

**STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY**

In the Matter of Remedial)
Action by:)
ASARCO Incorporated)
) Enforcement Order
) No. DE 97TC-N119

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 in this matter is known as the "Everett Smelter" site. The site is located in Everett, Washington, and is centered near the intersection of East Marine View Drive and State Route 529. A map of the site study area is attached as Exhibit A. The site includes residential and industrial areas and a major interchange. This area includes the former location of a smelter that existed on a portion of the site between approximately 1893 and 1914. This area also includes approximately 650 acres that are outside the location of the former smelter.
2. The smelter property includes an area of about 44 acres. 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. At the turn of the century, the smelter was one of the largest industrial facilities in Everett, employing up to 125 people.

3. In 1893, 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. 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 and began operating the smelter until it was dismantled in 1914. It is unclear how or when the smelter structures were razed. However, it is known 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 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
1916	0.11	Mr. & Mrs. Cook
1924	4.19	State of Washington
1924	1.66	Weyerhaeuser
1924	10.28	Weyerhaeuser
1928	17.89	Mr. Priestersbach
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. Priestersbach were developed into residential neighborhoods. There are presently about 25 houses built on the former smelter property, all of which are west of East Marine View Drive. Weyerhaeuser and Burlington Northern Railroad presently use the area east of East Marine View Drive for industrial and railroad purposes. Mr. Boyd Benson also 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. The Benson property is currently vacant.

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. DE 92TC-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. DE 92TC-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 to contain smelter demolition debris to further define routes of exposure. Analysis of these samples indicated that elevated concentrations of lead and arsenic were contained in soil and house dust at residences within the former smelter property. 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 two homes on the site 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 former smelter property south of State Route 529. All but two of the homes were purchased as part of this program. In September 1995 Ecology issued Enforcement Order No. DE 95TC-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 DE 92TC-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. Some remedial investigation activities are ongoing.

17. Based on the analytical data collected during the SHA, Pre-RI, and RI/FS and by ATSDR, there is evidence 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. DE 92TC-N147 and DE 95TC-N350 Asarco expanded its property buy-out program and has currently purchased all but fifteen of the residences in the area south of Broadway, east of Balsam Lane, north of Bulter Street, and west of East Marine View Drive. Since Asarco's purchase, all of the homes located on the former smelter property have been vacated and fenced off. Many of the remaining homes have also been vacated, although Asarco is currently leasing eleven 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 outlines a phased approach to cleaning up the site, commencing certain activities as soon as possible. The initial activities included in Asarco's framework are consistent with the cleanup objectives set forth by Ecology and contained in the Model Toxics Control Act. This

Order requires all of the initial activities included in Asarco's proposed framework. In addition, this Order requires some of the activities which Asarco included in later phases of the proposed framework. The intent of this Order is to require all of the activities that are necessary to protect human health and the environment while investigative activities are being completed. It is also intended to require activities to prepare the site and collect information necessary to implement the anticipated Cleanup Action Plan.

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 the map attached as Exhibit A.
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.

6. Pursuant to RCW 70.105D.030(1) and 70.105D.050, the Department may require potentially liable persons to investigate or conduct other remedial actions with respect to the release or threatened release of hazardous substances, whenever it believes such action to be in the public interest.

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

8. The remedial actions required by this Order are interim actions as described in WAC 173-340-430. Based on the results of investigations to date, Ecology has determined that interim actions are appropriate and warranted at the site. Some of 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 of exposure to hazardous substances known to exist at the site. Other actions required by the Order are needed to provide for completion of the remedial investigation/feasibility study or design future cleanup actions at the site. The interim actions required by this Order are considered actions that are consistent with and necessary to implement any cleanup actions that will be selected by Ecology in the Cleanup Action Plan. This Order provides for implementing these actions as interim actions in order to promote a reasonable restoration time frame. It is not anticipated that the interim actions required by this Order will constitute a substantial majority of the final cleanup action likely to be selected by Ecology.

9. This Order is issued by Ecology for the purpose of superseding Enforcement Order No. DE 92TC-N147, dated April 20, 1992 and the First Amendment to Enforcement Order No. DE 92TC-N147, dated March 18, 1994. Some of the work required by this order is a continuation of work initiated by the original Order and/or first amendment. The work to be continued is identified in Section IV of this Order. Except where specifically provided herein, the provisions, terms and conditions of this Order are intended to supersede and replace the provisions, terms and conditions of the original Order and amendment.

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. House Demolition. The objective of this task is to demolish and remove the vacant homes on the former smelter site and to prepare this area for future remedial activities. Within 60 days following the effective date of this Order, Asarco shall prepare and submit a draft work plan for Ecology review. The work plan will describe the procedures and methods to be used to demolish all of the houses on the former smelter property south of Broadway and the house at 534 East Marine View Drive and prepare the land for further remedial actions consistent with alternatives presented in the RI/FS. These homes are identified as "fenced properties" on the site map attached as Exhibit B. Ecology will review the draft work plan and provide comments to Asarco. Within 30 days after receiving Ecology's comments, Asarco shall prepare and submit a

final home demolition work plan which incorporates Ecology's comments for Ecology's review and approval. Upon Ecology's written approval of the final work plan, Asarco shall implement the plan as approved.

After demolition, the land should be cleared of all structures. Pavements, sidewalks, and underground utilities may remain until a final cleanup action is selected; however, Asarco, in coordination with Ecology and the City of Everett Public Works Department, may remove pavements, sidewalks, and underground utilities as necessary. All demolition activities shall be conducted in a manner that minimizes, to the maximum extent practicable, releases or potential releases of hazardous substances to the environment. Asarco shall also comply with Article 4, Asbestos Control Standards, implemented by the Puget Sound Air Pollution Control Agency. Within 60 days following the completion of the demolition and site preparation, Asarco shall prepare a draft interim action report, in accordance with WAC 173-340-430(7), for Ecology's review. Ecology will review the draft report and provide comments to Asarco. Within 30 days after receiving Ecology's comments, Asarco shall prepare and submit a final interim action report which incorporates Ecology's comments for Ecology's review and approval.

2. Community Protection Measures Program. Asarco shall initiate the Community Protection Measures (CPM) Program, as described in an agreement between the Snohomish Health District and Asarco, and attached scope of work dated February 12, 1997. A copy of the agreement and scope of work is attached as Exhibit C. The CPM program includes a) an educational program, b) medical testing, c) environmental investigations, and d) a soil disposal program.

The scope of work requires Asarco and the Snohomish Health District to develop a system for collection and disposal of soils excavated by residents as part of typical and normal residential property maintenance, yard work, home improvement activities not subject to a building permit, and other homeowner activities. Asarco shall initiate development of this program and submit a draft soil disposal program plan for Ecology review within 60 days following the effective date of this Order. Ecology will review the draft plan and provide comments to Asarco. Within 30 days after receiving Ecology's comments, Asarco shall prepare and submit a final soil disposal program plan which incorporates Ecology's comments for Ecology's review and approval. Upon Ecology's written approval, Asarco shall implement the plan as approved.

3. Expanded Soil Disposal Program. The soil disposal program, required as part of the Community Protection Measures Program described in paragraph 2 above, is intended to address small quantities of soil that may be generated by residential property owners conducting projects that do not require a building permit. Because of the limitations of this Community Protection Measures Program, an expanded soil disposal program is needed to address soil generated on the site from larger projects, including projects that require building permits and utility projects. Specifically, this task is designed to ensure the adequate characterization, handling and disposal of soil and other material that may be generated on the site prior to the implementation of the Cleanup Action Plan. This task is not required for projects conducted by industrial property owners in the lowland portion of the study area.

Asarco is responsible for working with private or public persons within the study area that potentially generate problem waste, state dangerous waste, federally designated hazardous waste,

and state extremely hazardous waste due to elevated arsenic, lead, and/or cadmium concentrations resulting from historic smelter operations to ensure that such material is adequately characterized, handled and disposed of. Asarco shall coordinate with the City of Everett Public Works Department, Ecology, and the Community Protection Measures Project Manager at the Snohomish Health District to identify projects that are likely to generate such soil or other material. Projects shall be handled on a case-by-case basis. It is anticipated that the Community Protection Measures Project Coordinator at the Snohomish Health District, in coordination with Ecology, will identify projects that require characterization and disposal actions by Asarco. In the event that an agreement cannot be reached regarding work to be performed by Asarco, Ecology shall make the final decision. The purpose of the characterization is to determine and implement the appropriate method of disposal. Asarco is responsible for characterization costs and excess handling, transportation and disposal costs associated with smelter-related contamination. Asarco is not responsible for transportation and disposal costs for non-regulated material or material requiring disposal due to contaminants other than arsenic, lead, and/or cadmium. Asarco shall submit all soil sampling analytical results and any waste disposal manifests or other records to Ecology and the Community Protection Measures Project Manager at the Snohomish Health District when they become available.

Within 60 days following the effective date of this Order, Asarco shall prepare and submit a draft expanded soil disposal program plan for Ecology review. The expanded soil disposal program work plan shall specify how projects are identified, sampling and analysis protocols, reporting requirements, health and safety requirements, and a waste handling and disposal plan. Ecology will review the draft plan and provide comments to Asarco. Within 30 days after

receiving Ecology's comments, Asarco shall prepare and submit a final expanded soil disposal program plan which incorporates Ecology's comments for Ecology's review and approval. Upon Ecology's written approval, Asarco shall implement the plan as approved.

4. Soil Sampling and Analysis.

A. **Initial Soil Sampling and Analysis.** Ecology and Asarco, with input from the Northeast Everett Community Organization (NECO), have negotiated an initial soil sampling scope of work which is attached to this Order as Exhibit D. The objective of the initial soil sampling and analysis plan is to collect property-specific data which will be used to design an overall soil sampling and analysis plan that will be implemented throughout the entire site. Prior to implementation of the attached scope of work and within 30 days of the effective date of this Order, Asarco shall prepare and submit a draft initial soil sampling and analysis plan which meet the requirements of WAC 173-340-820 to Ecology for review. Ecology will review the draft plan and provide comments to Asarco. Within 30 days after receiving Ecology's comments, Asarco shall submit a final initial soil sampling and analysis plan for Ecology's review and approval. Upon receiving written approval from Ecology, Asarco shall implement the final initial soil sampling and analysis plan as approved.

The attached scope of work describes the initial soil sampling in the peripheral areas of the site. This scope of work requires collection of soil samples from 20 properties in the study area. The results of this sampling effort will be used by Ecology and Asarco, with input from the NECO, to design an overall soil sampling and analysis plan which will be the basis for making remedial action decisions on a property-by-property basis throughout the study area.

In addition to the soil sampling described in the attached scope of work, Asarco shall analyze soil samples for arsenic and lead that have been collected and archived as part of an independent investigation of Legion Park Memorial Golf Course. This includes approximately 400 samples.

Asarco shall submit the soil sampling results to Ecology and NECO as they become available.

Within 60 days following receipt of the all of the initial soil sampling analytical data, Asarco shall prepare and submit a draft report which presents and evaluates the results of the initial soil sampling activities for Ecology review. Ecology will review the draft report and provide comments to Asarco. Within 30 days after receiving Ecology's comments, Asarco shall prepare and submit a final initial soil sampling report which incorporates Ecology's comments for Ecology's review and approval.

B. Overall Soil Sampling and Analysis. Within 60 days following submittal of all of the initial soil sampling analytical data to Ecology, Asarco shall prepare and submit a draft overall soil sampling and analysis plan for Ecology review. It is anticipated that the draft plan will be developed during discussions between Ecology and Asarco, in consultation with NECO. Ecology will provide comments to Asarco on the draft plan. Within 30 days after receiving Ecology's comments, Asarco shall prepare and submit a final overall sampling and analysis plan for Ecology review and approval. Following written approval from Ecology, Asarco shall implement the final overall sampling and analysis plan as approved.

In the event that Ecology and Asarco, in consultation with NECO, have not reached agreement on the final overall soil sampling and analysis plan within 30 days after Asarco has

received Ecology's comments on the draft overall sampling and analysis plan, Asarco shall begin sampling additional properties using an overall sampling and analysis plan as directed by Ecology. Asarco shall implement the overall sampling and analysis plan, as directed by Ecology, until agreement on an overall sampling and analysis plan can be reached between Ecology and Asarco, in consultation with NECO.

The overall soil sampling and analysis plan will be used to identify properties and other areas with soil that contain arsenic, cadmium, and/or lead concentrations in excess of the soil cleanup levels of 20 mg/kg arsenic, 2 mg/kg cadmium, and 250 mg/kg lead. In addition, the overall soil sampling will be used to define the site boundary. Sufficient data must be collected to allow statistical definition of the arsenic concentrations, and other contaminant concentrations, if warranted, in soil for all properties and other exposure units with arsenic, cadmium, and/or lead concentrations in excess of the soil cleanup levels. The overall soil sampling and analysis plan will include the statistical methodology by which the data collected will be used to make remedial action decisions on a property-specific basis throughout the study area. Properties may be subdivided into smaller exposure units to evaluate whether partial-lot cleanup is necessary.

The area to be sampled in the overall soil sampling and analysis plan is roughly equivalent to the Remedial Investigation study area (Exhibit A). This area extends from the northwest corner of Legion Park Memorial Golf Course on the northwest, to the intersection of 11th and East Marine View Drive on the southeast. This area includes all residential properties north of 11th Street and east of State Route 529, including properties east of East Marine View Drive. It also includes all residential properties north of Tower Street (and east of the golf course), on the west side of State Route 529. In addition, all commercial and public use areas, such as

businesses, schools, parks, golf courses, and roadways within this area will be addressed in the overall soil sampling and analysis plan. When available and appropriate, existing data will be used. The exact boundary of the overall sampling effort will be adjusted based on the results of the sampling. The lowland area, the industrial area between East Marine View Drive and the Snohomish River, and the smelter area, the area occupied by vacant homes and enclosed by a fence, are being characterized under a separate task and are not part of the sampling area referred to in this section. A separate sampling and analysis plan will be prepared for the lowland and smelter areas.

Asarco shall submit the soil sampling results to Ecology, NECO, and the Community Protection Measures Project Coordinator at the Snohomish Health District as they become available.

Within 60 days following receipt of all of the overall soil sampling analytical data, Asarco shall prepare and submit a draft report which presents and evaluates the results of the overall soil sampling activities for Ecology review. Ecology will review the draft report and provide comments to Asarco. Within 30 days after receiving Ecology's comments, Asarco shall prepare and submit a final overall soil sampling report which incorporates Ecology's comments for Ecology's review and approval.

C. Soil Sampling and Analysis Requirements. For all soil sampling required by this Order, Asarco shall use analytical methods that achieve detection limits of no greater than 18 mg/kg arsenic, 20 mg/kg lead, and 1 mg/kg cadmium.

Asarco shall survey in all soil sampling locations as part of the initial soil sampling program. Acceptable surveying methods shall be of an accuracy and reliability that may be

obtained using a Brunton compass, steel or fiberglass surveying tape measure or a measuring wheel accurate to the nearest tenth of a foot. Sample locations shall be surveyed relative to fixed points near the sample location. Elevations of soil sampling locations with respect to the fixed points shall also be surveyed and shall be at least as accurate and reliable as achievable using hand level and rod. The fixed points shall be relatively permanent features, such as a point on the ground surface at a foundation corner, whose State Plane coordinates and elevation can be estimated from a large scale site map.

Following completion of the initial soil sampling program, Ecology will determine the appropriate surveying requirements to be used for the overall soil sampling program.

5. Smelter Area Investigation. The objective of the smelter area investigation is to identify the nature and extent of extremely hazardous waste, federally designated hazardous waste, state dangerous waste, and any other soils or material that may be a contaminant source for surface and ground water in and adjacent to the smelter area. The smelter area is defined as the former smelter property east of State Route 529. Asarco shall conduct an investigation to determine the location and volumes of material in the waste categories listed above.

Within 150 days following the effective date of this Order Asarco shall submit a draft sampling and analysis plan to conduct the investigation of the smelter area. The draft sampling and analysis plan shall include conducting bioassays in accordance with Ch. 173-303 WAC. Ecology will review the draft plan and provide comments to Asarco. Within 30 days after receiving Ecology's comments, Asarco shall submit a final sampling and analysis plan which incorporates Ecology's comments for Ecology's review and approval. Upon Ecology's written approval, Asarco shall implement the plan as approved.

Within 60 days following receipt of all of the smelter area investigation field and analytical data, Asarco shall prepare and submit a draft report which presents and evaluates the results of the smelter area investigation for Ecology review. Ecology will review the draft report and provide comments to Asarco. Within 30 days after receiving Ecology's comments, Asarco shall prepare and submit a final smelter area investigation report which incorporates Ecology's comments for Ecology's review and approval.

6. Supplemental Remedial Investigation. The supplemental remedial investigation is intended to complete characterization of the nature and extent of contamination in the lowland portion of the site (the area between the base of the bluff below East Marine View Drive and the Snohomish River) and its relationship to the upland area. In addition, the supplemental remedial investigation will be used to install monitoring wells which will be used to provide long-term monitoring of ground water during and after cleanup activities. Asarco has prepared and submitted a draft supplemental remedial investigation report (*Supplemental Investigation of the Everett Smelter Site Lowland Area, Everett, Washington, prepared by Hydrometrics, Inc. for ASARCO Inc. and dated July 1996*) which was a deliverable required by Enforcement Order DE 92TC-N147 and the first amendment to that Order. Ecology will provide comments on the draft supplemental remedial investigation report to Asarco.

Within 60 days after receiving Ecology's comments, Asarco shall prepare and submit a final supplemental remedial investigation report that incorporates Ecology's comments and a draft work plan for any additional characterization and monitoring activities for Ecology's review and approval. Ecology will review the draft work plan and provide comments to Asarco. Within 30 days after receiving Ecology's comments, Asarco shall prepare and submit a final work plan for

Ecology's review and approval. Upon receiving written approval from Ecology, Asarco shall complete the supplemental remedial investigation, if necessary, and initiate any required monitoring activities pursuant to the final work plan approved by Ecology.

The required work plans and associated tasks are subject to the provisions, terms and conditions of this Order. Sampling must extend to areas, depths and locations where contaminant concentrations are below appropriate cleanup levels.

7. Storm Water and Storm Drain Sediment Characterization and Controls. The objective of this task is to characterize and implement best management practices designed to eliminate, or substantially reduce, the discharge of storm water from the site that exceeds the appropriate regulatory limits. Storm water in the residential portion of the site flows into the City of Everett's combined sewer and storm water system. The regulatory limits for discharges to the City of Everett's combined sewer and storm water system are 0.5 mg/L for arsenic, 0.24 mg/L for cadmium, and 1.89 mg/L for lead. Storm water not entering the City of Everett's storm water system (water flowing into the lowland area) is subject to surface water criteria specified in accordance with WAC 173-340-730.

Asarco shall characterize the flow directions, drainage basins, and volumes of surface water. Storm water shall be monitored for total and dissolved arsenic, cadmium, and lead concentrations. Asarco shall start the investigation in and around the former smelter property and, if necessary, expand the investigation outward from the former smelter property until appropriate regulatory limits are achieved for arsenic, cadmium, and lead. A hydrologic water balance shall be calculated, and contaminant loading estimates will be made for all areas that are characterized. Storm drains shall be regularly inspected at a frequency of no less than quarterly

and, if present, storm drain sediments shall be characterized with respect to volumes and arsenic, cadmium, and lead concentrations. Sediments containing elevated concentrations of arsenic, cadmium, and/or lead shall be removed from the storm drain system and disposed of in accordance with applicable regulations, as necessary.

Within 90 days following the effective date of this Order, Asarco shall prepare and submit a draft work plan for monitoring, testing, storage, control and implementation of best management practices for storm water and storm drain sediments. The work plan shall include an analysis of best management practices that can be implemented on site in the interim period before the cleanup action plan is implemented. The work plan shall also include a schedule for implementation. It is anticipated that the work plan, and implementation thereof, will be modified, as necessary, to accommodate changing site activities and conditions. Ecology will review the draft work plan and provide comments to Asarco. All documentation regarding this task shall also be provided to the City of Everett's Public Works Department. Within 30 days after receiving Ecology's comments on the draft work plan, Asarco shall prepare and submit a final work plan for that incorporates Ecology's comments for Ecology review and approval. Upon receiving Ecology's written approval, Asarco shall implement the work plan as approved by Ecology. The plan shall continue to be implemented at the site during and after cleanup activities until the plan is replaced with by a long-term storm water monitoring and control plan.

Asarco shall prepare and submit quarterly task reports which contain, summarize and evaluate any data generated and any actions taken related to this task during the preceding quarter for Ecology's review and approval throughout the duration of this task.

8. Lowland Area Feasibility Study. Within 30 days following Ecology's written approval of the final supplemental remedial investigation report and the final smelter area investigation report, Asarco shall initiate the lowland area feasibility study by submitting a draft feasibility study report table of contents for Ecology's review and approval. Ecology will review the draft table of contents and provide comments to Asarco. Upon receiving Ecology's comments, Asarco shall conduct a feasibility study to identify and evaluate potential cleanup actions for the lowland portion of the site.

Within 180 days following Ecology's written approval of the feasibility study table of contents, Asarco shall submit a draft feasibility study report for Ecology's review. Ecology will review the draft report and provide comments to Asarco. Within 90 days of Asarco's receipt of Ecology's comments, Asarco shall prepare and submit a final lowland area feasibility study report which adequately addresses comments provided by Ecology for Ecology's review and approval.

9. State Environmental Policy Act (SEPA) Process. Asarco and Ecology are initiating the SEPA process for the cleanup actions anticipated to be taken at the site, including these interim actions. A SEPA checklist for the actions required by this Order has been completed by Asarco and is attached as Exhibit E-1. Ecology has made a Determination of Non-Significance (DNS) in response to the SEPA checklist prepared by Asarco to address the interim actions required by this Order. This determination is attached as Exhibit E-2.

Asarco shall work with Ecology in implementing the SEPA process for activities to be conducted under the Cleanup Action Plan. It is anticipated that the Cleanup Action Plan will require Asarco to complete an Environmental Impact Statement. Asarco shall work with Ecology, as lead agency, on scoping activities for an Environmental Impact Statement. Asarco

shall prepare a draft Environmental Impact Statement according to a schedule to be determined by Ecology after the scoping is complete.

10. Work Plans, Quality Assurance Plans, and Sampling and Analysis Plans. Asarco shall prepare and submit draft and final work plans to implement the above remedial actions for Ecology review and approval. The work plan shall describe in detail how the above tasks will be accomplished. The work plan shall meet the requirements of WAC 173-340-430(6) and include, where appropriate, a sampling and analysis plan, a quality assurance plan, a health and safety plan, a data management plan, and a schedule. The quality assurance plan shall provide for Ecology to independently conduct system and performance audits at any time.

11. Data and Document Submittal Requirements. All data and documents shall be submitted as hard copy and electronically on disk or other appropriate means. Data shall be entered in a relational database accessible by computer. The database program shall be Microsoft Access Version 2.0 or a compatible database program capable of exporting files to Microsoft Access Version 2.0. All environmental sampling data, coordinate and elevation data, cost data, and other data as appropriate shall be entered in the database. Asarco shall include a data management plan in the work plan. The data management plan shall include anticipated database table structures and relationships. All text documents shall be submitted as Microsoft Word Version 6.0 or a compatible word processing program. Submitted spreadsheet documents, if any, shall be compatible with Microsoft Excel version 5.0.

12. Monthly and Weekly Progress Reports. Asarco shall submit to Ecology written monthly progress reports which describe the actions taken during the previous month to implement the requirements of this Order. The progress reports shall include the following:

- A. A list of on-site activities that have taken place during the month, related to work plan tasks;
- B. Detailed description of any deviations from required tasks not otherwise documented in project plans or amendment requests;
- C. Description of all deviations from the schedule 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, both as hard copy and in computerized database format, received by Asarco during the past month and an identification of the source of the samples; and
- F. A list of deliverables for the upcoming month if different from the schedule.

All monthly progress reports shall be submitted by the tenth day of the following month, beginning after completion of the first full calendar month after the effective date of this Order. In addition, project meetings shall be held between Asarco and Ecology as necessary to discuss the progress of the work.

During periods of sample collection and field work, Asarco shall submit weekly progress reports to Ecology. The reports shall briefly list the tasks accomplished in the previous week and planned tasks for the upcoming week. The report shall be faxed to Ecology by 5:00 PM on Friday each week. The original shall be mailed to the Ecology project coordinator.

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 replacing Order No. DE 92TC-N147 with this 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: Dave Nazy
Address: Washington State Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008-5452

Phone: (206) 649-7258

The project coordinator for Asarco is:

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

Phone: (206) 756-0203

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, as necessary, of a professional engineer or hydrogeologist, or similar expert, 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) or

hydrogeologist(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 outside that required by this Order 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. Public participation will be implemented at the Everett Smelter Site through a Public Participation Plan in accordance with WAC 173-340-600(8). The Public Participation Plan is attached to this Order as Exhibit F. Ecology shall maintain the responsibility for public participation at the Site.

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. Asarco may request Ecology to resolve factual or technical disputes which may arise during the implementation of this Order. Such request shall be in writing and directed to the signatory, or his/her successor(s), of this Order. 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(l), 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 remedial action under this Order that are known to be applicable at the time of issuance of the Order have been listed in Exhibit G of this Order.

Asarco has a continuing obligation to determine whether additional permits or approvals addressed in RCW 70.105D.090(l) would otherwise be required for the remedial action under this Order. In the event Asarco 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 Ecology of this determination. Ecology shall determine whether Ecology or Asarco shall be responsible to contact the appropriate state and/or local agencies. If Ecology so requires, Asarco 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 Asarco and on how Asarco must meet those requirements. Ecology shall inform Asarco in writing of these requirements. Once established by Ecology, the additional requirements shall be enforceable

requirements of this Order. Asarco shall not begin or continue the remedial action potentially subject to the additional requirements until Ecology makes its final determination establishing applicable requirements.

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.

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:

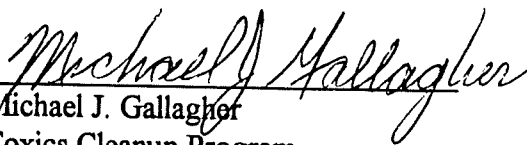
(1) up to three times the amount of any costs incurred by the state of Washington as a result of its refusal to comply; and

(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: 31st March, 1997.


Michael J. Gallagher
Toxics Cleanup Program
Section Manager, NWRO

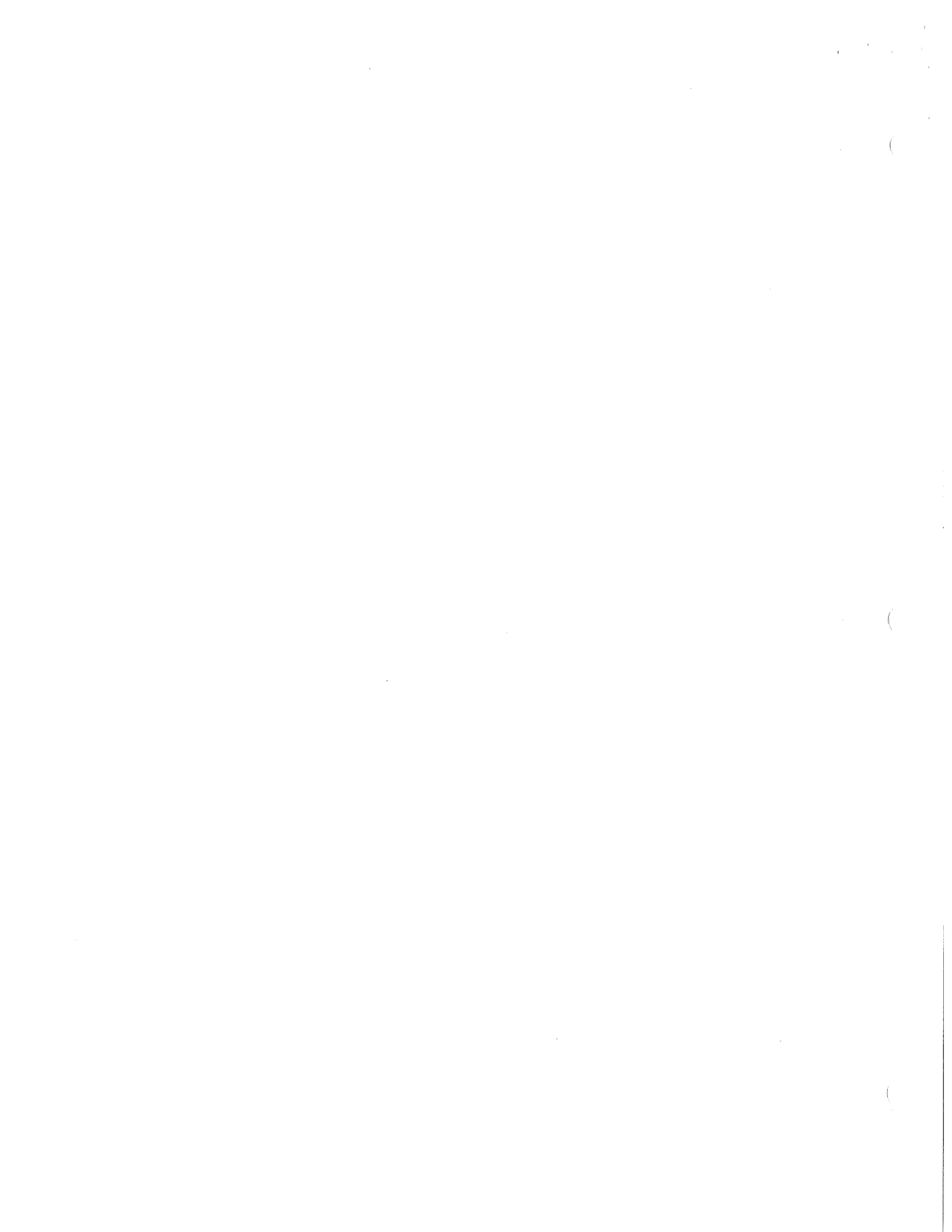


EXHIBIT C

AGREEMENT

between

SNOHOMISH HEALTH DISTRICT

and

ASARCO Incorporated

FINAL

THIS AGREEMENT is made and entered into by and between the Snohomish Health District (hereinafter referred to as "District") and ASARCO Incorporated (hereinafter referred to as "Asarco").

Recitals

A. Asarco is one of the corporations which historically operated a certain smelting facility that once existed at the north end of Everett, Washington.

B. The Department of Ecology ("Ecology") has exercised its authority under the Model Toxics Control Act, Ch. 70.015D RCW ("MTCA") to designate the area around the former smelter as a hazardous waste site (hereinafter referred to as the "Everett Smelter Site") and to name Asarco as a potentially liable party.

C. Under Ecology's oversight, Asarco has undertaken sampling activities to characterize the conditions at the Everett Smelter Site, and has preliminarily evaluated various remedial options, summarized in the Remedial Investigation/Feasibility Study (hereinafter referred to as the "RI/FS"). The RI/FS proposes the establishment of community protection measures for the Everett Smelter Site, including public education, environmental investigations, medical testing, and other institutional controls (hereinafter collectively referred to as the "CPM Program").

D. Following evaluation of the information presented in the RI/FS and considering public comments, Ecology will issue a Cleanup Action Plan (hereinafter referred to as the "CAP").

E. Asarco anticipates that Ecology will require a long-term CPM program for the Everett Smelter Site in the CAP, and that the CAP will be implemented pursuant to some form of an administrative order.

F. In the interim period, Asarco and the District wish to ensure that certain CPM Program activities are being implemented, such as public health education, situation-specific education for site development activities, medical testing, and other types of

institutional controls, such as environmental investigations and a soil disposal program.

G. The District has the expertise and experience to provide or arrange for the provision of these CPM Program activities, and is willing to assure that such services are available to the residents at the Everett Smelter Site.

H. It is the purpose of this Agreement to provide funding and technical assistance to the District in order to implement such CPM Program activities during the interim period until some form of final administrative order is issued requiring a long-term CPM program as part of the CAP.

Agreements

In consideration of the mutual promises and covenants contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Asarco and the District agree as follows:

1. Scope of Work. The District shall perform the tasks set out in the Scope of Work which is Attachment A hereto, and which is incorporated herein by this reference. It is understood that the District has sole authority and discretion in selecting specific methods or procedures to implement the tasks outlined in the Scope of Work; provided, however, that Asarco may terminate this Agreement at any time if in its sole discretion it deems the quality of the work being performed to be unacceptable or inconsistent with MTCA requirements. Attachments accompanying the Scope of Work are provided as examples only. It is understood that the District will develop its own forms, letters and educational materials as part of the CPM Program.

2. Term. This Agreement shall be effective on the date of its execution, and shall terminate twenty-four months thereafter, subject to renewal upon written notice and the mutual consent of the parties.

3. Funding. Asarco shall pay the District for those services described in the Statement of Work as follows:

3.1 Budget Process. The District shall prepare a six-month budget for the tasks under the Scope of Work to be performed in any subsequent six-month period, and submit it to Asarco for review and approval prior to commencing work under this Agreement, and on the first work day of every subsequent sixth month thereafter. Any disagreements concerning the budget will be processed in accordance with the terms outlined in Paragraph 9 of this Agreement.

3.2 Invoices. The District will prepare invoices for costs and expenses in forms with sufficient detail to understand the nature of the work performed and expenses incurred, and submit them for payment to Asarco on a quarterly basis. Invoices for costs or expenses due and payable under this Agreement that were incurred prior to the expiration date must be submitted within 90 days after the expiration date of this Agreement.

3.3 Payment. Asarco will reimburse the District for costs and expenses actually incurred upon receipt of invoices prepared in the form(s) specified in the Scope of Work. Claims for costs or expenses due and payable under this Agreement that were incurred prior to the expiration date shall be paid by Asarco, if received by Asarco within 90 days after the expiration date of this Agreement.

3.4 Records of Costs and Expenses. The District shall maintain books, records, documents and other evidence which sufficiently and properly reflect all direct and indirect costs and expenses incurred by it in the performance of the services described in the Scope of Work. The District will retain all books, records, documents and other material relevant to this Agreement for five years after expiration. During the term of this Agreement and for five years thereafter, these records shall be subject to the inspection, review or audit by personnel of both parties, and by other personnel duly authorized by law.

4. Contract Management. The work described herein shall be performed under the coordination of the designated Project Managers for each party, consisting of a District representative and Thomas L. Aldrich of Asarco, or their successors. Each party will provide assistance and guidance to the other as necessary for the performance of this Agreement. The name of the District representative shall be provided to Asarco in writing prior to the District's commencing work under this Agreement. Thereafter, both parties shall provide written notice to each other of any changes in identity of each party's Project Manager.

5. Indemnification. Each party shall defend, protect and hold harmless the other party from and against all claims, suits and/or actions arising from any negligent or intentional act or omission of the party's employees, agents and/or authorized subcontractor(s) while performing this and only this Agreement.

6. Relationship of the Parties. Nothing herein shall be deemed to create a partnership or joint venture and/or a principal and agent relationship between or among the parties, and each party shall have and maintain complete control over all of its employees, agents, and operations. No party nor any agent, employee, or subcontractor of either party shall be, represent, act, purport to act or be deemed to be the agent, representative, employee or servant of the other party and no

party shall have authority to bid for or to undertake any contracts enforceable against the other party.

7. Amendments. The District and Asarco may mutually amend this Agreement. Such amendments shall not be binding unless they are in writing and signed by personnel authorized to bind the District and Asarco.

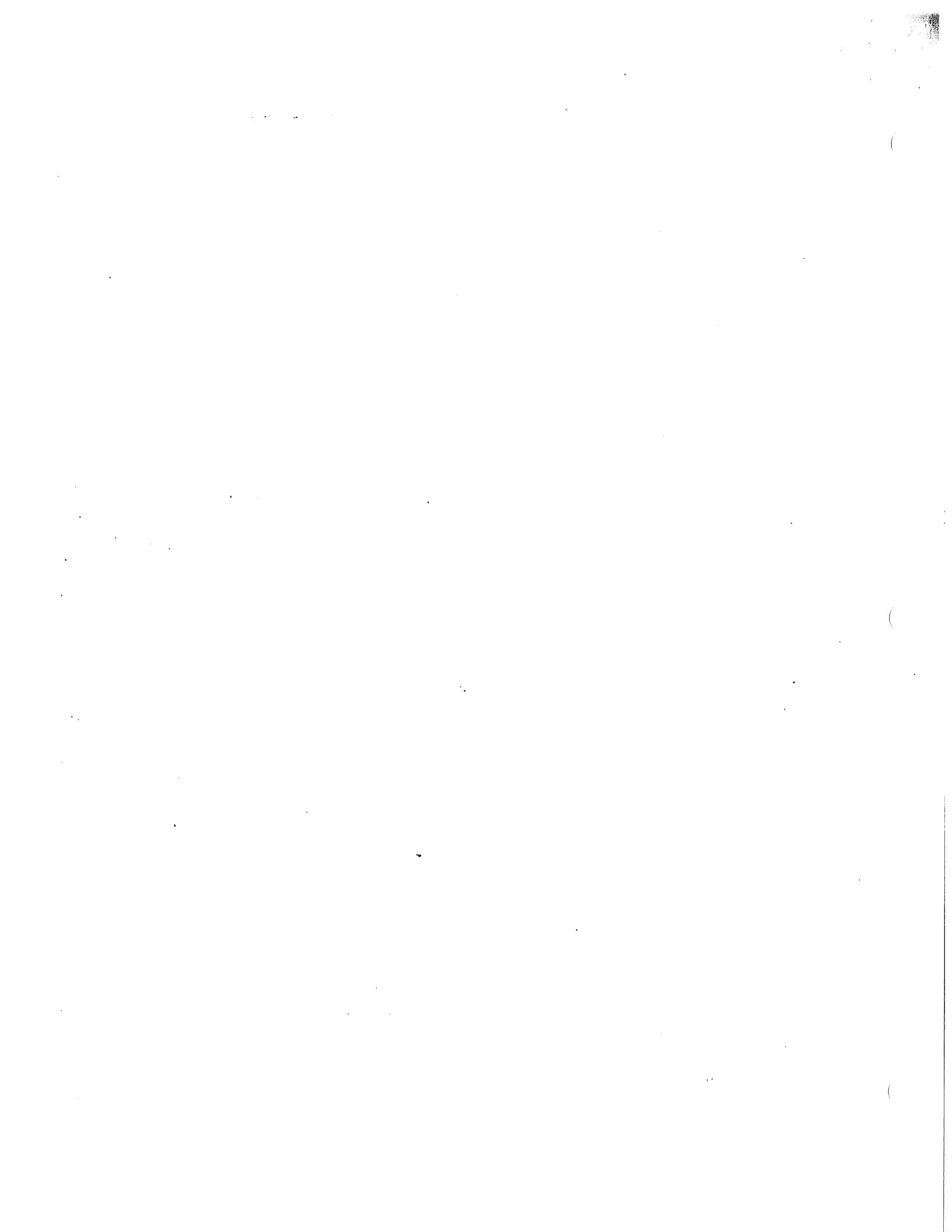
8. Termination. Except as otherwise provided in this Agreement, either party may terminate this Agreement upon 30 days written notification. If this Agreement is so terminated, the terminating party shall be liable only for performance rendered prior to the effective date of termination in accordance with the terms of this Agreement.

9. Disputes. In the event that a dispute arises under this Agreement, either party may submit such dispute to binding arbitration by the American Arbitration Association under its Commercial Arbitration Rules then in effect. The party calling for arbitration shall serve notice in writing upon the other party, setting forth in detail the question or questions to be arbitrated. The party calling for arbitration shall, as part of its notice, propose an arbitrator. The other party shall, within ten (10) days after receipt of such notice either agree to the proposed arbitrator or reject the proposed arbitrator. If the proposed arbitrator is rejected, the party calling for arbitration shall notify the presiding Judge of the Snohomish County Superior Court and request that he or she appoint a qualified arbitrator. The arbitrator's decision shall be final and binding on the parties hereto. The cost and expense of the arbitration shall be shared equally by the parties. Each party shall bear its own attorneys fees and other costs for its presentation to arbitrator. Provided, however, the parties may agree in writing to utilize alternative forums or services, or to resolve a dispute in an alternative manner.

10. Entire Agreement. This Agreement contains all the terms and conditions agreed upon by the parties. No other understandings, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or to bind any of the parties hereto.

11. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Washington.

12. Authority. Each party represents and warrants that it has all requisite power to enter into and be bound by the terms and conditions of this Agreement and to carry out its respective obligations hereunder and that the execution and delivery of this Agreement and the performance of each party's obligations hereunder have been duly authorized by all necessary action of such party.



ATTACHMENT A

SCOPE OF WORK

SNOHOMISH HEALTH DISTRICT

Community Protection Measures Program

INTRODUCTION

This Scope of Work outlines the activities of the Snohomish Health District (District) in implementing a Community Protection Measures (CPM) Program for the Everett Smelter Site, in Everett, Washington. It is anticipated that the program described is consistent with the Model Toxics Control Act, Ch. 70.105D RCW, and the concept of "institutional controls" set forth in WAC 173-340-440, as administered by the Department of Ecology (Ecology).

The CPM Program is intended to address the District's concerns about the potential for adverse health effects among individuals living and working in and around the Everett Smelter Site. All work under the CPM Program is generally limited to the area around the Everett Smelter Site as shown on the attached Figure 1 (Attachment 1). If the boundaries of the site are re-established by Ecology such that the area needs to be adjusted, then work conducted under the CPM program will apply to activities and residents in a similar area around the newly defined study area. Should this occur, it is understood that the Scope of Work is hereby amended accordingly.

The CPM Program is a voluntary program being implemented by the District, with funding and guidance from ASARCO Incorporated (Asarco). The CPM Program is an interim measure. It is anticipated that Ecology will issue some form of an administrative order that may include long-term implementation of the CPM Program.

The CPM Program consists of public and project-specific education, environmental investigations, and medical testing. Public education may be provided to the community at-large on health issues related to arsenic, strategies for preventing arsenic exposure, and potential health effects of arsenic. Project-specific education may be provided for individual residents, construction workers, and utility personnel conducting site development activities.

Medical testing will allow for voluntary testing of individuals for urinary arsenic and/or blood lead levels, and follow-up work with individuals whose tests are positive, including intervention

activities where warranted. Should intervention be required, activities may consist of an environmental assessment, individualized educational efforts, follow-up medical monitoring, and environmental abatement if necessary.

The CPM Program also allows for development of an "environmental investigation" process.

The final element of the CPM Program allows for the District to consult with Asarco in the development of a system for collection and disposal of soils excavated by residents as part of typical and normal property maintenance and improvement activities not subject to building permits.

All work within this plan will be implemented by persons working for or under the supervision of the District (with the exception of subcontractors that may be hired by the District, including the Consulting Physician and laboratory analyses contractors). The District will contract with Asarco for reimbursement of costs and expenses for implementing the public and project-specific education programs and the medical testing program; and for developing the environmental investigation and soil disposal programs.

The District and Asarco will each appoint Project Managers, and provide written notification of such to each other. If a project manager is changed, written notification will be sent to the other party. The District will prepare a written description of the project team and its structure, including each team-member's qualifications, for review by Asarco. The project team may consist of existing District employees, new hires, and subcontractors, as appropriate and mutually agreed upon by the District and Asarco. It is understood that the District has sole responsibility and authority over its employees and subcontractors.

In addition, the District will attempt to organize and seek comment from a citizens committee that will study the elements of the CPM Program and make recommendations on how it might be changed or improved in the future. The committee will consist of five community residents and one member each from Asarco, Ecology, the District and the City of Everett. It is envisioned that the committee will meet at least every six months, or on a schedule agreeable to the majority of committee members.

EDUCATIONAL PROGRAM

The educational program will be available to all people living, visiting or working in the Everett Smelter Site, with special emphasis on families with children and people conducting projects

that involve disturbance and contact with soil. The educational program will focus on informing people about: 1) the nature, extent and occurrence of elevated concentrations of arsenic, lead and cadmium at the site; 2) who is most at risk from being exposed; 3) the likely routes of exposure expected to occur on the site; 4) the toxicity associated with arsenic, lead, and cadmium; 5) the potential adverse health affects associated with exposures to these metals; and 6) recommendations for precautionary measures intended to reduce the risk of exposure. In addition, the educational program will inform people about the availability, limitations and utility of the medical testing program, the environmental investigation program, the soil collection service, and any other activities and aspects of the Community Protection Measures program.

1. Distribution of Health Advisories.

The District already has prepared informational materials that advise people about the nature of the metals in the soils at the Everett Smelter and recommend precautionary measures. These materials include the Public Health Advisory, "Guidelines for Reducing Potential Exposure" (Snohomish Health District, September 1995, September 1993 and January 1992) and Arsenic Fact Sheet (Snohomish Health District, January 1992).

The materials were prepared and distributed to residents in 1992 shortly after the site was identified, updated and distributed again after the study area was expanded in 1993, and then again in 1995. Currently, the District issues the Public Health Advisory to all residents living in the Everett Smelter Site on an annual basis.

Under the CPM Program, the District will update the Public Health Advisory, and prepare and update any other health-related materials that are deemed necessary. The District will prepare translated versions of the Public Health Advisory and other health information materials into various foreign languages, with input from the Everett Housing Authority to determine which languages are needed. The District will specifically prepare advisory information for vegetable garden practices in relevant foreign languages.

The District will mail the Public Health Advisory twice a year. Distributions will occur in the spring before outdoor activities begin, and then again in the fall.

In addition, distributions will occur for some populations at intervals other than the six-month periods. For one, the District will attempt to develop a method for identifying new residents that move into the Everett Smelter Site area, and provide materials as practicable, by mail or by hand-delivery.

Thereafter, those residents will be added to the mailing list. (See discussion about mailing list below.)

For another, the District will attempt to make distributions to nonresidents who spend significant time in the area, particularly if dealing with excavated soils. The District will attempt to develop a method for identifying these individuals, such as a monthly drive-through to observe major landscaping, utility repair, construction work, and other similar activities within the Everett Smelter Site. Educational materials regarding health advisories and institutional control measures may be distributed to nonresidents on an ad hoc basis. (See discussion about project-specific education measures below.)

In addition, the Health Advisories, Fact Sheets on arsenic and lead, and any other educational materials will be provided upon request, and otherwise at the discretion of the District.

2. Document Library.

Residents at the Everett Smelter Site, as well as local health care providers, would benefit from having one location where all relevant sample information and literature regarding health and risk issues would be readily available for review. In addition, the District project team responsible for implementing the medical testing may also wish to review relevant sample information and literature.

The District will establish and maintain a library of scientific reports and information related to the Everett Smelter Site. The collection will include but not necessarily be limited to reports, sample information and other similar materials prepared by or under the oversight of Ecology specifically for the Everett Smelter Site. It will also include any sample information prepared by other parties, such as Agency for Toxics Substances and Disease Registry, Department of Health, Department of Labor and Industries, City of Everett, and private parties.

The District will also prepare a database with all environmental sample results obtained to date and gathered in the future as part of the site investigation and cleanup. The database will be available to the public. These results will include but not necessarily be limited to metal concentration data obtained through the sampling of soil, groundwater and air within the study area. Individual medical testing results will not be included in the database.

The intent of the database is to provide residents and other interested parties with information concerning metals concentrations in relation to their property, or property in which they may have an interest. As such, the District will attempt to use geographic information system software to

incorporate maps, as well as street addresses and tax account numbers, as reference points. After site cleanup is undertaken, follow-up sample results will also be included in the database.

The library collection will also include reference documents regarding general risk assessment principles and health studies, such as materials related to arsenic, selected studies and scientific material regarding bioavailability of arsenic, results of various health studies, and the like. Both the District and Asarco will provide documents for the library, provided that informational material selected by the District will be chosen solely at the discretion of the District and cannot be removed at the request of Asarco. Copyright laws will be observed in regard to the production and distribution of materials. Any fees associated with obtaining copyright privileges will be paid by Asarco.

The library will be located at the offices of the District. Documents and the sample database will be available upon request to the public.

3. Public Presentations.

A limited community outreach program will use public presentations to provide education about the nature of the Everett Smelter Site and about health issues to specific groups. The District will provide public presentations to different interest groups.

The District will make a reasonable effort to deliver at least one presentation annually to local health care providers concerning health and medical issues related to arsenic, as well as the availability of medical testing to site residents. The District may involve the Consulting Physician on a subcontractual basis to assist in making these presentations.

In addition, the District may make one presentation each during any twelve month period to other general public groups such as: faculty and administrators of Hawthorne Elementary School; staff and residents at the Denney Youth Center; residents and personnel of Everett Housing Authority; day care center owners and staff; and city and utility personnel.

Presentations to these groups will include material regarding general arsenic health issues, health tips for safe gardening and yard care, consumption of home-grown vegetables, handouts for proper handling of soils, and other information as appropriate for each group. The District will also continue to participate in public meetings organized by Ecology and Asarco as part of the MTCA investigation and cleanup process.

4. Mailing List.

The mailing list used in the past by the District is the one provided by Ecology. In the future, this master mailing list may be primarily maintained by a consultant hired by Asarco. As part of this CPM Program, the District will assist in preparing and maintaining this master mailing list for the specific purpose of distributing health advisories and other information required under the CPM Program. The intent is to prepare a master mailing list that will be used by the District, Ecology and Asarco for their respective public involvement activities.

Using Ecology's mailing list as a starting point, the District will initially prepare a mailing list of residents at the Everett Smelter Site, and other nonresidents who have expressed an interest in receiving such information or who the District decides will receive the information.

Efforts will be made to ensure that people who spend time regularly in the area receive information. In many cases, a mailing list of residents will include those people. For example, parents of grandchildren would receive information through grandparents who are residents at the site; parents of day care attendees would receive information through day care owners. However, the District will consider whether any nonresidents who spend time at the site need to be specifically added to the mailing list.

The District will work with Ecology and Asarco to create a strategy for keeping the list current. The District, Ecology, and Asarco will try to develop a means for identifying new residents that may move into the Everett Smelter Site area; and for identifying residents who move out of the Everett Smelter Site area. Possible methods for identifying mailing list candidates might include systematically reviewing records kept by the Snohomish County tax assessors, Hawthorne Elementary School registration, day care facilities, and Everett Housing Authority.

The District will also attempt to design a process for identifying other parties who should receive health advisory information. The latter category may include health care providers, construction workers, utility personnel, and others.

No less frequently than once per year, the District will review the mailing list to add the names of residents who move into the neighborhood, and remove the names of those who move out.

5. Project-Specific Education.

The District will utilize project-specific educational measures to provide assistance to persons who undertake site development, maintenance, or building activities that involve excavated soils.

The District will assist property owners, developers, and workers by identifying particular characteristics of a parcel and specifying what precautions or actions are necessary, if any, before and during development activity.

The District will develop recommendations for soil disturbance activities within the Everett Smelter Site. These will include guidelines for testing, handling and interim disposal of soils that may be excavated through site development activities. The District will develop a soil testing protocol and suggestions for interim soil disposal, including a list of alternative soil disposal options consistent with applicable regulations. In addition, prior to construction or development work commencing in the study area, the District may assist with the development of operational plans to minimize the generation of dust with potentially high concentrations of metals and/or minimize other potential sources of exposure.

The District will provide these guidelines to residents, construction workers, utility personnel, and others conducting site development activities. It will attempt to inform public, quasi-public or commercial companies or others that may have cause to dig or to permit excavations in the Everett Smelter Site of proper handling and disposition of soils generated by excavation. The District will work with the City of Everett, whose existing permit procedures may act as control points.

The District will be responsible for attempting to design a method for identifying site development activities within the Everett Smelter Site. The District may consider such methods as: coordination with the City of Everett's site development and building permit departments; monthly drive-throughs to visually identify major landscaping, utility repairs, construction, and other similar activities; and any other method the District deems appropriate.

The mailing list used for general educational materials will attempt to include public, quasi-public or commercial companies that may have cause to dig or to permit excavations in the Everett Smelter Site. (See discussion about mailing list above.)

In addition to mailings, the District may prepare other educational materials for distribution to businesses and offices that individuals would logically frequent when involved with property excavation, as determined by the District.

The District will develop a program soliciting support from the City of Everett and utility companies who may have cause to dig or excavate soil in the Everett Smelter Site. The District may conduct at least one public informational meeting annually to managers and workers of appropriate City divisions and utility companies.

6. Citizens' Committee.

The District will attempt to organize and seek input from a Citizens' Committee that will review the elements of the CPM program and make recommendations on how it might be changed or improved in the future. Program elements may be added, deleted or revised in future CPM Agreements based upon comment from the Citizen's Committee.

In addition, the District will request that the Committee review and comment upon specific aspects and end-products produced through the CPM Program, including the content of educational material, the efficiency and convenience of the medical testing program, and type of information to be included in the environmental sampling database.

The committee will consist of five community residents to be selected by the Northeast Everett Community Organization, the Northwest Everett Community Organization and the Grandview Residential Council, and one member each from Asarco, Ecology, the District and the City of Everett. The committee will meet on a schedule and at the location agreed upon by a majority of the members.

MEDICAL TESTING

The goals of the medical testing program is to insure that protection measures are effective. Medical testing will measure urinary arsenic and/or blood lead in individuals who are subject to current potential for exposure to soils with elevated concentrations of metals. Medical testing will allow for voluntary testing of individuals for urinary arsenic and/or blood lead and follow-up work with individuals whose tests are positive, including intervention activities where warranted. Should intervention be required, activities may include an environmental investigation, individualized educational efforts, follow-up medical monitoring, and environmental abatement, if necessary.

Medical testing will be provided to offer individuals residing within the Everett Smelter Site, as well as other nonresidents whose activities may involve unusual exposure to soils, the opportunity to have their urine tested for arsenic twice a year and blood tested for lead once a year, or as otherwise determined by the Consulting Physician, without charge. If the results of urine or blood testing of any individual indicate elevated levels of arsenic or lead, certain free follow-up services will also be provided.

Although the need for blood lead testing may arise as determined by the Project Manager or the Consulting Physician, it is not anticipated that blood lead testing will be routinely performed. It is also recognized that an elevated blood lead level, if found, may be due to some influence unrelated to the Everett Smelter Site. Since the need for blood lead testing (as well as follow-up intervention) will be determined on a case-by-case basis, many aspects of medical testing that are described for urinary arsenic sampling in this Scope of Work will not be included for blood lead testing.

The District is responsible for implementing the medical testing program, and for preparing and maintaining the appropriate records. The District must have at least one staff individual who is trained on details regarding all aspects of the CPM Program who can act as the Project Manager. The Project Manager will be qualified to answer questions about the program procedures and be familiar with informational materials and mailing list protocol. Implementation of the program also requires that at least one District staff member be trained on intake procedures, and that all intakes be performed by these trained individuals. Intake Personnel may or may not be the same individual as the Project Manager.

1. Distribution of Medical Testing Information.

At the outset of the CPM Program and periodically thereafter, steps will be taken to advertise the availability of the medical testing program. Those steps include advertising, informational mailings to eligible individuals, and dissemination of information to nonresidents and local health care providers. An effort will also be made, in coordination with the Everett Housing Authority, to provide this information to non-English speaking residents.

The District will ensure public notice of the availability of the medical testing program by advertising in a local newspaper. (Attachment 2 is a sample advertisement used in the Tacoma program.) The District or Asarco will prepare a quarter page or larger advertisement and ensure that it is published in the Everett Herald once at the commencement of the medical testing program, and again every six months thereafter.

Additionally, the District will ensure that residents within the Everett Smelter Site are aware of the medical testing program by mailing information to homes within the site. The District or Asarco will prepare and distribute a mailing that informs residents in the Everett Smelter Site about the availability of the medical testing program. (Attachment 3 is a draft sample form letter.) The District will also prepare and distribute an informational brochure and other appropriate literature which answers such commonly asked questions as:

- What is the program about?
- Who is involved in implementing the program?
- Who is eligible?
- Who is paying for the program?
- What are the procedures for medical testing?
- What will be done with the medical testing data?
- Who can I call for further questions?
- What can the tests tell me?
- What are the limitations of the test?

In addition, local health care providers will be informed of the program by mailings. Mailings describing the medical testing program will be prepared and distributed to local health care providers. (Attachment 4 is a draft sample form letter.) Also, any public presentations to local health care providers will include information about the program.

2. Intake Procedures.

When interested parties call the District to request medical testing, the Intake Personnel will make an entry in a Program Log kept for the purpose of registering requests. Eligibility is not necessary for entry in the Program Log; all requests will be entered into it. Upon receiving a request, the Intake Personnel will enter the individual's name, address, age, occupation, reason for request, and whether the individual has requested testing before.

The Intake Personnel or Project Manager will then determine whether the individual is eligible for testing. Eligible individuals include residents who live within the boundaries of the study area for the Everett Smelter Site; and nonresidents who may need testing as determined by the Project Manager or the Consulting Physician. Individuals are eligible for testing twice within a one year period.

Upon determining eligibility, the Intake Personnel or Project Manager will enter an appropriate notation in the program log. The Intake Personnel or Project Manager will note on the form the basis for the eligibility determination.

If the individual is eligible, the Intake Personnel will fill out the name and address on a Testing Authorization form. (Attachment 5 are draft sample authorization forms.) The Intake Personnel will sign the form after it's filled out, and either give or mail the form to the participant, depending on whether the request is made in person or by telephone.

The Intake Personnel will also provide the individual with the Instructions for Participants. (Attachment 6 is a draft sample instruction form.)

A separate Testing Authorization form must be completed and signed for each family or participant at a residence each time samples are to be collected. Parents or guardians will need to complete and sign these forms for minor children. The Intake Personnel will advise the participant that samples cannot be collected unless the participant brings with them to the collection site the Testing Authorization form, with the informed consent or parental consent block signed by the participant or guardian, as appropriate.

For every tenth participant and otherwise on a random basis as determined by the District, the Testing Authorization form for Split Samples will be marked and extra lab forms included in the package. (See discussion of Split Samples below.)

The Intake Personnel will be trained to answer any questions about eligibility, location and hours of collection sites, and program procedures. It is not necessary that the Intake Personnel be trained to answer more substantive questions, such as questions about the purpose of the program, whether particular individuals will participate, health effects of arsenic, etc. However, if the Intake Personnel is not so trained, they will be specifically instructed to refrain from answering those kinds of questions, and refer them to either the Project Manager, the Project Manager's supervisor, or to the Consulting Physician.

3. Sample Collection.

Urine and/or blood samples will be collected at either the District or at the Consulting Physician's office. The District may make other arrangements for sample collection (e.g., mailing urine containers to residents, using a courier service or arranging for a drop-off site) at its discretion. The Instruction for Participants will include the collection site directions and hours of operation. Blood samples will be collected by venipuncture by a trained phlebotomist. Samples from children will be collected by a trained pediatric phlebotomist.

Urine samples will be collected only upon the participant's presentation of a Testing Authorization form, including the signed consent block. Samples will be taken and sent to BioTrace Lab with a test request form in accordance with the Instructions for Collection Sites. (Attachment 7 is a draft sample Instructions for Collection Sites.)

After the samples have been taken, the collection site personnel will complete the Testing Authorization form and make two copies of the completed form. One copy of the forms will be given to the participant, and the other copy will be retained in the collection site files.

A copy of the form will be mailed with a copy of the test request form to the Project Manager at the District. After receipt of the form, the Project Manager will enter information from the form into the Program Log (date signed, date of collection, samples collected, collection site, date sent to laboratory, single or split sample). The Consulting Physician will maintain the original forms in the participant's permanent medical file.

4. Split Samples.

When individuals request participation and the Intake Personnel determines that they are eligible for the medical testing program, the Intake Personnel will make an appropriate entry next to the participant's name in the Program Log. For every tenth eligible participant and otherwise on a random basis as determined by the District, the Testing Authorization Form for Split Samples will be used. As explained in the Instructions for Collection Sites, for these participants the collection site will split a single sample, sending one to BioTrace Labs and sending the second one to the Consulting Physician's selected lab (as approved by the District). (See discussion of Laboratory Analysis below.) The Consulting Physician will review the split sample laboratory reports to determine whether the results suggest a possible quality control problem with the testing.

5. Laboratory Analysis.

Urinary arsenic and blood lead levels will be analyzed by Biotrace Clinical Laboratory¹ and the Consulting Physician's selected lab (as approved by the District). The lab(s) will report test results to the Consulting Physician and the District by fax, and will also mail the original copy to the Consulting Physician and the District. Once a month, the lab(s) will submit an invoice to Asarco for testing performed during the prior month. The invoice will only indicate the tests performed and charges assessed and will not contain confidential information concerning the participants (e.g., testing results).

6. Action Levels for Lab Test Results.

Blood lead action levels:

1. Children (under age 7) and pregnant or nursing women:
10 micrograms/deciliter

¹ Biotrace Clinical Laboratory in Salt Lake City, Utah, is a division of Asarco's state-certified laboratory which is qualified to perform analyses pursuant to EPA's certified laboratory criteria and the Center for Disease Control's biological testing criteria.

2. Adults (age 7 and older): 25 micrograms/deciliter

Urinary arsenic actions levels:

1. Children (under age 7): 40 micrograms/liter
2. Adults (age 7 and older): 100 micrograms/liter

Urinary arsenic testing will be based upon collection of a first morning void sample. In addition to providing the total (uncorrected) urinary arsenic levels, results will also be provided after making corrections for specific gravity and creatinine, with the latter being reported as micrograms of arsenic per gram creatinine. If total urinary arsenic concentration equals or exceeds the action level, the sample will be speciated to differentiate between organic arsenic and inorganic arsenic (including appropriate metabolites). If speciated inorganic arsenic exceeds acceptable levels, as determined by the Consulting Physician, then follow-up services will be provided.

7. Communication of Test Results.

After receiving the lab reports, the Consulting Physician will review the results and send a copy of the lab report with a letter of explanation to the participant with a copy to the District. Different form letters will be used, depending on the test results.

The District will prepare one standard letter to be sent out by the Consulting Physician for participants with results below the action level. (Attachment 8 is a sample letter used in the Tacoma program.)

The District will prepare another letter to be sent out by the Consulting Physician for participants with results equal to or above the action levels. The letter will suggest that the participant set up an appointment for an interview with the Project Manager, at which time a Health and Exposure Questionnaire will be completed. (Attachment 9 is a sample used in the Tacoma program.) If the District is not contacted by the participant, the Project Manager will follow-up with a phone call in an attempt to schedule an interview and complete a Health and Exposure Questionnaire. Follow-up services, as described in Section 8, will also be offered to participants with results equal to or above the action levels.

All participants will receive a Medical Testing Program Information Sheet and will be advised that they are eligible to have their urine tested twice in a calendar year. (Attachment 10 is a sample Medical Monitoring Program Information Sheet used in the Tacoma program.) They will also be given the Consulting

Physician's phone number so that they, and/or their personal physicians, can call with any questions concerning the program, their results or the potential health effects of arsenic or lead exposure.

All laboratory results will be provided to the participant. Access to laboratory results which identify the participant will be limited to the District and the Consulting Physician. Results will be provided to Asarco by the District without identifying the individuals tested. Results that do not identify the participants (including questionnaire results) may be shared with other involved agencies at the District's discretion.

8. Follow-up Services.

For participants with urinary arsenic or blood lead equal to or exceeding the action levels, additional diagnostic services will be offered. These participants will be given a Health and Exposure Questionnaire and offered an opportunity for an interview with the Consulting Physician. Follow-up for blood lead will be provided in accordance with the Center for Disease Control Guidelines.

At the Consulting Physician's discretion, the Consulting Physician may also recommend further evaluations including repeating lab tests, performing additional lab tests, or medical evaluations, including evaluations by other medical specialists. In addition, the Consulting Physician may recommend that an environmental investigation be conducted, which would involve investigating the participant's home and/or work environment, and recommending corrective actions that may be warranted. However, the Consulting Physician will not provide direct medical treatment as part of this Scope of Work or the Agreement between the District and Asarco.

9. Responsibilities of the Consulting Physician.

The Consulting Physician, who will work as an independent contractor for the Program, will:

- Be available to answer physicians' or participants' questions concerning the Program;
- Review and interpret test results;
- Communicate test results to participants;
- Provide or recommend follow-up services, as appropriate;

- Be available to answer participants' or physicians' questions concerning test results or the general effects of arsenic or lead exposure;
- Maintain participant files, including the Testing Authorization forms, test results, notes from any phone conferences or interviews, Health and Exposure Questionnaire, results of follow-up evaluations, other correspondence;
- Upon request, provide copies of participants' files to participants and/or their health care providers;
- Review a summary of split and single lab test results for possible quality control problems;
- Provide the District and Asarco an annual letter report summarizing the results of the doctor's activities and reporting aggregate test results (without identifying results for individual participants); and
- Implement a billing system acceptable to the District for services rendered.

ENVIRONMENTAL INVESTIGATIONS

The District and Asarco will work together to design a program for conducting environmental investigations to respond to situations where soil-management practices at adjacent or nearby properties around the Everett Smelter Site, as shown on Figure 1, may be creating a risk of exposure not otherwise present. The environmental investigation process will not be conducted when there are no potential public health implications as determined by the District.

The need for environmental investigations may be evaluated when the District receives a complaint, in advance of a planned site development or cleanup activity, when construction or cleanup activity is noted, in follow-up to an elevated medical testing result, or upon recommendation from the Consulting Physician.

When an environmental investigation is prompted, the first step is for the District to determine whether an investigation is needed. This determination will be done in one of two ways. The first is to conduct medical testing of potentially exposed individuals to confirm whether any exposure is taking place. The second method for making the determination is to evaluate the construction or excavation site to see 1) whether it is located

generally within the area shown in Figure 1 and 2) whether soil management practices are likely to cause migration onto adjacent properties, or 3) after evaluating a complaint or observed situation, there is reason to believe an exposure may be occurring. The District may conduct air sampling for fugitive dusts containing metals in order to determine whether exposure may be occurring. The cost of air sampling equipment and analysis will be provided by Asarco as part of the agreement. The District will refer to the "action level" defined in WAC 296-62-07347 (i.e., a concentration of inorganic arsenic of 5 micrograms per cubic meter of air averaged over an eight-hour period) for guidance in making this determination. If none of these methods demonstrates the need for a further investigation, the District will take no further action using the resources provided by this agreement.

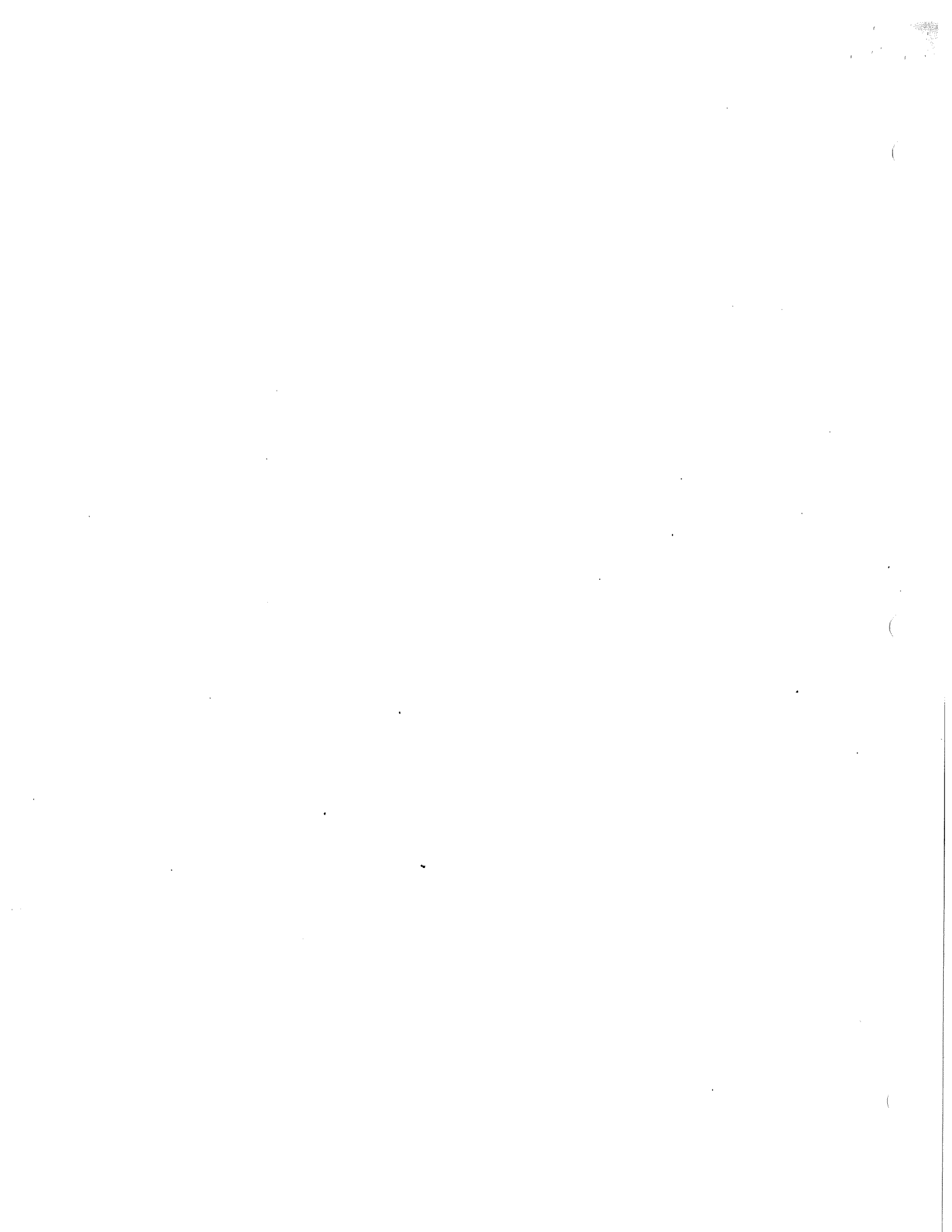
If the first-step investigation demonstrates the likelihood of exposure from metals in soils, at-risk individuals will be advised as to what abatement actions may be taken to reduce potential exposure. In addition, the District will take whatever steps it deems in its sole discretion may be necessary to correct the soil disturbance activities causing the exposure. The third-parties responsible for causing exposure will be encouraged to undertake voluntary corrective measures. However, if someone is found to be potentially exposing others to significant amounts of metals in soils through the generation of fugitive dusts or other means, and they are not willing to voluntarily correct the situation, the District may work with Ecology to provide regulatory enforcement under existing laws, such as the Model Toxics Control Act and the Snohomish Health District Sanitary Code.

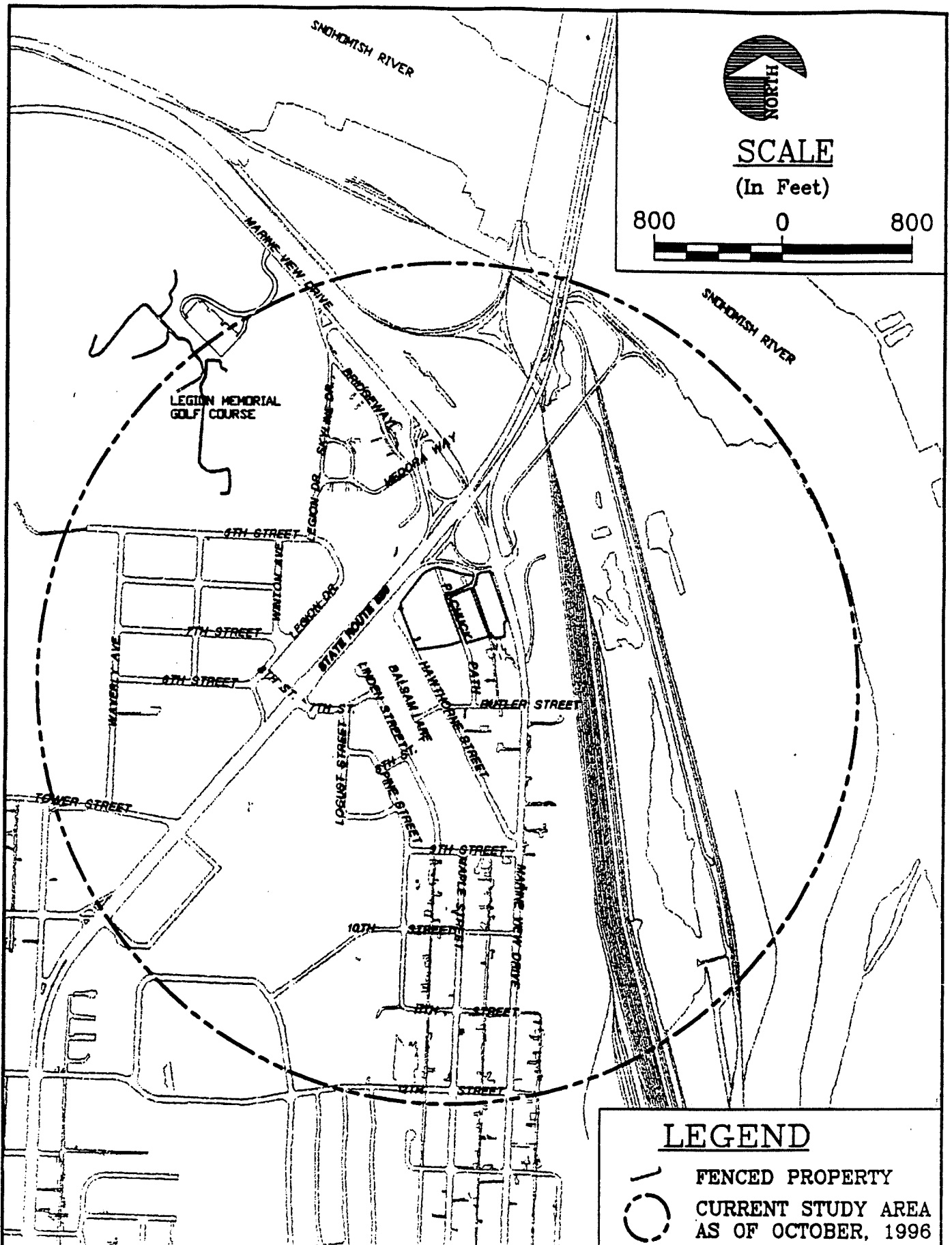
SOIL DISPOSAL PROGRAM

The final element of the CPM Program allows for the District to consult with Asarco in the development of a system for collection and disposal of soils excavated by residents as part of typical and normal residential property maintenance, yard work, home improvement activities not subject to a building permit, and other homeowner activities.

The District will work with Asarco to develop a long term soil collection and disposal program for residents excavating soil containing elevated levels of metals in the affected area. It is envisioned that Asarco will provide such a service at no cost to area residents that may excavate small quantities of soil with elevated levels of metals within the affected area.

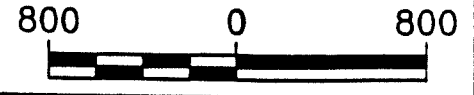
ATTACHMENT 1







SCALE

(In Feet)



LEGEND

-  FENCED PROPERTY
-  CURRENT STUDY AREA AS OF OCTOBER, 1996

EVERETT SMELTER SITE STUDY AREA

FIGURE

1



ATTACHMENT 2



RUSTON/ NORTH TACOMA HEALTH SCREENING

Confidential testing for current exposure to lead and arsenic is free and voluntary for Ruston and North Tacoma neighbors. Residents living within two miles of the former Asarco smelter are eligible to participate. Blood and urine specimens will be analyzed. Dr. John Holland, a physician specializing in occupational medicine, will send participants an explanation of the test results.

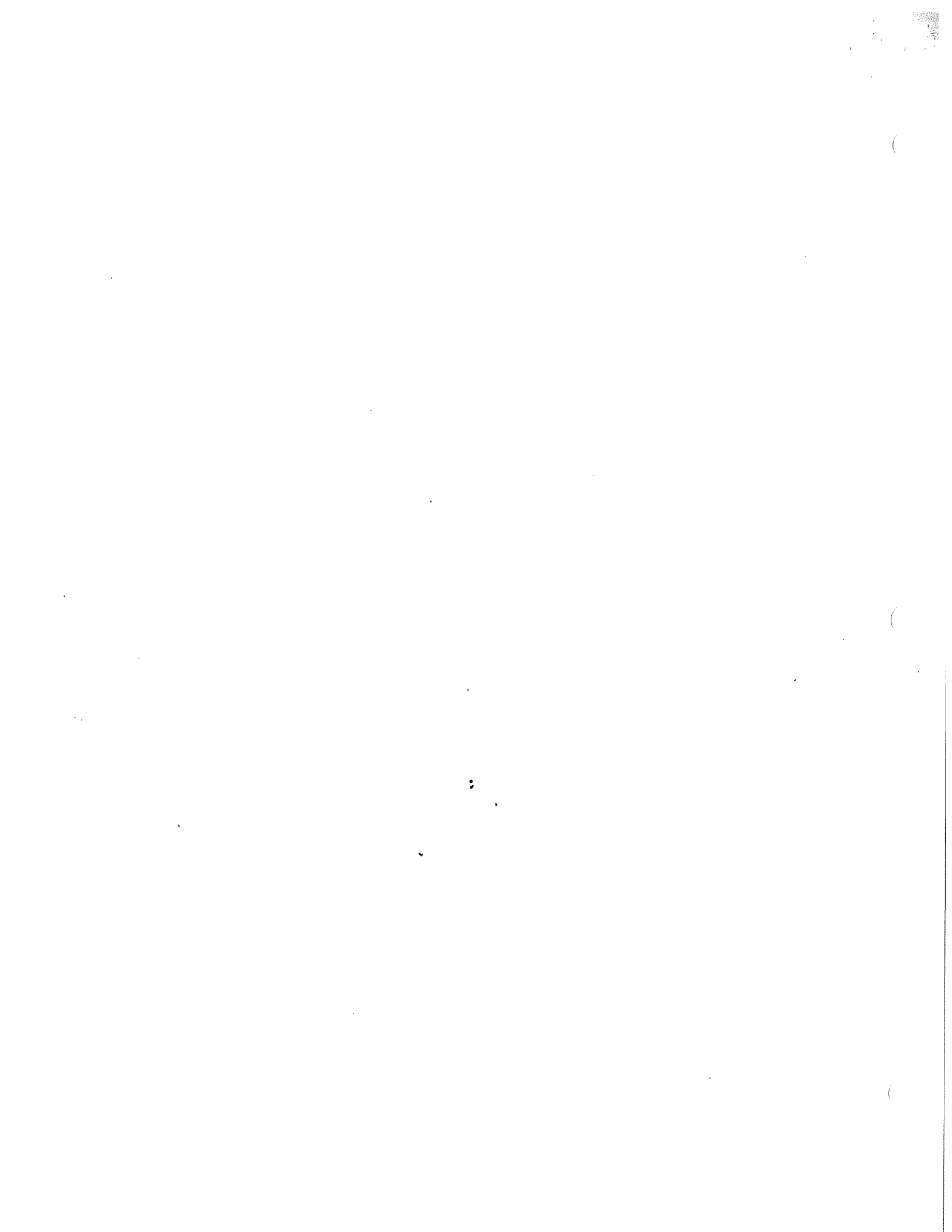
Contact the Asarco Information Center
at 756-5436 for information.

This program is overseen by Dr. Holland and paid for by ASARCO Incorporated.

MEDICAL MONITORING NEWS TRIBUNE AD
6 5/16" x 6"



ATTACHMENT 3



MEDICAL TESTING DIRECT MAIL TO RESIDENTS
1/15/97 DRAFT

Date

Dear Resident:

As a resident of the Everett Smelter Site study area, you are eligible for free health testing for current exposure to arsenic. (See map in the enclosed brochure.) Your participation is voluntary and free. If you would like to participate, you may call the Snohomish Health District at 339-5250 to register yourself and your children.

This brochure explains the details of this program. If you have questions, please call or visit the Snohomish Health District.

Snohomish Health District
Environmental Health Division
3020 Rucker Avenue, Suite 102
Everett, WA 98201
339-5250 (M-F, 9-5)

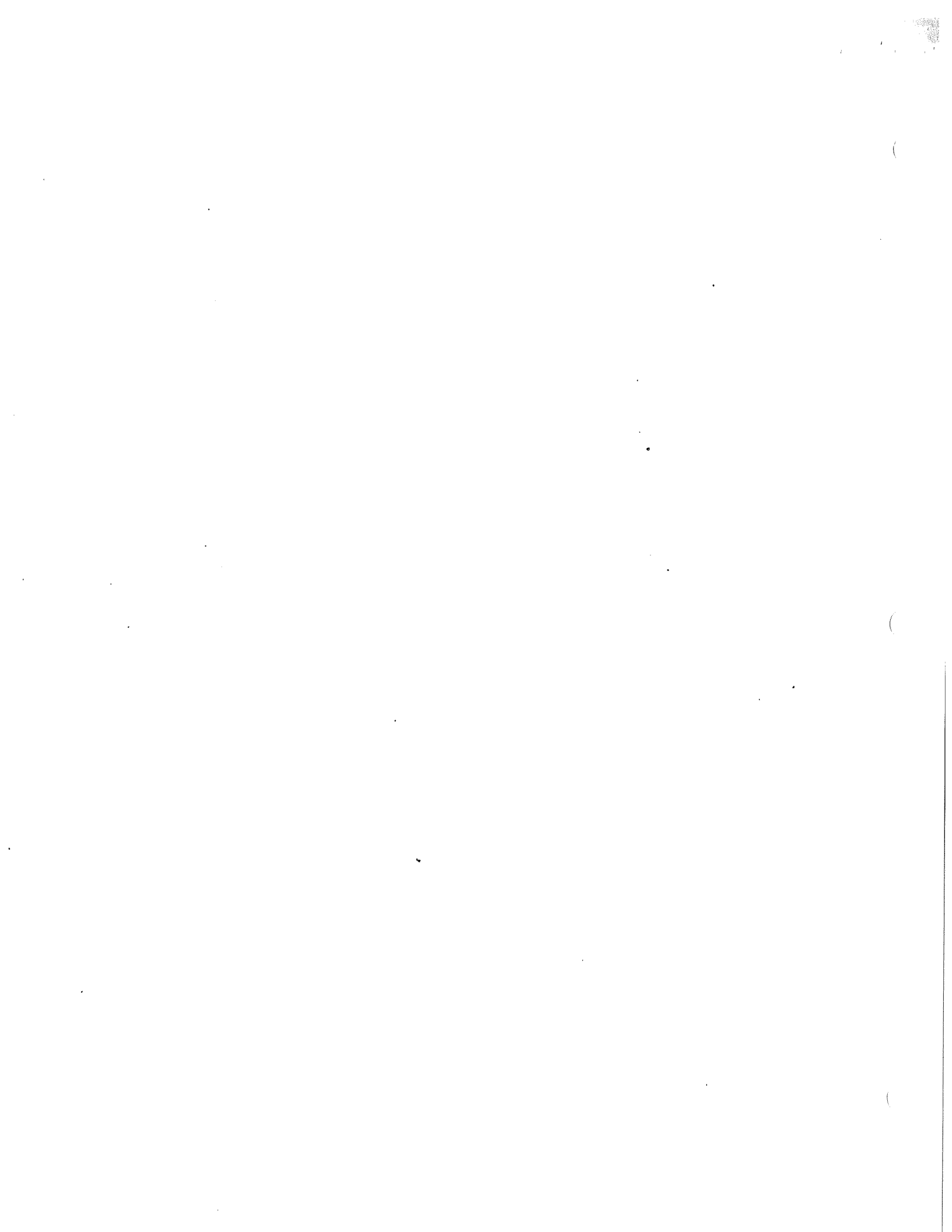
I will be happy to talk with you.

Sincerely,

Mike Young
Environmental Health Specialist



ATTACHMENT 4



MEDICAL TESTING DIRECT MAIL TO PHYSICIANS
1/15/97 DRAFT
(On Snohomish Health District letterhead)

Date

Dear Doctor:

As a physician practicing in Everett, you should know about a free program available to your patients in Northeast Everett. Free urinary arsenic screening is available to current residents living within the Everett Smelter Site study area. (See map in the enclosed brochure.)

All costs of the program are paid for by Asarco as part of a voluntary program with the Snohomish Health District.

To participate in this voluntary program, your patients must call or visit the Snohomish Health District, to obtain a Testing Authorization Form:

Snohomish Health District
Environmental Health Division
3020 Rucker Avenue, Suite 102
Everett, WA 98201
339-5250 (M-F, 9-5)

Test results are confidential and will be mailed directly to the patient with an individualized interpretation of their results. Some free followup services will be provided to those residents whose tests show exposure equal to or exceeding these action levels:

Action levels for arsenic in urine:

- Children under age 18
40 micrograms per liter
- Adults age 18 and older
100 micrograms per liter

Arsenic level refers to total urinary arsenic. If these levels are above the action levels then the specimen will be further analyzed for total inorganic arsenic compounds. Followup services will be offered if these are equal to or exceeding 40 micrograms per liter.

The medical consultant for this program is _____, M.D.,
M.P.H., a physician who is board certified in occupational medicine. Dr. _____ is
available to consult with you by phone, at no cost to you or your patients, by calling
_____.

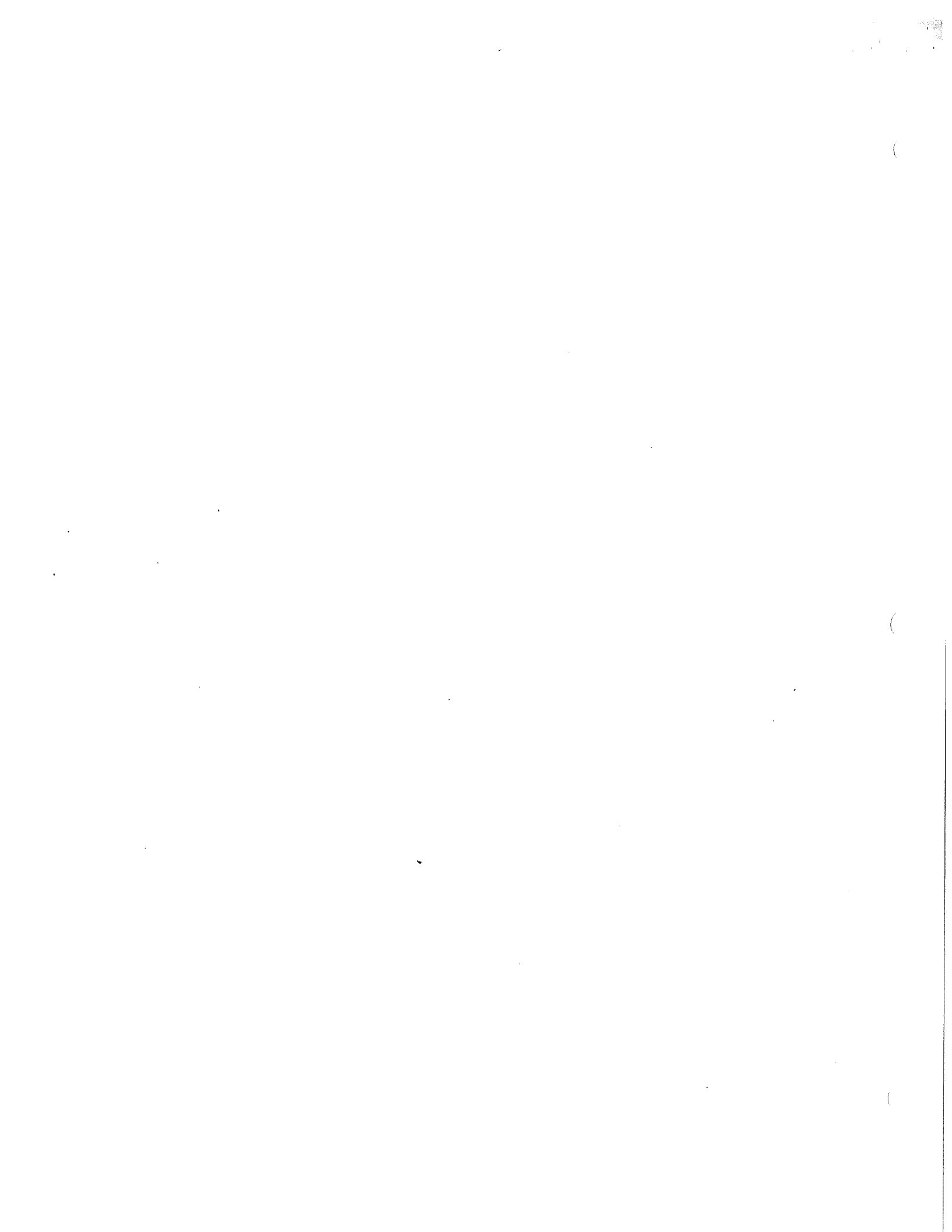
I have enclosed a copy of the mailing sent to residents of the Everett Smelter Site stud. area
explaining the program. As the administrative coordinator of the program, I am also
available to answer your questions and the questions of your patients concerning eligibility
and program procedures. You may reach me at (206) 339-5250.

Sincerely,

Mike Young
Environmental Health Specialist
Snohomish Health District

H:\PLM\16004-33\096003.3

ATTACHMENT 5



EVERETT SMELTER SITE MEDICAL TESTING PROGRAM
TESTING AUTHORIZATION FOR SINGLE SAMPLE (ADULTS)

Instructions for Collection Site Personnel:

1. **Before** collecting specimens, ensure that: Part A of this form has been signed by the Administrative Coordinator; Part B has been completed; and Part C has been signed by the Participant.
2. Explain collection procedures to Participant.
3. Collect specimens in accordance with the Collection Site Instructions for the Everett Smelter Site Medical Testing Program, complete Part D of this form and send specimens to Biotrace Labs.
4. Send the completed and signed original of this form and a copy of the Biotrace Labs requisition form to the Administrative Coordinator; provide a copy of this form to the Participant and keep a copy for Collection Site files.
5. For questions, call the Administrative Coordinator at (206) 746-5436.

Part A: Authorization for Testing

This authorizes _____ (referred to as the Participant) to have laboratory tests (listed in Part D) done as part of the Everett Smelter Site Medical Testing Program.

Administrative Coordinator _____ Date _____

Part B: Registration Information

1. Participant's name: _____
2. Home address _____
street address

city, state zip
3. Home telephone: _____
4. Date of birth (month/day/year) _____
5. Age (in years) _____
6. Social Security Number _____
7. Sex: _____ male _____ female

If the Participant is a female of childbearing age, questions 8 and 9 must be answered:

8. Are you currently pregnant? _____ yes _____ no
9. Are you currently breast feeding? _____ yes _____ no

Questions 10-14 are optional, but answering them will help the Consulting Physician estimate exposures and health risks for you and others in your household.

10. How many people live at your current home?
_____ adults _____ children (less than 18 years old)
11. What year did you move to your current address: _____
12. Have you ever lived at another residence located within the Everett Smelter Site study area?
_____ yes _____ no
If yes, list the address(es) and the years lived at each residence:
13. What is your current occupation? _____
14. Where is your current job located? (list city and address)

Part C: Informed Consent (Note: the Informed Consent must be signed in order to participate in the Program).

INFORMED CONSENT FOR ADULT PARTICIPANTS

I _____ hereby elect to participate in the Everett Smelter Site Medical Testing Program (the "Program") and consent to having a urine sample collected and tested for arsenic. I have been fully informed concerning the Program and the procedures for obtaining the urine samples. I understand that the purpose of this Program is to provide interested residents with information concerning their urinary arsenic levels. Certain additional diagnostic or other follow-up services may be provided to individuals with urinary arsenic levels above Program action levels if recommended by the Program Consulting Physieian. However, I understand that the purpose of the Program is to provide me with information rather than to treat any condition, whether or not the condition is related to elevated arsenic levels. I also understand that the results of the testing will be communicated by the laboratory to the Program Consulting Physician and will be used in preparing group reports, but will otherwise be kept confidential.

Signature of Participant: _____; Date: _____

Part D: (To be completed by collection site personnel)

Collection site: _____ Providence Hospital
_____ Snohomish Health District

Collection date: _____ Time: _____ a.m. p.m.

Specimens collected and sent to BioTrace Labs for analysis:
Urine (for arsenic level): _____ yes _____ no

Specimens collected by: (print name) _____

(signature) _____

EVERETT SMELTER SITE MEDICAL TESTING PROGRAM
TESTING AUTHORIZATION FOR SINGLE SAMPLE (MINORS)

Instructions for Collection Site Personnel:

1. **Before collecting specimens, ensure that: Part A of this form has been signed by the Administrative Coordinator; Part B has been completed; and Part C has been signed by the Participant's parent or guardian.**
2. **Explain collection procedures to Participant.**
3. **Collect specimens in accordance with the Collection Site Instructions for the Everett Smelter Site Medical Testing Program, complete Part D of this form and send specimens to Biotrace Labs.**
4. **Send the completed and signed original of this form and a copy of the Biotrace Labs requisition form to the Administrative Coordinator, provide a copy of this form to the Participant and keep a copy for Collection Site files.**
5. **For questions, call the Administrative Coordinator at (206) 746-5436.**

Part A: Authorization for Testing

This authorizes _____ (referred to as the Participant) to have laboratory tests (listed in Part D) done as part of the Everett Smelter Site Medical Testing Program.

Administrative Coordinator _____ Date _____

Part B: Registration Information

1. Participant's name: _____
2. Home address _____
street address

city, state zip
3. Home telephone: _____
4. Date of birth (month/day/year) _____
5. Age (in years) _____
6. Social Security Number _____
7. Sex: _____ male _____ female

If the Participant is a female of childbearing age, questions 8 and 9 must be answered:

8. Are you currently pregnant? _____ yes _____ no
9. Are you currently breast feeding? _____ yes _____ no

Questions 10-14 are optional, but answering them will help the Consulting Physician estimate exposures and health risks for you and others in your household.

10. How many people live at your current home?
_____ adults _____ children (less than 18 years old)
11. What year did you move to your current address: _____
12. Have you ever lived at another residence located within the Everett Smelter Site study area?
_____ yes _____ no
If yes, list the address(es) and the years lived at each residence:
13. What is your current occupation? _____
14. Where is your current job or school located? (list city and address)

Part C: Informed Consent (Note: the Informed Consent must be signed in order to participate in the Program).

PARENTAL CONSENT FOR PARTICIPANTS LESS THAN 18 YEARS OLD

I _____ am the parent or legal guardian of _____
I hereby elect to have him/her participate in the Everett Smelter Site Medical Testing Program (the "Program") and consent to having a urine sample collected from him/her and tested for arsenic. I have been fully informed concerning the Program and the procedures for obtaining the urine samples. I understand that the purpose of this Program is to provide interested residents with information concerning their urinary arsenic levels. Certain additional diagnostic or other follow-up services may be provided to individuals with urinary arsenic levels above Program action levels if recommended by the Program Consulting Physician. However, I understand that the purpose of the Program is to provide me with information rather than to treat any condition, whether or not the condition is related to elevated arsenic levels. I also understand that the results of the testing will be communicated by the laboratory to the Program Consulting Physician and will be used in preparing group reports, but will otherwise be kept confidential.

Signature of Parent/Guardian: _____

Date: _____ Relationship to participant (parent or legal guardian): _____

Part D: (To be completed by collection site personnel)

Collection site: _____ Providence Hospital
_____ Snohomish Health District

Collection date: _____ Time: _____ a.m. p.m.

Specimens collected and sent to BioTrace Labs for analysis:
Urine (for arsenic level): _____ yes _____ no

Specimens collected by: (print name) _____

(signature) _____

EVERETT SMELTER SITE MEDICAL TESTING PROGRAM
TESTING AUTHORIZATION FOR SPLIT SAMPLE (ADULTS)

Instructions for Collection Site Personnel:

1. **Before** collecting specimens, ensure that: Part A of this form has been signed by the Administrative Coordinator; Part B has been completed; and Part C has been signed by the Participant.
2. Explain collection procedures to Participant.
3. Collect specimens in accordance with the Collection Site Instructions for the Everett Smelter Site Medical Testing Program, complete Part D of this form and send one set of specimens to Biotrace Labs and one set to Laboratory of Pathology.
4. Send the completed and signed original of this form and a copy each of the Biotrace Lab requisition form and the Laboratory of Pathology requisition form to the Administrative Coordinator, provide a copy of this form to the Participant and keep a copy for Collection Site files.
5. For questions, call the Administrative Coordinator at (206) 746-5436.

Part A: Authorization for Testing

This authorizes _____ (referred to as the Participant) to have laboratory tests (listed in Part D) done as part of the Everett Smelter Site Medical Testing Program.

Administrative Coordinator _____ Date _____

Part B: Registration Information

1. Participant's name: _____
2. Home address _____
street address

city, state zip
3. Home telephone: _____
4. Date of birth (month/day/year) _____ 5. Age (in years) _____
6. Social Security Number _____
7. Sex: _____ male _____ female

If the Participant is a female of childbearing age, questions 8 and 9 must be answered:

8. Are you currently pregnant? _____ yes _____ no
9. Are you currently breast feeding? _____ yes _____ no

Questions 10-14 are optional, but answering them will help the Consulting Physician estimate exposures and health risks for you and others in your household.

10. How many people live at your current home?
_____ adults _____ children (less than 18 years old)
11. What year did you move to your current address: _____
12. Have you ever lived at another residence located within the Everett Smelter Site study area?
_____ yes _____ no
If yes, list the address(es) and the years lived at each residence:
13. What is your current occupation? _____
14. Where is your current job or school located? (list city and address)

Part C: Informed Consent (Note: the Informed Consent must be signed in order to participate in the Program).

INFORMED CONSENT FOR ADULT PARTICIPANTS

I _____ hereby elect to participate in the Everett Smelter Site Medical Testing Program (the "Program") and consent to having a urine sample collected and tested for arsenic. I have been fully informed concerning the Program and the procedures for obtaining the urine samples. I understand that the purpose of this Program is to provide interested residents with information concerning their urinary arsenic levels. Certain additional diagnostic or other follow-up services may be provided to individuals with urinary arsenic levels above Program action levels if recommended by the Program Consulting Physician. However, I understand that the purpose of the Program is to provide me with information rather than to treat any condition, whether or not the condition is related to elevated arsenic levels. I also understand that the results of the testing will be communicated by the laboratory to the Program Consulting Physician and will be used in preparing group reports, but will otherwise be kept confidential.

Signature of Participant: _____ Date: _____

Part D: (To be completed by collection site personnel)

Collection site: _____ Providence Hospital
_____ Snohomish Health District

Collection date: _____ Time: _____ a.m. p.m.

Collect 2 sets of specimens. Send one set to each of the labs noted below.

Biotrace Labs

Urine (for arsenic level): _____ yes _____ no

Lab of Pathology

Urine (for arsenic level:) _____ yes _____ no

Specimens collected by: (print name) _____

(signature) _____

EVERETT SMELTER SITE MEDICAL TESTING PROGRAM
TESTING AUTHORIZATION FOR SPLIT SAMPLE (MINORS)

Instructions for Collection Site Personnel:

1. **Before** collecting specimens, ensure that: Part A of this form has been signed by the Administrative Coordinator; Part B has been completed; and Part C has been signed by the Participant's parent or guardian.
2. Explain collection procedures to Participant.
3. Collect specimens in accordance with the Collection Site Instructions for the Everett Smelter Site Medical Testing Program, complete Part D of this form and send one set of specimens to Biotrace Labs and one set to Laboratory of Pathology.
4. Send the completed and signed original of this form and a copy each of the Biotrace Labs requisition form and the Lab of Pathology requisition form to the Administrative Coordinator, provide a copy of this form to the Participant and keep a copy for Collection Site files.
5. For questions, call the Administrative Coordinator at (206) 746-5436.

Part A: Authorization for Testing

This authorizes _____ (referred to as the Participant) to have laboratory tests (listed in Part D) done as part of the Everett Smelter Site Medical Testing Program.

Administrative Coordinator _____ Date _____

Part B: Registration Information

1. Participant's name: _____ ; _____
2. Home address _____
street address

city, state zip
3. Home telephone: _____
4. Date of birth (month/day/year) _____ 5. Age (in years) _____
6. Social Security Number _____
7. Sex: _____ male _____ female

If the Participant is a female of childbearing age, questions 8 and 9 must be answered:

8. Are you currently pregnant? _____ yes _____ no
9. Are you currently breast feeding? _____ yes _____ no

Questions 10-14 are optional, but answering them will help the Consulting Physician estimate exposures and health risks for you and others in your household.

10. How many people live at your current home?
_____ adults _____ children (less than 18 years old)
11. What year did you move to your current address: _____
12. Have you ever lived at another residence located within the Everett Smelter Site study area.
_____ yes _____ no
If yes, list the address(es) and the years lived at each residence:
13. What is your current occupation? _____
14. Where is your current job or school located? (list city and address)

Part C: Informed Consent (Note: the Informed Consent must be signed in order to participate in the Program).

PARENTAL CONSENT FOR PARTICIPANTS LESS THAN 18 YEARS OLD

I _____ am the parent or legal guardian of _____.
I hereby elect to have him/her participate in the Everett Smelter Site Medical Testing Program (the "Program") and consent to having a urine sample collected from him/her and tested for arsenic. I have been fully informed concerning the Program and the procedures for obtaining urine samples. I understand that the purpose of this Program is to provide interested residents with information concerning their urinary arsenic levels. Certain additional diagnostic or other follow-up services may be provided to individuals with urinary arsenic levels above Program action levels if recommended by the Program Consulting Physician. However, I understand that the purpose of the Program is to provide me with information rather than to treat any condition, whether or not the condition is related to elevated arsenic levels. I also understand that the results of the testing will be communicated by the laboratory to the Program Consulting Physician and will be used in preparing group reports, but will otherwise be kept confidential.

Signature of Parent/Guardian: _____

Date: _____ Relationship to participant (parent or legal guardian): _____

Part D: (To be completed by collection site personnel)

Collection site: _____ Providence Hospital
_____ Snohomish Health District

Collection date: _____ Time: _____ a.m. p.m.

Collect 2 sets of specimens. Send one set to each of the labs noted below.

Biotrace Labs

Urine (for arsenic level): _____ yes _____ no

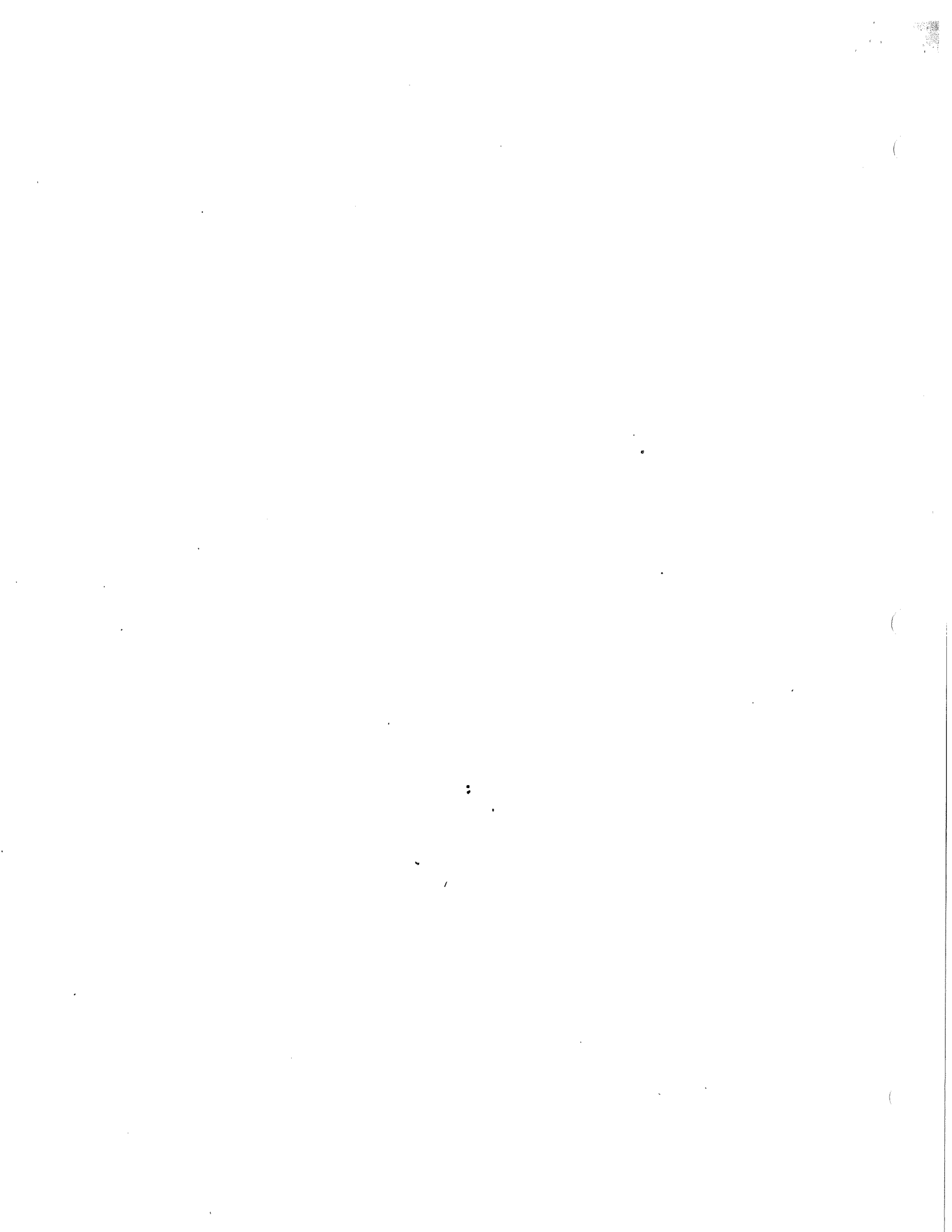
Lab of Pathology

Urine (for arsenic level:) _____ yes _____ no

Specimens collected by: (print name) _____

(signature) _____

ATTACHMENT 6



INSTRUCTIONS FOR PARTICIPANTS

(1) This medical testing program is voluntary. If you elect to participate, you must obtain from the Snohomish Health District a Testing Authorization form for each individual at your residence who wishes to have his or her urine tested for arsenic.

(2) For each form, ensure that Part A has been signed by the Administrative Coordinator for the Program and that the information in Part B is complete and accurate.

(3) With the exception of minor children (less than 18 years old), each participant must read and sign the informed consent (Part C).

(4) For minor children (less than 18 years old), the parental consent (Part C) must be read and signed by the parent or legal guardian.

(5) To have your samples collected, take your Testing Authorization form to either of the following medical facilities during the hours listed:

For participants 14 years and older:

Hours:

For participants of all ages:

Hours:

(6) Samples will not be collected, unless you present a Testing Authorization form that has been signed by the Administrative Coordinator (Part A), and completed and signed by you (Parts B and C).

(7) If you have any questions concerning the procedures for collecting the urine samples, please ask the collection site

personnel. Do not eat any kind of seafood for at least three days before having your urine sample collected.

(8) If you received a Testing Authorization Form for Split Samples, your sample has been randomly designated a "split sample." This means that two sets of urine specimens will be collected, with one set sent to one laboratory and the other set sent to a different laboratory for analysis. The purpose of randomly selecting certain samples as split samples is to help ensure quality control.

(9) You can expect to receive your results, and a letter of explanation from Dr. _____, the Program Medical Consultant, in the mail in approximately three to six weeks.

(10) If you have any questions concerning these instructions, please call the Administrative Coordinator, Mike Young at (206) 339-5250. If you have any questions about whether you should participate in the Program, the effects of elevated levels of urinary arsenic, or your own results, please call the Program Consulting Physician Dr. _____ at _____.

ATTACHMENT 7

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INSTRUCTIONS FOR COLLECTION SITES

1. Before collecting specimens, make sure the participant (or parent/guardian) has presented a Testing Authorization form with Part A signed by the Administrative Coordinator, Part B (registration information) completed and Part C (informed/parental consent) signed by the participant or parent/guardian, as appropriate. Collection of specimens may not occur without presentation of a signed Testing Authorization form.

2. Single (Non-split) Samples. If the Testing Authorization form is designated "For Single Sample," collect one urine specimen using a Biotrace Laboratories collection kit.

(a) Specimen Collection

Specimens are to be collected and transported in accordance with the instructions contained in the Biotrace Laboratories collection kit, using the containers and packaging provided in the kit as follows:

Collect the Urine Arsenic Specimen

- A 30 ml. random urine specimen is needed for arsenic analysis. This must be collected in plastic containers supplied in the kit.
- Avoid touching or otherwise contaminating interiors of the cup and container (also advise participants about this).
- Place adhesive numbered labels from the lab requisition form on both the urine collection cup and urine specimen transport container (labeled EDTA).
- Have participant collect a mid-stream urine specimen in the cup until it is half full, place lid securely on collection cup and return it to clinic staff.
- Clinic staff should pour urine from collection cup into the labeled urine specimen transport container, until it is 1/2 full (at least 30 ml.), then securely tighten the top on the transport container.

(b) Complete the Requisition Form

- In the appropriate boxes on the form, print: the participant's first, middle and last names; date of birth; sex; social security number (if available); and date and time of specimen

collection. Circle appropriate collection site location in referring physician section.

- The tests to be done have already been marked on the form, do not order any additional tests on the form.

(c) Complete Part D of Testing Authorization Form

- Fill in Part D of the participant's Testing Authorization form, indicating date, location of collection site and samples collected. Sign form where provided. Make 2 copies of completed form.

(d) Distribute Forms

- Place original (top) copy of lab requisition form in biohazard bag contained in Biotrace Labs collection kit.
- Retain a copy of the lab requisition form and a copy of the Testing Authorization form with participant's collection site record.
- Send a copy of the lab requisition form and the original Testing Authorization form to the Administrative Coordinator in the envelope provided.
- Give one copy of the Testing Authorization form to the participant.

(e) Sending Specimens to Biotrace Labs

- Make sure each specimen is labeled and place them in the biohazard bag (containing the completed lab requisition form).
- Place biohazard bag in the shipping box provided.
- Place shipping box in the large Federal Express envelope provided. Date and sign the preprinted Federal Express airbill and attach to envelope. Retain copy for collection site records.
- Call 1-800-238-5355 Monday through Friday for Federal Express pick-up.
- Specimens should be picked-up as soon as possible. If kept overnight, store at room temperature.

(f) Biotrace Laboratories Contact

- For questions about Biotrace Labs specimen collection, courier pick-up or ordering supplies, contact Ms. Gloria Pitt at Biotrace Labs in Salt Lake City at: 1-800-258-2368, then enter "2" and ext. "705"

3. Split Samples. If the Testing Authorization form is designated "For Split Samples," collect two separate sets of specimens. Use the Biotrace Laboratories collection kit and instructions for one set of specimens (as described above). For the second set of specimens use the Dynacare Laboratory of Pathology collection kit and instructions as follows:

(a) Specimen Collection

Specimens are to be collected and transported in accordance with the instructions contained in the Dynacare Laboratory of Pathology collection kit, using the containers and packaging provided in the collection kit.

Collect the Urine Arsenic Specimen

- A 30 ml. random urine specimen is needed for arsenic analysis. This must be collected in the plastic containers supplied in the kit.
- Avoid touching or otherwise contaminating interiors of the cup and container (also advise participants about this).
- Place adhesive numbered labels from the lab requisition form on both the urine collection cup and urine specimen transport container (with white top).
- Have participant collect a mid-stream urine specimen in the cup until it is half full, place lid securely on collection cup and return it to clinic staff.
- Clinic staff should pour urine from collection cup into the labeled urine specimen transport container, until it is 2/3 full (at least 30 ml.), then securely tighten the white plastic cap on the transport container.

(b) Complete Lab of Path Requisition Form

- In the appropriate boxes on the form, print: the participant's first, middle and last names; date of birth; sex; social security number (if available); and date and time of specimen collection. Check appropriate box in form's

Comment section indicating collection site location.

- The tests to be done have already been marked on the form, do not order any additional tests on the form.
- If only a single specimen could be collected, note this in the "Comments" section and describe any special circumstances.

(c) Complete Part D of Testing Authorization Form

- Fill in Part D of the participant's Testing Authorization form, indicating date, location of collection site and samples collected. Sign form where provided. Make 2 copies of completed form.

(d) Distribution of Forms

- Place original (top) copy of lab requisition form in the shipping box provided with the collection kit.
- Retain a copy of the lab requisition form and a copy of the Testing Authorization form with participant's collection site record.
- Send a copy of the lab requisition form and the original Testing Authorization form to the Administrative Coordinator in the envelope provided.
- Give one copy of the Testing Authorization form to the participant.

(e) Sending Specimens to Lab of Pathology

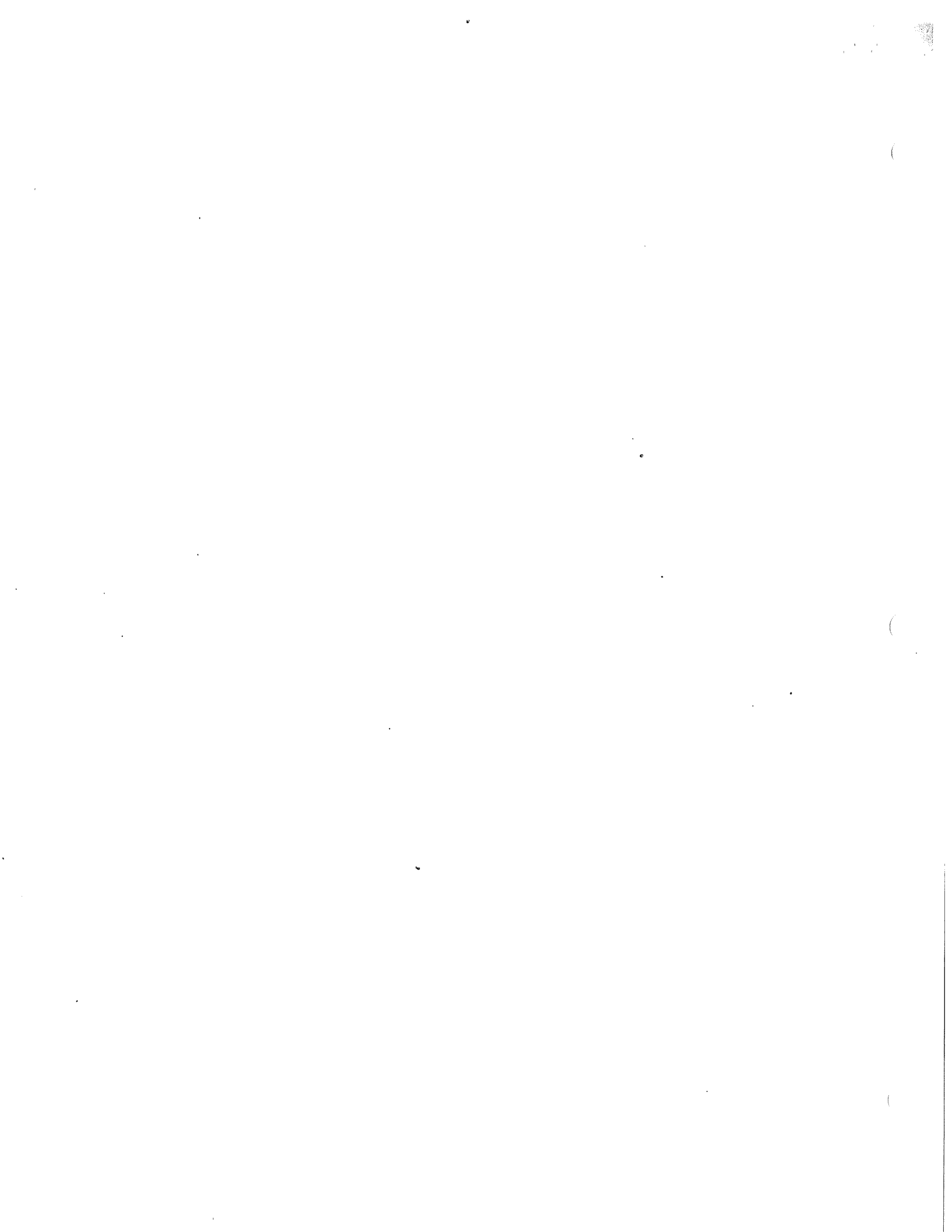
- Make sure each specimen is labeled and place them in the plastic biohazard bag (containing the completed lab requisition form).
- Place biohazard bag in the shipping box provided.
- For specimen pick-up on Monday through Saturday, call the Lab of Path courier for the Everett area at (206) _____.
- Specimens should be picked-up as soon as possible. If kept overnight, store at room temperature. If specimen pick-up is delayed longer than two days, still send specimens to lab but notify Ms. Jan Riley at Lab of Path (see below).

(f) Lab of Path Contact

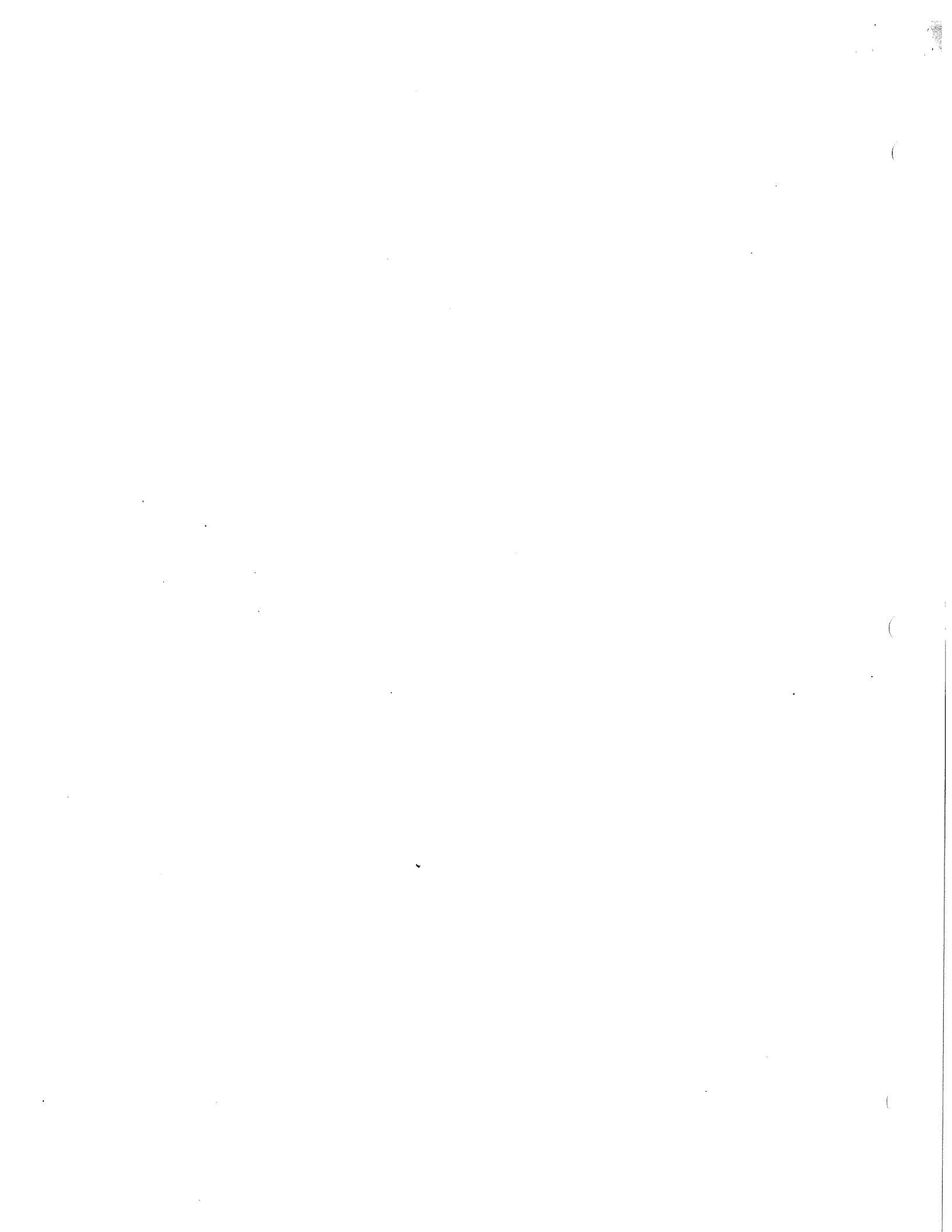
- For questions about Lab of Path specimen collection, courier pick-up or ordering supplies, contact Ms. Jan Riley at Dynacare Laboratory of Pathology in Seattle (leave a message if she is not available). She can be reached at:

Phone: (206) 386-2660 or 1-800-458-6836
Fax: (206) 386-6280

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ATTACHMENT 8



JOHN P. HOLLAND, MD, PC
OCCUPATIONAL MEDICINE CONSULTING
601 WEST MERCER PLACE, #303
SEATTLE, WA 98119

PHONE: 1-800-711-4966 OR (206) 270-3494

January 26, 1996

Sample of participant notification letter

Mary Q. Smith
4444 West 4th Avenue
Ruston, WA 98000

Dear Ms. Smith:

This is the report of your screening lab tests done as part of the North Tacoma/Ruston Medical Monitoring Program. The purpose of this program is to allow persons living near the site of the former Asarco smelter to have periodic medical monitoring to see if they have higher than normal levels of arsenic or lead in their body.

Identifying information:

Specimens for: **Mary Q. Smith** Age: 42 Sex: female
Pregnancy status: You stated you were not pregnant or breast-feeding
Date collected: February 1, 1996 Collection site: Tacoma General Hospital
Analyzed at: Biotrace labs, Sale Lake City, Utah

Your lab test results:

Blood lead level = 9 mcg/dl* (action level = 20 mcg/dl)
Urine arsenic level** = 20 mcg/liter** (action level = 40 mcg/liter)

* - Key: mcg = micrograms; dl = deciliter (0.1 liter)
** - This is total urinary arsenic (inorganic + organic)

Interpretation: Your lab tests show normal and nontoxic levels of arsenic and lead.

These are normal test results which show that your arsenic and lead levels are either non-detectable or are well below established toxic levels. Your arsenic and lead levels are similar to those seen in much of the general US population. You should not have any current or future health problems from these low levels of arsenic and lead in your body.

I have enclosed an information sheet which answers many of the questions commonly asked about the medical monitoring program. I will also be happy to talk with you or your physician if you have any questions about your lab results, potential health effects of arsenic or lead exposure, or the medical monitoring program. Please contact me by writing me at the address above or by calling my toll-free phone number, 1-800-711-4966.

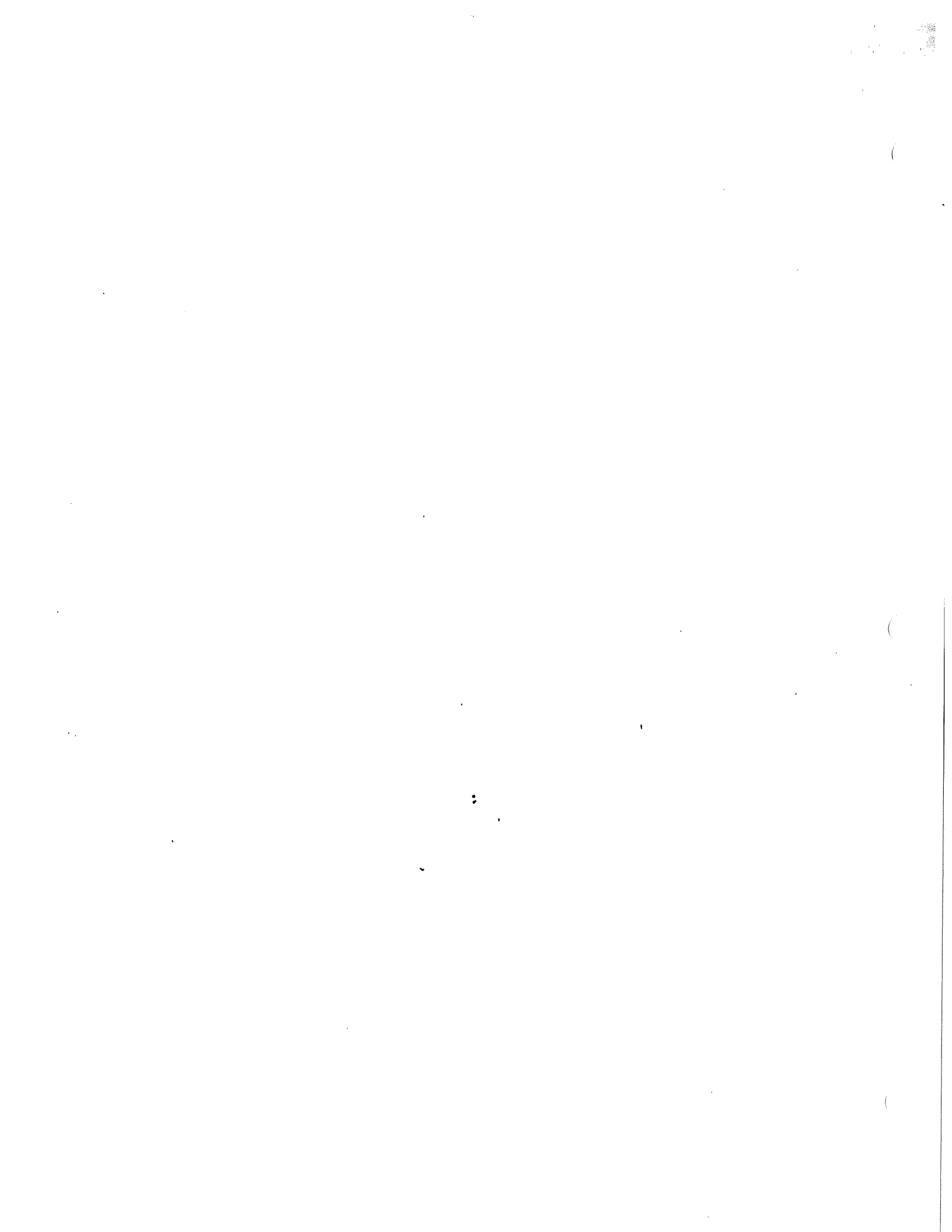
Sincerely,

John P. Holland, MD, MPH
Board certified specialist in occupational medicine
Consulting physician, North Tacoma/Ruston Medical Monitoring Program

Enclosures: lab test report, and *Information Sheet for Program Participants*
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ATTACHMENT 9



North Tacoma/Ruston Medical Monitoring Program
 Participant Questionnaire for Adults

INSTRUCTIONS FOR COMPLETING QUESTIONNAIRE:

Please complete the following questionnaire to the best of your ability. It is helpful if you complete all parts of the questionnaire. However, feel free to leave any questions blank or to write extra comments on the form if you desire. You will have an opportunity to go over this questionnaire with the program consulting physician. This form will be kept confidential in your file maintained by the consulting physician.

Name: _____ Last First Middle Initial			Date: _____ Month Day Year
Address:			
Street: _____		City: _____	
State: _____		Zip: _____ County: _____	
Home Phone Number () _____		Work Phone Number: () _____	
Social Security No.: _____ - _____ - _____ Age _____			
Birth Date: _____ (Month, Day, Year)		Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female	

- How long have you lived at the above address? _____ Yrs _____ Mos.
- Have you ever lived at another address in the Tacoma or Ruston area?
 _____ Yes _____ No If yes, please complete the following:

<u>Previous address in Tacoma or Ruston</u>	<u>Years at this address</u>
_____	19 _____ to 19 _____
_____	19 _____ to 19 _____
_____	19 _____ to 19 _____
_____	19 _____ to 19 _____

North Tacoma/Ruston Medical Monitoring Program
 Participant Questionnaire for Adults

Participant's name: _____
Last First Middle

3. Have you ever had blood lead or urinary arsenic testing done before?
 ____ Yes ____ No If yes, please explain below:

4. Do you currently smoke cigarettes, cigars or pipes? ____ Yes ____ No

5. Does anyone else smoke tobacco inside your home? ____ Yes ____ No

6. In the three days prior to giving your urine specimen, did you eat any seafood, including tuna, salmon, shrimp, oysters, crab or clams, and including meals eaten out? ____ Yes ____ No

7. In the three days prior to giving your blood and urine specimen, did you consume any red wine? ____ Yes ____ No

8. Do you get any regular exercise, other than work? ____ Yes ____ No

9. Do you exercise in or around your home? ____ Yes ____ No

If yes, mark all types of exercises in which you do participate, including whether it is outdoors, indoors or both.

	<u>Outdoors</u>	<u>Indoors</u>
_____ jogging/running	_____	_____
_____ bicycling	_____	_____
_____ stationary bicycle	_____	_____
_____ calisthenics	_____	_____
_____ weight lifting	_____	_____
_____ aerobic exercise or dance classes	_____	_____
_____ other workouts in the gym	_____	_____
_____ basketball	_____	_____
_____ softball or baseball	_____	_____
_____ other outdoor team sport (what?):	_____	_____

North Tacoma/Ruston Medical Monitoring Program
Participant Questionnaire for Adults

Participant's name: _____
Last First Middle

10. Are you currently taking any prescription medications? ____ Yes ____ No
If yes, complete the following:

<u>Name of medication</u>	<u>Reason this medication was prescribed</u>
_____	_____
_____	_____
_____	_____
_____	_____

11. Do you sometimes use non-prescription medications? ____ Yes ____ No
If yes, complete the following:

<u>Name of medication</u>	<u>Reason you take this</u>	<u>How often</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

12. Do you currently take any vitamins, dietary supplements, health foods, herbal preparations or similar products? ____ Yes ____ No
If yes, complete the following:

<u>Name of product</u>	<u>Reason you take this</u>	<u>How often</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

North Tacoma/Ruston Medical Monitoring Program
Participant Questionnaire for Adults

Page 4

Participant's name: _____
Last First Middle

13. Indicate if you or any members of your household ever worked in the following jobs or industries. For all that apply, enter an "S" for self or an "O" for others in your household. If possible, also state the years worked in this job (for example, 1980-95).

Foundries or metal working

- _____ iron or steel foundries
_____ aluminum foundries
_____ other smelter of foundries
_____ work at the former ASARCO copper smelter
_____ welding
_____ torch-cutting or burning of metal

Manufacturing

- _____ battery manufacturing
_____ battery recycling
_____ chemical manufacturing
_____ gasoline refining
_____ paint, glaze or ink manufacturing
_____ plastics manufacturing
_____ pesticide manufacturing

Other types of work

- _____ automobile radiator repair
_____ other automobile repair
_____ commercial painting
_____ construction work
_____ demolition work
_____ machine shop work
_____ mining
_____ pest control work
_____ other use of pesticides at work
_____ sand blasting
_____ shipyard work
_____ ship breaking
_____ scrap or salvage yards

North Tacoma/Ruston Medical Monitoring Program
Participant Questionnaire for Adults

Participant's name: _____
Last First Middle

14. Indicate if you or anyone else in your household has ever done any of the following activities either at work, at home or as a hobby. For all that apply, enter "S" for self or "O" for others in your home. If known, also state the years this activity was done (for example, 1980-95).

- _____ jewelry making
- _____ ceramics or pottery making
- _____ painting or glazing pottery
- _____ soldering
- _____ glass blowing
- _____ stained glass making
- _____ making lead shot or bullets
- _____ ammunition reloading
- _____ making cast lead fishing sinkers

- _____ automobile repair
- _____ furniture refinishing
- _____ home remodeling
- _____ painting an older house, apartment or other building
- _____ sanding off old paint in a house, apartment or other building
- _____ used a torch to burn off old paint for a building or other object
- _____ shot guns on indoor firing ranges
- _____ shot guns on outdoor firing ranges
- _____ working with artist's paints

15. Does anyone in your household wear a uniform or other [required? employer-provided? designated?] work clothes home? _____ Yes _____ No

Person's Name

Occupation

_____	_____
_____	_____
_____	_____
_____	_____

North Tacoma/Ruston Medical Monitoring Program
Participant Questionnaire for Adults

Participant's name: _____
Last First Middle

16. What types of residence do you currently live in? (choose one below)

- _____ single family home
- _____ duplex
- _____ apartment or condominium complex
the floor of this building you live on is the _____ floor
(consider the ground level as the first floor)
- _____ apartment in former single family home
- _____ mobile home
- _____ other (describe)

17. Does your home (house, apartment, etc.) have any of the following?
choose all that apply:

- _____ dirt drive or parking area
- _____ crushed rock drive or parking area
- _____ a yard
- _____ flower garden
- _____ vegetable garden
- _____ large areas of exposed dirt near the home
- _____ outdoor cooking areas (such as a grill or barbecue)
- _____ outdoor eating areas (such as a picnic table)

18. Do you eat vegetables grown in a garden in your yard or from a garden in the nearby neighborhood? _____ Yes _____ No

If yes, list the vegetables you typically eat from these gardens.

19. Have you done any digging or moving of earth around your home in the past 3 months? _____ Yes _____ No If yes, describe:

North Tacoma/Ruston Medical Monitoring Program
Participant Questionnaire for Adults

Participant's name: _____
 Last First Middle

20. Has there been any construction or earth moving on or near your property within the past month? _____ Yes _____ No If yes, describe:

21. Do you currently use well water for any of the following purposes?
drinking water _____ Yes _____ No
irrigation water _____ Yes _____ No
other uses _____ Yes _____ No (specify) _____

22. Indicate the play and recreation areas there are for children and adults near your home:

- _____ sand box
- _____ swing set or jungle gym
- _____ basketball court
- _____ playing field
- _____ other type of sports court
- _____ other (what?): _____

North Tacoma/Ruston Medical Monitoring Program
Participant Questionnaire for Adults

Participant's name: _____
Last First Middle

Supplemental questions for children

- C1. Was the residence built before 1960? Yes No
If yes, answer the following:
- a. Has there been any remodeling (including sanding, refinishing, chemical or heat stripping) within the last year?
 Yes (dates ___/___/___--___/___/___)
 No Don't know
- b. Does the home have any of the following:
lead pipes or pipe fittings Yes No Don't know
peeling or flaking paint Yes No Don't know
- C2. Does the child regularly visit a house built before 1960?
 Yes No Don't know
If yes, answer the following:
- a. Is this house in the neighborhood? Yes No Don't know
- b. How often does this child visit this house? _____ (days per week)
- C3. Has the child attended a day care center, preschool or babysitters facility built before 1960? Yes No Don't know
If yes, answer the following:
- a. How long did the child attend the facility? _____ mos _____ yrs.
- b. How much time is the child at the facility per month? _____ days
- c. name of facility _____
- d. address of facility _____

North Tacoma/Ruston Medical Monitoring Program
Participant Questionnaire for Adults

Participant's name: _____
Last First Middle

C4. In the last 3 months, has the child been seen playing with any of the following:
(check all that apply)

- _____ bullets
- _____ ceramics
- _____ curtain weights
- _____ batteries
- _____ fishing sinkers
- _____ old dolls (pre-1970)
- _____ other of concern (specify):

C5. Have any of the child's playmates had elevated blood lead test results?
_____ Yes _____ No _____ Don't know If yes, please answer the following:

- a. Who gave you this information? _____
- b. How can we contact them? _____

C6. Has your child received any home or folk remedies in the past year (such as Azarcon, Greta, Coral, Pay-loo-ah, Bali Goli, Rhada, Alarcon)?
_____ Yes _____ No _____ Don't know

If yes, please describe: _____

C7. Does anyone in your household cook or serve food in clay pots or dishes made outside of the USA? _____ Yes _____ No _____ Don't know

C8. Do you have a sandbox in your yard? _____ Yes _____ No _____ Don't know
If yes, about how often does the child play there (check one)

- _____ Daily
- _____ Weekly
- _____ Monthly
- _____ Rarely

North Tacoma/Ruston Medical Monitoring Program
Participant Questionnaire for Adults

Participant's name: _____
 Last First Middle

C9. Are there any pregnant or nursing women currently living in your household?
_____ Yes _____ No _____ Don't know

C10. Does the child often take food or a bottle outside to play?
_____ Yes _____ No _____ Don't know

If yes, about how many hours per week has the child played outside in the neighborhood in the past month? _____ hours

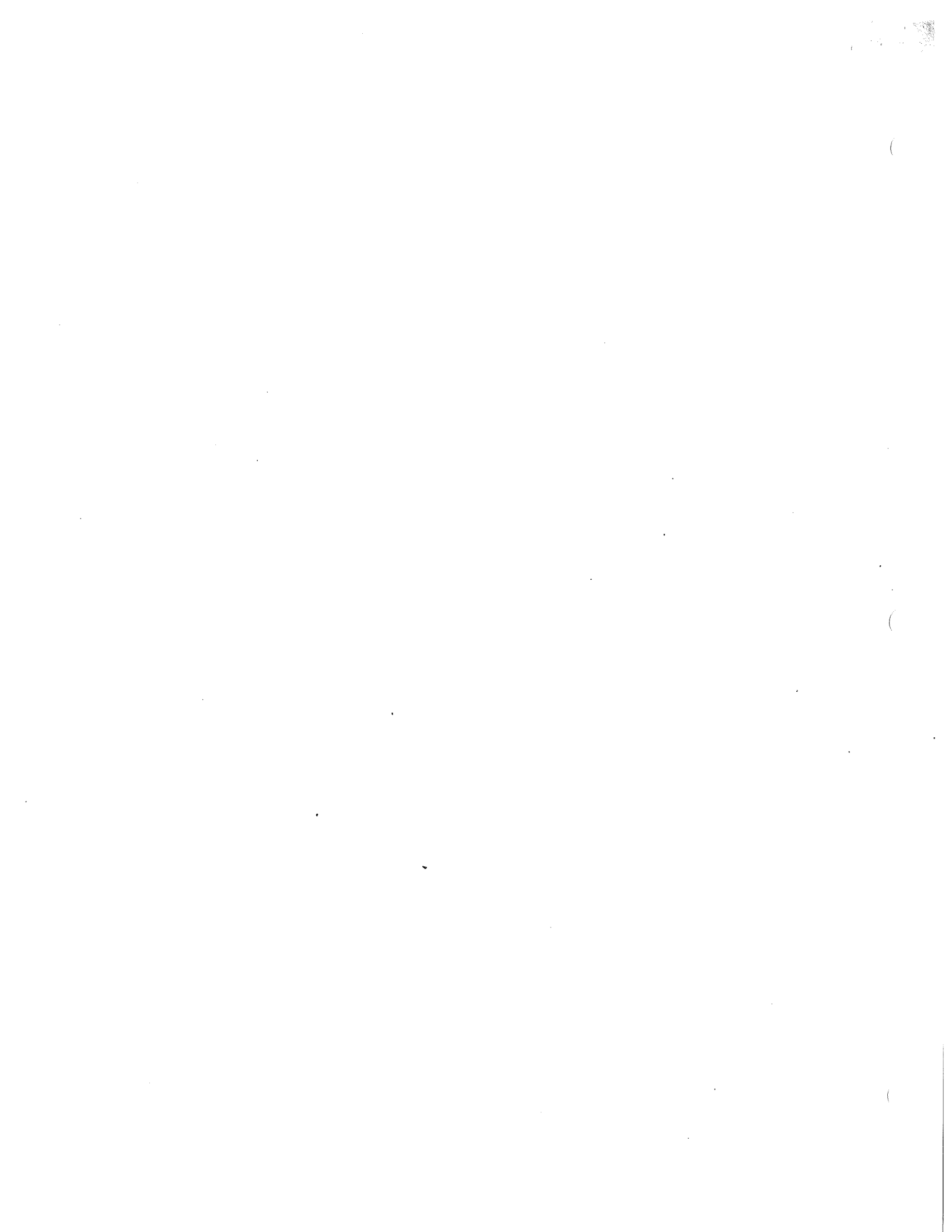
C11. Have you observed the child swallowing or putting things other than food in their mouth (such as toys, papers, paint chips, dirt)? If yes, please explain:

C12. Does the child eat vegetables from a garden located on your property or in the neighborhood? _____ Yes _____ No

If yes, what vegetables are typically eaten? (Please list)

C13. Does the child play in the garden referenced in question C12? _____ Yes _____ No

ATTACHMENT 10



An open letter from the Program Consulting Physician

JOHN P. HOLLAND, MD, PC
OCCUPATIONAL MEDICINE CONSULTING
601 WEST MERCER PLACE, #303
SEATTLE, WA 98119

PHONE: 1-800-711-4966 OR (206) 270-3494

Dear program participant:

This *Information Sheet for Program Participants* has been sent to you along with your medical monitoring lab test results. It has answers to many of the questions commonly asked about the community medical monitoring program.

I am available to talk to you and your physician, to answer any questions about your test results, or the potential health effects of arsenic and lead exposures, or about the medical monitoring program itself. This consultation with me by participants and their physicians is provided as part of the medical monitoring program at no cost to you or your physician.

You can contact me by writing me at the address above, or by calling my toll-free phone number, 1-800-711-4966. I hope the information provided by this medical monitoring program answers some of the health concerns you may have regarding environmental exposures to arsenic and lead.

Sincerely,

John P. Holland, MD, MPH
Board certified specialist in occupational medicine
Consulting physician for North Tacoma / Ruston Medical Monitoring Program

Answers to some common questions asked about the Program

Question: Is it normal to have low levels of arsenic and lead in the body?

Answer: Yes. In industrialized countries like the United States all residents have some exposure to low levels of arsenic and lead from air pollution, and from the water we drink and food we eat. Lead and arsenic in our environment comes from both industrial pollution and natural sources (such as natural rock formations).

Blood lead and urinary arsenic levels below the "Action levels" set for this monitoring program, are similar to levels found in the general US population. Such low blood lead and urinary arsenic levels are not considered by scientific experts to cause health problems or to pose long-term health risks.

Question: How can I find out more about what these results mean for my health?

Answer: If you have any questions, please feel free to call me at 1-800-711-4966 or write to me at the address above. I am also happy to talk with your physician about your test results and your health concerns regarding arsenic and lead exposure (but you will need to complete a release of information form for this).

North Tacoma / Ruston Medical Monitoring Program
Information Sheet for Program Participants

Question: How can I get a release form so you can send my test results to my doctor?

Answer: Call or write me at the above address and I will mail or fax the form to you.

Question: Are the results of my lab tests kept confidential?

Answer: Yes. All lab test results are sent directly to me as the program's consulting physician. Your lab test results are kept as confidential medical information in my office. These test results are sent only to you, unless you give written permission for them to be released to others. Your test results will be used to prepare aggregate group reports about the program, but this will be done in a way so that no individual can be identified.

Information on the Testing Authorization form (which you gave the Administrative Coordinator when registering for the program) is not considered medically confidential. Copies of the Testing Authorization form are kept by me, the Administrative Coordinator and others involved in program administration.

Question: How often can I have monitoring done as part of this program?

Answer: As long as you continue to live in the monitoring area, you can have blood lead and urine arsenic tests done every six months until December 31, 2005.

Question: Will someone notify me in six months when I am eligible for testing again?

Answer: No. You will not be notified to return for repeat testing in six months. You will need to do this on your own. You must contact the Administrative Coordinator again each time you want to have testing done.

Question: How do I arrange for my next set of monitoring tests to be done?

Answer: Each time you want to have monitoring tests done, you must contact the Administrative Coordinator by calling (206) 756-5436 (Sunday through Thursday from 1:00 pm to 5:00 pm), or by writing to:

Ms. Karen Pickett, Administrative Coordinator
Asarco Information Center
5311 N. Commercial Street
Ruston, Washington 98407
Phone: (206) 756-5436

Question: Do I have to answer the same questions each time I request testing?

Answer: Yes. Each time you request testing the Administrative Coordinator will verify your eligibility (by checking your home address) and will ask you to answer some questions needed to administer the program. You will then be sent a Testing Authorization form signed by the Administrative Coordinator.

Question: Who pays for the medical monitoring program?

Answer: A special fund had been set up by Asarco to pay all costs of the medical monitoring program, including: (1) your routine monitoring tests, (2) any telephone consultations or other communications with me (the program's consulting physician) by you or Tacoma-area physicians, and (3) any follow-up medical tests or evaluations for participants whose test results are above the action levels (follow-up testing must be arranged by me, the consulting physician, if it is to be paid for by the program).