Cascade Timber #1
FS 1204

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

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY, v. MCFARLAND CASCADE HOLDINGS, INC., CASCADE POLE COMPANY, and ASARCO INCORPORATED.	NO. 93-2-10099-5 **CONSENT DECREE**

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I. INTRODUCTION AND PURPOSE

A. In entering into this Consent Decree (Decree), the mutual objective of McFarland Cascade Holdings, Inc. (MCHI), Cascade Pole Company (CPC), and ASARCO Incorporated (Asarco), (herein collectively, "Defendants") and the Washington State Department of Ecology (Ecology), is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances at property located at 2502 Marine View Drive (the "Site") in Pierce County, Washington. This Decree requires the Defendants to undertake remedial actions which remove contamination from the majority of the Site and consolidate that contamination in a double barrier cap system on a small portion 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 raised by Ecology's Complaint. 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. 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

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Defendants and Ecology retain the right to seek reimbursement, in whole or in part, from any responsible entities for sums expended pursuant to this Decree.

D. 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 Defendants shall not challenge the jurisdiction of Ecology in any proceeding to enforce this Decree.

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). Venue is properly lain in Pierce County, the location of the property at issue.

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 in compliance with cleanup standards under RCW 70.105D.030(2)(d). 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 given notice to Defendants, as set forth in RCW 70.105D.020(8), of Ecology's determination that the Defendants are potentially liable persons for the Site and that

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there has been a release or threatened release of hazardous substances at the Site.

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

E. The Defendants have agreed voluntarily to undertake the actions specified in this Decree and consent 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. Defendants agree 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 corporate ownership or corporate status shall alter the responsibility of the Defendants under this Decree. Defendants shall make a copy of this Decree available to all agents, contractors and subcontractors retained to perform work required by this Decree and shall ensure that any contract for work undertaken by such contractors be in compliance with this Decree.

IV. DEFINITIONS

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

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A. Site: The Site, referred to as Cascade Timber Log Sort Yard No. 1, is located at 2502 Marine View Drive, Tacoma, Washington. The Site is more particularly described in Exhibit A to this Decree which is a detailed site diagram.

B. Parties: Refers to the Washington State Department of Ecology, McFarland Cascade Holdings, Inc., Cascade Pole Company, and ASARCO Incorporated.

C. Defendants: Refers to McFarland Cascade Holdings, Inc., Cascade Pole Company, and ASARCO Incorporated.

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 the Consent Decree.

E. Days: Refers to working days unless otherwise indicated.

V. STATEMENT OF FACTS

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

1. McFarland Cascade Holdings, Inc. (MCHI) presently owns property located on the north side of Hylebos Waterway at 2502 Marine View Drive, Tacoma, Washington. The Site was formerly owned by Cascade Pole Company who leased it to Cascade Timber Company, an unrelated company, from 1977 to 1981. Cascade Timber Company used the property as a log sort yard. Cascade Pole Company transferred the property to MCHI in 1986. Since

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1981, the property has not been used for any purpose other than storage.

2. Slag, a product of the ore smelting process produced at the ASARCO smelting facility in Tacoma, Washington, was placed on the Site as ballast from at least 1977 to 1981.

3. Ecology conducted a surface water investigation at the Site between November 1983 and June 1984. The study found the following metals in surface water runoff: arsenic, copper, lead, and zinc which were found at concentrations as high as 7280, 695, 710, and 3000 ppb, respectively. The study theorized that the cause of contamination was the use of slag as yard ballast. (Norton, D. and Johnson, A. 1985. Assessment of Log Sort Yards as Sources of Metals to Commencement Bay Waterways. Washington Department of Ecology Memorandum, Olympia, Washington.)

4. Further investigation conducted by MCHI's contractor, Applied Geotechnology, Inc., found arsenic, copper, lead, and zinc at concentrations up to 1200, 2600, 15, and 6200 ppb, respectively, in surface water on the Site. (Applied Geotechnology, Inc. 1988. Surface Water Investigation, Cascade Timber Yard 1, Tacoma, Washington. Applied Geotechnology. Bellevue, Washington.)

5. On November 6, 1989, Ecology issued an Agreed Order which named MCHI and Cascade Pole Company as potentially liable parties under the Model Toxics Control Act. The mutual objective of the Agreed Order was to provide a framework for a

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Remedial Investigation (RI), a Feasibility Study (FS), and the draft cleanup action plan for the Site.

6. Four rounds of groundwater sampling were conducted during the RI and FS. All samples were analyzed for total and dissolved metals. Concentrations of the metals of concern were low and do not indicate that groundwater has been a pathway of contaminant migration.

7. Surface soil samples were collected from across the Site during the RI/FS process. Arsenic was measured and found in 24 samples; concentrations ranged from 36 to 1900 mg/kg and averaged 467 mg/kg. Copper was measured and found in 4 samples; concentrations ranged from 39 to 190 mg/kg. Lead concentrations ranged from 46 to 1400 mg/kg from 8 sampled locations. Zinc concentrations ranged from 160 to 390 mg/kg from 4 sample locations. Excavation and sampling of five test pits at depths of 6, 18, and 36 inches below the slag/soil interface showed a maximum soil concentration of 180 mg/kg arsenic.

8. The Site is located within the boundaries of the federal Commencement Bay/Nearshore Tideflats (CB/NT) Superfund site. Under the CB/NT Cooperative Agreement between the U.S. Environmental Protection Agency ("EPA") and Ecology, Ecology and EPA have agreed to coordinate efforts to identify and investigate sources of hazardous substances being discharged to the waterways of Commencement Bay. Pursuant to the CB/NT Cooperative Agreement, to the greatest extent possible, all major source control activities will be consistent with the

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National Contingency Plan. Ecology agrees that work under this Decree is consistent with the CB/NT Cooperative Agreement.

VI. WORK TO BE PERFORMED

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

1. The Defendants shall perform the remedial actions specified in detail in the Cleanup Action Plan (Exhibit B) and the Scope of Work (Exhibit C).

2. Defendants agree not to undertake any actions inconsistent with the remedial actions called for by this Decree unless the Parties amend the scope of work to cover such actions. All work conducted under this Decree shall be done in accordance with Ch. 173-340 WAC unless otherwise provided herein.

3. The work will generally consist of the following:

(1) Excavation and consolidation of materials containing levels of contaminants exceeding the cleanup standards set for the Site.

(2) Containment of these materials with a double barrier cap system in accordance with the Ecology-approved remedial design and verification of attainment of cleanup standards in soils left uncontained.

(3) Installation and monitoring of groundwater monitoring wells.

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(4) Maintenance of the containment system and monitoring of stormwater runoff from the entire site.

4. Ecology Approvals. Ecology will review and approve or comment upon all documents in a timely fashion and will endeavor to review and comment within ten (10) working days of receipt.

VII. DESIGNATED PROJECT COORDINATORS

The project coordinator for Ecology is:

Garin Schrieve
Southwest Regional Office
Department of Ecology
P.O. Box 47775
7272 Cleanwater Lane
Olympia, WA 98504-7775

The project coordinators for Defendants are:

Les D. Lonning
McFarland Cascade Holdings, Inc.
1640 East Marc Street
Post Office Box 1496
Tacoma, Washington 98401-1496

Thomas L. Aldrich
Asarco Incorporated
Post Office Box 1677
Tacoma, Washington 98401

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 Defendants 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 coordinators. The project coordinators may designate, in writing, working level staff

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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.

VIII. PERFORMANCE

All work performed pursuant to this Decree shall be under the direction and supervision, as necessary, of an appropriate professional with experience and expertise in hazardous waste site investigation and cleanup. Any design and construction work must be under the supervision of a professional engineer. For all purposes of this Decree, Jim Gillie of Hydrometrics, Inc. is approved as having these qualifications.

IX. ACCESS

Ecology or any Ecology authorized representatives shall have the authority to enter and freely move about all property at the Site during normal business hours for the purposes of, inter alia: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Decree; reviewing Defendants' 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

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Decree; and verifying the data submitted to Ecology by the Defendant. Except in an emergency, Ecology shall make reasonable attempts to provide twenty-four (24) hours notice to the property owner prior to entering the Site. 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

Defendants shall make the results of all sampling, laboratory reports, and/or test results generated by it, or on its behalf available to Ecology. If requested by Ecology, Defendants shall allow split or duplicate samples to be taken by Ecology and/or its authorized representatives of any samples collected by Defendants pursuant to the implementation of this Decree. Defendants shall notify Ecology five (5) 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 Defendants or their authorized representatives of any samples collected by Ecology pursuant to the implementation of this Decree. Except in the event of an emergency, Ecology shall notify Defendants two (2) working days prior to any sample collection activity.

XI. PROGRESS REPORTS

Defendants shall submit to Ecology written monthly progress reports which describe the actions taken during the previous month to implement the requirements of this Decree. The progress shall include the following:

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A. A list of on-site activities 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 during the current month and any planned deviations in the upcoming month;

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 Defendants during the past month and an identification of the sources 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.

After completion of the remedial construction, the progress reports shall be due quarterly or as set forth in the approved Compliance Monitoring Plan.

XII. RETENTION OF RECORDS

Defendants 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 XXX, all records, reports, documents, and underlying data in their possession

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prepared in connection with the remedial actions called for in this Decree and shall insert in contracts with project contractors a similar record retention requirement. Upon request of Ecology, Defendants shall make all nonarchived 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 to a person not a party to this Decree shall be consummated without provision for continued operation and maintenance of any containment system, stormwater collection system, and monitoring system installed pursuant to this Decree.

Prior to transfer of any legal or equitable interest in all or any portion of the Site, and during the effective period of this Decree, Defendants shall provide a copy of this Decree to any prospective purchaser, lessee, transferee, or assignee of the property, and make best efforts to provide advance notification to Ecology of any transfer of interest in the property. In any case, Defendants shall provide notification to Ecology at least ten (10) days after any such transfer.

Defendants agree that restrictive covenants will be recorded for all of the Site, not later than the date of transfer of any legal or equitable interest in any portion of the Site. In any case, restrictive covenants for all of the Site will be recorded

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within thirty (30) calendar days of the issuance of the Notice of Completion of Construction set forth in Section XXVI of this Decree. The restrictive covenants shall be substantially similar to the Sample Restrictive Covenant included hereto as Attachment D.

XIV. RESOLUTION OF DISPUTES

A. If 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 preliminary decision, the Defendants have ten (10) days within which to notify Ecology's project coordinator of its objection to the decision.

(2) The Parties' project coordinators shall then confer in a good faith effort to resolve the dispute. If the project coordinators cannot resolve the dispute within ten (10) days, Ecology's project coordinator shall issue a final written decision.

(3) Defendants may then request Ecology management review of the decision. This request shall be submitted in writing to the Toxics Cleanup Program Manager within five (5) days of receipt of Ecology's project coordinator's final written decision.

(4) Ecology's Program Manager shall conduct a review of the dispute and shall issue a written decision regarding the dispute

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within thirty (30) calendar days of the Defendants' request for review. The Program Manager's decision shall be Ecology's final decision on the disputed matter.

B. If Ecology's final written decision is unacceptable to Defendants, Defendants have the right to submit the dispute to the Court for resolution within twenty-one (21) 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 Defendants present 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 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.

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XV. AMENDMENT OF CONSENT DECREE

This Decree may be amended only by a written stipulation signed by all the Parties to this Decree and entered 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.

Defendants shall submit any request for an amendment to Ecology for approval. Ecology shall indicate its approval or disapproval in a timely manner but in no case more than thirty (30) calendar days after the request for amendment is received. 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. In the same manner, Ecology may submit a request for amendment of the Decree to the Defendants.

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 fifteen (15) 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. Ecology shall act upon any written request for extension in a timely fashion.

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An extension shall only be granted for such period of time as Ecology or the Court, in the event the Parties are before the Court as a result of employing the dispute resolution process in Section XIV, determines is reasonable under the circumstances. A requested extension shall not be effective until approved by Ecology or the Court. It shall not be necessary formally to amend this Decree pursuant to Section XV when a schedule extension is granted.

B. The burden shall be on the Defendants 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 includes, but is not limited to, the following:

(1) Circumstances beyond the reasonable control and despite the due diligence of Defendants including (a) 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 Defendants; or (b) delays caused by third parties in granting, reviewing or approving permits where Defendants have applied for permits in a timely manner; or

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

(3) Endangerment as described in Section XVII.

However, neither increased costs of performance of the terms of the Decree nor changed economic circumstances shall be

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considered circumstances beyond the reasonable control of Defendants.

C. Ecology may generally extend the schedule for a period not to exceed ninety (90) calendar days. A longer extension may be granted where the 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 XVII.

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

XVII. ENDANGERMENT

If Ecology determines pursuant to WAC 173-340-860 that activities implementing this Decree, or any other circumstances or activities, are creating or have the potential to create a danger to the human health or the environment, Ecology may order Defendants 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 Defendants with respect to the work shall be suspended and the time periods for performance of that stopped work, as well as the time period for any other work dependent upon the stopped work, shall be extended, pursuant to Section XVI of this Decree,

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for such period of time as Ecology determines is reasonable under the circumstances.

In the event Defendants determine that activities undertaken in furtherance of this Decree or any other circumstances or activities are creating an endangerment to human health or the environment, Defendants may stop implementation of this Decree for such period of time necessary for Ecology to evaluate the situation and determine whether Defendants should proceed with implementation of the Decree or whether the work stoppage should be continued until the danger is abated. Defendants 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 Defendants' determination, it may order Defendants to resume implementation of this Decree. If Ecology concurs with the work stoppage, the Defendants' 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 this clause shall be resolved through the dispute resolution procedures in Section XIV.

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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, except as limited by the Covenant Not to Sue set forth in Section XXV:

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

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

(3) In the event that actions beyond the terms of this Decree are necessary to abate an emergency situation which threatens human health or the environment.

XIX. INDEMNIFICATION

Defendants 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 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. Such indemnity shall not extend to actions challenging the provisions of this Decree. However, the Defendants 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

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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 Defendants pursuant to this Decree shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits.

XXI. REMEDIAL AND INVESTIGATIVE COSTS

The Defendants agree to pay costs incurred by Ecology pursuant to this Decree which are reasonably attributable to the Site. For the purposes of this section, costs began to accrue on October 15, 1992. These costs shall include work performed by Ecology or its contractors 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 Ecology indirect costs of direct activities for work under this Decree. The Defendants agree to make payment 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 (e.g., site logs) performed shall be provided by Ecology. Itemized statements shall be prepared quarterly. Defendants shall give written notice of any objections to invoices within fifteen (1_,

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days of receipt. The Ecology project coordinator shall use best efforts to coordinate with Ecology's Fiscal Office to investigate, respond to and resolve Defendants' objections to invoices. The project coordinator will respond to Defendants as soon as possible. Failure to pay Ecology's costs within ninety (90) calendar days of receipt of the itemized statement will result in interest charges. However, no interest will be charged on an item that is the subject of a good faith objection by Defendants that has not been responded to by Ecology.

McFarland Cascade Holdings, Inc. and Cascade Pole Company agree to pay Ecology $342.78 as full and final satisfaction for any and all Ecology oversight costs accrued prior to the Agreed Order dated November 6, 1989.

XXII. IMPLEMENTATION OF REMEDIAL ACTION

If Ecology determines that Defendants have failed without good cause to implement the remedial action called for by this Decree, Ecology may, after notice to Defendants, perform any or all portions of the remedial action that remain incomplete. Defendants may appeal any such determination by Ecology as set forth in Section XIV, Resolution of Disputes. If Ecology performs all or portions of the remedial action called for by this Decree because of the Defendants' failure to comply with its obligations under this Decree, Defendants shall reimburse Ecology for the costs of doing such work in accordance with Section XXI, provided that Defendants are not obligated under

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this section to reimburse Ecology for costs incurred for work inconsistent with or beyond the scope of this Decree.

XXIII. FIVE YEAR REVIEW

If remedial actions, including ground water monitoring, continue 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 once 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. This provision shall remain in effect for the duration of the Decree.

XXIV. PUBLIC PARTICIPATION

Ecology shall maintain the responsibility for public participation at the Site, but shall use its best efforts to coordinate all public participation with Defendants. However, Defendants 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 engineering design reports. Ecology will finalize (if necessary) and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings. Ecology will make available for review by Defendants any final, edited fact sheets, and public notices.

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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 Defendants 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; Ecology's Southwest Regional Office at 7272 Cleanwater Lane, Tumwater, Washington; and Tacoma Public Library, Main Branch, Northwest Room, 1102 Tacoma Avenue South, Tacoma, Washington. At a minimum, copies of all public notices, fact sheets, and press releases; all quality assured ground water, surface water, soil sediment, and air monitoring data; remedial action 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. 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 regard-

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ing 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. Reopener. The State of Washington may exercise its full legal authority to address releases of hazardous substances at the Site, notwithstanding the Covenant Not to Sue set forth above, in the event factors not known at the time of entry of this Decree are discovered, and present previously unknown threat to human health or the environment.

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; or
4. Other actions allowed under Section XVIII of this Decree.

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XXVI. NOTICE OF COMPLETION OF CONSTRUCTION

Ecology agrees to issue a letter, entitled Notice of Completion of Construction, when the work set forth in Tasks 1 through 5 in the Scope of Work has been completed. This Notice of Completion of Construction shall issue at the point in time when the only additional actions required under this Decree are associated with operation and maintenance of the capped, containment system, and completion of long term monitoring. The Notice of Completion of Construction shall be substantially similar to Exhibit E.

Within thirty (30) calendar days of the issuance of the Notice of Completion of Construction, Defendants shall file Restrictive Covenants as set forth in Section XIII.

XXVII. TERMINATION OF PRIOR AGREED ORDER

This Consent Decree supersedes the Agreed Order, dated November 6, 1989 between Ecology and MCHI and CPC. No later than thirty (30) calendar days following the entry of this Decree, Ecology shall issue a letter to MCHI and CPC which confirms that the work called for in the Agreed Order is completed and the Order is superseded.

XXVIII. CONTRIBUTION PROTECTION

As provided in RCW 70.105D.040(4)(d) Defendants shall not be liable for claims for contribution.

XXIX. CLAIMS AGAINST THE STATE

Defendants hereby agree that they 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 Defendants will make no claim against the State Toxics Control Account or any local toxics control account for any costs incurred in implementing this Decree.

XXX. DURATION OF DECREE

This Decree shall remain in effect and the remedial program described in the Decree shall be maintained and continued until the Defendants have completed the remedial actions as described in the Scope of Work.

XXXI. EFFECTIVE DATE

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

XXXII. RESERVATION OF RIGHTS

By agreeing to entry of this Decree, the Defendants and Ecology agree to abide by its terms. While the Parties believe that the recitals contained in this Decree are accurate, the execution and performance of the Decree is not, however, an admission by the Defendants of any fact or liability for any purpose other than as a foundation for the entry of this Decree. Defendants' performance under the Decree is undertaken without waiver of or prejudice to any claims or defenses whatsoever that may be asserted in the event of further administrative proceedings or litigation not associated with, or related to, this Decree. Nor is the execution or the performance of the Decree an agreement by Defendants to take any action at the Site othe

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than that described in this Decree. Defendants expressly reserve their rights to seek to recover any costs incurred in implementing this Decree from any other potentially liable person.

XXXIII. 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, this Decree 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 FLESKES Date
Toxics Cleanup Program

_____ _____
E. CHRISTINA BEUSCH, WSBA #18226 Date
Assistant Attorney General

_____ _____
B. CORRY MCFARLAND Date
for McFarland Cascade Holdings, Inc.

_____ _____
B. CORRY MCFARLAND Date
for Cascade Pole Company

_____ _____
AUGUSTUS B. KINSOLVING Date
for ASARCO Incorporated

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1.0 INTRODUCTION

This cleanup action plan (CAP) is provided to describe the proposed remediation at the Cascade Timber log sort yard #1 (hereafter referred to as "the Site") located on the north shoreline of the Hylebos Waterway in Tacoma, Washington. 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 (RI) and the Feasibility Study (FS) and associated investigative work; 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.

The environmental investigations and remedial alternatives described in this plan are discussed in detail in the RI and FS for the site. These studies were performed pursuant to the Agreed Order dated November 6, 1989.

2.0 SITE DESCRIPTION

Cascade Timber #1 is an 8 acre parcel of land located at 2502 Marine View Drive in the tide flats industrial area of Tacoma, Washington, as shown in Figure 1. The site is bounded by the Hylebos Waterway to the south, Sound Refining, Inc. to the west, the Don Oline property to the east, and Marine View Drive to the north. There are three buildings located on site: two sheet metal buildings containing old machinery parts are located in the northwestern corner; and a third small building of wood frame construction located by the site entrance from Marine View Drive.

From 1977 to 1981 the Cascade Timber Company leased the site from the Cascade Pole Company for use as a log storage and sorting yard. Normal sort yard operations included loading, unloading, sorting, and moving of logs within the yard. The natural soils and dredged fill material at the site include sand, silty sand, and clay, which are unstable under heavy loads, particularly during wet weather. Without stabilization of these surficial materials, deep ruts quickly develop in areas of heavy vehicular traffic. Therefore, continued operation as a log sorting facility necessitated a continuous maintenance program by the lessee. As a result, various materials were brought in as ballast to help stabilize the natural soils in areas of heavy traffic. Ballast brought to the site included smelter slag from the ASARCO Incorporated smelter in Ruston (Tacoma). The slag was brought in from at least 1977 to 1981. McFarland Cascade Holdings, Inc. purchased the property in 1986. The site has not been used for purposes other than storage since 1981.

During normal log sort yard operations, wood waste (principally bark) was produced by the handling of logs within the yard. This wood waste accumulated on top of the natural soil, dredged fill material, and imported ballast. As a result of heavy traffic, slag brought in as ballast was ground up and mixed with wood wastes and surficial soils.

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, primarily arsenic, copper, lead, and zinc. 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 with increased surface area 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). A Record of Decision for cleanup of the Commencement Bay Nearshore/Tideflats Superfund Site was issued in 1989 (USEPA, 1989).

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 Cascade Timber #1 site. Between August 1986 and April 1987, the U.S. Environmental Protection Agency's contractor Ecology and Environment, Inc. (EEI) conducted an inspection of the Site. The inspection involved the installation and sampling of four groundwater monitoring wells on the Site. In 1988, the site owner conducted a further investigation to provide information on the Site's history, extent of slag and wood bark present on the property, surface water quality, and on-site drainage.

On November 6, 1989, Ecology issued an Agreed Order which named McFarland Cascade Holdings, Inc. (MCHI) and Cascade Pole Company (CPC) as potentially liable under the Model Toxics Control Act (MTCA). The mutual objective of the Agreed Order was to provide a framework for the RI, FS, and the cleanup action for the Site. The RI was submitted to Ecology in December 1989. Field work conducted under this order consisted of surface and subsurface soil sampling, surface water sampling, groundwater sampling, and sampling of on-site residuals of woodwaste and slag.

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

3.1 Surface Water Quality

Surface water occurs on-site as a result of precipitation. Stormwater runoff discharges off-site to the Hylebos Waterway. Stormwater samples collected by Ecology in 1983 and 1984 contained concentrations of arsenic, copper, lead, and zinc up to 7280, 695, 710, and 3000 ug/l, respectively. Further

investigation conducted by MCHI's contractor, Applied Geotechnology, Inc., found arsenic, copper, lead, and zinc at concentrations up to 1200, 2600, 15, and 6200 ug/l, respectively (Applied Geotechnology, 1988). 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 metal contamination may be transported from the Site.

3.2 Groundwater Quality

During the installation of four monitoring wells by the EPA's contractor, EEI, two water-bearing zones were identified. Groundwater in the upper water-bearing zone occurs under unconfined conditions above a gray clay layer which appears to function as an aquitard. Depth to water in the upper, unconfined zone was measured at 7 to 10 feet below ground surface (bgs). Based on these two wells, groundwater appears to be flowing in a southerly direction. Groundwater in the lower water-bearing zone is reportedly confined by the overlying clay, tidally influenced, and is apparently generally flowing in a southerly direction. The groundwater in this zone is not a current or potential source of drinking water due to its natural salinity.

Two groundwater sampling rounds were conducted during the RI and two additional sampling rounds were conducted subsequent to completion of the FS. All samples were analyzed for total and dissolved Priority Pollutant Metals and two samples were analyzed for Priority Pollutant organics (volatile and semivolatile only). The maximum measured concentrations of arsenic, copper, lead, and zinc from groundwater samples collected on-site are shown in Table 1. While total copper concentrations measured in the groundwater exceed the marine chronic criterion, concentrations of the more mobile dissolved species were undetected. It is Ecology's opinion that groundwater has not been a pathway for migration of the contaminants resultant from the slag present on the Site.

Table 1. Measured Levels of Contaminants of Concern at the Cascade Timber #1 Site and Marine Chronic Criteria

Contaminant	Surface Water Maximum Measured, ug/l	Ground Water Range Measured, ug/l	Marine Acute[a] ug/l	Marine Chronic[a] ug/l
total arsenic	7280	< 5 to 20	69	36
dissolved arsenic	--	< 5 to 13		
total copper	2600	< 20 to 60	2.9	2.9
dissolved copper	--	< 20		
total lead	710	<5 to 10	220	8.5
dissolved lead	--	< 5		
total zinc	6200	< 10 to 90	95	86
dissolved zinc	--	< 10 to 60		

Key: (a) U.S. EPA Water Quality Criteria

3.3 Soil Quality

Surface soil samples were collected from across the site to evaluate concentrations of arsenic, copper, lead, and zinc in surficial soils to a maximum depth of 3 inches. Arsenic was measured in 24 samples; concentrations ranged from 36 to 1900 mg/kg and averaged 467 mg/kg. Copper was analyzed in 4 samples; concentrations ranged from 39 to 190 mg/kg. Lead concentrations ranged from 46 to 1400 mg/kg from 8 stations sampled. Zinc concentrations ranged from 160 to 390 mg/kg from 4 locations tested.

Five test pits were excavated below the soil/slag-waste interface to determine the vertical distribution of arsenic in underlying soils. Samples were collected from each test pit at approximately 6, 18, and 36 inches below the soil/slag interface. The maximum arsenic concentration observed was 180 mg/kg in a sample taken from the 6 inch depth below a concentrated slag deposit.

An additional 35 test pits were excavated across the site to visually determine the extent of slag remaining on-site. Based on the information gathered in the investigatory process, it is estimated that approximately 2500 to 3000 cubic yards of slag mixed with woodwaste remain on-site. In addition to this slag/woodwaste, it is estimated that approximately 2000 cubic yards of soil containing arsenic above 200 mg/kg are present.

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, a restrictive covenant 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) U.S. EPA 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 insure the efficacy of the cleanup. These data will be evaluated by Ecology 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 surface and ground 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. 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 marine chronic ambient water quality criteria.

4.1 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.

The point of compliance for ground water cleanup standards is at the edge of the containment facility. 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(s) of surface water discharge.

The site soils remaining outside the containment system must comply with soil cleanup standards. A Performance Monitoring 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.

5.0 SUMMARY OF REMEDIAL ALTERNATIVES

The MTCA requires as 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.

Many potential remediation alternatives were screened in the FS process to select the most effective, implementable, and cost-effective alternatives for

more detailed evaluation. Five alternatives for remediation of potential human health and environmental risks associated with slag deposits and contaminated soil were chosen for detailed evaluation in the FS. However, since submittal of the FS to Ecology experience at other similar log sort yards has indicated that bark separation, a key component in several of the alternatives analyzed, is not a feasible method for reducing the volume of contaminated materials. Bark can be separated from slag, however after a long contact time with slag and water, the bark adsorbs significant amounts of arsenic which cannot be removed by simple separation. Given this knowledge and the results of the environmental investigations on the Site, Ecology has selected a sixth alternative as the Agency's preferred cleanup action for remediation of the site.

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

Alternative 1 - No Action

The site will remain in its present physical state. The concentrations of arsenic in surface soils, groundwater seeps, and storm water discharge from the site will be monitored on a trimesterly basis over 30 years or two years beyond when the discharge meets regulatory standards.

Alternative 2 - Excavation and Removal

The slag/bark/soil mixture and soil exceeding the cleanup goal will be excavated and separated into two piles: one of slag and soil, the other of bark. The slag/soil mixture will be taken to a hazardous waste landfill for disposal. The bark will be washed and either sold as hog fuel or disposed in a municipal landfill. The site will be subsequently filled with clean soil and regraded to improve surface runoff and reduce erosion.

Alternative 3 - On-Site Stabilization by Capping

The slag/bark/soil mixture including any residual soil will be consolidated over the southern half of the site and capped with asphalt. The slag/bark/soil mixture already in place in this area will not be removed. The excavated material will be graded and compacted over the area to be capped. Low permeability asphalt will be placed over the slag/bark/soil subgrade. Areas of the site adjacent to the pavement area will be graded to divert surface water runoff away from the pavement. A storm drain system will be installed downstream of the paved area to collect and divert stormwater to one discharge point at the south end of the site.

Alternative 4 - On-Site Stabilization by Excavation and Asphalt Capping

The slag and soil will be separated from the bark, consolidated in the northwest corner of the site, and capped with asphalt. The slag/bark/soil mixture, and soil exceeding the cleanup goal, lying outside the area to be capped will be excavated and separated into two piles: one of slag and soil, and the other of bark. The slag/bark/soil mixture presently in the area to be capped will not be removed. The separated bark will be washed and either sold as hog fuel or disposed of in a municipal landfill. Low permeability asphalt

will be placed over the slag and soil mound. The excavated areas will be subsequently filled with clean soil and regraded to divert surface water runoff from the pavement area. A storm drain system will be installed downstream of the cleaned area to collect and divert storm water to one discharge point at the south end of the site. Storm water drainage from the capped area will be drained to a separate discharge point at the north end of the property.

Alternative 5 - On-Site Stabilization by Excavation and Encapsulation with Asphalt

A portion of the northwest corner of the site will be used for a containment area for slag and soil. The slag/bark/soil mixture, and soil exceeding the cleanup goal, will be excavated from the entire site including the containment area, and separated into two piles: one of slag and soil; one of bark. The bark will be washed and either sold as hog fuel or disposed of in a municipal landfill. The containment area will be excavated as necessary and lined with a flexible membrane liner for the containment of the slag and soil. A low permeability asphalt cap will be placed over the containment area. The excavated areas will be subsequently filled with clean soil and regraded to divert surface water runoff from the pavement area. A storm drain system will be installed downstream of the cleaned area to collect and divert stormwater to one discharge point at the south end of the site. Storm water drainage from the capped area will be drained to a separate discharge point at the north end of the property.

Alternative 6 - On-Site Stabilization by Excavation and Capping with a Flexible Membrane Liner System (Variation of Alternative 4)

A portion of the northwest corner of the site will be used for a containment area for the slag/bark/soil mixture and soil exceeding the cleanup standards. These materials will be excavated from across the site and consolidated with the materials already in the containment area. The resulting mound will be covered with a cap that is functionally equivalent to the requirements of EPA Technical Guidance Document No. EPA/530-SW-89-047 (RCRA equivalent). The excavated areas will be subsequently filled with clean soil and regraded to reduce erosion and divert surface water runoff away from the containment area. A storm drain system will be installed around the cap which will collect storm water from the capped area and discharge to the south side of the site.

6.0 SELECTED CLEANUP ACTION

While a number of alternatives emerged from the detailed evaluation conducted in the FS, it is Ecology's opinion that Alternative 6 best meets the evaluation criteria provided in WAC 173-340-360 and provides the greatest protection for human health and the environment.

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

6.1 Detailed Description of the Selected Alternative

The proposed cleanup action consists of excavating the slag/bark/soil mixture and soil containing levels of lead and arsenic above the cleanup standard and consolidating the materials into a mound in the northwest portion of the site. The mound will then be capped with a double liner system consisting of flexible membrane liners designed and placed in accordance with EPA Guidance. The actual cap design will be determined as part of the remedial design. The cap system will serve to isolate contaminated materials from surface water and eliminate the potential for worker exposure to the contaminated material. The capped mound will be positioned to maintain a setback of at least 200 feet from the Hylebos Waterway, and to maintain the setbacks required by local building codes. A gas venting system will be installed to prevent the concentration of gases produced by the decomposition of soil organics and woodwaste contained under the cap. A storm water drain system will collect storm water from the capped surface and convey it to a discharge point on the south edge of the Site. Access to the containment system will be limited by fencing the perimeter of the capped area.

The remainder of the site from which materials have been removed will be backfilled with clean soil, and graded to divert surface water runoff away from the containment area using a series of swales and ditches. The prepared surface will be revegetated to minimize erosion. Site surface water will discharge to the Hylebos Waterway from a maximum of two points.

Groundwater will be monitored by wells located on the perimeter of the cap system. Surface water will be monitored at point(s) of discharge from the site. The specifics of compliance monitoring will be determined during the remedial design phase.

A Best Management Practices Plan will be prepared detailing the measures to be taken to ensure the effectiveness of the cleanup action selected. It will, at a minimum, address the inspection and maintenance of the cap and gas venting systems, maintenance of the stormwater collection system, and maintenance of erosion control measures.

Institutional controls, including restrictive covenants on the capped portion of the site, will prohibit the disruption of the containment system, the use of the area for non-industrial purposes, and require that the containment system be maintained in accordance with the Operation and Maintenance Plans prepared during the remedial design phase. Since industrial soil cleanup standards will be used, a restrictive covenant limiting site use to industrial activities will be placed on the property deed for the remainder of the Site.

7.0 JUSTIFICATIONS/DETERMINATIONS

Chapter 173-340 WAC states that all cleanup actions must meet the following four threshold requirements: cleanups shall protect human health and the environment; shall comply with cleanup standards; shall comply with applicable state and federal laws; and shall provide for compliance monitoring. In addition, chapter 173-340 WAC also gives preference to the use of permanent

cleanup solutions to the maximum extent practicable. In general, technologies which reuse, recycle, destroy, or detoxify hazardous substances are given preference. However, MTCA recognizes that treatment technologies leading to permanent solutions may not exist in all cases. A determination that a cleanup action satisfies the requirement of "permanent to the maximum extent practicable" is based upon consideration of the following factors:

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 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/bark/soil mixture by capping of the wood waste, contaminated soil, and slag deposits. The remainder of the site will meet cleanup standards. The metal concentrations in surface water runoff attributable to these soils/wastes will be minimized by preventing surface water contact with the contaminated slag/bark/soil.

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

7.2 Compliance with Cleanup Standards

The proposed 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 173-201 WAC (Chapter 173-201A WAC)

h. Submission of Plans and Reports for Construction of Wastewater Facilities, Chapter 173-240 WAC

i. Dangerous Waste Regulations, Chapter 173-303 WAC

j. Washington Clean Air Act, Chapter 70.94 RCW

k. Washington Industrial Safety and Health Act (WISHA)

l. Shoreline Management Act

FEDERAL LAWS AND REGULATIONS

m. Resource Conservation and Recovery Act (RCRA)

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

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

p. 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 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. Soil will be tested as part of site excavation work to ensure soil remaining uncontained on-site is in compliance with the cleanup standards. 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 for the materials containing elevated concentrations of metals (above cleanup standards). The earth work may impact the community from exposure to airborne dust. This 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.

The proposed cleanup action alternative includes isolation and containment of slag, bark, and soils in exceedance of the cleanup standards together with attendant engineering and institutional controls, grading and erosion control measures, and monitoring to ensure compliance with applicable laws and cleanup standards. The proposed alternative will prevent contact with precipitation and surface water runoff. Long-term reliability will be dependent on maintenance of the engineering controls and continued monitoring since residuals will be contained and 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 containment system to ensure its integrity and effectiveness. Institutional controls including restrictive covenants to prohibit use of the capped area and limit future land use of the remainder of the site to industrial uses only will ensure that the containment system and remedy as a whole will continue to function as intended 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.

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 result in a chemical or physical reduction of toxicity, mobility, or volume of the contamination present on the site. However, 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 primarily earthwork and conventional technologies and, therefore, should be readily implemented. Consolidation and capping with a flexible membrane liner system has been performed at another log sort yard in the Tacoma area.

7.9 Cost

Capital and annual operating and maintenance (O&M) costs were estimated for each alternative. The capital and O&M cost estimates are intended to fall within a range of accuracy of +50 to -30 percent of the actual cost of construction. Using a 10 percent interest rate and a 30-year projected life, the present worth cost for each alternative was calculated from the capital and O&M estimates. The cost for each alternative is presented in Table 3.

Table 3. Remedial Alternative Cost Comparison

ALTERNATIVE	COST(1)
Alternative 1. No Action	104,000
Alternative 2. Excavation and Removal	1,083,000
Alternative 3. On-Site Stabilization by Asphalt Capping	315,000
Alternative 4. On-Site Stabilization by Excavation and Asphalt Capping	220,000
Alternative 5. On-Site Stabilization by Excavation and Encapsulation	224,000
Alternative 6. On-Site Stabilization by Excavation and Capping with a Flexible Membrane Liner System	190,000

(1) 30-year present worth cost using 10 percent interest rate

7.10 Elimination of Other Alternatives

Alternative 1 was eliminated because it did not comply with all ARARs. Alternative 2 was eliminated because the cost is approximately ten times greater than similar alternatives (which involve disposal on-site) without a commensurate increase in protectiveness. Alternatives 3, 4, and 5 were not selected due to serious uncertainties associated with the feasibility of the bark separation and washing process. Alternative 5 was not feasible without

modification because groundwater data suggest that the bottom of the encapsulated area would be below the water level of the shallow aquifer.

8.0 STATE AND COMMUNITY ACCEPTANCE

State and community acceptance will be evaluated based on the comments received during the public comment period. The draft CAP will be modified by Ecology based on these comments to arrive at the 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

During the 30-day comment period on this draft Cleanup Action Plan and proposed Consent Decree, Ecology will hold a public meeting to discuss the proposed cleanup and respond to the public's comments and concerns regarding the proposed documents. Following the public comment period Ecology will issue a final Cleanup Action Plan and Responsiveness Summary which responds to the comments received. The proposed Consent Decree will be entered with the Court following receipt and consideration of public comments, and will become effective on the date it is entered with the Court. The schedule for implementation of the proposed alternative is defined in the Scope of Work of the accompanying Consent Decree.

REFERENCES

Applied Geotechnology. 1988. Surface Water Investigation Cascade Timber Yard 1, Applied Geotechnology, Bellevue, Washington

Applied Geotechnology. 1990. Remedial Investigation, Cascade Timber Yard No.1. Applied Geotechnology Inc., Bellevue, Washington

Applied Geotechnology. 1990. Feasibility Study, Cascade Timber Yard No. 1, Applied Geotechnology Inc., Bellevue, Washington

Norton, D., and A. Johnson. 1985. Completion Report on WQIS Project 1 for the Commencement Bay Nearshore/Tideflats Remedial Investigation: Assessment of Log Sort Yards as Metal Sources to Commencement Bay Waterways, November 1983 to June 1984. Washington State Department of Ecology Memorandum. February 27, 1985.

Tetra Tech. 1985. Commencement Bay Nearshore/Tideflats Remedial Investigation. Vols. 1 and 2. Final Report. EPA-910/9-85-134b. Prepared for the Washington State Dept. of Ecology and the U.S. Environmental Protection Agency. Tetra Tech, Inc., Bellevue, WA.

Tetra Tech. 1988. Commencement Bay Nearshore/Tideflats Feasibility Study. Public Review Draft. Prepared for the Washington Department of Ecology. Tetra Tech, Inc., Bellevue, WA.

U.S. Environmental Protection Agency. 1989. Commencement Bay Nearshore/Tideflats Record of Decision. 1989.

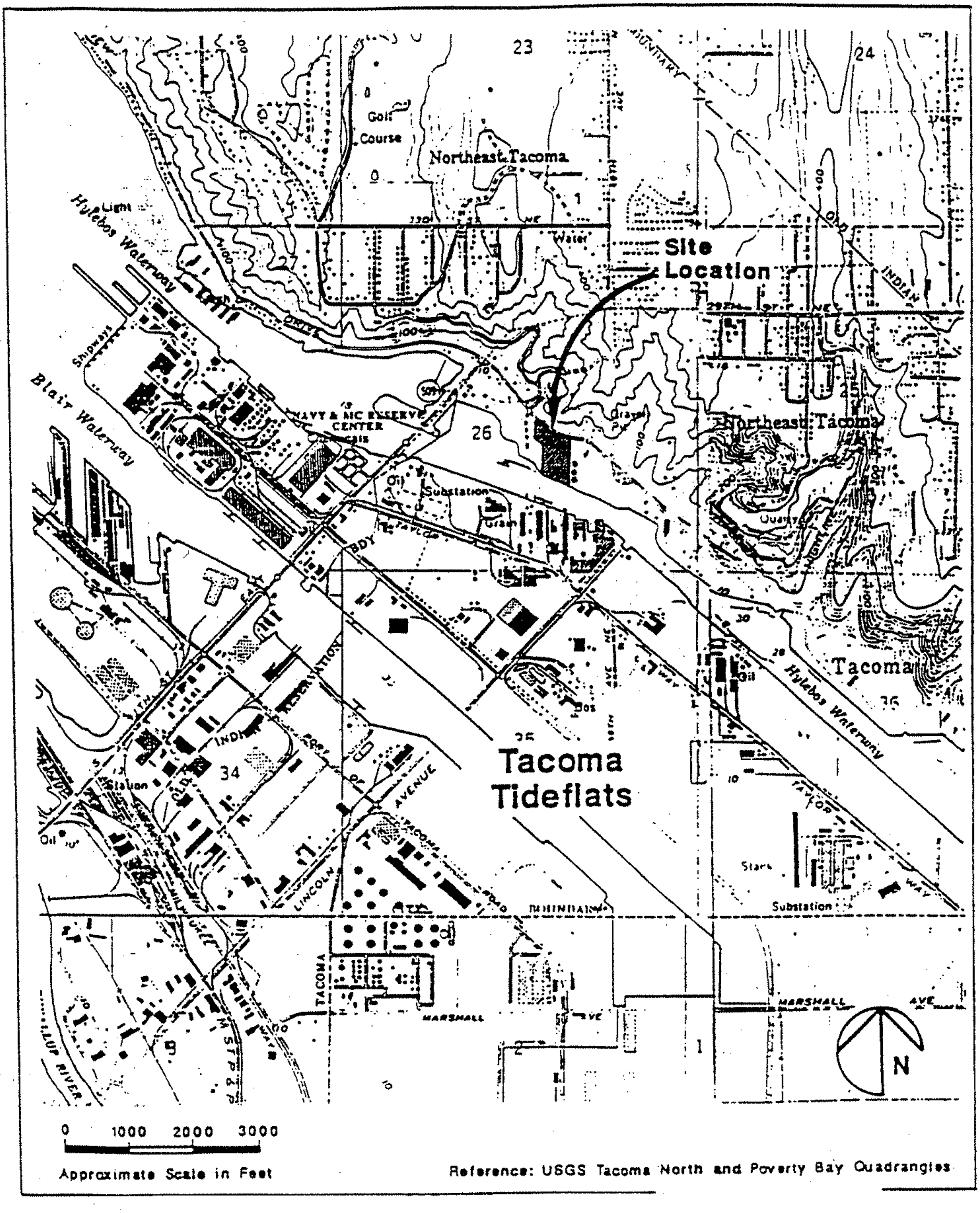
Site Location
Northeast Tacoma
Golf Course
Hylebos Waterway
Blair Waterway
Shipways
NAVY & MC RESERVE CENTER
Substation
Tacoma Tideflats
Tacoma
MARSHALL AVE
LINCOLN
AVENUE
TAYLOR WAY
PUYALLUP RIVER
N
0 1000 2000 3000
Approximate Scale in Feet
Reference: USGS Tacoma North and Poverty Bay Quadrangles

Figure 1

EXHIBIT C

SCOPE OF WORK

All work performed at and around the site pursuant to this Decree shall be accomplished in accordance with Chapter 173-340 WAC and design documents prepared by the Defendants shall be submitted for review and approval by Ecology. For the purposes of project oversight and review of plans and documents, the project is broken down into seven specific tasks. These tasks and their deliverable due dates are outlined below:

Task 1 - Predesign Deliverables

(a) Safety and Health Plan

All work, including sampling and other field data gathering activities, shall be performed under an appropriate safety and health plan for the protection of workers and the surrounding community in accordance with Ecology and WISHA requirements. The Defendants shall submit this plan to Ecology prior to commencing any action on the site. The Defendants shall be responsible for ensuring that the plan satisfies applicable laws and requirements.

(b) Preliminary Design

Submit a Preliminary Design of the containment system and stormwater collection system in accordance with the selected cleanup action outlined in the Cleanup Action Plan (Exhibit B) to Ecology for review and comment when the basic design parameters have been determined (approximately 10% design completion). This submittal shall include the following: design data and criteria; preliminary design assumptions; relevant design standards to be used in the final design; and, preliminary plans showing the proposed location of the surface water collection system features including monitoring points.

This Preliminary Design shall include descriptions and plans for how subsequent design work will proceed. At a minimum, this shall include: conceptual design; preliminary structure layouts; plan of action if contaminated soil volumes encountered differ from what has been estimated in the RI/FS; preliminary construction schedule and sequencing; performance expectations of operation and maintenance and compliance monitoring plans; and an outline of foreseeable problems which might be encountered.

Schedule: Within two weeks of the effective date of this Decree

Task 2 - Draft Remedial Design

Submit draft remedial design documents, which incorporate and address Ecology's comments on the Preliminary Design. Remedial design documents shall include design for any construction needed to implement Best Management Practices (BMPs) for the control of stormwater runoff.

The remedial design activities shall consist of preparation of the following: an engineering report; construction plans and specifications; a construction quality control/quality assurance plan; and, an operation and maintenance plan. Preparation of all remedial design documents shall be in accordance with WAC 173-340-400. The engineering report shall contain: all assumptions used as a basis for design; calculations, and other engineering support materials; an analysis of expected cap system permeability; a detailed map illustrating the proposed location of cleanup actions; results of pertinent sampling and analyses; requirements for construction documentation reports to be prepared within 2 months after completion of construction; and, a detailed schedule of the remedial actions to be implemented.

The operation and maintenance plan shall address, at a minimum, the following: maintenance of the containment system including maintenance of the gas venting system and stormwater collection system; and, maintenance of drainage system features from the entire site. The plan shall address operation and maintenance aspects of the remedial action as specified in WAC 173-340-400(4)(c). The operation and maintenance plan shall also include a compliance monitoring plan which describes all sampling activity required before, during and after remedial action.

The compliance monitoring plan, included in the operation and maintenance plan shall be designed to assess protectiveness of remedial actions during construction and operation and maintenance periods associated with the cleanup. In addition, monitoring shall be conducted to confirm that the cleanup actions have resulted in the attainment of cleanup standards. The compliance monitoring plan shall be prepared in accordance with WAC 173-340-410(3) and WAC 173-340-820.

The compliance monitoring plan shall specifically address installation and sampling of monitoring wells to be installed adjacent to the containment system in the shallow dredge fill aquifer. The monitoring plan shall identify proposed well locations based on site-specific logistical considerations. Proposed well construction details shall be contained in the plan.

The compliance monitoring plan shall address evaluation of groundwater quality in monitoring wells quarterly for three years. At the end of this period, Ecology will evaluate the results and determine the necessity and schedule of further monitoring.

Schedule: Within one month of receipt of Ecology's comments on the Task 1 deliverables

Task 3 - Final Remedial Design

Submit final remedial design documents, which respond to Ecology's comments on the Draft Remedial Design, for Ecology approval.

Schedule: Within three weeks of receipt of Ecology's comments on the Task 2 deliverables

Task 4 - Implement Remedial Design

Implement cleanup actions as outlined in the Ecology-approved Final Remedial Design. During construction, detailed records shall be kept of all aspects of the work performed, including construction techniques and materials used, items installed, and tests and measurements performed. The requirements of WAC 173-340-400(7) shall be met. Photographic documentation of significant construction phases shall be performed. An extra copy of the photos shall be submitted to Ecology along with the as-built plans.

Schedule: In accordance with the schedule contained in the Ecology-approved final remedial design documents

Task 5 - Construction Documentation/As-Built Plans

At the completion of construction the engineer responsible for the supervision of construction shall prepare as-built drawings and a report documenting all aspects of facility construction. The report shall also contain a certification from the engineer that the cleanup action has been constructed in substantial compliance with the plans and specifications and related documents.

Schedule: Within two months of completion of construction

Task 6 - Recording of Restrictive Covenant

A restrictive covenant functionally equivalent to the attached sample (Attachment D) shall be recorded in the Site property deed and a signed copy provided to Ecology.

Schedule: Within 30 calendar days of receipt of the Notice of Completion of Construction from Ecology

Task 7 - Post-Construction Compliance Monitoring

Implement Compliance Monitoring Plan activities related to post-construction groundwater and surface water monitoring.

Schedule: According to the schedule contained in the Compliance Monitoring Plan

EXHIBIT D

SAMPLE RESTRICTIVE COVENANT

Notice is hereby given that the Property, which is the subject of this Restrictive Covenant and is legally described in Exhibit A hereto (the "Property"), is the subject of remedial action under Chapter 70.105D RCW. The work done to clean up the Property (hereinafter the "Cleanup Action") is described in Washington State Department of Ecology Consent Decree, Pierce County No. _____, and in exhibits to the Decree. The Consent Decree is filed with the Superior Court of the State of Washington in and for Pierce County.

The restrictions and obligations described in this Restrictive Covenant are intended to run with the land and be binding on any and all persons who acquire an interest in the Property.

Potential purchasers and lessees are further put on notice that,

1. The Property may be used only for Industrial uses as defined in and allowed under the City of Tacoma's Zoning Regulations codified in the Tacoma City Code as of the date of this Restrictive Covenant, attached hereto as Exhibit B.

2. Activities on the Property that interfere with or reduce the effectiveness of the Cleanup Action or any operation, maintenance, or monitoring required by the Decree are prohibited.

3. Activities on the Property that may result in the release of a hazardous substance that was contained as a part of the Cleanup Action are also prohibited. [Applies only to capped portion of Property.]

The owner of the Property and owner's assigns and successors in interest reserve the right to record an instrument which provides that this Restrictive Covenant shall no longer limit the use of the Property or be of any further force or effect. However, such an instrument may be recorded only with the consent of the Department of Ecology or of a successor agency.

EXHIBIT E

SAMPLE NOTICE OF COMPLETION OF CONSTRUCTION

TO WHOM IT MAY CONCERN:

Notice is hereby given that the Washington Department of Ecology certifies that Tasks 1 through 5, as set forth in the Scope of Work for the Consent Decree between the Department of Ecology and McFarland Cascade Holdings, Inc., Cascade Pole Company and Asarco Incorporated have been satisfactorily completed. The property is located at 2502 Marine View Drive, Tacoma, Washington. The remedial actions have resulted in the removal of all contamination to specified cleanup levels throughout the Site and consolidation of the contamination in a double barrier containment system on the northwest corner of the Site. These remedial actions have resulted in the completion of the construction phase of the cleanup action. Long term operation and maintenance of the containment system, stormwater collection system, and monitoring are continuing obligations under the Consent Decree.

_____

Carol Fleskes
Department of Ecology
Program Manager
Toxics Cleanup Program

Request copy of decree from Pat Melonie

INSTITUTIONAL CONTROL(S) QUESTIONNAIRE: MTCA FORMAL DECISIONS

Site Name: CASCADE TIMBER #1 CD - Final cleanup FS 1204

Person providing this information: SCHREUE

[WAC 173-340-440(1)(a)]: Did the interim action or cleanup action result in residual concentrations of hazardous substances which exceed method A or B or industrial or commercial cleanup levels established under WAC 173-340-700 through 173-340-760?	(yes) or no
or	
[WAC 173-340-440(1)(b)]: Were conditional points of compliance established?	yes or (no)
or	
[WAC 173-340-440(1)(c)]: Was there a determination that institutional controls are required to assure the continued protection of human health and the environment or the integrity of the cleanup action?	(yes) or no

[WAC 173-340-440(4)(a)]: Was a deed restriction/restrictive covenant required on the property?	(yes) or no
or	
[WAC 173-340-440(4)(b)]: Was some other legal and/or administrative mechanisms required instead of a restrictive covenant/deed restriction? **If yes, describe.**	yes or no
The terms "restrictive covenant" and "deed restriction" mean the same thing.	

What kind(s) of institutional control did Ecology require?
See below examples. Be specific in your answer.
Maintenance of Containment Facility, Industrial Use only.

Examples of Institutional Controls

Access: Community protection measures that provide "notice"; educational programs, fences, signs, postings, public notices, health advisories.

Use Restrictions: Property may be used for industrial purposes only; well drilling is limited or denied; monitoring and operation and maintenance are required; area of containment may not be disturbed; community protection measures that tell property owners how to use (or not use) their property.

Engineering: All forms of containment (covers, caps, fills, asphalt paving, buildings or structures located atop contamination).