STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

In the Matter of Remedial Action by:

AGREED ORDER

City of Shelton

No. DE 19541

TO: Jeff Niten

City Manager City of Shelton 525 W Cota Street

Shelton, Washington 98584

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I. INTRODUCTION

The mutual objective of the State of Washington, Department of Ecology (Ecology) and the City of Shelton under this Agreed Order (Order) is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires the City of Shelton to implement a cleanup action plan. Ecology believes the actions required by this Order are in the public interest.

II. JURISDICTION

This Agreed Order is issued pursuant to the Model Toxics Control Act (MTCA), RCW 70.105D.050(1).

III. PARTIES BOUND

This Agreed Order shall apply to and be binding upon the Parties to this Order, their successors and assigns. The undersigned representative of each party hereby certifies that he or she is fully authorized to enter into this Order and to execute and legally bind such party to comply with this Order. The City of Shelton agrees to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter City of Shelton's responsibility under this Order. City of Shelton shall provide a copy of this Order to all agents, contractors, and subcontractors retained to perform work required by this Order, and shall ensure that all work undertaken by such agents, contractors, and subcontractors complies with this Order.

IV. DEFINITIONS

Unless otherwise specified herein, the definitions set forth in RCW 70.105D and WAC 173-340 shall control the meanings of the terms in this Order.

Site: The Site is referred to as the C Street Landfill Site. The Site constitutes a facility under RCW 70.105D.020(8). The Site is defined by any location where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed of, or placed, or otherwise come to be located. Based upon factors currently known to Ecology, the Site

is generally located on a 16.7-acre parcel at the southwest intersection of West C Street and US Highway 101 in Shelton, WA as shown on the Site Location Diagram (Exhibit A).

- A. <u>Parties</u>: Refers to the State of Washington, Department of Ecology and City of Shelton.
 - B. <u>Potentially Liable Persons (PLP(s))</u>: Refers to City of Shelton.
- C. <u>Agreed Order or Order</u>: Refers to this Order and each of the exhibits to this Order.

 All exhibits are integral and enforceable parts of this Order.

V. FINDINGS OF FACT

Ecology makes the following findings of fact, without any express or implied admissions of such facts by City of Shelton:

- A. The 16.7-acre property, known as the C Street Landfill, is located in Mason County and consists of the entirety of Mason County tax parcel 42024-21-60430. The property is located near the west terminus of West C Street, just west of US Highway 101 in Shelton, WA. The property is currently owned by the City of Shelton.
- B. Originally in private ownership, the property was mined in the past for sand and gravel.
- C. The property was acquired by the City in 1928 for use as a municipal landfill. Landfill operations occurred between 1928 and 1974 and collected municipal waste from the City of Shelton and surrounding area. The City continued limited dumping of road sweepings, pruning debris, and sludge after 1974 as described below.
- D. Occasional open burning of garbage occurred throughout the operating period of the landfill between 1928 and 1974.

- E. In the mid-1950s, the City constructed an incinerator on the property to reduce waste volume. Ash generated from the incinerator was deposited in the main pit of the landfill. In the mid-1960s, the incinerator was demolished.
- F. In October 1972, the first state solid waste regulation was promulgated as Chapter 173-301 WAC, with requirements including daily cover, access restrictions, and vector control for landfills. Landfill inspections at the time documented infractions of these new requirements.
- G. Between 1931 and 1974, the landfill received solid waste from the Rayonier Research Laboratory as well as demolition debris from decommissioning of the Rayonier pulp mill. The Port of Shelton also operated an Imhoff tank (a chamber used for the reception and processing of sewage) and used the Site to deposit sludge over the same time period.
- H. Between 1951 and 1981, the landfill was used for dumping of sludge from the City of Shelton Pine Street and Fairmount Avenue wastewater treatment plants (WWTP). Between July 1979 and November 1981, approximately 4.5 million gallons of high solids wastewater was disposed, forming a shallow, half-acre lagoon. During this time, Mason County Health Department (MCHD) issued a specified waste permit allowing the placement of dredged material from Oakland Bay in the City landfill. MCHD expressed concerns for the wastewater ponding that included potential infiltration, vector control, and public access for reasons of possible groundwater impact, and lack of vector prevention measures and access restrictions. In December 1981, MCHD decided that the sludge disposal operations created an emergency situation requiring immediate cessation of the practice. Future sludge disposal was directed to a permitted facility and access to the sludge lagoon on Site was restricted. The City's Department of Community Development informed MCHD that granular material from the Site would be used to cover the sludge lagoon. It is unknown if this action was performed or to what degree of cover was placed.
- I. The Simpson Timber Company (STC) long operated a wood-burning, boiler power plant at the Shelton mill site on Oakland Bay. Stack air emission controls were first imposed in 1976 and the light, fly-ash fraction was collected in baghouses. This waste was then mixed with water, made into a slurry and sent to the City's wastewater treatment plan where the material

typically settled out with other solids as treatment sludge. This waste stream containing STC ash was collected and disposed in the landfill between 1976 and 1981.

- J. Between 1984 and 1986, the Environmental Protection Agency (EPA) conducted a National Dioxin Study to determine the extent of dioxin contamination in the United States and possible associated risks to human health and the environment. STC volunteered its wood-fired boiler power plant as part of the study. The principal congener of concern, 2,3,7,8-tetrachlorodibenzodioxin (TCDD), was found to range from non-detect to 4.2 parts per billion (ppb) in baghouse ash. Additional study work in Mason County included ash disposal areas. Ten samples of wastewater treatment sludge containing STC ash were taken from the sludge disposal area in the landfill. These were composited and found TCDD at a concentration of 0.17 ppb. However, using toxic equivalency factors summed for combined dioxin/furan congeners produced a total concentration of 3.1 ppb.
- K. In 1987, the City retained the environmental consulting firm Brown and Caldwell to provide guidance and alternatives for closure of the landfill. Brown and Caldwell produced a draft report specifying Site correction and landfill closure recommendations that evaluated Site access controls, soil cover improvements over the waste disposal areas, and the need for groundwater monitoring. The recommendations did not include cap and cover permeability specifications as the firm did not believe groundwater monitoring was necessary at the time. Additional Site background details and information on the proposed closure options can be found in the draft report titled "Correction and Closure Plan: Shelton Landfill Disposal Facility, Administrative Draft; Brown and Caldwell, January 1988."
- L. Concentrations of dioxins/furans, carcinogenic polyaromatic hydrocarbons (cPAHs), and metals are contained in WWTP sludge that is present as surface soil in the northwest portion of the landfill. Dioxin/furans, mercury and lead are contained in cover soils overlying landfill waste in areas outside of the WWTP sludge disposal area. Areas of contamination cover 4 acres of the 16.7 acre landfill property.

- M. Iron and manganese, considered secondary contaminants, are contained in groundwater beneath the site at a depth of approximately 80 feet below ground surface (approximately 50 feet below the bottom of the landfill waste).
- N. In 2016, the City of Shelton entered into Agreed Order No. DE 12929 to perform a Remedial Investigation (RI), Feasibility Study (FS) and prepare a draft Cleanup Action Plan. The RI/FS work was completed, documented, and preliminary approval given for those documents and the draft Cleanup Action Plan by Ecology on November 19, 2020.

VI. ECOLOGY DETERMINATIONS

Ecology makes the following determinations, without any express or implied admissions of such determinations (and underlying facts) by City of Shelton.

- A. The City is an "owner or operator" as defined in RCW 70.105D.020(22) of a "facility" as defined in RCW 70.105D.020(8).
- B. Based upon all factors known to Ecology, a "release" or "threatened release" of "hazardous substance(s)" as defined in RCW 70.105D.020(32) and (13), respectively, has occurred at the Site.
- C. Based upon credible evidence, Ecology issued a PLP status letter to the City of Shelton dated December 9, 2014, pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. By letter dated January 8, 2015, the City of Shelton voluntarily waived its rights to notice and comment and accepted Ecology's determination that the City of Shelton is a PLP under RCW 70.105D.040.

VII. WORK TO BE PERFORMED

Based on the Findings of Fact and Ecology Determinations, it is hereby ordered that City of Shelton take the following remedial actions at the Site and that these remedial actions must be conducted in accordance with WAC 173-340 unless otherwise specifically provided for herein:

A. As of the effective date of the Agreed Order, the City of Shelton will implement the Cleanup Action Plan (Exhibit B) which includes, but is not limited to the following Scope of Work:

The cleanup action consists of installation of a low permeable soil cap and implementation of institutional controls, physical barriers, and an inspection, monitoring and maintenance plan (IM&M), as follows:

Low Permeability Soil Cap. The soil cap will be installed over the full extent of contaminated material at the landfill as defined in Exhibit A (approximately 4 acres) to prevent contact with landfill waste and contaminated soil by human and terrestrial ecological receptors and will meet the landfill closure specifications in WAC 173-304-460(e). The soil cap will consist of a geotextile isolation barrier, a minimum 2-foot-thick layer of clean, imported low permeability cover materials, and a 1-foot-thick vegetative layer of topsoil seeded with grasses or other shallow-rooted vegetation.

Institutional Controls. Institutional controls will include a deed restriction to prevent future, unrestricted development or any other activities that could create exposure pathways for direct contact with the contaminated soil or landfill waste. The institutional controls are required *in perpetuity*.

Signage and Physical Barriers. Signage will be installed along the main access road that connects to the terminus of West C Street, warning of the presence of landfill waste and potential risk to human health, along with a gate or other physical restriction on the access road. A fence with signage will be installed surrounding the landfill area to minimize accessibility from areas other than the access road.

Monitoring. The IM&M plan will include the following:

• Annual topographic surveys for at least the first 5 years following construction, ¹ to evaluate soil settlement and cap stability

¹ An initial topographic survey would also be conducted upon completion of cap construction.

- Periodic inspection of Site conditions
- Maintenance of the remedy (e.g., removal of large vegetation from the cap area² and filling of eroded areas), performed on an as-needed basis
- Semiannual groundwater monitoring at the four existing monitoring wells for iron and manganese concentrations
- Periodic reporting of IM&M activities to Ecology, including 5-year reviews

The conceptual elements of the cleanup action are depicted on Figure 3 of the Cleanup Action Plan (Exhibit B). The detailed locations and specifications will be defined in future design and specification documents.

B. Schedule of Deliverables: Prior to construction, the following documents will be prepared to meet the requirements of WAC 173-340-400 and 410. The schedule for the Scope of Work deliverables is set forth in Exhibit C to this Order:

Engineering Design Report (EDR). The EDR will describe the engineering concepts, design criteria and operation parameters of the cleanup action. The EDR will include the assumptions and calculations for the construction of the soil cap and specifications for the signage and physical barriers. Other components of the EDR will include:

A schedule for final design and construction.

A general description of construction testing that will be used during the cleanup to demonstrate adequate quality control.

A general description of the compliance monitoring that will be performed during and after construction.

A draft environmental (restrictive) covenant.

Construction Plans and Specifications. The plans and specifications will be prepared in conformance with currently accepted engineering practices and techniques to detail the cleanup actions to be performed.

Compliance Monitoring Plan (CMP). The CMP will describe the monitoring to be performed during construction to meet the requirements of WAC 173-340-410. The CMP

² Trees would not be allowed to grow in the capped area, since roots of large trees could compromise the geotextile barrier and extend into the landfill waste and bring it to the surface if a tree is blown over (for example).

will include a sampling and analysis plan to describe the sample collection, handling, and analysis procedures to be used to meet the requirements of WAC 173-340-820.

Inspection, Monitoring and Maintenance Plan. The IM&M Plan will present technical guidance and regulatory requirements for the long-term inspection, maintenance, and monitoring of the cleanup action. The IM&M Plan will provide the details and specifications for compliance groundwater monitoring and sampling and inspection, maintenance and repair of the soil cap and landfill cover, signage, and physical barriers.

- C. If the City learns of a significant change in conditions at the Site, including but not limited to a statistically significant increase in contaminant and/or chemical concentrations in soil, groundwater, surface water, air, and/or sediments, the City, within seven (7) days of learning of the change in condition, shall notify Ecology in writing of said change and provide Ecology with any reports or records (including laboratory analyses, sampling results) relating to the change in conditions.
- D. City of Shelton shall submit to Ecology written quarterly Progress Reports that describe the actions taken during the previous quarter to implement the requirements of this Order. All Progress Reports shall be submitted within thirty (30) days of the last day of each quarter. Unless otherwise specified by Ecology, Progress Reports and any other documents submitted pursuant to this Order shall be sent by email to Ecology's project coordinator. The Progress Reports shall include the following:
 - 1. A list of on-site activities that have taken place during the quarter.
 - 2. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests.
 - 3. Description of all deviations from the Scope of Work and Schedule during the current year and any planned deviations in the upcoming year.
 - 4. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule.
 - 5. All raw data (e.g., including laboratory analyses) received during the previous year (if not previously submitted to Ecology), together with a detailed description of the underlying samples collected.

- E. Pursuant to WAC 173-340-440(11), City of Shelton shall maintain sufficient and adequate financial assurance mechanisms to cover all costs associated with the operation and maintenance of the remedial action at the Site, including institutional controls, compliance monitoring, and corrective measures.
 - 1. Within one hundred and eighty (180) days of the effective date of this Order, City of Shelton shall submit to Ecology for review and approval an estimate of the costs under this Order for operation and maintenance of the remedial actions at the Site, including institutional controls, compliance monitoring and corrective measures. Within sixty (60) days after Ecology approves the aforementioned cost estimate, City of Shelton shall provide proof of financial assurances sufficient to cover all such costs in a form acceptable to Ecology.
 - 2. City of Shelton shall adjust the financial assurance coverage and provide Ecology's project coordinator with documentation of the updated financial assurance for:
 - i. Inflation, annually, within thirty (30) days of the anniversary date of the entry of this Order; or if applicable, the modified anniversary date established in accordance with this section, or if applicable, ninety (90) days after the close of City of Shelton's fiscal year if the financial test or corporate guarantee is used.
 - ii. Changes in cost estimates, within thirty (30) days of issuance of Ecology's approval of a modification or revision to the cleanup action plan (CAP) that result in increases to the cost or expected duration of remedial actions. Any adjustments for inflation since the most recent preceding anniversary date shall be made concurrent with adjustments for changes in cost estimates. The issuance of Ecology's approval of a revised or modified CAP will revise the anniversary date established under this section to become the date of issuance of such revised or modified CAP.
 - F. As detailed in the Cleanup Action Plan, institutional controls are required at the Site.

Environmental (Restrictive) Covenants will be used to implement the institutional controls.

- 1. In consultation with City of Shelton, Ecology will prepare the Environmental (Restrictive) Covenants consistent with WAC 173-340-440, RCW 64.70, and any policies or procedures specified by Ecology. The Environmental (Restrictive) Covenants shall restrict future activities and uses of the Site as agreed to by Ecology and City of Shelton.
- 2. After approval by Ecology, City of Shelton shall record the Environmental (Restrictive) Covenant for the Site with the office of the Mason County Auditor as detailed in the Schedule and Deliverables (Exhibit C). City of Shelton shall provide Ecology with the original recorded Environmental (Restrictive) Covenants within thirty (30) days of the recording date.
- G. All plans or other deliverables submitted by City of Shelton for Ecology's review and approval under the Scope of Work and Schedule and Deliverables (Exhibit C) shall, upon Ecology's approval, become integral and enforceable parts of this Order.
- H. If Ecology determines that City of Shelton has failed to make sufficient progress or failed to implement the remedial action, in whole or in part, Ecology may, after notice to City of Shelton, perform any or all portions of the remedial action or at Ecology's discretion allow the City of Shelton opportunity to correct. In an emergency, Ecology is not required to provide notice to City of Shelton, or an opportunity for dispute resolution. City of Shelton shall reimburse Ecology for the costs of doing such work in accordance with Section VIII.A (Remedial Action Costs). Ecology reserves the right to enforce requirements of this Order under Section X (Enforcement).
- I. Except where necessary to abate an emergency situation or where required by law, the City of Shelton shall not perform any remedial actions at the Site outside those remedial actions required by this Order to address the contamination that is the subject of this Order, unless Ecology concurs, in writing, with such additional remedial actions pursuant to Section VIII.J. (Amendment

of Order). In the event of an emergency, or where actions are taken as required by law, City of Shelton must notify Ecology in writing of the event and remedial action(s) planned or taken as soon as practical but no later than within twenty-four (24) hours of the discovery of the event.

J. Ecology hereby incorporates into this Order the previous remedial actions described in Section V, Findings of Fact. Reimbursement for specific project tasks under a grant agreement with Ecology is contingent upon a determination by Ecology's Toxics Cleanup Program that the retroactive costs are eligible under WAC 173-332A-320(6), the work performed complies with the substantive requirements of WAC 173-340, and the work is consistent with the remedial actions required under this Order. The costs associated with Ecology's determination on the past independent remedial actions described in Section V, Findings of Fact, are recoverable under this Order.

VIII. TERMS AND CONDITIONS

A. Payment of Remedial Action Costs

City of Shelton shall pay to Ecology costs incurred by Ecology pursuant to this Order and consistent with WAC 173-340-550(2). These costs shall include work performed by Ecology or its contractors for, or on, the Site under RCW 70.105D, including remedial actions and Order preparation, negotiation, oversight, and administration. These costs shall include work performed both prior to and subsequent to the issuance of this Order. Ecology's costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). For all Ecology costs incurred, City of Shelton shall pay the required amount within thirty (30) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general statement of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Pursuant to WAC 173-340-550(4), failure to pay Ecology's costs within ninety (90) days of receipt of the itemized statement of costs will result in interest charges at the rate of twelve percent (12%) per annum, compounded monthly.

In addition to other available relief, pursuant to RCW 19.16.500, Ecology may utilize a collection agency and/or, pursuant to RCW 70.105D.055, file a lien against real property subject to the remedial actions to recover unreimbursed remedial action costs.

B. Designated Project Coordinators

The project coordinator for Ecology is:

Andrew Smith Department of Ecology Southwest Regional Office PO Box 47775 Olympia, WA 98504-7775 360-407-6316 Andrew.Smith@ecy.wa.gov

The project coordinator for City of Shelton is:

Jeff Niten, City Manager 525 W Cota Street Shelton, Washington 98584 360-432-5105 Jeff.niten@sheltonwa.gov

Each project coordinator shall be responsible for overseeing the implementation of this Order. Ecology's project coordinator will be Ecology's designated representative for the Site. To the maximum extent possible, communications between Ecology and City of Shelton, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order shall be directed through the project coordinators. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the work to be performed required by this Order.

Any party may change its respective project coordinator. Written notification shall be given to the other party at least ten (10) calendar days prior to the change.

C. Performance

All geologic and hydrogeologic work performed pursuant to this Order shall be under the supervision and direction of a geologist or hydrogeologist licensed by the State of Washington or under the direct supervision of an engineer registered by the State of Washington, except as otherwise provided for by RCW 18.43 and 18.220.

All engineering work performed pursuant to this Order shall be under the direct supervision of a professional engineer registered by the State of Washington, except as otherwise provided for by RCW 18.43.130.

All construction work performed pursuant to this Order shall be under the direct supervision of a professional engineer or a qualified technician under the direct supervision of a professional engineer. The professional engineer must be registered by the State of Washington, except as otherwise provided for by RCW 18.43.130.

Any documents submitted containing geologic, hydrogeologic, or engineering work shall be under the seal of an appropriately licensed professional as required by RCW 18.43 and 18.220.

City of Shelton shall notify Ecology in writing of the identity of any engineer(s) and geologist(s), contractor(s) and subcontractor(s), and others to be used in carrying out the terms of this Order, in advance of their involvement at the Site.

D. Access

Ecology or any Ecology authorized representative shall have access to enter and freely move about all property at the Site that City of Shelton either owns, controls, or has access rights to at all reasonable times for the purposes of, *inter alia*: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing City of Shelton's progress in carrying out the terms of this Order; conducting such tests or collecting such samples as Ecology may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by City of Shelton. City of Shelton shall make all reasonable efforts to secure access rights for those properties within the Site not owned or controlled by City of Shelton where remedial activities or investigations will be performed pursuant to this Order. Ecology or any Ecology authorized representative shall give reasonable notice before entering any Site property owned or controlled by City of Shelton unless an emergency prevents such notice. All persons who access the Site pursuant to this section shall comply with any applicable health and safety plan(s) and

restricted access requirements. Ecology employees and their representatives shall not be required to sign any liability release or waiver as a condition of Site property access.

E. Sampling, Data Submittal, and Availability

With respect to the implementation of this Order, City of Shelton shall make the results of all sampling, laboratory reports, and/or test results generated by it or on its behalf available to Ecology. Pursuant to WAC 173-340-840(5), all sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with Section VII (Work to be Performed), Ecology's Toxics Cleanup Program Policy 840 (Data Submittal Requirements), and/or any subsequent procedures specified by Ecology for data submittal.

If requested by Ecology, City of Shelton shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by City of Shelton pursuant to implementation of this Order. City of Shelton shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow City of Shelton and/or its authorized representative to take split or duplicate samples of any samples collected by Ecology pursuant to the implementation of this Order, provided that doing so does not interfere with Ecology's sampling. Without limitation on Ecology's rights under Section VIII.D (Access), Ecology shall notify City of Shelton prior to any sample collection activity unless an emergency prevents such notice.

In accordance with WAC 173-340-830(2)(a), all hazardous substance analyses shall be conducted by a laboratory accredited under WAC 173-50 for the specific analyses to be conducted, unless otherwise approved by Ecology.

F. Public Participation

Ecology shall maintain the responsibility for public participation at the Site. However, City of Shelton shall cooperate with Ecology, and shall:

1. If agreed to by Ecology, develop appropriate mailing lists and prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans, remedial investigation/feasibility study reports, cleanup action

plans, and engineering design reports. As appropriate, Ecology will edit, finalize, and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings.

- 2. Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before meetings related to remedial action work to be performed at the Site with the interested public and/or local governments. Likewise, Ecology shall notify City of Shelton prior to the issuance of all press releases and fact sheets related to the Site, and before meetings related to the Site with the interested public and local governments. For all press releases, fact sheets, meetings, and other outreach efforts by City of Shelton that do not receive prior Ecology approval, City of Shelton shall clearly indicate to its audience that the press release, fact sheet, meeting, or other outreach effort was not sponsored or endorsed by Ecology.
- 3. When requested by Ecology, participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions or as a presenter.
- 4. When requested by Ecology, arrange and/or continue information repositories to be located at the following location:
 - a. Shelton Timberland Library 710 W Alder Street Shelton, WA 98501 (360) 426-1362
 - b. Shelton Civic Center
 Public Works Department
 525 W. Cota St.
 Shelton, WA 98584
 (360) 426-9731
 - c. Ecology's Southwest Regional Office 300 Desmond Drive SE Lacey, 98503-1274 (360) 407-6045

At a minimum, copies of all public notices, fact sheets, and documents relating to public comment periods shall be promptly placed in these repositories. A copy of all documents related to this Site

shall be maintained in the repository at Ecology's Southwest Regional Office in Lacey, Washington.

G. Retention of Records

During the pendency of this Order, and for ten (10) years from the date of completion of work performed pursuant to this Order, City of Shelton shall preserve all records, reports, documents, and underlying data in its possession relevant to the implementation of this Order and shall insert a similar record retention requirement into all contracts with project contractors and subcontractors. Upon request of Ecology, City of Shelton shall make all records available to Ecology and allow access for review within a reasonable time.

Nothing in this Order is intended to waive any right City of Shelton may have under applicable law to limit disclosure of documents protected by the attorney work-product privilege and/or the attorney-client privilege. If City of Shelton withholds any requested records based on an assertion of privilege, City of Shelton shall provide Ecology with a privilege log specifying the records withheld and the applicable privilege. No Site-related data collected pursuant to this Order shall be considered privileged.

H. Resolution of Disputes

- 1. In the event that City of Shelton elects to invoke dispute resolution City of Shelton must utilize the procedure set forth below.
- a. Upon the triggering event (receipt of Ecology's project coordinator's written decision or an itemized billing statement), City of Shelton has fourteen (14) calendar days within which to notify Ecology's project coordinator in writing of its dispute (Informal Dispute Notice).
- b. The Parties' project coordinators shall then confer in an effort to resolve the dispute informally. The parties shall informally confer for up to fourteen (14) calendar days from receipt of the Informal Dispute Notice. If the project coordinators cannot resolve the dispute within those 14 calendar days, then within seven (7) calendar days Ecology's project coordinator shall issue a written decision (Informal Dispute Decision) stating: the

nature of the dispute; the City of Shelton's position with regards to the dispute; Ecology's position with regards to the dispute; and the extent of resolution reached by informal discussion.

- c. City of Shelton may then request regional management review of the dispute. This request (Formal Dispute Notice) must be submitted in writing to the Southwest Region Toxics Cleanup Section Manager within seven (7) calendar days of receipt of Ecology's Informal Dispute Decision. The Formal Dispute Notice shall include a written statement of dispute setting forth: the nature of the dispute; the disputing Party's position with respect to the dispute; and the information relied upon to support its position.
- d. The Section Manager shall conduct a review of the dispute and shall issue a written decision regarding the dispute (Decision on Dispute) within thirty (30) calendar days of receipt of the Formal Dispute Notice. The Decision on Dispute shall be Ecology's final decision on the disputed matter.
- 2. The Parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used.
- 3. Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Order, unless Ecology agrees in writing to a schedule extension.
- 4. In case of a dispute, failure to either proceed with the work required by this Order or timely invoke dispute resolution may result in Ecology's determination that insufficient progress is being made in preparation of a deliverable, and may result in Ecology undertaking the work under Section VII (Work to be Performed) or initiating enforcement under Section X (Enforcement).

I. Extension of Schedule

1. City of Shelton request for an extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least thirty (30) days prior to

expiration of the deadline for which the extension is requested, and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify:

- a. The deadline that is sought to be extended.
- b. The length of the extension sought.
- c. The reason(s) for the extension.
- d. Any related deadline or schedule that would be affected if the extension were granted.
- 2. The burden shall be on City of Shelton to demonstrate to the satisfaction of Ecology that the request for such extension has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause may include, but may not be limited to:
 - a. Circumstances beyond the reasonable control and despite the due diligence of City of Shelton including delays caused by unrelated third parties or Ecology, such as (but not limited to) delays by Ecology in reviewing, approving, or modifying documents submitted by City of Shelton.
 - b. Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty.
- c. Endangerment as described in Section VIII.K (Endangerment).

 However, neither increased costs of performance of the terms of this Order nor changed economic circumstances shall be considered circumstances beyond the reasonable control of City of Shelton.
- 3. Ecology shall act upon any City of Shelton's written request for extension in a timely fashion. Ecology shall give City of Shelton written notification of any extensions granted pursuant to this Order. A requested extension shall not be effective until approved by Ecology. Unless the extension is a substantial change, it shall not be necessary to amend this Order pursuant to Section VIII.J (Amendment of Order) when a schedule extension is granted.
- 4. At City of Shelton's request, an extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. Ecology may grant schedule extensions exceeding ninety (90) days only as a result of one of the following:

- a. Delays in the issuance of a necessary permit which was applied for in a timely manner.
 - b. Other circumstances deemed exceptional or extraordinary by Ecology.
 - c. Endangerment as described in Section VIII.K (Endangerment).

J. Amendment of Order

The project coordinators may verbally agree to minor changes to the work to be performed without formally amending this Order. Minor changes will be documented in writing by Ecology within seven (7) days of verbal agreement.

Except as provided in Section VIII.L (Reservation of Rights), substantial changes to the work to be performed shall require formal amendment of this Order. This Order may only be formally amended by the written consent of both Ecology and City of Shelton. Ecology will provide its written consent to a formal amendment only after public notice and opportunity to comment on the formal amendment.

When requesting a change to the Order, City of Shelton shall submit a written request to Ecology for approval. Ecology shall indicate its approval or disapproval in writing and in a timely manner after the written request is received. If Ecology determines that the change is substantial, then the Order must be formally amended. Reasons for the disapproval of a proposed change to this Order shall be stated in writing. If Ecology does not agree to a proposed change, the disagreement may be addressed through the dispute resolution procedures described in Section VIII.H (Resolution of Disputes).

K. Endangerment

In the event Ecology determines that any activity being performed at the Site under this Order is creating or has the potential to create a danger to human health or the environment on or surrounding the Site, Ecology may direct City of Shelton to cease such activities for such period of time as it deems necessary to abate the danger. City of Shelton shall immediately comply with such direction.

In the event City of Shelton determines that any activity being performed at the Site under this Order is creating or has the potential to create a danger to human health or the environment, City of Shelton may cease such activities. City of Shelton shall notify Ecology's project coordinator as soon as possible, but no later than twenty-four (24) hours after making such determination or ceasing such activities. Upon Ecology's direction, City of Shelton shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with City of Shelton's cessation of activities, it may direct City of Shelton to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to this section, City of Shelton's obligations with respect to the ceased activities shall be suspended until Ecology determines the danger is abated, and the time for performance of such activities, as well as the time for any other work dependent upon such activities, shall be extended in accordance with Section VIII.I (Extension of Schedule) for such period of time as Ecology determines is reasonable under the circumstances.

Nothing in this Order shall limit the authority of Ecology, its employees, agents, or contractors to take or require appropriate action in the event of an emergency.

L. Reservation of Rights

This Order is not a settlement under RCW 70.105D. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any of Ecology's rights or authority. Ecology will not, however, bring an action against City of Shelton to recover remedial action costs paid to and received by Ecology under this Order. In addition, Ecology will not take additional enforcement actions against City of Shelton regarding remedial actions required by this Order, provided City of Shelton complies with this Order.

Ecology nevertheless reserves its rights under RCW 70.105D, including the right to require additional or different remedial actions at the Site should it deem such actions necessary to protect human health or the environment, and to issue orders requiring such remedial actions. Ecology

also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances at the Site.

By entering into this Order, City of Shelton does not admit to any liability for the Site. Although City of Shelton is committing to conducting the work required by this Order under the terms of this Order, City of Shelton expressly reserves all rights available under law, including but not limited to the right to seek cost recovery or contribution against third parties, and the right to assert any defenses to liability in the event of enforcement.

M. Transfer of Interest in Property

No voluntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by City of Shelton without provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

Prior to City of Shelton's transfer of any interest in all or any portion of the Site, and during the effective period of this Order, City of Shelton shall provide a copy of this Order to any prospective purchaser, lessee, transferee, assignee, or other successor in said interest; and, at least thirty (30) days prior to any transfer, City of Shelton shall notify Ecology of said transfer. Upon transfer of any interest, City of Shelton shall notify all transferees of the restrictions on the activities and uses of the property under this Order and incorporate any such use restrictions into the transfer documents.

N. Compliance with Applicable Laws

1. Applicable Laws. All actions carried out by City of Shelton pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits or approvals, except as provided in RCW 70.105D.090. At this time, no federal, state, or local requirements have been identified as being applicable to the actions required by this Order. City of Shelton has a continuing obligation to identify additional applicable federal, state, and local requirements which apply to actions carried out pursuant to this Order, and to comply with those requirements. As additional federal, state, and local requirements

are identified by Ecology or City of Shelton, Ecology will document in writing if they are applicable to actions carried out pursuant to this Order, and City of Shelton must implement those requirements.

- 2. Relevant and Appropriate Requirements. All actions carried out by City of Shelton pursuant to this Order shall be done in accordance with relevant and appropriate requirements identified by Ecology. At this time, no relevant and appropriate requirements have been identified as being applicable to the actions required by this Order. If additional relevant and appropriate requirements are identified by Ecology or City of Shelton, Ecology will document in writing if they are applicable to actions carried out pursuant to this Order and City of Shelton must implement those requirements.
- 3. Pursuant to RCW 70.105D.090(1), City of Shelton may be exempt from the procedural requirements of RCW 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 and of any laws requiring or authorizing local government permits or approvals. However, City of Shelton shall comply with the substantive requirements of such permits or approvals. For permits and approvals covered under RCW 70.105D.090(1) that have been issued by local government, the Parties agree that Ecology has the non-exclusive ability under this Order to enforce those local government permits and/or approvals. At this time, no state or local permits or approvals have been identified as being applicable but procedurally exempt under this section.
- 4. City of Shelton has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order. In the event either Ecology or City of Shelton determines that additional permits or approvals addressed in RCW 70.105D.090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify the other party of its determination. Ecology shall determine whether Ecology or City of Shelton shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, City of Shelton shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the substantive requirements those agencies believe are

applicable to the remedial action. Ecology shall make the final determination on the additional substantive requirements that must be met by City of Shelton and on how City of Shelton must meet those requirements. Ecology shall inform City of Shelton in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. City of Shelton shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination.

Pursuant to RCW 70.105D.090(2), in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency that is necessary for the state to administer any federal law, the exemption shall not apply and City of Shelton shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits or approvals.

O. Periodic Review

So long as remedial action continues at the Site, the Parties agree to review the progress of remedial action at the Site, and to review the data accumulated as a result of monitoring the Site as often as is necessary and appropriate under the circumstances. Unless otherwise agreed to by Ecology, at least every five (5) years after the initiation of cleanup action at the Site the Parties shall confer regarding the status of the Site and the need, if any, for further remedial action at the Site. At least ninety (90) days prior to each periodic review, City of Shelton shall submit a report to Ecology that documents whether human health and the environment are being protected based on the factors set forth in WAC 173-340-420(4). Ecology reserves the right to require further remedial action at the Site under appropriate circumstances. This provision shall remain in effect for the duration of this Order.

P. Indemnification

City of Shelton agrees to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action (1) for death or injuries to persons, or (2) for loss or damage to property, to the extent arising from or on account of acts

or omissions of City of Shelton, its officers, employees, agents, or contractors in entering into and implementing this Order. However, City of Shelton shall not indemnify the State of Washington nor save nor hold its employees and agents harmless from any claims or causes of action to the extent arising out of the negligent acts or omissions of the State of Washington, or the employees or agents of the State, in entering into or implementing this Order.

IX. SATISFACTION OF ORDER

The provisions of this Order shall be deemed satisfied upon City of Shelton's receipt of written notification from Ecology that City of Shelton has completed the remedial activity required by this Order, as amended by any modifications, and that City of Shelton has complied with all other provisions of this Agreed Order.

X. ENFORCEMENT

Pursuant to RCW 70.105D.050, this Order may be enforced as follows:

- A. The Attorney General may bring an action to enforce this Order in a state or federal court.
- B. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the Site.
- C. A liable party who refuses, without sufficient cause, to comply with any term of this Order will be liable for:
 - 1. Up to three (3) times the amount of any costs incurred by the State of Washington as a result of its refusal to comply.
 - 2. Civil penalties of up to twenty-five thousand dollars (\$25,000) per day for each day it refuses to comply.
- D. This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under RCW 70.105D.060.

Effective date of this Order: _ December 20, 2021

City of Shelton

Jeff Niten

City Manager

525 W Cota Street, Tacoma WA

360-432-5105

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

Rebecca S. Lawson, P.E., LHG

Section Manager

Toxics Cleanup Program

Southwest Regional Office

360-407-6241

EXHIBIT A Site Location Diagram



EXHIBIT B Cleanup Action Plan



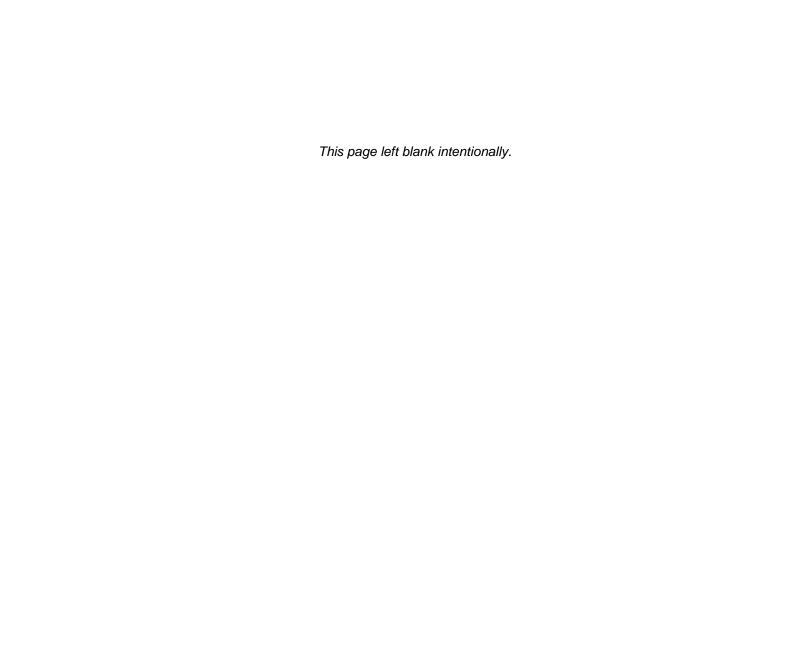
Cleanup Action Plan

Shelton C Street Landfill City of Shelton

August 10, 2021

Prepared by:

Washington State Department of Ecology



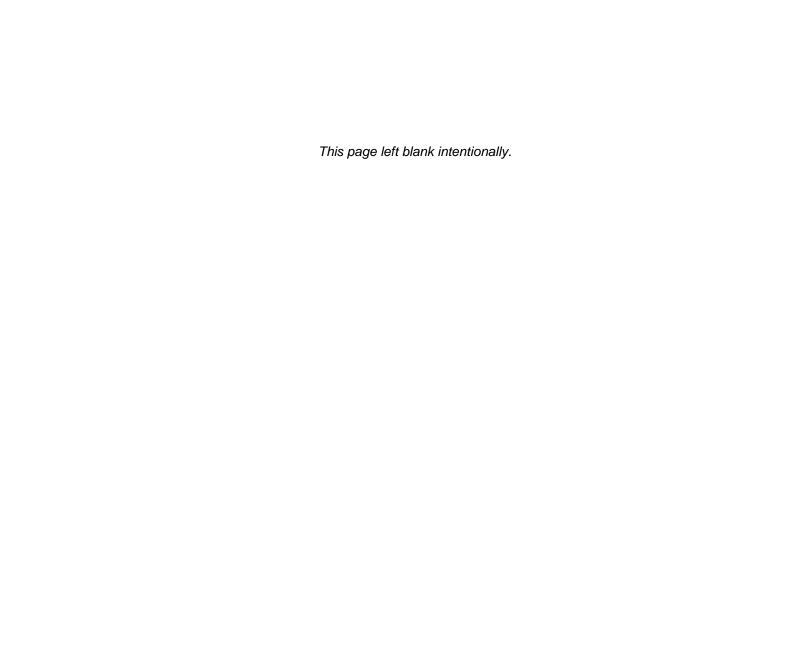
CLEANUP ACTION PLAN

Shelton C Street Landfill Shelton, Washington

Prepared for Department of Ecology

FEBRUARY 2021







CLEANUP ACTION PLAN Shelton C Street Landfill Shelton, Washington Prepared for Department of Ecology

FEBRUARY 2021

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Acronyms

2,3,7,8-TCDD 2,3,7,8-tetrachlorodibenzo-p-dioxin

Agreed Order Agreed Order No. DE 12929

ARARs Applicable Relevant and Appropriate Requirements

Aspect Consulting, LLC

bgs below ground surface

City of Shelton

COCs contaminants of concern

cPAH carcinogenic polycyclic aromatic hydrocarbons

CSM conceptual site model

DCA disproportionate cost analysis

dCAP Draft Cleanup Action Plan

DU Decision Unit

Ecology Washington State Department of Ecology

EM electromagnetic induction

ER electrical resistivity

EPA U.S. Environmental Protection Agency

FS Feasibility Study

IM&M inspection, maintenance, and monitoring

ISM incremental sampling methodology

MFS Minimum Functional Standards

mg/kg milligrams per kilogram

ug/L micrograms per liter

MTCA Model Toxics Control Act

OSHA Occupational Safety and Health Administration

PAHs polycyclic aromatic hydrocarbons

RCW Revised Code of Washington

RI Remedial Investigation

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SEPA State Environmental Policy Act

TEQ toxic equivalent concentration

USDOT United States Department of Transportation

WAC Washington Administrative Code

WISHA Washington Industrial Safety and Health Act

WSDOT Washington State Department of Transportation

WWTP wastewater treatment plant

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1 Introduction

This cleanup action plan (CAP) describes the cleanup action selected by the Washington State Department of Ecology (Ecology) for the Shelton C Street Landfill, a former municipal solid waste landfill, located in Shelton, Washington (herein referred to as the Site; Figure 1). The Site is located on a 16.7-acre parcel owned by the City of Shelton (the Property; Figure 1). The Property is at the west end of West C Street, just west of the overpass across U.S. Highway 101 in Mason County, Washington. The City of Shelton (City) acquired the Property in 1928 and used a portion of it as a municipal solid waste landfill through the early 1980s for disposal of solid waste generated within the City limits and the surrounding areas.

The dCAP has been prepared to meet the requirements of Agreed Order No. DE 12929 (Agreed Order) between the Ecology and the City, executed on September 30, 2016. Ecology has determined that the cleanup action described here complies with the Model Toxics Control Act (MTCA), Chapter 70.105D Revised Code of Washington (RCW), and the MTCA Cleanup Regulation, Chapter 173-340 WAC. This determination is based on the Remedial Investigation and Feasibility Study (RI/FS) Report, Shelton C Street Landfill, prepared by Aspect Consulting, LLC (Aspect) on behalf of the City, and approved by Ecology (RI/FS; Aspect, 2020), and other relevant documents in the administrative record.

1.1 Purpose

A CAP is a required part of the site cleanup process under Chapter 173-340 WAC, MTCA Cleanup Regulations. The purpose of the CAP is to identify the proposed cleanup action for the Site and to provide an explanatory document for public review. More specifically, the CAP:

- Describes the Site
- Summarizes current site conditions
- Summarizes the cleanup action alternatives considered in the remedy selection process
- Describes the selected cleanup action for the Site and the rationale for selecting this alternative
- Identifies site-specific cleanup levels and points of compliance for each hazardous substance and medium of concern for the proposed cleanup action
- Identifies applicable state and federal laws for the proposed cleanup action
- Identifies residual contamination remaining on the Site after cleanup and restrictions on future uses and activities at the Site to ensure continued protection of human health and the environment
- Discusses compliance monitoring requirements
- Presents the schedule for implementing the CAP

Ecology has made a preliminary determination that the cleanup described in this CAP will comply with the requirements for selection of a remedy under WAC 173-340-360.

1.2 Previous Studies

The dCAP was developed using information presented in the RI/FS for the Site (Aspect, 2020), which was reviewed and approved by Ecology. Prior to the RI, the only known investigation of the Site was conducted in 1986 following a national U.S. Environmental Protection Agency (EPA) study of dioxin/furan-contaminated sites. The 1986 study identified the presence of dioxin/furan-contaminated baghouse residue mixed with wastewater treatment plant (WWTP) sludge that had been disposed of at the Site (CH2M Hill, 1987).

The RI consisted of five phases of Site investigation and characterization work, as follows:

- Geophysical Survey. In May 2017, a geophysical survey consisting of an electromagnetic induction (EM) survey, magnetic survey, and electrical resistivity (ER) survey was completed to provide preliminary information regarding the lateral extent and thickness of landfill waste at the Site.
- Surface Characterization. In July 2017, a surface soil characterization investigation was conducted to characterize the presence and nature and extent of contaminants in surface and shallow subsurface soil near the reported WWTP sludge disposal area. The investigation used incremental sampling methodology (ISM) in three Decision Units (DUs) to determine average concentrations of contaminants within the WWTP sludge disposal area.
- **Groundwater Evaluation.** In December 2017, a groundwater evaluation was initiated, consisting of installing four groundwater monitoring wells, followed by four quarters of groundwater sampling to evaluate hydrogeologic conditions and groundwater quality.
- Landfill Gas and Soil Gas Investigation. In December 2018, a landfill gas/soil gas investigation was completed, consisting of sampling from five temporary soil gas probes installed at locations where the geophysical investigation suggested that landfill waste is present.
- Cover Soil Characterization. In February 2020, a cover soils characterization occurred, consisting of soil sampling from four test pits excavated in areas where cover soils are present, outside of the WWTP sludge disposal area.

The final draft of the RI/FS was submitted to Ecology in May 2020. The RI/FS provides the technical basis for the cleanup actions to be conducted at the Site.

2 Site Description

The Property is a single parcel (Mason County parcel no. 42024-21-60430) totaling approximately 16.7-acres in size that is currently vacant undeveloped land, covered by shrub vegetation and trees (Figure 2). A 250-foot-wide strip of land along the eastern edge of the Property is a utility right-of-way that includes transmission towers, overhead electrical transmission lines, and a buried natural gas pipeline (Figure 2). Public access to the Property is restricted by a locking gate approximately 1,500 feet east of the Property on West C Street and signage indicating restricted access.

This section presents a discussion of the Site history; a summary of the conceptual site model (CSM) describing the contamination found at the Site and the associated environmental concerns; and the cleanup standards.

2.1 Site History

The Shelton C Street Landfill is an unlined, municipal solid waste landfill that was used by the City of Shelton between approximately 1928 and the mid-1980s (Aspect, 2020). Prior to this, the Property was privately owned and mined for sand and gravel aggregate, resulting in a deep, bowl-like depression that was ideally suited for use as a landfill.

The solid waste known to have been deposited in the landfill consists primarily of residential solid waste, but was reported to also include disposal of by-products, research waste, and demolition debris from nearby pulp mills, and sludge from the City's wastewater treatment plant. Between 1976 and 1981, processed WWTP sludge is reported to have contained fly-ash baghouse residue that was generated by a wood-burning, boiler power plant at the Simpson Timber Company Shelton timber mill. The baghouse ash contained dioxin compounds. Because of its age, the landfill contents are heavily degraded.

The Property has been generally unused since the mid-1980s, and public access to the Property and surrounding properties is restricted for safety reasons. There is no available information that documents landfill closure activities, and it is not known whether any were completed, but the results of the RI indicate that some of the landfill waste was covered with imported soil.

2.2 Conceptual Site Model

The information presented in this section is based on the CSM that was provided in the RI/FS, which should be referenced for additional details.

Native soils at the Site consist of interglacial recessional outwash, composed of silty gravels, gravelly sands and silty sands, overlying glacial till. Ground surface elevations within the bowl are 50 to 80 feet lower than the ground surface surrounding the bowl (Figure 2). Fill soils observed within the landfill consist of 2 to 15 feet of cover soil, except in the northwest portion of the landfill, where WWTP sludge is exposed at the surface. The WWTP sludge is estimated to be up to 5 feet thick, at its thickest, and pinches out to less than 6-inches thick at the perimeter of the sludge disposal area. The

cover soil and WWTP sludge overlie municipal solid waste that is approximately 20 to 25 feet thick.

Groundwater is located within the recessional outwash at depths of 83 to 105 feet below ground surface (bgs). This indicates that there is more than 35 feet of separation between the base of the landfill waste and the top of the water table. Groundwater levels fluctuate seasonally by up to 6 feet and the inferred groundwater flow direction is to the south-southeast.

The source of contaminants at the Site is the landfill waste, including the WWTP sludge. Based on the RI, the contaminants of concern (COCs) for the cleanup action consist of carcinogenic polycyclic aromatic hydrocarbons (cPAHs), dioxin/furans, and metals in surface soil, and total and dissolved iron and manganese in groundwater. The nature and extent of contamination that defines the Site is summarized as follows:

- Soil. Concentrations of dioxins/furans, cPAHs, and metals are contained in WWTP sludge that is present as surface soil in the northwest portion of the landfill. Dioxin/furans, mercury and lead are contained in cover soils overlying landfill waste in areas outside of the WWTP sludge disposal area.
- **Groundwater.** Iron and manganese in groundwater (both total and dissolved) are secondary contaminants in groundwater that are attributable to the subtle reducing and/or slightly acidic conditions associated with carbon dioxide in landfill gas that results in dissolution of naturally occurring constituents from native soils.

Dioxin/furans, cPAHs, and metals are at the highest concentrations in surface soil at the northwest portion of the landfill, where WWTP sludge was disposed of on the ground surface. Based on current and potential future use scenarios, the risk at the Site is to human receptors and terrestrial ecological receptors (plants and animals) who have the potential for direct contact with landfill waste and COCs in surface and shallow subsurface soil.

3 Cleanup Standards

The cleanup standards required under MTCA consist of cleanup levels for hazardous substances present at the Site and the location where cleanup levels must be met (point of compliance). All media exceeding a cleanup level is addressed through a cleanup remedy that prevents exposure to the contaminated media. The cleanup standards for the Site are presented in this section.

3.1 Contaminated Media and Points of Compliance

This section presents the contaminated media and points of compliance for the cleanup action.

3.1.1 Landfill Waste and Soil

The landfill waste itself is presumed to be contaminated with one or more hazardous substances. Due to the heterogeneous nature of waste at municipal landfills and the presumptive remedy for landfill closure, which allows for containment of the waste, the landfill contents were not fully characterized for specific hazardous substances during the RI, except for the WWTP sludge that is exposed at the ground surface. The presence of landfill waste requires that an environmental (restrictive) covenant be recorded on the ownership deed for the Site Property.

The soil point of compliance (POC) is the location or locations where the soil cleanup levels must be attained for the Site to be in compliance with the cleanup standards. The standard POC for direct contact with soil is 15 feet, based on a reasonable maximum depth of excavation and assumed placement of excavated soils at the surface where excavation occurs. The conditional POC for direct contact with soil is 6 feet when an institutional control is established to prevent soil excavation. When a physical barrier is incorporated into a cleanup remedy, the conditional POC can be set at 30 inches. The selected remedy will include installation of a geotextile isolation barrier; therefore, the POC for direct contact with soil at the Site is 30 inches.

The WWTP sludge and landfill cover soil contains dioxins/furans, cPAHs, and/or metals. The soil cleanup levels for these contaminants are summarized in Table 1.

3.1.2 Groundwater

The groundwater POC) is the point, or points, where the groundwater cleanup levels must be attained for the Site to be in compliance with the cleanup standards. The standard POC for groundwater under MTCA is throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site (WAC 173-340-720(8)(b)). Where it can be demonstrated that it is not practicable to meet the cleanup level throughout the Site within a reasonable restoration timeframe, Ecology may approve a conditional POC that is as close as practicable to the source and does not exceed the property boundary.

In addition to MTCA, the Site is subject to the requirements of the Minimum Functional Standards (MFS; WAC 173-304), which defines the groundwater POC as "that part of ground water that lies beneath the perimeter of a solid waste facilities" active area as

that active area would exist at closure of the facility." Ecology has approved a conditional POC for groundwater at the downgradient edge of the landfill waste, which is the same location as a MFS POC.

The maximum beneficial use of groundwater beneath and downgradient of the Site is drinking water; therefore, the groundwater cleanup levels are based on cleanup levels protective of potable groundwater.

3.2 Cleanup Levels

Cleanup levels are the concentration at which a substance does not threaten human health or the environment. The cleanup levels for the Site were developed during the RI/FS and have been approved by Ecology as the final cleanup levels. The soil and groundwater cleanup levels are the most stringent of the cleanup levels protective of human health through the direct contact and ingestion pathways and those that are protective of ecological receptors. The soil and groundwater cleanup levels are presented on Tables 1 and 2, respectively.

4 Cleanup Action Alternatives and Analysis

4.1 Alternatives Evaluated

Four remedial alternatives were developed and evaluated in the RI/FS (Aspect, 2020) to address contamination at the Site. The alternatives combined a range of potentially applicable technologies, consisting of landfill capping, source removal, institutional controls and long-term monitoring. The alternatives consisted of the following:

- Alternative 1 Install a low permeability soil cap, implement institutional controls, and conduct long-term monitoring
- **Alternative 2** Install an impermeable cover system with geomembrane layer, implement institutional controls, and conduct long-term monitoring
- Alternative 3 Remove WWTP sludge, install a permeable soil cap, implement institutional controls, and conduct long-term monitoring
- Alternative 4 Conduct full removal of landfill waste

Each of the four alternatives were evaluated against the MTCA threshold criteria and other requirements, including disproportionate cost analysis procedures (WAC 173-340-360). The results of the analysis identified Alternative 1, further explained in Section 4.2, as the preferred alternative because it meets threshold requirements; is permanent to the maximum extent practicable; has a reasonable restoration timeframe; and is the most cost-effective of the four alternatives.

4.2 Rationale for the Selected Cleanup Action

The contamination at the Site requiring remedial action consists of cPAHs, dioxins/furans, and metals in shallow soil in the WWTP sludge area and landfill cover soil and the landfill waste itself. The selected cleanup action consists of construction of a permeable soil cap, and implementation of institutional controls, physical barriers, and an inspection, monitoring, and maintenance (IM&M) program. The selected cleanup action meets the threshold requirements set forth in MTCA and identified in WAC 173-340-360(2)(a), as follows:

- **Protect human health and the environment.** Construction of the permeable cap with underlying geotextile isolation barrier will protect humans and terrestrial ecological receptors from direct-contact exposure. Implementation of institutional controls (deed restriction) and the IM&M program will ensure that the cap remains protective.
- Comply with cleanup standards. The cleanup action will result in containment of soils with hazardous substance concentrations exceeding cleanup levels at the point of compliance. Compliance with cleanup standards will be achieved by meeting the requirements of WAC 173-340-740(6)(f), as described in this section.
- Comply with applicable state and federal laws. The cleanup action was specifically developed to comply with MTCA. The cleanup action is anticipated to comply with all other potential applicable, relevant, and appropriate requirements

- ((ARARs); see Section 5.2) because the required engineering design and agency review processes will include steps to ensure compliance. The means of compliance with ARARs will be documented in the engineering design documents and other preconstruction documentation that will be prepared during the design phase.
- **Provide for compliance monitoring.** During construction of the cap, quality control measures will ensure that cap construction is completed per design requirements. The IM&M will be conducted to ensure the long-term protectiveness of the remedy.

The cleanup action has a reasonable restoration timeframe, uses permanent solutions to the maximum extent practicable, and was provided for public review during the RI/FS public comment period. The selected cleanup action meets the MTCA threshold requirements and selection criteria per WAC 173-340-360.

5 Description of the Cleanup Action

The selected remedial alternative for implementation during the cleanup action was developed through evaluation of the Site conditions and applicable remedial technologies in the RI/FS. This section describes the selected remedial alternative.

5.1 Cleanup Action Components

The cleanup action consists of installation of a permeable soil cap and implementation of institutional controls, physical barriers, and an IM&M program, as follows:

- Low Permeability Soil Cap. The soil cap will be installed over the full extent of the landfill (approximately 4 acres) to prevent contact with landfill waste and contaminated soil by human and terrestrial ecological receptors and will meet the landfill closure specifications in WAC 173-304-460(e). The soil cap will consist of a geotextile isolation barrier, a minimum 2-foot-thick layer of clean, imported low permeability cover materials, and a 1-foot-thick vegetative layer of topsoil seeded with grasses or other shallow-rooted vegetation.
- **Institutional Controls.** Institutional controls will include a deed restriction to prevent future, unrestricted development or any other activities that could create exposure pathways for direct contact with the contaminated soil or landfill waste. The institutional controls are required *in perpetuity*.
- Signage and Physical Barriers. Signage will be installed along the main access road that connects to the terminus of West C Street, warning of the presence of landfill waste and potential risk to human health, along with a gate or other physical restriction on the access road. A fence with signage will be installed surrounding the landfill area to minimize accessibility from areas other than the access road.
- **Monitoring.** The IM&M program will include the following:
 - Annual topographic surveys for at least the first 5 years following construction, ¹ to evaluate soil settlement and cap stability
 - Periodic inspection of Site conditions
 - Maintenance of the remedy (e.g., removal of large vegetation from the cap area² and filling of eroded areas), performed on an as-needed basis
 - Semiannual groundwater monitoring at the four existing monitoring wells for iron and manganese concentrations
 - Periodic reporting of IM&M activities to Ecology, including 5-year reviews

The conceptual elements of the cleanup action are depicted on Figure 3. The detailed locations and specifications will be defined in future design and specification documents.

¹ An initial topographic survey would also be conducted upon completion of cap construction.

² Trees would not be allowed to grow in the capped area, since roots of large trees could extend into the landfill waste and bring it to the surface if a tree is blown over (for example).

5.2 Applicable, Relevant, and Appropriate Requirements (ARARs)

The cleanup action has been developed to meet the requirements of MTCA and regulations implementing it, Chapter 173-340 of the Washington Administrative Code (WAC 173-430), the requirements of the Agreed Order between the City and Ecology, as well as the following other potentially applicable state and federal laws. The specific applicable or relevant and appropriate requirements (ARARs) for the cleanup action are anticipated to be identified over the course of the engineering and design reviews that will be required prior to implementation.

MTCA. The MTCA statute (Chapter 70.105D RCW) is the primary law that governs cleanup of contaminated sites in the state of Washington (Ecology, 2013). The MTCA cleanup regulation (Chapter 173-340 WAC) specifies criteria for the evaluation and conduct of a cleanup action. It requires that cleanup actions protect human health and the environment, meet environmental standards in other applicable laws, and provide for monitoring to confirm compliance with cleanup levels.

For solid waste landfills, MTCA considers MFS to be relevant and appropriate requirements and defines the solid waste closure requirements in WAC 173-304 as the minimum requirements for cleanup actions conducted at solid waste landfills under MTCA (WAC 173-340-710(7)(c)).

Minimum Functional Standards for Solid Waste Handling. These regulations (Chapter 173-304 WAC) provide the minimum requirements for cleanup actions conducted under MTCA at solid waste landfills that stopped receiving waste prior to October 9, 1991. WAC 173-304 became effective in November 1985, replacing Washington State's first MFS for solid waste landfills, Chapter 173-301 WAC.

Criteria for Municipal Solid Waste Landfills. The 173-351 regulations specify postclosure care activities for municipal solid waste landfills that received waste after October 9, 1991.

SEPA. The State Environmental Policy Act (SEPA; Chapter 197-11 WAC) and the SEPA procedures (Chapter 173-802 WAC) ensure that state and local government officials consider environmental values when making decisions. The SEPA process begins when an application for a permit is submitted to an agency, or an agency proposes to take some official action, such as implementing a Cleanup Action Plan under MTCA. Completion of a SEPA checklist would be required prior to initiating remedial construction activities.

Solid and Hazardous Waste Management. The Washington Dangerous Waste Regulations (Chapter 173-303 WAC) would apply if dangerous wastes are generated, and United States Department of Transportation (USDOT) and Washington State Department of Transportation (WSDOT) regulations regarding transport of hazardous materials (49 CFR Parts 171-180) would apply if regulated material is transported offsite as part of the cleanup action. The Washington Solid Waste Handling Standards (Chapter 173-350 WAC) regulate handling, treatment, or off-site disposal of nonhazardous solid waste.

Other:

- Occupational Safety and Health Administration (OSHA) and Washington Industrial Safety and Health Act (WISHA) regulations (29 CFR 1910.120; Chapter 296-62 WAC) governing worker safety during cleanup action execution. Compliance would be achieved through preparation and implementation of site-specific health and safety plan(s) (HASP[s]) with appropriate controls, worker training and certifications, and occupational monitoring
- Mason County Land Modification (Grading) Permit
- Washington State Water Well Construction Regulations (Chapter 173-160 WAC) regulating groundwater well installation and decommissioning as part of the cleanup action

The Archeological and Historical Preservation Act (16 USCA 496a-1) would be applicable if any subject materials are discovered during grading and excavation activities. A cultural resources assessment and archeological oversight of subsurface disturbing activities may be required elements of the project.

5.3 Restoration Timeframe

Site cleanup will be achieved upon completion of the remedy construction. Permeable cap design and construction is anticipated to be completed in under one year, which is considered a reasonable restoration timeframe in accordance with the factors listed in WAC 173-340-360(4)(b).

5.4 Compliance Monitoring and Reporting

Compliance monitoring and reporting will be implemented in accordance with WAC 173-340-410 to ensure the protectiveness of the cleanup actions. The following sections generally describe the monitoring requirements.

5.4.1 Groundwater

The goal of groundwater monitoring is to evaluate groundwater quality over time and ensure that there are no risks to human health or the environment at the point of compliance. The contaminant concentrations in groundwater downgradient of the Site currently meet the cleanup levels, except for secondary contaminants total iron and total manganese. Over time, the iron and manganese concentrations in groundwater are expected to approach background conditions as the subsurface environment becomes less anaerobic. Groundwater monitoring will be conducted to monitor these changes over time.

Groundwater monitoring will include semiannual water level measurement, sample collection from Site monitoring wells AMW-1 through AMW-4, and laboratory analysis. Measured water levels will be analyzed to determine the groundwater surface elevation and direction and rate of flow. All groundwater samples will be collected using low-flow techniques while monitoring for pH, temperature, and conductivity using calibrated field equipment, handled using standard chain-of-custody procedures, and analyzed by an accredited laboratory for total iron and total manganese.

Concentrations of total iron and total manganese will be evaluated for statistically significant trends following unified guidance provided by the EPA (EPA, 2009). These trends will be used to determine compliance with cleanup levels.

Groundwater monitoring and interpretation will be documented annually and submitted to the Ecology Site Manager. Results of laboratory analysis will be posted to Ecology's Environmental Information Management (EIM) database. Groundwater monitoring and reporting will be conducted for a minimum period of 5 years after completing the construction of the remedy and for at least 2 years after groundwater cleanup levels are met.

5.4.2 Landfill Cover

Annual inspection, maintenance and repair will be conducted to preserve the intended function of the landfill cover. The inspection will include observation and documentation of the following:

- Appearance and condition of vegetation
- Soil erosion, cracks or other changes in the surface elevation
- Intrusion by humans or animals, including holes or wildlife trails
- Any other damage or disturbance to the cover

Maintenance and repairs will be completed as needed to maintain the integrity and protectiveness of the cover. Cover inspection, maintenance, and repair will be documented annually and submitted to the Ecology Site Manager.

5.4.3 Signage and Physical Barriers

Annual inspection of notification and physical barriers will be conducted to preserve their intended function. The inspection will include observation and documentation of the following:

- Integrity and legibility of public notification signage
- Damage to the perimeter fencing

Maintenance, repairs and/or replacement will be completed as needed to maintain the protectiveness of the signage and physical barriers. Inspections, maintenance, and repair or replacement will be documented annually and submitted to the Ecology Site Manager.

5.5 Schedule for Implementation

The implementation of the cleanup action will occur after a public participation comment period on the dCAP. Construction of the remedy is expected in 2022.

5.6 Institutional Controls

Institutional controls are measures taken to limit or prohibit activities that may interfere with the integrity of a cleanup action or that may result in exposure to hazardous substances at a site (WAC 173-340-440). An environmental covenant, in the form of a deed restriction, will be developed for the Property following the remedy construction because contamination will remain after cleanup. The environmental covenant will prevent disturbance of the landfill cover and underlying contaminated soil and landfill

waste without prior notification of Ecology. The environmental covenant may also limit future property use.

5.7 Periodic Review

In accordance with WAC 173-340-420, at a site where a cleanup action requires an institutional control, Ecology will conduct a review of this Site every five years to ensure the continued protection of human health and the environment. Since the landfill waste will remain onsite and institutional controls will be required, periodic reviews will occur at the Site to assess the effectiveness of the cleanup action.

6 Cleanup Action Implementation

The cleanup will be conducted as a formal action under an Agreed Order between the City and Ecology. Prior to construction, plans and specifications will be prepared to meet the requirements of WAC 173-340-400 and will consist of the following:

- Engineering Design Report (EDR). The EDR will describe the engineering concepts, design criteria and operation parameters used for design of the cleanup action. The EDR will include the assumptions and calculations for the construction of the soil cap and specifications for the signage and physical barriers. Other components of the EDR will include:
 - A schedule for final design and construction.
 - A general description of construction testing that will be used during the cleanup to demonstrate adequate quality control.
 - A general description of the compliance monitoring that will be performed during and after construction.
 - A draft environmental (restrictive) covenant.
- Construction Plans and Specifications. The plans and specifications will be prepared in conformance with currently accepted engineering practices and techniques to detail the cleanup actions to be performed.
- Compliance Monitoring Plan (CMP). The CMP will describe the monitoring to be performed during construction to meet the requirements of WAC 173-340-410. The CMP will include a sampling and analysis plan to describe the sample collection, handling, and analysis procedures to be used to meet the requirements of WAC 173-340-820.
- Inspection, Monitoring and Maintenance Plan (IM&M Plan). The IM&M Plan will present technical guidance and regulatory requirements for the long-term inspection, maintenance, and monitoring of the cleanup action. The IM&M Plan will provide the details and specifications for compliance groundwater monitoring and sampling and inspection, maintenance and repair of the soil cap and landfill cover, signage, and physical barriers.

The schedule for preparation of these documents will be defined in the Agreed Order, based on its date of execution.

References

- Aspect Consulting, LLC, 2020, Public Review Draft Remedial Investigation and Feasibility Study Report, Shelton C Street Landfill, Shelton, Washington, May 21, 2020.
- CH2M Hill, 1987, Simpson Timber Company, Dioxin Study, Final Report, March 1987.
- Washington State Department of Ecology (Ecology), 2013, Model Toxics Control Act Regulation and Statute, Chapter 173-340 of the Washington Administrative Code (WAC 173-340), and Chapter 70.105D of the Revised Code of Washington (RCW 70.105D), Publication No. 94-06, Revised 2013.
- United States Environmental Protection Agency (EPA), 2009, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, Publication EPA 530-R-09-007, March 2009.

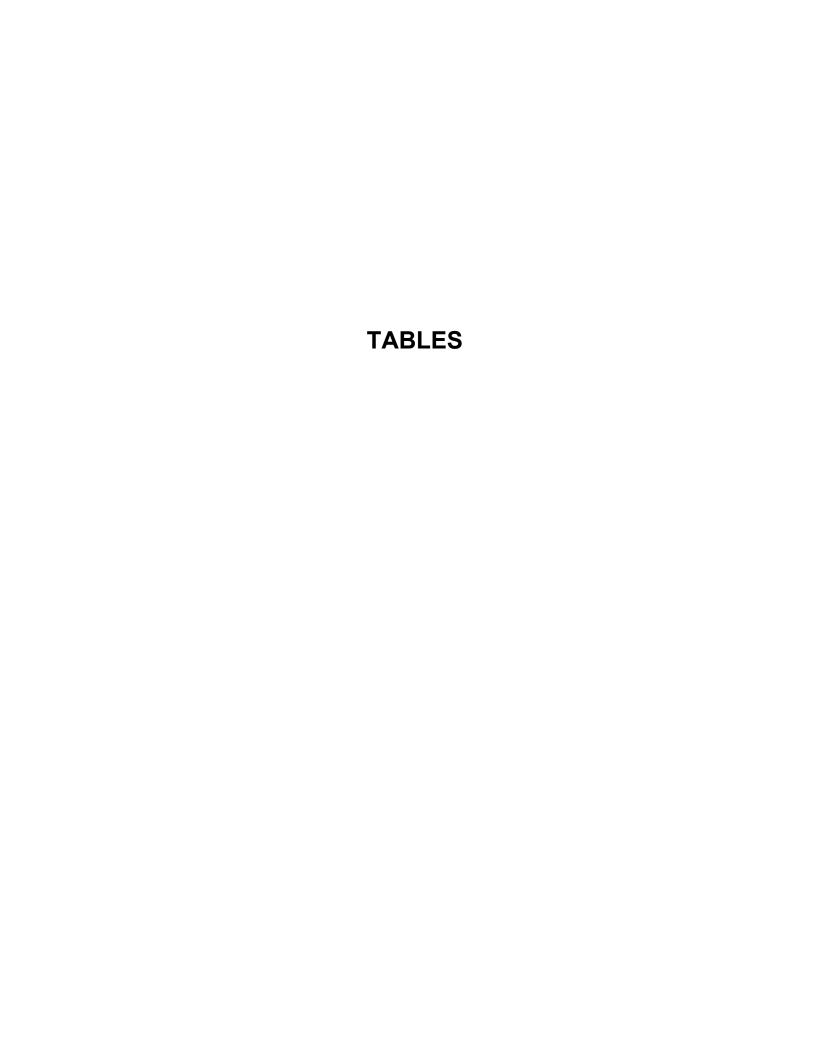


Table 1. Soil Contaminants of Concern and Site Cleanup Levels

Shelton C Street Landfill

Contaminant of Concern	Soil Cleanup Level	Criteria ¹	
Dioxins/Furans (ng/kg)			
Tetrachlorodibenzo-p-dioxin (tcdd); 2,3,7,8-	2	а	
Chlorinated dibenzo-p-dioxins (PCDDs), total	2.2	b	
Chlorinated dibenzofurans (PCDFs), total	2.2	b	
Metals (mg/kg)			
Barium	102	а	
Copper	50	С	
Lead	50	d	
Mercury	0.1	С	
Selenium	0.78	е	
Silver	2	d	
Zinc	86	d	
Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAH; mg/kg)			
Benzo[a]anthracene	1.37	f	
Benzo[a]pyrene	0.14	f	
Benzo[b]fluoranthene	1.37	f	
Benzo[k]fluoranthene	13.7	f	
Chrysene	137	f	
Dibenzo[a,h]anthracene	0.14	f	
Indeno[1,2,3-cd]pyrene	1.37	f	
Total cPAHs TEQ	0.14	f	

Notes:

ng/kg = nanogram per kilogram

mg/kg = milligram per kilogram

TEQ = toxic equivalent concentration

7493, Table 749-3 (Eco Indicator Concentrations), wildlife criteria

¹From Aspect Consulting, LLC, 2020, Public Review Draft Remedial Investigation and Feasibility Study Report, Shelton C Street Landfill, Shelton, Washington, May 21, 2020

^aEcological Indicator Soil Concentrations for Protection of Terretrial Plants and Animals, MTCA 173-340-

^bNatural Background concetnration for Dioxins/Furans in WA Soils, Ecology Technical Memorandum #8, August 9, 2010

^cEco Indicator Concentrations, soil biota criteria

^dEco Indicator Concentrations, plant criteria

^eNatural Background Soil Metals Concentrations in Washington State, October 1994

^fModel Toxics Control Act Cleanup Regulatoin (MTCA), WAC 173-340, Method B standard formula values

Table 2. Groundwater Contaminants of Concern and Site Cleanup Levels

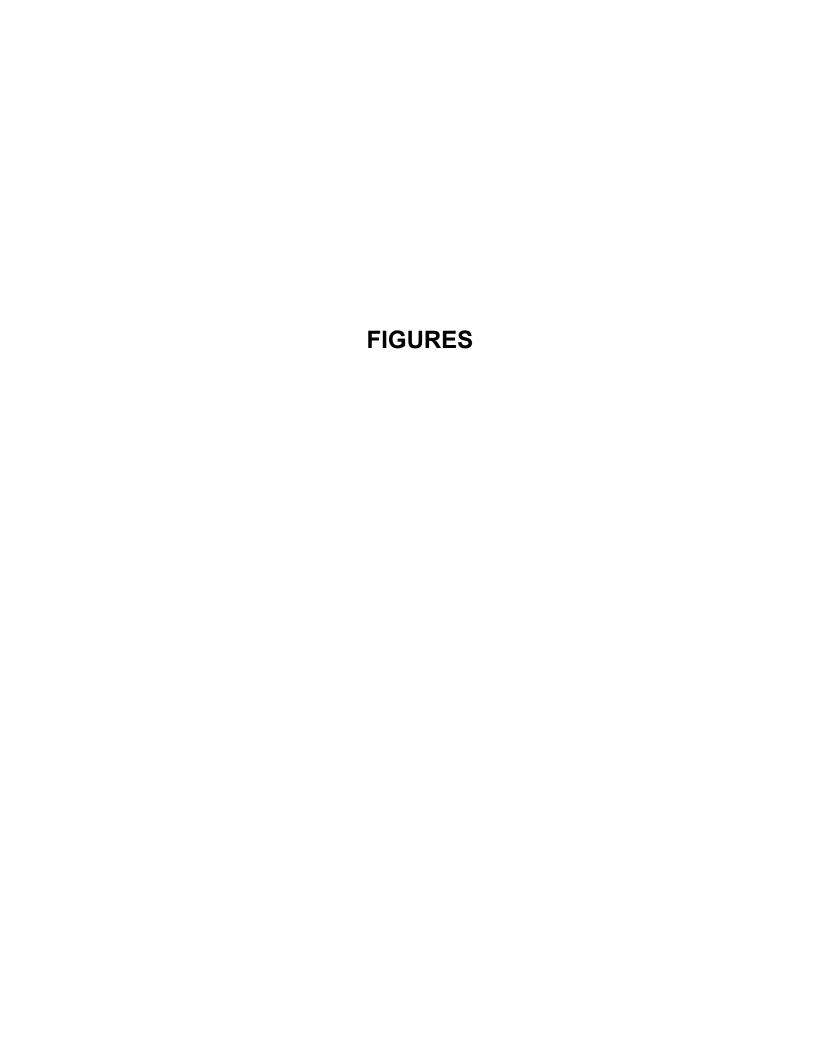
Shelton C Street Landfill

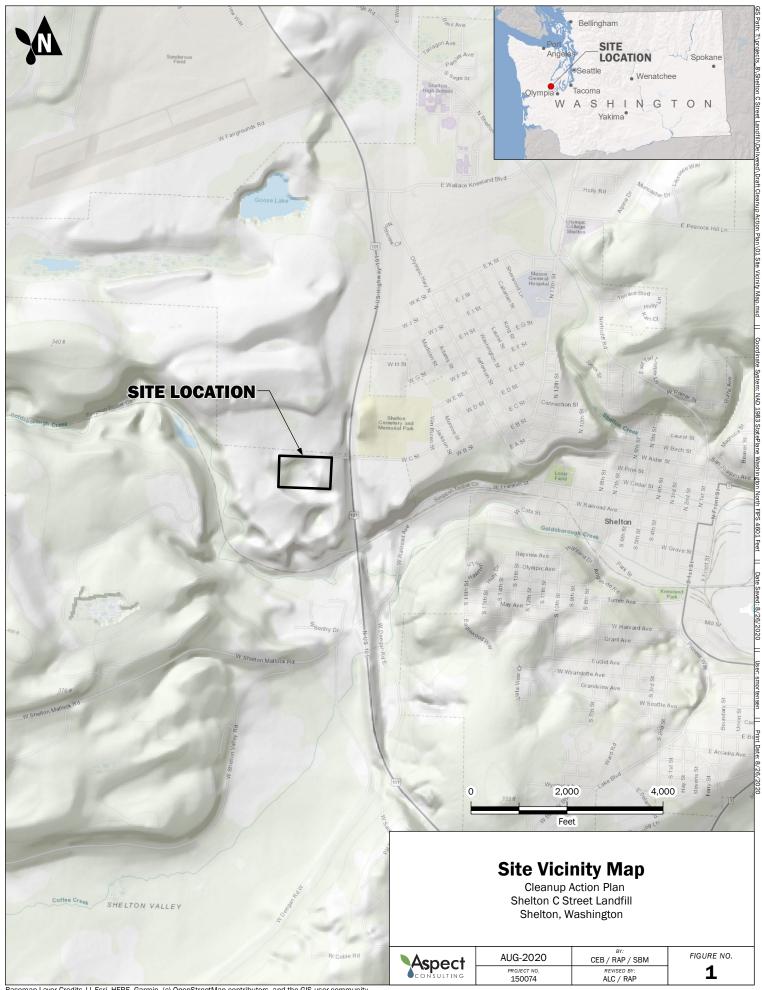
Contaminant of Concern	Groundwater Cleanup Level ¹	
Conventionals (ug/L)		
Iron	300	
Manganese	50	

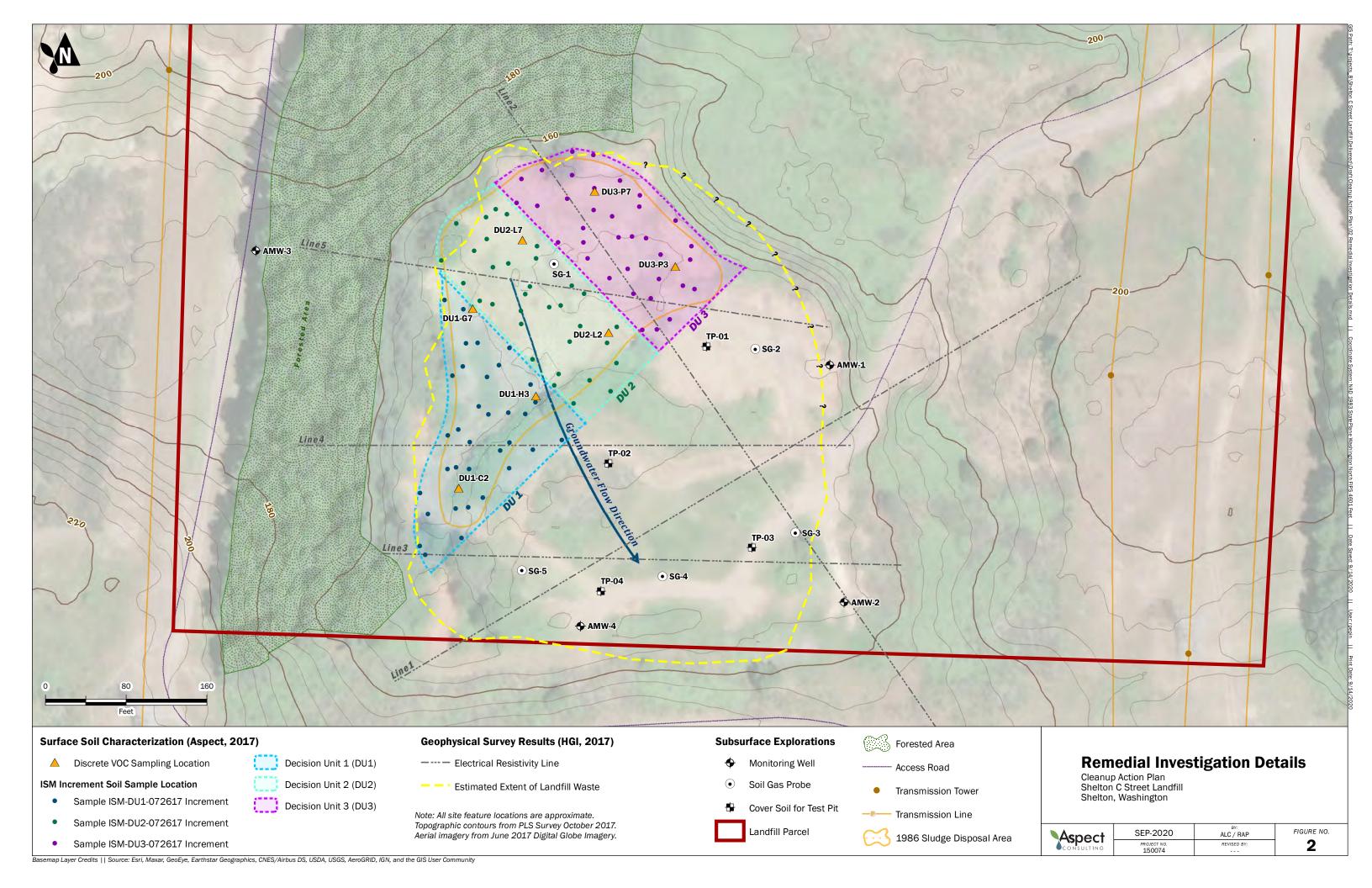
Notes:

ug/L = microgram per liter

¹From Aspect Consulting, LLC, 2020, Public Review Draft Remedial Investigation and Feasibility Study Report, Shelton C Street Landfill, Shelton, Washington, May 21, 2020







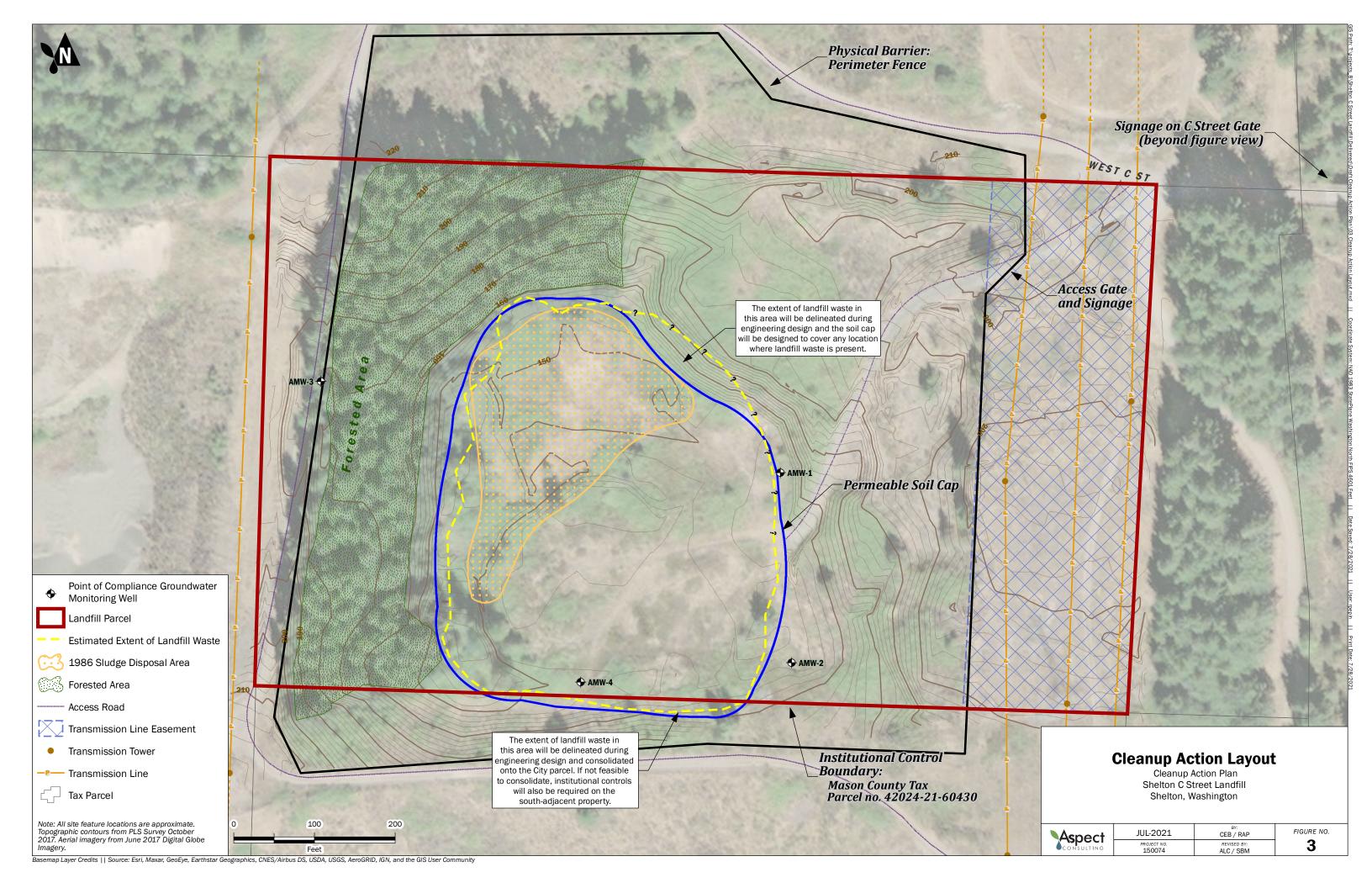


EXHIBIT C Schedule and Deliverables

Exhibit C Schedule of Deliverables

Deliverables	Due Date
Progress Reports	Quarterly, due by the 15th of the month in
	January, April, July and October
Draft Engineering Design Report (EDR), including 90% construction plans and specifications, and draft Compliance Monitoring Plan (CMP) (see Section VII.B)	Submit to Ecology 90 days after AO Effective Date
Draft Inspection, Monitoring and Maintenance	Submit to Ecology 90 days after AO Effective
Plan	Date
Final EDR, including 100% construction plans and specifications and final CMP	Submit to Ecology 30 days after receipt of
	Ecology's written comments on draft
	documents
Draft Construction Completion Report,	Submit to Ecology 90 days after cleanup
including draft as-built report	construction is complete
	Submit to Ecology 30 days after receipt of
	Ecology's written comments on draft
Final Construction Completion Report	documents
Final Inspection, Monitoring and Maintenance	Submit to Ecology with the Final
(I,M&M) Plan	Construction Completion Report
	Submit to Ecology with the Final
Draft Environmental Covenant	Construction Completion Report
Record Final Environmental Covenant	Within 30 days of execution
	Submit to Ecology within 30 days of
Final Environmental Covenant	recording
Draft and Final Inspection, Monitoring and	Submit to Ecology in accordance with the
Maintenance Reports	schedule in the I,M&M Plan