



GEOTECHNICAL ENGINEERING • ENVIRONMENTAL ENGINEERING  
CONSTRUCTION TESTING & INSPECTION

# Operations and Maintenance Plan for Management of Arsenic & Lead Contaminated Soils (O&M Plan)

## For

Les Schwab – Yakima West New Construction

Project Number: 064-22024

Construction General Permit #**WARXXXXXX**

## Prepared For

Les Schwab Tire Centers

20900 Cooley Road

Bend, OR 97701

(541) 416-5342

## Owner/Developer

Les Schwab

## Contractor

**TBD (Out for Bid-10/25/23)**

## Project Site Location

6809 W Nob Hill Boulevard

Yakima, Washington 98908

## O&M Plan- Prepared By

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## O&M Plan- Preparation Date

**October 25, 2023**

## Approximate Project Construction Dates

January 2024 – Approximate Commencement

September 2024 – Approximate Completion

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October 25, 2023

Project No. 064-22024

**OPERATION & MAINTENANCE PLAN FOR  
MANAGEMENT OF ARSENIC & LEAD CONTAMINATED SOIL**Les Schwab – Yakima West  
6809 W Nob Hill Boulevard  
Yakima, Washington 98908**1.0 INTRODUCTION**

On behalf of Les Schwab Tire Centers, Krazan and Associates, Inc. (Krazan) has prepared this Operation and Maintenance Plan (O&M Plan) for the above-referenced property (subject site) located at 6809 W Nob Hill Boulevard, Yakima, Washington (see Figure 1).

This site-specific O&M Plan is based on the conclusions and recommendations provided in Krazan's Phase I Environmental Site Assessment report dated January 3, 2022, analytical results and analytical results provided in the Krazan's Phase II Site Characterization Sampling report dated January 3, 2023. The purpose of the O&M Plan is to establish long-term on-site management protective barriers overlying soils with arsenic & lead in excess of Washington State Department of Ecology (WDOE) Model Toxic control Act (MTCA) Method A Cleanup Levels (CULs). Laboratory analysis confirmed the presence of elevated arsenic and lead concentrations in soils at the proposed new construction Les Schwab Yakima West site located at 6809 W Nob Hill Road, Yakima, WA. Based on the elevated levels of arsenic and lead in the soil and the site history as a former orchard farming property, WDOE Model Remedies for Cleanup of Former Orchard Properties in Central and Eastern Washington (Model Remedies Document) was used to establish property cleanup/capping-in-place methods for the site. During development, arsenic and lead contaminated soils are to be placed below hard cap asphalt access roads/easements and parking lot, concrete sidewalks, buildings, rock landscaping with geotextile fabric, organic/landscaping material (underlain by minimum 3-inches of compacted soil, gravel, or rock totaling a minimum of 6-inches), and soft cap grass/sod (minimum of 6-inches of clean soil or 4-inches of compacted gravel required underneath). The chosen cleanup method from the Model Remedies Document has been determined to be model remedy Capping in Place, utilizing both Hard and Soft (landscape) methods.

This O&M Plan further addresses potential environmental issues and is intended to reduce the risk of workers and building occupants exposed to impacted soils and to prevent contaminated soil from migrating beyond its current location. This O&M Plan describes the following:

- Procedure for notifying occupants, maintenance workers, and repair contractors of site conditions.
- Protective barriers to prevent exposure and keep contaminate soils onsite.
- Inspection criteria and monitoring schedule.
- How site workers can protect themselves from exposure.
- What to do in the event that impacted soils need to be excavated or protective barriers breached.

## **2.0 SITE LOCATION AND DESCRIPTION**

### **2.1 Existing and Historical Conditions**

The subject site is located at 6809 West Nob Hill Road, Yakima, WA. The subject site currently consists of the southwest portion of Yakima County parcel number (APN) 18132914416, and contains 1.5-acres of flat vacant grassland. No structures or hard surfaces currently exist on-site. The property is bordered by Congdon Residential apartment housing to the north, West Nob Hill Boulevard to the south, West Valley Church to the west, and vacant grassland to the east. See Figures 1 and 2 for Vicinity and Site Maps.

### **2.2 Proposed Construction Activities**

The project consists of the construction of six-bay Les Schwab Tire Centers store including asphalt parking and other associated site improvements over approximately 1.5-acres. The project includes a 30 feet wide access easement east adjacent to the site stretching to an existing curb cut approximately 400 feet east.

## **3.0 SITE BACKGROUND**

### **3.1 Previous Phase I Environmental Site Assessment**

A Phase I Environmental Site Assessment was conducted by Krazan dated January 3, 2022 at the subject site. See Appendix A for the Krazan Phase I Environmental Site Assessment. The report concluded with the following findings:

Review of historical assessor records, business directories, and aerial photographs indicate that the subject site was used for agricultural purposes from at least 1938 thru 2019. The site was reportedly used as an apple orchard from 1938 thru 1996, then utilized for alfalfa production from 1996 thru 2019. Based on aerial photographs, the subject site, the northern-adjacent property (Congdon Retail Property), and eastern-vicinity Panda Express property contained homogeneous agricultural production from at least 1956 to 2006. The subject site and northern-adjacent site remained homogeneous until at least 2015. Based on a Phase II Report and Ecology Letter for the Congdon Retail Property and a Remedial Action Report for the Panda Express property, both sites contained lead, arsenic, and

dichlorodiphenyldichloroethylene (DDE) pesticide concentrations in the soil above regulatory limits, likely due to historical agricultural processes that included the application of pesticides.

Based on the documented environmental issues on the adjacent properties and similar historical land uses, six (6) shallow near-surface soil samples were collected for analysis of arsenic, lead, and DDE at various locations throughout the site as part of this ESA. Soil sample analytical results revealed elevated concentrations of arsenic and lead above MTCA Method A soil cleanup levels for all six samples. DDE concentrations did not exceed the MTCA Method B soil cleanup level for direct contact.

### **3.2 Previous Site Characterization Sampling Report**

Subsequent to the sampling and reporting included with the Phase I ESA, on January 3, 2023, Krazan conducted a Site Characterization Report which included ten additional characterization soil samples of arsenic and lead. All ten samples were above MTCA Method A cleanup levels. Laboratory results identified average concentrations of arsenic at 48.0 mg/kg and lead at 588.60 mg/kg, above regulatory limits of 20.0mg/kg and 250 mg/kg are arsenic and lead respectively. See Appendix B for the Site Characterization Sampling Report.

### **3.3 Previous Remedial Action Report**

Information derived from a Terracon Remedial Action Report conducted for the adjacent Panda Express property dated December 26, 2012, was utilized within the previously stated Krazan Phase I ESA, on January 3, 2023. Laboratory results confirmed that sampled soils, which previously contained homogenous farming practices on the subject site, contained lead, arsenic, and dichlorodiphenyldichloroethylene (DDE) pesticide concentrations in the soil above regulatory limits, likely due to historical agricultural processes that included the application of pesticides. See Appendix C for the Remedial Action Report.

## **4.0 ACTIVITIES COVERED BY OPERATION AND MAINTENANCE PLAN**

This section discusses the applicability of the O&M Plan. In general, any excavation and/or trenching will invoke this O&M Plan. Also, any post construction future activities that may invoke this O&M Plan will primarily comprise future installation, repair, or modification of utilities beneath or outside the buildings. If excavation for utilities or landscaping will penetrate into the subsurface soil, then this O&M Plan should be followed.

In order to meet regulatory criteria associated with impacted soil, Krazan recommends the following summary of elements be incorporated into the site management and development plans:

- Management of the area should be completed to prevent potential exposure of impacted soils to site occupants or site workers. Management may include closure of the area from occupant or worker use; completion of localized remediation; or placement of hardscapes, landscapes, clean soils, or other methods dependent upon chosen model remedies.
- Management of site-wide impacted soils through development and implementation of a site-specific O&M Plan. The site-wide soil management may be included within an O&M Plan which could additionally address hazardous building materials present at the site. The O&M Plan should include guidance for repair and maintenance activities and any additional elements required to prevent either worker or tenant exposure to impacted soil.
- Site-wide remediation activities may be managed as a portion of site redevelopment activities. Additional remedial investigation may be required and may be completed as a portion of project design and included within project specifications. Remediation should be completed in conformation with Model Toxics Control Act (MTCA) and Washington State's Dangerous Waste regulations as presented in WAC 173-340 and 173-303 respectively. Additionally, the remedial design and project specifications will need to address potential worker exposure elements. Remedial options may include excavation and disposal of impacted soil at an appropriately permitted facility, or consolidation and/or capping of impacted soils onsite. At this time, the proposed chosen method has been determined to be Capping in Place, utilizing both Hard and Soft methods, per the WDOE Model Remedies for Cleanup of Former Orchard Properties.

It is important to note that all excavated contaminated soils need sampling and analysis conducted if removed for disposal as well as the excavations themselves for extent characterization. All imported soils for use on the site will need confirmation sampling and analysis to confirm that they are beneath MTCA Method A cleanup levels, both when imported and following placement.

## **5.0 NOTIFICATION PROCEDURES**

Notifying personnel whose duties have the potential to disturb on-site soils is the best way to prevent inadvertent worker exposure, destruction of protective barriers, or offsite migration of impacted soils.

### **5.1 Maintenance, Contractor, and Landscape Workers**

It is improbable for workers to come across contaminated soils during their regular maintenance and landscaping duties. However, if they are performing non-routine tasks, such as repairing sprinkler lines or replacing large shrubs/trees, maintenance and landscaping workers may come across contaminated soils. While many tasks like painting or mowing may not involve contact with impacted soil, some tasks

like main water line replacement may require contraction of services and careful excavation and the replacement of barrier materials to prevent impacted soils from resurfacing or being washed or transported offsite.

To comply with the Hazard Communication Program, it is essential to inform employees or subcontractors who may come in contact with impacted soils about their presence, location, and expected concentrations. Additionally, employees must be educated on protective measures that they can take to safeguard themselves in case they encounter impacted soils. Moreover, employees should be informed about how to replace the barrier materials appropriately to ensure the protective barriers' integrity remains intact.

## **5.2 Voluntary Cleanup Program and Environmental Covenant**

Since contamination was left beneath the cap in place method, an Environmental Covenant with associated land use restrictions was drafted in collaboration with the Washington Department of Ecology (WDOE), as part of the Voluntary Cleanup Program (VCP). To guarantee the ongoing maintenance of the protective barriers at the site, this Environmental Covenant was recorded at the local auditor's office upon finalization. Applicable VCP and Environmental Covenant information is included in Appendix D.

## **5.3 Property Transfer**

If and when the property owner transfers interest in the property, such as title, easement, or lease, to another entity, the new owner should be provided with a copy of the current O&M Plan. This provision ensures the continued operation and maintenance of the protective barriers.

## **6.0 SITE CONTROLS**

As part of development, protective barriers were constructed over impacted soils. The following subsections describe the protective barriers and suggested protective barrier inspection procedures summarized in Section 6.4. Refer to Figure 3 for the protective barrier overlay location map.

### **6.1 Impermeable Surfaces**

The impermeable surfaces at the site, such as the building footprint, paved parking and drive areas, sidewalks, and other ancillary features, including curbs, are underlain with compacted gravels to form the hard-capping system.

Protective barriers must be well-maintained for the life of the building and current site operations. Inspection procedures for capped surfaces are discussed in Section 6.4.2. Impermeable surfaces should be

inspected at least annually to confirm that no significant degradation, such as cracks, voids, etc., have developed that would result in exposure of impacted soils. In the event that protective barriers need replacement (or a portion thereof), an environmental professional, engineer, and/or other qualified professional should be consulted to develop appropriate procedures and protocols to complete such work.

## **6.2 Permeable Surfaces**

Permeable surfaces at the site are comprised of landscaping areas with rock and fabric coverings and grassy or other vegetated areas. Section 6.4.3. contains suggested inspection procedures for the protective barriers and associated responses of engineered landscaping areas. Near-surface (less than 4-inches deep) landscaping can be replaced as needed, while planting at depths greater than 4-inches should be maintained as originally placed. If replacement of deeper planting is necessary, the work procedures outlined in Section 8.0 should be followed. Hand cultivation is recommended for landscape areas, and activities such as rototilling or soil relocation that disturb materials at depths greater than 4-inches are prohibited.

## **6.3 Installation of Utilities**

Any installation or maintenance to subsurface water lines, stormwater, or other applicable utility at the site, by maintenance or other workers/contractors can be accomplished by following the notification procedures outlined in Section 5.0 and work procedures outlined in Sections 6.4 and 7.0. An environmental professional should be contacted to assess and develop a work plan for major repairs to subsurface water conveyance systems or other utility at the site.

## **6.4 Protective Barrier Inspection Procedure**

Due to the management of impacted soils on-site under protective barriers, both hard and soft, or through their removal during site redevelopment, there is currently no immediate risk of exposure to human health or the environment. To maintain this state and prevent future exposure, regular inspection procedures must be performed to ensure the protective barriers remain intact for the duration of the site's current operations. The following contains protective barrier summary information and suggested inspection schedule, procedures, and associated responses that may be useful in assuring that protective barriers remain effective.

The largest portion of arsenic and lead soils designated over MTCA Method A Cleanup Levels is covered with impermeable, hard cap, surfaces such as the building footprint, asphalt parking area, accesses, easements, and concrete ancillary features underlain by compacted gravel. The next largest portion of the Les Schwab Tire Centers site has been covered with permeable surfaces consisting of geotextile type

fabric overlain by 12-inches to 18-inches of clean soil and stone mulch landscaping used near parking areas and near the sloped property perimeter. Grass areas have been constructed with a minimum of 6-inches of clean soil overlain with 2-inches of grass or rock mulch landscaping material (totaling 8-inches).

#### **6.4.1 Inspection Schedule**

Protective barriers should ideally be visually inspected semi-annually and at least annually, preferably in the spring to verify that damage has not occurred during the winter and in the fall to assure that barriers are in good condition before winter storms commence. See Appendix E for the Semi-Annual Protective Barrier Inspection Form.

#### **6.4.2 Impermeable Asphalt and Concrete Surfaces (Hard Cap)**

Inspections of asphalt and concrete surfaces should be conducted to detect any signs of significant damage, such as cracks, voids, gouges, or other breaches that may lead to exposure to impacted soils.

- Minor surface imperfections, defined as routine surface cracking that does not penetrate the depth of the asphalt or concrete, does not require repair.
- Moderate surface imperfections, defined as visual exposure to underlying clean crushed gravel or soil, should be repaired before the following winter season.
- Significant surface imperfections, defined as exposure of the underlying soil below the underlying crushed gravel or soil, should be repaired as soon as feasible.

#### **6.4.3 Permeable Engineered Landscaping Areas (Soft Cap)**

Inspect permeable features for damage to overlying sod, bark, or rock, and underlying fabric or clean soil materials. Inspect the landscaped area for indications of damaged sod materials or areas with dying vegetation. Inspect the overlying gravel and rock areas for indications of uneven distribution or material migration/erosion that could potentially result in exposure of underlying materials. Classify damage, if identified, as minor, moderate, or significant using the following descriptions.

- Minor damage has less than 10 percent overall or less than 25-square feet in a localized area, provided the exposure to underlying soils is not present.
- Moderate damage lies between 10 and 20 percent overall or between 25 and 100-square feet in a localized area, or result in less than 10 percent overall or less than 25-square feet of exposure to the native soils underlying the 4-inches of topsoil.
- Significant damage has more than 20 percent overall or more than 100-square feet in a localized area, or results in more than 10 percent overall or more than 25-square feet of exposure to the native soils underlying the 4-inches of topsoil.

Damage, if present, should be repaired in conformance with the original construction detail and consistent with the following:

- Minor & Moderate damage should be replaced or repaired before the following winter season.
- Significant damage should be repaired as soon as feasible.

## **7.0     WORKER PROTECTION**

If maintenance or repair work at the site necessitates working in areas where impacted soils are present, safe work practices and engineering controls should be implemented to reduce potential exposure to these soils. Following is a summary of control measures and work practices that can be used singularly or in combination with each other to minimize the exposure during this type of work.

### **7.1     Work Area Access**

When carrying out maintenance or repair work in areas of contaminated soil, appropriate measures should be taken to prevent unauthorized access. This may include erecting temporary fencing or barriers, taking into consideration the duration of the repair task and the area of contaminated soil exposed. For minor repairs where the worker does not leave the immediate work area and the repair is completed within a short period of time, signage may not be necessary. However, for longer projects, orange construction safety fence or metal panel construction fencing may be required to secure the area.

### **7.2     Dust Suppression**

To ensure worker safety and prevent offsite migration, dust and erosion control measures must be implemented during maintenance, repair, or earthwork activities that involve working in contaminated soils. A dust control plan should be developed during the planning phase of future earthwork activities, as needed, to minimize worker exposure and prevent dust from leaving the site. This plan may include procedures for wetting soils and stockpiles to suppress dust, as well as scheduling work during calm weather conditions with minimal wind to further reduce the risk of fugitive dust. By keeping impacted soils moist during a work activity, dust is less likely to become suspended in the air causing potential worker exposure or offsite migration. Whenever feasible, the work area should be pre-moistened before soil impacting activities, and stockpiled soils and excavation areas should be periodically rewetted during the work and covered during inclement weather.

### 7.3 Work Practices

The goal of work practice implementation is to keep all contaminated soils within their containment area. Most maintenance and landscaping activities will not impact the in-place protective barriers. However, if maintenance and landscaping activities require excavation greater than 4-inches deep, but less than 100-square feet in surface area, the suggested work practices should be implemented:

1. Place plastic sheeting around all sides of the intended excavation area, with an extension of about 5 to 10 feet from the excavation edge, based on the expected amount of material to be excavated. Ensure that plastic seams are overlapped and sealed to prevent soil and dust from penetrating or moving beneath the plastic. Repair any damaged plastic sheeting if needed.
2. Erect barriers or use other means of identification to enclose the work area's perimeter and prevent unintentional access to the excavation site.
3. For the clean capping material, place sod or gravel with the upper 4-inches of topsoil, or fabric, or rock on one side of the excavation.
4. Place the remaining subgrade soil excavated to facilitate the maintenance or landscaping activity on the side of the excavation opposite to the sod or clean capping material.
5. Conduct the maintenance or landscaping activity.
6. Replace presumed contaminated soil.
7. Offsite disposal of excavated material is prohibited without characterization. Contact an environmental professional, engineer, or other qualified professional to determine disposal requirements of excess excavated soil.
8. Clean tools, equipment, and protective clothing of remaining soils by dry brushing damp soil followed by wet cleaning. Place the accumulated soil from cleaning in the excavation.
9. Repair or install new geotextile fabric where present at the start of the work.
10. Replace the clean capping topsoil or hard cap, compacting as necessary.
11. If the depth from the replaced soil surface to the ground surface is greater than the thickness of the sod, rock, or gravel, additional clean soil should be imported from offsite sources and placed into the excavation until the depth matches the thickness of the sod, rock, or gravel.
12. Replace sod; fabric and rock; or gravel.
13. Remove the plastic sheeting and dispose of solid waste properly.
14. Thoroughly wash hands and face to remove any remaining soil.

The contractor shall make every effort to replace impacted soils in work areas at the site. In the event this is not possible, an environmental professional should be consulted to evaluate appropriate off-site disposal or impacted soils. To prevent worker exposure and the unintentional movement of contaminated

soils beyond the work area, the contractor must adhere to strict decontamination procedures for both personnel and equipment.

#### **7.4 Decontamination**

The contractor must ensure that decontamination procedures are put into place to minimize worker exposure and prevent fugitive dust from migrating offsite. For any work that result in breaching protective barriers, wet cleaning of tools, equipment, and workers will also reduce potential exposure and offsite migration of impacted soils. After completing the work task and replacing the impacted soil (soil excavated below 4-inches), clean tools and equipment used during the project with contaminated soils placed back into the ground at the repair location. Moist soil can be dry brushed from tools, equipment, personnel clothing, and plastic sheeting where the impacted soil was staged. Following dry brushing, complete the cleaning process by wet wiping or washing these items.

After replacement of the clean topsoil and ground cover (sod, gravel, or rock and fabric layers), site workers should proceed to a wash station/facility and thoroughly wash their hands and face to remove any potential remaining particles of impacted soil in excess of threshold concentrations.

### **8.0 PROCEDURES FOR BREACHING PROTECTIVE BARRIERS**

Planned and unplanned protective barrier breaches may occur at the site as part of operations consistent with developed site use.

A planned breach of protective barriers refers to a scheduled maintenance or construction activity that is expected to result in the breach of a protective barrier. For instance, the installation of a new retaining wall may be a planned event that could lead to a protective barrier breach.

An unplanned protective barrier breach is an unexpected breach occurrence resulting from an accident or emergency repair activity. For example, the sudden repair of a broken water line could result in an unplanned protective barrier breach.

To address each type of protective barrier breach, the following is a summary of the procedure that should be followed

#### **8.1 Planned Protective Barrier Breach**

During the planning phase, it is important to assess the potential impact of any additional site development or maintenance activity on the protective barrier. If the project is small (less than 100 square feet of protective barrier) and will be carried out by in-house employees or contractors, the feasibility of

implementing the procedures outlined in Section 5.0 should be evaluated. If these procedures can be implemented, the work can proceed as planned. However, if it is not feasible to implement these procedures, the work should be halted until an environmental professional, engineer, or other qualified professional can assess the planned work and recommend alternative procedures.

For larger projects (greater than 100 square feet of protective barrier), an environmental professional, engineer, or other qualified professional should evaluate the proposed work during the project-planning phase and develop procedures that can be implemented during the actual work.

## **8.2 Unplanned Protective Barrier Breach**

When an unplanned protective barrier breach occurs, the first step is to control the event that caused the breach and contain any offsite soil migration. Once the site is temporarily stabilized, contact an environmental professional, engineer, or other qualified professional to assess the extent of the protective barrier impact. They should also develop a work plan for repairing or replacing the protective barrier and determine whether notification to Ecology of the unplanned protective barrier breach is warranted.

## **9.0 CONCLUSIONS**

Pre-development investigation confirmed arsenic and lead in site soils at concentrations above the MTCA Method A cleanup levels and DDE concentrations not exceeding the MTCA Method B soil cleanup level for direct contact, as a result of previous orchard use.

Clean soils will be used preferentially in all areas designated for landscaping or grass, with a minimum of 6 inches of clean soil covered by 2 inches of rock mulch, sod/grass, or other landscaping material (totaling 8 inches) to effectively cover the contaminated soils. Additionally, a geotextile fabric placed beneath all landscaped areas will extend to a minimum of 3 feet beneath the compact gravel layer used as support for the hard cap asphalt/concrete layer. This overlapping will ensure a complete cap over the site. The use of permanent features such as asphalt roads, concrete sidewalks, and buildings will serve to effectively hard cap site soils.

To ensure that institutional controls remain effective, site conditions should be inspected regularly, as per Ecology practices, at least annually. Ideally, semi-annual visual inspections of the protective barriers should be conducted, preferably in spring to check for damage after winter and in fall before winter storms to ensure that the barriers are in good condition.

## **10.0 MODIFICATIONS TO THE O&M PLAN**

The provisions of this O&M Plan may need to be amended, although this is not anticipated. If a change to the O&M Plan becomes necessary, the proposed O&M Plan modifications will be prepared by the property owner's environmental consultant.

## **11.0 TEAM MEMBERS**

Names and contact information for those identified as members of the pollution prevention team are provided in the following table.

| <b>Title</b>                     | <b>Name(s)</b>                    | <b>Phone Number</b> |
|----------------------------------|-----------------------------------|---------------------|
| Site Owner / Representative      | Congdon Development Company, LLC  | (509) 996-4440      |
| Contractor Representative        | TBD                               |                     |
| Architect/Engineering Consultant | Cushing Terrell                   | (406) 922-7107      |
| Environmental Consultant         | Krazan and Associates, Inc.       | (253) 939-2500      |
| Emergency Ecology Contact        | Central Regional Office           | (509) 575-2490      |
| Emergency Owner Contact          |                                   |                     |
| Non-Emergency Ecology Contact    | Hector Casique – Central Regional | (509)509-1288       |

**REFERENCES CITED**

*Remedial Action Report – Panda Express Restaurant – Terracon - December 26<sup>th</sup>, 2012*

*Washington Department of Ecology, Toxics Cleanup Program - Model Remedies for Cleanup of Former Orchard Properties in Central and Eastern Washington – Sampling and Cleaning Up Arsenic and Lead Contaminated Soils - July 2021*

*Krazan Phase I Environmental Site Assessment – Limited Soil Sampling – January 3<sup>rd</sup>, 2022*

*Krazan Site Characterization Report – Letter Report for Soil Sampling - January 3<sup>rd</sup>, 2023*

*Washington Department of Ecology, Toxics Cleanup Program – Central Regional Office*

*Cleanup and Tank Search Online GIS Tool – Washington Department of Ecology*