

**STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY**

In the Matter of Remedial) Enforcement Order
Action by:)
)
ASARCO Incorporated) No. 02TCPNR-4059

To: ASARCO Incorporated
P.O. Box 1677
Tacoma, Washington 98401

I.

Jurisdiction

This Order is issued pursuant to the authority of RCW 70.105D.050(1).

II.

Statement of Facts

1. The area that is the subject of this Order is known as the “fenced area” of the “Everett Smelter” site, also called the “Former Arsenic Trioxide Processing Area” of the “Everett Smelter” site. The fenced area is in Everett, Washington, and is southwest of the intersection of East Marine View Drive and State Route 529. Figures showing the fenced area at increasing levels of detail are included in Exhibit A. Figure A-1 shows the Everett Smelter site as outlined by the Community Protection Measures Boundary. The fenced area is about 4.7 acres in size.

2. The historic smelter plant boundary is shown on Figure A-1. Figure A-2 shows the extent of Asarco-owned property in 1912. Some of the primary structures at the smelter included 8 railroad spurs, a sulfide mill, furnace and roaster buildings, flues and dust chambers,

and two 100+ foot high smoke stacks (See Figure A-3). At the turn of the century, the smelter was one of the largest industrial facilities in Everett, employing up to 125 people.

3. In 1894, the Puget Sound Reduction Company began operating the smelter, refining ores primarily from the Monte Cristo mining district. Ores were delivered to the smelter by rail and refined for lead, copper, gold, and silver. The smelter produced pig lead, most of which was shipped to Japan and China. The lead smelter operated until May 1907. Lead ore was refined on the Site until 1908.

4. Some of the ore from the Monte Cristo mining district contained over 25 percent total arsenic. To recover arsenic from the ore, an arsenic processing plant was constructed on the southern end of the Site (See Figure A-3). The plant consisted of several structures, including additional smoke stacks, flues, ovens and mills, and a large arsenic processing building. The arsenic processing plant operated from approximately 1898 until 1912.

5. In 1903, ASARCO Incorporated (Asarco) bought the smelter; they operated it until it was dismantled in 1914 and 1915. It is unclear how or when the smelter structures were razed. However, it is reported that when some of the arsenic processing equipment was dismantled in Everett it was salvaged and used in the Asarco smelter in Ruston, Washington.

6. Asarco sold the smelter property and its surrounding land-holdings through a series of transactions that occurred between 1914 and 1936. The transactions are listed in the following table. The number of acres listed for each transaction is an approximation.

Year	No. of Acres	Property Sold To
1914	1.32	Weyerhaeuser
1914	0.92	Snohomish County

Year	No. of Acres	Property Sold To
1916	0.11	Mr. & Mrs. Cook
1924	4.19	State of Washington
1924	1.66	Weyerhaeuser
1924	10.28	Weyerhaeuser
1928	17.89	Mr. Spriestersbach
1932	6.01	Model Transfer & Storage
1936	6.01	City of Everett

The acreage bought by the State of Washington is now the interchange between East Marine View Drive and State Route 529. The 17.89 acres bought by Mr. Spriestersbach were developed into residential neighborhoods. About 25 houses were built on property that is now within the fenced area. The area east of East Marine View Drive is used for industrial and railroad purposes. Mr. Boyd Benson owns approximately 5 acres of the industrial area east of East Marine View Drive. Since the 1950s, the Benson property has been used for a rock wool insulation plant, which processed smelter slag left on the Site into insulation; a scrap metal yard; and, most recently, a bark and topsoil facility.

7. In 1990, an outcrop of slag was discovered on the hillside below East Marine View Drive. The slag was discovered during an environmental investigation being conducted by Hart-Crowser for Weyerhaeuser. As part of the investigation, slag, soil, and ground water samples were collected on Weyerhaeuser property and analyzed for the presence of heavy metals. After receiving the data, Weyerhaeuser notified Ecology in a letter to Mr. Greg Bean, dated October 30, 1990, that a release of a hazardous substance had occurred at the site.

8. Ecology conducted an initial investigation of the Site in December 1990. The investigation included a Site visit, historic research of the area, and a review of the data previously submitted by Weyerhaeuser.

9. Ecology conducted a Site Hazard Assessment (SHA) of the Site in February 1991. The SHA consisted of a magnetic survey, to attempt to locate the extent of buried slag, and collection of 20 surface soil samples that were analyzed for metals. Laboratory analysis demonstrated releases of arsenic, cadmium, and lead to the soils found in the residential area on the site.

10. Ecology conducted a "Pre-Remedial Investigation" (Pre-RI) in May 1991. The Pre-RI consisted of the preparation of a site map and collection of 285 additional soil samples. The purpose of the investigation was to further characterize the nature and extent of elevated concentrations of residual metals that were identified in the SHA. Results of the Pre-RI confirmed releases of arsenic, cadmium, and lead in surface soils throughout the study area.

11. In April 1992 Ecology issued Enforcement Order No. DE92TC-N147 to Asarco. This Order required Asarco to perform a Remedial Investigation/Feasibility Study and certain Interim Actions to limit exposure of residents to arsenic and other metals at the site.

12. In March 1994 Ecology issued the first amendment to Enforcement Order No. DE92TC-N147. The first amendment required Asarco to perform additional interim actions and prepare an interim deliverable remedial investigation report. The amendment also required Asarco to undertake additional sampling for the remedial investigation and extended the schedule.

13. The Washington State Department of Health (WDOH) and the Agency for Toxic Substances and Disease Registry (ATSDR) collected hair and urine samples from site residents in 1994. Analysis of these samples indicated that some people on the site were exposed to greater than normal amounts of arsenic.

14. Subsequent to the hair and urine sampling, ATSDR sampled soil and house dust at residences located in areas suspected of containing smelter demolition debris to further define routes of exposure. Analysis of these samples indicated that soil and house dust at residences within the former smelter property contained elevated concentrations of lead and arsenic. ATSDR forwarded a Health Consultation to Ecology dated August 31, 1995 regarding the soil and house dust sampling at two homes on the site. In the Health Consultation, ATSDR concluded that residents of the two homes were being exposed to arsenic at concentrations that represented an immediate threat to their health, and that lead found in surface soil at one of the homes might pose a threat to the health of young children or women of child-bearing age who lived in the home. ATSDR recommended that exposure to arsenic be stopped as soon as possible and that blood lead testing be performed.

15. In 1994 and 1995, Asarco voluntarily implemented a property buy-out program for the homes located in the area formerly occupied by the arsenic processing facilities of the smelter. This area was then fenced and came to be called the fenced area. All but two of the homes were purchased as part of this program. In September 1995 Ecology issued Enforcement Order No. DE95TC-N350 to Asarco. This Order required Asarco to immediately take action to stop the exposure to arsenic of residents, pets, and others who resided in the two remaining houses at 520 and 534 East Marine View Drive. Thereafter, Asarco purchased these properties

and following Asarco's purchases, the families vacated each of these houses and moved to residences off-site.

16. Pursuant to Enforcement Order DE92TC-N147 and first amendment, Asarco prepared an Interim Deliverable report in April 1994 and a Remedial Investigation and Feasibility Study (RI/FS) report (*Everett Smelter Remedial Investigation and Feasibility Study, prepared by Hydrometrics, Inc. for ASARCO Inc. and dated September 1995*) for most of the study area.

17. Based on the analytical data collected during the SHA, Pre-RI, the RI/FS, other sampling efforts by Asarco and Ecology and sampling efforts by ATSDR, there is evidence of elevated concentrations of arsenic, cadmium, and lead in the soils. Based on analytical data in the RI/FS report, there is evidence of arsenic and lead in ground water and arsenic and lead in surface water on the site. Based on the analytical data collected by ATSDR, there is evidence of arsenic and lead in house dust on the site.

18. Subsequent to issuance of Enforcement Order Nos. DE92TC-N147 and DE95TC-N350 Asarco expanded its property buy-out program and purchased all but fifteen of the residences in the area south of Broadway, east of Balsam Lane, north of Butler Street, and west of East Marine View Drive. Since Asarco's purchase, all of the homes located within the fenced area have been vacated and demolished. Many of the homes adjacent to the fenced area have also been vacated, although Asarco is currently leasing some of these properties for residential use.

19. In August 1996, Asarco approached Ecology with a suggested "framework for solution" which provided an outline of potential remedial activities. Asarco's proposed framework outlined a phased approach to cleaning up the site, commencing certain activities as soon as possible. Ecology concluded that the initial activities included in Asarco's framework were consistent with the cleanup objectives set forth by Ecology and contained in the Model Toxics Control Act. Therefore, Ecology issued Order No. DE97TC-N119 which required all of the initial activities included in Asarco's proposed framework. In addition, the Order required some of the activities which Asarco included in later phases of the proposed framework. Order No. DE97TC-N119 was amended in October 1998 to require Asarco to continue to implement Community Protection Measures (CPMs) until February 2000 and to assist Ecology in implementing State Environmental Policy Act (SEPA) requirements for the site. By letter dated April 19, 1999, Ecology described the current status of Asarco's compliance with the requirements of Order No. DE97TC-N119 and directed Asarco to begin implementing the Overall Soil Sampling Task. Asarco refused to comply with this directive.

20. In October 1997 Ecology and Asarco entered a mediated process which included the City of Everett, Snohomish County, Snohomish Public Utility District, Snohomish Health District, Everett Housing Authority, Northeast Everett Community Organization, and Northwest Everett Neighborhood Association. The purpose of the mediation was to thoroughly explore alternatives for cleaning up the Everett Smelter site. Agreement was not reached in the mediation, but each organization's concerns were fully discussed. Mediation concluded in August 1998 without reaching agreement.

21. Prior to the conclusion of mediation, in July 1998, Asarco filed suit in Thurston County Superior Court against Ecology challenging the cleanup decision which Asarco anticipated Ecology would make on constitutional and non-constitutional grounds. In pretrial proceedings, the Court ruled the non-constitutional portion of the suit was not ripe for adjudication. The Court ruled that the constitutional challenge was ripe for adjudication. The Thurston County Superior Court ruled in December 1999 that it was unconstitutional to impose retroactive liability upon Asarco under the Model Toxics Control Act for cleaning up property it did not historically own, but that it was constitutional to impose retroactive liability upon Asarco for property it did historically own (See Figure A-2).

22. Both Ecology and Asarco appealed this decision to the Washington State Supreme Court. On March 21, 2002 the State Supreme Court vacated the superior court's order and dismissed Asarco's lawsuit without prejudice, holding it was not ripe for judicial review. On April 8, 2002, Ecology issued Enforcement Order No. 02TCPNR-3878 to Asarco to proceed with cleanup of the Everett Smelter site. On April 9, 2002, Asarco filed a motion with the State Supreme Court asking for partial reconsideration of the Supreme Court's decision. Filing of this motion delayed finality of the Supreme Court's decision, thus staying Enforcement Order No. 02TCPNR-3878. For future clarity and efficiency with respect to the compliance dates in the order, Ecology rescinded the Enforcement Order with Order No. 02TCPNR-3933. Asarco's motion is now pending. It is uncertain when the Supreme Court will act upon Asarco's motion.

23. In the context of the above lawsuit, Asarco did not contest liability under the Model Toxics Control Act for those properties it currently owns within the Everett Smelter site (i.e.,

properties purchased by Asarco through the property buy-out program referenced above). *See, e.g.,* Finding of Fact No. 21, Superior Court Findings of Fact dated March 3, 2000, *Asarco Incorporated v. Department of Ecology*, Thurston County Superior Court No. 98-2-1729-2; *Asarco Inc. v. Department of Ecology*, Washington Supreme Court No. 69406-1, slip op. at 4 n. 1 (“Liability to clean the 7.2 acres purchased by Asarco is not at issue in this case”).

24. In April 1999 Ecology issued Enforcement Order No. DE99TC-N356, which ordered Asarco to clean up the 80 most contaminated homes within the Everett Smelter site outside of the fenced area. These homes were and are still occupied. Asarco refused to comply with this order. Some of these homes are on property which Asarco historically owned. Others are currently owned by Asarco.

25. After mediation concluded, Ecology prepared the Integrated Final Cleanup Action Plan and Draft Environmental Impact Statement for the Uplands Area of the Everett Smelter Site (FCAP/FEIS). After receiving and responding to public comment on the draft, the FCAP/ FEIS was issued on November 19, 1999. The FCAP/FEIS required, among other things, that all material within the fenced area with an arsenic concentration greater than 3,000 milligrams/kilogram (mg/kg, equivalent to parts per million) be excavated and sent off-site to a facility permitted to accept such waste (FCAP/FEIS, p. 128). This requirement was based on: (a) analytical data indicate soil with arsenic concentrations exceeding 3,000 mg/kg is federally-designated hazardous waste, and hence is dangerous waste under WAC 173-303-070(3) (FCAP/FEIS, p. 43); (b) material with arsenic concentrations between 1,500 and 5,000 mg/kg may cause permanent or even lethal health effects in sensitive individuals, the dangerous waste concentration of 3,000 mg/kg is in the mid-point of this range, and Ecology has determined that

leaving arsenic concentrations greater than 3,000 mg/kg within a densely populated area is not protective of human health and the environment because any breach of containment would expose material that could be an immediate threat to health, and this hazard would remain for the indefinite future because the toxicity of the arsenic-contaminated soil will persist for the indefinite future (FCAP/FEIS, p. 103); and (c) long-term effectiveness and protection of future generations can only be accomplished by removing the most highly contaminated soil (arsenic concentrations greater than 3,000 mg/kg) from the fenced area to an off-site facility designed for the acceptance and long-term management of such waste, and it is inappropriate to leave high levels of contamination in an urban neighborhood which, if exposed, could constitute an immediate threat to health (FCAP/FEIS, p. 130).

26. In January 2000 Asarco issued the draft *Comprehensive Lowland Area Remedial Investigation Report* (LL Report). This was a report required by Ecology Order No. DE97TC-N119. It included a summary of the smelter investigation report and characterization of storm water and storm drain sediment, also required by Ecology Order No. DE97TC-N119. Asarco's draft lowland area report indicates: (a) smelter materials of primary interest are residuals of arsenic trioxide (containing arsenic concentrations in the hundreds of thousands up to 760,000 mg/kg and flue dust (containing arsenic concentrations in the thousands up to 25,000 mg/kg), this material being located mostly within the top four feet in the fenced area east of Pilchuck Path (LL Report, p. 2-11) (See Figure A-5); (b) materials containing residual arsenic trioxide or flue dust can act as sources of arsenic to ground water under ambient leaching conditions (LL Report, p. 2-12); (c) two surface run-off samples collected from the northeast corner of the fenced area and

two manholes south of the fenced area exceed the City of Everett's sewer discharge limit of 500 µg/L for arsenic (LL Report, p. 2-17); (d) there are approximately 20,000 to 25,000 cubic yards of soil with arsenic concentrations greater than 3,000 mg/kg in an area of about 2.8 acres; within that area, there are 1.4 acres containing approximately 10,000 to 15,000 cubic yards of soil with arsenic concentrations over 10,000 mg/kg; these areas directly coincide with former arsenic processing facilities located between East Marine View Drive and Pilchuck Path in the fenced area (shown in Figure A-3)(LL Report, p. 4-14); and (e) arsenic loading from the fenced area was on the order of 3-4 pounds per day during periods of storm water sampling in January and February of 1999, with over 75 percent of the observed arsenic load discharging to the City of Everett's sewer/storm water system (LL Report, p. 5-8). Asarco's report concluded that it is likely that remediation activities planned for the fenced area would be successful in intercepting and removing current sources of metals to ground water and surface water and that the best approach for addressing elevated arsenic concentrations was to begin with the fenced area (LL Report, p. 6-7).

27. As noted above, Asarco voluntarily purchased the homes within the fenced area, as well as some homes outside the fenced area. The property which Asarco currently owns is not a part of Asarco's litigation against Ecology, and Asarco has not challenged its liability to clean up the property which it currently owns, which includes the fenced area.

III.

Ecology Determinations

1. Asarco is a former "owner or operator" and a current owner as defined at RCW 70.105D.020(11) of a "facility" as defined in RCW 70.105D.020(4). As described in RCW

70.105D.040(1)(c), Asarco formerly “owned or possessed” a hazardous substance and “arranged for disposal” of that hazardous substance at the facility. Asarco is also a “generator” as described in RCW 70.105D.040(1)(c), of a hazardous waste which was disposed of, or has otherwise come to be located, at the “facility”.

2. The facility is known as the Everett Smelter Site and is located in the area around the intersection of State Route 529 and East Marine View Drive in Everett, Washington. This area is shown on Figure A-1. The Everett Smelter Site is the area within the Community Protection Measures Boundary designated on Figure A-1. The fenced area is shown on Figures A-1, A-2, A-4, and A-5.

3. The substances found at the facility as described above are “hazardous substances” as defined at RCW 70.105D.020(7).

4. The presence of these hazardous substances at the facility constitutes a release as defined at RCW 70.105D.020(19).

5. By letter dated August 29, 1991, Ecology notified Asarco of its status as a “potentially liable person” under RCW 70.105D.040 after notice and opportunity for comment. Asarco is a “potentially liable person” as a current owner, a past owner, and a generator of the hazardous substances that have come to be located at the site. RCW 70.105D.040(1)(a), (b), & (c).

6. Ecology issued the Integrated Final Cleanup Action Plan and Draft Environmental Impact Statement for the Uplands Area of the Everett Smelter Site (FCAP/FEIS) on November 19, 1999. The FCAP/FEIS includes cleanup actions to be taken within the fenced area.

7. Pursuant to RCW 70.105D.030(1)(b) the Department may require potentially liable persons to conduct remedial actions to remedy releases or threatened releases of hazardous substances.

8. Based on the foregoing facts, Ecology believes the remedial actions required by this Order are in the public interest.

9. The remedial actions required by this Order are interim actions as described in WAC 173-340-430. Based on the results of investigations and public comment received to date, Ecology has determined that interim actions are appropriate and warranted at the site. The interim actions required by this Order are technically necessary to reduce the threat to human health and the environment by eliminating or substantially reducing one or more pathways for exposure to hazardous substances known to exist at the site. The interim actions required by this Order are considered actions that are consistent with and necessary to implement final cleanup actions within the fenced area as provided for in the FCAP/FEIS. This Order provides for implementing these actions, which are outside any current litigation, relate to property Asarco currently owns, and relate to the most severely contaminated portion of the Everett Smelter Site, as interim actions in order to promote a reasonable restoration time frame.

10. This Order does not supersede Enforcement Order Nos. DE97TC-N119 or DE99TC-N356, which remain in effect.

IV.

Work to be Performed

Based on the foregoing Facts and Determinations, it is hereby ordered that Asarco take the following remedial actions and that these actions be conducted in accordance with Chapter 173-340 WAC unless otherwise specifically provided for herein.

1. Interim Action Report. Asarco shall prepare an interim action report as required by WAC 173-340-430(7). The report will describe how the cleanup will be accomplished to meet the scope of work specified in Exhibit B of this order. All work must be accomplished in accordance with chapter 70.105D RCW, chapter 173-340 WAC, and all other applicable laws and regulations. The interim action report will include the substantive requirements of permits for which the procedural requirements are exempted under RCW 70.105D.090.

2. Schedule. Asarco shall prepare and submit for Ecology review and approval an Interim Action Report Outline within 15 days of the effective date of this Order. The outline shall include a preliminary list of figures, drawings, plans, and tables which will be included in the Interim Action Report. The outline shall include a preliminary list of applicable requirements of chapters 70.94, 70.95, 70.105, 75.20, 90.48, and 90.58 RCW and of any laws requiring or authorizing local government permits or approvals for the interim action to be taken under this Order.

Asarco shall submit a Preliminary Draft Interim Action Report within 60 days of receipt of Ecology's comments on the Outline. The Preliminary Draft Interim Action Report shall follow the Outline as revised according to Ecology's comments.

Asarco shall submit a Public Review Draft Interim Action Report within thirty days of receipt of Ecology's comments on the Preliminary Draft Interim Action Report. The Public Review Draft Interim Action Report shall incorporate Ecology's comments on the Preliminary Draft Interim Action Report. The Public Review Draft Interim Action Report will be the subject of a 30-day public comment period which will include a public meeting. Ecology will provide comment to Asarco on the public review draft after receiving comment from the public. Ecology will choose an appropriate means of responding to comments received from the public.

Asarco shall submit a Final Interim Action Report within thirty days of receipt of Ecology's comments on the Public Review Draft Interim Action Report. The Final Interim Action Report shall incorporate Ecology's comments on the Public Review Draft Interim Action Report and shall be submitted within fifteen calendar days after receipt of Ecology's comments.

The Final Interim Action Report will include a schedule and deliverables, including monthly progress reports. Mobilization of equipment to the site shall occur no later than April 30, 2003, and all work shall be completed by October 30, 2004, unless otherwise approved by Ecology.

3. Interim Action Report Preparation. Preparation of the Final Interim Action Report falls within the practice of engineering as defined by RCW 18.43.020(5). As engineering work, it must be submitted under the seal of a professional engineer registered with the state of Washington as required by WAC 173-340-840(3). As required by WAC 196-23-020(2), the

preliminary and public review draft interim action reports are to be clearly identified as draft or preliminary and are to be stamped and dated, although they need not be signed, by the engineer providing direct supervision of the work as defined in WAC 196-23-030. The Final Interim Action Report is to be submitted under the seal of a professional engineer registered in the state of Washington as specified in WAC 196-23-020(1).

4. Data and Document Submittal Requirements. Data and documents submittals shall follow the requirements of WAC 173-340-840. All data and documents, with the exception of monthly progress reports, shall be submitted as hard copy and electronically on disk or other appropriate means. Monthly progress reports shall be submitted electronically only. Portions of monthly reports which cannot be readily submitted electronically shall be submitted in hard copy by mail. All electronic submittals shall be in a format acceptable to Ecology. Data shall be entered in a relational database accessible by computer and part of or easily made part of a database containing all past data and suitable for use during the life of and after the project. Data submittals shall be done in a manner that facilitates tracking of cleanup activities by Ecology and the Snohomish Health Department, and provision of information on those cleanup activities in response to public inquiries in person, over the telephone, or by email.

The database program shall be Microsoft® Access or a compatible database program capable of exporting files to Microsoft® Access. Asarco has previously submitted data in database Evernew4. This database is acceptable as a starting point.

All text of review documents shall be submitted as Microsoft® Word or compatible format. Spreadsheet documents, if any, shall be compatible with Microsoft® Excel. Figures and

drawings which are 8½ x 11 inches in size or smaller should be incorporated in Word documents if practicable. Otherwise, such drawings should be submitted in Adobe Acrobat format.

Drawings which do not fit on an 8½ x 11 page must be submitted in hard copy.

Final documents are to be submitted in both hard copy and electronic copy. Electronic copies are to be in either Microsoft® Word or Adobe® Acrobat format.

Ecology's intent is to return review comments using Microsoft® Word's reviewing tool and to have all final documents available, insofar as possible, in electronic format which may be emailed or written to a CD-ROM upon request. Any documents which are available in hard copy only shall be clearly listed in the electronic copy. Asarco is to maintain revision control on all documents, both electronic and hard copy, so that it is clear which document is the latest draft or is the final document.

Data submittals should be done in a manner which promotes efficient use by Ecology, Asarco, and the public. Ecology expects Asarco to work with Ecology and the public to ensure that documents are submitted in a manner that maximizes access to them and promotes efficiency in reviewing them.

5. Monthly Progress Reports. Asarco shall submit monthly progress reports which describe the actions taken during the previous month to implement the requirements of this Order.

Between progress reports Asarco shall apprise Ecology in a timely manner of any issues which need to be addressed during the progress of the work.

The monthly progress reports shall include the following: (a) a list of activities that have taken place during the month, related to work plan tasks; (b) a detailed description of any

deviations from required tasks not otherwise documented in project plans or amendment requests; (c) description of all deviations from the schedule specified in the work plan governing the activities during the reporting month and any planned deviations in the upcoming month; (d) for any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule; (e) all validated data received by Asarco during the past month, in computerized database format, and an identification of the source of the samples; (f) a list of deliverables for the upcoming month if different from the schedule, and (g) other information as identified by Ecology.

Monthly progress reports shall be submitted by the tenth day of the following month, beginning after the first full calendar month after the effective date of this Order. Monthly progress reports shall be submitted to Ecology's Project Coordinator via e-mail. Copies shall be sent via e-mail to others as requested by Ecology. The subject line shall read: Everett Smelter – Progress Report for *Month Year*. The progress report shall be included as an attached Word document. Any figure, table, or other document referred to but not incorporated in the progress report shall be sent via regular mail.

No follow-up copies shall be submitted. Ecology shall ensure that a copy is printed and routed to Ecology's project file. If any problems are encountered with tables or graphics, Ecology will request a hard-copy.

The above submittal requirements for monthly reports are intended to promote efficient exchange of information. Submittal requirements for monthly reports may be modified by mutual agreement between Ecology and Asarco.

6. Failure to Perform. Asarco's failure to submit any of the above deliverables, deliverables identified in the Final Interim Action Report, to mobilize, or to complete cleanup by the applicable required date will be a violation of this Enforcement Order. In such instance, Ecology may proceed with remediation work and/or bring appropriate legal actions, including actions for penalties, in accordance with Ch. 70.105D RCW.

V.

Terms and Conditions of Order

1. Definitions. Unless otherwise specified, the definitions set forth in ch. 70.105D RCW and ch. 173-340 WAC shall control the meanings of the terms used in this Order.
2. Public Notice. RCW 70.105D.030(2)(a) requires that, at a minimum, this Order be subject to concurrent public notice. Ecology shall be responsible for providing such public notice and reserves the right to modify or withdraw any provisions of this Order should public comment disclose facts or considerations which indicate to Ecology that the Order is inadequate or improper in any respect.
3. Remedial Action Costs. Asarco shall pay to Ecology costs incurred by Ecology pursuant to this Order. These costs shall include work performed by Ecology or its contractors for investigations, remedial actions, and Order preparation, oversight and administration. Ecology costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). Asarco shall pay the required amount within 90 days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general description of work performed will be provided upon request. Itemized

statements shall be prepared quarterly. Failure to pay Ecology's costs within 90 days of receipt of the itemized statement of costs will result in interest charges.

By issuing a new order, Ecology does not intend to affect Asarco's obligation to pay costs incurred by Ecology pursuant to any other orders or statutory requirements. Asarco's obligation for such costs, including accruing interest, is continuing.

4. Designated Project Coordinators. The project coordinator for Ecology is:

Name: David L. South
Address: Washington State Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008-5452

Phone: (425) 649-7200
FAX: (425) 649-7098
e-mail: dsou461@ecy.wa.gov

The project coordinator for Asarco is:

Name: Tom Martin
Address: ASARCO Inc.
P.O. Box 1677
Tacoma, Washington 98401

Phone: (253) 756-0203
e-mail: tmartin@asarco.com

The project coordinator(s) shall be responsible for overseeing the implementation of this Order. To the maximum extent possible, communications between Ecology and Asarco, 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). Should Ecology or Asarco change project coordinator(s), written

notification shall be provided to Ecology or Asarco at least ten (10) calendar days prior to the change.

5. Performance. All work performed pursuant to this Order shall be under the direction and supervision of a professional engineer licensed in the state of Washington with appropriate training, experience and expertise in hazardous waste site investigation and cleanup. Asarco shall notify Ecology as to the identity of such engineer(s), 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. Asarco 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 will be in compliance with this Order. Except when necessary to abate an emergency situation, Asarco shall not perform any remedial actions at the Everett Smelter site beyond those required by this Order or other Orders in effect pertaining to the Everett Smelter site unless Ecology concurs, in writing, with such additional remedial actions. WAC 173-340-400(7)(b)(i) requires that "construction" performed on the Site must be under the supervision of a professional engineer registered in Washington.

6. Access. To the extent that the tasks required by this Order require access to land not owned by Asarco, Asarco shall use its best efforts to obtain access agreements for itself, its contractors and agents, and Ecology and their contractors or agents, from the present owners or lessees as the need for such access may arise. Best efforts shall include, at a minimum, a certified letter from Asarco to the present owners of such property requesting access agreements to permit Asarco, Ecology and their authorized representatives to access such property. In the

event Asarco is unable to obtain access under reasonable terms and conditions, Ecology may, consistent with its authority, assist Asarco in obtaining access.

Ecology or any Ecology authorized representative shall have the authority to enter and freely move about all property at the Site at all reasonable times for the purposes of, inter alia: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing the progress in carrying out the terms of this Order; conducting such tests or collecting samples as Ecology or the project coordinator 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 Asarco. When entering the Site under ch. 70.105D RCW, Ecology shall provide reasonable notice prior to entering the Site unless an emergency prevents notice. Ecology shall allow split or replicate samples to be taken by Asarco during an inspection unless doing so would interfere with Ecology's sampling. Asarco shall allow split or replicate samples to be taken by Ecology and shall provide Ecology seven (7) days notice before any sampling activity.

7. Public Participation. Ecology shall retain the responsibility for public participation for this interim action. Asarco shall provide timely assistance to Ecology upon request.

Asarco shall be responsible for erecting and maintaining signs on Hawthorne and on East Marine View Drive which explain the nature of the work. The signs will summarize monitoring being done to protect the health and safety of adjacent residents. These signs will be erected by March 30, 2003. Asarco's project coordinator, with contact telephone number and email, and

Ecology's project coordinator, with contact telephone number and email will be displayed on the sign. Asarco shall also list a 24-hour emergency contact number.

In addition, Asarco shall identify an on-site construction contact, with telephone number, whom the public may contact with questions and comments about current operations. This person shall have a telephone with voice mail, be readily available during normal working hours, and shall return voice mail messages promptly. All calls are to be logged, the nature of the call indicated, and Asarco's response. The logs shall be submitted to Ecology with Asarco's monthly report.

A weather-proof, transparent box, such as those used on real estate signs, will be attached to each sign. Flyers giving updates on the work will be placed in the box on a periodic basis, not to exceed monthly. The flyers will summarize the results of monitoring performed to ensure the health and safety of nearby residents and list the times, duration, and magnitude (both absolute and in comparison to the exceeded standard) of all exceedances of allowable standards which have occurred over the life of the project, the actions taken to stop each exceedance, and the actions taken to prevent such an exceedance from occurring again. Asarco shall provide Ecology at least three working days to review and comment on each flyer.

8. Retention of Records. Asarco shall preserve in a readily retrievable fashion, during the pendency of this Order and for ten (10) years from the date of completion of the work performed pursuant to this Order, all records, reports, documents, and underlying data in its possession relevant to this Order. Should any portion of the work performed hereunder be undertaken through contractors or agents of Asarco, a record retention requirement meeting the terms of this paragraph shall be required of such contractors and/or agents.

9. Dispute Resolution. In the event of a factual or technical dispute, Ecology's site manager will provide Asarco with specific direction on how to proceed and a schedule for compliance. By the specified compliance date, Asarco shall either comply or request Ecology to resolve the dispute. Such request shall be in writing and directed to Mr. James Pendowski, Program Manager of the Toxics Cleanup Program, or his successor. Ecology resolution of the dispute shall be binding and final. Asarco is not relieved of any requirement of this Order during the pendency of the dispute and remains responsible for timely compliance with the terms of the Order unless otherwise provided by Ecology in writing.

10. Reservation of Rights. Ecology reserves all rights to issue additional orders or take any action authorized by law in the event or upon the discovery of a release or threatened release of hazardous substances not addressed by this Order, upon discovery of any factors not known at the time of issuance of this Order, in order to abate an emergency, or under any other circumstances deemed appropriate by Ecology.

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 from the Everett Smelter site.

In the event Ecology determines that conditions at the Site are creating or have the potential to create a danger to the health or welfare of the people on the Site or in the surrounding area or to the environment, Ecology may order Asarco to stop further implementation of this Order for such period of time as needed to abate the danger.

11. Transference of Property. No voluntary or involuntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by Asarco 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 transfer of any legal or equitable interest Asarco may have in the Site or any portions thereof, Asarco shall serve a copy of this Order upon any prospective purchaser, lessee, transferee, assignee, or other successor in such interest. At least thirty (30) days prior to finalization of any transfer, Asarco shall notify Ecology of the contemplated transfer.

12. Compliance With Other Applicable Laws.

A. All actions carried out by Asarco 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 paragraph B. of this section.

B. Pursuant to RCW 70.105D.090(1), Asarco shall determine the substantive requirements of chapters 70.94, 70.95, 70.105, 75.20, 90.48, and 90.58 RCW and of any laws requiring or authorizing local government permits or approvals for the interim action to be taken under this Order. Asarco shall promptly consult with the appropriate state and/or local agencies. Written documentation from those agencies of the substantive requirements applicable to the interim action shall be included in the Interim Action Report. These requirements shall be enforceable requirements of this Order. If additional substantive requirements are identified after issuance of the Interim Action Report, they will be included in an addendum to the Interim Action Report and become enforceable parts of this Order.

C. 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 Asarco 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.

VI.

Satisfaction of this Order

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

VII.

Enforcement

1. Pursuant to RCW 70.105D.050, this Order may be enforced as follows:
 - A. The Attorney General may bring an action to enforce this Order in a state or federal court.
 - B. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the Site.
 - C. In the event Asarco refuses, without sufficient cause, to comply with any of the terms of this Order, Asarco may be liable for:

(1) up to three times the amount of any costs incurred by the state of Washington as a result of its refusal to comply; and

(2) civil penalties of up to \$25,000 per day for each day it refuses to comply.

D. This Order is not appealable to the Washington Pollution Control Hearings Board.

This Order may be reviewed only as provided under RCW 70.105D.060.

Effective date of this Order: June 10, 2002.

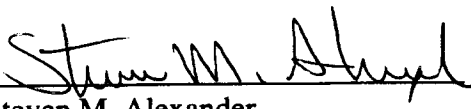

Steven M. Alexander
Toxics Cleanup Program



Exhibit A

Figures

The accompanying figures present maps which show the fenced area of the Everett Smelter Site, as well as the Community Protection Measures area and the Historic Plant Boundary, at increasing levels of detail.

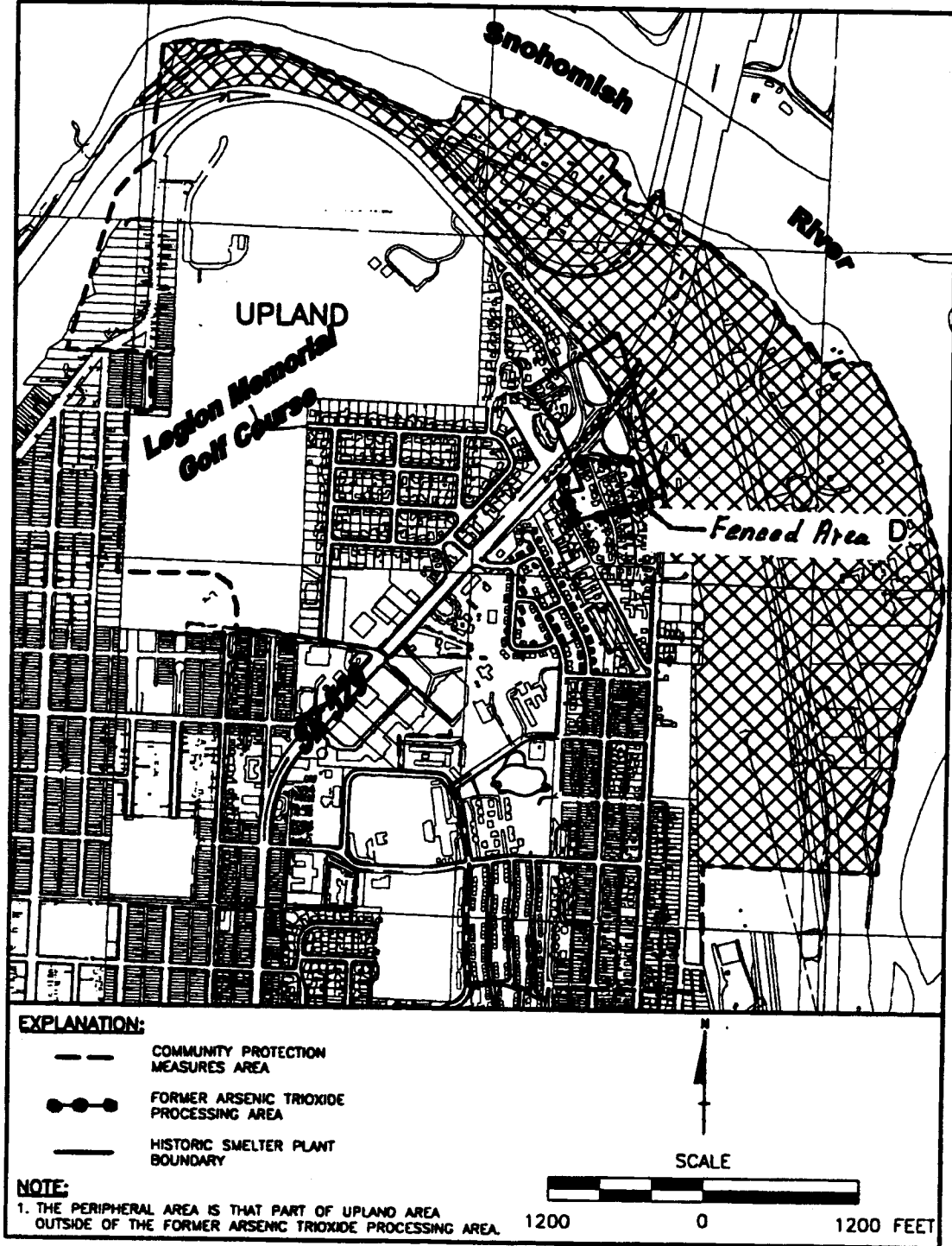


Figure A-1: The Everett Smelter site. (From FCAP/FEIS, Figure 1-2)

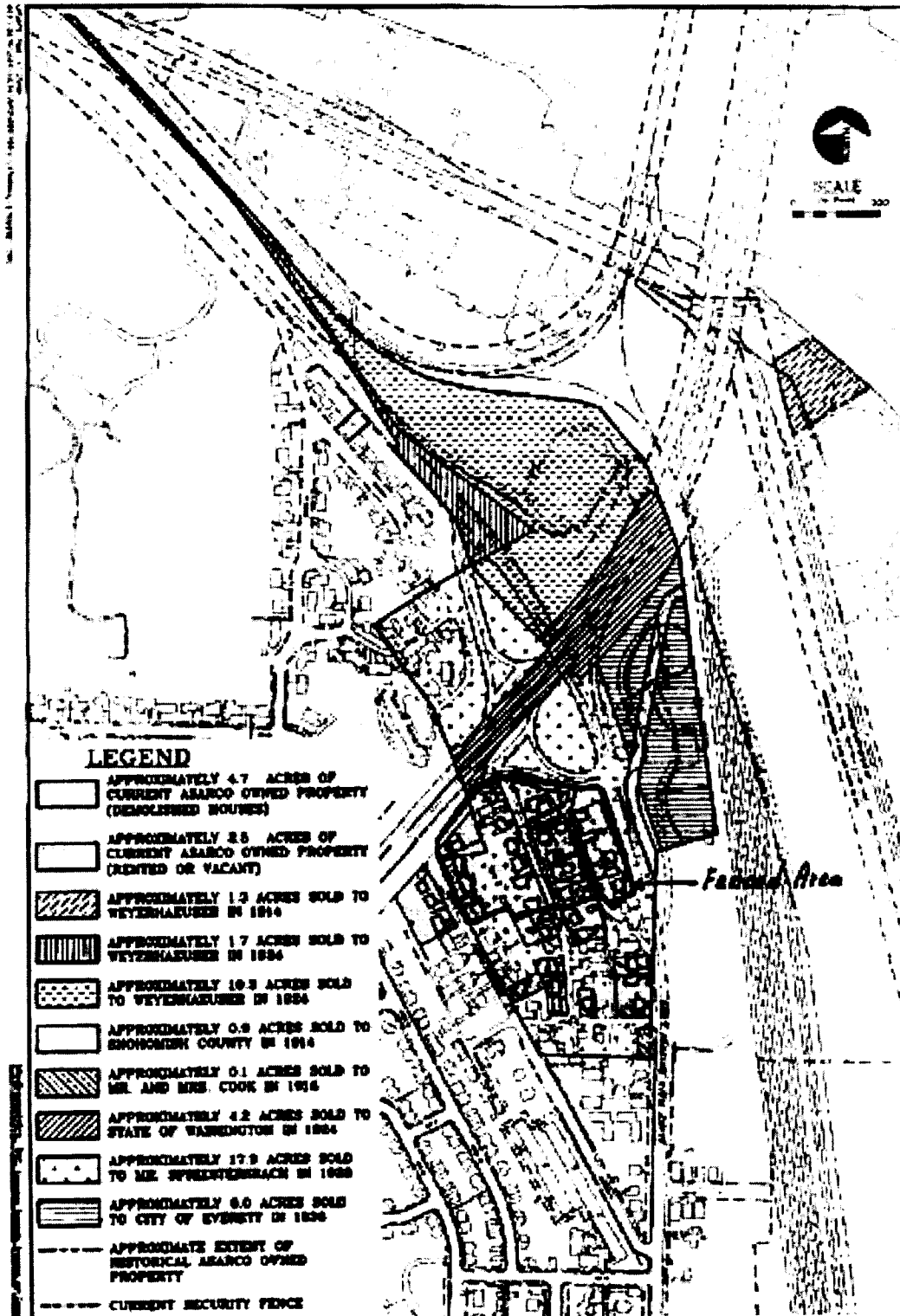


Figure A-2: Approximate extent of Asarco-owned property in 1912. (Received from Asarco)

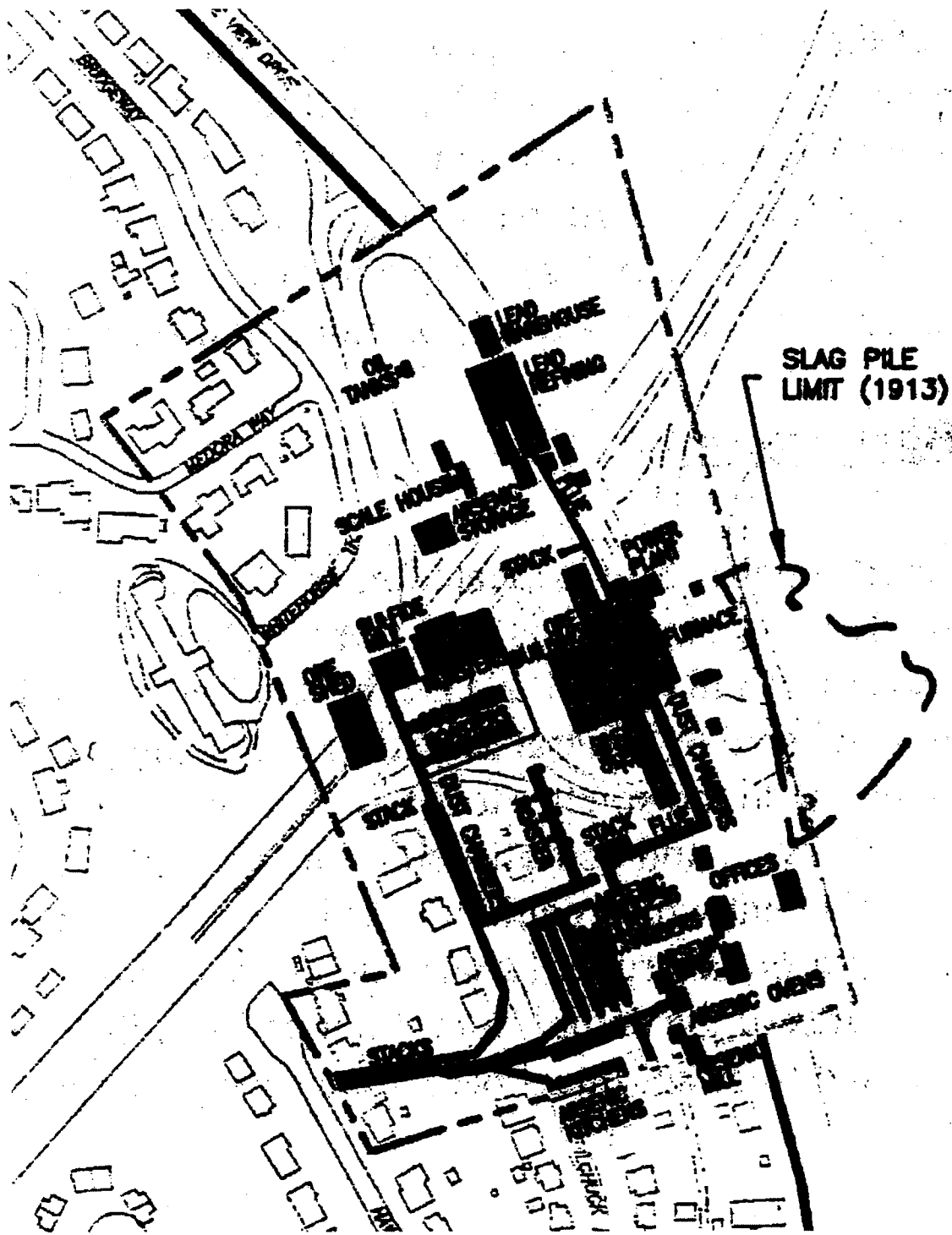


Figure A-3: Former Smelter Layout – arsenic processing area on southern part of historic plant area is now within the fenced area. (From RI/FS report)

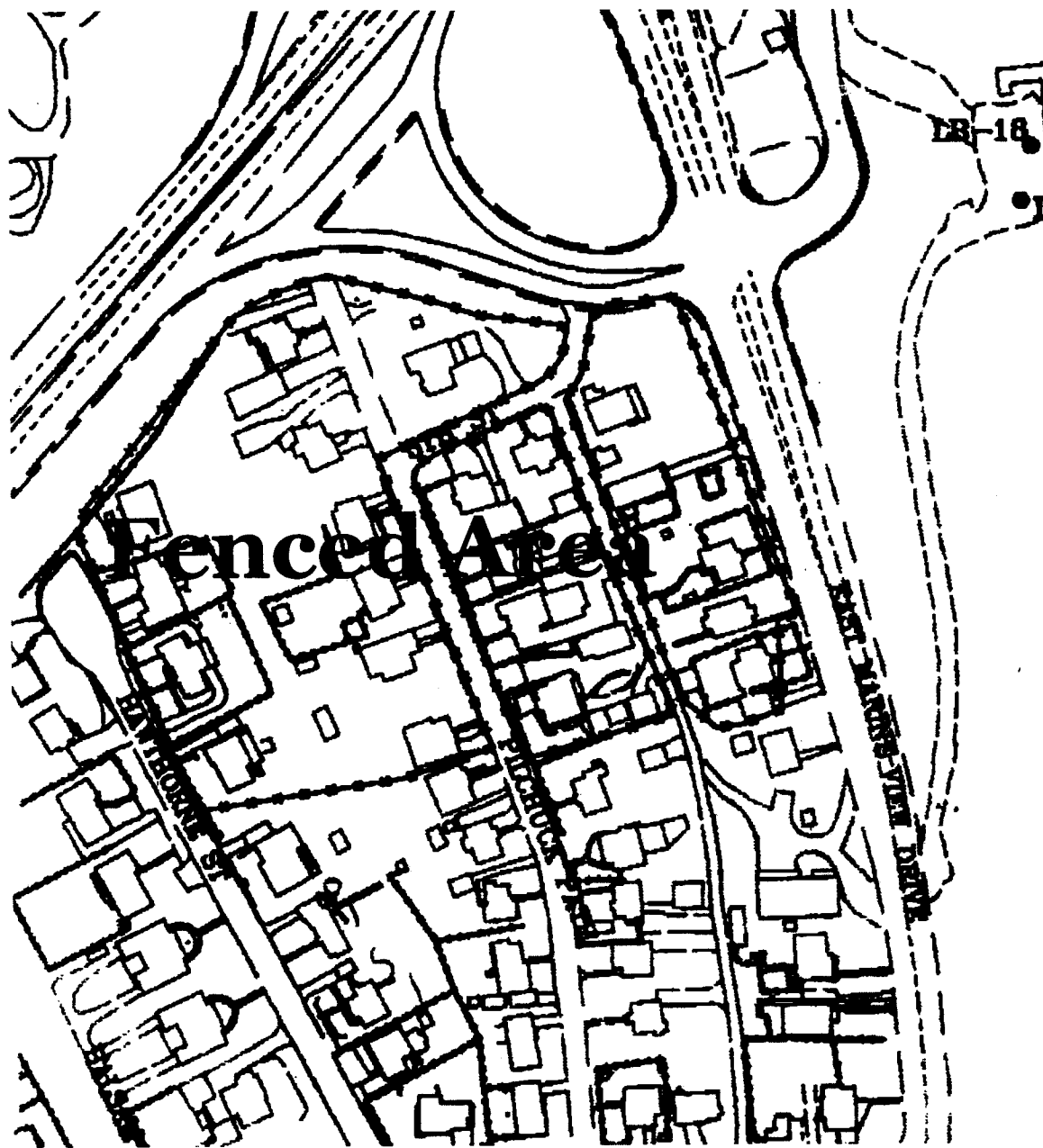


Figure A-4: The fenced area of the Everett Smelter Site. (—x—x—x— indicates security fence enclosing blocks of houses. Streets were left open for access.)

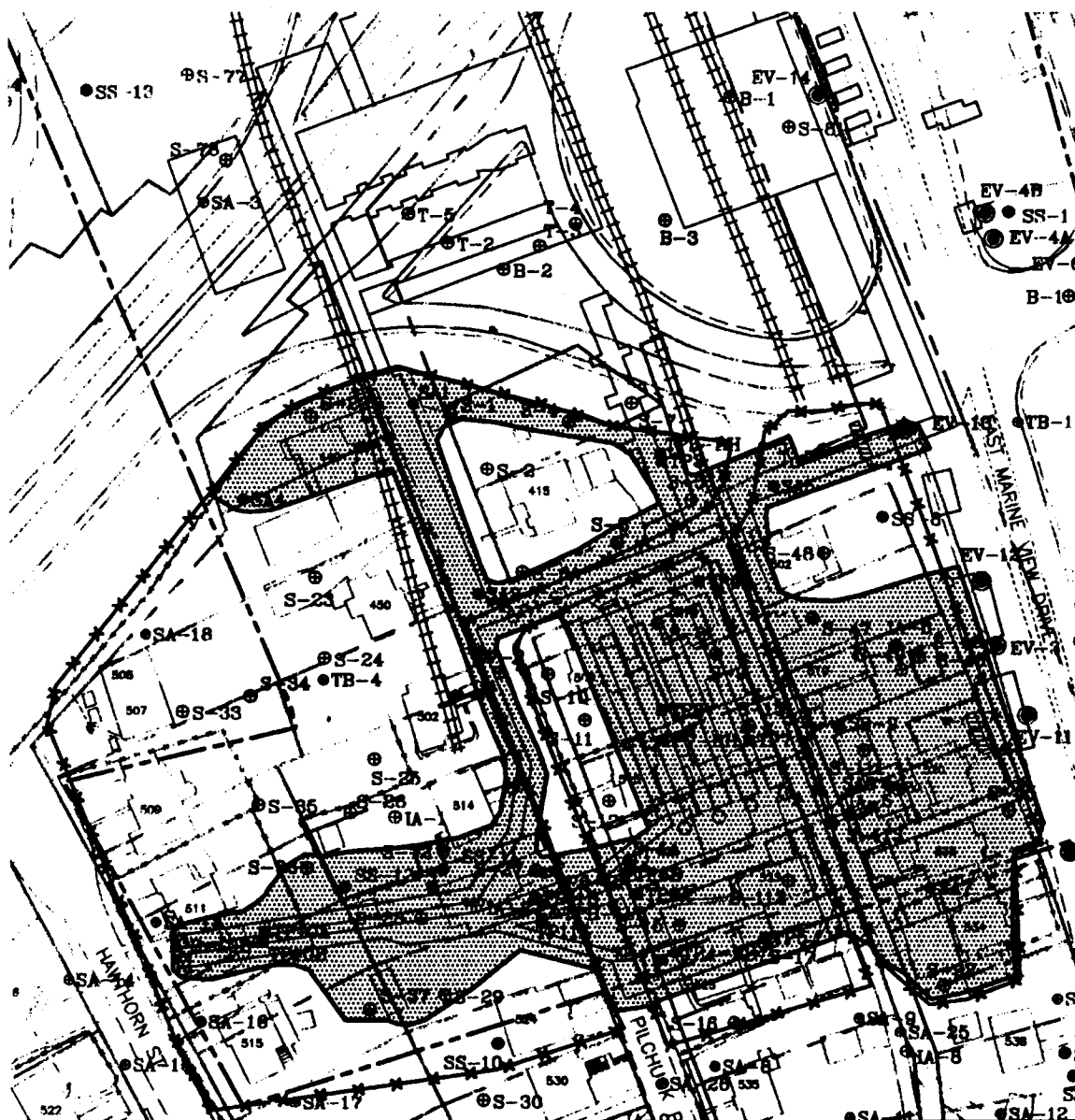


Figure A-5: Estimated extent of smelter residuals containing arsenic trioxide or flue dust. (From LL report, Figure 2-4)

Exhibit B

Scope of Work

Flue dust, arsenic trioxide, soil, and any other material with an arsenic concentration exceeding 3,000 mg/kg shall be excavated and sent to an off-site facility permitted to accept such waste. Initial excavation will include all material within the area shown of Figure A-5 to a depth of four feet.

All identifiable smelter debris, housing foundation material, road and driveway material, utility pipes, rubbish, vegetation and wood debris, and other non-soil material excavated during the course of this interim action ("excavated waste") shall be cleaned as necessary and appropriate and sent to an off-site facility permitted to accept such waste.

Excavated waste may be stored while awaiting final disposition, but may not be stored beyond October 30, 2004, unless otherwise approved by Ecology. The Interim Action Report, a required report in the remediation process, shall identify plans for storage, including anticipated amounts of material to be stored and anticipated length of storage time. The report shall provide that storage facilities meet the substantive requirements for dangerous waste storage and handling in Chapter 173-303 WAC. In addition, once dangerous waste is loaded for transport off-site it is subject to all requirements of Chapter 173-303 WAC.

After the material exceeding 3,000 mg/kg arsenic has been removed from the site, surface water run-on will be prevented and the site will be graded to promote run-off of precipitation falling on the site. The grading will be done in a manner such that run-off does not contact contaminated soil.

Interim grading of the fenced area at the conclusion of this interim action must be consistent with potential future use. Interim grading specifications will be included in the interim action report.

The site will be left in a condition and maintained in a manner which meets the approval of Ecology. Ecology shall consult with interested parties prior to giving such approval.

The Interim Action Report shall contain a description of the amounts, locations, depths, and concentrations of unexcavated contaminated material which will remain on site after completion of the interim action. Contaminated material is material that is estimated to have arsenic concentrations in excess of 20 mg/kg. The description will be used in designing further actions.

Performance Monitoring

Compliance monitoring and sampling and analysis plans shall be prepared as required by WAC 173-340-430(7)(d) and (f). This plans will provide for performance monitoring as described below.

Upon completion of initial excavation, and any additional excavation deemed necessary by visual inspection, samples will be collected and analyzed to evaluate whether all material with an arsenic concentration exceeding 3,000 mg/kg has been excavated.

Borings will be advanced to a depth of three feet beyond the limits of the excavation and samples collected in six-inch intervals. The borings are to be approximately perpendicular to the excavation's surface through which the boring is advanced. Borings will be located at a frequency of one per 400 square feet using a scheme which randomizes boring locations. Borings are to be advanced into both the excavations bottom and sidewalls. Ecology will consult with Asarco on boring locations once excavation has been completed.

Each sample will be analyzed for arsenic with an analytical method having a method detection limit no greater than 18 mg/kg arsenic.

At least 30 samples with a range of arsenic concentrations shall be analyzed for antimony and thallium. The method detection limits for these metals are to be no greater than their respective cleanup levels, and analytical methods with detection limits which achieve detection of the metals will be used if readily available. Results of these analyses will be correlated with arsenic concentrations to provide an estimate of concentrations of these metals remaining on site. This correlation will be evaluated to ensure that cleanup of arsenic is adequately addressing antimony and thallium, and to document what remains behind in association with the arsenic. Data already collected to correlate arsenic with lead, cadmium, and mercury, which are presented in the FCAP/FEIS, are considered sufficient.

No single sample may exceed 3,000 mg/kg arsenic. In case of exceedance, the excavation will be deepened or expanded laterally within the area outlined by a line connecting surrounding locations for which all samples are less than 3,000 mg/kg arsenic. After excavation, six additional borings will be advanced to a depth of three feet beneath the new limit of excavation, re-sampled, and re-analyzed.

In addition, the upper 95% confidence limit will be calculated for each group of six adjacent borings. The calculation will be made on the data set made up of all samples collected from each boring. Data shall be assumed to be lognormally distributed unless this assumption is rejected by a statistical test approved by Ecology. If a lognormal distribution is inappropriate, data shall be assumed to be normally distributed unless this assumption is rejected by a statistical test. The W test, D'Agostino's test, or, censored probability plots, as appropriate for the data, shall be the statistical methods used to determine whether the data are lognormally or normally distributed. If both lognormal and normal distributions are rejected the data will be statistically evaluated as directed by Ecology.

If the upper 95% confidence limit exceeds 3,000 mg/kg, the entire area outlined by adjacent clean locations will be excavated. After excavation, six additional borings will be advanced to a depth of three feet beneath the new limit of excavation, re-sampled, and re-analyzed. This requirement

addresses the chance of missing contamination exceeding 3,000 mg/kg if, by chance, all sampling locations miss areas which are actually present and exceed 3,000 mg/kg.

This sampling and analysis method has been selected to ensure there is a high likelihood of excavating all material with an arsenic concentration exceeding 3,000 mg/kg.

Imported Soil

Imported soil used for back-filling and restoration must meet the requirements specified in the *Property Cleanup Manual for the Peripheral Area of the Everett Smelter Site* (Washington State Department of Ecology, June 26, 2000, p. 16. Granular backfill shall be tested for metals and topsoil shall be tested for priority pollutants as described in the Quality Assurance Project Plan (See pp. 10-11, Appendix A of the Property Cleanup Manual).

Safety and Health Plan

A safety and health plan will be prepared as required by WAC 173-340-430(7)(e). This plan will meet all applicable regulatory requirements and will include provisions for safety and health which address concerns raised by citizens of the neighborhood immediately adjacent to the fenced area.

The safety and health plan will provide for continuous monitoring of dust for arsenic and other hazardous substances, specify allowable concentrations and points where those concentrations must not be exceeded, and specify steps to be taken to immediately control emissions if allowable concentrations are exceeded. In no case can contaminated dust or other hazardous substances be allowed to reach the neighborhood surrounding the fenced area in concentrations which exceed allowable concentrations.

Monitoring parameters will include arsenic, lead, cadmium, antimony, thallium, and mercury. Asarco may apply to Ecology to reduce the monitoring parameters to arsenic and lead. Such application is to present monitoring data collected during the work which shows a sufficient correlation of cadmium, antimony, thallium, and mercury with arsenic and lead to show that monitoring for arsenic and lead only provides sufficient assurance that cadmium, antimony, thallium, and mercury are not leaving the site in concentrations exceeding allowable standards.

Ecology may require monitoring for any other hazardous substances which become of concern at the site.