WASSER Winters
FS 1218

Includes Cleanup Action Plan
(Exhibit C)

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR PIERCE COUNTY

STATE OF WASHINGTON,
DEPARTMENT OF ECOLOGY,

Plaintiff,

v.

PORT OF TACOMA,

Defendant.

No. ~~93 2 08684 4~~ 93-2-08693-3
ORDER ENTERING
CONSENT DECREE

Having reviewed the Consent Decree signed by the parties to this matter, the Joint Motion for Entry of the Consent Decree, the Affidavit of Jo Messex Casey, and the file herein, it is hereby

ORDERED AND ADJUDGED that the Consent Decree in this matter is ENTERED and that the Court shall retain jurisdiction over the Consent Decree to enforce its terms.

Signed this 27 day of August, 1993.

~~Superior Court Judge~~

t4:tacoma.ord

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Ecology Division
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IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
FOR PIERCE COUNTY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY,

v.

PORT OF TACOMA

~~93-2-08684-4~~

No. 93-2-08693-3

CONSENT DECREE

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I. INTRODUCTION

A. In entering into this Consent Decree (Decree), the mutual objective of the Washington State Department of Ecology (Ecology) and The Port of Tacoma (Defendant) is to provide for remedial action at property located at 1602 Marine View Drive, Tacoma, WA (the "Site") where there has been a release or threatened release of hazardous substances. (Exhibits A and B) This Decree requires the Defendant to undertake the following remedial action(s) which are discussed in more detail in Section VI:

(1) The Defendant shall perform the remedial actions specified in detail in the Cleanup Action Plan (Exhibit C) and the Scope of Work (Exhibit D). These exhibits are incorporated by reference and are integral and enforceable parts of this Decree.

(2) Record with the property deed the attached Declaration of Restrictive Covenant (Exhibit E) limiting the Site to industrial uses and ensuring that future development is consistent with the strength and permeability limitations of the Site.

Ecology has determined that these actions are necessary to protect public health and the environment.

B. The Complaint in this action is being filed simultaneously with this Decree. An answer has not been filed, and there has not been a trial on any issue of fact or law in this case. However, the parties wish to resolve the issues

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raised by Ecology's complaint. By entering into this Decree, the Defendant neither admits nor denies liability under federal or state law. In addition, the parties agree that settlement of these matters without litigation is reasonable and in the public interest and that entry of this Decree is the most appropriate means of resolving these matters.

C. In signing this Decree, the Defendant agrees to its entry and agrees to be bound by its terms.

D. By entering into this Decree, the parties do not intend to discharge nonsettling parties from any liability they may have with respect to matters alleged in the complaint. The parties retain the right to seek reimbursement, in whole or in part, from any liable persons for sums expended under this Decree.

E. This Decree shall not be construed as proof of liability or responsibility for any releases of hazardous substances or cost for remedial action nor an admission of any facts; provided, however, that the Defendant shall not challenge the jurisdiction of Ecology in any proceeding to enforce this Decree.

F. The Court is fully advised of the reasons for entry of this Decree, and good cause having been shown: IT IS HEREBY ORDERED, ADJUDGED, AND DECREED AS FOLLOWS:

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II. JURISDICTION

A. This Court has jurisdiction over the subject matter and over the parties pursuant to Chapter 70.105D RCW, the Model Toxics Control Act (MTCA).

B. Authority is conferred upon the Washington State Attorney General by RCW 70.105D.040(4)(a) to agree to a settlement with any potentially liable person if, after public notice and hearing, Ecology finds the proposed settlement would lead to a more expeditious cleanup of hazardous substances. RCW 70.105D.040(4)(b) requires that such a settlement be entered as a consent decree issued by a court of competent jurisdiction.

C. Ecology has determined that a release or threatened release of hazardous substances has occurred at the Site which is the subject of this Decree. Ecology has further determined that the release is causing contamination of surface water and will continue to cause contamination unless the release is remediated.

D. Ecology has given notice to the Defendant, as set forth in RCW 70.105D.020(8), of Ecology's determination that the Defendant is a potentially liable person for the Site and that there has been a release or threatened release of hazardous substances at the Site.

E. The actions to be taken pursuant to this Decree are necessary to protect public health, welfare, and the environment.

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F. Defendant has agreed to undertake the actions specified in this Decree and consents to the entry of this Decree under the MTCA.

III. PARTIES BOUND

This Decree shall apply to and be binding upon the signatories to this Decree (parties), their successors and assigns. The undersigned representative of each party hereby certifies that he or she is fully authorized to enter into this Decree and to execute and legally bind such party to comply with the Decree. Defendant agrees to undertake all actions required by the terms and conditions of this Decree and not to contest state jurisdiction regarding this Decree. No change in ownership or corporate status shall alter the responsibility of the Defendant under this Decree. Defendant shall provide a copy of this Decree to all agents, contractors and subcontractors retained to perform work required by this Decree and shall ensure that all work undertaken by such contractors and subcontractors will be in compliance with this Decree.

IV. DEFINITIONS

Except for as specified herein, all definitions in WAC 173-340-200 apply to the terms in this Decree.

A. Site: The Site, previously known as the Wasser & Winters site, is located at 1602 Marine View Drive in Tacoma, Washington. The Port of Tacoma owns approximately 13.54 acres, of which approximately 11.4 upland acres is "the Site" subject to this Decree. The Site is further described in Exhibit A, a

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detailed site diagram, and Exhibit B, a legal description, attached and hereby incorporated as part of this Decree.

B. Parties: Refers to the Washington State Department of Ecology and the Port of Tacoma.

C. Defendant: Refers to the Port of Tacoma.

D. Consent Decree or Decree: Refers to this Consent Decree and each of the exhibits to the Decree. All exhibits are integral and enforceable parts of this Consent Decree. The terms "Consent Decree" or "Decree" shall include all exhibits to the Consent Decree.

V. STATEMENT OF FACTS

Ecology makes the following finding of facts without any express or implied admissions by Defendant.

1. Wasser & Winters Company leased the property for log storage and sorting from June 1, 1972 through November 1984. The property is currently not leased.

2. Slag, a product of the ore smelting process produced at the ASARCO smelting facility in Tacoma (Ruston), Washington, was placed on the Site as ballast in the 1970s and early 1980s.

3. Ecology conducted a surface water investigation at the Site between November 1983 and June 1984. The study found elevated levels of several metals in surface water runoff from the Site which discharged to the Hylebos Waterway. Metals included arsenic, copper, lead, and zinc which were found at concentrations as high as 21,600, 10,160, 5,900, and 11,930 ppb, respectively. Federal and state marine acute ambient water

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quality criteria for arsenic, copper, lead and zinc are 69, 3, 140, and 95 ppb, respectively. The study concluded that the elevated levels of arsenic, copper, lead and zinc in runoff from the log sort yards studied were from the slag present on the yards. (Norton, D. and Johnson, A. 1985. Completion Report on WQIS Project 1 for the Commencement Bay Nearshore/Tideflats Remedial Investigation; Assessment of Log Sort Yards as Sources of Metals to Commencement Bay Waterways. Washington Department of Ecology Memorandum, Olympia, Washington.)

4. In March, 1987 Ecology issued a Consent Order under, ch. 90.48 RCW, to the Port to perform a preliminary Site Characterization and Focused Feasibility Study to further investigate the occurrences and potential control of metals in Site stormwater runoff. The Port's contractor, Sweet-Edwards & Associates, Inc., reported that surface water runoff contained elevated concentrations of arsenic, copper, lead and zinc.

5. On October 7, 1991, Ecology issued an Agreed Order under ch. 70.105D RCW to complete a Remedial Investigation/Feasibility Study (RI/FS). The Port's contractor for the RI/FS, Kennedy/Jenks Consultants, Inc., reported that surface soil samples taken from 39 locations across the Site contained concentrations of arsenic, copper, lead, and zinc of up to 3,250 mg/kg, 3,270 mg/kg, 1,870 mg/kg, and 3,340 mg/kg, respectively. The MTCA Method A Industrial soil standards for arsenic and lead are 200 mg/kg, and 1000 mg/kg, respectively. Sampling of 30 soil borings indicated that samples taken from 2

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feet below ground surface generally contain 1 to 3 orders of magnitude lower metals concentrations than the corresponding ground surface soil samples; in no case did any of the samples from deeper than 2.5 feet exceed 20 mg/kg arsenic (MTCA Method A Residential Soil Cleanup Standard). Based on the investigatory work conducted during the RI/FS process, it is estimated that there are approximately 18,500 cubic yards of mixed soil, bark, woodwaste, and slag above the Method A Industrial Cleanup Standards for arsenic (200 mg/kg) present at the Site.

6. Three rounds of groundwater samples were taken from eleven monitoring wells during the RI process. Concentrations of metals were generally low and do not indicate that groundwater has been a significant pathway of contaminant migration.

7. Monitoring of surface water runoff conducted during the RI in 1992 indicates levels of arsenic, copper, lead, and zinc of up to 340, 282, 52, and 695, ug/l, respectively, were detected in stormwater discharge leaving the Site.

8. The Site is located within the boundaries of the federal Commencement Bay Nearshore/Tideflats (CB/NT) Superfund Site, and has been identified as a source of contamination to the Head of Hylebos Problem Area.

9. The Port of Tacoma has negotiated a proposed federal consent decree (Federal Decree) for the Commencement Bay Nearshore/Tideflats Superfund Site; Sitcum Waterway Problem Area. This Federal Decree is also signed by the State of

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Washington in its capacity as a natural resource trustee. The Federal Decree settles the Natural Resource Damage (NRD) liability for all land owned, operated, or managed by the Port, including the site subject to this Decree. The NRD settlement requires the Port to place institutional controls upon the site subject to this Consent Decree (see Exhibit F-7).

10. Petroleum hydrocarbons have been identified on a limited area in the southern portion of the Site. Defendant is addressing these issues as an independent cleanup action.

VI. WORK TO BE PERFORMED

This Decree contains a program designed to protect public health, welfare and the environment from the known release, or threatened release, of hazardous substances or contaminants at, on, or from the Site.

A. The Defendant shall perform the remedial actions specified in detail in the Cleanup Action Plan (Exhibit C) and the Scope of Work (Exhibit D). These exhibits are incorporated by reference and are integral and enforceable parts of this Decree. A summary of the work program to be performed is as follows:

(1) Prepare the subgrade at the Site by grading, importing fill, and consolidating and pulverizing bark and woodwaste material present.

(2) Cap the Site with asphaltic concrete according to the plans specified in the Ecology-approved Remedial Design Report.

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(3) Install a storm water collection system as described in the Ecology-approved Remedial Design Report.

(4) Inspect and maintain the cap and storm water collection system in accordance with the Ecology-approved Operation and Maintenance Plan.

(5) Monitor surface water and groundwater and conduct soil verification sampling in accordance with the Ecology-approved Monitoring Plan.

(6) Defendant agrees not to perform any remedial actions outside the scope of this decree except those described in Section V, ¶ 10, unless the parties agree to amend the scope of work to cover these actions. All work conducted under this decree shall be done in accordance with ch. 173-340 WAC unless otherwise provided herein.

(7) Within 20 days of completion of paving, the Defendant shall record a restrictive covenant (Exhibit E) in the title records to that portion of the property underlying the Site over which Defendant holds fee title. The restrictive covenant shall limit the Site to industrial uses, excepting that portion which is to be set aside for a buffer area pursuant to the Consent Decree reference in V.9 above, and ensure that future development is consistent with the strength and permeability limitations of the Site. The Defendant shall forward a filed copy of the restrictive covenant

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to Ecology within 10 days of receiving a filed copy from the Pierce County Auditor.

VII. DESIGNATED PROJECT COORDINATORS

The project coordinator for Ecology is:

Garin Schrieve
7272 Cleanwater Lane, LU-11
Olympia, Washington 98504-6811

The project coordinator for the Defendant is:

Suzanne Dudziak
Port of Tacoma
P. O. Box 1837
Tacoma, WA 98401-1837

Each project coordinator shall be responsible for overseeing the implementation of this Decree. The Ecology project coordinator will be Ecology's designated representative at the Site. To the maximum extent possible, communications between Ecology and the Defendant and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Decree, shall be directed through the project coordinator. The project coordinators may designate, in writing, working level staff contacts for all or portions of the implementation of the remedial work required by this Decree. The project coordinators may agree to minor modifications to the work to be performed without formal amendments to this Decree. Minor modifications will be documented in writing by Ecology.

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

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VIII. PERFORMANCE

All work performed pursuant to this Decree shall be under the direction and supervision, as necessary, of a professional engineer or hydrogeologist, or equivalent, with experience and expertise in hazardous waste site investigation and cleanup. Any construction work must be under the supervision of a professional engineer. Defendant shall notify Ecology in writing as to the identity of such engineer(s) or hydrogeologist(s), or others and of any contractors and subcontractors to be used in carrying out the terms of this Decree, in advance of their involvement at the Site.

IX. ACCESS

Ecology or any Ecology authorized representatives shall have the authority to enter and freely move about all property at the Site 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 Decree; reviewing Defendant's progress in carrying out the terms of this Decree; 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 Decree; and verifying the data submitted to Ecology by the Defendant. Upon request, Ecology shall split any samples taken during an inspection unless the Defendant fails to make available a representative for the purpose of splitting samples.

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All parties with access to the Site pursuant to this paragraph shall comply with approved health and safety plans.

X. SAMPLING, DATA REPORTING, AND AVAILABILITY

With respect to the implementation of this Decree, Defendant shall make the results of all sampling, laboratory reports, and/or test results generated by it, or on its behalf available to Ecology and shall submit these results in accordance with Section XI of this Decree.

If requested by Ecology, Defendant shall allow split or duplicate samples to be taken by Ecology and/or its authorized representatives of any samples collected by Defendant pursuant to the implementation of this Decree. Unless otherwise agreed to by the parties, Defendant shall notify Ecology seven (7) calendar days in advance of any sample collection or work activity at the Site. Ecology shall, upon request, allow split or duplicate samples to be taken by Defendant or authorized representatives of any samples collected by Ecology pursuant to the implementation of this Decree provided it does not interfere with the Department's sampling. Without limitation on Ecology's rights under Section IX, Ecology shall endeavor to notify Defendant prior to any sample collection activity.

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XI. PROGRESS REPORTS

Defendant shall submit to Ecology written monthly progress reports until construction is complete. The progress reports shall describe the actions taken during the previous month to implement the requirements of this Decree. The progress report shall include the following:

A. A list of on-site activities related to this Decree that have taken place during the month;

B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests;

C. Description of all deviations from the schedule (Exhibit D) during the current month and any planned deviations in the upcoming months;

D. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule;

E. All raw data (including laboratory analysis) received by the Defendant during the past month and an identification of the source of the sample; and

F. A list of deliverables for the upcoming month if different from the schedule.

All progress reports shall be submitted by the tenth day of the month in which they are due after the effective date of this Decree. Unless otherwise specified, progress reports and any other documents submitted pursuant to this Decree shall be sent

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by certified mail, return receipt requested, to Ecology's project coordinator.

XII. RETENTION OF RECORDS

Defendant shall preserve, during the pendency of this Decree and for ten (10) years from the date this Decree is no longer in effect as provided in Section XXV, all records, reports, documents, and underlying data in its possession relevant to the implementation of this Decree and shall insert in contracts with project contractors and subcontractors a similar record retention requirement. Upon request of Ecology, Defendant shall make all non-archived records available to Ecology and allow access for review. All archived records shall be made available to Ecology within a reasonable period of time.

XIII. TRANSFER OF INTEREST IN PROPERTY

No voluntary or involuntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site not previously described in this Consent Decree shall be consummated without provision for continued operation and maintenance of any containment system, stormwater collection system, and monitoring system installed or implemented pursuant to this Decree.

Prior to transfer of any legal or equitable interest in all or any portion of the property not previously described in this Consent Decree, and during the effective period of this Decree, Defendant shall serve a copy of this Decree upon any prospective purchaser, lessee, transferee, assignee, or other successor in

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interest of the property; and, at least twenty (20) days prior to any transfer, Defendant shall notify Ecology of said contemplated transfer.

XIV. RESOLUTION OF DISPUTES

A. In the event a dispute arises as to an approval, disapproval, proposed modification or other decision or action by Ecology's project coordinator, the parties shall utilize the dispute resolution procedure set forth below.

(1) Upon receipt of the Ecology project coordinator's decision, the Defendant shall have fourteen (14) calendar days within which to notify Ecology's project coordinator of its objection to the decision.

(2) The parties' project coordinators shall then confer in an effort to resolve the dispute. If the project coordinators cannot resolve the dispute within fourteen (14) calendar days, Ecology's project coordinator shall issue a written decision.

(3) Defendant may then request Ecology management review of the decision. This request shall be submitted in writing to the Toxics Cleanup Program Manager within seven (7) calendar days of receipt of Ecology's project coordinator's decision.

(4) Ecology's Toxics Cleanup Program Manager shall conduct a review of the dispute and shall issue a written decision regarding the dispute within thirty (30) calendar days of the Defendant's request for review. The Program Manager's decision shall be Ecology's final decision on the disputed matter.

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B. If Ecology's final written decision is unacceptable to Defendant, Defendant has the right to submit the dispute to the Court for resolution within thirty (30) calendar days of receipt of Ecology's decision. The parties agree that one judge should retain jurisdiction over this case and shall, as necessary, resolve any dispute arising under this Decree. In the event Defendant presents an issue to the Court for review, the Court shall review the action or decision of Ecology on the basis of whether such action or decision was arbitrary and capricious and render a decision based on such standard of review.

C. 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. Where either party utilizes the dispute resolution process in bad faith or for purposes of delay, the other party may seek sanctions.

Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Decree, unless Ecology agrees in writing to a schedule extension or the Court so orders.

XV. AMENDMENT OF CONSENT DECREE

This Decree may only be amended by a written stipulation among the parties to this Decree that is entered by the Court or by order of the Court. Such amendment shall become effective upon entry by the Court. Agreement to amend shall not be unreasonably withheld by any party to the Decree.

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Defendant shall submit any request for an amendment to Ecology for approval. Ecology shall indicate its approval or disapproval in a timely manner after the request for amendment is received. If the amendment to the Decree is substantial, Ecology will provide public notice and opportunity for comment. Reasons for the disapproval shall be stated in writing. If Ecology does not agree to any proposed amendment, the disagreement may be addressed through the dispute resolution procedures described in Section XIV of this Decree.

XVI. EXTENSION OF SCHEDULE

A. An extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least 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 the reason(s) the extension is needed.

An extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. A requested extension shall not be effective until approved by Ecology or the Court. Ecology shall act upon any written request for extension in a timely fashion. It shall not be necessary to formally amend this Decree pursuant to Section XV when a schedule extension is granted.

B. The burden shall be on the Defendant to demonstrate to the satisfaction of Ecology that the request for such extension

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has been submitted in a timely fashion and that good cause exists for granting the extension. Good cause includes, but is not limited to, the following:

(1) Circumstances beyond the reasonable control and despite the due diligence of Defendant 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 Defendant; or

(2) Acts of God, including fire, flood, blizzard, extreme temperatures, storm, or other unavoidable casualty; or

(3) Endangerment as described in Section XVII.

(4) Agreement by both parties to the extension.

However, neither increased costs of performance of the terms of the Decree nor changed economic circumstances shall be considered circumstances beyond the reasonable control of Defendant.

C. Ecology may extend the schedule for a period not to exceed ninety (90) days, except where a longer extension is needed as a result of:

(1) Delays in the issuance of a necessary permit which was applied for in a timely manner; or

(2) Other circumstances deemed exceptional or extraordinary by Ecology; or

(3) Endangerment as described in Section XVI.

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Ecology shall give Defendant written notification in a timely fashion of any extensions granted pursuant to this Decree.

XVII. ENDANGERMENT

In the event Ecology determines that activities implementing or in noncompliance with this Decree, or any other circumstances or activities, are creating or have the potential to create a danger to the health or welfare of the people on the Site or in the surrounding area or to the environment, Ecology may order Defendant to stop further implementation of this Decree for such period of time as needed to abate the danger or may petition the Court for an order as appropriate. During any stoppage of work under this section, the obligations of Defendant with respect to the work under this Decree which is ordered to be stopped shall be suspended and the time periods for performance of that work, as well as the time period for any other work dependent upon the work which is stopped, shall be extended, pursuant to Section XVI of this Decree, for such period of time as Ecology determines is reasonable under the circumstances.

In the event Defendant determines that activities undertaken in furtherance of this Decree or any other circumstances or activities are creating an endangerment to the people on the Site or in the surrounding area or to the environment, Defendant may stop implementation of this Decree for such period of time necessary for Ecology to evaluate the

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situation and determine whether Defendant should proceed with implementation of the Decree or whether the work stoppage should be continued until the danger is abated. Defendant shall notify Ecology's project coordinator as soon as possible, but no later than twenty-four (24) hours after such stoppage of work, and thereafter provide Ecology with documentation of the basis for the work stoppage. If Ecology disagrees with the Defendant's determination, it may order Defendant to resume implementation of this Decree. If Ecology concurs with the work stoppage, the Defendant's obligations shall be suspended and the time period for performance of that work, as well as the time period for any other work dependent upon the work which was stopped, shall be extended, pursuant to Section XVI of this Decree, for such period of time as Ecology determines is reasonable under the circumstances. Any disagreements pursuant to the clause shall be resolved through the dispute resolution procedures in Section XIV.

XVIII. OTHER ACTIONS

Ecology reserves its rights to institute remedial action(s) at the Site and subsequently pursue cost recovery, and Ecology reserves its rights to issue orders and/or penalties or take any other enforcement action pursuant to available statutory authority under the following circumstances:

(1) Where Defendant fails, after notice, to comply with any requirement of this Decree;

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(2) In the event or upon the discovery of a release or threatened release not addressed by this Decree;

(3) Upon Ecology's determination that action beyond the terms of this Decree is necessary to abate an emergency situation which threatens public health or welfare or the environment; or

(4) Upon the occurrence or discovery of a situation beyond the scope of this Decree as to which Ecology would be empowered to perform any remedial action or to issue an order and/or penalty, or to take any other enforcement action. This Decree is limited in scope to the geographic site described in Exhibit A and Exhibit B and to those contaminants which Ecology knows to be at the Site when this Decree is entered.

The Port of Tacoma has negotiated a proposed federal consent decree (Federal Decree) for the Commencement Bay Nearshore/Tideflats Superfund site, Sitcum Waterway Problem Area. This Federal Decree is also signed by the State of Washington in its capacity as a natural resource trustee. The Federal Decree settles the Natural Resource Damage (NRD) liability for all land owned, operated, or managed by the Port, including the site subject to this Decree. The NRD settlement requires the Port to place institutional controls upon the site subject to this Consent Decree (see Exhibit F, p. 7). In the event the federal Consent Decree is not entered by the U.S. District Court, Ecology reserves all rights regarding the injury

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to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances from the Wasser-Winters Site.

Ecology reserves the right to take any enforcement action whatsoever, including a cost recovery action, against potentially liable persons not party to this Decree.

XIX. INDEMNIFICATION

To the extent permitted by law, Defendant agrees to indemnify and save and hold the State of Washington, its employees, and agents harmless from any and all claims or causes of action for death or injuries to persons or for loss or damage to property arising from or on account of acts or omissions of Defendant, its officers, employees, agents, or contractors in entering into and implementing this Decree. However, the Defendant shall not indemnify the State of Washington nor save nor hold its employees and agents harmless from any claims or causes of action arising out of the negligent acts or omissions of the State of Washington, or the employees or agents of the State, in implementing the activities pursuant to this Decree.

XX. COMPLIANCE WITH APPLICABLE LAWS

All actions carried out by Defendant pursuant to this Decree shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits.

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XXI. REMEDIAL AND INVESTIGATIVE COSTS

The Defendant agrees to pay costs incurred by Ecology in the amount of $5,798.53 for oversight and remedial action performed prior to October 7, 1991.

The Defendant agrees to pay costs incurred by Ecology pursuant to this Decree. These costs shall include work performed by Ecology, the Department of Health, or Ecology's contractors under Chapter 70.105D RCW both prior to and subsequent to the issuance of this Decree for investigations, remedial actions, and Decree preparation, negotiations, oversight and administration. Ecology costs shall include costs of direct activities; e,g., employee salary, travel costs, laboratory costs, contractor fees, and employee benefit packages; and indirect costs of direct activities. The Defendant agrees to pay the required amount within ninety (90) 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 and itemized statements will be provided by Ecology and shall be prepared quarterly. Failure to pay Ecology's costs within ninety (90) days of receipt of the itemized statement will result in interest charges.

Nothing in this section shall preclude Ecology or other federal, state or local governmental entities from seeking to

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recover other costs incurred by such entities for which Defendant is liable.

XXII. IMPLEMENTATION OF REMEDIAL ACTION

If Ecology determines that Defendant has failed without good cause to implement the remedial action, Ecology may, after notice to Defendant, perform any or all portions of the remedial action that remain incomplete. If Ecology performs all or portions of the remedial action because of the Defendant's failure to comply with its obligations under this Decree, Defendant shall reimburse Ecology for the costs of doing such work in accordance with Section XXI, provided that Defendant is not obligated under this section to reimburse Ecology for costs incurred for work inconsistent with or beyond the scope of this Decree.

XXIII. FIVE YEAR REVIEW

As remedial action, including ground water monitoring, continues at the Site, the parties agree to review the progress of remedial action at the Site, and to review the data accumulated as a result of Site monitoring as often as is necessary and appropriate under the circumstances. At least every five years the parties shall meet to discuss the status of the Site and the need, if any, of further remedial action at the Site. Ecology reserves the right to require further remedial action at the Site under appropriate circumstances. This provision shall remain in effect for the duration of the Decree.

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XXIV. PUBLIC PARTICIPATION

Ecology shall maintain the responsibility for public participation at the Site. However, Defendant shall cooperate with Ecology and, if agreed to by Ecology, shall:

A. Prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans and the completion of engineering design reports. Ecology will finalize (including editing if necessary) and distribute such fact sheets and prepare and distribute public notices of Ecology's public presentations and meetings;

B. Notify Ecology's project coordinator prior to the preparation of all press releases and fact sheets, and before major meetings with the interested public and local governments. Likewise, Ecology shall notify Defendant prior to the issuance of all press releases and fact sheets, and before major meetings with the interested public and local governments;

C. 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;

D. In cooperation with Ecology, arrange and/or continue information repositories to be located at Citizens for a Healthy Bay, 771 Broadway, Tacoma, and at Ecology's Southwest Regional Office at 7272 Cleanwater Lane, Olympia, Washington. At a minimum, copies of all public notices, fact sheets, and press releases; all quality assured ground water, surface water, soil

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sediment, and air monitoring data; remedial actions plans; supplemental remedial planning documents; and all other similar documents relating to performance of the remedial action required by this Decree shall be promptly placed in these repositories.

XXV. DURATION OF DECREE

This Decree shall remain in effect and the remedial program described in the Decree shall be maintained and continued until the Defendant has received written notification from Ecology that the requirements of this Decree have been satisfactorily completed.

After the Defendant concludes that Tasks 1 through 7 of Exhibit D of the remedial action have been performed, the Defendant may submit a written report to Ecology stating that the remedial action associated with Tasks 1 through 7 of Exhibit D have been completed in accordance with the requirements of this Decree and request that Ecology issue a written acknowledgement. If Ecology concurs that Tasks 1 through 7 of Exhibit D have been adequately completed, Ecology shall issue a written acknowledgement. Such letter may only issue at the point in time when the only remaining actions required under this Decree are associated with operation and maintenance of the cap, stormwater system, and completion of long-term monitoring.

XXVI. CLAIMS AGAINST THE STATE

Defendant hereby agrees that it will not seek to recover any costs accrued in implementing the remedial action required

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by this Decree from the State of Washington or any of its agencies; and further, that the Defendant will make no claim against the State Toxics Control Account or any Local Toxics Control Account for any costs incurred in implementing this Decree. Except as provided above, however, Defendant expressly reserves the right to seek to recover any costs incurred in implementing this Decree from any other potentially liable person.

XXVII. COVENANT NOT TO SUE

In consideration of Defendants' compliance with the terms and conditions of this Decree, the State covenants not to institute legal or administrative actions against Defendants regarding contamination covered by this Decree. Compliance with this Decree shall stand in lieu of any and all administrative, legal, and equitable remedies and enforcement actions available to the State against Defendants for the release or threatened release of hazardous substances covered by the terms of this Decree.

This covenant is strictly limited in its application to the Site specifically defined in Exhibit A and to those hazardous substances which Ecology knows to be located at the Site as of the entry of this Decree. This covenant is not applicable to any other hazardous substance or area and the State retains all of its authority relative to such substances and areas.

A. Reopeners: Notwithstanding the covenant given above, Ecology reserves the right to institute legal or administrative actions against Defendants seeking to require them to perform

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additional response actions at the site, and to pursue appropriate cost recovery in accordance with provisions set out in RCW 70.105D.050, under the following circumstances:

(1) If Defendants fail to meet the requirements of this Decree, including, but not limited to, failure of the remedial action to meet the cleanup standards identified in the Cleanup Action Plan (Exhibit C).

(2) Upon Ecology's determination that action beyond the terms of this Decree is necessary to abate an imminent and substantial endangerment to public health or welfare or the environment.

(3) In the event new information becomes available regarding factors previously unknown to Ecology, including the nature or quantity of hazardous substances at the Site, and Ecology determines, in light of this information, that further remedial action is necessary at the Site to protect human health or the environment, and Defendants, after notice, fail to take the necessary action within a reasonable time.

B. Applicability. The Covenant Not to Sue set forth above shall have no applicability whatsoever to:

1. Criminal liability;
2. Liability for damages to natural resources;
3. Any Ecology action against potentially liable persons not a party to this Decree, including cost recovery.

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XXVIII. CONTRIBUTION PROTECTION

Defendants shall not be liable for claims for contribution regarding matters addressed in this Consent Decree, pursuant to RCW 70.105D.040(4)(d).

XXIX. EFFECTIVE DATE

This Decree is effective upon the date it is entered by the Court.

XXX. PUBLIC NOTICE AND WITHDRAWAL OF CONSENT

This Decree has been the subject of public notice and comment under RCW 70.105D.040(4)(a). As a result of this process, Ecology has found that this Decree will lead to a more expeditious cleanup of hazardous substances at the Site.

If the Court withholds or withdraws its consent to this Decree, it shall be null and void at the option of any party and the accompanying Complaint shall be dismissed without costs and without prejudice. In such an event, no party shall be bound by the requirements of this Decree.

Carol L. Fleskes 8/3/93
CAROL FLESKES Date
Program Manager
Toxics Cleanup Program

Jo Messex Casey 8/24/93
JO MESSEX CASEY Date
WSBA #19161
Assistant Attorney General

For Port of Tacoma

Jack G. Fahnlink
Authorized Representative Date
Port of Tacoma

DATED this 27 day of August, 1993.

FILED
IN COUNTY CLERK'S OFFICE
AUG 27 1993
PIERCE COUNTY, WASHINGTON
TED RUTT COUNTY CLERK
BY _____ DEPUTY

JUDGE
Pierce County Superior Court

t4:consent.red

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EXHIBIT A

SITE DIAGRAM

LEGAL DESCRIPTION FOR UPLAND AREA

PARCEL 47

PORT OF TACOMA

Commencing at the Southeast corner of the Northeast Quarter of the Southeast Quarter of Section 36, Township 21 North, Range 3 East, Willamette Meridian; thence North 89°26'40" West along the South line of said Northeast Quarter of the Southeast Quarter, 230.31 feet to the Westerly right-of-way line of Marine View Drive and the Point of Beginning; thence North 1°57'22" West along said right-of-way line, 137.65 feet; thence North 70°45'35" West, 526.00 feet; thence South 42°53'25" West 503.14 feet; thence South 48°31'08" East 962.23 feet to a curve to the left in a Northerly direction having a radius of 904.93 feet; said curve being the Westerly right-of-way line of Marine View Drive; thence along said curve an arc length of 514.98 feet; thence Northerly along said Westerly right-of-way line North 1°57'22" West, 196.79 feet to the Point of Beginning.

Containing 496,393 sq. ft. or 11.40 acres more or less.

Exhibit B

EXHIBIT C

CLEANUP ACTION PLAN
WASSER & WINTERS LOG SORT YARD

June 1993

TABLE OF CONTENTS

1.0 INTRODUCTION

This draft cleanup action plan (CAP) is provided to describe the proposed remedial action for the Wasser-Winters log sort yard site (hereafter referred to as "the Site") located on the southern tip of the head of Hylebos Waterway turning basin in Tacoma, Washington (Exhibits A & B). It has been prepared to satisfy the requirements of the Model Toxics Control Act (MTCA). The purposes of this CAP are to: 1) describe the Site, including a summary of its history and extent of contamination as presented in the Remedial Investigation/Feasibility Study (RI/FS); 2) identify the site-specific cleanup standards; 3) summarize the remedial alternatives presented in the FS; and 4) identify and describe the selected alternative for Site remediation.

Thorough descriptions of the Site and the remedial alternatives set forth are found in the RI/FS (Kennedy-Jenks, 1993) for the Site. The RI/FS was performed pursuant to Agreed Order No. DE 91-S248.

2.0 SITE DESCRIPTION

The Site, previously known as the Wasser & Winter site, is located at 1602 Marine View Drive in Tacoma, Washington. The Port of Tacoma owns approximately 13.54 acres, of which approximately 11.4 upland acres is "the Site" subject to this Decree (Exhibits A & B). The Site is situated on the head of the Hylebos Waterway in Commencement Bay. Wasser & Winters Company leased the property, also for log storage and sorting from June 1, 1972 through November 1984. During yard operations logs were trucked into the sort yard, weighed, and unloaded into scaling bays. After scaling, the logs are stacked on log decks designated for a specific grade and size of log.

The natural soils and dredged fill material at the Site are fine-grained silt and silty sand which are unstable under heavy loads, particularly during wet weather. Therefore, operation of the Site as a log sort yard required the use of ballast material to support the heavy machinery and log inventory on the

site. In addition to other rock and gravel material, slag from the ASARCO smelter in Tacoma was used to ballast portions of the site in the 1970s and early 1980s.

During normal log sort yard operations, wood waste (principally bark) is produced by loading, unloading and movement of logs within the yard. This wood waste accumulates on top of the natural soil, dredged fill material, and ballast. As a result of heavy vehicular traffic, wood wastes have been mixed with surficial soils and slag ballast.

In the early 1980s, the Department of Ecology (Ecology) initiated preliminary investigations of water and sediment quality in Commencement Bay and its tributaries, including the Hylebos Waterway. Surface water samples collected by Ecology at the Site and other similar log sort yards in the Commencement Bay area were found to contain elevated concentrations of metals. Ecology believes that the metals are leached out of the slag by the acidic conditions attributed to biological decomposition products of the wood waste. The mechanical grinding of the slag by heavy vehicular traffic pulverized it and created smaller particles which increased the surface area of the slag available to leach metals.

2.1 Commencement Bay Superfund Site Considerations

In 1983, the Commencement Bay area was identified as a federal Superfund site. Hylebos Waterway marine sediments were found to be contaminated with metals (Tetra Tech, 1985, 1988). The Record of Decision for the Commencement Bay Nearshore/Tideflats Superfund site issued in 1989 (USEPA, 1989) identifies the Wasser & Winters Site as a source of problem chemicals (arsenic, copper, zinc, lead) to the Head of Hylebos Waterway problem area.

3.0 SITE CHARACTERIZATION

In February 1985, Ecology issued a report entitled, "Assessment of Log Sort Yards as Metals Sources to Commencement Bay Waterways, November 1983 - June 1984" (Norton and Johnson, 1985). This report contained storm water runoff data for numerous log sort yards, including the Wasser & Winters Site. In 1986 and 1987, the U.S. Environmental Protection Agency's contractor Ecology and Environment, Inc. (EEI) conducted an inspection of the site (EEI, 1987). The inspection involved the installation and sampling of four groundwater monitoring wells on the site.

In March 1987 the Port entered into a Consent Order with Ecology to perform a preliminary Site Characterization and Focused Feasibility Study with the goal of evaluating potential interim measures that could mitigate the release of metals in site stormwater runoff. This study was conducted by the Port's contractor, Sweet-Edwards & Associates, and consisted of surface water monitoring, excavation and sampling of 13 backhoe pits, and installation of three groundwater monitoring wells (Sweet-Edwards, 1987).

On October 7, 1991, Ecology issued an Agreed Order to complete a RI/FS. The mutual objectives of the Agreed Order were to provide a framework for the investigation of the extent of metals contamination at the site and the evaluation of alternatives available to provide a permanent site remedy in accordance with the Model Toxics Control Act. The RI/FS was submitted to Ecology in March 1993.

Specific findings of the investigative work conducted at the Site include the following:

3.1 Surface Water Quality

Surface water occurs on-site as a result of precipitation and discharges off-site to Hylebos Creek and Hylebos Waterway via overland flow and ditches. Stormwater samples collected by Ecology in 1983 and 1984 contained concentrations of arsenic, copper, lead, and zinc up to 21,600, 10,160, 5,900, and 11,930 ug/l (ppb), respectively. Further investigation in 1987 by the Port's contractor Sweet-Edwards showed elevated levels of arsenic, copper, lead and zinc discharging from the site in storm water. Stormwater sampling conducted during the RI showed lower concentrations of metals in water discharging from the site, yet concentrations were consistently above marine chronic criteria. Maximum concentrations measured in surface water on-site and the marine chronic and acute water quality criteria are shown for comparison in Table 1. Based on the results of the environmental investigations conducted at the Site, it appears that surface water runoff is the primary pathway by which metals are transported from the Site.

3.2 Ground Water Quality

Site hydrogeology is characterized by two distinct zones of saturation: an unconfined Dredge Fill unit consisting of poorly graded sand and gravel, and the confined Middle Sand unit consisting of fine- to medium-grained sand. These two water-bearing zones are separated by an upper aquitard consisting of clayey silt approximately 5 to 6 feet thick (Kennedy-Jenks, 1993). Saturation conditions in the Dredge Fill unit appear to be discontinuous; where observed, saturated conditions were typically encountered at approximately 7 feet below ground surface (bgs). The Dredge fill appears to be recharged from infiltration of surface water that ponds on the surface of the site. The Middle Sand unit appears to be tidally influenced, and discharges to the Hylebos Waterway. The ground water at the Site is not a current or potential

future source of drinking water due to tidal influence and the water's natural salinity.

Three rounds of groundwater samples were taken from eleven monitoring wells during the RI process. Four of the wells sampled the Dredge Fill unit, with the remainder sampling the Middle Sand unit. The ranges in concentrations of dissolved arsenic, copper, lead, and zinc from these wells and the Marine Chronic Water Quality Criteria are shown in Table 1. Arsenic exceeded the Marine Chronic criterion in two samples collected from one monitoring well in the Dredge Fill; these samples were below the Marine Acute criterion. The majority of samples were below the detection limit of 1 ug/l. Arsenic was detected in only two of 21 samples from the Middle Sand unit at very low levels (< 4 ug/l). While most copper concentrations measured exceed the Marine Chronic and Acute criteria, they are generally low and do not indicate an impact on the site groundwater has taken place. It is Ecology's opinion that the groundwater has not been a significant pathway for migration of the contaminants resultant from the slag present on the Site.

Table 1. Measured Levels of Contaminants of Concern at the Wasser-Winters Site and Marine Ambient Water Quality Criteria

Contaminant	Surface Water Maximum Measured[a] ug/l	Ground Water Range Measured/Avg.[b] ug/l	Marine Acute[c] ug/l	Marine Chronic[c] ug/l
arsenic	21,600	<1 to 57 / 1	69	36
copper	10,160	<2 to 10 / 3	2.9	2.9
lead	5,900	<1 to 2 / 1	220	8.5
zinc	11,930	<4 to 57 / 10	95	86

Key: (a) Total metals
(b) Dissolved metals
(c) U.S. EPA Water Quality Criteria

3.3 Soil Quality

Most of the surface of the Site is covered by areas of bark, other wood debris, gravel, and slag. The bark is often mixed with sand and silt, and ranges in thicknesses from 0.5 to 2.0 feet. Estimates of the percentage of slag on the surface of the Site were made at approximately 1,000 locations across the site during the RI process. The majority of slag identified during this mapping ranged in size from 0.25 to 8 inches in the greatest dimension. Smaller particles were observed, but were difficult to identify.

Based on the results of the surface slag mapping, 39 surface soil samples were collected. The maximum detected concentrations of the metals of concern were arsenic - 3,250 mg/kg, copper - 3,270 mg/kg, lead - 1,870 mg/kg, and zinc - 3,340 mg/kg. These maximum concentrations were found in two samples taken from the center of the site.

Subsurface soil samples were taken at 30 locations across the site at a depth of 2 feet below ground surface. The maximum detected concentrations in subsurface materials were arsenic - 759 mg/kg, copper - 799 mg/kg, lead - 513 mg/kg, and zinc - 1,050 mg/kg. These maximum values all occurred within the same sample. In general, concentrations of these metals at the 2-foot depth were 1 to 3 orders of magnitude less than those detected at the surface at the corresponding location. In no case did any of the samples from deeper than 2.5 feet exceed 20 mg/kg of arsenic (MTCA Method A Residential Cleanup Standard).

Moderate levels of petroleum hydrocarbon contamination from an underground diesel storage tank and a previous equipment maintenance facility have been identified in a small portion of the site located in the southern corner. The tank was removed by GeoEngineers, Inc. in 1990. The extent of petroleum contamination was determined in studies conducted by GeoEngineers

(GeoEngineers, 1990) and Pacific Environmental Group, Inc. (Pacific Environmental, 1991). Based on these studies it appears that soils contaminated with petroleum hydrocarbons do not contain elevated levels of the metals of concern at the site. The Port of Tacoma and other PLPs are conducting an independent cleanup action on this petroleum contamination. The contaminated soils will be excavated and removed from the site for treatment or disposal prior to conducting the cleanup action of the metals/slag contaminated soils.

4.0 CLEANUP STANDARDS

Cleanup standards were developed for this Site based on Chapter 173-340 WAC. The use of Method A industrial soil cleanup standards per WAC 173-340-745 is justified for the following reasons: the Site cleanup may be defined as a routine cleanup per WAC 173-340-130; the Site is located in a heavy industrial area, adjacent to other industrial properties; the site is zoned for industrial use; and, deed restrictions will limit the use of the Site to industrial activities in the future.

Soil cleanup levels have been determined for arsenic and lead. Copper and zinc were evaluated and determined not to be present on-site at concentrations which would present a human health (direct contact) hazard. Ground water cleanup standards were set for arsenic, copper, lead, and zinc. The cleanup standards for soil and ground water are presented in Table 2.

Table 2. Cleanup Standards

Site Cleanup Standards			
Contaminant	Ground Water (ug/l)[a][f]	Soil (mg/kg)[d]	Surface Water[e]
Arsenic	36	200[c]	*
Copper	2.9 (10[b])		*
Lead	8.5 (10[b])	1000[c]	*
Zinc	86		*

Key: (a) State and Federal Water Quality Criteria - Marine Chronic Criteria

(b) Practical Quantification Limit (PQL). Ecology recognizes that the PQL may be higher than the cleanup standard for a given parameter. In these cases, the cleanup standard may be considered to be attained if the parameter is undetected at the PQL and the conditions outlined in WAC 173-340-707 are met.

(c) MTCA Method A Cleanup Levels - Industrial Soil per WAC 173-340-745

(d) Soil cleanup standards are not based on 100 X ground water cleanup level due to the low ground water concentrations (below cleanup standards) of the compounds listed below.

(e) No surface water cleanup standards have been set for this site since the proposed remedial action should eliminate surface water as a contaminant pathway; however, surface water will be monitored for the same parameters as ground water, as indicated by the symbol *, to ensure the efficacy of the cleanup. These data will be compared to state and federal marine chronic water quality criteria to determine whether an individual NPDES permit and/or additional cleanup is required.

(f) Natural background values may be substituted as cleanup objectives by Ecology if the requirements of WAC 173-340-708 (11) are satisfied.

In addition to protection of human health from the direct contact exposure pathway, contaminant concentrations remaining in soil after the cleanup is completed must also support maintenance of acceptable water quality (see standards in Table 2).

The aquifer underlying the Site cannot be used for drinking water due to salinity. However, the Site is immediately adjacent to the Hylebos Waterway and ground water present on-site discharges to this waterway. Therefore, ground water discharge must be of a quality which will maintain acceptable sediment and water column quality. Hylebos Waterway sediment cleanup objectives are set forth in the Commencement Bay Nearshore/Tideflats Record of Decision (USEPA, 1989). It is expected that discharge of ground water contaminant concentrations below marine chronic ambient water quality criteria will result in sediment and surface water concentrations at or below acceptable levels as discussed above. Therefore, ground water standards for this Site are the state and federal marine chronic ambient water quality criteria.

The points of compliance and compliance monitoring requirements are discussed in section 6.2.

5.0 SUMMARY OF REMEDIAL ALTERNATIVES

The MTCA requires at a minimum that all cleanup actions protect human health and the environment, comply with cleanup standards, comply with applicable state and federal laws, and provide for compliance monitoring. In addition, all cleanup actions must consider implementation time, cost effectiveness,

permanent solutions, and resource recovery technologies to the maximum extent practicable.

A number of potential remediation alternatives were screened in the FS process to select the most effective, implementable, and cost-effective alternatives for more detailed evaluation. Six alternatives for remediating potential human health and environmental risks associated with slag deposits and contaminated soil were chosen for detailed evaluation in the FS.

The following is a brief description of each of the alternatives:

Alternative 1 — No action. Semiannual groundwater and surface water monitoring.

Alternative 2 — The site would be graded to direct surface water to collection and treatment system. Collected water would be treated by sedimentation/neutralization/reverse osmosis/ion exchange. Groundwater monitoring.

Alternative 3 — Soils exceeding the cleanup standards would be excavated and disposed of off-site in a permitted hazardous waste landfill. Excavated areas would be backfilled with clean soil. Would include regrading of site surface and stormwater collection and monitoring. Groundwater monitoring.

Alternative 4 — Soil/slag would be capped with asphaltic concrete meeting permeability and strength requirements. Surface water

runoff from the capped area would be collected and conveyed to a point of discharge along the Hylebos Waterway. A vegetated buffer of approximately 100 feet in width would be maintained along the Hylebos Creek; contaminated soils from this buffer area would be excavated and placed in the area to be capped. Groundwater monitoring.

Alternative 5 — Contaminated soils would be excavated and encapsulated in a flexible membrane liner at a depth of approximately 2 feet below ground surface. An asphaltic concrete cap would be placed over the site. Surface water would be collected and a vegetated buffer would be constructed as in Alternative 4. Groundwater monitoring.

Alternative 6 — Contaminated materials would be solidified by mixing with cement. Solidified materials would be capped with asphalt after appropriate subgrade preparation. Groundwater monitoring.

6.0 SELECTED CLEANUP ACTION

While several of the alternatives examined in the FS should positively impact the quality of surface water runoff, ground water, and soil conditions on the site, it is Ecology's opinion that Alternative 4, previously outlined and described in detail below, will provide the greatest protection for human health and the environment.

On-site containment, rather than waste treatment, was selected as the cleanup action because literature review and bench scale studies for similar sites have not demonstrated the existence of a feasible treatment system (biological or chemical) for this waste type.

6.1 Detailed Description of the Selected Cleanup Action

The alternative selected involves capping of the Site with asphalt. The cap system will serve to isolate contaminated materials from surface water, prevent infiltration through contaminated soils, and eliminate the potential for worker exposure to the contaminated material. While the actual cap design will be determined as part of the remedial design, the cap is expected to consist of a suitable layer of base course rock and gravel overlain by an asphaltic concrete layer of appropriate thickness, strength, and low permeability characteristics. Seems and edges of the cap will be engineered to reduce effective permeability and potential for cracking of the cap.

A vegetated buffer strip approximately 100 feet in width will be constructed along the Hylebos Creek bank will be maintained in accordance with City of Tacoma's Stream Corridor Development permit requirements. Soils in this buffer area exceeding the cleanup standards will be excavated, backfilled with clean material, and placed in the area to be capped.

As part of the cap subgrade preparations, surficial soils containing large amounts of bark and wood debris will be excavated from existing locations and consolidated in the center of the area to be capped. A mechanical pulverization and mixing process will be used to improve the subgrade characteristics of these materials by reducing their size and adding material more suitable for pavement support. The cap thickness in this central area would be increased to account for the increased organic content of the subgrade. This preparation will help to ensure future cap stability and

integrity by reducing the potential for settlement cracking. The requirements of the National Pollutant Discharge Elimination System and State Waste Discharge Baseline General Permit for Storm Water Discharges Associated with Industrial Activities will be met during the construction of the cleanup action.

A stormwater collection system will be included in the cleanup action. This system is expected to consist of a series of catch basins and drain lines leading to a single point of discharge to the Hylebos Waterway. The purpose of this system is to efficiently drain the surface of the cap to prevent the occurrence of standing water on the cap and the associated potential for leakage.

A key component of the selected cleanup action is an ongoing schedule of inspection and maintenance of the cap. An Operation and Maintenance Plan will be prepared as part of the remedial design phase. This plan will specify regular and frequent cap inspections and maintenance to ensure that the cap is functioning as intended. This plan will also address the regular maintenance and operation of the storm water collection system.

Institutional controls prohibiting the disruption of the cap system without Ecology approval will be placed on the site. Since industrial soil cleanup standards will be used, a restrictive covenant limiting site use to industrial activities will be placed on the property deed. Future industrial uses of the site will only be permitted if it can be shown that the cap is of suitable strength to support the proposed activities.

6.2 Points of Compliance/Compliance Monitoring

Given that Ecology's proposed cleanup alternative involves containment of hazardous substances on-site, requirements of WAC 173-340-740(6)(d) must be

met including carrying out a compliance monitoring program to ensure the long-term integrity of the containment system, and other requirements for containment technologies in WAC 173-340-360(8) are met.

Groundwater will be monitored by wells located on the perimeter of the cap system; these wells shall represent the points of compliance for ground water cleanup standards. All wells will sample the uppermost aquifer system. Specific well placements, designs, and monitoring methodologies will be developed during the remedial design phase.

Monitoring of storm water runoff for the metals of concern will be conducted at the post-remediation point of surface water discharge to the Hylebos Waterway. If surface water runoff occurs from areas left uncapped, it will be monitored to assess the effectiveness of the cleanup action.

Any site soils remaining outside the containment system must comply with soil cleanup standards. A Performance Monitoring Sampling Plan describing the sampling design and analytical methodologies that will be used to ensure that soils remaining outside the containment facility meet the cleanup standards will be prepared during the remedial design phase.

7.0 JUSTIFICATIONS/DETERMINATIONS

The MTCA requires that any alternative selected for site remediation must, as a minimum, meet four threshold requirements as follows: protect human health and the environment; comply with cleanup standards; comply with applicable state and federal laws; and, provide for compliance monitoring.

7.1 Protection of Human Health and the Environment

The risks identified during the RI/FS process are: 1) potential human health impacts from ingestion and inhalation of on-site wood waste and soil/slag deposits which contain elevated concentrations of metals; 2) potential water quality impacts in the Hylebos Waterway and Hylebos Creek attributable to surface water runoff or ground water discharge containing elevated concentrations of metals; and, 3) potential impacts to marine sediments.

The selected cleanup action eliminates the human health risks from ingestion and inhalation of metals in the slag/soil mixture by capping of the wood waste, contaminated soil, and slag deposits. The metal concentration in surface water runoff attributable to these soils/wastes will be minimized by preventing surface water contact with the soil/slag.

As noted in Section 2.1 above, Ecology believes that the site is a source, along with other sources, of metals to the Hylebos Waterway sediments. Conditions in the Hylebos Waterway sediments will be addressed in other activities pursuant to the Commencement Bay Nearshore/Tideflats Record of Decision. The selected cleanup action for the Wasser-Winters site will minimize the possibility of metals migration from the site soils to the Hylebos Waterway.

7.2 Compliance with Cleanup Standards

The selected alternative is designed to comply with the remedial action objectives listed in Section 5.0 above.

7.3 Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

This evaluation criterion is used to determine the degree to which the selected cleanup action complies with federal and state standards and regulations. The following ARARs apply to the site:

STATE LAWS AND REGULATIONS

a. Model Toxics Control Act Cleanup Regulation, Chapter 173-340 WAC

b. Hazardous Waste Cleanup - Model Toxics Control Act, Chapter 70.105D RCW

c. State Environmental Policy Act, Chapter 197-11 WAC

d. Minimum Standards for Construction and Maintenance of Water Wells, Chapter 173-160 WAC

e. Water Pollution Control, Chapter 90.48 RCW

f. NPDES Permit Program, Chapter 173-220 WAC

g. Water Quality Standards for Surface Waters of the State of Washington, Chapter 173-201A WAC

h. Dangerous Waste Regulations, Chapter 173-303 WAC

i. Washington Clean Air Act, Chapter 70.94 RCW

j. Washington Industrial Safety and Health Act (WISHA)

FEDERAL LAWS AND REGULATIONS

l. Resource Conservation and Recovery Act (RCRA)

m. Occupational Safety and Health Act (OSHA), 29 CFR subpart 1910.120

n. Federal Water Pollution Control Act of 1972 (Clean Water Act)

o. Water Quality Act of 1987:

1) Section 308. Establishes water quality criteria for toxic pollutants.

2) Section 402. Establishes the NPDES permit process for discharges to surface water bodies.

The selected cleanup action achieves all ARARs listed above. Other ARARs such as shoreline management regulations, and air quality regulations will be complied with as an integral part of the remedial design and implementation steps.

7.4 Compliance Monitoring

Compliance monitoring as specified in WAC 173-340-410 will be provided to determine compliance with the cleanup standards listed in Section 5.0. Surface and ground water will be monitored to evaluate compliance with cleanup standards. A compliance monitoring plan will be prepared and submitted to Ecology for approval as part of the remedial design phase.

7.5 Short-Term Effectiveness

Short-term effectiveness considers how each alternative would impact the human health and the environment during the implementation (construction) phase and prior to attainment of cleanup standards.

The implementation of the proposed cleanup action involves various earthmoving activities. The earth work has a potential to impact the community from exposure to airborne dust. This potential impact will be mitigated through use of control measures such as watering to reduce dust generation. The earth work may increase mobility of soil particles in surface water runoff. Mitigation of this potential sediment discharge will involve using sediment barriers and performing remedial activities during the dry season.

Capping should result in immediate improvements in the quality of storm water runoff. The cap should effectively isolate contaminated materials from surface water runoff. Capping should eliminate the human health concerns associated with ingestion of contaminated material.

7.6 Long-Term Effectiveness

Long-term effectiveness is evaluated in terms of the magnitude of residual risk and the adequacy and reliability of the cleanup action.

Implementation of the selected alternative will prevent contact between precipitation/surface water runoff and contaminated soil/slag materials. Long-term reliability will be dependent on maintenance of the engineering controls and continued monitoring since residuals will remain on site. There is a high degree of confidence that the isolation and containment measures will be effective in controlling mobility of metals when coupled with appropriate long-term operation, maintenance and monitoring to remedy any

potential damage to the cap system due to settlement, erosion, or other causes. The selected alternative provides, in addition to monitoring, periodic routine inspections and maintenance of the cap system to ensure its integrity and effectiveness. Institutional controls, including restrictive covenants, will limit the use of the site to industrial uses for the long-term.

7.7 Reduction of Toxicity, Mobility, or Volume

This evaluation criterion addresses the statutory preference for selecting remedial actions that employ treatment technologies that permanently and significantly reduce toxicity, mobility, and volume of the hazardous substances present. As stated in section 6.0 above, physical or chemical treatment was not chosen as the preferred cleanup alternative because the existence of a feasible treatment system for this waste is not known.

The human health and environmental risks identified at the Site are a direct result of on-site slag deposits containing metals. The implementation of this alternative will not use treatment technologies to reduce toxicity, mobility, or volume of the contamination present on the site. The cleanup action will eliminate the contact of storm water with contaminated soil/slag through the use of a physical barrier (cap system), thereby limiting the mobility of contaminants.

7.8 Implementability/Technical Feasibility

This alternative employs conventional technologies and, therefore, should be readily implemented. Capping has been performed at other log sort yards in the Tacoma area. Maintenance requirements for the cap system should not pose any technical difficulties.

7.9 Cost

The relative costs of the alternatives determined in the FS are given in Table 3.

Table 3. Remedial Alternative Cost Comparison

ALTERNATIVE		COST[1]
Alternative 1.	No Action	553,000
Alternative 2.	Grading/surface water collection/water treatment	NA[2]
Alternative 3.	Excavation/off-site landfilling	3,593,000 - 4,321,00
Alternative 4.	Asphalt capping/stormwater collection	2,543,000
Alternative 5.	Excavation and encapsulation at depth/asphalt capping	3,935,000
Alternative 6.	Solidification/asphalt capping	2,611,000

(1) 30-year present worth cost using 5 percent discount rate

(2) Not applicable. Alternative 2 did not meet the preliminary threshold evaluation criteria described in the Feasibility Study, therefore a cost analysis was not performed.

7.10 Elimination of Other Alternatives

Alternatives 1 and 2 have not been chosen because human health and the environment are not adequately protected by these alternatives. Alternative 3 was not chosen due to excessive costs without a corresponding increase in protectiveness. Solidification and asphalt capping (Alternative 6) was not chosen due to the poor strength and subgrade properties expected from the

solidified soil/slag/woodwaste mixture. Alternative 5 was not chosen because it offers little benefit in protection for a substantial increase in cost when compared to Alternative 4.

8.0 STATE AND COMMUNITY ACCEPTANCE

State and community acceptance will be evaluated based on the comments received during the public comment period. Based on the information gathered from the public, Ecology will modify the draft CAP to arrive at a final CAP.

9.0 CLEANUP ACTION REQUIREMENTS

The cleanup action as selected is designed to accomplish the following requirements:

1. Protect human health and the environment.

2. Comply with cleanup standards per WAC 173-340-700 through 760.

3. Comply with applicable state and federal laws per WAC 173-340-710.

4. Provide compliance monitoring per WAC 173-340-410.

5. Use permanent solutions to the maximum extent practicable per WAC 173-340-360(4), (5), (7), and (8).

6. Provide a reasonable restoration timeframe per WAC 173-340-360(6).

7. Consider public concerns, if any, raised during public comment on the draft cleanup action plan per WAC 173-340-360(10) through (13).

10.0 SCHEDULE FOR IMPLEMENTATION/UPCOMING ACTIVITIES

Ecology will begin negotiations on a Consent Decree per MTCA with the Port of Tacoma to cover the remedial design, remedial construction, and all other work phases. The time line for implementation of all project phases will be defined in the Consent Decree. Full public participation, including a 30-day public comment period and public meeting, will accompany the MTCA Consent Decree.