

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

In the Matter of Remedial Action by:

AGREED ORDER

Kaiser Aluminum and & Chemical Corporation Trentwood Site

No. 2692

TO: Kaiser Aluminum & Chemical Corporation
P O Box 15108
East 15000 Euclid Avenue
Spokane Valley, Washington 99215-5108

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I. INTRODUCTION

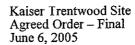
The mutual objective of the State of Washington, Department of Ecology (Ecology) and Kaiser Aluminum & Chemical Corporation (Kaiser) under this Agreed Order (Order) is to provide for remedial action at a facility where there has been a release or threatened release of hazardous substances. This Order requires Kaiser to complete a Remedial Investigation (RI) to evaluate the extent of contamination, and a Feasibility Study (FS) to evaluate potential cleanup actions at the Kaiser Aluminum & Chemical Corporation Trentwood Site (the Site) as specified in Section VII of this Order and in Exhibit B to the Order. Ecology believes the actions required by this Order are in the public interest.

II. JURISDICTION

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

III. PARTIES BOUND

This Agreed Order shall apply to and be binding upon the Parties to this Order, their successors and assigns. Subject to the next two sentences, the undersigned representative of each Party hereby certifies that he or she is fully authorized to enter into this Order and to execute and legally bind such Party to comply with the Order. Kaiser is in a Chapter 11 bankruptcy proceeding currently pending in the U.S. Bankruptcy Court for the District of Delaware as Case No. 02-10429 (JFK). While Kaiser believes that entry into this Agreed Order is within the ordinary course of Kaiser's business, and thus does not require Bankruptcy Court approval, it is possible that the Bankruptcy Court could disagree. Kaiser agrees to undertake all actions required by the terms and conditions of this Order. No change in ownership or corporate status shall alter Kaiser's responsibility under this Order. Kaiser shall provide a copy of this Order to all agents, contractors, and subcontractors retained to perform work required by this Order, and



shall ensure that all work undertaken by such agents, contractors, and subcontractors complies with this Order.

IV. DEFINITIONS

Unless otherwise specified herein, the definitions set forth in Chapter 70 105D RCW and Chapter 173-340 WAC shall control the meanings of the terms used in this Order.

- Site: The Site is referred to as the Kaiser Aluminum & Chemical Corporation

 Trentwood Site and is generally located at East 15000 Euclid Avenue in Spokane Valley,

 Washington. The Site is defined by the extent of contamination caused by the release of hazardous substances at the Site. The Site constitutes a Facility under RCW 70.105D.020(4).
- 2. <u>Parties</u>: Refers to the State of Washington, Department of Ecology and Kaiser Aluminum & Chemical Corporation.
 - 3. PLP: Refers to Kaiser Aluminum & Chemical Corporation.
- All exhibits are integral and enforceable parts of this Order. The terms "Agreed Order" or "Order" shall include all exhibits to the Order.

V. FINDINGS OF FACT

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

(1) Kaiser is the owner and operator of real property known as the Kaiser Trentwood facility located at East 15000 Euclid Avenue in Spokane Valley, Washington (the Site). The Site is located within the Spokane River Valley, approximately ten miles east of downtown Spokane at Township 25 North, Range 44E, Section 2 (southern ½), Section 10 (Northeast ¼), and Section 11 (northern ½). The Site is approximately 512 acres in size and is more particularly described in Exhibit A (Site Diagram).

- (2) In March 1942, the Defense Plant Corporation began construction of the Trentwood facility to produce aluminum needed for war-time aircraft production. The first shipment of ingots was made in December 1942 and finished aircraft aluminum sheet was first produced in March 1943. Aluminum Company of America (ALCOA) operated the Trentwood facility until the end of World War II.
- (3) Kaiser initially leased the Trentwood facility from the United States government in May 1946 and later purchased the property and plant. The Trentwood facility currently operates as an aluminum sheet and plate rolling mill.
- (4) In November 1980, Kaiser submitted a Resource Conservation and Recovery Act (RCRA) Permit Part A application (EPA ID number WAD009067281) to the United States Environmental Protection Agency (EPA) to obtain interim status and thereby retain the option of storing hazardous waste over 90 days.
- (5) Kaiser first submitted a RCRA closure plan to Ecology in 1986 to address the interim status of dangerous waste storage facilities. A revised Interim Status Closure Plan was submitted in 1991.
- (6) EPA Region X conducted a RCRA Facility Assessment (RFA) in December 1992. The purpose of the RFA was to identify Solid Waste Management Units (SWMUs) and to evaluate if identified SWMUs require additional investigation and/or corrective action under RCRA. The RFA report recommended additional review and/or monitoring at six SWMUs and three identified Areas of Concern. The RFA recommended no further action at 26 of 32 identified SWMUs.
- (7) In November 1994, EPA authorized the Washington Department of Ecology to implement corrective action at treatment, storage, and disposal (TSD) facilities within the state

and to use the Model Toxics Control Act (MTCA) as the corrective action authority under the State Dangerous Waste regulations (Chapter 173-303 WAC).

- (8) In December 1994, Kaiser was notified of Ecology's preliminary finding that Kaiser was a Potentially Liable Person (PLP) under MTCA. In January 1995, Kaiser responded to Ecology acknowledging PLP status without admitting liability and reserving future rights and defenses allowed by law. Ecology issued a final PLP determination in March 1995.
- (9) Since 1980, Kaiser has had several documented releases related to historical operations at the facility. A number of investigations and independent remedial actions have been conducted at the Site to address ground water and soil contamination as a result of the releases.
- (10) Ground water monitoring at the Site began in 1979 to assess the impact of three on-Site landfills. Over one hundred additional wells have been installed since then to evaluate the nature and extent of contamination at the Site and a groundwater monitoring plan was implemented in the early 1990s. Additional systematic iterations of groundwater investigation have been implemented and the monitoring plans updated accordingly. The results of the monitoring show the presence of petroleum product with PCBs floating on ground water. Ground water sample analyses completed between December 1989 and December 2002 show the following constituents exceeding state and federal standards in groundwater at some locations at the Site: Total Petroleum Hydrocarbons (TPH), Polychlorinated Biphenyls (PCBs), Iron, Manganese, Antimony, and Arsenic. These results are summarized in the "Draft Groundwater Remedial Investigation/Feasibility Study" Report that was first submitted to Ecology in 1996, and revised in 2001 and 2003 following reviews by Ecology.

- (11) Since 1993, Kaiser has been implementing independent remedial measures to contain and actively remediate groundwater in the Oil House and the Wastewater Areas of the facility to: (a) prevent movement of petroleum free-product floating on ground water that contains PCBs and of the dissolved hydrocarbons in groundwater; (b) recover free product; and (c) enhance biodegradation of dissolved and residual hydrocarbons
- (12) The Spokane Regional Health District completed a MTCA site hazard assessment in 2001; the Site was ranked a "2".
- (13) PCB contamination in ground water and down-gradient of the Casting areas were further investigated in 2003 and 2004. The results of these studies, showing the presence of PCBs in ground water in the Casting and down-gradient areas, are summarized in the following reports:

Hart Crowser, 2004 (February 25), Kaiser Hot Line Data Report, Kaiser Trentwood Facility, Spokane, Washington

Hart Crowser, 2004 (April 12) Kaiser Hot Line Data Report, Kaiser Trentwood Facility, Spokane, Washington

Hart Crowser, 2005(January 4), Kaiser DC-4 Furnace Data Report, Kaiser Trentwood Facility, Spokane, Washington.

(14) Kaiser has also conducted numerous soil investigations and independent soil removal actions to address releases related to historical operations at the facility. Reports of such removal actions had been submitted to Ecology in the form of independent reports. The following reports document releases to soils, removal actions, and residual concentrations of TPH, PCBs, or chromium in Site soils:

Hart Crowser, 1990 (March 22), Interim Report Soil and Ground Water Quality Assessment Kaiser-Trentwood Works Spokane, Washington

Hart Crowser, 1991 (January 8), Oil House Tank Removal Kaiser-Trentwood Works Spokane, Washington.

Hart Crowser, 1991 (May 1), Site hazard assessment of Kensol product spill (letter).

Hart Crowser, 1991(June), Transfer Line Removal and Cleanup, KACC-Trentwood Facility Spokane, Washington

Hart Crowser, 1991 (June 26), Interim PCB Cleanup Report

Hart Crowser, 1991 (September 18), Observation and Documentation of Hoffman Flow-Through Process Tank Closure and Subsurface Investigation Kaiser Trentwood Facility Spokane, Washington

Hart Crowser, 1991 (October 15), Removal of 8 Underground Storage Tanks (USTs) Kaiser-Trentwood Facility Spokane, Washington

Hart Crowser, 1992 (January 23), Monitoring Well Installation and Soil and Groundwater Sampling: October through December 1991.

Hart Crowser, 1992 (February 14), Sampling Results from Beneath the Field-Constructed Concrete Tanks (memorandum).

Hart Crowser, 1992 (February 17), Information regarding a historical release of polychlorinated biphenyls (PCBs) at Kaiser's Trentwood facility (letter).

Hart Crowser, 1992 (February 17), Soil Boring Assessment at Oil House Drum Storage Area Trentwood Works, Spokane, Washington

Hart Crowser, 1992 (February 18), Engineering Report – Hoffman Tank Cover KACC Trentwood Works

Hart Crowser, 1992 (March 10), Continuous Can Process Line (CCPL) Investigation Kaiser-Trentwood Works

Hart Crowser, 1992 (July 28), Trench Sampling Report Trentwood Works Spokane, Washington

Science Applications International Corporation, 1993 (July), RCRA Facility Assessment PR/VSI Report Kaiser Aluminum Trentwood Spokane, Washington

Hart Crowser, 1994 (February 16), Chemical Sampling Data Results for Oil House Extraction Well Project (memorandum)

Hart Crowser, 1997 (February 25), Subsurface Investigation, Rail Car Unloading (RCU) Area, Kaiser Trentwood Works, Spokane, Washington.

Hart Crowser, 1997 (June 25), Subsurface Investigation, Oil Reclamation Building (ORB), Kaiser Trentwood Works, Spokane, Washington.

Hart Crowser, 1997 (July 7), Interim Remedial Measure (IRM) Plan, Oil Reclamation Building, Kaiser Trentwood Works, Spokane, Washington

Hart Crowser, 1997 (July 7), Interim Remedial Measure (IRM) Plan, Former Rail Car Unloading Area, Kaiser Trentwood Works, Spokane, Washington.

Hart Crowser, 1998 (March 24), Kaiser Trentwood Monitoring Well Installation Report, Wells MW-13, MW-14, MW-15, and MW-16, Kaiser Trentwood Works, Spokane, Washington.

Hart Crowser, 1998 (May 19), Soil Chemical Testing Results Hydrogen Sulfide Scrubber Building Excavation, Kaiser Trentwood Works, Spokane, Washington

Hart Crowser, 2003 (July), Draft Groundwater Remedial Investigation/Feasibility Study, Kaiser Trentwood Facility, Spokane, Washington

Hart Crowser, 2004 (February 25), Kaiser Hot Line Data Report, Kaiser Trentwood Facility, Spokane, Washington

Hart Crowser, 2004 (April 12), Kaiser Hot Line Data Report, Kaiser Trentwood Facility, Spokane, Washington

Hart Crowser, 2005 (January 4, 2005), Kaiser DC-4 Furnace Data Report, Kaiser Trentwood Facility, Spokane, Washington

Hart Crowser, 2005 (January) Kaiser Cold Mill Data Report, Kaiser Trentwood Facility, Spokane, Washington.

(15) In 2002, Ecology management of the Site cleanup was transferred to the Toxics Cleanup Program

VI. ECOLOGY DETERMINATIONS

Ecology makes the following determinations, without any express or implied admissions of such determination by Kaiser:

- 1. Kaiser is the "owner or operator" as defined in RCW 70.105D.020(12), of a "facility" as defined in RCW 70.105D.020(4).
- 2. Based upon all factors known to Ecology, a "release" or "threatened release" of "hazardous substance(s)" as defined in RCW 70.105D.020(20) and RCW 70.105D.020(7), respectively, has occurred at the Site.
- Based upon credible evidence, Ecology issued a potentially liable person status letter to Kaiser dated December 9, 1994, pursuant to RCW 70.105D.040, 020(16) and WAC 173-340-500. In January 1995, Kaiser responded to Ecology acknowledging PLP status without admitting liability and reserving future rights and defenses allowed by law. After providing for notice and opportunity for comment, reviewing any comments submitted, and concluding that

credible evidence supported a finding of potential liability, Ecology issued a determination that Kaiser is a potentially liable person (PLP) under RCW 70 105D 040 and notified Kaiser of this determination by letter dated March 13, 1995.

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

VII. WORK TO BE PERFORMED

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

- 1. Kaiser shall furnish all personnel, materials and services necessary for, or incidental to, the planning, initiation, completion, and reporting upon the Scope of Work and Schedule, attached as Exhibit B. Exhibit B is incorporated by reference and is an integral and enforceable part of the Order. The work to be performed is the completion of the Remedial Investigation (RI) and the Feasibility Study (FS) for ground water and for soils at the Site.
- The Scope of Work and Schedule (Exhibit B) and each element thereof are designed and shall be implemented and completed in accordance with the Model Toxics Controls Act (Chapter 70.105D RCW) and its implementing regulation (Chapter 173-340 WAC) as amended, and all applicable federal, state, and local laws and regulations.
- Progress reports shall be completed on a quarterly basis. The reports shall address progress made during the period, work in progress, problem areas, key activities, deliverables submitted, field work and data generated, subcontracting, analytical services performed, and key staff changes
- As provided in the agreed upon Scope of Work and Schedule, attached as Exhibit B, Kaiser shall commence work and thereafter complete all tasks in Exhibit B in the time frames

and framework indicated unless the Department grants an extension in accordance with Section VIII K, or unless provided otherwise in this Order

5. If, at any time after the first exchange of comments on drafts, Ecology determines that Kaiser has made insufficient progress in the preparation of any of the deliverables required by this section, Ecology may complete and issue the final deliverable.

VIII. TERMS AND CONDITIONS OF ORDER

A. Public Notices

This Order has been the subject of public notice and comment pursuant to WAC 173-340-600.

B. Remedial Action Costs

Kaiser shall pay to Ecology costs incurred by Ecology pursuant to this Order and consistent with WAC 173-340-550(2). Kaiser agrees to pay \$62,853 in costs incurred as of June 3, 2005 as well as future costs as provided herein. Future costs shall include work performed by Ecology or its contractors for, or on, the Site under Chapter 70.105D RCW, concerning this Order, including remedial actions and Order preparation, negotiation, oversight, and administration of this Order Except as provided herein, Kaiser shall 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, a general description statement of work performed, and the amount of time spent by involved staff members on the project. Itemized statements shall be prepared quarterly. Pursuant to WAC 173-340-550(4), failure to pay Ecology's costs, other than disputed costs as provided herein, within ninety (90) days of receipt of the itemized statement of costs will result in interest charges at the rate of twelve percent (12%) per annum, compounded monthly, or as such interest rate may be modified in Ecology regulations. Such modified interest rate shall apply to costs accruing after the effective date of the regulation that modifies the rate. Kaiser shall pay any disputed costs that remain after completion of the dispute resolution process set forth below within ninety (90) days of a final determination by Ecology If Ecology affirms the costs, Kaiser shall pay interest for the costs affirmed from the date of the expiration of the original 90 day period following receipt of the itemized statement.

C. Implementation of Remedial Action

Except where necessary to abate an emergency situation, Kaiser shall not perform any additional, active remedial actions at the Site outside those remedial actions required by this Order, or other Ecology orders, unless Ecology concurs, in writing, with such remedial actions For purposes of this paragraph, "active remedial action" shall mean on-the-ground investigation (including sampling), remedy construction, operation of remedial systems, or similar activities Kaiser shall give Ecology written *notice* of remedial actions necessary to abate an emergency situation before, or, as soon as possible after, taking the action.

C. Designated Project Coordinators

The project coordinator for Ecology is:

Teresita Bala
Department of Ecology
Eastern Regional Office
4601 N. Monroe
Spokane, WA 99205-1295

The project coordinator for Kaiser is:

Patrick J. Blau Kaiser Aluminum & Chemical Corporation P.O. Box 15108 Spokane, WA 99215-5108

The project coordinators shall be responsible for overseeing the implementation of this Order. The Ecology project coordinator will be Ecology's designated representative for the Site. To the maximum extent possible, communications between Ecology and Kaiser, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order shall be directed through the project coordinator(s).

Ecology and Kaiser may change their respective project coordinator, but must provide ten (10) days advance written notification of the change to the other party.

E. Performance

All work performed pursuant to this Order shall be under the direction and supervision, as necessary, of a licensed professional engineer, or licensed hydrogeologist, or equivalent, with experience and expertise in hazardous waste site investigation and cleanup. Kaiser shall notify Ecology in writing of 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 Order, in advance of their involvement at the Site

Any construction work performed pursuant to the Order shall be under the supervision of a professional engineer or a qualified technician under the direct supervision of a professional engineer. The professional engineer must be registered in the State of Washington, except as provided in RCW 18 43 130.

F. Access

Ecology or any Ecology authorized representative shall have the authority to enter and freely move about all property at the Site that Kaiser either owns, controls, or has access rights to, with escorts, at all reasonable times for the purposes of, *inter alia*: inspecting non-privileged records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing Kaiser's progress in carrying out the terms of this Order; conducting such tests or collecting such samples as Ecology may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by Kaiser. Ecology or any Ecology authorized representative shall give reasonable notice before entering any Site property owned or controlled by Kaiser unless an emergency prevents such notice. All persons who access the Site pursuant to this paragraph shall comply with the Site's approved Health and Safety Plan, if any Ecology employees and their representative shall not be required to sign any release or waiver as a condition of site property access.

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G. Sampling, Data Reporting, and Availability

With respect to the implementation of this Order, Kaiser shall make all sampling results, 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 VII of this Order. These data shall be submitted in a mutually agreeable electronic format. The sampling referenced in this paragraph concerns data collected for the implementation of the RI/FS, and does not include sampling associated with the NPDES permit, ongoing operations, waste management, or other matters.

In accordance with Chapter 173-340-840(5), Kaiser shall submit sampling data according to Ecology's Environmental Information Data Submittal Guide. These submittals shall be provided to Ecology on a semi-annual basis

If requested by Ecology, Kaiser shall allow split or duplicate samples to be taken by Ecology and/or its authorized representative of any samples collected by Kaiser pursuant to implementation of this Order Unless Ecology agrees in writing, Kaiser shall notify Ecology seven (7) days in advance of any sample collection or work activity pursuant to the implementation of this Order at the Site. If the situation warrants it, Ecology will seek to allow less advance notice and will notify Kaiser in writing of its approval Ecology shall, upon request, allow split or duplicate samples of any samples collected by Ecology pursuant to the implementation of this Order to be taken by Kaiser or its authorized representative provided it does not interfere with Ecology's sampling.

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

H. Public Participation

A public participation plan is required for this Site. Ecology has developed a public participation plan for the Site and is attached to this Order as Exhibit C.

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

- If agreed to by Ecology, develop an appropriate mailing list, prepare drafts of public notices and fact sheets at important stages of the remedial action, such as the submission of work plans, remedial investigation/feasibility study reports, cleanup action plans, and engineering design reports. As appropriate, and with input from Kaiser, Ecology will edit, finalize, and distribute such fact sheets and prepare and distribute public notices of Ecology's presentations and meetings;
- With regard to investigation and cleanup of contamination at the Site covered by the Order, notify Ecology's project manager prior to any of the following: issuance of all press releases; distribution of fact sheets; performance of other outreach activities and meetings with the interested public and local governments. For all such press releases, fact sheets, meetings, and other outreach efforts by Kaiser that do not receive prior approval, Kaiser shall clearly indicate to its audience that the press release, fact sheet, meeting or other outreach effort was not sponsored or endorsed by Ecology
- When requested by Ecology, participate in public presentations on the progress of the remedial action at the Site. Participation may be through attendance at public meetings to assist in answering questions, or as a presenter;
- 4. When requested by Ecology, arrange and/or continue information repositories to be located at the following locations:
 - (a) Spokane Valley Library 12004 East Main Spokane Valley, WA
 - (b) Argonne County Library 4322 North Argonne Road Spokane, WA 99206
 - (c) Spokane City Library 906 W. Main Avenue Spokane, WA 99201
 - (d) Washington Department of Ecology Eastern Regional Office

4601 N. Monroe Spokane, WA 99205-1295

At a minimum, copies of all public notices, fact sheets, and documents associated with the public comment period shall be promptly placed in these repositories.

I. Retention of Records

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

J. Resolution of Disputes

- 1. In the event a dispute arises as to an approval, disapproval, proposed change, or other decision or action by Ecology's project coordinator, the Parties shall utilize the dispute resolution procedure set forth below.
- (a) Upon receipt of the Ecology project coordinator's decision, Kaiser has fourteen (14) days within which to notify Ecology's project coordinator of its objection to the decision or action.
- (b) 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) days, Ecology's project coordinator shall issue a written decision.
- (c) Kaiser may then request Ecology management review of the decision.

 This request shall be submitted in writing to the Eastern Region Toxics Cleanup Section

 Manager within seven (7) days of receipt of Ecology's project coordinator's decision.

- (d) The Section Manager shall conduct a review of the dispute and shall endeavor to issue a written decision regarding the dispute within thirty (30) days of Kaiser's request for review
- (e) Kaiser may then request additional Ecology management review of the decision. This request shall be submitted in writing to the Toxics Cleanup Program Manager with seven (7) days of receipt of the Section Manager's decision.
- (f) The Program Manager shall conduct a review of the dispute and shall issue a written decision regarding the dispute within thirty (30) days of Kaiser's request for review. The Program Manager's decision shall be Ecology's final decision on the disputed matter.
- 2. The Parties agree to only utilize the dispute resolution process in good faith and agree to expedite, to the extent possible, the dispute resolution process whenever it is used.
- 3. Implementation of these dispute resolution procedures shall not provide a basis for delay of any activities required in this Order, except as provided herein, unless Ecology agrees in writing to a schedule extension.

K. Extension of Schedule

- 1. An extension of schedule shall be granted only when a request for an extension is submitted in a timely fashion, generally at least thirty (30) days prior to expiration of the deadline for which the extension is requested, and good cause exists for granting the extension. All extensions shall be requested in writing. The request shall specify the reason(s) the extension is needed. The request shall specify:
 - (a) The deadline that is sought to be extended;
 - (b) The length of the extension sought;
 - (c) The reason(s) for the extension; and
 - (d) Any related deadline or schedule that would be affected if the extension were granted.

- 2. The burden shall be on Kaiser 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:
 - (a) Circumstances beyond the reasonable control and despite the due diligence of Kaiser 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 Kaiser; or
 - (b) Acts of God, including fire, flood, blizzard, extreme temperatures, storm, earthquake, terrorist attack, or other unavoidable casualty; or
 - (c) Endangerment as described in Section VIII M of this Order
 - (d) Other circumstances agreed to by Ecology.

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

- Ecology shall act upon any written request for extension in a timely fashion Ecology shall give Kaiser written notification in a timely fashion of any extensions granted pursuant to the Order. A requested extension shall not be effective until approved by Ecology Unless the extension is a substantial change, it shall not be necessary to amend this Order pursuant to Section VIII L when a schedule extension is granted.
- 4. An extension shall only be granted for such period of time as Ecology determines is reasonable under the circumstances. Ecology may grant schedule extensions exceeding ninety (90) days only as a result of:
 - (a) Delays in the issuance of a necessary permit which was applied for in a timely manner;
 - (b) Other circumstances deemed exceptional or extraordinary, or agreed to, by Ecology; or

(c) Endangerment as described in Section VIII M of this Order

L. Amendment of Order

The project coordinators may verbally agree to minor changes to the work to be performed without formally amending this Order. Minor changes will be documented in writing by Ecology within seven (7) days of verbal agreement. Minor changes include but are not limited to the collection of additional samples, laboratory analysis, or installation of additional wells/borings consistent with the Scope of Work.

Except as provided in Section VIII N of this Order, substantial changes to the work to be performed shall require formal amendment of this Order. This Order may only be formally amended by the written consent of both Ecology and Kaiser. Kaiser shall submit a written request for amendment to Ecology for approval. Ecology shall indicate its approval or disapproval in writing and in a timely manner after the written request for amendment is received. If the amendment to the Order represents a substantial change, Ecology will provide additional public notice and opportunity to comment. If Ecology does not agree to a proposed amendment, the disagreement may be addressed through the dispute resolution procedures described in Section VIII. J of this Order.

M. Endangerment

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

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

determination or cessation of such activities. If Ecology disagrees with Kaiser's cessation of activities, it may direct Kaiser to resume such activities.

If Ecology concurs with or orders a work stoppage pursuant to this section, Kaiser's obligations with respect to the ceased activities shall be suspended until Ecology determines the danger is abated, and the time for performance of such activities, as well as the time for any other work dependent upon such activities, shall be extended for such period of time as Ecology determines is reasonable under the circumstances. In such a case, Kaiser shall not be subject to any enforcement action for stopping or delaying implementation of this Order

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

N. Reservation of Rights/No Settlement

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

Ecology nevertheless reserves its rights under Chapter 70.105D RCW, including the right to require additional or different remedial actions at the Site should it deem such actions necessary to protect human health and the environment, and to issue orders requiring such remedial actions. Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances at the Site. Kaiser reserves all rights and defenses with respect to any additional actions that Ecology may seek to require at the Site.

O. Transfer of Interest in Property

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

Prior to Kaiser's transfer of any such interest in all or any portion of the Site and during the effective period of this Order, Kaiser shall serve a copy of this Order upon any prospective purchaser, lessee, transferee, assignee, or other successor in said interest; and, at least thirty (30) days prior to any transfer, Kaiser shall notify Ecology of said transfer. Upon transfer of any interest, to the extent permissible under the Bankruptcy Code, Kaiser shall restrict uses and activities to those consistent with this Order and notify all transferees of the restrictions on the use of the property.

P. Compliance with Applicable Laws

- 1 All actions carried out by Kaiser pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements, including requirements to obtain necessary permits, except as provided in RCW 70.105D.090.
- 2. Pursuant to RCW 70.105D.090(1), the substantive requirements of Chapters 70.94, 70.95, 70.105, 77.55, 90.48, and 90.58 RCW and of any laws requiring or authorizing local government permits or approvals for the remedial action under this Order and that are known to be applicable at the time this Order becomes effective are binding and enforceable requirements of this Order.

Kaiser has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70 105D 090(1) would otherwise be required for the remedial action under this Order. In the event either Ecology or Kaiser determines that additional permits or approvals addressed in RCW 70 105D 090(1) would otherwise be required for the remedial action under this Order, it shall promptly notify the other party of its determination. Ecology shall determine whether Ecology or Kaiser shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, Kaiser shall promptly consult with the appropriate state and/or local agencies and provide Ecology with written documentation from those agencies of the

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

Ecology shall ensure that notice and opportunity for comment is provided to the public and appropriate agencies prior to establishing the substantive requirements under this section.

Pursuant to RCW 70.105D.090(2) in the event Ecology determines that the exemption from complying with the procedural requirements of the laws referenced in RCW 70.105D.090(1) would result in the loss of approval from a federal agency which is necessary for the state to administer any federal law, the exemption shall not apply and Kaiser shall comply with both the procedural and substantive requirements of the laws referenced in RCW 70.105D.090(1), including any requirements to obtain permits. Such a determination by Ecology shall not affect the applicability of the exemption to any of the other statutes referenced in RCW 70.105D.090(1).

Q. Indemnification

Kaiser 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 negligent acts or omissions, or acts or omissions subject to strict liability, of Kaiser, its officers, employees, agents, or contractors in entering into and implementing this Order. However, Kaiser 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 Order.

IX. SATISFACTION OF ORDER

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

X. ENFORCEMENT

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

- 1. The Attorney General may bring an action to enforce this Order in a state or federal court. Kaiser reserves all rights in such an action.
- 2. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for remedial actions and orders related to the Site. Kaiser reserves all rights in such an action.
- 3. In the event Kaiser refuses, without sufficient cause, to comply with any term of this Order, Kaiser will be liable for:
- (a) Up to three (3) times the amount of any costs incurred by the State of Washington as a result of its refusal to comply; and
- (b) Civil penalties of up to \$25,000 per day for each day it refuses to comply.

 Kaiser reserves all rights in such an action

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This Order is not appealable to the Washington Pollution Control Hearings Board 4 Except as provided herein, this Order may be reviewed only as provided under RCW 70.105D.060.

Effective date of this Order: Ungust 16, 2005

KAISER ALUMINUM & CHEMICAL **CORPORATION**

Peter S. Bunin

Vice President & General Manager

Flat Rolled Products

Kaiser Aluminum & Chemical Corporation

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STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

Flora J. Goldstein Section Manager

Toxics Cleanup Program Eastern Regional Office

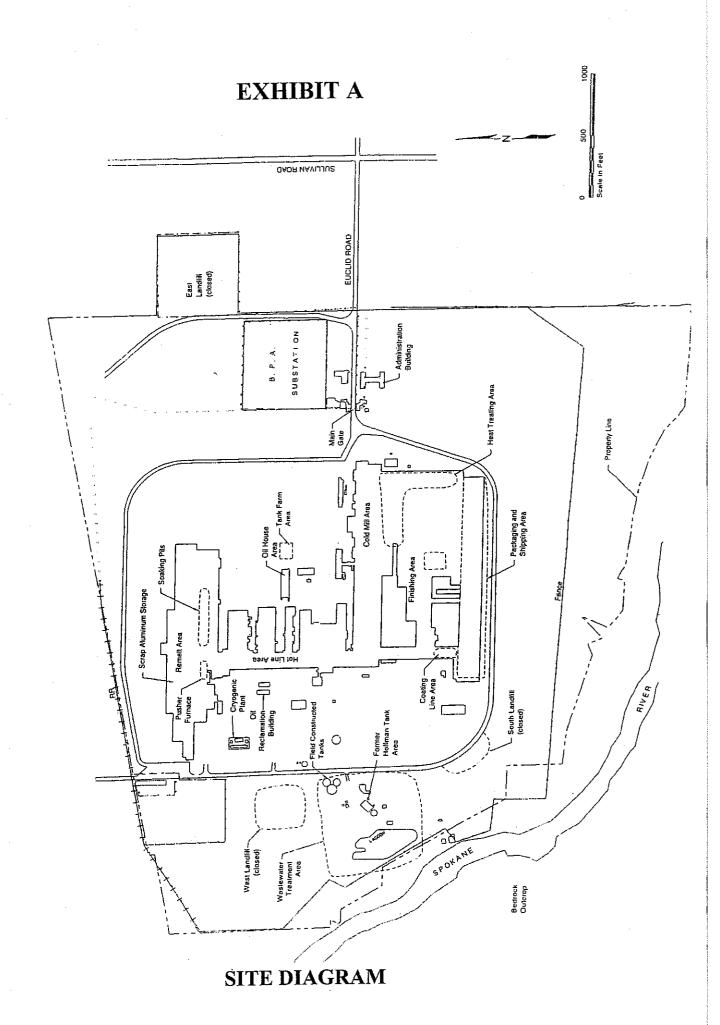


EXHIBIT B

KAISER TRENTWOOD SITE SCOPE OF WORK AND SCHEDULE REMEDIAL INVESTIGATION/FEASIBILITY STUDY(RI/FS)

This Scope of Work is to be implemented by Kaiser Aluminum and Chemical Corporation or their consultant through the development of planning documents and/or reports for completion of a site-wide Remedial Investigation/Feasibility Study (RI/FS) at the Kaiser Trentwood Site

The purpose of this RI/FS is to collect, develop, and evaluate sufficient information at the Kaiser Trentwood Site to enable the selection of a cleanup action under WAC 173-340-360.

WAC 173-340-350 lists a description of the contents of the required work. This RI/FS must conform with the MTCA regulations, modified as appropriate to the site.

Kaiser Trentwood shall furnish all personnel, materials, and services necessary for, or incidental to, executing the Scope of Work for the Site.

BACKGROUND

GROUND WATER

Kaiser first submitted a draft Groundwater Remedial Investigation/Feasibility Study Report in September 1996. Revised versions were submitted in July 2001 and subsequently in July 2003. Written comments on the July 2003 draft Groundwater Remedial Investigation/Feasibility Study Report were sent to Kaiser in October 2004. Included in the comment letter was a request to address the results of the Hot Line and Remelt Areas (see Figure 1 for identified Site areas) PCB contamination study conducted by Kaiser in 2003 to 2004 in the Ground Water RI/FS.

In August 2004, Kaiser informed Ecology that additional wells would be installed at the Site to further define potential point sources of contamination to groundwater and to support Kaiser plans for facility upgrades in the Remelt Area and the Cold Mill Area.

The results of the 2003 to 2005 PCB investigations in the hot line and remelt or casting areas confirm the presence of a PCB plume, the extent of which has not been completely determined. Additional groundwater studies are therefore needed to determine the extent of this PCB contamination. Kaiser has also installed monitoring wells in the Cold Mill

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area; the extent of contamination in this area needs to be determined through additional investigations.

Recent site investigations showed releases from transfer lines connecting the Oil Reclamation Building to the Wastewater Treatment System area. A release from an underground storage tank for waste oil in the truck shop area had been discovered in April 2005. Addition soil and groundwater investigations are also warranted for these areas.

SOILS

Kaiser had conducted several removal actions on releases and spills that occurred at the Site. Removal actions were reported to Ecology in the form of independent reports. Based on Ecology's review of the independent and spill reports that are in the agency files, the following areas that would require additional investigations to complete the RI/FS are the following:

- Oil House Area
- Wastewater Area
- Remelt(Casting)/Hot Line Area
- Oil Reclamation Building
- G3 Transfer Lines Area/Other Transfer Lines Areas
- Cold Mill/Finishing Area
- Truck Shop Area

Additional soil investigations in these areas may be necessary to assess the following:

- Horizontal and vertical extent of soil contamination;
- Potential sources to groundwater contamination;
- Amount/volume of contamination in the vadose zone;
- Extent of smear zones; and,
- Presence or absence of soil gas as a result of petroleum fuel releases on site.

TASK I. PHASE I PROJECT PLANNING DOCUMENTS

A. Phase I RI Work Plan

The Phase I RI is primarily intended to complete groundwater investigations at the Site. Soil data collected during Phase I investigations will supplement existing soil data.

The Phase I RI Work Plan shall, at a minimum, include the following:

1 Introduction

The introduction includes a general explanation of the goals, and expected results of the investigations

Data Summary, Evaluation, and Completeness Evaluation

a. Summary of the July 2003 Draft Groundwater RI/FS.

b Summary of Supplemental Investigation and Remedial Activities Since 2003

c. Proposed Investigations to Fill Data Gaps At a minimum, Phase I investigations shall include the components described below in each specified area at the Site (please see Figure 1) Installation of monitoring wells shall be in compliance with Chapter 173-160 WAC. Groundwater sampling and analysis from all new monitoring wells and other pertinent monitoring wells for each area must be conducted for at least four quarters (inclusive of previous sampling periods unless additional sampling parameters are required) Groundwater and soil samples shall be analyzed for the following constituents (unless noted otherwise in the final approved Work Plan): Total Petroleum Hydrocarbons (TPH), Polychlorinated Biphenyls (PCBs), Volatile Organic Carbons (VOCs), Semivolatile Organic Carbons (sVOCs), and total metals. Additional analyses germane to specific areas or operations at the Site may be identified during the course of the Phase I investigations.

i. Cold Mill Area

- Excavation of accessible historical transfer lines leading from the Cold Mill to the Oil House using a backhoe to observe soil conditions adjacent to the lines to identify release points. Collection of soil samples, if necessary.
- Installation of at least one monitoring well at an identified release point(shown as CM-MW-9S at its tentative location in Figure 1). Sufficient soil samples must be taken during well installation from the surface to the water table in appropriate intervals to provide additional information on the nature, extent, and limits of TPH, PCBs, VOCs, sVOCs, and total metals in soils.
- Groundwater sampling and analysis of all cold mill wells, including CM-MW-9S, for at least four quarters
- Installation of additional soil borings/monitoring wells, if necessary, based on initial soil and ground water results from CM-MW-9S.
- Surface soil sampling in former transformer yard area. Additional sampling or borings may be necessary, based on initial sampling results.

ii Remelt (Casting)/Hot Line Areas

- Installation of at least one monitoring well upgradient of RM-MW-9S
 to determine the upgradient extent of the groundwater PCB plume.
 Additional monitoring wells may be proposed based on initial soil and
 groundwater results from RM-MW-9S.
- Installation of deep monitoring wells MW-RM-7D, RM-MW-6D in the Remelt Area to provide soil and groundwater data in the vicinity and downgradient of a reported former wash pad.
- Installation of HL-MW-23DD (about 210 feet below ground surface)
 to determine the vertical extent of the PCB plume in the vicinity
- Installation of three shallow wells, HL-MW-24S through HL-MW-26S, within the West Landfill area. Additional wells may be installed based on soil and groundwater results from the installation of these three wells, if necessary.
- Installation of MW-27S, between MW-17S and MW-25S to determine downgradient extent of PCB contamination. Additional wells may be installed based on soil and groundwater results from MW-27S.
- Collecting soil samples during well installation from the surface to the water table in appropriate intervals to provide additional information on the nature, extent, and limits of TPH, PCBs, VOCs, sVOCs, and total metals in soils.
- Sampling and analysis of groundwater from all Hot Line Area/Remelt Area wells for at least four quarters.
- Collection of additional PCB wipes or core samples from the induction furnace basement, if necessary.

iii. G3 Oil Reclamation to Wastewater Treatment Transfer Lines and Other Transfer Lines Areas

- Completion of investigation of known and suspected release points, if necessary.
- Collection of surface soil samples at all release points.
- Installation of soil borings and/or monitoring wells, if necessary, to determine the vertical extent of contamination.

- Collection and analysis of soil samples from soil borings and/or monitoring wells from the surface to the water table using appropriate intervals.
- Groundwater monitoring for at least four quarters.

iv. 1980 Fuel Oil Spill Area

- Installation of one monitoring well (FO-MW-1) at the location of release from a former pipeline.
- Collection and analysis of soil samples to the water table.
- Collection of at least four quarter of groundwater samples.

v. Oil Reclamation Building

- Use a series of deep backhoe pits in the east and west man-made depressions to observe soil conditions and to collect sufficient samples to define the extent of contamination
- Installation of soil borings/monitoring wells, if necessary, to determine contamination to the water table.
- Soil sampling to the water table.
- At least four quarters of ground water monitoring on wells HL-MW-6A, HL-MW-20S, and HL-MW-19S.
- Soil gas investigations in areas with high TPH concentrations.

vi. Former Discharge Ravines West and South

- Excavation of two lateral trenches, perpendicular to and across the west and south ravines, to allow for shallow soil samples to be collected.
- Based on results of shallow soil samples, advance two soil borings in each ravine (shown as DRW-SB1 and SB2 for the West Ravine, DRS-SB1 and -SB2 for the South in Figure 1) to the groundwater table to determine vertical extent of contamination. Soil borings may be converted to monitoring wells for groundwater sampling, if necessary.

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> Additional trenches/borings/monitoring wells may be necessary, particularly along trench axes, based on initial findings. Further investigations/sampling may include ravine discharge areas.

vii. Truck Shop Area

- Additional soil testing from soil borings, if necessary
- Groundwater monitoring from the newly-installed monitoring wells in this area for at least four quarters.
- Soil gas investigation in area of release
- 3 Groundwater monitoring of all Operation, Performance, and Protection monitoring wells will be conducted in accordance with the 2004 Updated Groundwater Monitoring Plan or as amended in the Sampling and Analysis Plan under Task I.B.
- 4 Continued implementation of the current interim remedial actions at the Site.
- 5. Existing soil piles on Site, generated during earlier investigations, will be identified and located on a Site map and evaluated for volume and contaminant concentrations.
- 6. Phase I Implementation Schedule

Deliverables: Phase I RI Work Plan - Draft Phase I RI Work Plan - Final

B. Sampling and Analysis Plan

A Sampling and Analysis Plan (SAP) for use during all groundwater and soil characterization studies shall be prepared. The SAP may be combined with the Phase I RI Work Plan if more efficient. The SAP shall be prepared in accordance with the Model Toxics Control Act (MTCA), Chapter 70.105D, the MTCA Cleanup Regulation, Chapter 173-340 WAC, and appropriate federal guidance. The required contents of a Sampling and Analysis Plan are listed under WAC 173-340-820

Deliverables: Sampling and Analysis Plan – Draft Sampling and Analysis Plan – Final

C. Health and Safety Plan

A Health and Safety Plan shall be prepared to address RI/FS activities as required under WAC 173-340-810(2).

Deliverables: Health and Safety Plan

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TASK II. FIELD INVESTIGATIONS

Field investigations, according to the Work Plan in Task I, shall be conducted. All sampling and analysis shall be conducted in accordance with the Sampling and Analysis Plan.

Deliverables: Progress Reports

TASK III. PHASE I TECHNICAL MEMORANDUM

This Technical Memorandum is a data report that shall be prepared to include all soils and first quarter groundwater results collected during the Phase I investigations. The second through fourth quarters of groundwater shall be submitted through progress reports and in the RI Report.

Deliverable: Phase I Technical Memorandum

TASK IV. INTERIM ACTIONS (if necessary)

Based on Phase I data, interim actions at the Site may be conducted under WAC 173-340-430, if appropriate and warranted. An Interim Action Work Plan(s) shall be submitted for Ecology's review and approval. An Interim Action Report(s) shall be prepared and submitted to Ecology after completion of the interim actions.

Deliverables: Interim Action Work Plan(s) - Draft

Interim Action Work Plan(s) - Final

Interim Action Report(s)

TASK V. PHASE II RI WORK PLAN

The purpose of the Phase II RI is primarily to complete soil evaluation and assessment and to identify soil data gaps to complete the RI. Additional groundwater sampling may be conducted, if necessary.

The Phase II RI Work Plan shall, at a minimum, include the following:

1. Introduction

A general explanation of the goals and expected results of the investigations shall be included

Evaluation and Assessment of the Completeness of Existing Soil Data

Appendix A is a preliminary summary of the reports of removal actions, spill and/or release reports that were evaluated by Ecology prior to preparation of this Scope of Work. Available reports and background information associated with the areas listed in Appendix A and all other data available to Kaiser should be used to assess soil contamination. All existing soils data (including Phase I RI soils data) from soil borings, excavation verification samples, monitoring well installation, soils investigations shall be compiled and summarized. The current understanding of the existing information on the environmental condition of the soils on site shall be described. Additional data needs shall be identified such that the RI/FS shall be completed.

3 Additional Soil RI Investigations

Additional field investigations to be performed during the Phase II RI shall be presented. At a minimum, soil contamination and facility-oriented RI tasks shall include the following to complete the RI/FS investigations:

a. Site Physical Studies

All drainage features present on the property, including, sumps, dry wells, manholes, subsurface drains, and associated piping shall be investigated and presented to establish discharge points.

Locations of drainage features shall be documented on a map or maps.

ii Information shall be presented or collected to identify, enumerate, and characterize human populations potentially exposed to contaminants at the Site or released from the Site

Biological and ecological information shall be collected in accordance with MTCA. This information shall include general information of the flora and fauna associated in and around the site with particular emphasis placed on identifying sensitive environments, especially with regard to endangered species and their habitats and those consumed by humans or found in human food chains.

iv. Historical-to-present Site air photos shall be included providing a developmental time-line of the facility.

b. Soil Investigation

i Soil Chemistry

Based on Task 2, excavations and/or soil borings will be advanced in the following areas to evaluate the nature, extent, and limit of

TPH, PCBs, VOCs, sVOCs, PAHs, and total metals contamination:

- Oil House Area
- Wastewater Area
- Cold Mill/Finishing Area
- Remelt(Casting)/Hot Line Area
- Oil Reclamation Building Area
- G3 Transfer Lines/Other Transfer Lines Areas
- Truck Shop Area
- Other areas as identified from Phase I results.

ii. Soil Physical Properties

Sufficient samples shall be taken during soil boring installation to permit vadose zone transport modeling and geotechnical evaluations. As approved in the work plan, samples from each area shall be analyzed for grain size analysis, cation exchange capacity, moisture content, Atterburg Limits, total organic carbon, Modified Proctor, and Permeability.

iii Soil Gas Investigation

Additional soil gas investigations shall be conducted in representative areas where high TPH concentrations have been observed.

iv. Drainage/Lagoon Investigation. [This investigation may be conducted as part of the requirements of Ecology's Water Quality Program Enforcement Order. Additional tasks over and beyond the requirements of the Enforcement Order shall be performed under this section.]

Water and sediment samples shall be collected along drain lines, manholes and sumps to evaluate migratory routes of contamination. Draft RI/FS Scope of Work Kaiser Trentwood Site June 2, 2005

Water, suspended, and sludge samples shall be collected from the lagoon to determine if the lagoon is acting as a repository of contamination from drainage systems.

4 Treatability Studies

Conduct laboratory and/or bench scale studies, if necessary, to determine the applicability of remedial alternatives to Site conditions

- 5. Phase II RI Implementation Schedule
- 6. Amendments to Sampling and Analysis Plan

Deliverables: Phase II RI Work Plan – Draft Phase II RI Work Plan – Final

TASK VI. PHASE II INVESTIGATIONS

Deliverables: Progress Reports

Treatability Study Reports

TASK VII. REMEDIAL INVESTIGATION REPORT

The Remedial Investigation Report shall be prepared in accordance with WAC 173-340-350. The current understanding and conceptual site model shall be presented based on all existing soil and groundwater data including Phase I and Phase II RI results.

Deliverables: Remedial Investigation Report - Draft Remedial Investigation Report- Draft Final

TASK VIII. FEASIBILITY STUDY TECHNICAL MEMORANDUM

A Feasibility Study Technical Memorandum shall be prepared that will include a preliminary cleanup level analysis, an ARAR analysis, the development of remedial alternatives, and a preliminary evaluation of alternatives under MTCA for Ecology's review

Deliverable: Feasibility Study Technical Memorandum – Draft Feasibility Study Technical Memorandum - Final Draft RI/FS Scope of Work Kaiser Trentwood Site June 2, 2005

TASK IX. FEASIBILITY STUDY REPORT

A Feasibility Study Report shall include:

- Development of cleanup levels.
- Development of remedial alternatives.
- Evaluation of alternatives based on the requirements and criteria specified under WAC 173-340-360.

Deliverables: Feasibility Study Report - Draft

Feasibility Study Report - Draft Final

THE DRAFT FINAL REMEDIAL INVESTIGATION REPORT AND THE FEASIBILITY STUDY REPORT WILL BE MADE AVAILABLE FOR PUBLIC COMMENT. A FINAL REMEDIAL INVESTIGATION REPORT AND A FINAL FEASIBILITY STUDY REPORT WILL BE ISSUED AFTER INCORPORATING COMMENTS FROM THE PUBLIC.

TABLE I SCHEDULE OF TASKS/DELIVERABLES GROUND WATER RI/FS

TASK/DELIVERABLE	DATE
Effective Date	Start
Task I	
Phase I RI Work Plan – Draft	60 days after start
Sampling and Analysis Plan – Draft	60 days after start
Phase I RI Work Plan – Final	30 days after receipt of Ecology's comments on Draft Phase I RI Work Plan
Sampling and Analysis Plan – Final	30 days after receipt of Ecology's comments on Draft Sampling and Analysis Plan
Health and Safety Plan	60 days after start
Task II	The state of the s
Phase I Field Investigations	In accordance with Phase I RI Work Plan
Progress Reports	In accordance with Agreed Order
Task III	
Phase I Technical Memorandum (Data Report)	60 days after receipt of final validated laboratory data associated with both the completion of Phase I monitoring well installations and the first round of quarterly groundwater sampling
TASK IV	
Interim Action Work Plan(s) – Draft	As necessary
Interim Action Work Plan(s) – Final	30 days after receipt of Ecology's comments
Interim Action Report(s)	30 days after completion of interim actions
Task V	
Phase II RI Work Plan – Draft	30 days after submittal of Phase I Technical Memorandum
Phase II RI Work Plan – Final	60 days after receipt of Ecology's comments on Draft Phase II RI Work Plan

(Continuation – Table 1)	
TASK/DELIVERABLE	DATE
Task VI	
Phase II Field	In accordance with Phase II RI Work Plan
Investigations	
Progress Reports	In accordance with Agreed Order
Treatability Study Reports	In accordance with Phase II RI Work Plan
Task VII	
Remedial Investigation	In accordance with Phase II RI Work Plan
Report – Draft	
Remedial Investigation	60 days after receipt of Ecology's comments
Report – Draft Final	
Task VIII	
Feasibility Study	30 days after submittal of Draft Final Remedial
Technical Memorandum –	Investigation
Draft	·
- 1111 0 1	20.1 Gammanint of Frankovi's comments on
Feasibility Study	30 days after receipt of Ecology's comments on
Technical Memorandum -	Draft Feasibility Study Technical Memorandum
Final	
Task IX	CO less the submitted of Final Facgibility Study
Feasibility Study Report -	60 days after submittal of Final Feasibility Study Technical Memorandum
Draft	
Feasibility Study Report –	60 days after receipt of Ecology's comments on the
Draft Final	Draft Feasibility Study Report

APPENDIX A (Preliminary WDOE Review of Historical Reports and Records)

Note: The summary, comments and recommendations noted in this Appendix A were prepared by Ecology and have not been subjected to review by or consultation with Kaiser

I. OIL HOUSE AREA

- A. Oil House Tank Removal (1990) 10,000-gallon UST (waste oil) located immediately south of the Oil House
 - PCBs and TPH detected in soils directly beneath the UST; soils were excavated
 - 1400 cubic feet of TPH-contaminated soil removed; excavation extended up to 22 feet.
 - Composite side and wall samples had TPH (EPA Method 418.1) concentrations range from 23 to 340 mg/kg. Samples were not analyzed for PCBs.
 - Area was capped with asphalt after the excavation was backfilled with clean soil.
 - This tank is the likely source of PCBs in the product lens in the area
 - This is identified as a Solid Waste Management Unit (SWMU) in the RCRA Facility Assessment Report (FAR).

Comments:

Soil samples were not analyzed for PCBs after excavation.

Lateral extent and vertical extent (below 22 feet) of TPH and PCB, as well as VOCs, sVOCs, and total metals, contamination have not been evaluated.

- B. 20,000-Gallon Unleaded Gasoline UST Removal (1991) located northeast of the Oil House
 - Approximately 1,200 cubic yards excavated; excavation was terminated at 18 feet.
 - Excavation bottom sample collected beneath the dispenser area had 1700 mg/kg gasoline, and 310 mg/kg diesel. All other verification side and bottom samples had TPH below 100 mg/kg.
 - Area was capped with asphalt after backfilling with clean fill.

Comments:

Contaminated soils underneath the dispenser area were left after 18 feet deep excavation. The lateral extent and vertical extent of TPH contamination underneath the dispenser area have not been determined.

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Additional testing for TPH, BTEX, VOCs, and semi-VOCs are recommended.

- C. Eight USTs Removed (1991) Seven 10,000-gallon USTs (mineral oil, Stoddard solvent, or kerosene), one 1,000-gallon UST (unleaded gasoline), located immediately north of the Oil House
 - Approximately 7,000 cubic yards of soils removed; excavation depth up to 32 feet.
 - Verification samples had TPH (EPA Method 8015 Modified) ranging from 215 to 69,000 mg/kg. TPH detections were generally in the Kensol range. No Gasoline range hydrocarbons, BTEX, or PCBs were detected.
 - Area was capped with asphalt after backfilling with clean fill.
 - One or more of these tanks were likely sources of free-phase petroleum in ground water in the area.

Comments:

Lateral extent and vertical extent of TPH contamination have not been determined. TPH contaminated soils were left after up to 32 feet of excavation. Additional sampling to confirm absence of BTEX, PCBs, VOCs, and semi-VOCs is necessary.

The absence or presence of soil vapor in soils at depth greater than 32 feet has to be evaluated.

- D. Oil House French Drain Removal (1991) The French drains were located off the northwest and southwest corners of the Oil House, on either side of a concrete pad previously used to store drums.
 - PCBs were discovered in soils while closing the drain at the north end
 - Concrete slab and concrete north ramp were removed along with the asphalt at north end. About 1,050 cubic yards of removed concrete and excavated soils were hauled to a TSCA permitted landfill. Excavation was initially to 4 feet and increased to 5 feet. Confirmation samples had PCB (Aroclor 1248) concentration up to 130 mg/kg,
 - Additional excavation up to 7 feet was conducted. PCB in soil samples after excavation range from 0.028 to 230 mg/kg.
 - Excavation was backfilled with clean soils and covered with asphalt.
 - Nine soil borings advanced to determine vertical extent of PCB contamination. PCBs were detected in soils located beneath the north drain up to 65 feet deep (0.54 mg/kg) and up to the water table for the soils beneath the south drain (0.24 mg/kg at 80 feet deep)

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- Concentrations of PCBs in soils in the area range from <0.2 to 2,900 mg/kg and are highest near the surface.
- Elevated concentrations of TPH are present in the 65 to 80 feet deep smear zone, concentrations of PCBs in the smear zone range from <0.2 to 0.6 mg/kg.

Comments:

Depth of contamination of PCB contaminated soils and extent of PCB smear zone need to be evaluated.

Extent of TPH contamination, including the smear zone, is not defined

- E. Tank Farm Kensol Spill (1991) Kensol 51, an aluminum rolling lubricant, was spilled (volume unknown) from a leak in a transfer line located in the Tank Farm east of the Oil House
 - 300 cubic yards of soils were removed. Excavation depth was up to 12 feet.
 Excavation bottom composite sample had TPH (Method 418.1) concentration of 12,000 mg/kg.
 - Five borings were advanced and completed as monitoring wells. TPH results show a maximum of 25,750 mg/kg at 66 feet deep. Free product was detected on the water table in 3 wells.
 - An extraction well was installed (now part of the Interim Remedial Measures) to recover free product.

Comment:

Lateral extent and vertical extent of TPH contamination, including extent of smear zone, are not known.

II. WASTEWATER TREATMENT AREA

- A. Field Constructed Tanks Two tanks constructed of reinforced concrete (wall thicknesses that range from 7 feet at the base to about 1.5 feet at the top, bottoms between 2 to 3 feet thick) have capacities of 225,500 gallons each. One tank is constructed from steel surrounded by concrete blocks, capacity of 588,000 gallons. The tanks were initially constructed to store fuel oil for mill operations. In later years, tanks were used for phase separation of waste oil/water mixtures generated in the wastewater process.
 - Soils from two holes cored through the bottom of each of the concrete tanks in 1992 had TPH (EPA 8015) concentrations at 650 and 1070 mg/kg.
 - The tanks were emptied in the fall of 1989.
 - Two monitoring wells were installed and various soil samples were collected and analyzed in 1989; three additional wells were installed near the field-constructed tanks in 1990. Soil samples taken from two monitoring wells close to and down gradient from these tanks showed TPH concentrations at 2,300 ppm at 63-65 feet deep and 6,400 ppm at 58.5 to 60.5 feet deep.
 - A composite soil sample collected from the upper six inches of petroleum-stained soils located next to the tanks contained 65,000 ppm TPH, 230 ppm chromium, 410 ppm lead, 15 ppm acenapththylene, and 0.19 ppm fluoranthene.
 - These tanks are probably a primary source of petroleum hydrocarbon in ground water in the wastewater area.
 - Identified as a Solid Waste Management Unit (SWMU) in the RCRA Facility Assessment Report (RAF).

Comments:

Lateral extent and vertical extent of soil contamination are not defined. Ground water contamination source area is not known

Contaminants to be evaluated further should include TPH, PCBs, VOCs, PAHs, and total metals

- B. Hoffman Tank Removal (1990) This 6,000-gallon Hoffman Tank, located south of the Wastewater Treatment Plant, was an oily wastewater flow-through process tank associated with the Wastewater Treatment system.
 - About 6,500 cubic yards of soils were removed. Excavation depth was up to 35 feet.
 - Composite site and bottom samples had TPH concentrations ranging from 140 to 33,000 ppm TPH, <0.66 to 0.52 ppm PCBs. The 33,000 ppm TPH concentration is from a sample underneath the Wastewater Treatment Plant footings.
 - A 50 mil PVC geomembrane liner was installed over this area.

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- This tank was probably the second largest source of petroleum hydrocarbons to ground water in the Wastewater Area.
- Identified as a Solid Waste Management Unit (SWMU) in the RCRA Facility Assessment Report (RAF).

Comments:

Residual soil contamination remains after excavation up to 35 feet. Lateral extent and vertical extent of contamination need to be further evaluated.

Contaminants to be evaluated should include TPH, PCBs, VOC, PAHs, and total metals

- C. Hydrogen Sulfide Scrubber Building Excavation (1998) Petroleum contamination was discovered when Kaiser was excavating soil to construct hydrogen sulfide scrubber building. Petroleum contamination is believed to be from the former Hoffman tank. Area is located on the southwest side of the wastewater treatment plant.
 - Because of nearby buildings, excavation was limited to about 20 by 20 feet and up to 7 feet deep. Side and bottom soil samples had TPH concentrations up to 20,000 mg/kg diesel and 22,000 mg/kg oil. Low concentrations of VOCs, PAHs, PCBs, and metals were also detected.
 - The scrubber building was constructed and the immediate surrounding area has been paved.

Comments:

Lateral extent and vertical extent of contamination are not defined.

Contaminants to be evaluated should include TPH, PCBs, VOCs, PAHs, and total metals.

Presence or absence of soil gas needs to be evaluated.

- D. Wastewater Lagoon The wastewater lagoon is situated on the western portion of the wastewater treatment area.
 - Samples of sludge taken from the lagoon showed PCB concentrations ranging from 78 to 320 mg/kg and <0.5 to 0.7 mg/kg hexavalent chromium.
 - The lagoon sludge was removed in 1992.
 - Following removal of the sludge and the liner, random samples were collected from the exposed subbase surface.
 - Sand and soil were removed and final verification sampling results following all
 excavation activities indicated no exceedance above MTCA Method A cleanup
 levels for TPH, PCBs, VOCs, semi-VOCs, and priority pollutant metals

Draft RI/FS Scope of Work Kaiser Trentwood Site June 2, 2005

Accumulated lagoon sludges were again removed in 1998. No data on sampling
of the sludges were found in the site file.

Comments:

There needs to be further sampling of the lagoon sludges

Source of sludge contamination in the lagoon needs to be identified.

III. OIL RECLAMATION BUILDING/TRANSFER LINES AREAS

- A. Oil Reclamation Building (ORB) Area Investigations conducted in 1996 to evaluate nature and extent of potential contamination.
 - Horizontal extent of soil containing TPH exceeding 200 mg/kg begins at the northwest corner of the ORB and extends west approximately 900 feet and south approximately 400 feet; total area encompasses approximately 60,000 square feet TPH detected include mostly kerosene, diesel, and oil
 - Except at three locations, petroleum-contaminated soil is limited to the upper 2 to 5 feet. At one man-made depression, contaminated soil was detected to depths up to 70 feet. At another man-made depression, contamination was detected to 20 feet. Around the perimeter of the ORB, contamination was detected at depths up to 20 feet below the ground surface (the total depth of the exploration) and may extend deeper. These depths were detected as much as 50 feet away from the edge of the building.
 - The recommendation was to put an asphalt cap over the man-made depressions and to install a geomembrane/concrete cap around the perimeter of the ORB Limited soil excavation would be involved to prepare for installation of the cap around the ORB.

Comments:

Vertical extent and lateral extent of contamination around the ORB building and the manmade depressions need to be defined

Contaminants shall include TPH, PCBs, VOC, PAHs, and total metals.

Soil vapor in vicinity of the ORB needs to be evaluated.

- B. Oil-Water Emulsion Spill (1992) Oil-water emulsion was released when a backhoe hit a pipeline while digging a trench
 - Stained soils were excavated up to 4 feet deep. Additional soil excavation was performed on two residual hot spots.
 - Verification samples after the excavations show TPH concentrations less than 200 mg/kg.
- C. Wastewater Emulsion Transfer Line Leak Area/Former Rail Car Unloading (RCU) Area(1998) A leak in the transfer line that carried oil-contaminated wastewater from the Oil Reclamation Building to the Wastewater Treatment area was detected near the rail car unloading area.
 - About 500 cubic yards of soils were removed.

Draft RJ/FS Scope of Work Kaiser Trentwood Site June 2, 2005

- Area of soil contamination (TPH>200 mg/kg) extends east and north of the RCU area. The affected area encompasses approximately 52,500 square feet.
- TPH-affected soil appears to be limited to the upper few feet of the soil column.
 However, high TPH concentrations were detected in the deepest soil sample 44
 feet below the ground surface. Area over soils known to be contaminated beyond
 15 feet was capped with asphalt.

Comments:

Need to evaluate lateral and vertical extent of contamination.

Contaminants to be evaluated should include TPH, PCBs, VOCs, PAHs, and total metals.

D. Oil/Emulsion Transfer Line Release (2004)

- Two samples collected from the pipe bedding sand showed 29,000 mg/kg diesel, 33,000 residual range organics and 12,000 mg/kg diesel, 15,000 mg/kg residual range organics (NWTPH-Dx)
- In another area, TPH concentration was measured at 4,100 mg/kg diesel, 6,900 mg/kg residual range organics

Comments:

Need to evaluate lateral and vertical extent of contamination.

Contaminants to be evaluated should include TPH, PCBs, VOCs, PAHs, and total metals.

- E. Fuel Oil Spill (1980) Up to 10,000 gallons of #2 fuel oil was discharged to the ground according to Kaiser. Ecology's onsite investigations estimated around 50,000 to 100,000 gallons were released to the ground.
 - Product was never recovered. No soils investigations were conducted.

Comments:

Extent of soil contamination was never investigated; need to evaluate lateral and vertical extent of contaminations

Contaminants to be evaluated should include TPH, VOCs, sVOCs, and total metals.

IV. COLD MILL/FINISHING AREAS

A. Continuous Can Process Line (CCPL) Investigation (1992)

- CCPL equipment and tanks were removed in 1991. Approximately 733 stained soils, concrete, steel and floor blocks were hauled to Arlington for disposal.
- Total chromium concentrations in post-excavation surface soil samples ranged from 26 to 340 mg/Kg.
- Total chromium concentrations at three locations on the CCPL pit floor through the 18 inch thick concrete ranged from 12 to 18 mg/kg.
- Total chromium concentrations in the concrete pit walls/floor samples ranged from 19 to 470 mg/kg.
- Ground water collected from monitoring a monitoring well did not indicate any ground water quality concerns.

Comments:

Hexavalent chromium was not detected in most samples. Total chromium concentrations (assuming mostly trivalent chromium) are all below the Method B unrestricted land use cleanup levels of 120,000 mg/Kg.

Lateral and vertical distributions of chromium should be evaluated to determine if residual chromium in soil are potential chromium sources to ground water.

B. Chromium Transfer Line (CTL) (1990-1992)

- Composite soil samples concentrations ranged from 15 to 2400 mg/kg total chromium; <1 mg/kg hexavalent chromium for all samples.
- Subsurface soil concentrations ranged from 6 to 16,000 mg/Kg total chromium, <0.1 to 29 mg/kg hexavalent chromium.
- Four monitoring wells were installed near the CTL. Chromium was not detected in ground water.
- 400 feet of CTL, two concrete sumps, associated sludge, storm drain, and underground storage tank were removed
- Surface soils were stripped.
- 9,212 tons of contaminated soil, pipe, and concrete debris were excavated or removed. Excavation extended to 15 to 18 feet. Post excavation samples indicate concentration of total chromium left in place ranges from 61 to 910 mg/kg beneath the main excavation, up to 5,350 mg/kg total chromium in soil adjacent to building footings, and 9 to 220 mg/kg after surface stripping
- Excavation was backfilled.

Comment:

Lateral and vertical distributions of chromium should be evaluated to determine it residual chromium in soil is a potential source of chromium in ground water.

Draft RI/FS Scope of Work Kaiser Trentwood Site June 2, 2005

C. Cold Mill Electrical Grounding Pit (2004)

- Six (6) inches of oil/water liquid was observed in an electrical grounding pit.
- Samples indicate that the liquid is essentially all oil. There is some elevated lead in the oil 37 mg/kg.
- The soil/sludge sample had 90,000 mg/kg diesel, 6,300 mg/Kg residual range organics, 1190 mg/kg lead. No PCBs or significant levels of VOCs or Semi-VOCs were found.

Comment:

Kaiser has very recently installed monitoring wells in the Cold Mill Area. Extent of contamination, including the smear zone, should be evaluated.

Contaminants to be evaluated should include TPH, VOCs, sVOCs, and total metals

Existing and Proposed Explorations Location Plan

EXHIBIT C PUBLIC PARTICIPATION PLAN

KAISER ALUMINUM & CHEMICAL CORPORATION TRENTWOOD SITE

DRAFT PUBLIC PARTICIPATION PLAN

FOR THE

AGREED ORDER FOR A REMEDIAL INVESTIGATION/FEASIBILITY STUDY

PREPARED BY:

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Para asistencia Espanol Antonio Valero 509-454-7840 aval461@ecy.wa.gov

Если вам нужно помощь по русский, звоните Igor Vern 360-407-0281

<u>Iver461@ecy.wa.gov</u>

June 2005

INTRODUCTION

Overview of the Public Participation Plan

This Public Participation Plan (Plan) focuses on public participation activities that are part of the Agreed Order for a Remedial Investigation/Feasibility Study to be conducted at the Kaiser Aluminum & Chemical Corporation Trentwood Site (Kaiser) Details about the location, background of the site, companies involved in the project and contaminants of concern begin on page 4

The purpose of the Public Participation Plan is to promote public understanding of the Washington Department of Ecology's (Ecology) responsibilities, planning, and cleanup activities at the site. It also serves as a way of gathering information from the public that will assist Ecology and Kaiser to conduct the investigation and planning for cleanup in a manner that is protective of human health and the environment. The Plan will help the community living near the site, as well as the general public, to be informed regarding cleanup activities and how they may contribute to the decision making process.

This Plan has been developed by the Washington Department of Ecology and complies with the Washington State Model Toxics Control Act (MTCA) regulations (Chapter 173-340-600 WAC). It will be reviewed as cleanup progresses and may be amended if necessary. Amendments may occur at future stages of cleanup and may be part of a 30-day comment period if associated with cleanup documents (e.g., Consent Decree). Ecology will determine final approval of the Plan as well as any amendments.

Documents relating to the cleanup may be reviewed at the repositories listed on pages 8-9 of this Plan. If individuals are interested in knowing more about the Site or have comments regarding the Public Participation Plan, please contact one of the individuals listed below:

Ms. Teresita Bala, Site Manager WA State Department of Ecology Toxics Cleanup Program 4601 North Monroe Spokane, WA 99205 509-329-3581 tbal461@ecy.wa.gov

Mr. Pat Blau, Environmental Manager Kaiser Aluminum & Chemical Corporation P.O. Box 15108 Spokane, WA 99215-5108 509-927-6350 Pat.kaiser@twd.com

Ms. Carol Bergin, Public Involvement
WA State Department of Ecology
Toxics Cleanup Program
4601 North Monroe
Spokane, WA 99205
509-392-3546
cabe461@ecy.wa.goy

Para asistencia Espanol

Sr. Antonio Valero
WA State Department of Ecology
Toxics Cleanup Program
15 West Yakima Avenue, Suite 200
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Если вам нужно помощь по русский, звоните

Igor Vern WA State Department of Ecology 360-407-0281 iver461@ecy.wa.gov

Mrs. Johnnie Landis, Public Disclosure WA State Department of Ecology 4601 North Monroe Spokane, WA 99205 509-329-3415 johh@ecy.wa.gov

Public Participation and the Model Toxics Control Act

The Model Toxics Control Act (MTCA) is a "citizen-mandated" law that became effective in 1989 to provide guidelines for the clean up of contaminated sites in Washington State. This law sets up standards to make sure the clean up of sites is protective of human health and the environment. Ecology's Toxic Cleanup Program investigates reports of contamination that may threaten human health and/or the environment. If an investigation confirms the presence of contaminants, the site is generally ranked and placed on a Hazardous Sites List. This site is ranked a two on the Hazardous Sites List. Current or former owner(s) or operator(s), as well as any other potentially liable persons (PLPs), of a site may be held responsible for cleanup of contamination according to the standards set under MTCA. The PLP identified by Ecology for this site is Kaiser Aluminum & Chemical Corporation.

Public participation is an important part of cleanup under the MTCA process. The participation needs are assessed at each site according to the level of public interest and degree of risk posed by contaminants. Individuals who live near the site, community groups, businesses, government, other organizations and interested parties are provided an opportunity to become involved in commenting on the cleanup process. The Public Participation Plan includes requirements for public notice such as: identifying reports about the site and the repositories where reports may be read; providing public comment periods; and holding public meetings or hearings. Other forms of participation may be interviews, citizen advisory groups, questionnaires, or workshops. Additionally, citizen groups living near contaminated sites may apply for public participation

grants (during open application periods) to receive technical assistance in understanding the cleanup process and to create additional public participation avenues. Note: The department currently does not have a citizen technical advisor for providing technical assistance to citizens on issues related to the investigation and cleanup of the site.

SITE BACKGROUND

Site Description and History

The Washington State Department of Ecology is proposing to enter into an Agreed Order with Kaiser Aluminum & Chemical Corporation to conduct a Remedial Investigation and Feasibility Study (RI/FS) at the Trentwood facility. The site is located at 15000 East Euclid Avenue, Spokane Valley, Spokane County, Washington (See Appendix A – Site Map Figure 1).

An Agreed Order is a legal document issued by Ecology that formalizes the agreement between Ecology and potentially liable persons (PLPs) for the cleanup actions needed at a site. The purpose of the Remedial Investigation is to evaluate the extent of petroleum, metals and polychlorinated biphenyls (PCBs) in soil and groundwater at the site. The Feasibility Study (FS) will identify and evaluate possible alternatives for cleanup of these contaminants. Prior to finalization, the RI/FS reports will be made available to the public for comment. After a 30-day public comment period, Ecology will respond to input received from the community and make modifications to the RI/FS, if appropriate

Kaiser Trentwood is a large site that sits along the Spokane River at approximately river mile 86. It is north of the Spokane Valley Mall, east of Mirabeau Point and 10 miles east of downtown Spokane. It is made up of 525 acres and includes three on-site landfills. These landfills are located in the West, East and South sections of the property and were used for site-specific hazardous materials. All three landfills are now closed.

In 1942 the U.S. Government's Defense Plant Corporation began construction of the Trentwood Works on the property. The facility produced aluminum needed for making aircraft for World War II. The Aluminum Company of America (Alcoa) operated the facility until the end of World War II when operations stopped. Kaiser then leased the site from the U.S. government in 1946 and later purchased the facility and property. The facility currently operates as an aluminum sheet and plate rolling mill, and provides materials for the current war in Iraq.

In 1980 Kaiser applied for a permit from the U.S. Environmental Protection Agency to store hazardous materials on-site that are necessary for the production of aluminum products. These hazardous substances include petroleum fuels, PCB oil, solvents and chromium. Wastes generated as a result of present or past operations include wastewaters, chrome sludge, paint and solvent wastes, and black dross. EPA was responsible for compliance, review and monitoring activities associated with this type of permit application. In 1992 EPA recommended additional review and/or monitoring at six facilities on-site and identified three additional areas of concern. No further action was necessary at 26 out of 32

facilities. In 1994 EPA gave the Washington Department of Ecology authority to implement corrective actions at treatment, storage and disposal (TSD) facilities in the state using the Model Toxics Control Act (MTCA) as the regulatory authority. As a result, Ecology became involved at the site in 1994 and using MTCA named Kaiser as a Potentially Liable Person (PLP) responsible for cleaning up the site.

Since 1980, several documented releases have occurred related to historical operations at the site. Kaiser conducted independent investigations and remedial actions to address groundwater and soil contamination coming from these releases. Soil studies showed concentrations of PCBs, petroleum product and metals were above levels allowed under the state's MTCA regulations.

Groundwater monitoring began in 1979 to assess impacts of the three on-site landfills. Since 1993, Kaiser implemented independent cleanup actions in the Oil House and Wastewater areas to prevent movement of petroleum containing PCBs floating on groundwater. Actions were also taken to prevent movement of the dissolved hydrocarbons found in groundwater.

Since the late 1980s over 100 additional monitoring wells have been installed at the site as part of a series of voluntary investigations and clean-up efforts by Kaiser. Results of this monitoring also showed petroleum product containing PCBs floating on groundwater. It also showed Total Petroleum Hydrocarbons (TPH), PCBs, iron, manganese, antimony, and arsenic in groundwater at levels exceeding allowable state standards. PCB contamination has also been found in groundwater in the remelt and hot line areas (See Appendix A – Site Map Figure 2).

As part of the operations at Kaiser, sanitary and industrial wastewater is discharged to the Spokane River. These discharges are managed under an NPDES permit administered by Ecology's Water Quality Program. The discharges are permitted under the provisions of the State of Washington Water Pollution Control Law and the federal Water Pollution Control Act.

Please see the section on "Other Studies on the Spokane River" for additional information.

Contaminants of Concern

The main contaminants that are now known at the site are Polychlorinated Biphenyl's (PCBs), petroleum product and metals. Metals include chromium, iron, manganese, antimony and arsenic.

Polychlorinated biphenyl's (PCBs) are a group of manufactured synthetic chemicals, either solids or oily liquids. They may range from colorless to light yellow in color and have no smell or taste. These chemicals were historically used as insulating fluids, coolants and lubricants in transformers, capacitors or other electrical equipment; as heat transfer and hydraulic fluids; in inks and carbonless paper. The manufacture of PCBs stopped in the United States in 1977 because of evidence they accumulate in the environment and do not

breakdown. They may also cause harmful health effects to fish, wildlife, humans and other living organisms.

Common routes of human exposure to PCBs may include drinking contaminated well water; eating contaminated foods such as dairy, fish, and meat; breathing air contaminated with PCBs; conducting maintenance on electrical transformers containing PCB fluids or handling materials containing PCBs. For details regarding PCB health effects, please see the Agency for Toxic Substances and Disease Registry (ATSDR) website at www.atsdr.cdc.gov/tfacts17.html

Potential human exposure risks for the Spokane River are primarily through the eating of fish caught in the river (see Appendix B for Fish and Sediment advisories)

Other Studies on the Spokane River

Between 1978 and 1984 PCBs were found in fish samples collected from the Spokane River by the Washington State Department of Ecology. Additional studies conducted in the 1990s showed that fish collected from portions of the river continued to show significant contamination. As a result, the Department of Ecology, Department of Health and Spokane Regional Health District jointly issued advisories. These advisories were issued to warn the public about limiting fish consumption in certain areas of the river, how to prepare fish to reduce intake of PCB contamination, and to warn the public of contamination at specific beaches. The current consumption advisory for the upper river is based on data from fish samples collected in 1999. (See Appendix B for copies of the Fish and Sediment advisories). Ecology plans to collect additional fish sampling data during 2006 and evaluate it, along with fish tissue sampling data collected during the PCB Total Maximum Daily Load Process conducted in 2004-2005.

Coeur d'Alene Basin/Spokane River - Federal Cleanup

The United States Environmental Protection Agency (USEPA), under the authority of CERCLA (the federal Superfund), has been investigating heavy metals contamination in the Coeur d' Alene basin and upper Spokane River—Heavy metals contamination is associated with historic mining operations in Idaho and includes zinc, arsenic, cadmium and lead—These metals have been determined to be broadly distributed throughout the upper Spokane River including and extending beyond the fine grained sediment areas behind Upriver Dam where PCBs are located. A design is being developed to clean up metals contamination at two beaches along the Spokane River that contain the highest levels of contamination. The design may include capping, removal and/or stabilization of the contamination at Starr Road and Island Complex—The design documents are expected in the summer of 2005.

Upriver Dam Site - State Cleanup

Kaiser and Avista have completed a Remedial Investigation and Feasibility Study focused on PCBs in sediments behind Upriver Dam and a Cleanup Action Plan. Inland Paper Company and Liberty Lake Sewer District have also been identified as potential contributors to PCB contamination through discharges of effluent wastewater to the Spokane River; however, these companies are not participating in the cleanup at this time.

Ecology is working to integrate the results of the USEPA metals studies with cleanup of PCBs.

Total Maximum Daily Load (TMDL)

Ecology is also developing a Total Maximum Daily Load (TMDL) assessment consistent with the federal Clean Water Act to address PCBs in the Spokane River. This issue deals with PCBs and water quality rather than PCBs in sediments. A draft report of this TMDL assessment is expected to be made public in the fall of 2005

COMMUNITY BACKGROUND

Community Profile and Concerns

The site is surrounded by industrial and commercial businesses as well as residential homes. The neighborhood population, although predominantly Caucasian, continues to become more diverse as the area grows. Slavics, Vietnamese, Native Americans, Asians, Hispanics and others add to the rich culture of people living and recreating in this area. This segment of the Spokane River is used for recreational activities including swimming, boating, hiking and fishing. Certain areas of the river are also used for subsistence fishing by Native Americans and some non-English speaking groups.

General outreach efforts were conducted from 1999-2000 to educate the public about fish and sediment advisories for the Spokane River. Results of the outreach indicated some Slavic, Hispanic, Hmong and Vietnamese people may be eating fish from the river at higher rates than most English-speaking groups. Slavic community leaders expressed concern that a lot of subsistence fishing was taking place along the river and that the messages to the public should be more simplified and broadly distributed. The Washington State Departments of Ecology and Health along with Spokane Regional Health District increased outreach to all communities as a result of this feedback.

Additional outreach efforts were recently conducted by Ecology, Spokane Regional Health District, The Lands Council, and local leaders of non-English speaking communities. Feedback indicates that some Slavic, Hispanic, and Native American people continue to consume fish from the upper portion of the river. Slavic and Hispanic communities have expressed concerns about the safety of eating the fish, playing on the beaches, and swimming in the river. These same concerns have been expressed during community interviews conducted with English speaking individuals living or recreating near the site.

Community interviews are still being conducted near the site. Some of the primary concerns expressed during these interviews are listed below:

• There may be negative economic impacts due to Kaiser's bankruptcy. Concern was expressed whether Kaiser would be able to pay for clean up of pollution they caused or whether costs would be passed to taxpayers

If the river isn't cleaned up it will cause economic loss

• The river is an important part of the Spokane region. It is important to cleanup any pollution so the beaches and water are safe for recreating, the fish are safe to eat and people don't have to worry about chemicals and health effects from pollution.

What type of contamination is in the river, where is it located, and how long will

it take to clean up?

Keep the people living along or near the river informed about the work taking
place and give them an opportunity to contribute their opinions in the decisionmaking process.

• Inform people of any health risks for children, adults and pets that use the river

Ecology will focus on addressing these concerns through the activities listed in the Public Participation Activities and Timeline section below

Public Participation Activities and Timeline

The following is a list of some of the public participation efforts that will occur until the cleanup actions are completed:

- A mailing list is being developed for individuals who live near the site. The potentially affected vicinity covers any adjacent properties and homes and/or businesses within close proximity to the site and areas to be investigated. These persons, along with Kaiser, will receive copies of all fact sheets developed regarding the cleanup process via first class mail Additionally, individuals, organizations, local, state and federal governments, and any other interested parties will be added to the mailing list as requested. Other interested persons may request to be on the mailing list at any time by contacting Carol Bergin at the Department of Ecology (see page 3 for details).
- ❖ Public Repositories are locations where documents may be reviewed. Due to reduced hours at many libraries throughout the county, four repositories have been established. The following locations will contain copies of any documents that go through the public review process related to this site:

Washington Department of Ecology 4601 North Monroe Spokane, WA 99205-1295 Contact: Ms Johnnie Harris, Public Disclosure Coordinator 509-329-3415

Spokane Valley Library 12004 East Main Spokane Valley, WA Contact: Mr. Dave Barnett 509-926-6283 Spokane Public Library 906 West Main Spokane, WA 99201 Contact: Ms. Dana Darylmple 509-444-5300

Argonne County Library 4322 North Argonne Road Spokane, WA 99206 Contact: Ms. Judy Luck 509-926-4334

- During each stage of cleanup fact sheets are created by Ecology, then distributed to individuals on the mailing list. These fact sheets explain the stage of cleanup, the site background, what happens next in the cleanup process and ask for comments from the public A 30-day comment period allows interested parties time to comment on the process. The information from these fact sheets is also published in a statewide Site Register which is sent to those who request to be on that mailing list. Persons interested in receiving the Site Register should contact Linda Thompson of Ecology at 360-407-6069 or e-mail Ltho461@ecy.wa.gov. The fact sheets are also posted on Ecology's web page under the Toxics Cleanup Program at http://www.ecy.wa.gov/programs/tcp/sites/sites_information.html. Look under Spokane County, Kaiser Aluminum Trentwood
- ❖ Display ads or legal notices are published in the Spokesman Review, ethnic newspapers when available, and on Ecology's Public Events Calendar http://www.ecy.wa.gov to inform the general public. These notices are published at the beginning of the 30-day comment period for the public notices. They are also used to announce public meetings and workshops or public hearings.
- ❖ Public meetings, workshops, open houses and public hearings are held based upon the level of community interest. If ten or more persons request a public meeting or hearing based on the subject of the public notice, Ecology will hold a meeting or hearing and gather comments. These meetings, workshops or hearings will be held at a location that meets ADA standards and is close to the site. They may be held away from the site if it is necessary to accommodate large numbers of interested persons. These events are announced using the same methods as display ads or legal notices.
- Flyers may also be made available in various locations throughout the community (e.g., postings near Mirabeau Point, at schools, libraries, etc.) to announce public comment periods, meetings, workshops, etc.

❖ Written comments which are received during the 30-day comment period may be responded to in a **Responsiveness Summary**. The Responsiveness Summary will be sent to those who make the written comments and will be available to the public at the Repositories.

Answering Questions from the Public

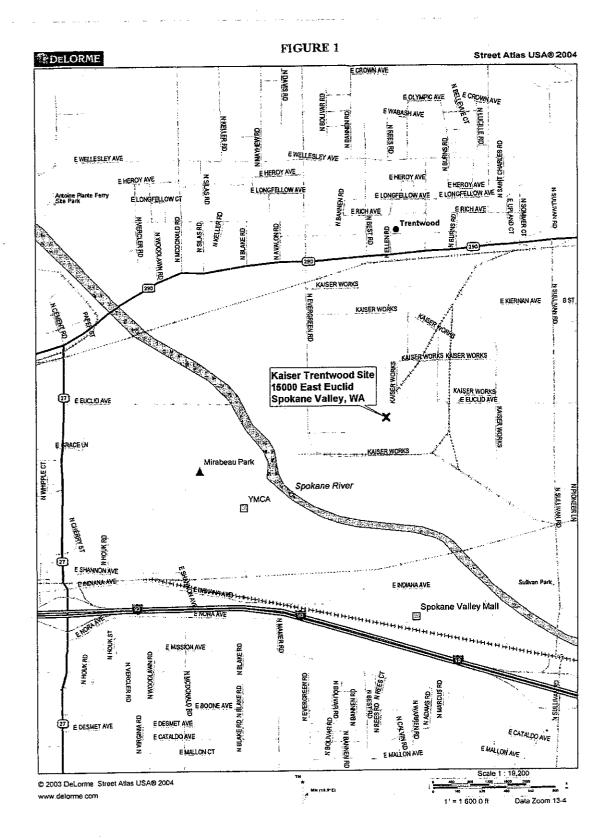
Individuals in the community may want to ask questions to better understand the cleanup process. Page 3 lists the contacts for Ecology and the Kaiser Aluminum Trentwood Site. Interested persons are encouraged to contact these persons by phone or e-mail to obtain information about the site, the process and potential decisions.

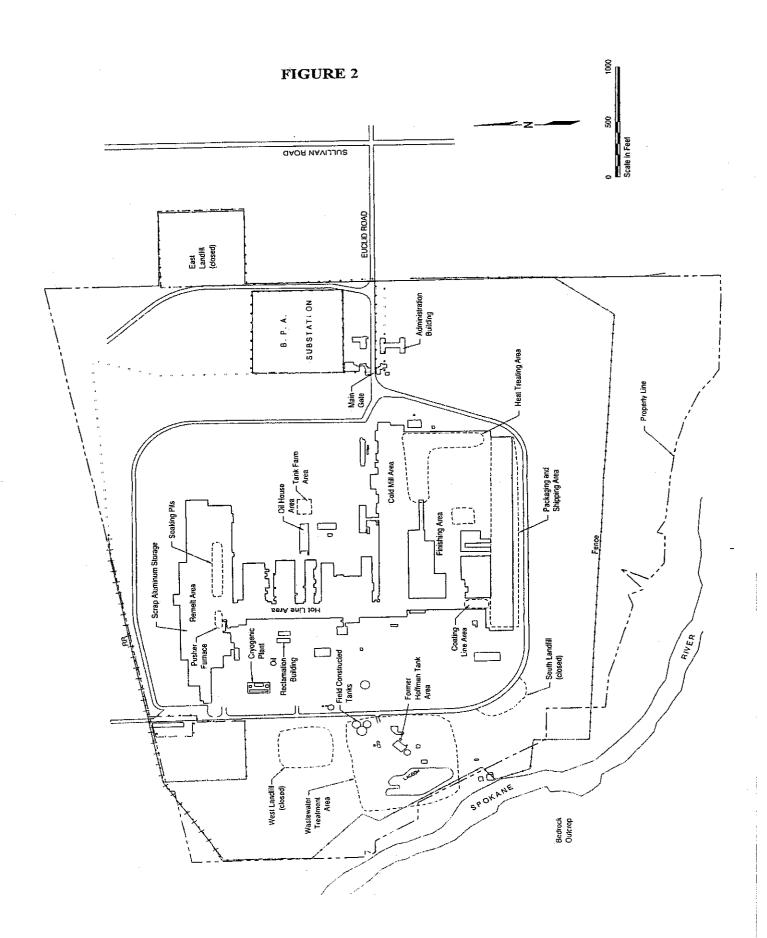
Public Notice and Comment Periods

Timeline

DATE	ACTION TAKEN
September 2004 – January 2005	Community Interviews for Kaiser Aluminum
	Trentwood Site
Begin January 2005	Negotiations for an Agreed Order for a Remedial
	Investigation and Feasibility Study
Expected June 2005	Fact Sheet and 30-day comment period on Agreed
	Order for Remedial Investigation and Feasibility
	Study

APPENDIX A SITE MAP - FIGURES 1 & 2





APPENDIX B

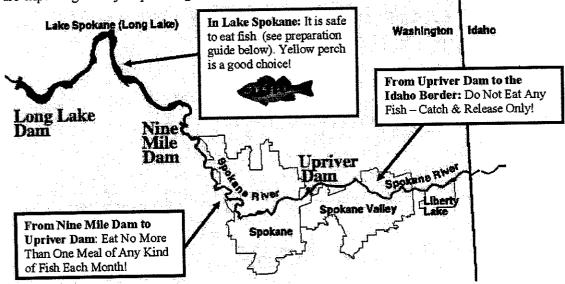
FISH ADVISORY 2003 and SEDIMENTS ADVISORY 2003



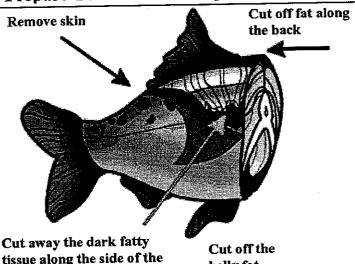
Spokane River Fish Meal Advisory Issued July 2003



Spokane River fish contain chemicals called PCBs that can be harmful to your health. Fish from some parts of the river have more PCBs than others. Follow the advice given below if you eat fish from the Spokane River Because PCBs can harm babies before they are born, women who are expecting a baby or planning to have babies should pay special attention to this warning.



Prepare Your Fish this way to Reduce Your Exposure to PCB's:



meat near the skin

- Cook fish on a rack so the juices and fat will drip off.
- Do not eat the juices, bones, organs, fat, and skin.

For More Information Call Toll-Free: 1-877-485-7316 www.doh.wa.gov/ehp/oehas/ EHA fish adv.htm or

Contact the Spokane Regional Health District at: (509) 324-1574 www.srhd.org

belly fat







ATTENTION

LEAD AND ARSENIC IN SHORELINE SOILS

Frequent contact with shoreline soils along the Spokane River from State Line to Plantes Ferry Park may be unsafe, particularly for young children. Follow these steps to limit your exposure to lead and arsenic in these soils.

- Avoid muddy soil that might cling to clothing, toys, hands or feet.
- Wash your hands and face, especially before eating.
- Avoid dry, loose, or dusty soils that you might breathe.
- Wash anything that has come in contact with shoreline soils before entering your home.

For more information contact the Spokane Regional Health District at:

(509) 324-1574

APPENDIX C

CURRENT MAILING LIST

KAISER ALUMINUM TRENTWOOD SITE

APPENDIX D GLOSSARY

- Agreed Order: A legal document issued by Ecology which formalizes an agreement between the department and potentially liable persons (PLPs) for the actions needed at a site. An agreed order is subject to public comment. If an order is substantially changed, an additional comment period is provided
- Applicable State and Federal Law: All legally applicable requirements and those requirements that Ecology determines are relevant and appropriate requirements.
- **Area Background:** The concentrations of hazardous substances that are consistently present in the environment in the vicinity of a site which are the result of human activities unrelated to releases from that site.
- Carcinogen: Any substance or agent that produces or tends to produce cancer in humans.
- Chronic Toxicity: The ability of a hazardous substance to cause injury or death to an organism resulting from repeated or constant exposure to the hazardous substance over an extended period of time.
- Cleanup: The implementation of a cleanup action or interim action.
- Cleanup Action: Any remedial action, except interim actions, taken at a site to eliminate, render less toxic, stabilize, contain, immobilize, isolate, treat, destroy, or remove a hazardous substance that complies with cleanup levels; utilizes permanent solutions to the maximum extent practicable; and includes adequate monitoring to ensure the effectiveness of the cleanup action.
- Cleanup Action Plan: A document which identifies the cleanup action and specifies cleanup standards and other requirements for a particular site. After completion of a comment period on a Draft Cleanup Action Plan, Ecology will issue a final Cleanup Action Plan.
- Cleanup Level: The concentration of a hazardous substance in soil, water, air or sediment that is determined to be protective of human health and the environment under specified exposure conditions.
- Cleanup Process: The process for identifying, investigating, and cleaning up hazardous waste sites.
- Consent Decree: A legal document approved and issued by a court which formalizes an agreement reached between the state and potentially liable persons (PLPs) on the actions needed at a site. A decree is subject to public comment. If a decree is substantially changed, an additional comment period is provided.

- Containment: A container, vessel, barrier, or structure, whether natural or constructed, which confines a hazardous substance within a defined boundary and prevents or minimizes its release into the environment
- **Contaminant:** Any hazardous substance that does not occur naturally or occurs at greater than natural background levels.
- Enforcement Order: A legal document, issued by Ecology, requiring remedial action. Failure to comply with an enforcement order may result in substantial liability for costs and penalties. An enforcement order is subject to public comment. If an enforcement order is substantially changed, an additional comment period is provided.
- Environment: Any plant, animal, natural resource, surface water (including underlying sediments), ground water, drinking water supply, land surface (including tidelands and shorelands) or subsurface strata, or ambient air within the state of Washington.
- **Exposure:** Subjection of an organism to the action, influence or effect of a hazardous substance (chemical agent) or physical agent.
- Exposure Pathways: The path a hazardous substance takes or could take form a source to an exposed organism. An exposure pathway describes the mechanism by which an individual or population is exposed or has the potential to be exposed to hazardous substances at or originating from the site. Each exposure pathway includes an actual or potential source or release from a source, an exposure point, and an exposure route. If the source exposure point differs from the source of the hazardous substance, exposure pathway also includes a transport/exposure medium.
- Facility: Any building, structure, installation, equipment, pipe or pipeline (including any pipe into a sewer or publicly-owned treatment works), well, pit, pond, lagoon, impoundment, ditch, landfill, storage container, motor vehicle, rolling stock, vessel, or aircraft; or any site or area where a hazardous substance, other than a consumer product in consumer use, has been deposited, stored, disposed or, placed, or otherwise come to be located.
- Feasibility Study (FS): A study to evaluate alternative cleanup actions for a site. A comment period on the draft report is required. Ecology selects the preferred alternative after reviewing those documents.
- Free Product: A hazardous substance that is present as a nonaqueous phase liquid (that is, liquid not dissolved in water).
- Groundwater: Water found beneath the earth's surface that fills pores between materials such as sand, soil, or gravel In aquifers, groundwater occurs in sufficient quantities that it can be used for drinking water, irrigation, and other purposes

- Hazardous Sites List: A list of sites identified by Ecology that requires further remedial action.

 The sites are ranked from 1 to 5 to indicate their relative priority for further action.
- Hazardous Substance: Any dangerous or extremely hazardous waste as defined in RCW 70 105 010 (5) (any discarded, useless, unwanted, or abandoned substances including, but not limited to, certain pesticides, or any residues or containers of such substances which are disposed of in such quantity or concentration as to pose a substantial present or potential hazard to human health, wildlife, or the environment because such wastes or constituents or combinations of such wastes; (a) have short-lived, toxic properties that may cause death, injury, or illness or have mutagenic, teratogenic, or carcinogenic properties; or (b) are corrosive, explosive, flammable, or may generate pressure through decomposition or other means,) and (6) (any dangerous waste which (a) will persist in a hazardous form for several years or more at a disposal site and which in its persistent form presents a significant environmental hazard and may affect the genetic makeup of man or wildlife; and is highly toxic to man or wildlife; (b) if disposed of at a disposal site in such quantities as would present an extreme hazard to man or the environment), or any dangerous or extremely dangerous waste as designated by rule under Chapter 70 105 RCW: any hazardous substance as defined in RCW 70.105.010 (14) (any liquid, solid, gas, or sludge, including any material, substance, product, commodity, or waste, regardless of quantity, that exhibits any of the characteristics or criteria of hazardous waste as described in rules adopted under this chapter,) or any hazardous substance as defined by rule under Chapter 70.105 RCW; petroleum products
 - Hazardous Waste Site: Any facility where there has been a confirmation of a release or threatened release of a hazardous substance that requires remedial action.
 - Independent Cleanup Action: Any remedial action conducted without Ecology oversight or approval, and not under an order or decree
 - Initial Investigation: An investigation to determine that a release or threatened release may have occurred that warrants further action
 - Interim Action: Any remedial action that partially addresses the cleanup of a site.
 - Mixed Funding: Any funding, either in the form of a loan or a contribution, provided to potentially liable persons from the state toxics control account.
 - Model Toxics Control Act (MTCA): Washington State's law that governs the investigation, evaluation and cleanup of hazardous waste sites. Refers to RCW 70.105D. It was approved by voters at the November 1988 general election and known is as Initiative 97. The implementing regulation is WAC 173-340.
 - Monitoring Wells: Special wells drilled at specific locations on or off a hazardous waste site where groundwater can be sampled at selected depths and studied to determine the direction of groundwater flow and the types and amounts of contaminants present

- Natural Background: The concentration of hazardous substance consistently present in the environment which has not been influenced by localized human activities.
- National Priorities List (NPL): EPA's list of hazardous waste sites identified for possible long-term remedial response with funding from the federal Superfund trust fund.
- Owner or Operator: Any person with any ownership interest in the facility or who exercises any control over the facility; or in the case of an abandoned facility, any person who had owned or operated or exercised control over the facility any time before its abandonment.
- Polynuclear Aromatic Hydrocarbon (PAH): A class of organic compounds, some of which are long-lasting and carcinogenic. These compounds are formed from the combustion of organic material and are ubiquitous in the environment. PAHs are commonly formed by forest fires and by the combustion of fossil fuels.
- Potentially Liable Person (PLP): Any person whom Ecology finds, based on credible evidence, to be liable under authority of RCW 70.105D.040.
- Public Notice: At a minimum, adequate notice mailed to all persons who have made a timely request of Ecology and to persons residing in the potentially affected vicinity of the proposed action; mailed to appropriate news media; published in the local (city or county) newspaper of largest circulation; and opportunity for interested persons to comment.
- **Public Participation Plan:** A plan prepared under the authority of WAC 173-340-600 to encourage coordinated and effective public involvement tailored to the public's needs at a particular site.
- **Recovery By-Products:** Any hazardous substance, water, sludge, or other materials collected in the free product removal process in response to a release from an underground storage tank
- Release: Any intentional or unintentional entry of any hazardous substance into the environment, including, but not limited to, the abandonment or disposal of containers of hazardous substances
- Remedial Action: Any action to identify, eliminate, or minimize any threat posed by hazardous substances to human health or the environment, including any investigative and monitoring activities of any release or threatened release of a hazardous substance and any health assessments or health effects studies.
- Remedial Investigation (RI): A study to define the extent of problems at a site. When combined with a study to evaluate alternative cleanup actions it is referred to as a Remedial Investigation/Feasibility Study (RI/FS). In both cases, a comment period on the draft report is required.

- Responsiveness Summary: A compilation of all questions and comments to a document open for public comment and their respective answers/replies by Ecology. The Responsiveness Summary is mailed, at a minimum, to those who provided comments and its availability is published in the Site Register.
- **Risk Assessment:** The determination of the probability that a hazardous substance, when released into the environment, will cause an adverse effect in exposed humans or other living organisms.
- Sensitive Environment: An area of particular environmental value, where a release could pose a greater threat than in other areas including: wetlands; critical habitat for endangered or threatened species; national or state wildlife refuge; critical habitat, breeding or feeding area for fish or shellfish; wild or scenic river; rookery; riparian area; big game winter range

Site: See Facility.

- Site Characterization Report: A written report describing the site and nature of a release from an underground storage tank, as described in WAC 173-340-450 (4) (b).
- Site Hazard Assessment (SHA): An assessment to gather information about a site to confirm whether a release has occurred and to enable Ecology to evaluate the relative potential hazard posed by the release. If further action is needed, an RI/FS is undertaken.
- Site Register: Publication issued every two weeks of major activities conducted statewide related to the study and cleanup of hazardous waste sites under the Model Toxics Control Act. To receive this publication, please call (360) 407-7200.
- Surface Water: Lakes, rivers, ponds, streams, inland waters, salt waters, and all other surface waters and water courses within the state of Washington or under the jurisdiction of the state of Washington.
- TCP: Toxics Cleanup Program at Ecology
- Total Petroleum Hydrocarbons (TPH): A scientific measure of the sum of all petroleum hydrocarbons in a sample (without distinguishing one hydrocarbon from another) The "petroleum hydrocarbons" include compounds of carbon and hydrogen that are derived from naturally occurring petroleum sources or from manufactured petroleum products (such as refined oil, coal, and asphalt).
- **Toxicity:** The degree to which a substance at a particular concentration is capable of causing harm to living organisms, including people, plants and animals.

- Underground Storage Tank (UST): An underground storage tank and connected underground piping as defined in the rules adopted under Chapter 90.76 RCW.
- Washington Ranking Method (WARM): Method used to rank sites placed on the hazardous sites list. A report describing this method is available from Ecology.

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