

**STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY**

In the Matter of Remedial Action by:

AGREED ORDER

**POPE RESOURCES LP and OLYMPIC
PROPERTY GROUP LLC**

No. DE 15448

TO: Mr. Adrian Miller
Olympic Property Group LLC
Pope Resources LP
19245 Tenth Ave. NE
Poulsbo, WA 98370

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I. INTRODUCTION

The mutual objective of the State of Washington, Department of Ecology (Ecology), Pope Resources LP (“PR”), and Olympic Property Group LLC (“OPG”) 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 PR and OPG (the “Companies”) to perform a remedial investigation/feasibility study and prepare a draft Cleanup Action Plan for the Upland Area of the Port Gamble Bay and Mill Site consistent with WAC 173-340-350 and WAC 173-340-380 respectively.¹ 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 parties to comply with this Order. The Companies agree to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter the Companies’ responsibility under this Order. The Companies 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.

¹ Assuming agreement on a cleanup action plan, Ecology and the Companies expect to enter into a new consent decree that will cover Upland Area and be separate from the Consent Decree filed in Kitsap County under Case No. 13-2-02720-0.

A. Site: The Site is referred to as the Port Gamble Bay and Mill Site. The Site constitutes a facility under RCW 70.105D.020(8). The Site is defined by 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 consists of the portion addressed in the October 2013 Cleanup Action Plan included in the Consent Decree in Kitsap County Case No. 13-2-02720-0, together with the upland portion of the former sawmill area, and upland areas to the west and south of the former sawmill area, all of which are generally located near the eastern terminus of NE View Drive in Port Gamble, Washington, as well as wherever hazardous substances from releases at these areas have come to be located. The Upland Area of the Site has not yet been fully defined but is generally as shown in the Site Location Diagram (Exhibit A).

B. Upland Area: Refers to that portion of the Site other than the portion addressed in the October 2013 Cleanup Action Plan included in the Consent Decree in Kitsap County Case No. 13-2-02720-0.

C. Parties: Refers to the State of Washington, Department of Ecology; Pope Resources LP; and Olympic Property Group LLC, each of which shall be referred to as a “Party.”

D. Potentially Liable Persons (PLP[s]): Refers to Pope & Talbot, Inc.; Pope Resources LP; and Olympic Property Group LLC. Ecology has given notice to the Washington State Department of Natural Resources (DNR) of Ecology’s determination that it is a PLP for the Site,² but DNR has chosen not to participate at the Site or to be a party to this Agreed Order.

E. Agreed Order or Order: Refers to this Order and each of the exhibits to this Order. All exhibits are integral and enforceable parts of this Order. The terms “Agreed Order” or “Order” shall include all exhibits to this Order.

² On May 9, 2007, Ecology gave DNR notice of Ecology’s determination that DNR is a potentially liable person for the Department of Natural Resources Aquatic Land Lease Area No. 20-12795 (Port Gamble Leased Area), which is part of the Port Gamble Bay and Mill Site. *See* Consent Decree in Kitsap County Case No. 13-2-02720-0, p. 5.

V. FINDINGS OF FACT

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

A. In 1853, the corporate predecessor to Pope & Talbot, Inc. (P&T) established one of the first sawmills on Puget Sound on a sand spit projecting east from the base of a bluff that forms the western boundary to the mouth of Port Gamble Bay. A forest products manufacturing facility was operated at this location for approximately 142 years (1853 to 1995). The facility underwent several changes over that period including filling activities that expanded the spit on which the facility was located, relocating buildings, and changing building and structure uses. Between 1853 and 1995, operations included a succession of sawmill buildings, two chip loading facilities, a log transfer facility, log rafting and storage areas, and a “hog fuel” boiler.

B. In 1985, P&T spun off its timberland, development branch, and its real estate, including the sawmill, uplands and adjacent tidelands to PR. P&T continued wood products manufacturing at the Site until 1995 under a lease with PR. OPG was formed in 1998 to manage PR’s real estate in Kitsap County and presently manages portions of the Site including areas that it leases and that contain property improvements. In November 2007, P&T filed for bankruptcy in Delaware, Case No. 07-11738 (CSS).

C. Mill operations ceased in 1995 and the sawmill facility was dismantled and removed in 1997. Since 1997, portions of the Upland Area have been leased to a variety of parties for use as a log sort and wood chipping yard, material handling activities and a marine laboratory.

D. In January 1997, Ecology conducted an initial investigation of the former mill area, which consisted of sampling sediment in four catch basins. The results of that investigation indicated that concentrations of petroleum hydrocarbons and metals were present at levels above applicable chemical criteria for these compounds. Subsequently, a contractor removed accumulated materials from catch basins, vaults, and sumps in 1997. In July 1998, Ecology notified P&T of the potential listing of the former sawmill site on Ecology’s Confirmed and Suspected Contaminated Site List. Thereafter, detailed environmental investigations were

conducted by P&T and the Companies to characterize soil, groundwater, surface water, and sediment quality conditions at the former mill area. The Site characterization data confirmed the presence of hazardous substances in soil and groundwater at the upland portion of the Site. Based on these data, Ecology added the Site to the hazardous sites list in 2001.

E. Between 2002 and 2005, approximately 26,310 tons of contaminated soils were excavated from the former mill area uplands as interim remedial actions.

F. In May 2008, Ecology and the Companies entered into Agreed Order No. DE 5631, pursuant to which two focused Remedial Investigation and Feasibility Study (RI/FS) Reports for portions of the Site including the former mill area and in-water areas were completed, submitted, and released for public comment in February and March 2011. In December 2012 based on public comment, the reports were revised and combined into a Partial RI/FS (PRI/FS) that summarized existing remedial investigation results for the former mill area and Port Gamble Bay and developed and evaluated remedial alternatives for the in-water portions of the Site.

G. In December 2013, based on the conclusions of the PRI/FS, Ecology and the Companies entered into the Consent Decree in Kitsap County Case No. 13-2-02720-0 to design, permit, and implement a sediment cleanup action for the in-water portion of the Site. In-water construction actions began in September 2015 and were completed in January 2017. In total 8,592 pilings were removed, 77,297 cubic yards of contaminated marine sediments were dredged, and 33,240 cubic yards of contaminated intertidal material was excavated. The resulting excavated and dredged materials, consisting primarily of mixed sediment and wood debris, were temporarily stored in stockpiles on the upland former mill area. They were subsequently rinsed with water to reduce salinity and ammonia to acceptable levels for off-site disposal. The stockpiles were removed from the former mill area between July and September 2017.

H. The Remedial Investigation, Port Gamble Bay and Feasibility Study, Former Pope & Talbot, Inc., Sawmill Site, completed respectively in 2009 and 2010, have confirmed that there have been releases or threatened releases of hazardous substances at concentrations above screening levels at the upland former sawmill area, including but not limited to total lead and dioxin and furans in soil, and arsenic in groundwater. Wood products manufacturing and treatment activities, including use of pentachlorophenol, incineration of salt-laden wood (and aerial deposition of resulting ash), and landfilling using contaminated materials resulted in the release of dioxin and furan contamination. Existing soil dioxin and furan data from studies completed by Ecology have also confirmed the presence of hazardous substances in the former mill area. In addition, as discussed in EXHIBIT B – Supplemental RI/FS Work Plan, data separately collected by the Port Gamble S’Klallam Tribe also reported dioxins/furans in upland areas to the west and south of the former sawmill area. Releases of hazardous substances on the upland portion of the Site present a threat to human health and the environment and require remedial action.

VI. ECOLOGY DETERMINATIONS

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

A. As the current owner of the upland and tidelands portion of the Site, PR is an “owner or operator” as defined in RCW 70.105D.020(17) of a “facility” as defined in RCW 70.105D.020(5). As a person exercising control through management of the upland portion of the Site, OPG is an “owner or operator” as defined in RCW 70.105D.020(17) of a “facility” as defined in RCW 70.105D.020(5).

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 letters to the Companies dated May 9, 2007, pursuant to RCW 70.105D.040, .020(26), and WAC 173-340-500. After providing for notice and opportunity for comment, reviewing comments submitted, and concluding

that credible evidence supported a finding of potential liability, Ecology issued a determinations that the Companies are PLPs under RCW 70.105D.040 and notified the Companies of these determinations by letters dated November 14, 2007.

D. Pursuant to RCW 70.105D.030(1) and .050(1), Ecology may require PLPs to investigate or conduct other remedial actions with respect to any release or threatened release of hazardous substances, whenever it believes such action to be in the public interest. Based on the foregoing facts, Ecology believes the remedial actions required by this Order are in the public interest.

E. Under WAC 173-340-430, an interim action is a remedial action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance, that corrects a problem that may become substantially worse or cost substantially more to address if the remedial action is delayed, or that is needed to provide for completion of a site hazard assessment, remedial investigation/feasibility study, or design of a cleanup action plan. Either party may propose an interim action under this Order. If the Parties are in agreement concerning the interim action, the Parties will follow the process in Section VII.D. If the Parties are not in agreement, Ecology reserves its authority to require interim action(s) under a separate order or other enforcement action under RCW 70.105D, or to undertake the interim action itself.

VII. WORK TO BE PERFORMED

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

A. The Companies shall perform a remedial investigation and feasibility study for the Upland Area of the Site, as well as develop a public review draft Cleanup Action Plan, as described in the supplemental RI/FS work plan, which is attached to this order as Exhibit B. This work shall include, but not be limited to the following tasks:

- i. Compile and summarize existing data regarding previous investigations and remedial actions in the Upland Area of the Site;
- ii. Develop a conceptual site model;
- iii. Identify potential data gaps;
- iv. Develop a sampling and analysis plan (SAP) to address data gaps at the Upland Area of the Site. The SAP should include a supplemental investigation to determine both the lateral and vertical extent of dioxin and furan contamination in the Upland Area as a result of aerial deposition of hog fuel boiler ash, pentachlorophenol wood treatment, or other activities at the former mill.
- v. The Companies shall perform the supplemental investigations and present the results to Ecology in the draft supplemental RI/FS Report. In addition, the draft RI/FS Report shall include identification of appropriate soil cleanup levels, and those areas requiring remediation. The FS section shall include the evaluation of cleanup action alternatives.
- vi. The Companies shall prepare a Draft Cleanup Action Plan describing final cleanup actions for the Upland Area of the Site, consistent with MTCA requirements.

B. The work shall be performed according to the Supplemental RI/FS Work Plan and Schedule of Deliverables included in Exhibit B.

C. All plans or other deliverables submitted by the Companies for Ecology's review and approval under the Scope of Work and Schedule of Deliverables in Exhibit B shall, upon Ecology's approval, become integral and enforceable parts of this Order.

D. If the Parties agree on an interim action under Section V.E, the Companies shall prepare and submit to Ecology an Interim Action Work Plan, including a scope of work and schedule, by the date determined by Ecology. Ecology will provide public notice and opportunity to comment on the Interim Action Work Plan in accordance with WAC 173-340-600(16). The Companies shall not conduct the interim action until Ecology approves the Interim Action Work Plan. Upon approval by Ecology, the Interim Action Work Plan becomes an integral and

enforceable part of this Order, and the Companies are required to conduct the interim action in accordance with the approved Interim Action Work Plan.

E. If Ecology determines that the Companies have failed to make sufficient progress or failed to implement the remedial action, in whole or in part, Ecology may, after notice to the Companies, perform any or all portions of the remedial action or at Ecology's discretion allow the Companies opportunity to correct. The Companies 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).

F. Except where necessary to abate an emergency situation, the Companies shall not perform any remedial actions at the Site outside those remedial actions required by this Order, unless Ecology concurs, in writing, with such additional remedial actions.

VIII. TERMS AND CONDITIONS

A. Payment of Remedial Action Costs

The Companies 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). As of June 30 2017, Ecology has incurred \$\$8,734.56 in outstanding costs for work performed at the Port Gamble Bay and Mill Site Uplands. Payment for these costs shall be submitted within thirty (30) days of the effective date of this Order or by Nov 30 2017, whichever is first. For all other Ecology costs incurred, the Companies 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:

John Evered
Toxics Cleanup program
PO Box 47600
Olympia, WA 98504-7600
(360) 407-7071

The project coordinator for the Companies is:

Clay Patmont
Anchor QEA, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101
(206) 300-1543

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 the Companies, 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.

The Companies 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 the Companies either own, control, or have 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 the Companies' 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 the Companies. The Companies shall make all reasonable efforts to secure access rights for those properties within the Site not owned or controlled by the Companies 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 the Companies 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). 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, the Companies 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, the Companies shall allow Ecology and/or its authorized representative to take split or duplicate samples of any samples collected by the Companies pursuant to implementation of this Order. The Companies shall notify Ecology seven (7) days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow the Companies 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.E (Access), Ecology shall notify the Companies 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

A Public Participation Plan has been prepared for the Site and is attached to this Order as Exhibit D.

RCW 70.105D.030(2)(a) requires that, at a minimum, this Order be subject to concurrent public notice. Ecology shall be responsible for providing such public notice and reserves the right to modify or withdraw any provisions of this Order should public comment disclose facts or considerations which indicate to Ecology that this Order is inadequate or improper in any respect.

Ecology shall maintain the responsibility for public participation at the Site. However, the Companies 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 the Companies 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 the Companies that do not receive prior Ecology approval, the Companies 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 locations:

- a. Poulsbo Library
700 NE Lincoln Street
Poulsbo, WA
- b. Department of Ecology
Toxic Cleanup Program
Headquarters Office
300 Desmond Drive
Lacey, WA

At a minimum, copies of all public notices, fact sheets, and press releases; all quality assured monitoring data; remedial action plans and reports, supplemental remedial planning documents, and all other similar documents relating to performance of the remedial action required by this Order shall be promptly placed in these repositories.

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, the Companies 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, the Companies 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 the Companies may have under applicable law to limit disclosure of documents protected by the attorney work-product privilege and/or the attorney-client privilege. If the Companies withhold any requested records based on an assertion of privilege, the Companies 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 the Companies elect to invoke dispute resolution, the Companies 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), the Companies have 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 fourteen 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 Companies' position with regards to the dispute; Ecology's position with regards to the dispute; and the extent of resolution reached by informal discussion.

c. The Companies may then request regional management review of the dispute. This request (Formal Dispute Notice) must be submitted in writing to the HQ 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 Companies' Formal Dispute Notice. The Section Manager's 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.E (Work to be Performed) or initiating enforcement under Section X (Enforcement).

I. Extension of Schedule

1. The Companies 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; and
- d. Any related deadline or schedule that would be affected if the extension were granted.

2. The burden shall be on the Companies 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 the Companies 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 the Companies;
- b. Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty; or
- 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 the Companies.

3. Ecology shall act upon either of the Companies' written request for extension in a timely fashion. Ecology shall give the Companies 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 the Companies' 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:

- 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; or
- 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 the Companies. 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, the Companies shall submit a written request for amendment 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 the Companies to cease such activities for such period of time as it deems necessary to abate the danger. The Companies shall immediately comply with such direction.

In the event that the Companies determine 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, the Companies may cease such activities. The Companies 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, the Companies shall provide Ecology with documentation of the basis for the determination or cessation of such activities. If Ecology disagrees with the Companies cessation of activities, it may direct the Companies to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to this section, the Companies' 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 the Companies to recover remedial action costs paid to and received by Ecology under this Order. In addition, Ecology will not take additional enforcement actions against the Companies regarding remedial actions required by this Order, provided the Companies 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, the Companies do not admit to any liability for the Site. Although the Companies are committing to conducting the work required by this Order under the terms of this Order, the Companies 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 the Companies 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 the Companies' transfer of any interest in all or any portion of the Site, and during the effective period of this Order, the Companies 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, the Companies shall notify Ecology of said transfer. Upon transfer of any interest, the Companies shall notify all transferees of the restrictions on the activities and uses of the property under this Order and incorporate any such restrictions into the transfer documents.

N. Compliance with Applicable Laws

1. All actions carried out by the Companies 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. The Companies have 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 the Companies, Ecology will document in writing if they are applicable to actions carried out pursuant to this Order, and the PLP must implement those requirements.

2. All actions carried out by the Companies 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 the Companies, Ecology will document in writing if they are applicable to actions carried out pursuant to this Order and the PLP must implement those requirements.

3. Pursuant to RCW 70.105D.090(1), the Companies are 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 with respect to all actions carried out pursuant to this Order. However, the Companies 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 the substantive requirements of such 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. The Companies have 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 the Companies determine 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 the Companies shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, the Companies 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 the Companies and on how the Companies must meet those requirements. Ecology shall inform the Companies in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable requirements of this Order. The Companies 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 the Companies 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. Indemnification

The Companies agree 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 the Companies, its officers, employees, agents, or contractors in entering into and implementing this Order. However, the Companies 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 the Companies receipt of written notification from Ecology that the Companies have completed the remedial activity required by this Order, as amended by any modifications, and that the Companies have 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: _____

POPE RESOURCES LP

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

JON ROSE
President
Olympic Property Group LLC
(360) 509-0631

JIM PENDOWSKI
Section Manager
Toxics Cleanup Program
Headquarters Cleanup Section
(360) 407-7177

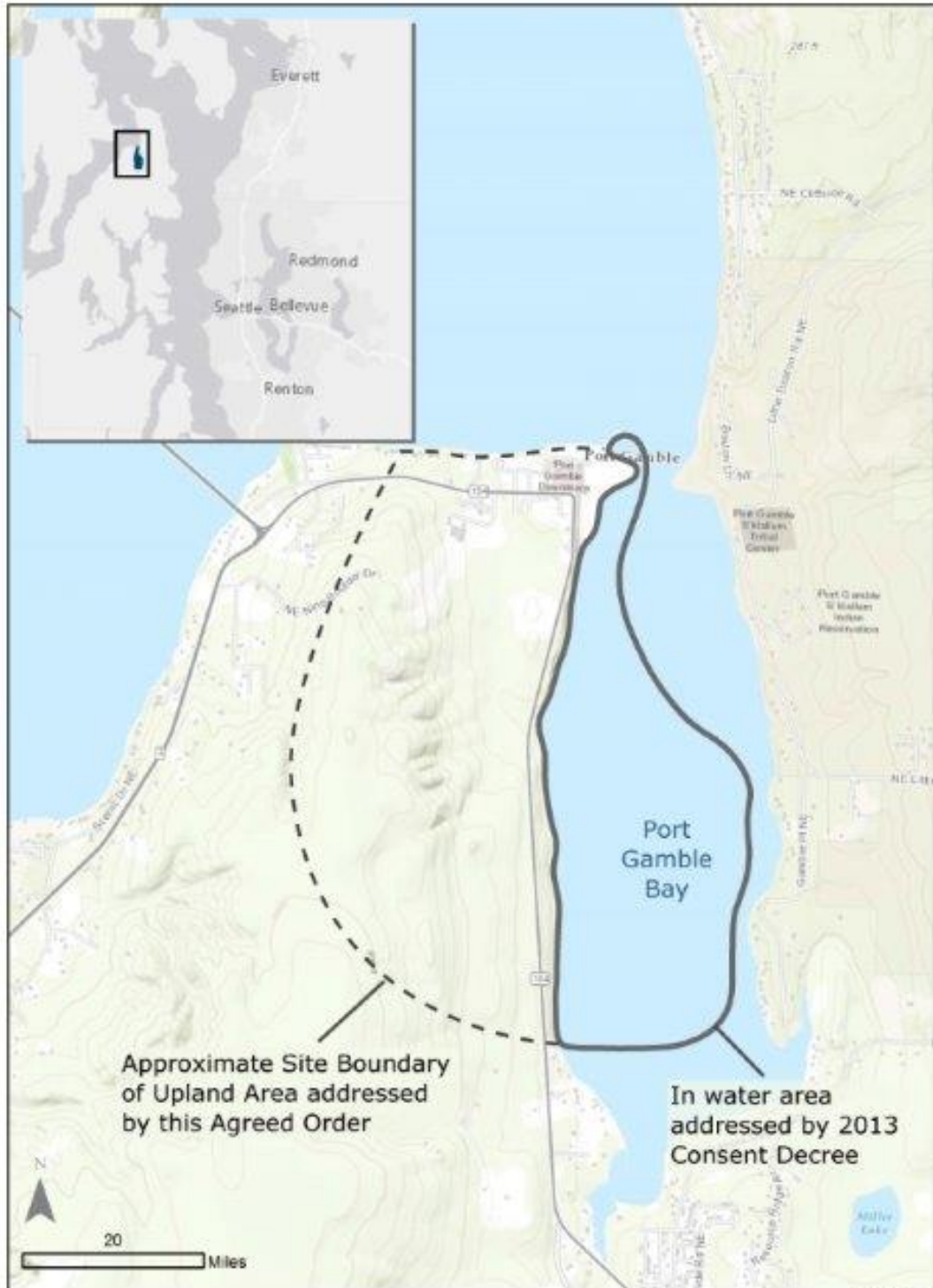
Agreed Order No. DE 15448
Page 24 of 29

Olympic Property Group LLC
(360) 509-0631

Toxics Cleanup Program
Headquarters Cleanup Section
(360) 407-7177

EXHIBIT - A

Site Diagram



Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN

Exhibit A
Site and Upland Property Diagram
Port Gamble Bay and Mill Site

EXHIBIT - B

Supplemental RI/FS Work Plan and Schedule of Deliverables



October 2017
Former Pope & Talbot Inc. Sawmill Site Uplands, Port Gamble



Supplemental Remedial Investigation/Feasibility Study Work Plan

Prepared for Pope Resources, LP/OPG Properties, LLC
and the Washington State Department of Ecology

October 2017

Former Pope & Talbot Inc. Sawmill Site Uplands, Port Gamble

Supplemental Remedial Investigation/Feasibility Study Work Plan

Prepared for

Pope Resources/OPG Properties
19950 7th Avenue NE, Suite 200
Poulsbo, Washington 98370

Washington State Department of Ecology
Aquatic Lands Cleanup Unit
300 Desmond Drive
Lacey, Washington 98504

Prepared by

Anchor QEA, LLC
720 Olive Way, Suite 1900
Seattle, Washington 98101

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APPENDICES

Appendix A	Sampling and Analysis Plan/ Quality Assurance Project Plan
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ABBREVIATIONS

BAF	bioaccumulation factor
bgs	below ground surface
CoC	chemical of concern
Data Memorandum	RI Data Memorandum
DQO	data quality objective
Ecology	Washington State Department of Ecology
EIM	Environmental Information Management
EPA	U.S. Environmental Protection Agency
HCCC	Hood Canal Coordinating Council
MTCA	Model Toxics Control Act
ng/kg	nanograms per kilogram
OPG	OPG Properties, LLC
PAH	polynuclear aromatic hydrocarbon
PR	Pope Resources, LP
P&T	Pope & Talbot, Inc.
QAPP	Quality Assurance Project Plan
RI/FS	Remedial Investigation/Feasibility Study
SAP	Sampling and Analysis Plan
TEQ	toxic equivalents quotient
TPH	total petroleum hydrocarbons
WAC	Washington Administrative Code
Work Plan	Supplemental RI/FS Work Plan

1 Introduction

This Remedial Investigation/Feasibility Study (RI/FS) Supplemental Work Plan (Work Plan) has been prepared in accordance with the Model Toxics Control Act (MTCA; Chapter 173-340 Washington Administrative Code [WAC]). Pope Resources/OPG Properties (PR/OPG) will implement this Work Plan under the requirements of both the 2008 Agreed Order DE 5631 between PR/OPG and the Washington State Department of Ecology (Ecology), as well as the forthcoming 2017 Agreed Order, to which this RI/FS will be attached. The new 2017 Agreed Order between PR/OPG and Ecology will provide for this RI/FS and a draft Cleanup Action Plan for the upland area of the Port Gamble Bay and Mill Site (the Site). The Site consists of the area addressed in the October 2013 Cleanup Action Plan included in the Consent Decree in Kitsap County Case No. 13-2-02720-0, together with the upland portion of the former sawmill area, and upland areas to the west and south of the former sawmill area in Port Gamble, Washington. The upland areas addressed by this RI/FS Work Plan refer to that portion of the Site other than the portion addressed in the October 2013 Cleanup Action Plan included in the Consent Decree in Kitsap County Case No. 13-2-02720-0.

While this RI/FS Work Plan will be conducted under the 2017 Agreed Order, certain terms from the 2008 Agreed Order are being used for consistency.¹ Ecology and PR/OPG have the mutual objective of targeting completion of the RI/FS and entering into a new consent decree for documented upland areas of the Site in 2018.

1.1 Site Background

In 1853, the corporate predecessor to P&T established one of the first sawmills on Puget Sound in Port Gamble, and continuously operated a forest products manufacturing facility (“Mill Site”; as depicted in Figure 1) up until 1995. Over that period, the Mill Site underwent a variety of changes, including expansion by filling, as well as changes in the location and function of buildings and structures. In 1985, P&T transferred ownership of the uplands and adjacent tidelands portion of the sawmill as part of a spinoff that created the new company, Pope Resources (PR). By that time, the majority of hazardous substance releases to the Site had already occurred. P&T continued wood products manufacturing at the sawmill until 1995 under a lease with PR. Sawmill operations ceased in 1995, and the facility was dismantled and mostly removed in 1997. Since 1997, the Mill Site has been leased to a variety of parties for uses including log sorting and wood chipping, material handling activities, a marine laboratory, and parking. OPG Properties, LLC (OPG), formerly known as Olympic Property Group, LLC, was formed in 1998 to manage PR’s real estate in Kitsap County and presently manages the Mill Site including making leasing arrangements and property improvements.

¹ For example, the term “Mill Site” was used in the 2008 Agreed Order and is being used here to refer to a portion of the remaining upland portions of the Site.

In July 1998, Ecology notified P&T of the potential listing of the Mill Site on Ecology's Confirmed and Suspected Contaminated Site List. Beginning in 1999, detailed upland investigations of the Mill Site were performed by PR/OPG based on a focused-area sampling strategy (Anchor QEA and Environmental Partners 2012). Potential source areas were delineated based on historical Mill Site maps, records, and recollections of former mill workers. Areas containing historical structures or activities where materials were processed or stored and could have released hazardous substances into the soil or groundwater were identified as potential source areas. Eleven potential source areas were identified at the Mill Site (Figure 1) and included petroleum product storage areas, former transformer locations, wood treatment/painting areas, and drum storage areas.

Multiple soil and groundwater investigations were completed at the Mill Site from 1999 through 2001 to characterize the nature and extent of contamination in the potential source areas (Anchor QEA and Environmental Partners 2012). Figure 2 depicts the initial soil and groundwater sampling locations along with representative cross-sections. Cross section C-C' (Figure 3) displays the variable thickness of fill materials across the Mill Site, ranging from 2 and 18 feet below ground surface (bgs). The fill material consists of sand and gravel containing debris (bricks, wood chips, concrete, and ash). Native material deposited in nearshore marine and glaciofluvial environments underlies the fill material and consists of sand with some gravel and shell fragments. The depth to groundwater at the Mill Site ranges from near ground surface in areas of standing water to greater than 12 feet bgs. Groundwater flow direction is generally towards Port Gamble Bay and Hood Canal (towards the east and northeast).

The 1999 to 2001 site characterization delineated areas exceeding MTCA unrestricted land use soil cleanup levels for total petroleum hydrocarbons (TPH), polynuclear aromatic hydrocarbons (PAHs), and/or metals (arsenic, lead, and mercury; Anchor QEA and Environmental Partners 2012). As an initial interim action in coordination with Ecology under the Voluntary Cleanup Program, in 2002 PR/OPG excavated 20,460 tons of soil exceeding MTCA unrestricted land use soil cleanup levels from 10 discrete areas of the Mill Site (Figure 4) and disposed of these materials at a permitted off-site landfill facility (Anchor QEA and Environmental Partners 2012). Monitoring was performed during and following implementation of the interim action to ensure environmental protection, to verify the extent of soils requiring excavation, and to verify expected post-construction natural attenuation (e.g., in adjacent groundwater). In 2004/2005, PR/OPG removed an additional 5,850 tons of soil exceeding MTCA unrestricted land use soil cleanup levels for mercury from two discrete areas (Figure 5) and disposed of these materials at a permitted off-site landfill facility (Anchor QEA and Environmental Partners 2012). Additional post-construction groundwater monitoring and Ecology reviews were performed from 2005 to 2009 and again from 2015 to 2016 (Environmental Partners 2016) to verify the protectiveness of the interim actions in reducing groundwater metal concentrations.

In November 2007, P&T filed for bankruptcy (Delaware Case No. 07-11738).

In May 2008, Ecology and PR/OPG entered into Agreed Order No. DE 5631, pursuant to which two focused RI/FS reports for portions of the Port Gamble Bay and Mill Site were completed, submitted, and released for public comment in 2011. In December 2012, the RI/FS documents for Port Gamble Bay and Mill Site uplands were revised in response to public comments.

As discussed above, in December 2013 Ecology and PR/OPG entered into the Consent Decree to design, permit, and construct sediment cleanup actions in Port Gamble Bay. The sediment cleanup design was detailed in an engineering design report (Anchor QEA 2015a). In-water construction actions were performed over two construction seasons and were completed in January 2017 (Anchor QEA 2017b). Mixed sediment and wood debris dredged from Port Gamble Bay was subsequently rinsed (“sparged”) on the Mill Site to protectively rinse salinity and ammonia from the stockpiles. All stockpiles were removed from the Mill Site between July and September 2017.

As set forth in the Ecology-approved *Post-Stockpile Removal – Sampling and Quality Assurance Project Plan* (Anchor QEA 2017a), following visual confirmation of removal of the stockpiles, five-point surface soil (0 to 1 foot bgs) composite samples from non-hardscape areas of the Mill Site (Figure 6) will be sampled and analyzed for cadmium, PAHs, and dioxins/furans to verify successful removal of sediments from the Mill Site. Post-stockpile removal soil sampling will be coordinated, as practicable, with data collection efforts described in this RI/FS Work Plan,

2 Summary of Existing Information

2.1 Previous Investigations and Cleanup Evaluations

As summarized above and detailed in the draft final Mill Site RI/FS (Anchor QEA and Environmental Partners 2012), multiple soil and groundwater investigations were completed at the Mill Site from 1999 through 2009 to characterize the nature and extent of contamination. The RI/FS collected and evaluated information to determine if any additional cleanup, beyond the interim actions completed to date, were necessary to address remaining soil and/or groundwater contamination at the Mill Site. The 2012 RI/FS included the following cleanup recommendations:

- Interim actions performed from 2002 to 2005 successfully removed from the Mill Site those soils that exceeded MTCA unrestricted land use soil cleanup levels for TPH, PAHs, and metals; no other chemicals of concern (CoCs) were identified at the Mill Site at that time
- Restrictive covenants are needed to continue to preclude use of the shallow aquifer in the southern portion of the Mill Site for future drinking water supply; localized areas with groundwater arsenic concentrations exceeding drinking water criteria are attributable to reducing geochemical conditions in fill soils
- Existing soil covers that minimize the potential for future terrestrial wildlife exposure in a localized buried soil deposit containing lead concentrations marginally above MTCA unrestricted land use soil cleanup levels (located near the edge of an existing midden) will remain on the Mill Site, but need to be documented in Kitsap County property records; existing County permitting processes will further control the potential for future disturbances and wildlife risks within these areas (additional contingencies are also required in this area to protect cultural resources; Anchor QEA 2014)

Since publication of the 2012 RI/FS, PR/OPG performed supplemental groundwater quality monitoring in the southern portion of the Mill Site as requested by Ecology. These data confirmed that groundwater metal concentrations have remained stable and are below natural background concentrations at the Mill Site shoreline (Environmental Partners 2016), further demonstrating protection of adjacent surface waters and sediments in Port Gamble Bay consistent with the 2012 RI/FS. The *Engineering Design Report* (Anchor QEA 2015a) included groundwater fate and transport modeling to ensure long-term protectiveness of the sediment cleanup action for all Site CoCs. In 2016, Ecology approved decommissioning the groundwater monitoring wells, confirming that no further monitoring of groundwater metals concentrations at the Mill Site is required. Also in 2016, Mill Site groundwater sampling data for dioxins/furans were collected to verify the protectiveness of sparging operations.

In April 2014, Ecology performed an expanded assessment of upland surface and near surface soil dioxin/furan levels at the Mill Site (Leidos 2014). Soil borings at 30 approximately equally spaced

200- by 200-foot grid locations across the Mill Site were advanced 2 to 3 feet bgs using a direct push Geoprobe. Surface soil samples (approximately 0 to 1 foot below hardscape cover or bedding materials) were submitted for dioxin/furan analyses.

In July 2014, PR/OPG collected 13 additional direct push Geoprobe soil samples (up to approximately 10 feet bgs) from the Mill Site shoreline to inform the sediment cleanup remedy design (Anchor QEA 2015a). Composite samples of near-surface fill soils (8 to 10 feet bgs; 2 to 5 core locations per sampling area) were submitted for cadmium, PAH, and dioxin/furan analyses.

In November 2014, the Hood Canal Coordinating Council (HCCC) collected near-surface fill soil composites in the southern Mill Site using a direct push Geoprobe® (Anchor QEA 2015b). A total of 12 soil borings were advanced to approximately 15 to 20 feet bgs. The fill layers from four borings within a sub-area, ranging from 7 to 18 feet bgs, were composited into a single analytical sample; the resulting three composite samples were submitted for analysis for a wide range of CoCs including dioxins/furans. Similarly, three "Z-layer" composite samples representative of the native soils below the fill layer within each sub-area (i.e., below 7 to 18 feet bgs) were also submitted for CoC analyses.

In September 2015, PR/OPG collected three additional surface soil samples (up to 2.5 feet bgs) from the Mill Site, and submitted these samples for dioxin/furan analyses along with detailed earthworm bioaccumulation testing (Anchor QEA 2016). This work was performed following Ecology-approved work plans under the Agreed Order (DE 5631) and provided site-specific dioxin/furan bioaccumulation factor (BAF) data to develop protective soil cleanup levels at the Mill Site consistent with MTCA requirements. The resultant site-specific BAF (tissue concentration divided by soil concentration) was approximately 0.35. Using this BAF, protective soil concentrations were calculated using Ecology's *Wildlife Exposure Model for Site-Specific Evaluations* (Table 749-4; WAC 173-340-900). The resultant site-specific soil dioxin/furan toxicity equivalent quotient (TEQ) level for ecological protection (based on potential mammalian predator exposure) was 260 nanograms per kilogram (ng/kg).

For the purpose of development of this RI/FS Work Plan, all post-interim action soil sampling data available for the Mill Site were compared to MTCA unrestricted land use soil cleanup levels (Method A or B). With the exception of the localized buried soil deposit containing lead concentrations noted above (and discussed in the 2012 RI/FS), the only other CoC remaining at the Mill Site after the 2002 to 2005 interim actions is dioxin/furan TEQ. Thus, characterization and evaluation of alternative cleanup remedies for dioxin/furan TEQ is the primary focus of this RI/FS Work Plan.

In addition to the Mill Site sampling summarized above, in 2011 the Port Gamble S'Klallam Tribe collected surface soil (0 to 0.5 foot bgs) samples at five locations west and south of the Mill Site (Ridolfi 2011). The soil samples were submitted for dioxin/furan analysis.

2.2 Extent of Dioxin/Furan TEQ

All of the dioxin/furan soil sampling data available for the Mill Site were compiled to develop a preliminary characterization of dioxin/furan TEQ levels and to identify data gaps needed to complete the Mill Site RI/FS. Both discrete and composite sampling data summarized above were combined to support a comprehensive evaluation of all surface and near-surface soil dioxin/furan TEQ data and to provide a conservative interpretation of concentration distributions. Each of the HCCC and remedial design sub-sample locations were assumed to have a dioxin/furan TEQ level equal to the composite sample result. The resulting sampling data and inverse-distance-weighting interpolation of dioxin/furan TEQ levels in surface soils at the Mill Site are presented in Figure 7.

As summarized in the Figure 7 compilation, the extent of dioxin/furan TEQ concentrations within the Mill Site (i.e., exceeding the 12 ng/kg MTCA unrestricted land use soil cleanup level) is generally well characterized by the existing data. However, surface soil dioxin/furan TEQ concentrations further west and south of the Mill Site (see Figure 9) have also exceeded 12 ng/kg, either due to airborne deposition from historical hog fuel boiler emissions, and/or other confounding anthropogenic sources such as backyard burning, fireplaces/stoves, weed control, and exhaust from diesel engines (Ecology 2011). As discussed in Section 3.2, additional surface soil sampling data will be collected during the RI/FS at targeted locations west and south of the Mill Site, to delineate the extent of the Site from airborne deposition of historical hog fuel boiler releases, and to distinguish those releases from the influence of other confounding anthropogenic sources.

The Figure 7 summary identifies approximately 2 acres within the central and southern portion of the Mill Site that exceeds the 12 ng/kg TEQ MTCA unrestricted land use soil cleanup level (denoted as yellow areas in Figure 7). Mill Site surface soil areas with the highest dioxin/furan TEQ levels (purple, pink, and yellow areas depicted in Figure 7) generally correspond with former wood treatment areas at the former sawmill (Figure 1). Moreover, the fingerprint and primary congeners contributing over 70 percent of the TEQ in the highest concentration samples - 1,2,3,7,8-pentachlorodibenzodioxin, 1,2,3,6,7,8-hexachlorodibenzodioxin, and 1,2,3,4,6,7,8-heptachlorodibenzodioxin – are consistent with a possible fungicide (e.g., pentachlorophenol) source, likely used historically at the sawmill for sapstain control and other facility operations typical of sawmills operating in the mid-1900s (e.g., see NewFields 2014). The nature of dioxin/furan releases at the Mill Site will be further evaluated in the RI/FS.

Near-surface dioxin/furan TEQ concentrations in fill areas of the southern Mill Site sampled by HCCC averaged approximately 36 ng/kg, while deeper “Z-layer” samples collected approximately 7 to 20 feet bgs averaged approximately 80 times lower (0.46 ng/kg; Anchor QEA 2015b). As discussed in Section 3.3, additional subsurface soil profile data will be collected to delineate vertical distributions of dioxin/furan TEQ in wood preserving areas and in areas with potentially elevated subsurface soil dioxin/furan levels (e.g., in areas identified in the HCCC sampling and the remedial design shoreline cores).

3 RI/FS Data Quality Objectives

3.1 Data Collection Objectives and Design Rationale

As discussed in Section 2, available data collected at the Mill Site provide a significant portion of information for the RI/FS. A defined data collection effort will fill remaining RI data gaps. This section identifies specific data gaps and defines the RI/FS activities that will be performed.

A systematic planning process is a key step in developing successful sampling and analysis programs to ensure the appropriate sampling, analyses, and data evaluations are conducted to meet program objectives. Specifically, the data quality objective (DQO) process is often used by Ecology to determine the type, quantity, and quality of data needed for the RI/FS. The DQO process is a seven-step procedure that establishes performance and acceptance criteria to ensure that data that are collected support the goals of the RI/FS. The DQO process is depicted graphically in Figure 8.

The following two DQOs have been identified to complete the RI/FS:

- DQO 1: Delineate areal extent of the Mill Site
- DQO 2: Characterize vertical dioxin/furan profiles in higher TEQ areas

Each of these DQOs are discussed below.

3.2 Delineate Areal Extent of the Mill Site

Table 1
DQO 1: Delineate Areal Extent of the Mill Site

DQO Step	Description
<p>Step 1: State the problem</p>	<p>As discussed in Section 2.2 and summarized in the Figure 7 compilation, the extent of dioxin/furan TEQ concentrations within the Mill Site exceeding the 12 ng/kg MTCA unrestricted land use soil cleanup level is generally well characterized by the existing data. However, surface soil dioxin/furan TEQ concentrations further west and south of the Mill Site have also exceeded 12 ng/kg, and may potentially have been influenced by airborne deposition from historical hog fuel boiler emissions, as well as by other confounding anthropogenic sources such as backyard burning, fireplaces/stoves, weed control, and exhaust from diesel engines (Ecology 2011). Additional surface soil sampling data at targeted locations west and south of the Mill Site are needed to delineate the extent of the Site.</p>
<p>Step 2: Identify the goals of the study</p>	<p>Principal Study Question</p> <ul style="list-style-type: none"> • Where is the approximate boundary of the extent of contamination at the Site affected by historical wood treatment and/or hog fuel boiler releases?

DQO Step	Description
<p>Step 3: Identify the information inputs</p>	<p>Existing Field Data/Reports</p> <ul style="list-style-type: none"> • Existing surface and near-surface soil dioxin/furan TEQ sampling and analysis data summarized in Section 2 of this Work Plan <p>New Data to Be Collected in the RI/FS</p> <ul style="list-style-type: none"> • Surface soil dioxin/furan TEQ sampling and analyses
<p>Step 4: Define the boundaries of the study</p>	<p>Geographic Area</p> <ul style="list-style-type: none"> • The study area for surface soil dioxin/furan TEQ sampling and analysis includes targeted locations west and south of the Mill Site that have not been fully characterized <p>Timeframe</p> <ul style="list-style-type: none"> • Historical dioxin/furan data collected from 2005 to present <p>Sample Type</p> <ul style="list-style-type: none"> • Surface soil (0 to 1 foot bgs) samples will be collected and analyzed for dioxins/furans at targeted locations potentially affected by historical wood treatment and/or hog fuel boiler releases as opposed to the potential influence of other confounding anthropogenic sources
<p>Step 5: Develop the analytical approach</p>	<p>The proposed surface soil dioxin/furan data will provide information to delineate the extent of dioxin/furan TEQ concentrations exceeding the 12 ng/kg MTCA unrestricted land use soil cleanup level (the provisional Site boundary). If initial sampling data do not delineate the extent of the Site, PR/OPG will propose to Ecology additional step-out sampling to achieve DQO 1.</p>
<p>Step 6: Specify performance or acceptance criteria</p>	<p>Performance or acceptance criteria will be described in the Sampling and Analysis Plan/Quality Assurance Project Plan (Appendix A of this Work Plan). The following quality control considerations will be addressed:</p> <ul style="list-style-type: none"> • Field quality control samples • Laboratory quality control • Data quality indicators for chemical analyses (precision, accuracy, representativeness, completeness, and comparability)
<p>Step 7: Develop the detailed plan for obtaining data</p>	<p>Surface Soil Sampling and Analysis</p> <ul style="list-style-type: none"> • Surface soil (0 to 1 foot bgs) samples will be collected at three locations along the southwest end of the Mill Site along the bluff slope approximately 20 feet above the existing Mill Site grade, as well as at four additional targeted locations west and south of the Mill Site potentially affected by historical hog fuel boiler emissions, and to distinguish those releases from the potential influence of other confounding anthropogenic sources including near prior residential properties along much of the bluff adjacent to the Mill Site. Targeted sampling locations include the Port Gamble Buena Vista cemetery (with graves dating back to the 1850s), as well as three forested locations around the perimeter of the town between stations previously sampled by the Port Gamble S'Klallam Tribe (Ridolfi 2011). Each of these seven surface soil samples (Figure 9) will be submitted for dioxin/furan analyses.

3.3 Characterize Vertical Dioxin/Furan Profiles in Higher TEQ Areas

Table 2

DQO 2: Characterize Vertical Dioxin/Furan Profiles in Higher TEQ Areas

DQO Step	Description
<p>Step 1: State the problem</p>	<p>As discussed in Section 2.2, while the available data suggest that surface soil concentrations are likely greater than those at depth, consistent with surface releases from wood treatment operations at the Mill Site after the area was filled, the vertical profiles of dioxin/furan TEQ levels in Mill Site soils have not been delineated in detail. Moreover, elevated soil dioxin/furan levels detected in subsurface soils that were previously composited (i.e., in areas identified in the HCCC sampling and the remedial design shoreline cores) have also not been delineated in detail. Additional subsurface soil profile data will be collected during the RI/FS to delineate vertical distributions of dioxin/furan TEQ in areas with potentially elevated surface and/or subsurface soil levels.</p>
<p>Step 2: Identify the goals of the study</p>	<p>Principal Study Question</p> <ul style="list-style-type: none"> • Are elevated dioxin/furan TEQ levels at the Mill Site largely restricted to the upper foot of soil, consistent with surface releases after the area was filled? • Did historical placement of hog fuel boiler ash with other fill materials contribute to subsurface soil dioxin/furan releases during early Mill Site development?
<p>Step 3: Identify the information inputs</p>	<p>Existing Field Data/Reports</p> <ul style="list-style-type: none"> • Existing core data and near-surface soil dioxin/furan TEQ sampling and analysis data summarized in Section 2 of this Work Plan <p>New Data to Be Collected in the RI/FS</p> <ul style="list-style-type: none"> • Soil core sampling and dioxin/furan TEQ analyses
<p>Step 4: Define the boundaries of the study</p>	<p>Geographic Area</p> <ul style="list-style-type: none"> • The study areas for soil core sampling and dioxin/furan TEQ analysis are the Mill Site areas depicted in Figure 7 with surface soil TEQ levels above the 12 ng/kg MTCA unrestricted land use soil cleanup level, areas with elevated soil dioxin/furan levels detected in subsurface soils that were previously composited (i.e., in areas identified in the HCCC sampling and the remedial design shoreline cores), and more recent Mill Site fill areas <p>Timeframe</p> <ul style="list-style-type: none"> • Historical dioxin/furan data collected from 2005 to present <p>Sample Type</p> <ul style="list-style-type: none"> • Surface (0 to 1 foot bgs) and subsurface (below 1 foot bgs) will be collected and analyzed for dioxins/furans
<p>Step 5: Develop the analytical approach</p>	<p>The proposed soil coring analyses will provide information to characterize the vertical distributions of dioxin/furan TEQ concentrations in areas of the Mill Site that exceed the 12 ng/kg MTCA unrestricted land use soil cleanup level. These data will inform the RI evaluation of the nature and extent of contamination at the Mill Site, as well as FS evaluations of alternative cleanup options.</p>

DQO Step	Description
<p>Step 6: Specify performance or acceptance criteria</p>	<p>Performance or acceptance criteria will be described in the Sampling and Analysis Plan/Quality Assurance Project Plan (Appendix A of this Work Plan following Ecology review of this draft). The following quality control considerations will be addressed:</p> <ul style="list-style-type: none"> • Field quality control samples • Laboratory quality control <p>Data quality indicators for chemical analyses (precision, accuracy, representativeness, completeness, and comparability)</p>
<p>Step 7: Develop the detailed plan for obtaining data</p>	<p>Surface and Subsurface Soil Sampling and Analysis</p> <ul style="list-style-type: none"> • Surface and subsurface soil samples will be collected at nine locations that exceed or may potentially exceed the 12 ng/kg MTCA unrestricted land use soil cleanup level at the Mill Site, particularly in the southern portion of the Mill Site with the highest dioxins/furan TEQ levels (Figure 9). Each core will be advanced using direct push Geoprobe methods to approximately 15 feet bgs and will be sectioned into a 0 to 1 foot bgs interval, and every 2 feet below that interval (i.e., 1 to 3 feet bgs, 3 to 5 feet bgs, etc.). The first three surficial intervals from each core will be submitted for dioxin/furan analyses. Depending on the results of the initial analyses, archived deeper intervals will be submitted for dioxin/furan analyses to characterize vertical profiles to inform the RI/FS. The selection of archived samples for further dioxin/furan analyses will be coordinated with Ecology.

4 Project Management and Schedule

4.1 Roles and Responsibilities

Clay Patmont of Anchor QEA will serve as overall Project Coordinator for the RI/FS. As such, he will be the primary contact for routine Ecology communications and required Ecology reporting, including monthly progress reports, schedule updates, and other project management tasks. Nathan Soccorso of Anchor QEA will lead the field collection efforts described in DQOs 1 and 2.

4.2 Data Management

Data collected for this project will be validated and managed consistent with the Quality Assurance Project Plan (QAPP), which will be an associated document to the Sampling and Analysis Plan (SAP).

All data collected as part of this project will be submitted to Ecology's Environmental Information Management (EIM) database. An official project database will be maintained by Anchor QEA throughout the duration of this project, which will form the basis of RI/FS analyses, including generation of tables and graphics.

4.3 Deliverables

The following deliverables will be prepared:

- **Draft RI/FS SAP.** Following Ecology review of this draft Work Plan, procedures for quality assurance and quality control will be documented in the form of a SAP, to collect the new RI data described in Section 3. Ecology will review the SAP. If requested by Ecology, comments submitted by Ecology will be incorporated into a revised document, which will be issued as the Final RI/FS SAP.
- **RI Data Memorandum (Data Memorandum).** A Data Memoranda will accompany the EIM data submittal(s). The Data Memorandum will contain a brief synopsis of deviations from the SAP and data validation reports. New data will be tabulated and provided in written form and uploaded to Ecology's EIM data management system (as provided in WAC 173-340-840[5]). The requirement for electronic submittal shall be complete when Ecology confirms all data are properly submitted into EIM. Ecology's comments on the Data Memorandum, if provided, will be incorporated into the RI/FS (below).
- **RI/FS Outline.** Prior to drafting the RI/FS Report, an annotated outline of the RI/FS Report will be prepared that addresses MTCA requirements. Ecology's comments on the RI/FS Outline, if provided, will be incorporated into the RI/FS (see below).
- **Agency Review Draft RI/FS Report (Agency Review RI/FS).** The Agency Review RI/FS will integrate available data from prior studies at the Mill Site and additional data collected as per the SAP following the DQO process in this Work Plan. The RI/FS shall define the nature and

extent of contamination, and evaluate cleanup action alternatives consistent with MTCA requirements.

- **Public Review Draft RI/FS Report.** The Agency Review Draft RI/FS, described above, shall be revised to address Ecology's comments. The revised document will be submitted to Ecology for use in the public review process.
- **Draft Cleanup Action Plan.** The Cleanup Action Plan shall describe final cleanup actions at the Mill Site. The proposed cleanup action shall be prepared consistent with MTCA requirements. Ecology's comments on the draft Cleanup Action Plan, if provided, will be incorporated into a revised Draft Cleanup Action Plan.
- **Revised Cleanup Action Plan.** The draft Cleanup Action Plan, described above, shall be revised to address Ecology's comments. The revised document will be submitted to Ecology for use in developing the Public Review Draft Cleanup Action Plan.

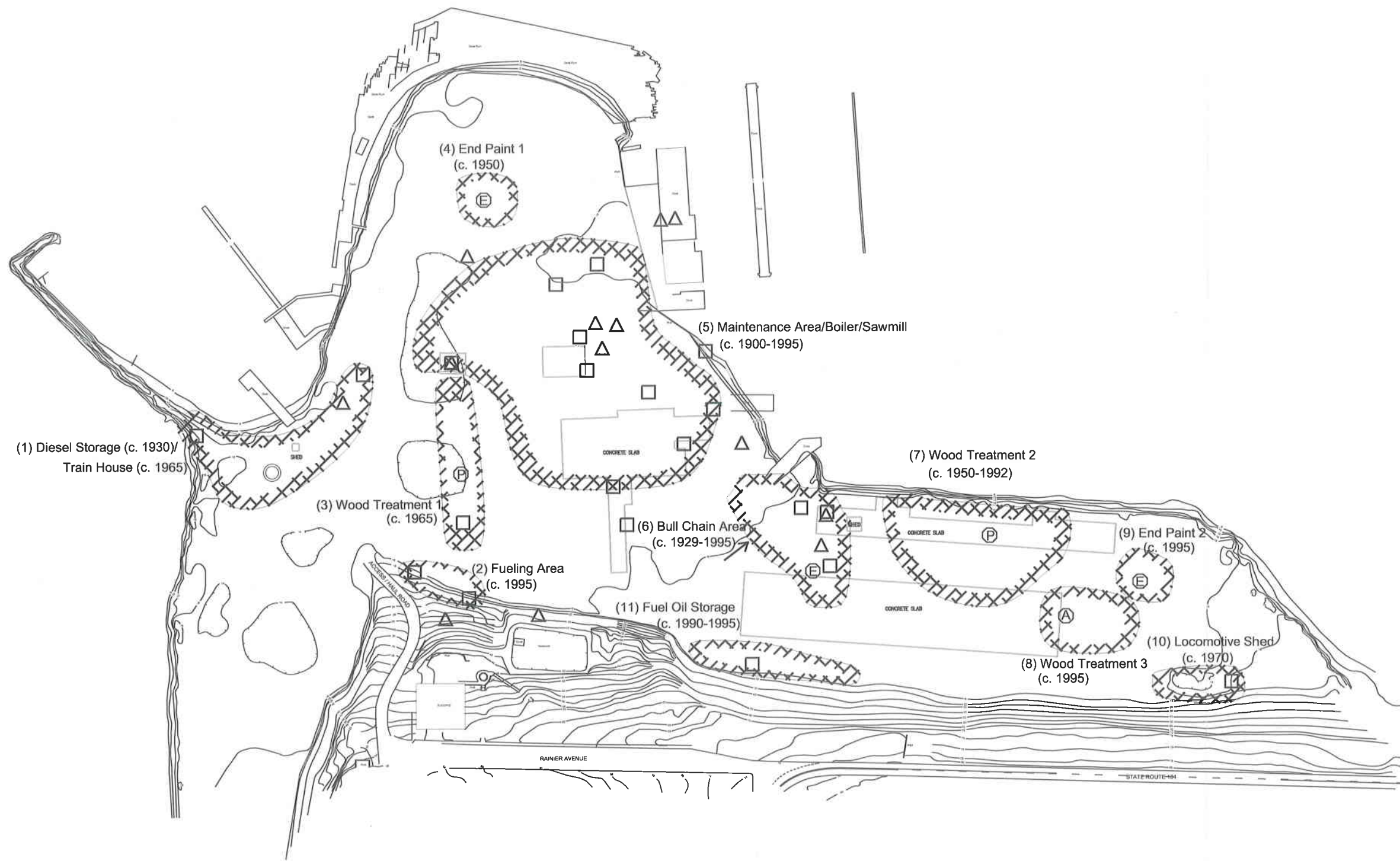
4.4 Preliminary Schedule

A preliminary project schedule has been developed for planning and coordination purposes and is depicted in Figure 10.

5 References

- Anchor QEA (Anchor QEA, LLC), 2014. *Cultural Resources Survey Report for the Port Gamble Bay Cleanup Project*. Prepared for Pope Resources LP/OPG Properties LLC. October 2014.
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- NewFields, 2014. *Oakland Bay Sediment Dioxin Source Study, Oakland Bay, Washington*. Prepared for Washington State Department of Ecology. November 2014.
- Ridolfi (Ridolfi, Inc.), 2011. *Summary and Data Packages for Shellfish, Sediment, and Soil Samples Taken from Point Julia*. Collected in January 2011 and presented on behalf of the Port Gamble S'Klallam Tribe.

Figures



KEY:



APPROXIMATE POTENTIAL SOURCE AREAS ADDED BY EPI
 POTENTIAL SOURCE AREAS BASED ON INFORMATION
 PROVIDED BY PARAMETRIX AND POPE & TALBOT, INC.
 BASE SURVEY MAP PREPARED BY PARAMETRIX

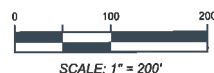
SOURCE AREA OPERATIONS

- PETROLEUM PRODUCT STORAGE AREA
- △ FORMER PCB TRANSFORMER LOCATION
- WOOD TREATMENT / END PAINT AREA
 P = PCP BASED WOOD TREATMENT
 A = OTHER WOOD TREATMENT
 E = END SEAL
- ⊙ DRUM STORAGE AREA



FORMER BUILDINGS

APPROXIMATE POTENTIAL SOURCE AREAS



SCALE: 1" = 200'

295 NE Gilman Boulevard, Suite 201 Issaquah, Washington 98027 FIGURE 3-1 SOURCE AREAS	PROJECT	17008.2		
	PREPARED FOR	POPE RESOURCES		
	LOCATION	PORT GAMBLE MILL SITE PORT GAMBLE, WASHINGTON		
	SHEET	DRAWN BY	REVIEWED BY	DATE
	1 of 1	MMH	SLG	04/25/07

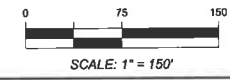


KEY:



- ⊕ MONITORING WELL LOCATION (PARAMETRIX)
- SOIL PROBE LOCATION (PARAMETRIX / FOSTER WHEELER)
- TEST PIT LOCATION (PARAMETRIX / FOSTER WHEELER)
- ⊕ EPI SAMPLING LOCATION

BASE SURVEY MAP PREPARED BY PARAMETRIX

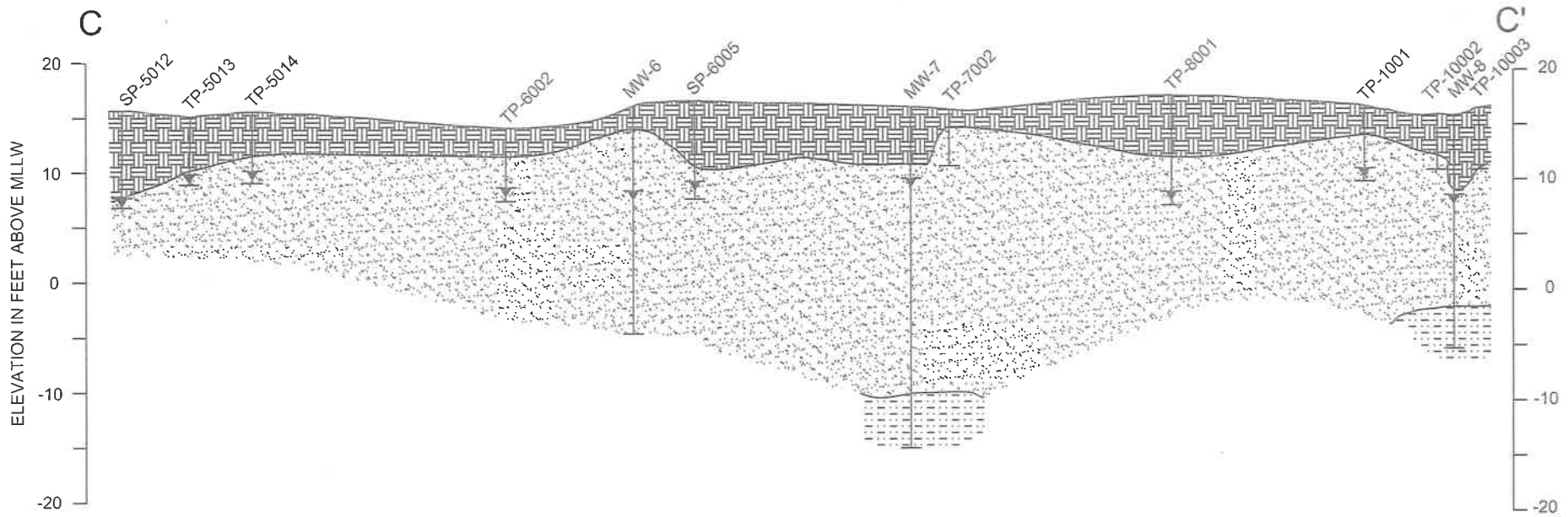


ePI ENVIRONMENTAL PARTNERS INC
 295 NE Gilman Boulevard, Suite 201
 Issaquah, Washington 98027

FIGURE 3-2






CROSS-SECTION LOCATION MAP

PROJECT	17008.2		
PREPARED FOR	POPE RESOURCES		
LOCATION	FORMER MILL SITE PORT GAMBLE, WASHINGTON		
SHEET	DRAWN BY	REVIEWED BY	DATE
1 of 1	MMH	SLG	10/10/07



SOURCE: INTERIM REPORT NO.2 - POPE & TALBOT, INC. PORT GAMBLE MILL SITE, RESULTS OF PHASE I GROUNDWATER AND SURFACE WATER INVESTIGATION (OCTOBER 10, 1990; PARAMETRIX 199d)

KEY:

-  FILL
-  SAND, NATIVE MATERIAL
-  SILTY SAND OR CLAYEY SILT, NATIVE MATERIAL
-  BOTTOM OF BORING
-  WATER LEVEL AT TIME EXECUTION OR DRILLING

NOTES:
 -WATER LEVELS FOR TP-7002, TP-10002, AND TP-10003 ARE NOT RELIABLE
 -BASE DRAWING BY PARAMETRIX
 -SCALE: 10 HORIZONTAL EXAGGERATION



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 Issaquah, Washington 98027

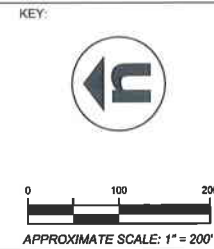
FIGURE 3-5

CROSS SECTION C-C'

PROJECT	17008.2		
PREPARED FOR	POPE RESOURCES		
LOCATION	PORT GAMBLE MILL SITE PORT GAMBLE, WASHINGTON		
SHEET 1 of 1	DRAWN BY MMH	REVIEWED BY SLG	DATE 10/10/07



- CONTAMINANTS OF CONCERN (COCs) BY AREA**
- 1 - TPH & PAHs
 - 2 - Lead
 - 3 - PAHs & Arsenic
 - 4 - PAHs
 - 5 - TPH
 - 6 - PAHs
 - 7 - PAHs & Mercury
 - 8 - Mercury
 - 9 - Mercury
 - 10 - Mercury





- MW-1 EXISTING MONITORING WELL LOCATION
- 72 ELEVATION CONTOUR (FEET ABOVE MEAN SEA LEVEL)
- 7 AREA DESIGNATIONS WITH APPROXIMATE FINAL EXCAVATION LIMITS

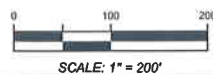
295 NE Gilman Boulevard, Suite 201 Issaquah, Washington 98027 FIGURE 4-3 SITE REPRESENTATION AND REMEDIAL EXCAVATION AREAS 2002 IRM	PROJECT	17008.2
	PREPARED FOR	POPE RESOURCES
	LOCATION	PORT GAMBLE MILL SITE PORT GAMBLE, WASHINGTON
	SHEET	DRAWN BY MMH
		REVIEWED BY SLG
		DATE 04/26/07



KEY:



MV-1
 EXISTING MONITORING WELL LOCATION
 2004/2005 EXCAVATION LIMITS



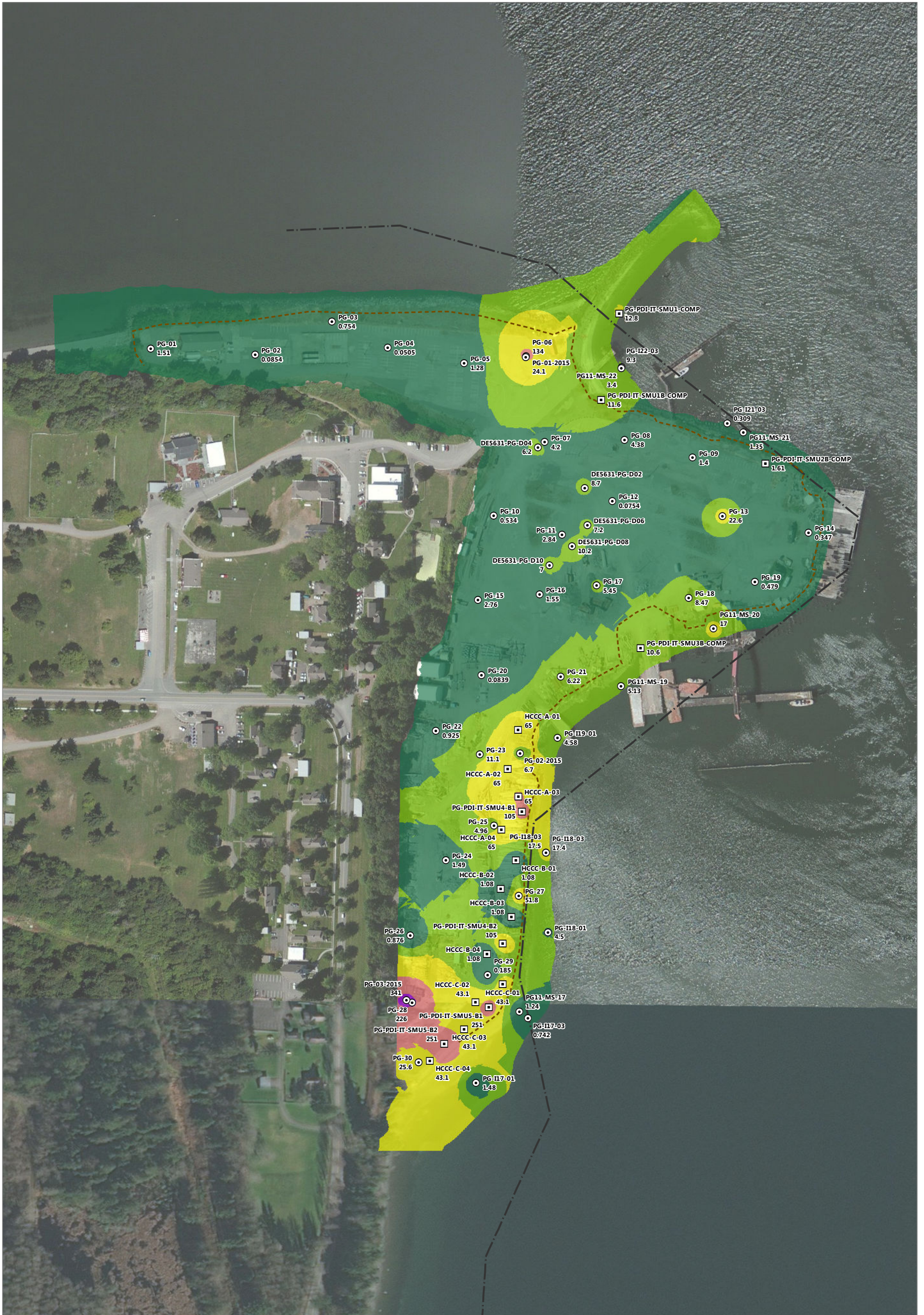
295 NE Gilman Boulevard, Suite 201 Issaquah, Washington 98027 FIGURE 4-17 SITE REPRESENTATION AND REMEDIAL EXCAVATION AREAS 2004/2005 IRM	PROJECT	17008.2 FORMER MILL SITE		
	PREPARED FOR	POPE RESOURCES		
	LOCATION	PORT GAMBLE, WASHINGTON		
	SHEET	DRAWN BY	REVIEWED BY	DATE
	1 of 1	SLG	SLG	05/08/07



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Figure 2
Stockpile Areas and Dioxin/Furan TEQ Interpolation
 Sampling and Quality Assurance Project Plan
 Port Gamble Bay Cleanup Project

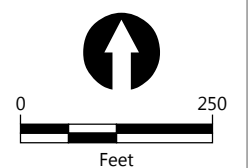


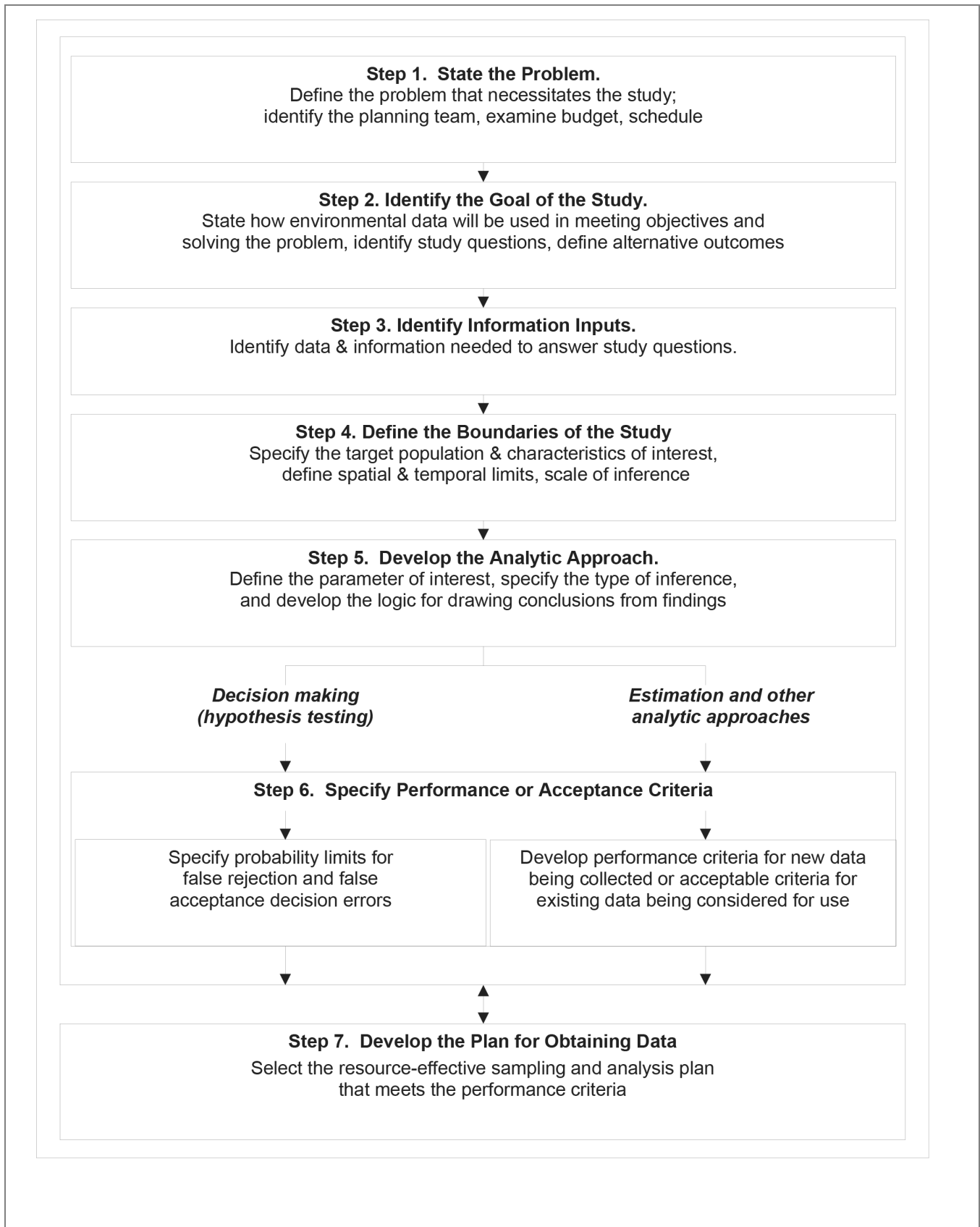
LEGEND:

- ⊙ Surface Sample
 - ⊠ Vertical Composite Sample (upper fill unit depth ranged from surface to 7- to-18.5 feet)
- | | | | | |
|------------------------------------|-----------|------------|-----------|---|
| Total Dioxin/Furan TEQ 2005 | 12.1 - 45 | 45.1 - 180 | 181 - 340 | Approximate Recent Top of Bank |
| 0.0506 - 5 | 5.01 - 12 | | | Option: 1983 Deed Line with Ordinary High Water |

NOTE(S):

1. Total Dioxin/Furan TEQ reported in ng/kg. Surface-Weighted Average Concentration (SWAC) in the upland area shown is 7.6 ng/kg.
2. Aerial imagery from ESRI.



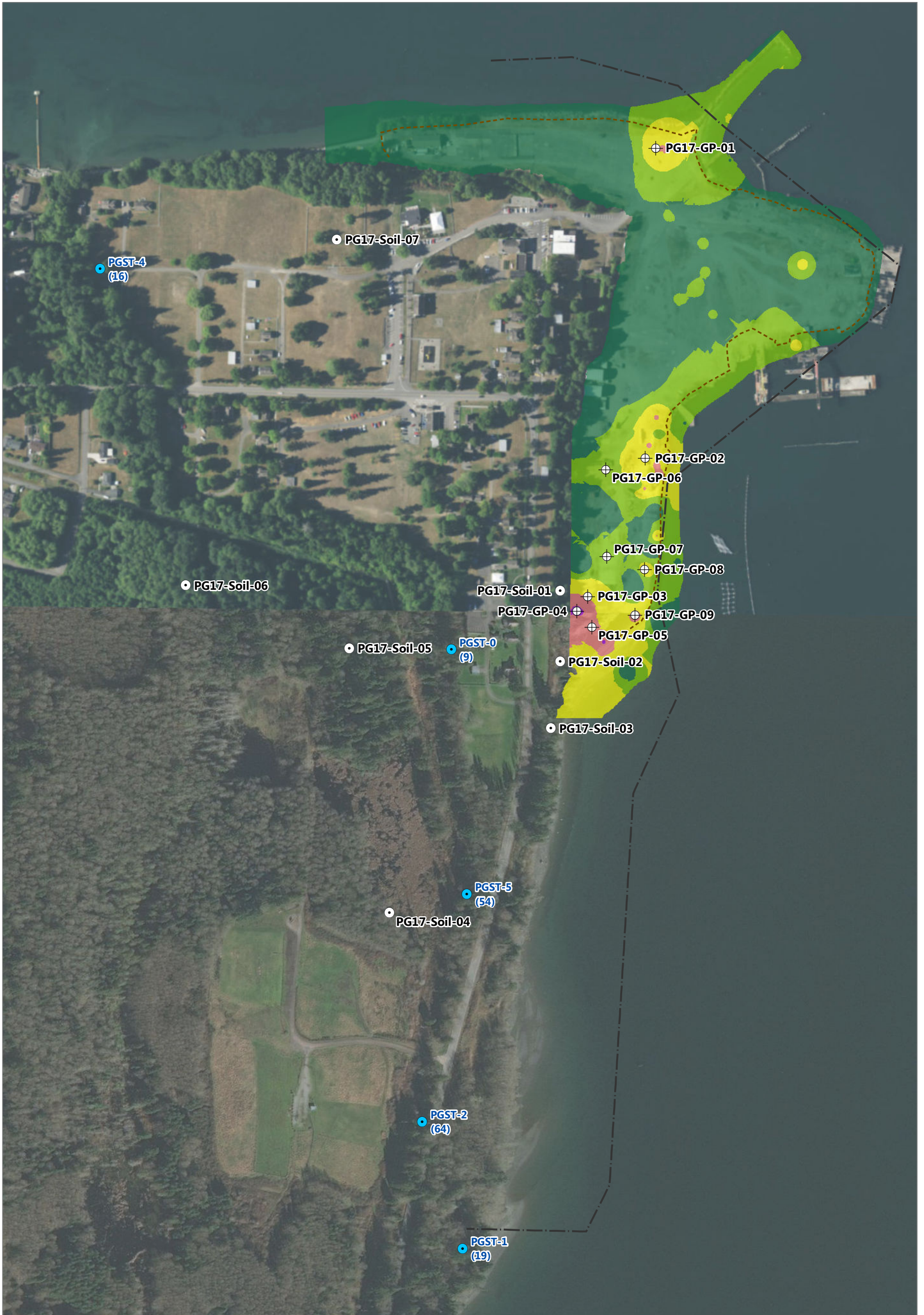


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Figure 8
Data Quality Objective Process

Pope and Talbot Sawmill Uplands
Supplemental Remedial Investigation/Feasibility Study Work Plan

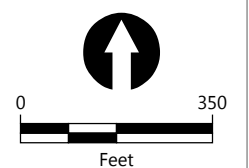


LEGEND:

- | | | | |
|-----------------------------------|------------------------------------|------------|--------------------------------------|
| ● Soil Sample 2011 (DF TEQ ng/kg) | Total Dioxin/Furan TEQ 2005 | 12.1 - 45 | - - - Approximate Recent Top of Bank |
| Proposed Sampling | 0.0506 - 5 | 45.1 - 180 | Option: 1983 Deed Line with |
| ⊕ Geoprobe | 5.01 - 12 | 181 - 340 | Ordinary High Water |
| ○ Surface Soil | | | |

NOTE(S):

- Total Dioxin/Furan TEQ reported in ng/kg. Surface-Weighted Average Concentration (SWAC) in the upland area shown is 7.6 ng/kg.
- Aerial imagery from ESRI.



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Figure 9
Proposed RI/FS Sampling Locations
 Pope and Talbot Sawmill Uplands
 Supplemental Remedial Investigation/Feasibility Study Work Plan

**Figure 10. Preliminary Project Schedule, Former Pope & Talbot Sawmill Site RI/FS
Subject to Modification**

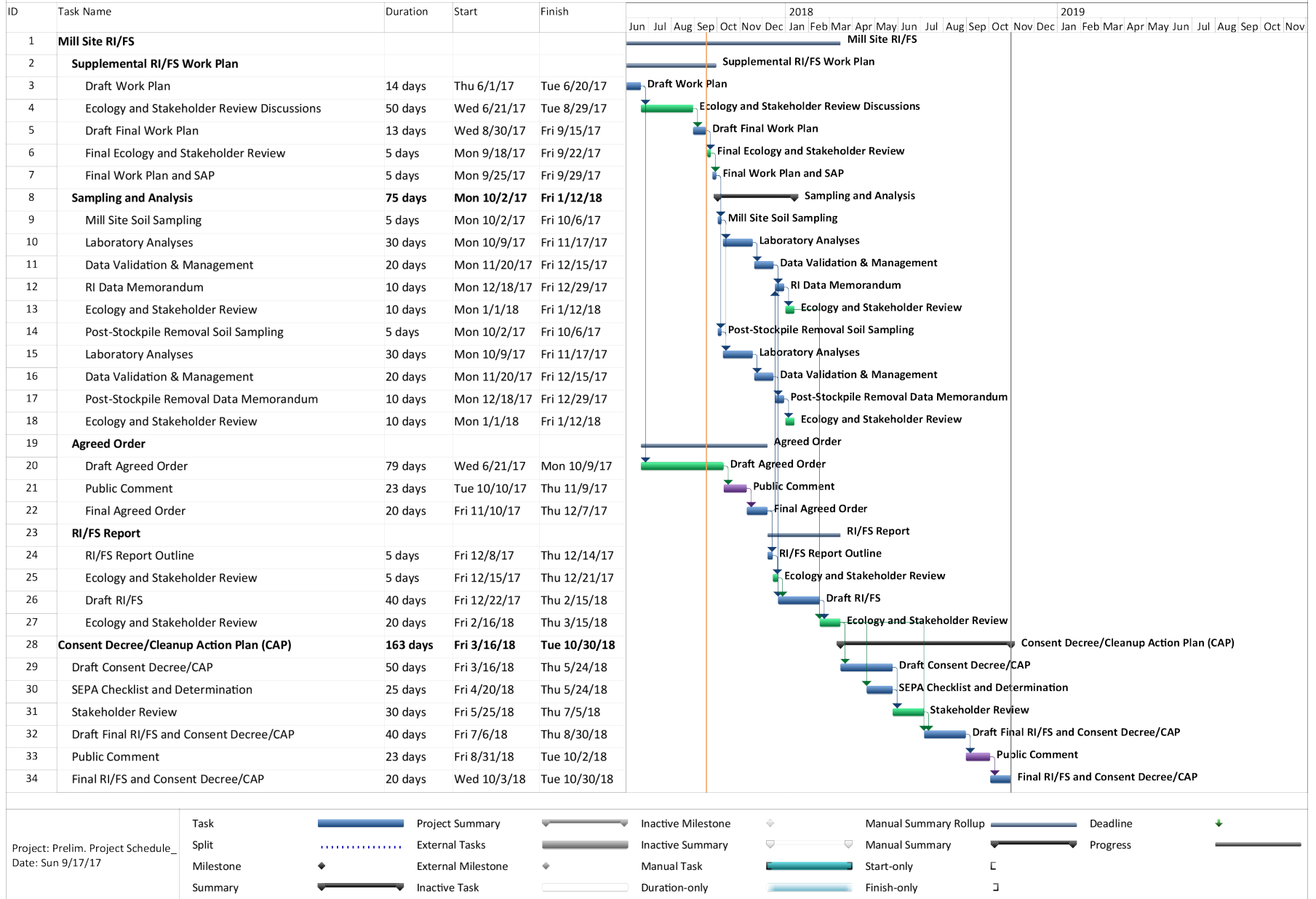


Figure 10
Preliminary Project Schedule
Pope and Talbot Sawmill Uplands
Supplemental Remedial Investigation/Feasibility Study Work Plan

Appendix A

Sampling and Analysis Plan/

Quality Assurance Project Plan



September 2017
Former Pope & Talbot, Inc., Sawmill Site Uplands, Port Gamble



Supplemental Remedial Investigation/Feasibility Study—Sampling and Quality Assurance Project Plan

Pope Resources, LP, and OPG Properties, LLC
and the Washington State Department of Ecology

September 2017

Former Pope & Talbot, Inc., Sawmill Site Uplands, Port Gamble

Supplemental Remedial Investigation/Feasibility Study—Sampling and Quality Assurance Project Plan

Prepared for

Pope Resources, LP, and OPG Properties, LLC
19950 7th Avenue NE, Suite 200
Poulsbo, Washington 98370

Prepared by

Anchor QEA, LLC
720 Olive Way Suite 1900
Seattle, Washington 98101

Washington State Department of Ecology
Aquatic Lands Cleanup Unit
300 Desmond Drive
Lacey, Washington 98504

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Table 5	Data Quality Objectives

FIGURES

Figure 1	Vicinity Map
Figure 2	Target Sampling Locations

APPENDICES

Appendix A	Inadvertent Discovery Plan
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ABBREVIATIONS

ARI	Analytical Resources, Inc.
bgs	below ground surface
COC	chain-of-custody
DQO	data quality objective
Ecology	Washington State Department of Ecology
EDL	estimated detection limit
EPA	U.S. Environmental Protection Agency
GPS	global positioning system
HASP	health and safety plan
MDL	method detection limit
Mill Site	Pope & Talbot sawmill facility
MTCA	Model Toxics Control Act
P&T	Pope & Talbot
PR/OPG	Pope Resources/Olympic Property Management
QA	quality assurance
QC	quality control
RI/FS Work Plan	Supplemental Remedial Investigation/Feasibility Study Work Plan
RL	reporting limit
RPD	relative percent difference
SQAPP	Sampling and Quality Assurance Project Plan
TEQ	toxicity equivalent quotient

1 Introduction

This Sampling and Quality Assurance Project Plan (SQAPP) describes procedures for the collection and analysis of additional surface and subsurface soil data under the Supplemental Remedial Investigation/Feasibility Study Work Plan (RI/FS Work Plan; Anchor QEA 2017a). Pope Resources/OPG Properties (PR/OPG) is implementing this work under the requirements of both the 2008 Agreed Order DE 5631 between PR/OPG and the Washington State Department of Ecology (Ecology), as well as the forthcoming 2017 Agreed Order between PR/OPG and Ecology to prepare a RI/FS and draft Cleanup Action Plan for the upland area of the Port Gamble Bay and Mill Site (the Site) in Port Gamble, Washington (Figure 1).

As discussed in the RI/FS Work Plan, available data collected at the Site provide a significant portion of the information needed for the RI/FS. The purpose of the additional data collection conducted as part of this SQAPP is to address specific remaining data gaps. In accordance with the RI/FS Work Plan, surface and subsurface soil samples will be collected and analyzed for dioxin/furan toxicity equivalent quotient (TEQ). Work will be conducted in accordance with the Model Toxics Control Act (MTCA; Chapter 173-340 of the Washington Administrative Code).

1.1 Project Planning and Coordination

John Evered, of Ecology, will serve as the government project manager, who will conduct the overall project coordination, review reports, and coordinate with Pope Resources/Olympic Property Management (PR/OPG) and Anchor QEA. Jason Cornetta will serve as the PR/OPG and Anchor QEA task and field manager and is responsible for executing this SQAPP by overseeing the collection and analysis of field samples and reporting the analytical results to Ecology.

1.2 Laboratory Coordination and QA/QC Management

Cindy Fields, of Anchor QEA, will serve as the project chemist and quality assurance (QA) manager and laboratory coordinator. She is responsible for subcontracting the state-certified laboratory, ensuring observation of established protocols for sample processing, decontamination, sample preservation, holding times, chain-of-custody (COC) documentation, and data management. She will provide QA oversight of the analytical and data validation programs ensuring that the chemistry data are valid and usable for their intended purpose, and that all sample processing and analytical procedures meet the quality control (QC) requirements.

1.3 Subcontractor Support

Samples collected by Anchor QEA will be analyzed by Analytical Resources, Inc. (ARI), located in Tukwila, Washington. ARI is accredited by Ecology. All chemical testing will adhere to SW-846 QA/QC procedures and analysis protocols (USEPA 1998) or follow the appropriate ASTM International or

Standard Method protocols. If more current analytical methods are available, the laboratory may use them.

Amanda Volgardsen will serve as the laboratory project manager at ARI. The laboratory manager will oversee all laboratory operations associated with the receipt of the environmental samples, chemical analyses, and laboratory report preparation for this project. The laboratory manager will review all laboratory reports and prepare case narratives describing any anomalies and exceptions that occurred during analyses.

The Data Validator project manager will be Christina Rink, of Laboratory Data Consultants, who will serve as the primary contact and perform all applicable data validation.

1.4 Health and Safety Program

Anchor QEA is already operating under a site-specific health and safety plan (HASP; Anchor QEA 2017b). A job safety analysis specific to the sample collection and described herein, will be added to the current HASP that will identify identification of potential physical and chemical hazards, and identification of key project personnel.

1.5 Project Schedule

The field soil sample collection is tentatively scheduled for the week of October 2, 2017. Submittal of a final data memorandum that includes final validated analytical data is tentatively scheduled for December 29, 2017. A complete preliminary schedule for the Site RI/FS is included in the RI/FS Work Plan (Anchor QEA 2017a).

2 Sampling and Analysis Plan

This sampling and analysis plan describes the procedures that will be used to collect surface and subsurface soil samples needed to provide the additional data described in the RI/FS Work Plan (Anchor QEA 2017a). The target sampling locations and coordinates are included in Table 1 and depicted on Figure 2. The Inadvertent Discovery Plan (Appendix A) will be followed during all field work described in this SQAPP.

2.1 Surface Soil Sampling

Surface soil samples will be collected at targeted locations west and south of the Mill Site. The purpose of this additional surface soil sample collection is to delineate the extent of the Site from airborne deposition of historical hog fuel boiler releases, but excluding the influence of other confounding anthropogenic sources. Surface soil (0 to 1 foot below ground surface [bgs]) samples will be collected at three locations along the southwest end of the Site along the bluff slope approximately 20 feet above the existing Site grade, as well as at four additional targeted locations west and south of the Site potentially affected by historical hog fuel boiler emissions, but excluding the potential influence of other confounding anthropogenic sources (Figure 2). Each of these seven surface soil samples will be submitted for dioxin/furan analyses.

2.2 Surface and Subsurface Soil Sampling

Surface and subsurface soil samples will be collected at targeted locations on the Site. The purpose of this additional surface and subsurface soil sample collection is to delineate vertical distributions of dioxin/furan TEQ in areas with potentially elevated surface and/or subsurface soil levels. Soil samples will be collected at nine locations that exceed or may potentially exceed the 12 nanograms per kilogram MTCA unrestricted land use soil cleanup level at the Site, particularly in the southern portion of the Site with the highest dioxins/furan TEQ levels (Figure 2). Samples from each of these nine locations samples will be submitted for dioxin/furan analyses or archived at the laboratory.

2.3 Surface Soil Field Sampling Methods

At each sampling location, soil will be collected directly from the ground surface using decontaminated hand tools (e.g., hand augur, steel spoons, or scoops), following procedures listed in ASTM E1676. Sufficient soil will be collected for all soil chemical testing and placed into a stainless steel mixing vessel for homogenization. Consistent with ASTM recommendations, the following procedures for sample collection and processing will be followed:

- The surface of the location at which the sample is to be collected will be cleared of debris such as leaves and twigs.
- If grass or other plants are present, the plants will be cut to ground level and removed before the sample is collected.

- Gravel and rocks greater than 2 inches will be excluded from the sample.
- Soil samples will be qualitatively described, including color, texture, and the presence of roots, leaves, and soil organisms.
- Following homogenization, an aliquot of soil will be placed into laboratory-supplied sample containers and placed into a cooler for delivery to the analytical laboratory.

Table 2 provides the recommended containers, preservation techniques, and holding times.

2.4 Subsurface Soil Field Sampling Methods

At each sampling location a core will be advanced using direct push Geoprobe methods to approximately 15 feet bgs and will be sectioned into a 0 to 1 foot bgs interval, and every 2 feet below that interval (i.e., 1 to 3 feet bgs, 3 to 5 feet bgs, etc.). The first three surficial intervals from each core will be submitted for dioxin/furan analyses. Depending on the results of the initial analyses, archived deeper intervals will be submitted for dioxin/furan analyses to characterize vertical profiles to inform the RI/FS. The selection of archived samples for further dioxin/furan analyses will be coordinated with Ecology.

- Samples will be photographed, with respective boring identification and sample location markers visible in the photos.
- The following information, at a minimum, will be logged by the field geologist: sample depth, Unified Soil Classification System description, soil moisture, occurrence of groundwater, and physical indications of potential contamination (e.g., odor or staining).
- Samples will be collected directly from the direct push sampler using decontaminated stainless steel sampling tools, or equivalent, as follows:
 - 0 to 1-foot interval bgs (analyze)
 - 1 to 3-foot interval bgs (analyze)
 - 3 to 5-foot interval bgs (analyze)
 - 5 to 7-foot interval bgs (archive)
 - 7 to 9-foot interval bgs (archive)
 - 9 to 11-foot interval bgs (archive)
 - 11 to 13-foot interval bgs (archive)
 - 13 to 15-foot interval bgs (archive)
- The sediment sample will be transferred to a decontaminated stainless steel bowl, homogenized to a uniform color and consistency, and placed into laboratory-supplied sample containers.

Table 2 provides the recommended containers, preservation techniques, and holding times.

2.5 Sample Identification and Labels

Each sample will be assigned a unique alphanumeric identifier. The identifier will have the format of "Project Identifier-Station ID-Media Code-Date." Samples will be identified according to the following procedure:

- The project designator will be "PG" to denote Port Gamble.
- The station ID will correspond to sample locations shown on Figure 2.
- The media code for soil is "GP" for soil collected with a Geoprobe and "Soil" for soil collected with hand tools.
- The number will indicate the station ID shown on Figure 2.
- Date of collection, in the form of YYYYMMDD.
- As an example, a soil sample collected on August 24, 2017, from Geoprobe area PG17-GP-05 will have an ID of PG17-GP-05-20170824.

Each sample will have an adhesive plastic or waterproof paper label affixed to the container or bag and will be labeled at the time of collection. The following information will be recorded on the container label at the time of collection:

- Project name
- Sample identifier
- Date and time of sample collection
- Analysis to be performed

2.5.1 Station Positioning

A handheld Differential Global Positioning System (GPS) will be used to navigate to the planned sampling locations. GPS coordinates for each sub-sampling station are provided in Table 1. Collection at the sampling location will be guided by the navigation system, with an accuracy of ± 10 feet. When positioned at the sampling location, the coordinates will be recorded in latitude and longitude, in decimal degrees, to five decimal places. Positions will be relative to the Washington State Plane Coordinates, North; North American Datum 1983.

2.6 Equipment Decontamination

The following general decontamination procedures will be followed for field sampling equipment:

- Pre-wash rinse with tap or site water.
- Wash with a solution of tap water or site water and phosphate-free soap (e.g., Alconox).
- Rinse three times with distilled water.
- Cover (no contact) all decontaminated items with aluminum foil.
- Store in a clean, closed container for next use.

2.7 Sample Storage and Delivery

Sample container requirements, holding times, and preservation requirements are outlined in Table 2. Sample containers, instruments, working surfaces, technician protective gear, and other items that may come into contact with sample material must meet high standards of cleanliness. All equipment and instruments that will be used and are in direct contact with various media collected for chemical analyses must be made of glass, stainless steel, or HDPE, and will be cleaned prior to each day's use and between sampling or compositing events.

2.8 Waste Management

Upon the completion of soil sample collection at a station, excess soil collected and not needed for analysis will be disposed of at the sample location where it was collected. All disposable sampling materials and personal protective equipment used in sample collection and processing (e.g., disposable gloves and paper towels) will be placed in heavy-duty garbage bags for disposal in the municipal waste. No hazardous materials will be used during fieldwork for this study.

2.9 Field Documentation

A complete record of field activities will be maintained. Documentation necessary to meet data quality objectives (DQOs) for this project includes field notes and field forms, sample container labels, and COC forms. The field documentation will provide descriptions of all sampling activities, sampling personnel, and weather conditions; and it will record all modifications, decisions, and/or corrective actions to the study design and procedures identified in this SQAPP.

A field logbook made of water-resistant paper will be maintained during field operations. All entries will be made legibly, in indelible ink, and will be signed and dated daily. Information recorded will include the following:

- Date, time, place, and location of sampling
- On-site personnel and visitors
- Daily safety discussion and any safety issues
- Field measurements (depth of soil sample) and their units
- Observations about site, location, and samples (weather, odors, appearance, etc.)
- Equipment decontamination verification

Field logbooks are intended to provide sufficient data and observations to enable participants to reconstruct events that occur during project field activities. Entries will be factual, detailed, and objective. Unless restricted by weather conditions, all original data recorded in field logbooks and on sample identification tags, COC records, and field forms will be written in waterproof ink. If an error is made, the individual responsible may make corrections simply by crossing out the error with a single line and adjacently recording the correct information with their initials and the date of correction.

The erroneous information must not be obliterated. All documentation, including voided entries, must be maintained within project files.

2.10 Chain-of-Custody Procedures

Chain-of-custody procedures will be followed for all samples throughout the collection, handling, and analysis processes. The principal document used to track possession and transfer of samples is the COC form. Each sample will be represented on a COC form the day it is collected. All manual data entries will be made using an indelible ink pen. Corrections will be made by drawing a single line through the error, writing in the correct information, and then dating and initialing the change. Blank lines and spaces on the COC form will be lined out, dated, and initialed by the individual maintaining custody. Electronic COC forms generated from a custom field application will be emailed directly to the laboratory and QA managers.

A COC form will accompany each shipment of samples to the analytical laboratory. Each person in custody of samples will sign the COC form and ensure the samples are not left unattended unless properly secured. Copies of all COC forms will be retained in the project files.

All samples will be shipped or hand delivered to the analytical laboratory no later than 1 day after collection. Samples collected on Friday may be held until the following Monday for shipment, provided that this delay does not jeopardize any holding time requirements.

Specific sample shipping procedures are as follows:

- Coolers or containers containing samples for analysis may be shipped via overnight delivery to the laboratory. In the event that Saturday delivery is required, the field coordinator will contact the analytical laboratory before 3 p.m. on Friday to ensure that the laboratory is aware of the number of containers shipped and the airbill tracking numbers for those containers. Following each shipment, the field coordinator will call the laboratory and verify that the shipment from the day before has been received and is in good condition.
- Coolant ice will be sealed in separate plastic bags and placed in the shipping containers.
- Individual sample containers will be placed in a sealable plastic bag, packed to prevent breakage, and transported in a sealed ice chest or other suitable container.
- Glass jars will be separated in the shipping container by shock-absorbent material (e.g., bubble wrap) to prevent breakage.
- The shipping containers will be clearly labeled with sufficient information (name of project, time and date container was sealed, person sealing the container, and consultant's office name and address) to enable positive identification.
- Chain-of-custody forms will be enclosed in a plastic bag and taped to the inside lid of the cooler.

- A minimum of two signed and dated custody seals will be placed on adjacent sides of each cooler prior to shipping.
- Each cooler will be wrapped securely with strapping tape, labeled "Glass – Fragile" and "This End Up," and will be clearly labeled with the laboratory's shipping address and the consultant's return address.

Upon transfer of sample possession to the analytical laboratory, the person(s) transferring custody of the sample container will sign the COC form. Upon receipt of samples at the laboratory, the custody seals will be broken, and the receiver will record the condition of the samples on a sample receipt form. Chain-of-custody forms will be used internally in the laboratory to track sample handling and final disposition.

2.11 Sample Analyses

The samples will be analyzed for dioxin/furan (Table 1). Analytical methods and expected reporting limits (RLs) for each parameter are included in Table 3. Samples will be submitted to ARI for analyses. The laboratory will be responsible for the following:

- Analyze the samples following the methods described in this SQAPP and laboratory Standard Operating Procedures
- Follow documentation and custody procedures
- Meet all RL requirements
- Meet QA/QC frequency and DQO requirements (Tables 4 and 5)
- Deliver electronic data files as specified in this SQAPP
- Meet turnaround times for deliverables as described in this SQAPP
- Allow Ecology and the QA/QC contractor to perform laboratory and data audits

3 Quality Assurance Project Plan

The purpose of the project SQAPP is to provide confidence in the analytical results through a system of QA/QC performance checks with respect to sample collection methods, laboratory analyses, data reporting, and corrective action procedures to achieve compliance with established performance and data quality criteria. This section presents the QA/QC procedures to ensure that the data derived from this investigation are defensible and usable for their intended purpose.

3.1 Measurements of Data Quality

The overall DQO for field sampling and laboratory analysis is to produce data of known and appropriate quality to support the project objectives. DQOs for the project are provided in Table 5. The quality of laboratory data is assessed by precision, accuracy, representativeness, comparability, completeness, and sensitivity. The definitions for the data quality indicators are as follows.

3.1.1 Precision

Precision is the ability of an analytical method or instrument to reproduce its own measurement. It is a measure of the variability, or random error, in sampling, sample handling, and in laboratory analysis. ASTM recognizes two levels of precision: repeatability—the random error associated with measurements made by a single test operator on identical aliquots of test material in a given laboratory, with the same apparatus, under constant operating conditions; and reproducibility—the random error associated with measurements made by different test operators, in different laboratories, using the same method but different equipment to analyze identical samples of test material (ASTM 2002).

In the laboratory, "within-batch" precision is measured using replicate sample or QC analyses and is expressed as the relative percent difference (RPD) between the measurements. The "batch-to-batch" precision is determined from the variance observed in the analysis of standard solutions or laboratory control samples from multiple analytical batches.

Precision measurements can be affected by the nearness of a chemical concentration to the method detection limit (MDL), where the percent error (expressed as RPD) increases. RPD is calculated using Equation No. 1.

Equation No. 1

$$RPD = \frac{(C1 - C2) \times 100\%}{(C1 + C2)/2}$$

where:

RPD = relative percent difference

C1 = larger of two values

C2 = smaller of two values

3.1.2 Accuracy

Accuracy is a measure of the closeness of an individual measurement (or an average of multiple measurements) to the true or expected value. Accuracy is determined by calculating the mean value of results from ongoing analyses of laboratory control samples, standard reference materials, and standard solutions. In addition, spiked project samples are also measured; this indicates the accuracy or bias in the actual sample matrix. Accuracy is expressed as percent recovery of the measured value, relative to the true or expected value. If a measurement process produces results for which the mean is not the true or expected value, the process is said to be biased. Bias is the systematic error either inherent in a method of analysis (e.g., extraction efficiencies) or caused by an artifact of the measurement system (e.g., contamination). Analytical laboratories utilize several QC measures to eliminate analytical bias, including systematic analysis of method blanks, laboratory control samples, and independent calibration verification standards. Because bias can be positive or negative, and because several types of bias can occur simultaneously, only the net, or total, bias can be evaluated in a measurement.

Laboratory accuracy will be evaluated against quantitative laboratory control sample and matrix spike recovery performance criteria outlined in Table 1. Surrogate spike recoveries will be evaluated against laboratory control limits, and internal standard recoveries will be evaluated against method criteria. Accuracy can be expressed as a percentage of the true or reference value, or as a percentage of the spiked concentration. Equation No. 2 is used to express accuracy.

Equation No. 2

$$\%R = \frac{100\% \times (S - U)}{Csa}$$

where:

%R = percent recovery

S = measured concentration of spiked aliquot

U = measured concentration of unspiked aliquot

Csa = actual concentration of spike added

3.1.3 *Representativeness*

Representativeness expresses the degree to which data accurately and precisely represent an environmental condition. For the sampling program, the list of analytes has been identified to provide a comprehensive assessment of the known and potential contaminants at the Site.

3.1.4 *Comparability*

Comparability expresses the confidence with which one dataset can be evaluated in relation to another dataset. For this program, comparability of data will be established through the use of standard analytical methodologies, reporting formats, and the use of common traceable calibration standards and reference materials.

3.1.5 *Completeness*

Completeness is a measure of the amount of data that is determined to be valid in proportion to the amount of data collected.

3.1.6 *Sensitivity*

Sensitivity is measured by the achievable laboratory detection and RLs. The MDL is defined as the minimum concentration at which a given target analyte can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. Laboratory RLs are defined as the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. The estimated detection limit (EDL) is defined as the sample and analyte-specific detection limit achievable at the time of analysis.

The sample-specific EDL, MDL, and RL will be reported by the laboratory and will take into account any factors relating to the sample analysis that might decrease or increase the RL (e.g., dilution factor, percent moisture, sample mass). In the event that the MDL and RL are elevated for a sample due to matrix interferences and subsequent dilution or reduction in the sample aliquot, the data will

be evaluated by Anchor QEA and the laboratory to determine if an alternative course of action is required or possible. If this situation cannot be resolved readily (i.e., RIs less than criteria are achieved), Ecology will be contacted to discuss an acceptable resolution.

3.2 Laboratory Quality Control

Laboratory QC procedures, where applicable, include initial and continuing instrument calibrations, standard reference materials, laboratory control samples, matrix replicates, matrix spikes, surrogate spikes (for organic analyses), and method blanks. Table 3 lists the frequency of analysis for laboratory QA/QC samples, and Table 1 summarizes the DQOs for precision, accuracy, and completeness.

Results of the QC samples from each analytical batch will be reviewed by the analyst immediately after a sample group has been analyzed. The QC sample results will then be evaluated to determine if control limits have been exceeded. If control limits are exceeded in the sample group, the QA/QC manager may be contacted to determine if correction action is required. Corrective action may include re-preparation and/or re-analysis of affected samples or possible method modifications if the concern is determined to be due to method failure.

3.3 Data Validation

Data generated in the field and at the laboratories will be verified and validated according to methods and procedures described in this section.

3.3.1 Data Review, Validation, and Verification

The analytical data will undergo U.S. Environmental Protection Agency (EPA) Stage 2B validation (USEPA 2009). During the validation process, analytical data will be evaluated for SQAPP, method, and laboratory quality control compliance, and their validity and applicability for program purposes will be determined. Based on the findings of the validation process, data validation qualifiers may be assigned. The validated project data, including qualifiers, will be entered into the project database, thus enabling this information to be retained or retrieved, as needed.

3.3.2 Validation and Verification Methods

Field and laboratory data for this task will undergo a formal verification and validation process. All entries into the database will be verified. All errors found during the verification of field data, laboratory data, and the database will be corrected prior to release of the final data.

Data verification includes a review for completeness and accuracy by the field coordinator and laboratory manager; review by the data manager for outliers and omissions; and the use of performance criteria to identify laboratory QC sample outliers. Data verification will be conducted manually by Anchor QEA staff or by an external validator.

For this program, Stage 2B validation (USEPA 2009) will be conducted following National Functional Guidelines for data validation (USEPA 2011, 2016a, 2016b), this Plan, and professional judgment. Data will be reviewed with regard to the following, as appropriate to the particular analysis:

- Completeness
- Holding times
- MRLs, MDLs, and EDLs
- Laboratory control samples
- Matrix spike/matrix spike duplicates
- Matrix duplicates
- Standard reference materials
- Internal standard area counts
- Surrogate recoveries
- Method blanks
- Initial calibration data
- Continuing calibration data
- Instrument performance checks

A data validation report will be generated to document any issues with data quality and any qualifications applied to data and this report will be peer reviewed prior to finalization. All validated data will be entered into the database established for this program, and a final data file will be exported. Verification of the database export against the PDF data report will be performed by the QA manager or designee. Any errors found in the data file export will be corrected in the database and reviewed for systemic reporting errors.

3.3.3 Reconciliation with User Requirements

The QA manager will review data at the completion of the task to determine if DQOs have been met. If data do not meet the project's specifications, the QA manager will review the errors and determine if the problem is due to calibration/maintenance, sampling techniques, or other factors and will suggest corrective action, if appropriate. The problem should be able to be corrected by retraining, revising techniques, or replacing supplies/equipment; if not, the DQOs will be reviewed for feasibility. If specific DQOs are not achievable, the QA manager will recommend appropriate modifications. If matrix interference is suspected to have attributed to the exceedance, adequate laboratory documentation must be presented to demonstrate that instrument performance or laboratory technique did not bias the result. In cases where the DQOs have been exceeded and corrective actions did not resolve the outlier, data will be qualified per EPA National Functional Guidelines (USEPA 2011, 2016a, 2016b). In these instances, the usability of data will be determined by the extent of the exceedance. Rejected data will be assigned an "R" qualifier and will not be used for any purposes.

4 Data Analysis, Recordkeeping, and Reporting Requirements

This section describes the data analysis, recordkeeping, and data reporting elements of the SQAPP.

4.1 Analysis of Chemistry Data

The chemical results will be processed using the data management rules presented in Section 3. Dioxin/furan TEQ will be calculated in accordance with the Port Gamble Sawmill Area Soil (Appendix B; Leidos 2014) and carcinogenic polycyclic aromatic hydrocarbon TEQ will be calculated in accordance with Washington Administrative Code 173-340-708(e).

4.2 Recordkeeping and Data Report

At the conclusion of the data acquisition and validation, all records, including field records, laboratory data reports, data validation reports, and other relevant documentation, will be provided to Ecology in a data report. The data report will include the following:

- A description of field events
- Deviations from sample, analysis, and validation described in this SQAPP
- Field and laboratory records, including laboratory COC forms
- Chemical and physical testing results, sampling depth, and final data qualifiers
- A summary of the sampling results relative to pre-construction results
- A summary of data quality and usability
- Laboratory reports

When the testing results are validated and finalized, they will be loaded onto Ecology's Environmental Information Management database.

5 References

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- USEPA, 2016a. *National Functional Guidelines for Superfund Organic Methods Data Review*. Office of Superfund Remediation and Technology Innovation. EPA-540-R-2016-002. September 2016.
- USEPA, 2016b. *National Functional Guidelines for Inorganic Superfund Data Review*. Office of Superfund Remediation and Technology Innovation. EPA-540-R-2016-001. September 2016.

Tables

Table 1
Target Sample Locations and Analytes

Sample Area	Northing	Easting	Dioxin/Furan TEQ	Total Solids
PG17-GP-01	1211075	317395	X	X
PG17-GP-02	1211036	316267	X	X
PG17-GP-03	1210827	315764	X	X
PG17-GP-04	1210788	315710	X	X
PG17-GP-05	1210843	315652	X	X
PG17-GP-06	1210892	316225	X	X
PG17-GP-07	1210896	315909	X	X
PG17-GP-08	1211034	315862	X	X
PG17-GP-09	1210999	315697	X	X
PG17-Soil-01	1210727	315786	X	X
PG17-Soil-02	1210727	315527	X	X
PG17-Soil-03	1210693	315285	X	X
PG17-Soil-04	1210106	314614	X	X
PG17-Soil-05	1209960	315576	X	X
PG17-Soil-06	1209366	315804	X	X
PG17-Soil-07	1209915	317061	X	X

Notes:

1. North American Datum 1983 WA State Plane North, US Survey Feet

TEQ: toxicity equivalence

Table 2
Guidelines for Sample Handling and Storage

Analyte	Container ^a	Holding Time	Preservative
Total Solids	4-ounce glass jar	14 days	Cool/4°C
		6 months	Freeze/-18°C
		6 months	Cool/4°C
		2 years	Freeze/-18°C
PCDD/PCDF Congeners		1 year until extraction	Freeze/-18°C
		1 year after extraction	Freeze/-18°C

Notes:

a. Actual containers used will be verified with the lab prior to sample collection.

PCDD/PCDF: polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans

Table 3
Analyte List, Analytical Methods, and Reporting Limits

Analyte	Analytical Method	Target Reporting Limit
Conventionals and Physical Tests		
Total solids (%)	SM 2540B	0.1
PCDD/PCDF (ng/kg)		
2,3,7,8-TCDD	1613B	0.5
1,2,3,7,8-PeCDD	1613B	2.5
1,2,3,4,7,8-HxCDD	1613B	2.5
1,2,3,6,7,8-HxCDD	1613B	2.5
1,2,3,7,8,9-HxCDD	1613B	2.5
1,2,3,4,6,7,8-HpCDD	1613B	2.5
OCDD	1613B	5.0
2,3,7,8-TCDF	1613B	0.5
1,2,3,7,8-PeCDF	1613B	2.5
2,3,4,7,8,-PeCDF	1613B	2.5
1,2,3,4,7,8-HxCDF	1613B	2.5
1,2,3,6,7,8-HxCDF	1613B	2.5
1,2,3,7,8,9-HxCDF	1613B	2.5
2,3,4,6,7,8-HxCDF	1613B	2.5
1,2,3,4,6,7,8-HpCDF	1613B	2.5
1,2,3,4,7,8,9-HpCDF	1613B	2.5
OCDF	1613B	5.0

Notes:

kg: kilogram

ng: nanogram

PCDD/PCDF: polychlorinated dibenzo-p-dioxins/ polychlorinated dibenzofurans

Table 4
Field and Laboratory Quality Assurance/Quality Control Sample Analysis Summary

Analysis Type	Field Duplicate	Field/Equipment Blank	Initial Calibration	Ongoing Calibration	SRM or LCS	Matrix Duplicates	Matrix Spikes	Matrix Spike Duplicates	Method Blanks	Surrogate Spikes
Total solids	1 per 20 samples	NA	Each batch ^a	NA	NA	1 per 20 samples	NA	NA	NA	NA
PCDD/PCDF Congeners	1 per 20 samples	1 per sampling event	As needed ^a	Every 12 hours	1 per 20 samples	1 per 20 samples	Nac	Nac	1 per 20 samples	Every sample

Notes:

a. Calibration and certification of drying ovens and weighing scales are conducted bi-annually.

b. Initial calibrations are considered valid until the continuing calibration no longer meets method specifications. At that point, a new initial calibration is analyzed.

c. Labeled standards are added to each sample in isotope-dilution analyses as required by the method.

LCS: laboratory control sample

NA: not applicable

PCDD/PCDF: polychlorinated dibenzo-p-dioxins/ polychlorinated dibenzofurans

SRM: standard reference material

Table 5
Data Quality Objectives

Parameter	Precision	Accuracy	Completeness
Total solids	± 20% RPD	NA	95%
PCDD/PCDF Congeners	± 35% RPD	50-150% R	95%

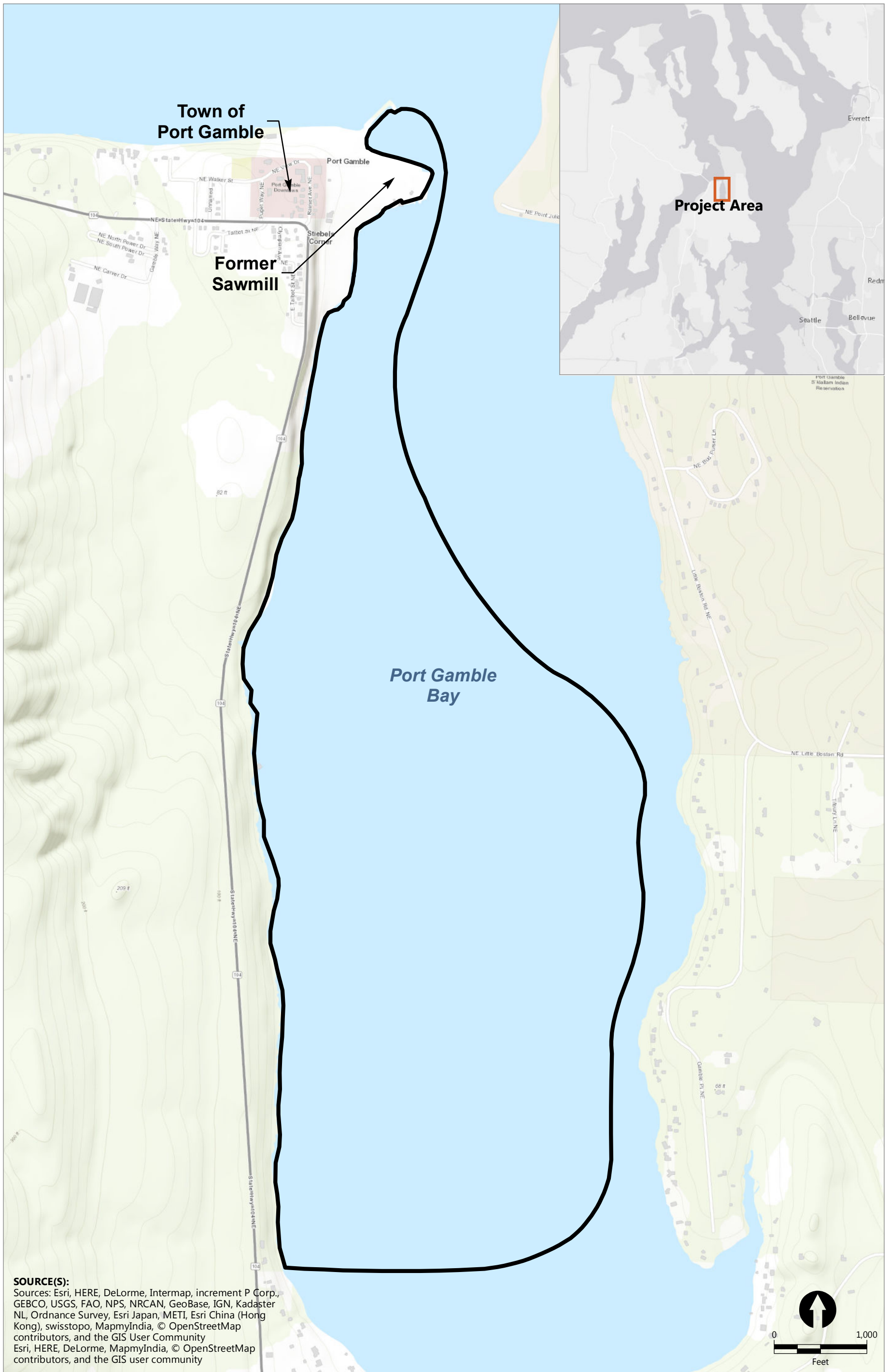
Notes:

PCDD/PCDF: polychlorinated dibenzodioxin/polychlorinated dibenzofuran

RPD: relative percent difference

R: recovery

Figures

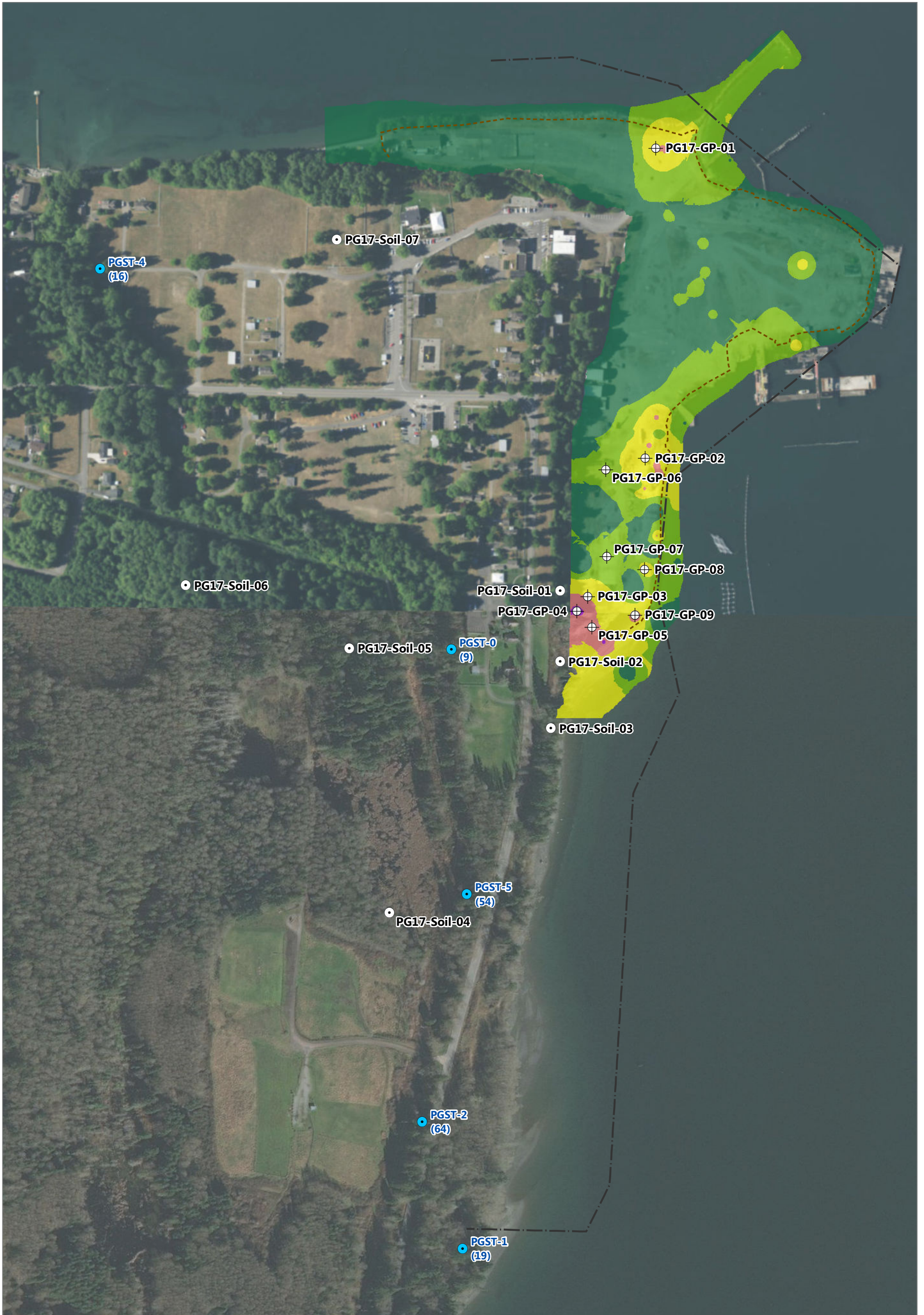


SOURCE(S):
 Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
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Figure 1
Vicinity Map
 Sampling and Quality Assurance Project Plan
 Former Pope & Talbot Inc. Sawmill Site Uplands

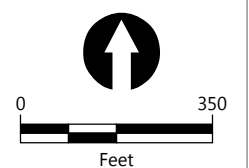


LEGEND:

- Soil Sample 2011 (DF TEQ ng/kg)
- ⊕ Geoprobe
- Surface Soil
- Total Dioxin/Furan TEQ 2005**
- 0.0506 - 5
- 5.01 - 12
- 12.1 - 45
- 45.1 - 180
- 181 - 340
- Approximate Recent Top of Bank
- ⋯ Option: 1983 Deed Line with Ordinary High Water

NOTE(S):

1. Total Dioxin/Furan TEQ reported in ng/kg. Surface-Weighted Average Concentration (SWAC) in the upland area shown is 7.6 ng/kg.
2. Aerial imagery from ESRI.



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Figure 2
Proposed RI/FS Sampling Locations
 Sampling and Quality Assurance Project Plan
 Former Pope & Talbot Inc. Sawmill Site Uplands

Appendix A

Inadvertent Discovery Plan

ATTACHMENT 1

INADVERTENT DISCOVERY PLAN

Confidential – not for public distribution

Confidential

INTRODUCTION

The Port Gamble Bay Cleanup Project requires a Nationwide Permit 38 from the U.S. Army Corps of Engineers (USACE) and therefore must comply with Section 106 of the National Historic Preservation Act (NHPA). Section 106 regulations include provisions for “Post-Review Discovery” (36 Code of Federal Regulations [CFR] 800.13). State laws regarding inadvertent discovery of archaeological resources also apply to the project, including Revised Code of Washington (RCW) 27.53 (Archaeological Sites and Resources), RCW 68.50.645 (Skeletal Human Remains), and RCW 27.44 (Indian Graves and Records). This *Inadvertent Discovery Plan* describes actions that must be taken in the event of a discovery of archaeological materials or human remains.

PROCEDURES FOR THE DISCOVERY OF ARCHAEOLOGICAL RESOURCES

If a construction team member believes he or she has inadvertently uncovered an archaeological resource or possible resource, all work at or adjacent to the discovery shall immediately stop. The area of work stoppage shall be adequate to provide for the security, protection, and integrity of the archaeological discovery. Vehicles, equipment, and unauthorized personnel shall not be permitted to traverse the discovery site. Work in the immediate area shall not resume until treatment of the discovery has been completed following the provisions of this section.

A resource discovery could be prehistoric or historic in age and would include finds such as the following:

- Areas of charcoal or charcoal-stained soil and stones
- Stone tools or waste flakes (i.e., an arrowhead or stone chips)
- Animal bones, burned rocks, or mollusk shell, whether or not seen in association with stone tools or chips
- Tin cans, ceramics, flat glass or bottles, concentrations of brick, or logging or agricultural equipment

The construction team member shall immediately notify either:

1. The project archaeological monitor, if the monitor is already on site

2. The project environmental manager (see the contact information at the end of this document), if the archaeological monitor is not on site

Under no circumstances shall the construction team directly contact federal or state agencies, tribes, or the media.

The archaeological monitor, if on site, shall evaluate the find as described in the *Archaeological Monitoring Plan*. If the archaeological monitor is not on site, the project environmental manager shall arrange for a qualified archaeologist to visit the work site to determine if the find is potentially significant (eligible for listing in the National Register of Historic Places [NRHP]).

If the archaeologist determines that the find is not archaeological or is clearly not NRHP-eligible, work may resume immediately with no further delay.

If the archaeologist determines that the find is potentially NRHP-eligible, the project environmental manager shall contact the following by email and phone (see the contact information at the end of this document):

- The USACE Project Manager and USACE Archaeologist
- The State Archaeologist
- Tribal Cultural Resources Staff
- The Washington State Department of Ecology (Ecology) Project Manager
- The Washington State Department of Natural Resources (DNR) Archaeologist

If USACE determines that the discovery is an NRHP-eligible archaeological resource, and the State Historic Preservation Office (SHPO) concurs, treatment shall proceed as described in the *Archaeological Monitoring Plan*.

USACE, in consultation with SHPO, tribes, DNR, and Ecology, will decide when construction may resume at the discovery location. Where archaeological resources are encountered during construction but additional project effects to the resources are not anticipated, project construction may continue while assessment and documentation of the resources proceeds.

If continued construction is likely to cause additional impacts to archaeological resources, project activities within a radius of 30 feet of the discovery will cease until the archaeologist has completed treatment as described in the *Archaeological Monitoring Plan*, and USACE and the Department of Archaeology and Historic Preservation (DAHP) have indicated that work can proceed.

PROCEDURES FOR THE DISCOVERY OF HUMAN REMAINS

The procedures described below are compliant with RCW 68.60.055. They are also described in the *Archaeological Monitoring Plan*.

If materials are discovered that may be human remains, all work shall stop at the location where the discovery was made. Activity at that location shall not resume until treatment of the discovery has been completed as follows:

- The archaeological monitor shall immediately notify the principal investigator and the project environmental manager. The project environmental manager is responsible for all other contacts and coordination (e.g., any contacts with federal and state agencies, tribes, or the media).
- The project environmental manager shall contact the Kitsap County Sheriff (Sheriff). The Sheriff will assume jurisdiction upon arrival, and the Kitsap County Medical Examiner will determine if the remains are forensic (a crime scene). If the remains are forensic, the Medical Examiner will control the discovery and no work may resume until the Sheriff transfers control back to the property owner.
- The project environmental manager or principal investigator shall contact the USACE permit manager and USACE archaeologist.
- If the remains are not forensic (i.e., the remains are archaeological), the Medical Examiner will notify the State Physical Anthropologist at DAHP. DAHP will take jurisdiction over the remains and will notify appropriate cemeteries and affected tribes of the discovery.
- The project environmental manager or USACE may choose to coordinate independently with the tribes at any time, even prior to the Medical Examiner's determination.
- The State Physical Anthropologist will determine if the remains are Native American

or not, and will notify any appropriate cemeteries and affected tribes of the determination. DAHP will lead all consultation with the affected parties regarding the future preservation, excavation, and disposition of the remains.

- Construction may resume as determined during consultation.

Confidential

CONTACT INFORMATION

Project Environmental Manager

Heather Page
(206) 979-7987
hpage@anchorqea.com

Principal Investigator

Barbara Bundy Ph.D., RPA
(907) 677-6671
bbundy@anchorqea.com

USACE Project Manager

Jerald Gregory
(206) 764-6665
Jerald.J.Gregory@usace.army.mil

USACE Archaeologist

Lance Lundquist
(206) 764-6909
Lance.A.Lundquist@usace.army.mil

DNR Archaeologist

Maurice Major
(360) 902-1298
maurice.major@dnr.wa.gov

Ecology Project Manager

Russ McMillan
(360) 407-7536
rmcm461@ecy.wa.gov

Port Gamble S'Klallam Tribe

Josh Wisniewski, Cultural Resources
(360) 633-1899
joshw@pgst.nsn.us

Suquamish Tribe

Dennis Lewarch, Cultural Resources
(360) 394-8529
dlewarch@suquamish.nsn.us

Skokomish Tribe

Kris Miller, THPO Cultural Resources
(360) 426-2280
shlanay1@skokomish.org

Lower Elwha Klallam Tribe

William S. White, Cultural Resources
(360) 460-1617
bill.white@elwha.nsn.us

Jamestown S'Klallam Tribe

Gideon U. Cauffman, Cultural Resources
(360) 681-4638
gcauffman@jamestowntribe.org

DAHP

Rob Whitlam, State Archaeologist
(360) 586-3080
Rob.Whitlam@dahp.wa.gov

Kitsap County Sheriff

(360) 337-7101

EXHIBIT - C

Ecology Policy Number 840, Data Submittal Requirements



Toxics Cleanup Program

Policy 840: Data Submittal Requirements

Established: August 1, 2005

Revised: April 12, 2016

Contact: Policy & Technical Support Unit, Headquarters

Purpose: This Policy provides guidance on the submission of environmental monitoring data generated or collected during the investigation or cleanup of contaminated sites under the Model Toxics Control Act.

References: [WAC 173-340-840 \(5\)](#)
[Chapter 173-204 WAC](#)
[Environmental Information Management System Database](#)
[Sediment Cleanup Users Manual II](#)

Attachments: A - Model Grant and Permit Condition

Disclaimer: This Policy is intended solely for the guidance of Ecology staff. It is not intended, and cannot be relied on, to create rights, substantive or procedural, enforceable by any party in litigation with the state of Washington. Ecology may act at variance with this Policy depending on site-specific circumstances, or modify or withdraw this Policy at any time.

Approved by:

James J. Pendowski, Program Manager
Toxics Cleanup Program

Accommodation Requests: To request ADA accommodation, including materials in a format for the visually impaired, call Ecology's Toxics Cleanup Program at 360-407-7170. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.

Purpose and Applicability

The investigation and cleanup of contaminated sites generate a large volume of environmental monitoring data that need to be properly managed to facilitate regulatory decisions. The data also need to be accessible by Ecology staff, site owners, consultants, and the general public.

This Policy describes the requirements for submitting environmental monitoring data generated or collected during the investigation and cleanup of contaminated sites under Chapter 70.105D RCW, Model Toxics Control Act (MTCA).

This Policy applies to Ecology staff and any person who investigates or cleans up contaminated sites and submits related environmental sampling data to Ecology, including potentially liable persons, Voluntary Cleanup Program (VCP) customers, prospective purchasers, government agencies, and Ecology contractors.

1. Unless otherwise specified by Ecology, all environmental monitoring data generated during contaminated site investigations and cleanups are required to be submitted to Ecology in both written format and electronically through EIM.

Environmental monitoring data include biological, chemical, physical, and radiological data generated during site investigations and cleanups under the Model Toxics Control Act Cleanup Regulation (Chapter 173-340 WAC) and the Sediment Management Standards (Chapter 173-204 WAC).

The Environmental Information Management System (EIM) is a searchable database that contains data collected by Ecology (or by environmental contractors on behalf of Ecology), and by Ecology grant recipients, local governments, the regulated community, and volunteers.

Under this Policy, data are considered to be “environmental monitoring data” if generated or collected during:

- a. Site investigations and cleanups conducted under an order, agreed order or consent decree, permit, grant, loan, contract, interagency agreement, memorandum of understanding; or
- b. An independent remedial action.

Under this Policy, data are not considered to be environmental monitoring data if generated or collected for the following studies. This means that entering data into EIM, while encouraged, is optional for:

- a. Non site-specific studies;
- b. Site hazard assessments that result in no further action; and
- c. All initial site investigations.

2. Orders, agreed orders, consent decrees, or permits must include a condition that site-specific environmental sampling data be submitted in compliance with this Policy.

For those reports prepared and submitted for review under an order, agreed order, consent decree, or permit, the environmental sampling data must be entered into EIM at the time of report submittal. If reports for such work do not include documentation that data was submitted in compliance with this Policy, the reports shall be deemed incomplete and a notice will be provided to the submitter.

Generally, Ecology should not review such reports until that documentation is provided. The assistant attorney general assigned to the site should be consulted for an appropriate response when Ecology's review is delayed due to failure of data entry into EIM.

3. Site-specific environmental sampling data must be entered into EIM before Ecology will review independent remedial action reports under the Voluntary Cleanup Program.

For independent remedial action reports prepared and submitted under Ecology's Voluntary Cleanup Program (VCP), environmental sampling data must be entered into EIM at the time any report is submitted requesting an opinion on the sufficiency of the action under the VCP.

However, Ecology may establish an alternate deadline for entering data into EIM if this Policy creates undue hardship on the VCP customer and Ecology does not need the data in EIM to begin the review.¹ But in no case will Ecology issue a No Further Action (NFA) opinion letter under the VCP—either for the whole site or a property located within the site—until the data has been entered into EIM.

If sampling data has not been entered into EIM, Ecology may still review the report for the limited purpose of determining whether it contains sufficient information to provide an opinion. If the report is incomplete, Ecology may also respond to the VCP customer's request for an opinion by issuing an administrative letter rejecting the report and requesting additional information.

¹ For example, when a site has multiple groundwater sampling events over time, it may be more efficient to enter the data into EIM at one time after monitoring is completed, rather than for each monitoring event. Another example would be where a VCP consultant is using EIM for the first time and needs additional time to learn how to use the system.

4. Grants, contracts, interagency agreements or memoranda of understanding issued after the effective date of this Policy must include a condition that site-specific data be submitted in compliance with this Policy.

Reports on such work will not be accepted as complete until the data have been submitted in compliance with this Policy. If a payment or transfer of funds is involved in the transaction, the relevant payment or transfer shall be withheld until this requirement has been met. Attachment A contains example language to include in these documents.

5. Data generated during upland investigations and cleanups must be submitted electronically using Ecology's EIM.

The Environmental Information Management System is Ecology's main database for environmental monitoring data. Proper submission of data through this system meets the requirement of submitting such data in an electronic format.

Additional information about EIM, including instructions for data submittal, can be found on Ecology's EIM website at <http://www.ecy.wa.gov/eim/>. The Toxic Cleanup Program's (TCP) EIM Coordinator can also provide technical assistance to site managers and consultants who use EIM.

6. Data generated during sediment investigations and cleanups must be submitted electronically using Ecology's EIM.

Effective March 1, 2008, EIM is Ecology's data management system for sediment-related data. Proper submission of data through EIM meets the requirement of submitting such data in an electronic format. Electronic data must be submitted to Ecology simultaneously with the accompanying report.

For additional information on sediment sampling and analysis plan requirements, see Ecology's *Sediment Cleanup Users Manual (SCUM II)* Publication No. 12-09-057, available at: <https://fortress.wa.gov/ecy/publications/summarypages/1209057.html>

The Sediment Data Coordinator in TCP's Aquatic Land Cleanup Unit (ALCU) can also provide technical assistance with EIM.

7. Data submitted electronically using EIM must be checked by the Toxics Cleanup Program's EIM Coordinator before the data will be officially loaded into EIM.

Normally, TCP's EIM Coordinator will receive a notice that data have been submitted through EIM. Upon receipt of the notice, the EIM Coordinator should notify the Cleanup Project Manager. The EIM Coordinator then reviews the submittal for quality control and officially loads the data into the system.

Attachment A

Model Grant and Permit Condition

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Model Grant and Permit Condition

The following condition is to be inserted in grants, loans, contracts, interagency agreements, and memoranda of understandings where site-specific environmental monitoring data is expected to be generated:

All sampling data shall be submitted to Ecology in both printed and electronic formats in accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840: Data Submittal Requirements. Electronic submittal of data is not required for site hazard assessments that result in no further action and initial site investigations. (FOR GRANTS, AND LOANS ADD: Failure to properly submit sampling data will result in Ecology withholding payment and could jeopardize future funding.)

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EXHIBIT - D

Public Participation Plan



DEPARTMENT OF
ECOLOGY
State of Washington

DRAFT PUBLIC PARTICIPATION PLAN

Port Gamble Bay and Mill Site

*Prepared by Washington State Department
of Ecology*

October 2017

Publication no. **[draft]**

Publication and Contact Information

This report is available on the Department of Ecology's website at <https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=3444>

For more information contact:

Toxics Cleanup Program
P.O. Box 47600
Olympia, WA 98504-7600

Phone: 360-407-7170

Washington State Department of Ecology - www.ecy.wa.gov

- Headquarters, Olympia 360-407-6000
- Northwest Regional Office, Bellevue 425-649-7000
- Southwest Regional Office, Olympia 360-407-6300
- Central Regional Office, Yakima 509-575-2490
- Eastern Regional Office, Spokane 509-329-3400

Accommodation Requests: *To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 360-407-7170. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.*

This plan is for you!

This Public Participation Plan (PPP) is prepared for the Port Gamble Bay and Mill Site cleanup as part of the requirements of the Model Toxics Control Act (MTCA). The PPP provides information about MTCA cleanup actions and requirements for public involvement, and identifies how the Washington State Department of Ecology (Ecology) will support public involvement throughout the cleanup. The PPP is intended to encourage coordinated and effective public involvement tailored to the community's needs at the Port Gamble Bay and Mill Site.

For additional copies of this document, please check the site webpage <https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=3444>, or contact:

Washington State Department of Ecology
John Evered, Site Manager
Toxics Cleanup Program
PO Box 47600
Olympia, WA 98504-7600
360-407-7071
Email: John.Evered@ecy.wa.gov

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1.0: Introduction and Overview of the Public Participation Plan

This Public Participation Plan (PPP) explains how you can become involved in improving the health of your community. It describes public participation opportunities that will be available during this review period for the upland area of the Port Gamble Bay and Mill Site (Site). The upland area of the Site is generally located along the west shore of Port Gamble Bay, east of N Rainier Ave in Port Gamble, Kitsap County, Washington. The upland area is part of a large cleanup effort completed in early 2017 that included sediments in Port Gamble Bay. These sediment and upland cleanup efforts are a collaborative effort between the Washington State Department of Ecology (Ecology) and Pope Resources/Olympic Property Group (PR/OPG), identified as Potentially Liable Persons, or PLPs, at the Site. Current documents for review include:

- **Draft Agreed Order (AO)** - A formal legal agreement between Ecology and the PLPs to provide remedial actions in upland areas of the Site.
- **Supplemental Remedial Investigation/Feasibility Study (RI/FS) Work Plan** – The Supplemental RI/FS work plan is appended to the AO and presents a project schedule, list of future deliverables for the upland area, a summary of previous remedial actions and cleanup evaluations completed in upland areas of the Site. The RI/FS work plan also provides a description of existing sampling data and additional activities to characterize residual contamination in upland areas of the Site.
- **Draft Public Participation Plan (PPP)** – Describes how the public can provide input on cleanup in upland areas of the Site.

Cleanup actions, and the public participation process that helps guide them, are established in Washington’s Model Toxics Control Act (MTCA).¹ Under MTCA, Ecology is responsible for providing timely information and meaningful chances for the public to learn about and comment on important cleanup decisions before they are made. The goals of the public participation process are:

- To promote understanding of the cleanup process so that the public has the necessary information to participate.
- To encourage involvement through a variety of public participation opportunities.

¹ The Model Toxics Control Act (MTCA) is the hazardous waste cleanup law for the State of Washington. The full text of the law can be found in Revised Code of Washington (RCW), Chapter 70.105D. The legal requirements and criteria for public notice and participation during MTCA cleanup investigations can be found in Washington Administrative Code (WAC), Section 173-340-600.

This PPP provides a framework for open dialogue about the cleanup among community members, Ecology, and other interested parties. It outlines basic MTCA requirements for community involvement activities that will help ensure that this exchange of information takes place during the investigation and cleanup. These requirements include:

- Notifying the public about available reports and studies about the Site.
- Notifying the public about review and comment opportunities during specific phases of the cleanup investigation.
- Providing appropriate public participation opportunities to learn about cleanup documents, and if community interest exists, holding meetings to solicit input and identify community concerns.
- Considering public comments received during public comment periods.

In addition to these basic requirements, the PPP may include additional site-specific activities to meet the needs of your community. Based upon the type of proposed cleanup action, the level of public concern, and the risks posed by the Site, Ecology may decide that more public involvement opportunities are appropriate.

These opportunities form the basis for the public participation process. The intent of this PPP is to:

- Provide complete and current information to all interested parties.
- Let you know when there are opportunities to provide input.
- Provide opportunities to listen to and address community concerns.

Part of the Puget Sound Initiative

The Port Gamble Bay and Mill Site cleanup is part of a larger cleanup effort called the Puget Sound Initiative (PSI). Washington State established the PSI to protect and restore Puget Sound. The PSI includes cleaning up 50-60 contaminated sites within one-half mile of the Sound. These sites are grouped in several bays around the Sound for “baywide” cleanup efforts. If other sites in the Port Gamble baywide area are identified, they will be moved forward into investigation and cleanup; information about them will be provided to the community as well as people and groups who are interested.

Roles and Responsibilities

Ecology will lead public involvement activities. Ecology maintains overall responsibility and approval authority for the activities outlined in this PPP. The PLPs are responsible for cleanup at the Site. Ecology will oversee all future cleanup activities and ensure that contamination on the Site is cleaned up to concentrations that are established in state regulations and that protect human health and the environment.

Organization of this Public Participation Plan

The sections that follow in this PPP provide:

- Section 2: Background information about the Port Gamble Bay and Mill Site.
- Section 3: An overview of the local community that this PPP is intended to engage.
- Section 4: Public involvement opportunities in this cleanup.

This PPP addresses current conditions at the Site, but it is intended to be a dynamic working document that will be reviewed at each phase of the cleanup and updated as needed. Ecology and the PLPs urge the public to become involved in the cleanup process.

2.0: Site Background

Site Description and Location

Port Gamble Bay is located in Kitsap County and encompasses more than two square miles of subtidal and shallow intertidal habitat south of the Strait of Juan de Fuca. The upland area of the Site is generally located on the west shore of Port Gamble Bay, east of N Rainier Ave in Port Gamble, Kitsap County, Washington. The Site is bounded to the north by Hood Canal, to the east by Port Gamble Bay, and to the west and south by the Kitsap Peninsula and includes the upland area, adjacent tidelands, and portions of Port Gamble Bay. The mill was initially located on a relatively small sand spit, but this area underwent several changes during its operations, including historical filling activities to expand the upland area. The portion of the Site that is the subject of this cleanup is the uplands area (see Figure 1).

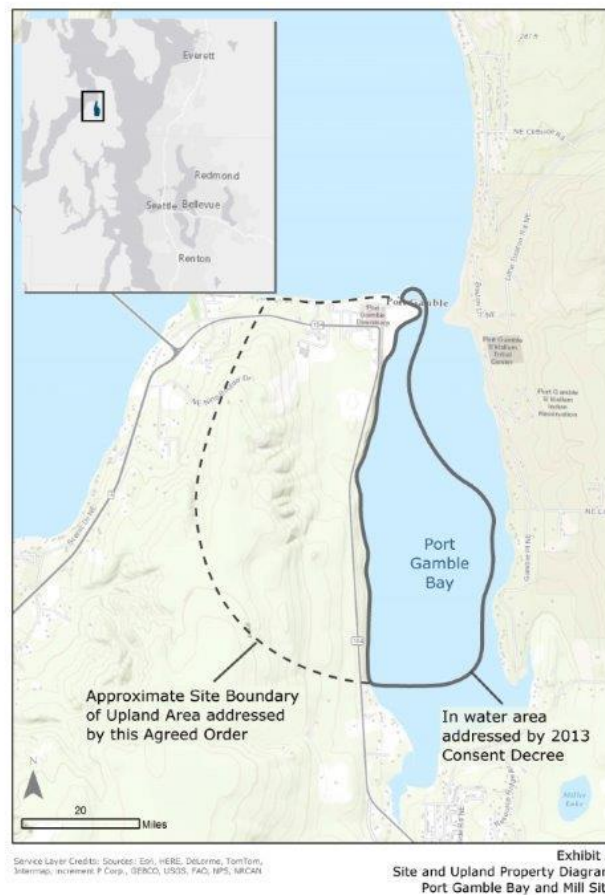


Figure 1: The Port Gamble Bay and Mill Site is shown in the above map. The uplands area of the Site is generally located on the west shore of Port Gamble Bay, east of N Rainier Ave in Port Gamble, Kitsap County, Washington. This represents the approximate upland area being evaluated to determine the upland site boundary.

General Site History and Contaminants

The upland area of the Site consists of former sawmill facility footprint and the adjacent uplands. Pope & Talbot, Inc. and their corporate predecessors used the facility to manufacture forest products for 142 years from 1853 to 1995. Much of the facility was removed in 1997, then the area was leased for log sorting, wood chipping, marine research and other light industrial activities.

Site contamination and prior cleanup actions

Historical operations on this property resulted in the release of pollutants from wood product manufacturing and treatment activities, including the use of pentachlorophenol, incineration of salt-laden wood (and aerial deposition of resulting ash) and landfilling of used contaminated materials. These pollutants included metals, petroleum hydrocarbons, carcinogenic polycyclic aromatic hydrocarbons (cPAHs) and dioxins/furans.

From 2002 to 2005, approximately 26,310 tons of contaminated soils were excavated from upland areas of the Site. Follow-on groundwater monitoring was performed through 2016 to verify the protectiveness of the upland cleanup actions in reducing groundwater concentrations of metals (arsenic and mercury), petroleum hydrocarbons, and cPAHs.

From September 2015 to January 2017, the in-water cleanup adjacent to the site was completed. This included efforts to improve marine and shoreline habitat and restore native species such as oysters. During the in-water cleanup, 8,592 pilings were removed, 77,297 cubic yards of contaminated marine sediments were dredged and 33,240 cubic yards of contaminated intertidal material were excavated. To confirm trends of decreasing arsenic levels in groundwater (to below required clean-up levels), monitoring is ongoing in the southern portion of the upland fill area.

The Cleanup Process

Washington State's cleanup process and key opportunities for you to provide input are outlined in Figure 2 on page 15. The general cleanup process includes the following steps:

- Remedial Investigation (RI) – investigates the site for types, locations, and amounts of contaminants.
- Feasibility Study (FS) – identifies cleanup options for those contaminants.
- Cleanup Action Plan (CAP) – selects the preferred cleanup option and explains how cleanup will be conducted.

Each of these steps is generally documented in reports and plans that will be available for public review. Public comment periods of at least 30 calendar days are usually conducted for the following documents:

- Draft RI report
- Draft FS report
- Draft CAP

These comment periods may be conducted separately or combined.

Steps in the cleanup process and related documents are described in greater detail in the following subsections.

Interim Actions

Interim actions may be completed during the cleanup if required by Ecology. An interim action partially addresses the cleanup of a site, and may be conducted if:

- It is technically necessary to reduce a significant threat to human health or the environment.
- It corrects a problem that may become substantially worse or cost substantially more to fix if delayed.
- It is needed to complete another cleanup activity, such as design of a cleanup plan.

Overview of the draft Agreed Order

The draft AO is a formal legal agreement between Ecology and the PLPs, PR/OPG, to provide remedial action at the Site. As part of the AO, PR/OPG agrees to conduct a Supplemental RI/FS and develop a draft Cleanup Action Plan (CAP) for the Site. The draft AO describes the studies and activities PR/OPG agrees to perform at the uplands area of the Site.

This includes:

- Compile and summarize existing data from previous investigations and remedial actions.
- Develop a conceptual site model.
- Identify potential data gaps and develop a sampling and analysis plan (SAP) to address identified data gaps. The SAP includes a supplemental investigation to determine the extent of dioxin and furan contamination from former mill activities at the uplands area of the Site.
- Perform the supplemental investigations and present the results to Ecology in a supplemental RI/FS Report. This report will include identification of appropriate

soil cleanup levels, areas requiring remediation and an evaluation of cleanup action alternatives.

Overview of the Supplemental Remedial Investigation/Feasibility Study Work Plan

The Supplemental RI/FS work plan presents a project schedule and a list of future deliverables for the upland area and a summary of previous remedial investigations and cleanup evaluations and activities completed at the Site. The Supplemental RI/FS work plan also provides a description of additional methods for addressing residual contamination, specifically how to determine the approximate vertical and horizontal extent of dioxin/furan contamination at the Site and surrounding uplands. This work plan will support further investigation and development of an updated RI/FS.

3.0: Community Profile

Community Profile

Port Gamble was founded in 1853 by Maine businessmen Andrew Pope and William Talbot. It was the longest continuously operating mill town in North America, and is the only remaining company-owned mill town on Puget Sound.² Port Gamble is an unincorporated town located in northern Kitsap County. The county's total population, as reported in 2010, is 251,133, with 107,367 housing units and a median age of 39.43.³

Key Community Concerns

An important part of this PPP is to identify key community concerns for the cleanup Site. Many factors are likely to raise community questions, such as the amount of contamination, how much contamination has been cleaned up and what remains, and future use of the Site. Community concerns often change over time as new information is learned and questions are answered. Identifying site-specific community concerns at each stage of the cleanup process helps ensure that they are adequately addressed. On-going key community concerns will be identified for upland areas of the Site through public comments and other opportunities, as detailed in Section 4.

² <http://www.portgamble.com/about-port-gamble> (Accessed 09/21/2017)

³ U.S. Census Bureau, State & County QuickFacts.

http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP (Accessed December 10, 2012).

4.0: Public Participation Opportunities

Ecology and the PLPs invite you to share your comments and participate in the cleanup in your community. As we work to meet our goals, we will evaluate whether this public participation process is successful. This section describes the public participation opportunities for the Site.

Measuring Success

We want this public participation process to succeed. Success can be measured, at least in part, in the following ways:

- Number of written comments submitted that reflect understanding of the cleanup process and the Site.
- Direct, in-person feedback about the site cleanup or public participation processes, if public meetings are held.
- Periodic updates to this PPP to reflect community concerns and responses.

If we are successful, this process will increase:

- Community awareness about plans for cleanup and opportunities for public involvement.
- Public participation throughout the cleanup.
- Community understanding regarding how their input will be considered in the decision-making process.

Activities and Information Sources

Ecology Contacts

Ecology is the lead contact for questions about the cleanup in your community. The Ecology staff person identified in this section is familiar with the cleanup process and activities at the Site. For more information about public involvement or the technical aspects of the cleanup, please visit our website at <https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=3444>, or contact:

John Evered, Site Manager
Department of Ecology
Toxics Cleanup Program
PO Box 47600
Olympia, WA 98504-7600

Phone: 360-407-7071
Email: John.Evered@ecy.wa.gov

Ecology's Webpage

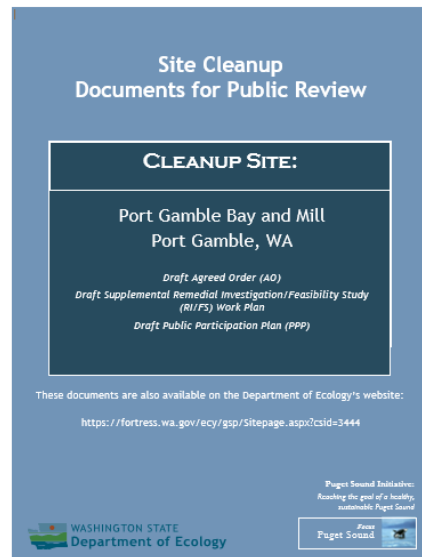
Ecology has created a webpage to provide convenient access to information. Documents such as the RI/FS are posted as they are issued during the investigation and cleanup process. Visitors to the webpage can find out about public comment periods and possible meetings; download, print, and read information; and submit comments via email. The webpage also provides links to detailed information about the MTCA cleanup process. The Port Gamble Bay and Mill Site webpage is available at the following address:

<https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=3444>

Information Centers/Document Repositories

The most comprehensive source of information about the Site is the information center, or document repository. Two repositories provide access to the complete list of site-related documents. All Site investigation and cleanup activity reports will be kept in print at those two locations and will be available for your review. They can also be requested on compact disk (CD). Document repositories are updated before public comment periods to include the relevant documents for review. Documents remain at the repositories throughout the investigation and cleanup. For the Site, the document repositories are:

- **Poulsbo Library**
700 NE Lincoln Street
Poulsbo, WA 98370
(360) 779-2915
Hours: Varies
- **Little Boston Library**
31980 Little Boston Road NE
Kingston, WA 98346
(360) 297-2670
Hours: Varies
- **Department of Ecology Headquarters**
300 Desmond Drive SE
Lacey, WA 98503
By appointment. Please contact Carol Dorn
at (360) 407-7224 or
Carol.Dorn@ecy.wa.gov.



Look for document covers much like the illustration on the right.

Public Comment Periods

Public comment periods provide opportunities for you to review and comment on major documents, such as the Draft Consent Decree, Draft RI, Draft FS, Draft CAP and Draft Public Participation Plan. The typical public comment period is 30 calendar days.

Notice of Public Comment Periods

Notices for each public comment period will be provided by local newspaper and by mail. These notices indicate the timeframe and subject of the comment period, and explain how you can submit your comments.

For the uplands area of the Site, a newspaper notice will be posted in the North Kitsap Herald.

Notices are also sent by regular mail to the local community and interested parties. The local community typically includes all residential and business addresses within one-quarter mile of the Site, as well as potentially interested parties such as public health entities, environmental groups, and business associations.

Fact Sheets

One common format for public comment notification is a fact sheet. Like the newspaper notice, fact sheets explain the timeframe and purpose of the comment period, but also provide background and a summary of the document(s) under review. Future fact sheets will be prepared at key milestones in the cleanup process.

MTCA Site Register

Ecology produces an electronic newsletter called the MTCA Site Register. This semi-monthly publication provides updates of the cleanup activities occurring throughout the state, including public meeting dates, public comment periods, and cleanup-related reports. Individuals who would like to receive the MTCA Site Register can sign up three ways:

- Call (360) 407-6848
- Send an email request to CherylAnn.Bishop@ecy.wa.gov
- Register online at http://www.ecy.wa.gov/programs/tcp/pub_inv/pub_inv2.html

Mailing Lists

Ecology maintains both email and regular mail distribution lists throughout the cleanup process. The lists are created from carrier route delineations for addresses within one-quarter mile of the Site; potentially interested parties; public meeting sign-in sheets; and requests made in person or by regular mail or email. You may request to be on a mailing list by contacting the Ecology staff person listed earlier in this section.

Optional Public Meetings

A public meeting will be held during a comment period if requested by ten or more people, or if Ecology decides it would be useful. Public meetings provide additional opportunity to learn about the investigation or cleanup, and to enhance informed comment. If you are interested in a public meeting about the Site, please contact the Ecology staff listed earlier in this section.

Submitting Comments

You may submit comments by regular mail or email during public comment periods to the Ecology Project Manager listed earlier in this section.

Response to Comments

Ecology will review all comments submitted during public comment periods, and will modify documents as necessary. You will receive notice by regular mail or email that Ecology has received your comments, along with a general explanation about how the comments were addressed and where the revised document can be found.

Other

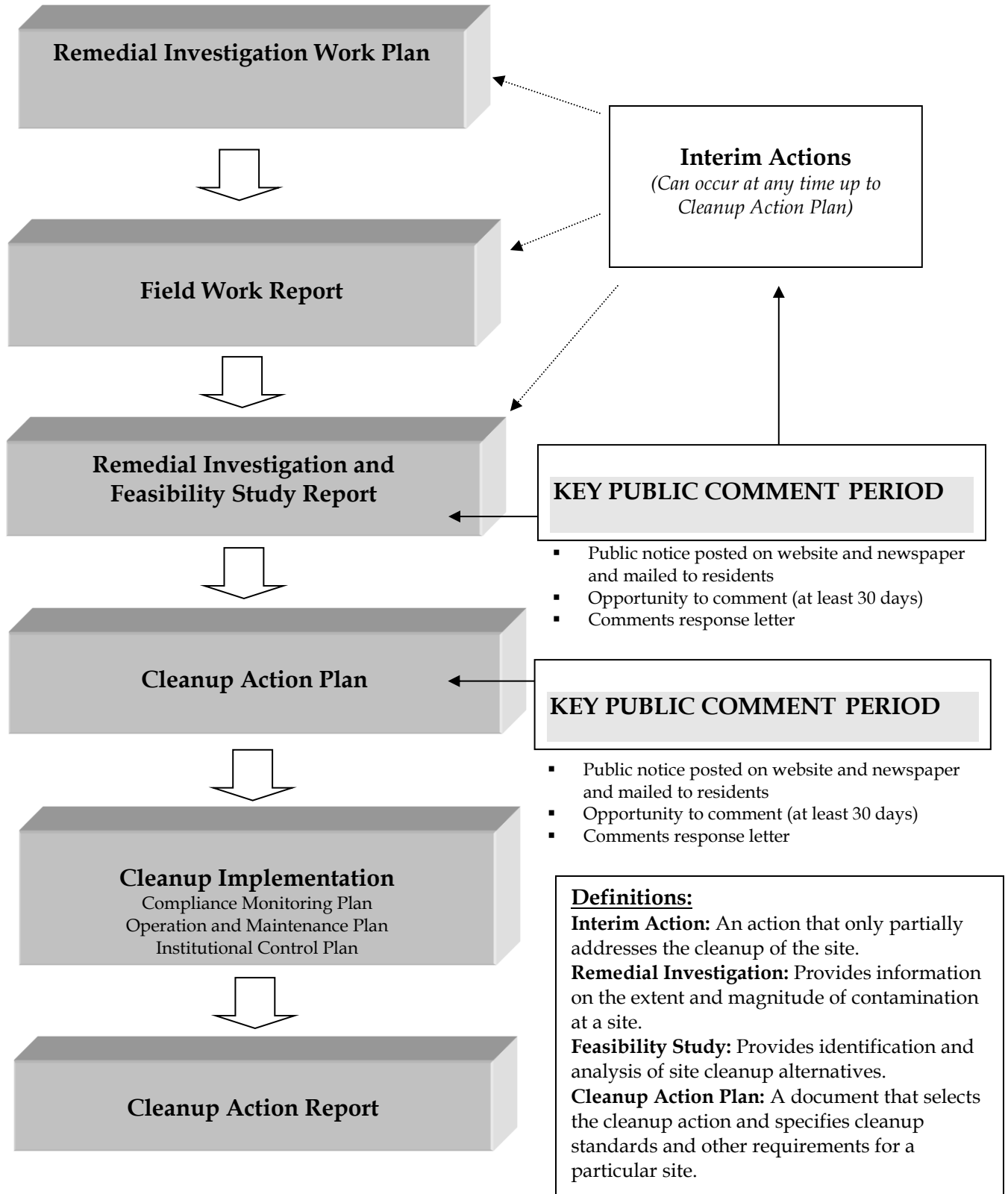
Ecology is committed to the public participation process and will consider additional means for delivering information and receiving comments, including combining public comment periods for other actions (such as those associated with the State Environmental Policy Act).

Public Participation Grants

You are eligible to apply for a Public Participation Grant from Ecology approximately every two years to provide funding for additional public participation activities. Those additional activities will not reduce the scope of the activities defined by this PPP. Activities conducted under this PPP would coordinate with the additional activities defined under the grant.

Visit www.ecy.wa.gov/programs/swfa/grants/ppg.html for more information about Ecology's Public Participation Grants.

Figure 2: Washington State Cleanup Process



Glossary

Cleanup: The implementation of a cleanup action or interim action.

Cleanup Action: Any remedial action except interim actions, taken at a site to eliminate, render less toxic, stabilize, contain, immobilize, isolate, treat, destroy, or remove a hazardous substance that complies with MTCA cleanup requirements, including but not limited to: complying with cleanup standards, utilizing permanent solutions to the maximum extent practicable, and including adequate monitoring to ensure the effectiveness of the cleanup action.

Cleanup Action Plan: A document that selects the cleanup action and specifies cleanup standards and other requirements for a particular site. The cleanup action plan, which follows the remedial investigation/feasibility study report, is subject to a public comment period. After completion of a comment period on the cleanup action plan, Ecology finalizes the cleanup action plan.

Cleanup Level: The concentration (or amount) of a hazardous substance in soil, water, air, or sediment that protects human health and the environment under specified exposure conditions. Cleanup levels are part of a uniform standard established in state regulations, such as MTCA.

Cleanup Process: The process for identifying, investigating, and cleaning up hazardous waste sites.

Contaminant: Any hazardous substance that does not occur naturally or occurs at greater than natural background levels.

Feasibility Study: Provides identification and analysis of site cleanup alternatives and is usually completed within a year. The entire Remedial Investigation/Feasibility Study (RI/FS) process takes about two years and is followed by the cleanup action plan. Remedial action evaluating sufficient site information to enable the selection of a cleanup action plan.

Hazardous Site List: A list of ranked sites that require further remedial action. These sites are published in the Site Register.

Interim Action: Any remedial action that partially addresses the cleanup of a site. It is an action that is technically necessary to reduce a threat to human health or the environment by eliminating or substantially reducing one or more pathways for exposure to a hazardous substance at a facility; an action that corrects a problem that may become substantially worse or cost substantially more to address if the action is delayed; an action needed to provide for completion of a site hazard assessment, state remedial investigation/feasibility study, or design of a cleanup action.

Model Toxics Control Act: Refers to RCW 70.105D. Voters approved it in November 1988. The implementing regulation is WAC 173-340 and was amended in 2001.

Public Notice: At a minimum, adequate notice mailed to all persons who have made a timely request of Ecology and to persons residing in the potentially affected vicinity of the proposed action; mailed to appropriate news media; published in the local (city or county) newspaper of largest circulation; and the opportunity for interested persons to comment.

Public Participation Plan: A plan prepared under the authority of WAC 173-340-600 to encourage coordinated and effective public involvement tailored to the public's needs at a particular site.

Release: Any intentional or unintentional entry of any hazardous substance into the environment, including, but not limited to, the abandonment or disposal of containers of hazardous substances.

Remedial Action: Any action to identify, eliminate, or minimize any threat posed by hazardous substances to human health or the environment, including any investigative and monitoring activities of any release or threatened release of a hazardous substance, and any health assessments or health effects studies conducted in order to determine the risk or potential risk to human health.

Remedial Investigation: Any remedial action that provides information on the extent and magnitude of contamination at a site. This usually takes 12 to 18 months and is followed by the feasibility study. The purpose of the Remedial Investigation/Feasibility Study is to collect and develop sufficient site information to enable the selection of a cleanup action.