMER YAKIMA FARMERS SUPPLY WASTE PIT
- AREA = 1 — FORMER YAKIMA FARMERS SUPPLY WASTE PIT LOCATION
- AREA = 2 — FORMER YAKIMA FARMER SUPPLY LIME AND SULFUR STOCKPILE LOCATIONS
- AREA = 3 — YAKIMA STEEL STORAGE YARD
- AREA = 4 — FORMER POND / CURRENT WETLANDS AREA
- D–TP3 — TEST PIT LOCATION FARALLON CONSULTING (2011)
- PIT — WASHINGTON STATE DEPARTMENT OF ECOLOGY (ECOLOGY) TEST PIT (2007)
- T –2 — ENVIRONMENTAL PARTNERS, INC. TEST PIT (2007)

- PROPOSED EXCAVATION BOTTOM AND TOP AREA
- PROPOSED AREA OF NEW ASPHALT CAP
- AREA OF EXISTING ASPHALT CAP
- AREA OF EXISTING CONCRETE CAP
- 75' WETLAND BUFFER
- MW–7 — SHALLOW MONITORING WELL INSTALLED BY FARALLON (2002)
- MW–7B — DEEP MONITORING WELL INSTALLED BY FARALLON (2002)
- MW-2 — SHALLOW MONITORING WELL INSTALLED BY AGRA EARTH & ENVIRONMENTAL, INC. (1997)
- MW-4 — DEEP MONITORING WELL INSTALLED BY AGRA EARTH & ENVIRONMENTAL, INC. (1997)
- WDOE–6 — MONITORING WELL INSTALLED BY ECOLOGY (1992)
- MW–10 — BAY CHEMICAL MONITORING WELL (2009)
- MW-8 — PROPOSED MONITORING WELL
- CIRCLED WELLS ARE PROPOSED POINTS OF CONDITIONAL COMPLIANCE

NOTE:

1. FIGURES WERE PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION

FORMER BAY CHEMICAL FLUE DUST STOCKPILE AREA

FORMER BAY CHEMICAL SLUDGE SETTLING POND AREA

PARCEL # 19133141010
BAY CHEMICAL SITE

PARCEL # 19133141408

ASPHALT

MW–10

- AREA 1 -

YAKIMA STEEL FABRICATORS BUILDING

CONCRETE

FABRICATION AREA

CANOPY

MW-6

MW-2

MW-9

FABRICATION AND LOADING AREA

MW-8

STEEL STORAGE AREA

- AREA 2 -

- GRAVEL -

MW-4

MW-3

AGRI-TECH BUILDING
(FORMER LIME SULFUR FORMULATING PLANT LOCATION)

CONCRETE

MW-1

BUILDING
(FORMER YAKIMA FARMERS SUPPLY MAIN WAREHOUSE)

EAST WASHINGTON AVENUE

WDOE-6

PARCEL # 19133141005

- ASPHALT -

(FORMER YAKIMA FARMERS SUPPLY LEASED WAREHOUSE)

PARCEL # 19133141011
BUILDING

- ASPHALT -

BNSF RAILROAD SPUR

PARCEL # 19133114003

- GRAVEL -

ROAD

MW–11

- AREA 3 -

- GRAVEL -

MATERIALS STORAGE AREA

6'

4'

5'

3'

PII

PIT

- AREA 4 -

FORMER POND
CURRENT
WETLANDS AREA

- DITCH -

OLD BARB WIRE FENCE

75' WETLAND BUFFER

PARCEL # 19133232408

PARCEL # 19133232433

PARCEL # 19133233009

CASCADE AUTO RECYCLING

PARCEL # 19133141406

0 100

APPROXIMATE SCALE IN FEET

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FIGURE 5

CLEANUP ACTION DETAILS
AGRI-TECH AND YAKIMA STEEL FABRICATORS
6 & 10 ½ EAST WASHINGTON AVENUE
YAKIMA, WASHINGTON

FARALLON PN: 765-001

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