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EVERETT SMELTER SITE REMEDIATION

AS-BUILT REPORT - 2004

WASHINGTON DEPARTMENT OF ECOLOGY

ENFORCEMENT ORDER NO. 02TCPNR-4059

Prepared for:

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TABLE OF CONTENTS

LIST OF EXHIBITS ii
LIST OF APPENDICES iii
CERTIFICATE OF ENGINEER iv
1.0 INTRODUCTION 1
1.1 REGULATORY ACTIONS AUTHORIZING CLEANUP 1
1.2 REQUIRED INFORMATION 2
1.3 DOCUMENTATION OF WORK BEYOND THE ENFORCEMENT ORDER 2
2.0 DESCRIPTION OF WORK 3
2.1 PHASE II – REMOVAL OF SOURCE MATERIAL FROM ASARCO PROPERTY 3
2.2 PHASE IIIB – REMOVAL OF RESIDENTIAL MATERIAL FROM ASARCO PROPERTY 5
2.3 WORK COMPLETED IN 2004 5
2.4 SCOPE OF WORK REQUIRED TO BE PERFORMED IN 2005 AND ADDITIONAL YEARS IF WARRANTED 6
3.0 DOCUMENTATION OF 2004 WORK 7
3.1 PHASE II DOCUMENTATION 7
3.2 PHASE IIIB DOCUMENTATION 8
3.3 SUMMARY OF QUANTITIES REMOVED AND DISPOSED 9
4.0 REFERENCES 10

LIST OF EXHIBITS

EXHIBIT 1 PHASE II SOURCE AREA REMOVAL AS-BUILT
EXHIBIT 2 PHASE IIIB AND SURFACE WATER CONTROL AS-BUILT
EXHIBIT 3 FENCED AREA – PHASES II & IIIB SEWER, TELEPHONE, AND ELECTRICAL UTILITY DEMOLITION AS-BUILT

EXHIBIT 4 FENCED AREA – PHASES II & IIIB WATER AND NATURAL GAS UTILITY DEMOLITION
EXHIBIT 5 SAMPLING PHASE 1A SUMMARY RESULTS AS-BUILT
EXHIBIT 6 SAMPLING PHASE 1B SAMPLE & CONFIRMATION TRENCH LOCATIONS AND SUMMARY RESULTS

LIST OF APPENDICES

APPENDIX A SAMPLING DATA AND MAPS
APPENDIX B DATA VALIDATION AND CONFIRMATION REPORTS
APPENDIX C MATERIAL TRANSPORTATION DOCUMENTS
APPENDIX D AIR MONITORING
APPENDIX E EVERETT 2004 CONSTRUCTION PHOTO LOG
APPENDIX F WELL ABANDONMENT

CERTIFICATE OF ENGINEER

This Everett Smelter Site Remediation As-Built Report 2004 was prepared in accordance with the requirements of the Enforcement Order No. 02TCPNR-4059, Agreed Judgment No. 03-2-08502-1, Final Cleanup Action Plan, and Interim Action Report. This Final Design package has incorporated comments from the State of Washington Department of Ecology and is consistent with the requirements of WAC 173-340-400, WAC 173-340-430, and WAC 173-340-840.

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1.0 INTRODUCTION

This report has been prepared by ASARCO Incorporated (Asarco) to document the condition of the fenced area within the former Everett Smelter site in Everett, Washington (the Site) following removal of soil and debris containing regulated concentrations of arsenic and other metals as required by Washington State Department of Ecology (Ecology) Enforcement Order No. 02TCPNR-4059. This work was conducted pursuant to an Agreed Judgment issued by Snohomish County Superior Court in October, 2003. Work was performed from May through October 2004.

1.1 REGULATORY ACTIONS AUTHORIZING CLEANUP

In June 2002, Ecology issued Enforcement Order No. 02TCPNR-4059 pursuant to the Final Cleanup Action Plan (FCAP), directing Asarco to remove and dispose of soils from within the fenced area that contain more than 3,000 parts per million (ppm or mg/kg) of arsenic. Under the order, removal is required to begin no later than April 30, 2003 and to be complete by October 30, 2004. A subsequent amendment to the order extends the cleanup of high-level contamination beyond the fenced area, to adjacent peripheral areas.

In response to the order, Asarco proposed to remove approximately 25,000 cubic yards of smelter residuals from the Everett site, disposing it with similar materials from the Tacoma Smelter in the Onsite Containment Facility (OCF) at the Ruston/Tacoma Site. In addition, Asarco proposed to remove approximately 60,000 cubic yards of soil containing arsenic concentrations between 150 and 3000 ppm from the fenced area and adjacent residential yards. This soil would be disposed as sub-grade backfill under the site-wide cap at the Ruston/Tacoma site.

Everett Superior Court issued Agreed Judgment No. 03-2-08502-1 (October 20, 2003) providing a schedule for the completion of required cleanup actions in the Fenced Area under the current Enforcement Order. Ecology approved the Final Design Report in March 2004.

EPA Region 10 issued their Action Memorandum on June 7, 2004 authorizing the removal and disposal of material from Everett at Tacoma.

1.2 REQUIRED INFORMATION

The general requirements for as-built documentation following site remediation are specified in WAC 173-340-400 Implementation of the cleanup action, (b) Construction documentation, (ii) As built reports. The remediation that was performed at the Site was performed as specified in the Final Design Report for the Site (see *Final Design Report, Everett Smelter Site*, Asarco Consulting, Inc., March 2004). This report does not reiterate the content of that document; as required by WAC 173-340-400(b)(ii), it presents the documentation of facility construction, in this case the removal of material containing greater than 3,000 mg/kg arsenic, from the fenced area of the Site. It also contains the data supporting the determination that the material removal was completed to Ecology's requirements as specified in the Final Design Report.

1.3 DOCUMENTATION OF WORK BEYOND THE ENFORCEMENT ORDER

Asarco entered into a Purchase and Sale Agreement with the Everett Housing Authority (EHA) for the property owned by the company in Everett; 15 residential properties outside the fenced area and 22 residential parcels in the Fenced Area. Under the terms of the Purchase and Sale Agreement, Asarco and the EHA executed a Remediation Agreement that covered all of the property that the EHA was purchasing as well as 22 other non-Asarco owned properties within the boundary of the former smelter. The EHA and Ecology have also executed Prospective Purchaser Consent Decrees covering the properties purchased by EHA from Asarco. The sale of the 15 residential properties was closed in July 2004 and the fenced area parcels in October 2004.

The Remediation Agreement defines seven work phases depending on the type of remediation and funding sources. This report includes documentation for Phases II and IIIB as described in Section 2 below. Phase II covers the work required by the Enforcement

Order; Phase IIIB covers additional removal in the Fenced Area to reach concentrations no greater than 150 mg/kg arsenic.

2.0 DESCRIPTION OF WORK

The work to be performed under the terms of the orders and agreements listed in the previous section have been defined in the Scope of Work, Exhibit D to the Remediation Agreement and is divided into seven phases (see also Exhibit H to the Remediation Agreement):

Phase I:	Purchase of the 15 Asarco Houses
Phase II:	Remediation of the Asarco Property (Fenced Area), soil concentrations > 3000 ppm As
Phase IIIA:	Purchase of the Asarco Property (Fenced Area)
Phase IIIB:	Remediation of the Asarco Property (Fenced Area), Soil Concentrations > 150 ppm As, < 3000 ppm As
Phase IV:	Demolition and Remediation of 7 Asarco Houses
Phase V:	Remediation of 8 Asarco Houses to be Remodeled
Phase VI:	Final Cap for the Asarco Property (Fenced Area)
Phase VII:	Remediation of 22 Non-Asarco Owned Houses

Phases I and IIIA are property purchase transactions. Phases II and IIIB are covered by this report and are described in more detail below.

2.1 PHASE II – REMOVAL OF SOURCE MATERIAL FROM ASARCO PROPERTY

This phase covers the removal of soil and debris greater than 3,000 mg/kg As (i.e., Source Material) with ultimate disposal of this material in the On-site Containment Facility (OCF) at Asarco's former Tacoma smelter. The Remediation Work in this phase is directed by Ecology Enforcement Order No. 02TCPNR-4059 pursuant to the FCAP, directing Asarco to remove and dispose of soils from within and adjacent to the fenced area that contain more

than 3,000 parts per million (ppm) of arsenic. Under the order, and subject to the subsequent Agreed Judgment (No. 03-2-08502-1) issued by Snohomish County Superior Court on October 20, 2003, removal is required to be complete by October 30, 2004. The removal plan calls for excavation and transportation of approximately 20,000 cubic yards of smelter soil from the Everett Smelter and disposal with similar materials from the Asarco Tacoma Smelter in the OCF. Approximately 1,600 tons of Source Material other than soil may have required transportation and disposed in permitted hazardous waste facilities other than the OCF. Source material other than soil would also be transported and disposed of in permitted hazardous waste facilities. In addition, about 15,000 cubic yards of soil and/or debris with concentrations less than 3,000 ppm arsenic (i.e., Residential Material) may have required excavation as part of Phase II to assure complete removal of all Source Material. Residential Material would be excavated and transported to Asarco's former Tacoma smelter, where it could be used as subgrade backfill and placed underneath the site-wide cap.

Asarco owned the non-public property in the fenced area until Phase II was completed. Streets and an alley are the only public property in the Fenced Area and are owned by the City of Everett. Access to and removal of the streets, overhead electrical distribution lines, and other underground utilities was needed to complete remediation of the fenced area. The City of Everett issued a Public Works Permit authorizing removal actions on public property. Asarco used barge-loading facilities in Everett owned by others.

Asarco is responsible for all work to be conducted in Phase II. Completion of Phase II was determined by Ecology's certification that the Source Material has been removed from the fenced area and other public or private property adjacent to within or adjacent to the fenced area. The requirements that must be satisfied for Ecology certification are specified in the Final Design Report, Appendix A, Compliance Monitoring Plan.

2.2 PHASE IIIB – REMOVAL OF RESIDENTIAL MATERIAL FROM ASARCO PROPERTY

Phase IIIB commenced after Phase II was completed. Remediation work in Phase IIIB included the removal of the remaining Residential Material containing arsenic concentrations between 150 and 3,000 ppm from the public and private property in the fenced area as approved in the FCAP, IAR and FDR. Ecology has amended the FCAP/FEIS accordingly to incorporate this phase of the Remediation Work. The volume of this material is estimated to be approximately 20,000 – 25,000 cubic yards. This soil will be transported by barge and will be disposed as sub-grade backfill under the site-wide cap at the Asarco Tacoma Smelter.

Under its Prospective Purchaser Consent Decree, the EHA is the entity responsible for the work under Phase IIIB. However, as provided in the Purchase and Sale Agreement and the Remediation Agreement, Asarco is to conduct the remediation work as specified in the Construction Documents. Completion of Phase IIIB will be determined by Ecology's certification that the Residential Material has been removed from the fence area and other public property within the fenced area.

2.3 WORK COMPLETED IN 2004

Work completed in 2004 is referenced by Phase number in Table 1 below, excluding the property sale transactions:

Phase/Description	Status of 2004 Work	Notes
Phase II – Source Material Removal, Fenced Area	Completed October 30, 2004	Work completed per Order and Agreed Judgment; Ecology certification of removal on October 13, 2004.
Phase IIIB – Residential Removal, Fenced Area	About 50% complete in 2004	Work halted due to weather; will resume in 2005.
Phase IV – Remediation of Houses to be Demolished	6 houses demolished; soil removal in 2005	EHA elected to renovate one property instead of demolition.
Phase V – Remediation of Houses to be Renovated	9 houses remediated	Includes 8 houses originally budgeted and one that was planned for demolition.

Phase/Description	Status of 2004 Work	Notes
Phase VI – Capping of the Fenced Area	Scheduled for 2005	Requires completion of both Phases II and IIIB.
Phase VII – Remediation of 22 non-Asarco Owned Houses	Completed 1 property this year.	Agreement with EHA requires at least 8 properties to be completed in 2005.

2.4 SCOPE OF WORK REQUIRED TO BE PERFORMED IN 2005 AND ADDITIONAL YEARS IF WARRANTED

The work proposed in 2005 is directed by Ecology pursuant to the Final Design Report for the site, EPA's June 7, 2004 Action Memorandum, and the work scope and schedules specified in the PPCDs for the properties purchased by the Everett Housing Authority (EHA) from Asarco in 2004.

The work in 2005 is described in Scope of Work, Exhibit D to the Remediation Agreement between Asarco and EHA. Work will be undertaken in four phases:

Phase IIIB: Completion of the removal of soil with arsenic concentrations above 150 ppm from the Fenced Area. About half of the material needing removal was performed in 2004 and the remainder will be excavated and transported to Asarco's Ruston/Tacoma site. This soil would be disposed as sub-grade backfill under the site-wide cap at the Ruston/Tacoma site.

Phase IV: Completion of the remediation of properties where the houses have been demolished. Demolition of six structures occurred in 2004. Soil removal and transportation to the Ruston/Tacoma site will be conducted in the same manner as Phase IIIB.

Phase VI: After completion of Phases II (Source Removal), IIIB and IV, properties will be graded and a minimum of two feet of clean fill placed as a site cap. This work

will be coordinated with the redevelopment plans for the site under the direction of the Everett Housing Authority.

Phase VII: Remediation of at least seven non-Asarco owned properties will be conducted in 2005.

3.0 DOCUMENTATION OF 2004 WORK

This section summarizes the documentation of the work performed in 2004 under Phases II and IIIB. Documentation of work performed under Phase V and VII have been submitted to Ecology under separate cover. Also, monthly reports documenting the progress of the cleanup have been submitted to Ecology under separate cover and are not included in this report.

The following Table 2 clarifies the correlation between the Excavation Phases and the Sampling Phases:

Excavation Description	Excavation Phase Number	Sampling Phase Number
Removal of soils exceeding 3,000 ppm arsenic 3' overdig or trench confirming soils exceeding 3,000 ppm arsenic have been removed	II	1a 1b
Removal of soils exceeding 150 ppm arsenic	III B	2

3.1 PHASE II DOCUMENTATION

The work performed in Phase II is documented in the following Exhibits and Appendices:

- Exhibits 1, 3, 4, 5, and 6 are plan sheets that show the extent of excavation, utility demolition, and sampling locations/summary results associated to work under the Enforcement Order (Phase II).

- Appendix A contains the performance sampling and analytical results and the sample maps for Phase II (see sub-appendices A.1, A.2, A.2.A, and A.4). Ecology's letter certifying the cleanup under this Phase is included in sub-appendix A.5.
- Appendix B contains the data validation reports for the analytical results obtained during Phase II.
- Appendix C documents the material shipment information, including the waste manifests and barge tracking information for Source Material.
- Appendix D includes air monitoring information for Phase II work.
- Appendix E is a summary photo log of the work performed, with particular emphasis on documenting the confirmation trench sampling (see sub-appendix A.2.A).
- Appendix F documents the abandonment of groundwater monitoring well EV-10 as approved by Ecology. The well log is included for reference; the entire casing was removed as part of the excavation in East Marine View Drive, which extended below the total depth of the monitoring well. As such, no abandonment/bentonite backfill was required.

3.2 PHASE IIIB DOCUMENTATION

The work performed in Phase IIIB is documented in the following Exhibits and Appendices:

- Exhibit 2 is the plan sheet that shows the extent of excavation associated with Phase IIIB to the point at which the work was suspended at the end of October 2004. It also shows the surface water erosion and sediment controls (ESC) established on the site prior to site demobilization this year.
- Appendix A contains the performance sampling and analytical results and the sample maps for Phase IIIB (see sub-appendices A.3, and A.4).
- Appendix B contains the data validation reports for the analytical results obtained during Phase IIIB.
- Appendix C documents the material shipment information, including the waste manifests and barge tracking information for Residential Material.

- Appendix D includes air monitoring information for Phase IIIB work.
- Appendix E is a summary photo log of the work performed.

3.3 SUMMARY OF QUANTITIES REMOVED AND DISPOSED

The following Table 3 summarizes the material quantities removed by excavation phase and material type. The table includes material quantities that were removed in all excavation phases undertaken this year. Material is categorized as follows:

- Subtitle C Material is soil or debris with arsenic concentrations above 30,000 mg/kg that was disposed of at U.S. Ecology's hazardous waste landfill in Idaho. This also includes any organic material (e.g., sod) that has arsenic concentrations above 3,000 mg/kg.
- Subtitle D Material is any soil or other material that could not be disposed of at the Tacoma facility with arsenic concentrations between 150 and 3,000 mg/kg arsenic.
- Source Material is non-organic material that has arsenic concentrations ranging between 3,000 and 30,000 mg/kg arsenic.
- Residential Material is inorganic material and incidental organic material with arsenic concentrations between 150 and 3,000 mg/kg arsenic.

2004 Everett Remediation Material Removal Summary

Phase/Type of Material		Tons by Truck	Tons by Barge	Total Tons Removed	Budgeted Tons	Variance - Tons
Phase II						
	Subtitle C	640	0	640	1,601	-961
	Subtitle D	524	0	524	3,694	-3,170
	Source	0	39,896	39,896	30,821	9,075
	Residential	0	2,898	2,898	25,575	-22,677
	Total Phase II	1,164	42,794	43,958	61,691	-17,733
Phase IIIB						
	Subtitle D	206	0	206	0	206
	Residential	235	25,447	25,682	38,280	-12,598
	Total Phase IIIB	441	25,447	25,888	38,280	-12,392
Phase V						
	Subtitle D	0	0	0	0	0
	Residential	6,360	3,478	9,838	5,400	4,438
	Total Phase V	6,360	3,478	9,838	5,400	4,438

2004 Everett Remediation Material Removal Summary (continued)

Total Phases II - V					
Subtitle C	640	0	640	1,601	-961
Subtitle D	730	0	730	3,694	-2,964
Source	0	39,896	39,896	30,821	9,075
Residential	6,595	31,823	38,418	69,255	-30,837
Total Tons Removed Phases II - V	**7,965**	**71,719**	**79,684**	**105,371**	**-25,687**
Phase VII					
Subtitle D	0	0	0	0	0
Residential	0	500	500	16,066	-15,566
Total Phase VII	0	500	500	16,066	-15,566
Total All Phases					
Subtitle C	640	0	640	1,601	-961
Subtitle D	730	0	730	3,694	-2,964
Source	0	39,896	39,896	30,821	9,075
Residential	6,595	32,323	38,918	85,321	-46,403
Total Tons Removed All Phases	7,965	72,219	80,184	121,437	-41,253

4.0 REFERENCES

ASARCO Incorporated. Smelter Area Investigation Report, Everett Smelter Site, Everett, Washington, ASARCO Incorporated, August 13, 1998

ASARCO Incorporated. Storm Water and Storm Drain Sediment Characterization and Controls Work Plan, ASARCO Incorporated, April 1998

ASARCO Consulting, Inc. Interim Action Report, Everett Smelter Site, October 2002.

ASARCO Consulting, Inc. Pre-Excavation Source Material Verification Report, Fenced Area Cleanup, Everett Smelter Site, September 2003.

City of Everett. Stormwater Management Manual, City of Everett, Revised 4/00

City of Everett. Design and Construction Standards and Specifications for Development, City of Everett, Revision 4/02

Environmental Protection Agency. Record of Decision, Commencement Bay Nearshore/Tideflats Superfund Site Operable Unit 02, Asarco Tacoma Smelter Facility, Ruston and Tacoma, Washington, U.S. Environmental Protection Agency Region 10, March 1995

Hydrometrics, Inc. and Kleinfelder, Inc. Everett Smelter Site Remedial Investigation, Everett, Washington, Hydrometrics, Inc. and Kleinfelder, Inc., September 1995

Hydrometrics, Inc. Everett Smelter Site Feasibility Study, Everett, Washington, Hydrometrics, Inc., September 1995

Washington State Department of Ecology. Everett Smelter Site Final Cleanup Action Plan (FCAP) and Final Environmental Impact Statement for the Upland Area, Everett, Washington, Washington State Department of Ecology, November 19, 1999 (Vol 1-4)

Washington State Department of Ecology. Interim Actions, WAC 173-340-430 et al, Model Toxics Control Act Cleanup Regulation, Chapter 173-340 WAC, Washington State Department of Ecology Toxics Cleanup Program, Publication 94-06, Amended February 12, 2001

Washington State Department of Ecology. Enforcement Order No. 02TCPNR-4059, June 10, 2002.

Washington State Department of Transportation. Standard Specifications for Road, Bridge, and Municipal Construction-2002, Washington State Department of Transportation

APPENDIX A

SAMPLING DATA AND MAPS

A.1 Phase 1A Sampling Results Table and Maps (Phase II Excavation)
A.2 Phase 1B Sampling Results Table and Maps (Phase II Excavation)
A.2.A Phase 1B Confirmation Trench Sampling Results Table and Maps (Phase II Excavation)
A.3 Phase 2 Sampling Results Table and Maps (Phase IIIB Excavation)
A.4 Everett Stockpile Testing
A.5 Certification Letter for Phase II from Department of Ecology

A.1 Phase 1A Sampling Results Table and Maps (Phase II Excavation)

Table A.1
Everett Fenced Area Performance Monitoring - Phase 1A Sampling

Decision Unit	Sample Number	Sample Date	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: >3,000 mg/Kg)
EMV1	IAFA-P1A-F-EMV1-C-1	9/7/04	Floor	7.5'	629	Pass
	IAFA-P1A-P-EMV1-C-A-1	9/7/04	Perimeter	surface	52	Pass
	IAFA-P1A-P-EMV1-C-B-1	9/7/04	Perimeter	2'	441	Pass
	IAFA-P1A-P-EMV1-C-C-1	9/7/04	Perimeter	4'	1166	Pass
	IAFA-P1A-P-EMV1-C-D-1	9/7/04	Perimeter	6'	742	Pass
LS01	IAFA-P1A-F-LS1-C-1	9/2/04	Floor	5'	4798	**Fail**
	IAFA-P1A-F-LS1-C-2	9/18/04	Floor	6'	827	Pass
	IAFA-P1A-P-LS1-C-A-1	9/18/04	Perimeter	surface	178	Pass
	IAFA-P1A-P-LS1-C-B-1	9/18/04	Perimeter	2'	795	Pass
	IAFA-P1A-P-LS1-C-C-1	9/18/04	Perimeter	4'	754	Pass
	IAFA-P1A-P-LS1-C-D-1	9/18/04	Perimeter	6'	1011	Pass
LS02	IAFA-P1A-F-LS2-C-1	8/31/04	Floor	3'	1321	Pass
LS03	IAFA-P1A-F-LS3-C-1	8/31/04	Floor	1'	991	Pass
	IAFA-P1A-P-LS3-C-A-1	8/31/04	Perimeter	surface	2111	Pass
LS04	IAFA-P1A-F-LS4-C-1	9/2/04	Floor	6'	1416	Pass
	IAFA-P1A-P-LS4-C-A-1	9/18/04	Perimeter	surface	432	Pass
	IAFA-P1A-P-LS4-C-B-1	9/18/04	Perimeter	2'	513	Pass
	IAFA-P1A-P-LS4-C-C-1	9/18/04	Perimeter	4'	1351	Pass
	IAFA-P1A-P-LS4-C-D-1	9/18/04	Perimeter	6'	693	Pass
LS05	IAFA-P1A-F-LS5-C-1	8/31/04	Floor	4'	1344	Pass
LS06	IAFA-P1A-F-LS6-C-1	8/31/04	Floor	1'	2851	Pass
	IAFA-P1A-P-LS6-C-A-1	8/31/04	Perimeter	surface	2400	Pass
LS07	IAFA-P1A-F-LS7-C-1	8/23/04	Floor	1'	2808	Pass
	IAFA-P1A-P-LS7-C-A-1	8/23/04	Perimeter	surface	4031	**Fail**
	IAFA-P1A-P-LS7-C-A-2	8/25/04	Perimeter	surface	1955	Pass
LS08	IAFA-P1A-F-LS8-C-1	8/5/04	Floor	1'	229	Pass
	IAFA-P1A-P-LS8-C-A-1	8/5/04	Perimeter	surface	147	Pass
LS09	IAFA-P1A-F-LS9-C-1	9/1/04	Floor	6'	659	Pass
	IAFA-P1A-P-LS9-C-A-1	9/18/04	Perimeter	surface	968	Pass
	IAFA-P1A-P-LS9-C-B-1	9/18/04	Perimeter	2'	1354	Pass
	IAFA-P1A-P-LS9-C-C-1	9/18/04	Perimeter	4'	2212	Pass

Table A.1
Everett Fenced Area Performance Monitoring - Phase 1A Sampling

Decision Unit	Sample Number	Sample Date	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: >3,000 mg/Kg)
	IAFA-P1A-P-LS9-C-D-1	9/18/04	Perimeter	6'	348	Pass
LS10	IAFA-P1A-F-LS10-C-1	8/27/04	Floor	4'	2168	Pass
LS11	IAFA-P1A-F-LS11-C-1	8/24/04	Floor	3'	3361	**Fail**
	IAFA-P1A-F-LS11-C-2	8/25/04	Floor	4'	2596	Pass
LS12	IAFA-P1A-F-LS12-C-1	8/23/04	Floor	4'	2739	Pass
LS13	IAFA-P1A-F-LS13-C-1	8/5/04	Floor	1'	794	Pass
	IAFA-P1A-P-LS13-C-A-1	8/5/04	Perimeter	surface	123	Pass
LS14	IAFA-P1A-F-LS14-C-1	9/1/04	Floor	6'	823	Pass
	IAFA-P1A-P-LS14-C-A-1	9/1/04	Perimeter	surface	563	Pass
	IAFA-P1A-P-LS14-C-B-1	9/1/04	Perimeter	2'	1075	Pass
	IAFA-P1A-P-LS14-C-C-1	9/1/04	Perimeter	4'	2115	Pass
	IAFA-P1A-P-LS14-C-D-1	9/1/04	Perimeter	6'	321	Pass
LS15	IAFA-P1A-F-LS15-C-1	8/27/04	Floor	4'	1145	Pass
LS16	IAFA-P1A-F-LS16-C-1	8/24/04	Floor	3'	2785	Pass
LS17	IAFA-P1A-F-LS17-C-1	8/23/04	Floor	4'	2457	Pass
LS18	IAFA-P1A-F-LS18-C-1	8/5/04	Floor	1'	1089	Pass
	IAFA-P1A-P-LS18-C-A-1	8/10/04	Perimeter	surface	210	Pass
LS19	IAFA-P1A-F-LS19-C-1	9/1/04	Floor	5'	778	Pass
	IAFA-P1A-P-LS19-C-A-1	9/1/04	Perimeter	surface	2206	Pass
	IAFA-P1A-P-LS19-C-B-1	9/1/04	Perimeter	2'	1549	Pass
	IAFA-P1A-P-LS19-C-C-1	9/1/04	Perimeter	4'	592	Pass
LS20	IAFA-P1A-F-LS20-C-1	8/27/04	Floor	4'	1145	Pass
LS21	IAFA-P1A-F-LS21-C-1	8/24/04	Floor	3'	2021	Pass
LS22	IAFA-P1A-F-LS22-C-1	8/23/04	Floor	4'	2546	Pass
LS23	IAFA-P1A-F-LS23-C-1	8/3/04	Floor	6'	1416	Pass
	IAFA-P1A-P-LS23-C-A-1	8/3/04	Perimeter	surface	305	Pass
	IAFA-P1A-P-LS23-C-B-1	8/3/04	Perimeter	2'	360	Pass
	IAFA-P1A-P-LS23-C-C-1	8/3/04	Perimeter	4'	849	Pass
	IAFA-P1A-P-LS23-C-D-1	8/3/04	Perimeter	6'	449	Pass
LS24	IAFA-P1A-F-LS24-C-1	9/1/04	Floor	6'	1716	Pass
	IAFA-P1A-P-LS24-C-A-1	9/1/04	Perimeter	surface	1363	Pass

Table A.1
Everett Fenced Area Performance Monitoring - Phase 1A Sampling

Decision Unit	Sample Number	Sample Date	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: >3,000 mg/Kg)
	IAFA-P1A-P-LS24-C-A-2	9/21/04	Perimeter	surface	1742	Pass
	IAFA-P1A-P-LS24-C-B-1	9/1/04	Perimeter	2'	2448	Pass
	IAFA-P1A-P-LS24-C-B-2	9/21/04	Perimeter	2'	2243	Pass
	IAFA-P1A-P-LS24-C-C-1	9/1/04	Perimeter	4'	4268	**Fail**
	IAFA-P1A-P-LS24-C-C-2	9/21/04	Perimeter	4'	1632	Pass
	IAFA-P1A-P-LS24-C-D-1	9/1/04	Perimeter	6'	1476	Pass
	IAFA-P1A-P-LS24-C-D-2	9/21/04	Perimeter	6'	2535	Pass
LS25	IAFA-P1A-F-LS25-C-1	8/27/04	Floor	4'	1675	Pass
LS26	IAFA-P1A-F-LS26-C-1	8/18/04	Floor	5'	2795	Pass
LS27	IAFA-P1A-F-LS27-C-1	8/2/04	Floor	4'	1054	Pass
	IAFA-P1A-P-LS27-C-A-1	8/2/04	Perimeter	surface	197	Pass
	IAFA-P1A-P-LS27-C-B-1	8/2/04	Perimeter	2'	85	Pass
	IAFA-P1A-P-LS27-C-C-1	8/2/04	Perimeter	4'	608	Pass
LS28	IAFA-P1A-F-LS28-C-1	9/1/04	Floor	4'	939	Pass
LS29	IAFA-P1A-F-LS29-C-1	8/18/04	Floor	3'	2449	Pass
LS30	IAFA-P1A-F-LS30-C-1	8/18/04	Floor	4'	1286	Pass
LS31	IAFA-P1A-F-LS31-C-1	7/28/04	Floor	4'	1385	Pass
	IAFA-P1A-P-LS31-C-A-1	7/28/04	Perimeter	surface	341	Pass
	IAFA-P1A-P-LS31-C-B-1	7/28/04	Perimeter	2'	84	Pass
	IAFA-P1A-P-LS31-C-C-1	7/28/04	Perimeter	4'	973	Pass
LS32	IAFA-P1A-F-LS32-C-1	9/1/04	Floor	4'	818	Pass
LS33	IAFA-P1A-F-LS33-C-1	8/18/04	Floor	3'	1817	Pass
LS34	IAFA-P1A-F-LS34-C-1	8/17/04	Floor	4'	2420	Pass
LS35	IAFA-P1A-F-LS35-C-1	7/27/04	Floor	4'	2045	Pass
	IAFA-P1A-P-LS35-C-A-1	7/27/04	Perimeter	surface	1410	Pass
	IAFA-P1A-P-LS35-C-B-1	7/27/04	Perimeter	2'	411	Pass
	IAFA-P1A-P-LS35-C-C-1	7/27/04	Perimeter	4'	1677	Pass
LS36	IAFA-P1A-F-LS36-C-1	8/31/04	Floor	4'	2634	Pass
LS37	IAFA-P1A-F-LS37-C-1	8/18/04	Floor	4'	1486	Pass
LS38	IAFA-P1A-F-LS38-C-1	8/17/04	Floor	3'	2001	Pass
LS39	IAFA-P1A-F-LS39-C-1	7/27/04	Floor	2'	2339	Pass

Table A.1
Everett Fenced Area Performance Monitoring - Phase 1A Sampling

Decision Unit	Sample Number	Sample Date	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: >3,000 mg/Kg)
	IAFA-P1A-P-LS39-C-A-1	9/24/04	Perimeter	surface	167	Pass
	IAFA-P1A-P-LS39-C-B-1	9/24/04	Perimeter	2'	1131	Pass
	IAFA-P1B-P-LS39-C-C-1	9/25/04	Perimeter	4'	904	Pass
LS40	IAFA-P1A-F-LS40-C-1	9/21/04	Floor	5'	2320	Pass
LS41	IAFA-P1A-F-LS41-C-1	8/18/04	Floor	4'	2633	Pass
LS42	IAFA-P1A-F-LS42-C-1	8/17/04	Floor	3'	2375	Pass
LS43[3]	IAFA-P1A-F-LS43-C-1	7/27/04	Floor	5'	2052	Pass
LS44	IAFA-P1A-F-LS44-C-1	9/21/04	Floor	5'	564	Pass
	IAFA-P1A-F-LS44-C-A-1	9/21/04	Perimeter	surface	1463	Pass
	IAFA-P1A-P-LS44-C-B-1	9/21/04	Perimeter	2'	2450	Pass
	IAFA-P1A-P-LS44-C-C-1	9/21/04	Perimeter	4'	1751	Pass
LS45	IAFA-P1A-F-LS45-C-1	8/18/04	Floor	4'	1344	Pass
	IAFA-P1A-P-LS45-C-A-1	8/18/04	Perimeter	surface	1764	Pass
	IAFA-P1A-P-LS45-C-B-1	8/18/04	Perimeter	2'	1408	Pass
	IAFA-P1A-P-LS45-C-C-1	8/18/04	Perimeter	4'	1682	Pass
LS46	IAFA-P1A-F-LS46-C-1	8/11/04	Floor	6'	2361	Pass
LS48	IAFA-P1A-F-LS48-C-1	8/11/04	Floor	6'	1815	Pass
	IAFA-P1A-P-LS48-C-A-1	8/11/04	Perimeter	surface	6996	**Fail**
	IAFA-P1A-P-LS48-C-A-2	8/18/04	Perimeter	surface	719	Pass
	IAFA-P1A-P-LS48-C-B-1	8/11/04	Perimeter	2'	13960	**Fail**
	IAFA-P1A-P-LS48-C-B-2	8/18/04	Perimeter	2'	1538	Pass
	IAFA-P1A-P-LS48-C-C-1	8/11/04	Perimeter	4'	12728	**Fail**
	IAFA-P1A-P-LS48-C-C-2	8/18/04	Perimeter	4'	2379	Pass
	IAFA-P1A-P-LS48-C-D-1	8/11/04	Perimeter	6'	1416	Pass
	IAFA-P1A-P-LS48-C-D-2	8/18/04	Perimeter	6'	634	Pass
LS50	IAFA-P1A-F-LS50-C-1	9/20/04	Floor	6'	3593	**Fail**
	IAFA-P1A-F-LS50-C-2	9/21/04	Floor	7'	2044	Pass
	IAFA-P1A-P-LS50-C-A-1	9/21/04	Perimeter	surface	1780	Pass
	IAFA-P1A-P-LS50-C-B-1	9/21/04	Perimeter	2'	765	Pass
	IAFA-P1A-P-LS50-C-C-1	9/21/04	Perimeter	4'	190	Pass
	IAFA-P1A-P-LS50-C-D-1	9/21/04	Perimeter	6'	917	Pass

Table A.1
Everett Fenced Area Performance Monitoring - Phase 1A Sampling

Decision Unit	Sample Number	Sample Date	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: >3,000 mg/Kg)
LS51	IAFA-P1A-P-LS51-C-A-1	7/28/04	Perimeter	surface	4363	**Fail**[1]
	IAFA-P1A-P-LS51-C-B-1	7/28/04	Perimeter	2'	357	Pass
	IAFA-P1A-P-LS51-C-C-1	7/28/04	Perimeter	4'	168	Pass
	IAFA-P1A-P-LS51-C-D-1	7/28/04	Perimeter	6'	73	Pass
	IAFA-P1A-P-LS51-C-E-1	7/28/04	Perimeter	8'	20	Pass
LS52	IAFA-P1A-F-LS52-C-1	9/21/04	Floor	4'	660	Pass
	IAFA-P1A-P-LS52-C-A-1	9/21/04	Perimeter	surface	941	Pass
	IAFA-P1A-P-LS52-C-B-1	9/21/04	Perimeter	2'	1180	Pass
	IAFA-P1A-P-LS52-C-C-1	9/21/04	Perimeter	4'	591	Pass
LS53	IAFA-P1A-F-LS53-C-1	9/21/04	Floor	6'	914	Pass
	IAFA-P1A-P-LS53-C-A-1	9/21/04	Perimeter	surface	508	Pass
	IAFA-P1A-P-LS53-C-B-1	9/21/04	Perimeter	2'	300	Pass
	IAFA-P1A-P-LS53-C-C-1	9/21/04	Perimeter	4'	854	Pass
	IAFA-P1A-P-LS53-C-D-1	9/21/04	Perimeter	6'	145	Pass
LS54	IAFA-P1A-F-LS54-C-1	9/21/04	Floor	6'	1880	Pass
LS55	IAFA-P1A-F-LS55-C-1	9/21/04	Floor	5'	1519	Pass
LS56	IAFA-P1A-F-LS56-C-1	9/20/04	Floor	5'	2145	Pass
	IAFA-P1A-P-LS56-C-A-1	9/1/04	Perimeter	surface	3774	**Fail**
	IAFA-P1A-P-LS56-C-A-2	9/21/04	Perimeter	surface	3053	**Fail**
	IAFA-P1A-P-LS56-C-A-3	9/22/04	Perimeter	surface	1435	Pass
	IAFA-P1A-P-LS56-C-B-1	9/1/04	Perimeter	2'	2397	Pass
	IAFA-P1A-P-LS56-C-B-2	9/21/04	Perimeter	2'	3018	**Fail**
	IAFA-P1A-P-LS56-C-B-3	9/22/04	Perimeter	2'	353	Pass
	IAFA-P1A-P-LS56-C-C-1	9/1/04	Perimeter	4'	5806	**Fail**
	IAFA-P1A-P-LS56-C-C-2	9/21/04	Perimeter	4'	2595	Pass
	IAFA-P1A-P-LS56-C-C-3	9/22/04	Perimeter	4'	295	Pass
LS57	IAFA-P1A-F-LS57-C-1	9/20/04	Floor	4'	3083	**Fail**
	IAFA-P1A-F-LS57-C-2	9/21/04	Floor	5'	2045	Pass
	IAFA-P1A-P-LS57-C-A-1	9/20/04	Perimeter	surface	2121	Pass
	IAFA-P1A-P-LS57-C-A-2	9/21/04	Perimeter	surface	2469	Pass
	IAFA-P1A-P-LS57-C-A-3	9/22/04	Perimeter	surface	1947	Pass
	IAFA-P1A-P-LS57-C-B-1	9/20/04	Perimeter	2'	1557	Pass

Table A.1
Everett Fenced Area Performance Monitoring - Phase 1A Sampling

Decision Unit	Sample Number	Sample Date	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: >3,000 mg/Kg)
	IAFA-P1A-P-LS57-C-B-2	9/21/04	Perimeter	2'	2135	Pass
	IAFA-P1A-P-LS57-C-B-3	9/22/04	Perimeter	2'	721	Pass
	IAFA-P1A-P-LS57-C-C-1	9/20/04	Perimeter	4'	3483	**Fail**
	IAFA-P1A-P-LS57-C-C-2	9/21/04	Perimeter	4'	3235	**Fail**
	IAFA-P1A-P-LS57-C-C-3	9/22/04	Perimeter	4'	145	Pass
LS58	IAFA-P1A-F-LS58-C-1	9/20/04	Floor	3'	2627	Pass
	IAFA-P1A-P-LS58-C-A-1	9/20/04	Perimeter	surface	2426	Pass
	IAFA-P1A-P-LS58-C-B-1	9/20/04	Perimeter	2'	1266	Pass
LS59	IAFA-P1A-F-LS59-C-1	9/20/04	Floor	3'	1544	Pass
	IAFA-P1A-P-LS59-C-A-1	9/20/04	Perimeter	surface	1400	Pass
	IAFA-P1A-P-LS59-C-B-1	9/20/04	Perimeter	2'	823	Pass
LS60	IAFA-P1A-F-LS60-C-1	9/20/04	Floor	4'	454	Pass
	IAFA-P1A-P-LS60-C-A-1	9/20/04	Perimeter	surface	597	Pass
	IAFA-P1A-P-LS60-C-B-1	9/20/04	Perimeter	2'	380	Pass
	IAFA-P1A-P-LS60-C-C-1	9/20/04	Perimeter	4'	79	Pass
LS61	IAFA-P1A-F-LS61-C-1	9/20/04	Floor	5'	489	Pass
	IAFA-P1A-P-LS61-C-A-1	9/20/04	Perimeter	surface	569	Pass
	IAFA-P1A-P-LS61-C-B-1	9/20/04	Perimeter	2'	171	Pass
	IAFA-P1A-P-LS61-C-C-1	9/20/04	Perimeter	4'	54	Pass
LS62	IAFA-P1A-F-LS62-C-1	9/17/04	Floor	4'	677	Pass
	IAFA-P1A-P-LS62-C-A-1	9/17/04	Perimeter	surface	2528	Pass
	IAFA-P1A-P-LS62-C-B-1	9/17/04	Perimeter	2'	711	Pass
	IAFA-P1A-P-LS62-C-C-1	9/17/04	Perimeter	4'	140	Pass
LS63	IAFA-P1A-F-LS63-C-1	9/17/04	Floor	3'	670	Pass
	IAFA-P1A-P-LS63-C-A-1	9/17/04	Perimeter	surface	1286	Pass
	IAFA-P1A-P-LS63-C-B-1	9/17/04	Perimeter	2'	628	Pass
LS64	IAFA-P1A-F-LS64-C-1	9/17/04	Floor	3'	446	Pass
	IAFA-P1A-P-LS64-C-A-1	9/17/04	Perimeter	surface	759	Pass
	IAFA-P1A-P-LS64-C-B-1	9/17/04	Perimeter	2'	1384	Pass
LS65	IAFA-P1A-F-LS65-C-1	9/17/04	Floor	4'	471	Pass
	IAFA-P1A-P-LS65-C-A-1	9/17/04	Perimeter	surface	772	Pass

Table A.1
Everett Fenced Area Performance Monitoring - Phase 1A Sampling

Decision Unit	Sample Number	Sample Date	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: >3,000 mg/Kg)
	IAFA-P1A-P-LS65-C-B-1	9/17/04	Perimeter	2'	273	Pass
	IAFA-P1A-P-LS65-C-C-1	9/17/04	Perimeter	4'	495	Pass
LS66	IAFA-P1A-F-LS66-C-1	9/17/04	Floor	4'	1244	Pass
	IAFA-P1A-P-LS66-C-A-1	9/17/04	Perimeter	surface	2517	Pass
	IAFA-P1A-P-LS66-C-B-1	9/17/04	Perimeter	2'	1877	Pass
	IAFA-P1A-P-LS66-C-C-1	9/17/04	Perimeter	4'	446	Pass
LS67	IAFA-P1A-F-LS67-C-1	9/17/04	Floor	4'	361	Pass
	IAFA-P1A-P-LS67-C-A-1	9/17/04	Perimeter	surface	2422	Pass
	IAFA-P1A-P-LS67-C-B-1	9/17/04	Perimeter	2'	2881	Pass
	IAFA-P1A-P-LS67-C-C-1	9/17/04	Perimeter	4'	1049	Pass
LS68	IAFA-P1A-F-LS68-C-1	9/17/04	Floor	4'	313	Pass
	IAFA-P1A-P-LS68-C-A-1	9/17/04	Perimeter	surface	2510	Pass
	IAFA-P1A-P-LS68-C-B-1	9/17/04	Perimeter	2'	1182	Pass
	IAFA-P1A-P-LS68-C-C-1	9/17/04	Perimeter	4'	1364	Pass
LS69	IAFA-P1A-F-LS69-C-1	9/16/04	Floor	5'	468	Pass
	IAFA-P1A-P-LS69-C-A-1	9/16/04	Perimeter	surface	1167	Pass
	IAFA-P1A-P-LS69-C-B-1	9/16/04	Perimeter	2'	1912	Pass
	IAFA-P1A-P-LS69-C-C-1	9/16/04	Perimeter	4'	478	Pass
LS70	IAFA-P1A-F-LS70-C-1	9/16/04	Floor	5'	744	Pass
	IAFA-P1A-P-LS70-C-A-1	9/16/04	Perimeter	surface	1222	Pass
	IAFA-P1A-P-LS70-C-B-1	9/16/04	Perimeter	2'	1883	Pass
	IAFA-P1A-P-LS70-C-C-1	9/16/04	Perimeter	4'	1044	Pass
LS71[2]	IAFA-P1A-F-LS71-C-1	9/15/04	Floor	2'	359	Pass
	IAFA-P1A-P-LS71-C-A-1	9/15/04	Perimeter	surface	1466	Pass
	IAFA-P1A-P-LS71-C-B-1	9/15/04	Perimeter	2'	1806	Pass
LS72[2]	IAFA-P1A-F-LS72-C-1	9/15/04	Floor	1'	403	Pass
	IAFA-P1A-P-LS72-C-A-1	9/15/04	Perimeter	surface	2118	Pass
LS73[2]	IAFA-P1A-F-LS73-C-1	9/15/04	Floor	3'	1732	Pass
LS74	IAFA-P1A-F-LS74-C-1	9/15/04	Floor	1'	1801	Pass
	IAFA-P1A-P-LS74-C-A-1	9/15/04	Perimeter	surface	1547	Pass
LS75	IAFA-P1A-F-LS75-C-1	9/20/04	Floor	4'	501	Pass

Table A.1
Everett Fenced Area Performance Monitoring - Phase 1A Sampling

Decision Unit	Sample Number	Sample Date	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: >3,000 mg/Kg)
	IAFA-P1A-P-LS75-C-A-1	9/20/04	Perimeter	surface	194	Pass
	IAFA-P1A-P-LS75-C-B-1	9/20/04	Perimeter	2'	67	Pass
	IAFA-P1A-P-LS75-C-C-1	9/20/04	Perimeter	4'	134	Pass
LS76[(2)]	IAFA-P1A-F-LS76-C-1	9/17/04	Floor	5'	713	Pass
LS77[(2)]	IAFA-P1A-F-LS77-C-1	9/20/04	Floor	5'	1689	Pass
LS78	IAFA-P1A-F-LS78-C-1	9/15/04	Floor	3'	2264	Pass
LS79	IAFA-P1A-F-LS79-C-1	9/15/04	Floor	5'	1211	Pass
	IAFA-P1A-P-LS79-C-A-1	9/15/04	Perimeter	surface	1066	Pass
	IAFA-P1A-P-LS79-C-B-1	9/15/04	Perimeter	2'	506	Pass
	IAFA-P1A-P-LS79-C-C-1	9/15/04	Perimeter	4'	1207	Pass
LS80	IAFA-P1A-F-LS80-C-1	9/15/04	Floor	2'	2159	Pass
	IAFA-P1A-P-LS80-C-A-1	9/15/04	Perimeter	surface	712	Pass
	IAFA-P1A-P-LS80-C-B-1	9/15/04	Perimeter	2'	1494	Pass
LS81	IAFA-P1A-F-LS81-C-1	9/20/04	Floor	3'	567	Pass
	IAFA-P1A-P-LS81-C-A-1	9/20/04	Perimeter	surface	1694	Pass
	IAFA-P1A-P-LS81-C-A-2	9/21/04	Perimeter	surface	2025	Pass
	IAFA-P1A-P-LS81-C-B-1	9/20/04	Perimeter	2'	3123	**Fail**
	IAFA-P1A-P-LS81-C-B-2	9/21/04	Perimeter	2'	423	Pass
LS82	IAFA-P1A-F-LS82-C-1	9/17/04	Floor	5'	434	Pass
LS83	IAFA-P1A-F-LS83-C-1	9/20/04	Floor	5'	1681	Pass
LS84	IAFA-P1A-F-LS84-C-1	9/15/04	Floor	6'	1579	Pass
	IAFA-P1A-P-LS84-C-A-1	9/15/04	Perimeter	surface	1847	Pass
	IAFA-P1A-P-LS84-C-B-1	9/15/04	Perimeter	2'	1052	Pass
	IAFA-P1A-P-LS84-C-C-1	9/15/04	Perimeter	4'	864	Pass
	IAFA-P1A-P-LS84-C-D-1	9/15/04	Perimeter	6'	469	Pass
LR08	IAFA-P1A-F-LR8-C-1	9/15/04	Floor	5'	351	Pass
	IAFA-P1A-P-LR8-C-A-1	9/15/04	Perimeter	surface	2382	Pass
	IAFA-P1A-P-LR8-C-B-1	9/15/04	Perimeter	2'	2023	Pass
	IAFA-P1A-P-LR8-C-C-1	9/15/04	Perimeter	4'	2579	Pass
US01	IAFA-P1A-F-US1-C-1	9/7/04	Floor	1'	857	Pass
	IAFA-P1A-P-US1-C-A-1	9/7/04	Perimeter	surface	671	Pass

Table A.1
Everett Fenced Area Performance Monitoring - Phase 1A Sampling

Decision Unit	Sample Number	Sample Date	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: >3,000 mg/Kg)
US02	IAFA-P1A-F-US2-C-1	9/9/04	Floor	2'	611	Pass
	IAFA-P1A-P-US2-C-A-1	9/9/04	Perimeter	surface	728	Pass
	IAFA-P1A-P-US2-C-B-1	9/9/04	Perimeter	2'	1881	Pass
US03	IAFA-P1A-F-US3-C-1	9/9/04	Floor	3'	3621	**Fail**
	IAFA-P1A-F-US3-C-2	9/10/04	Floor	5'	1438	Pass
	IAFA-P1A-P-US3-C-A-1	9/9/04	Perimeter	surface	5271	**Fail**
	IAFA-P1A-P-US3-C-A-2	9/10/04	Perimeter	surface	939	Pass
	IAFA-P1A-P-US3-C-B-1	9/9/04	Perimeter	2'	1540	Pass
	IAFA-P1A-P-US3-C-B-2	9/10/04	Perimeter	2'	1666	Pass
	IAFA-P1A-P-US3-C-C-2	9/10/04	Perimeter	4'	1475	Pass
US04	IAFA-P1A-F-US4-C-1	9/10/04	Floor	1'	745	Pass
	IAFA-P1A-P-US4-C-A-1	9/10/04	Perimeter	surface	1305	Pass
US05	IAFA-P1A-F-US5-C-1	9/13/04	Floor	3'	2875	Pass
	IAFA-P1A-P-US5-C-A-1	9/13/04	Perimeter	surface	1591	Pass
	IAFA-P1A-P-US5-C-B-1	9/13/04	Perimeter	2'	1074	Pass
US06	IAFA-P1A-F-US6-C-1	9/10/04	Floor	2'	804	Pass
	IAFA-P1A-P-US6-C-A-1	9/10/04	Perimeter	surface	1208	Pass
	IAFA-P1A-P-US6-C-B-1	9/10/04	Perimeter	2'	547	Pass
US07	IAFA-P1A-F-US7-C-1	9/13/04	Floor	3'	1565	Pass
	IAFA-P1A-P-US7-C-A-1	9/13/04	Perimeter	surface	1238	Pass
	IAFA-P1A-P-US7-C-B-1	9/13/04	Perimeter	2'	1429	Pass
US08	IAFA-P1A-F-US8-C-1	9/15/04	Floor	4'	1118	Pass
	IAFA-P1A-P-US8-C-A-1	9/15/04	Perimeter	surface	454	Pass
	IAFA-P1A-P-US8-C-B-1	9/15/04	Perimeter	2'	446	Pass
	IAFA-P1A-P-US8-C-C-1	9/15/04	Perimeter	4'	262	Pass
US09	IAFA-P1A-F-US9-C-1	9/15/04	Floor	4'	3338	**Fail**
	IAFA-P1A-F-US9-C-2	9/17/04	Floor	5'	1913	Pass
	IAFA-P1A-P-US9-C-A-1	9/15/04	Perimeter	surface	1084	Pass
	IAFA-P1A-P-US9-C-B-1	9/15/04	Perimeter	2'	499	Pass
	IAFA-P1A-P-US9-C-C-1	9/15/04	Perimeter	4'	2625	Pass
US10	IAFA-P1A-F-US10-C-1	9/13/04	Floor	3'	208	Pass

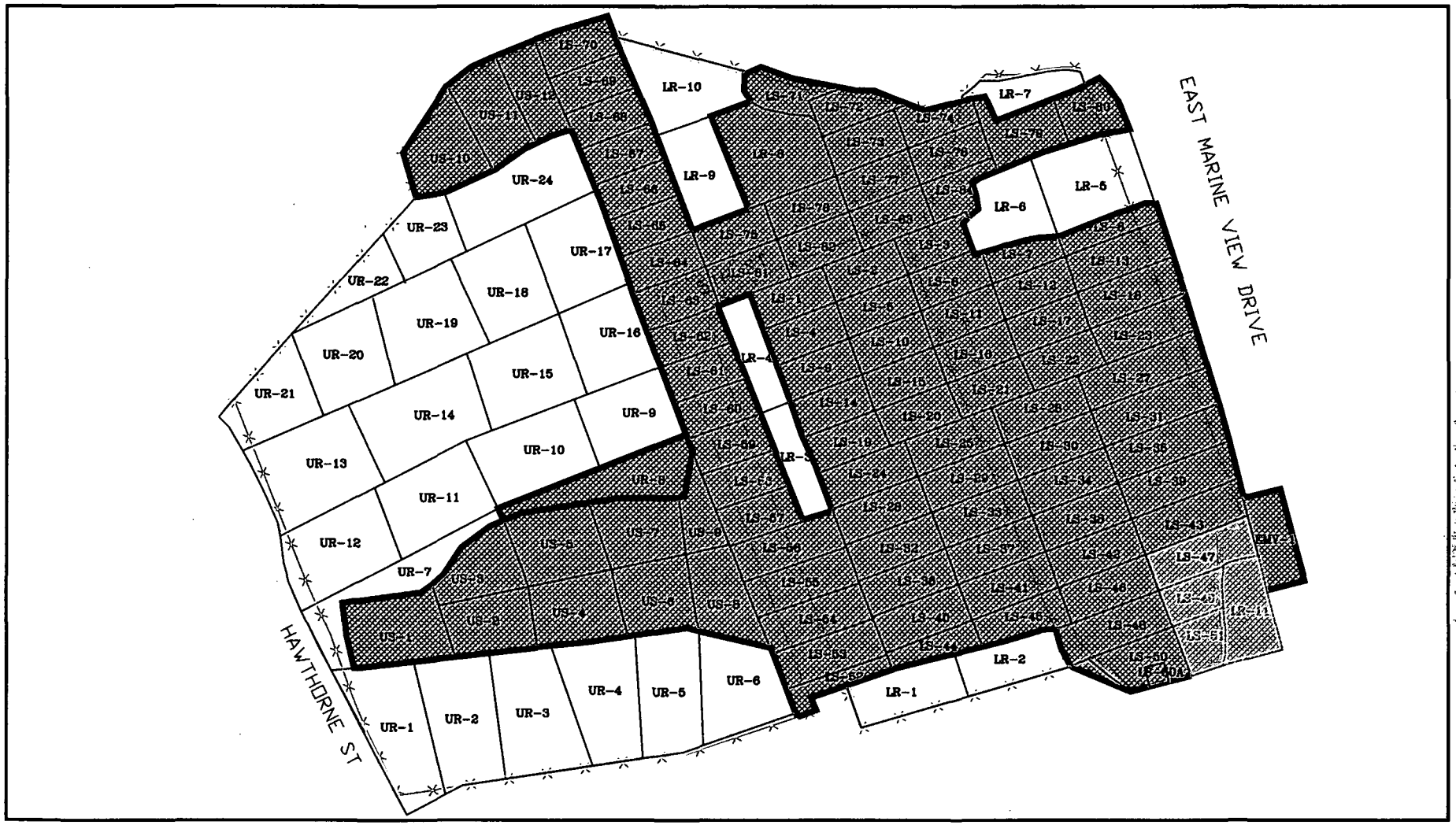
Table A.1
Everett Fenced Area Performance Monitoring - Phase 1A Sampling

Decision Unit	Sample Number	Sample Date	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: >3,000 mg/Kg)
	IAFA-P1A-P-US10-C-A-1	9/13/04	Perimeter	surface	900	Pass
	IAFA-P1A-P-US10-C-B-1	9/13/04	Perimeter	2'	1440	Pass
US11	IAFA-P1A-F-US11-C-1	9/13/04	Floor	3'	952	Pass
	IAFA-P1A-P-US11-C-A-1	9/13/04	Perimeter	surface	3750	**Fail**
	IAFA-P1A-P-US11-C-A-2	9/17/04	Perimeter	surface	1887	Pass
	IAFA-P1A-P-US11-C-B-1	9/13/04	Perimeter	2'	2034	Pass
	IAFA-P1A-P-US11-C-B-2	9/17/04	Perimeter	2'	1287	Pass
US12	IAFA-P1A-F-US12-C-1	9/15/04	Floor	5'	261	Pass
	IAFA-P1A-P-US12-C-A-1	9/15/04	Perimeter	surface	1169	Pass
	IAFA-P1A-P-US12-C-A-2	9/17/04	Perimeter	surface	1505	Pass
	IAFA-P1A-P-US12-C-B-1	9/15/04	Perimeter	2'	3409	**Fail**
	IAFA-P1A-P-US12-C-B-2	9/17/04	Perimeter	2'	1374	Pass
	IAFA-P1A-P-US12-C-C-1	9/15/04	Perimeter	4'	1824	Pass
UR08	IAFA-P1A-F-UR8-C-1	9/20/04	Floor	4'	1754	Pass
	IAFA-P1A-P-UR8-C-A-1	9/23/04	Perimeter	surface	1166	Pass
	IAFA-P1A-P-UR8-C-B-1	9/23/04	Perimeter	2'	667	Pass
	IAFA-P1A-P-UR8-C-C-1	9/23/04	Perimeter	4'	1761	Pass

(1)Upon beginning soil removal, a decision was made to expedite the construction of the detention pond which lies in LS51. Therefore, soil removal and subsequent sampling advanced directly to Phase 2 without completing Phase 1A and 1B samp In addition, Phase 1A and 1B sampling was not conducted at LR11, LS47, and LS49 because they comprise the remaining area of the detention pond along with LS51. All removed soil from these four units were managed as hazardous waste.

(2)Perimeter samples were not collected along the boundary of LR-8 because there was no perimeter. Although LR-8 was designated a "Residential" area, the decision unit contained Source Material. After the material exceeding 3,000 mg/Kg arsenic was removed, LR-8 was at a lower elevation than the surrounding decision units: LS-71, LS-72, LS-73, LS-76 & LS-

(3)The LS-43 perimeter was excavated and sampled as part of the East Marine View Drive excavation (EMV-1).



9/25/04

I:Everett Soils\Decision Unit Maps\Phase IA\Phase IA Soil Removal Status

LEGEND

FAIL

PASS

PASSING PERIMETER

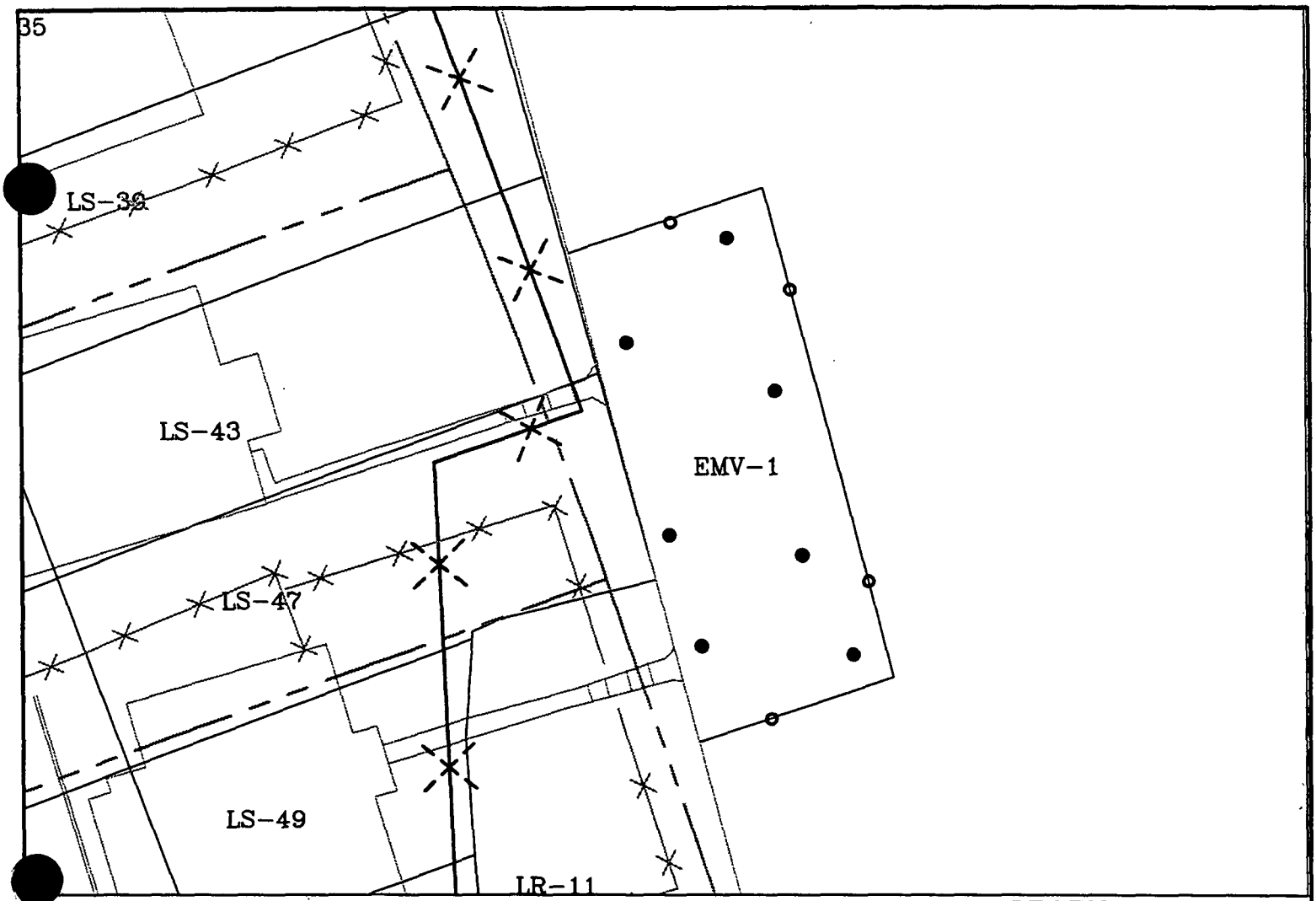
FAILING PERIMETER

SOILS OVER 3,000 PPM ARSENIC REMOVED WITHOUT SAMPLING

Asarco Consulting, Inc.

EVERETT SMELTER INTERIM ACTION
PHASE IA SOIL REMOVAL STATUS

REMOVAL OF SOILS ABOVE 3,000 PPM As



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	629	IAFA-P1A-F-EMV1-C-1
PERIMETER SURFACE	52	IAFA-P1A-P-EMV1-C-A-1
PERIMETER 2' DEPTH	441	IAFA-P1A-P-EMV1-C-B-1
PERIMETER 4' DEPTH	1166	IAFA-P1A-P-EMV1-C-C-1
PERIMETER 6' DEPTH	742	IAFA-P1A-P-EMV1-C-D-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

EMV-1 (1550 SQUARE FEET)
PHASE 1 - REMOVAL A (7.5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
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CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

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TAC EMV01C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
EMV-1

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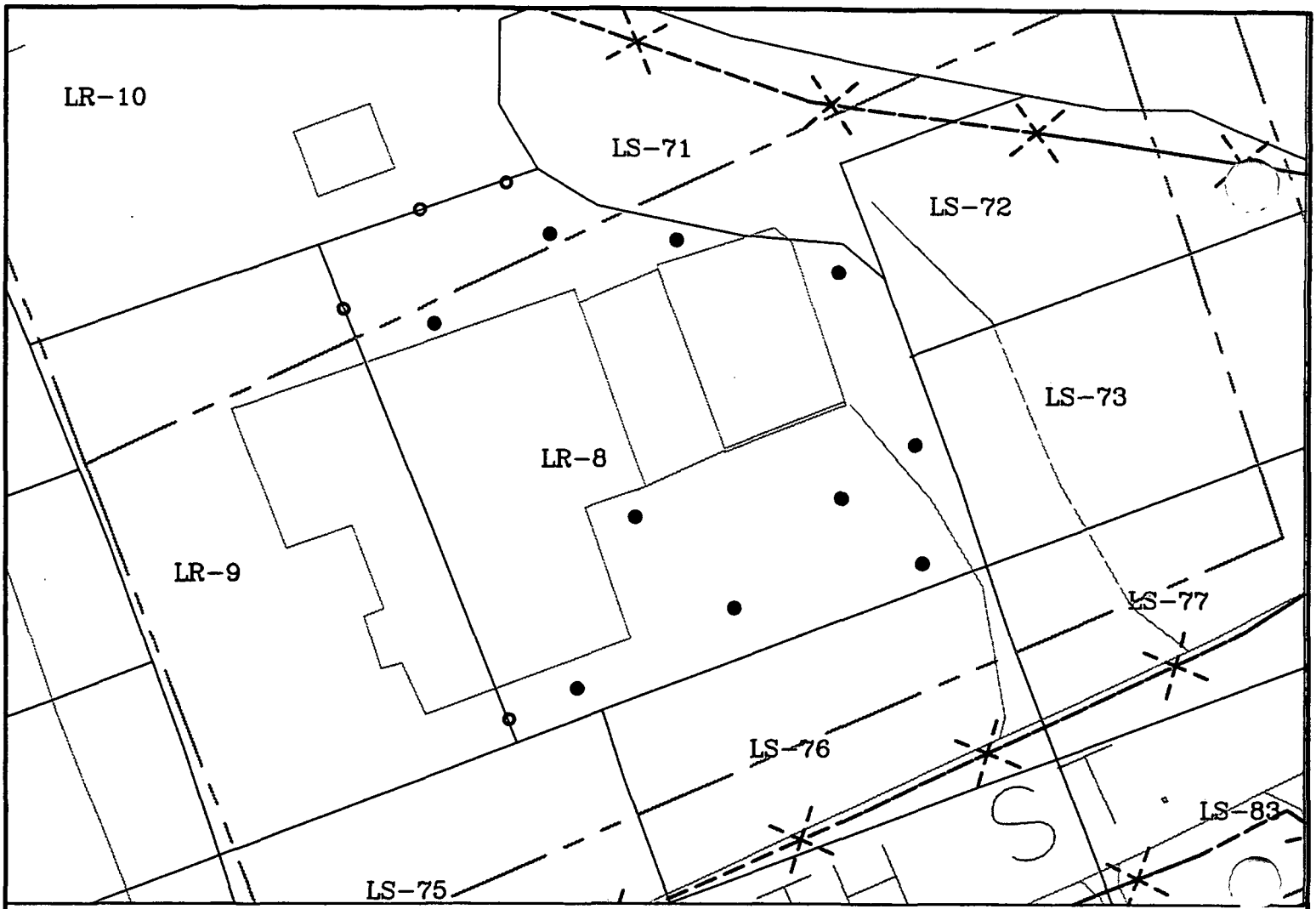

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	351	IAFA-P1A-F-LR8-C-1
PERIMETER SURFACE	2382	IAFA-P1A-P-LR8-C-A-1
PERIMETER 2' DEPTH	2023	IAFA-P1A-P-LR8-C-B-1
PERIMETER 4' DEPTH	2579	IAFA-P1A-P-LR8-C-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LR-08 (3527.80 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS NO	BY	DATE	
1st			
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3rd			
4th			

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(253) 759-4470

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LR-08

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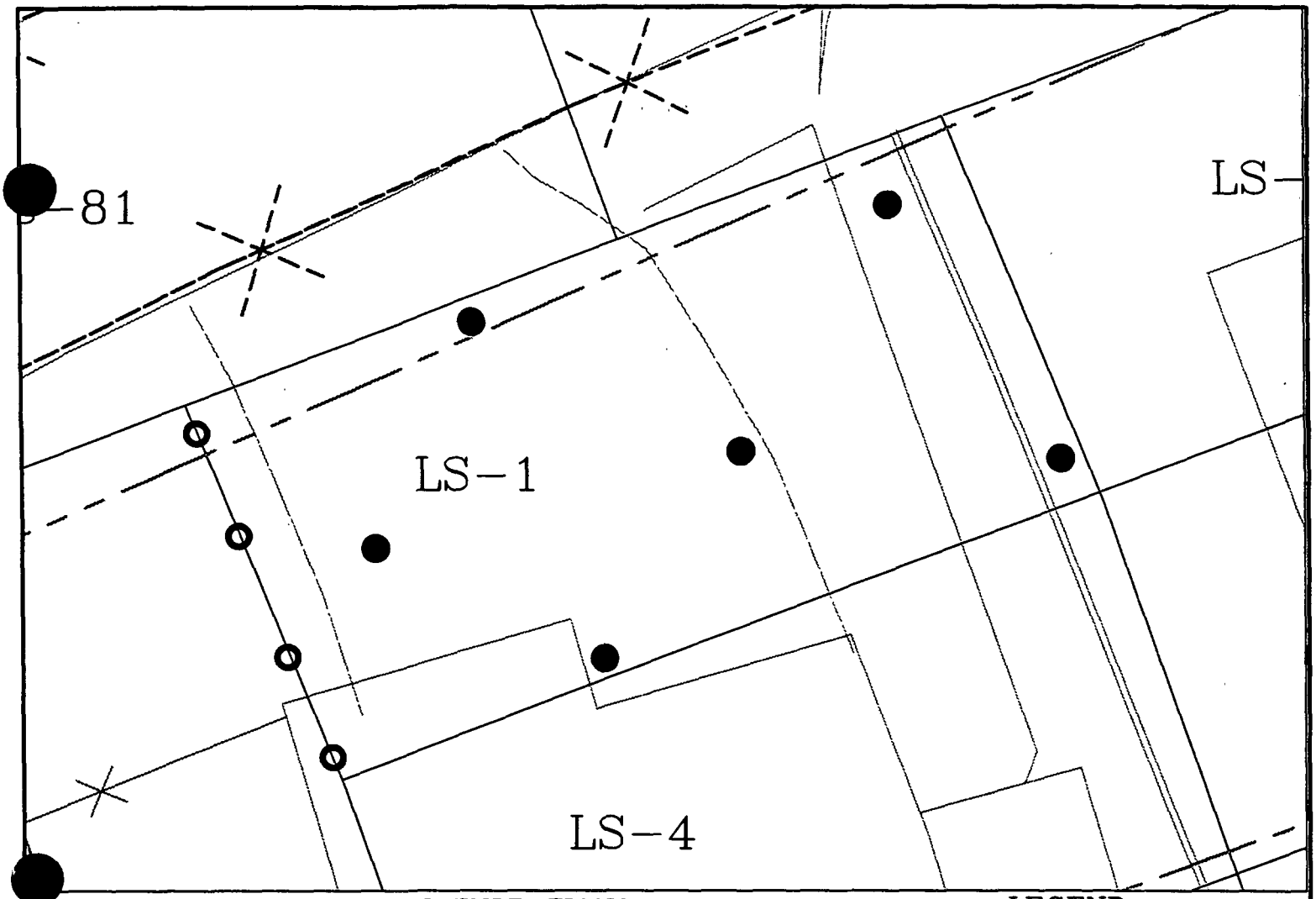

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	827	IAFA-P1A-F-LS1-C-2
PERIMETER SURFACE	178	IAFA-P1A-P-LS1-C-A-1
PERIMETER 2' DEPTH	795	IAFA-P1A-P-LS1-C-B-1
PERIMETER 4' DEPTH	754	IAFA-P1A-P-LS1-C-C-1
PERIMETER 6' DEPTH	1011	IAFA-P1A-P-LS1-C-D-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-01 (1243.80 SQUARE FEET)
PHASE 1 - REMOVAL A (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
1st			
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3rd			
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Project :
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SCALE: AS NOTED

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TAC LS01C4
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LS-01

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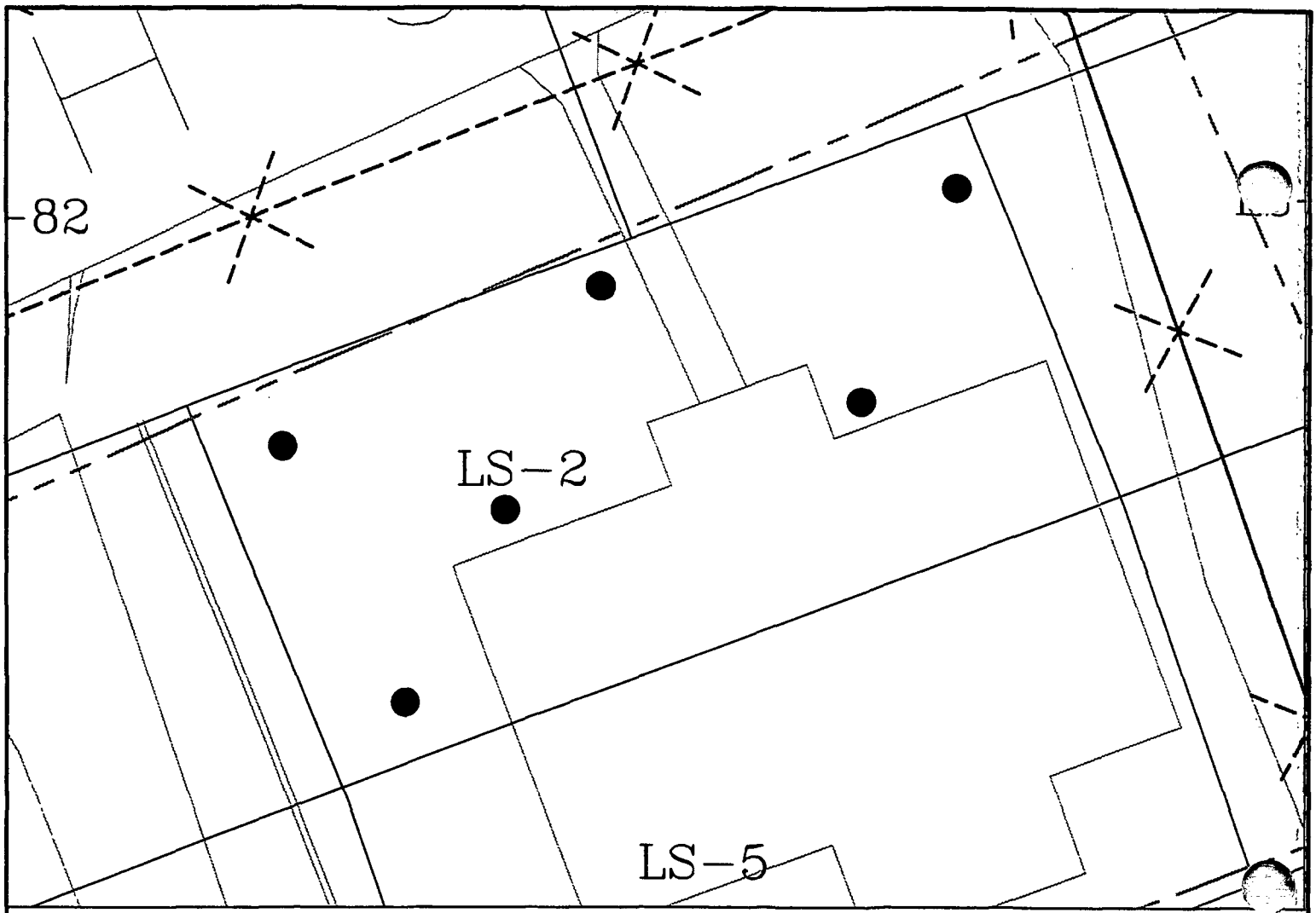

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1321	IAFA-P1A-F-LS2-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-02 (1253.40 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
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Project :
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SCALE: AS NOTED

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TAC LS02C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER LS-02
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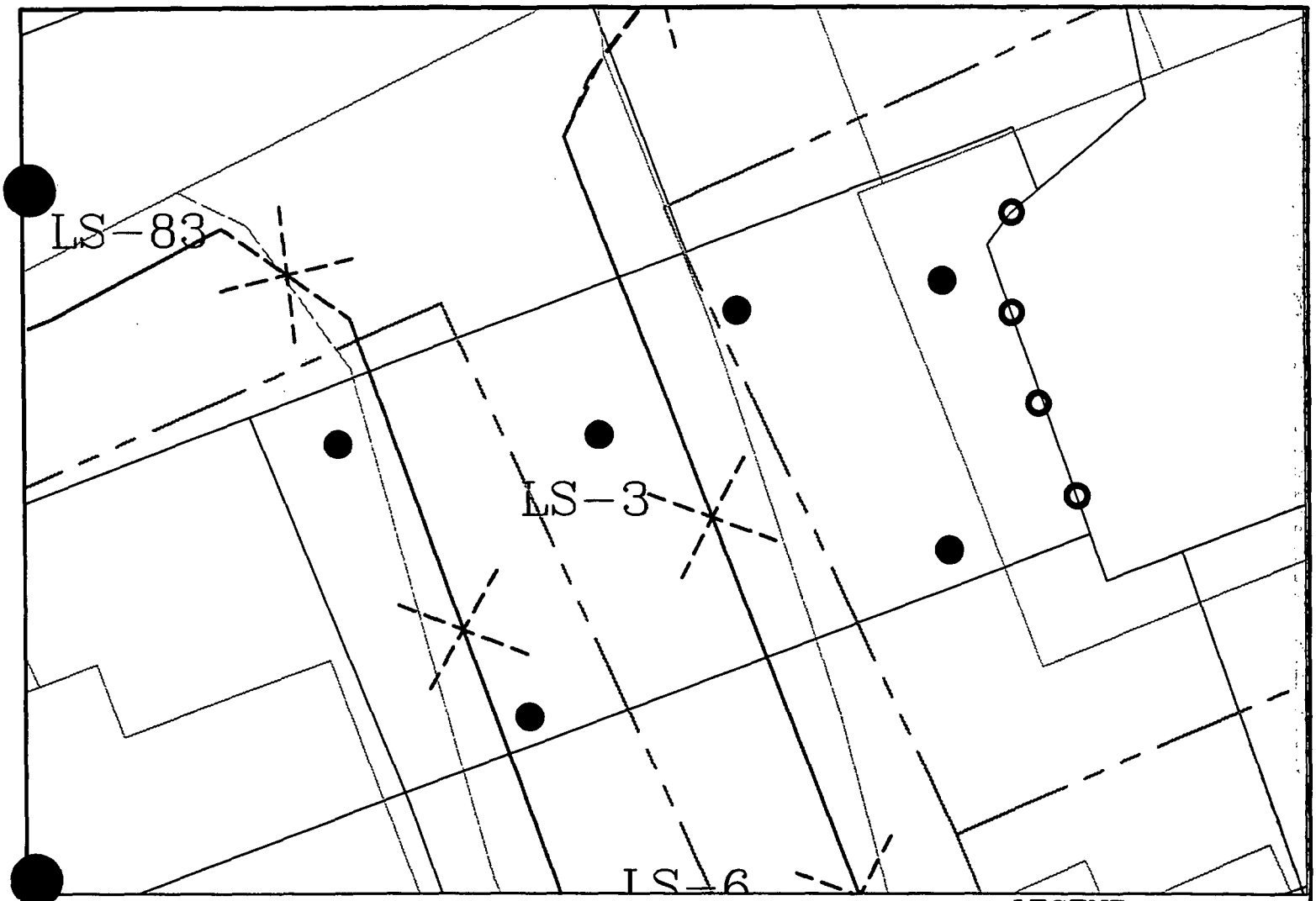

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	991	IAFA-P1A-F-LS3-C-1
PERIMETER SURFACE	2111	IAFA-P1A-P-LS3-C-A-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-03 (1142.20 SQUARE FEET)
PHASE 1 - REMOVAL A (1 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

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DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
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SCALE: AS NOTED	

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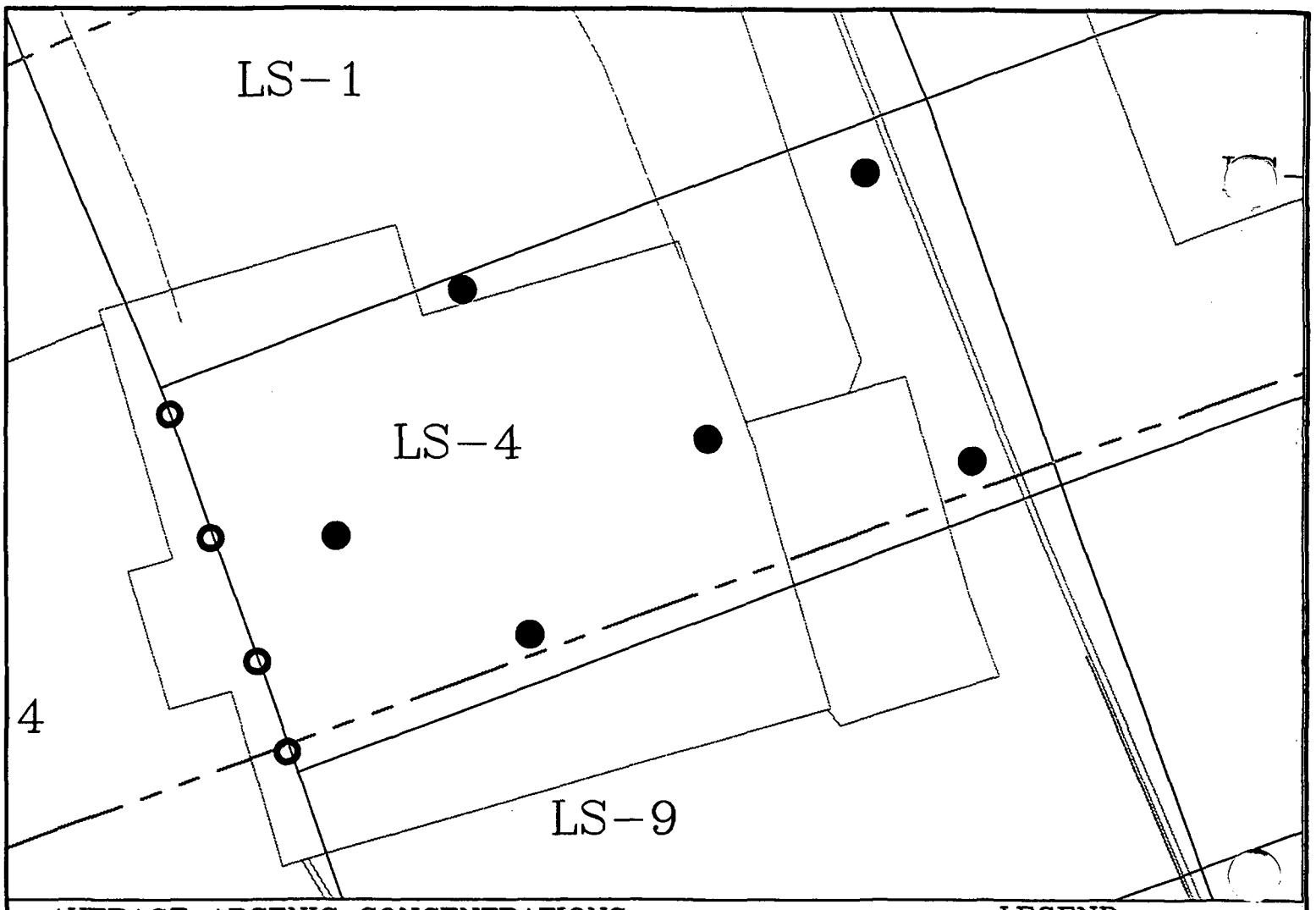

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1416	IAFA-P1A-F-LS4-C-1
PERIMETER SURFACE	432	IAFA-P1A-P-LS4-C-A-1
PERIMETER 2' DEPTH	513	IAFA-P1A-P-LS4-C-B-1
PERIMETER 4' DEPTH	1351	IAFA-P1A-P-LS4-C-C-1
PERIMETER 6' DEPTH	693	IAFA-P1A-P-LS4-C-D-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-04 (1248.00 SQUARE FEET)
PHASE 1 - REMOVAL A (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

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Project :
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APPROVED BY
SCALE: AS NOTED

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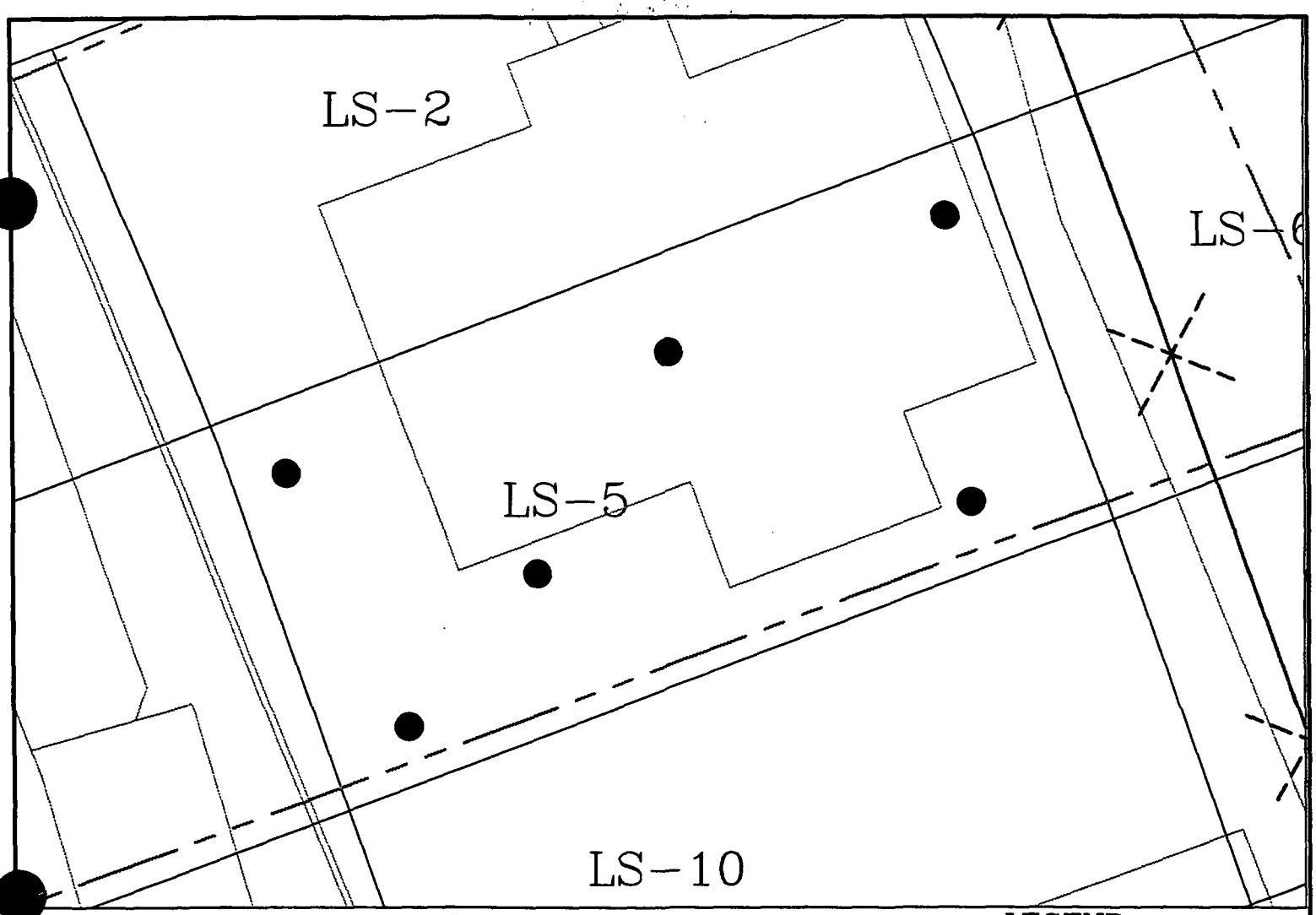

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1344	IAFA-P1A-F-LS5-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-05 (1268.50 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

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DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
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SCALE: AS NOTED

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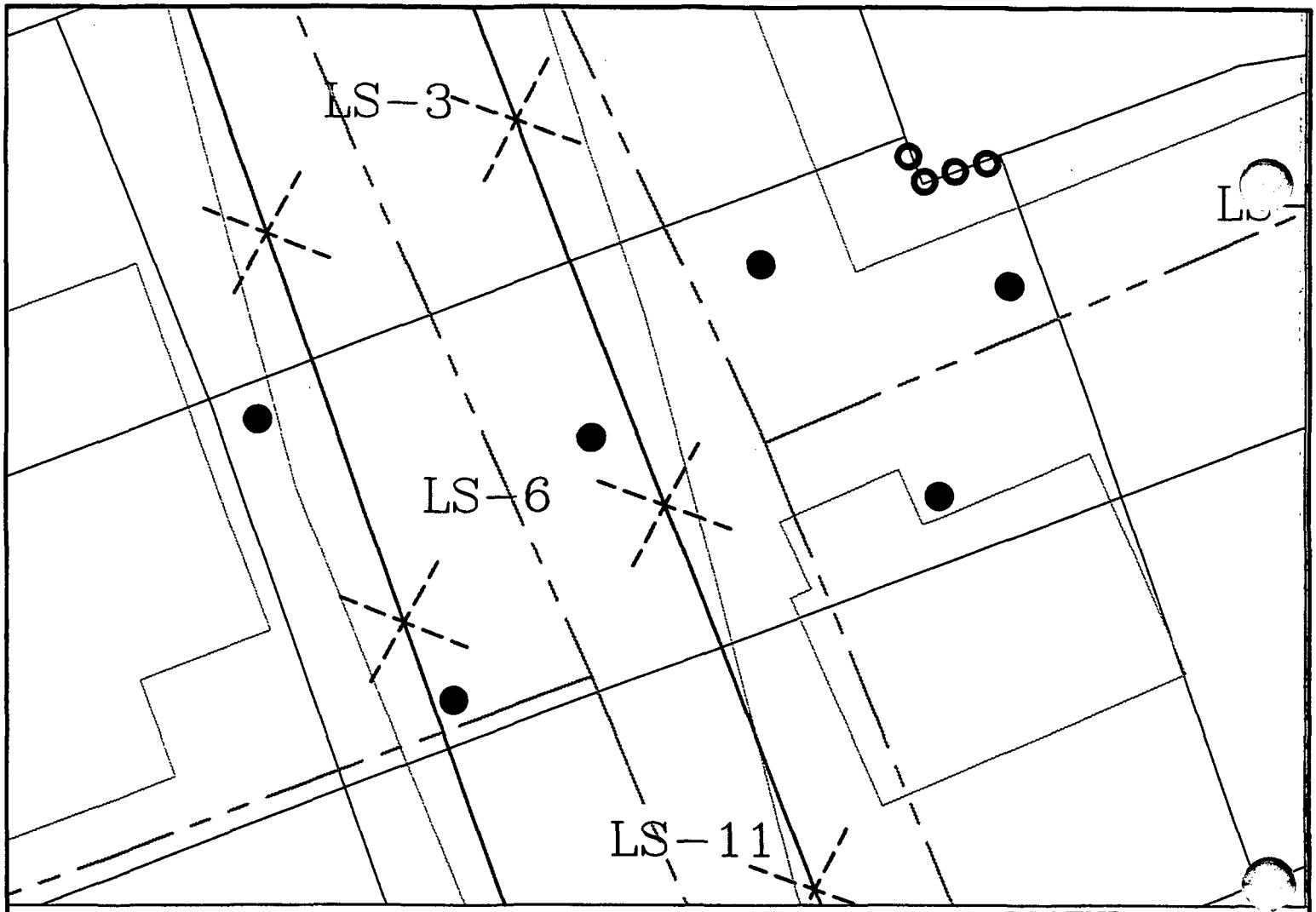

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2851	IAFA-P1A-F-LS6-C-1
PERIMETER SURFACE	2400	IAFA-P1A-P-LS6-C-A-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-06 (1237.60 SQUARE FEET)
PHASE 1 - REMOVAL A (1 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
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Project :
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SCALE: AS NOTED

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DRAWING FILE NUMBER
TAC LS06C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-06

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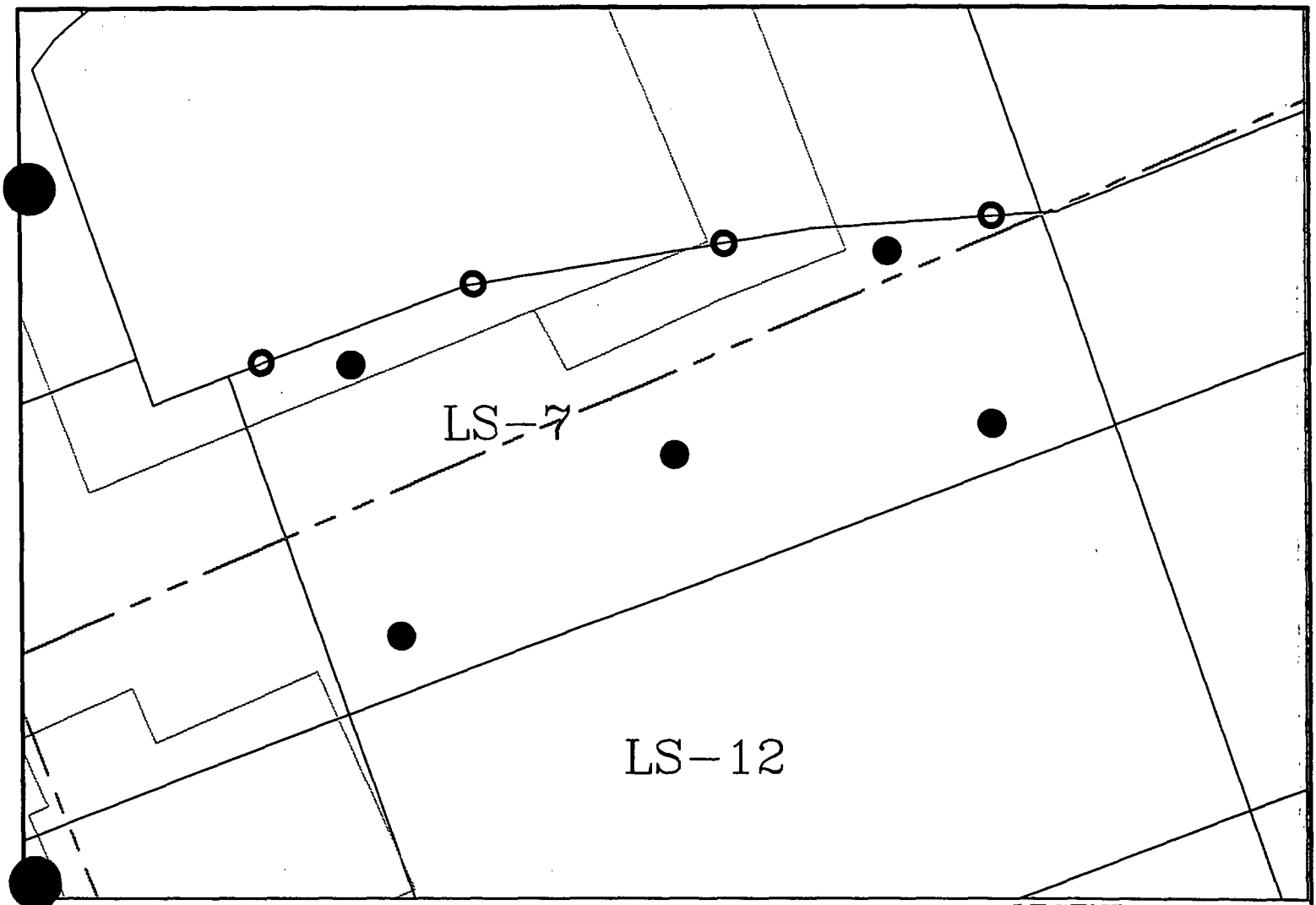

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2808	IAFA-P1A-F-LS7-C-1
PERIMETER SURFACE	1955	IAFA-P1A-P-LS7-C-A-2

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-07 (964.00 SQUARE FEET)
PHASE 1 - REMOVAL A (1 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :		
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SCALE: AS NOTED		

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DRAWING FILE NUMBER
TAC LS07C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-07

REV △

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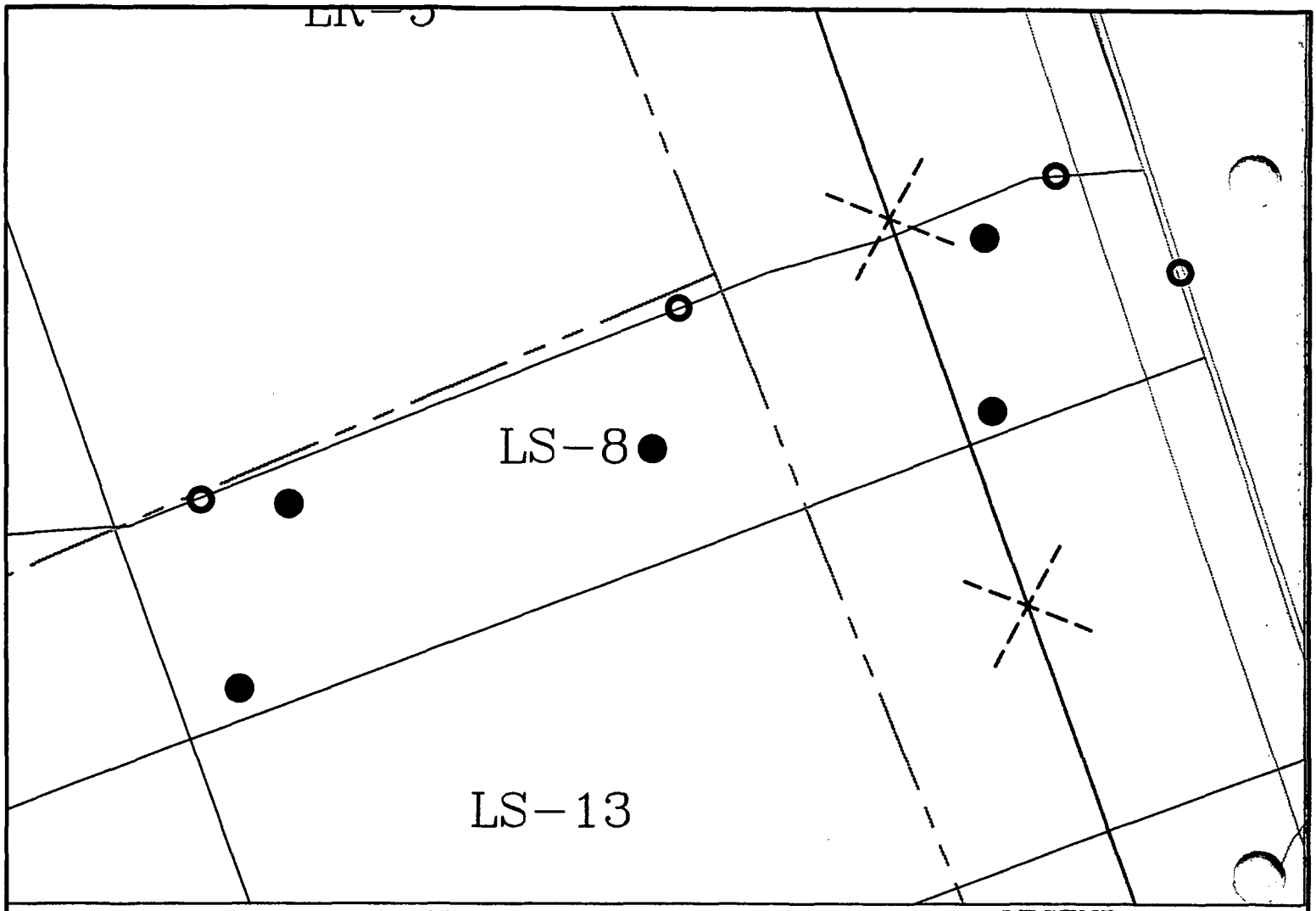

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	229	IAFA-P1A-F-LS8-C-1
PERIMETER SURFACE	147	IAFA-P1A-P-LS8-C-A-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-08 (915.60 SQUARE FEET)
PHASE 1 - REMOVAL A (1 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
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Project :
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SCALE: AS NOTED

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DRAWING FILE NUMBER
TAC LS08C4
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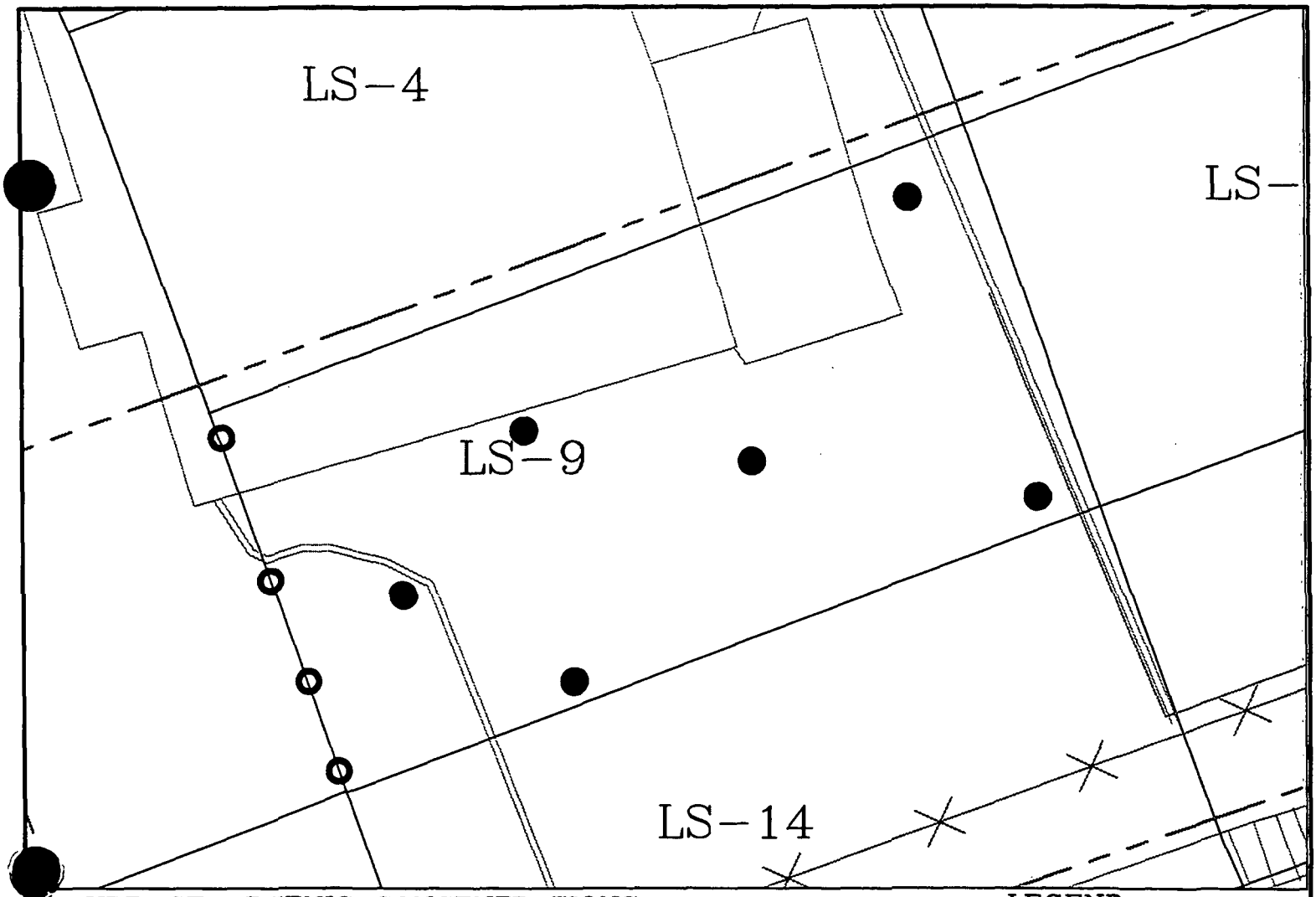

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	659	IAFA-P1A-F-LS9-C-1
PERIMETER SURFACE	968	IAFA-P1A-P-LS9-C-A-1
PERIMETER 2' DEPTH	1354	IAFA-P1A-P-LS9-C-B-1
PERIMETER 4' DEPTH	2212	IAFA-P1A-P-LS9-C-C-1
PERIMETER 6' DEPTH	348	IAFA-P1A-P-LS9-C-D-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-09 (1246.40 SQUARE FEET)
PHASE 1 - REMOVAL A (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
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Project :
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CHECKED BY
APPROVED BY
SCALE: AS NOTED

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DRAWING FILE NUMBER
TAC LS09C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER LS-09
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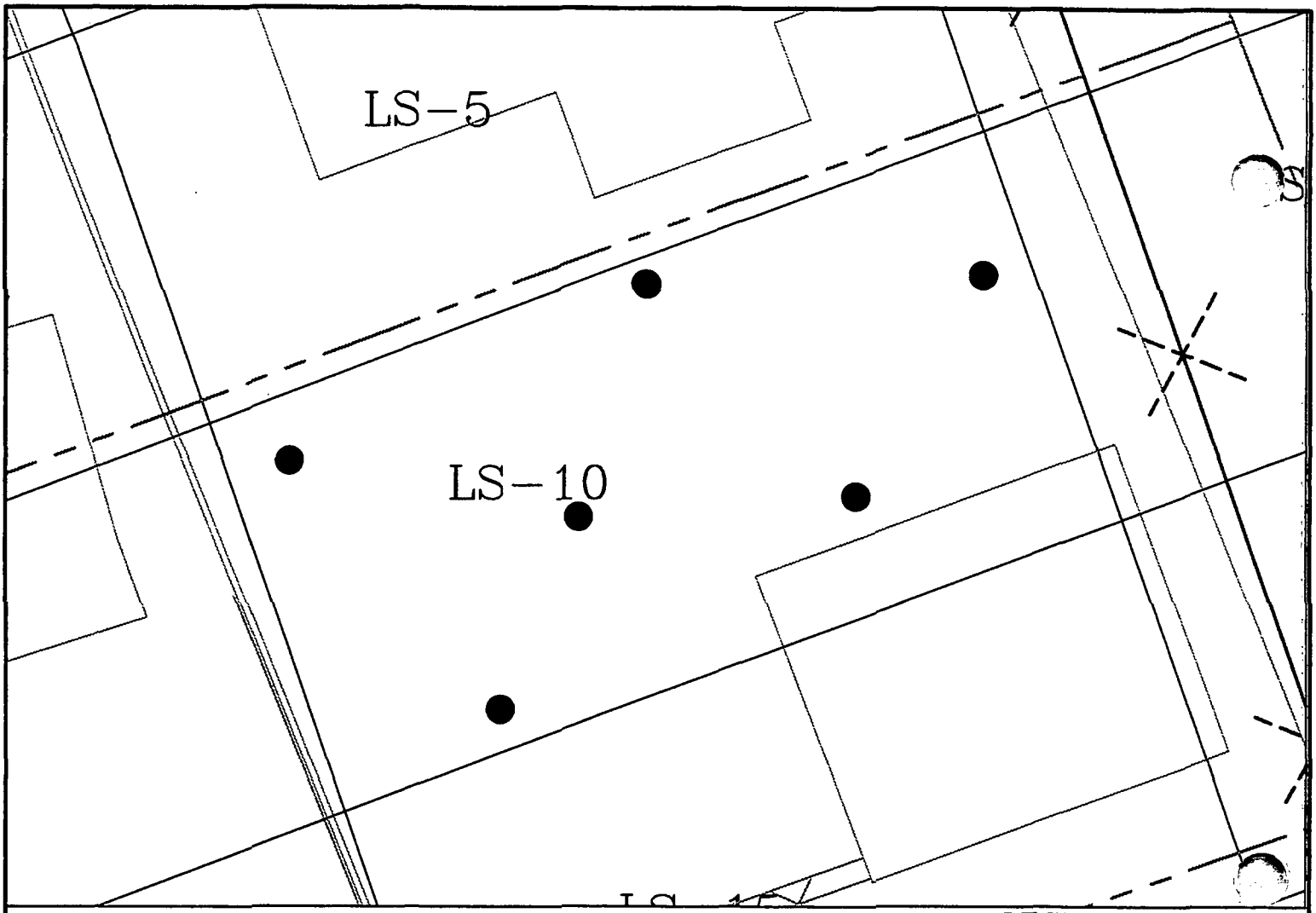

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2168	IAFA-P1A-F-LS10-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-10 (1250.60 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
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Project :
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SCALE: AS NOTED

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TAC LS10C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER: LS-10
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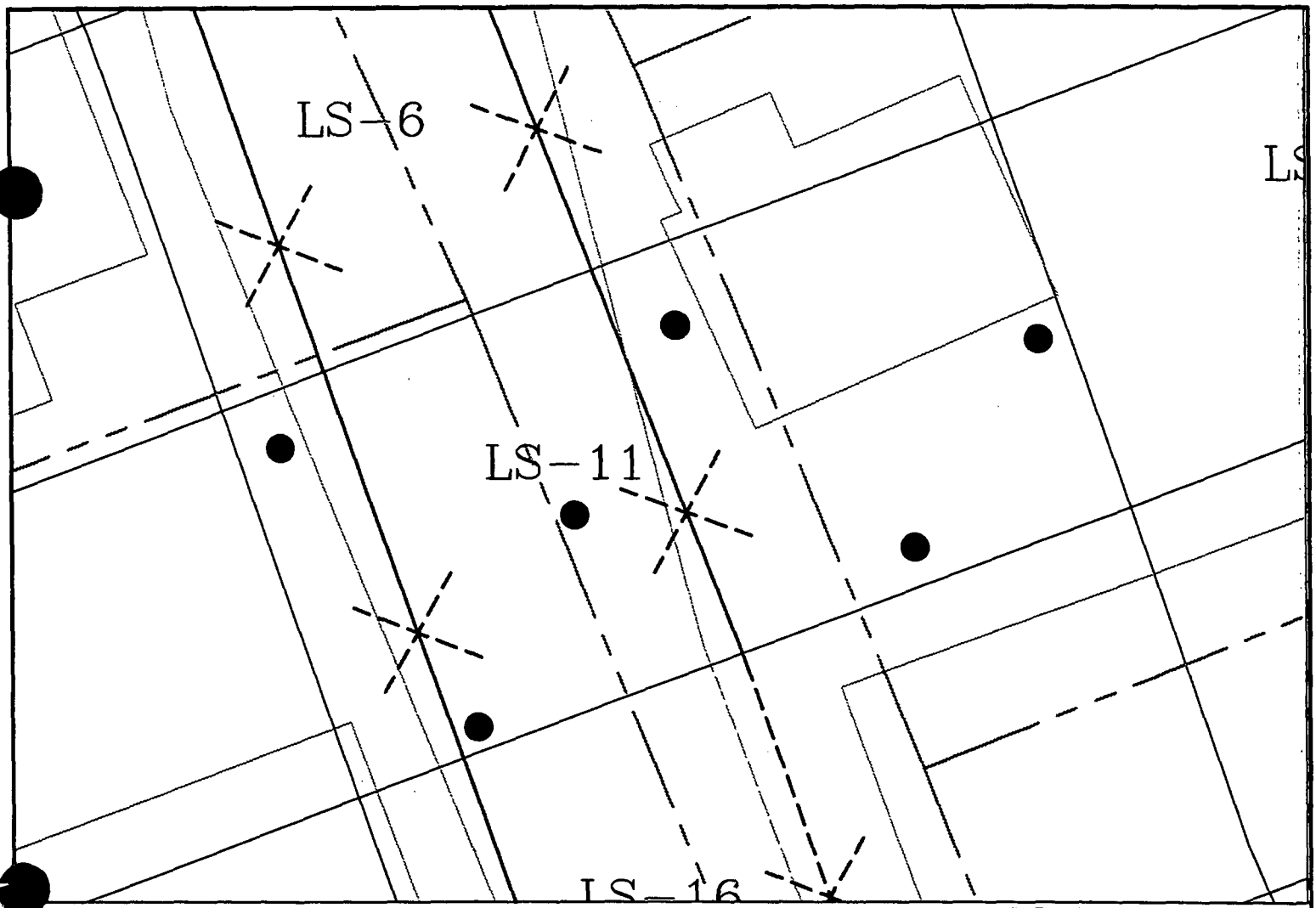

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2596	IAFA-P1A-F-LS11-C-2

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-11 (1254.60 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY 00PG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407
5219 North Shirley Street, Suite 100
(206) 759-4476

DRAWING FILE NUMBER
TAC LS11C4
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SHEET NUMBER
LS-11

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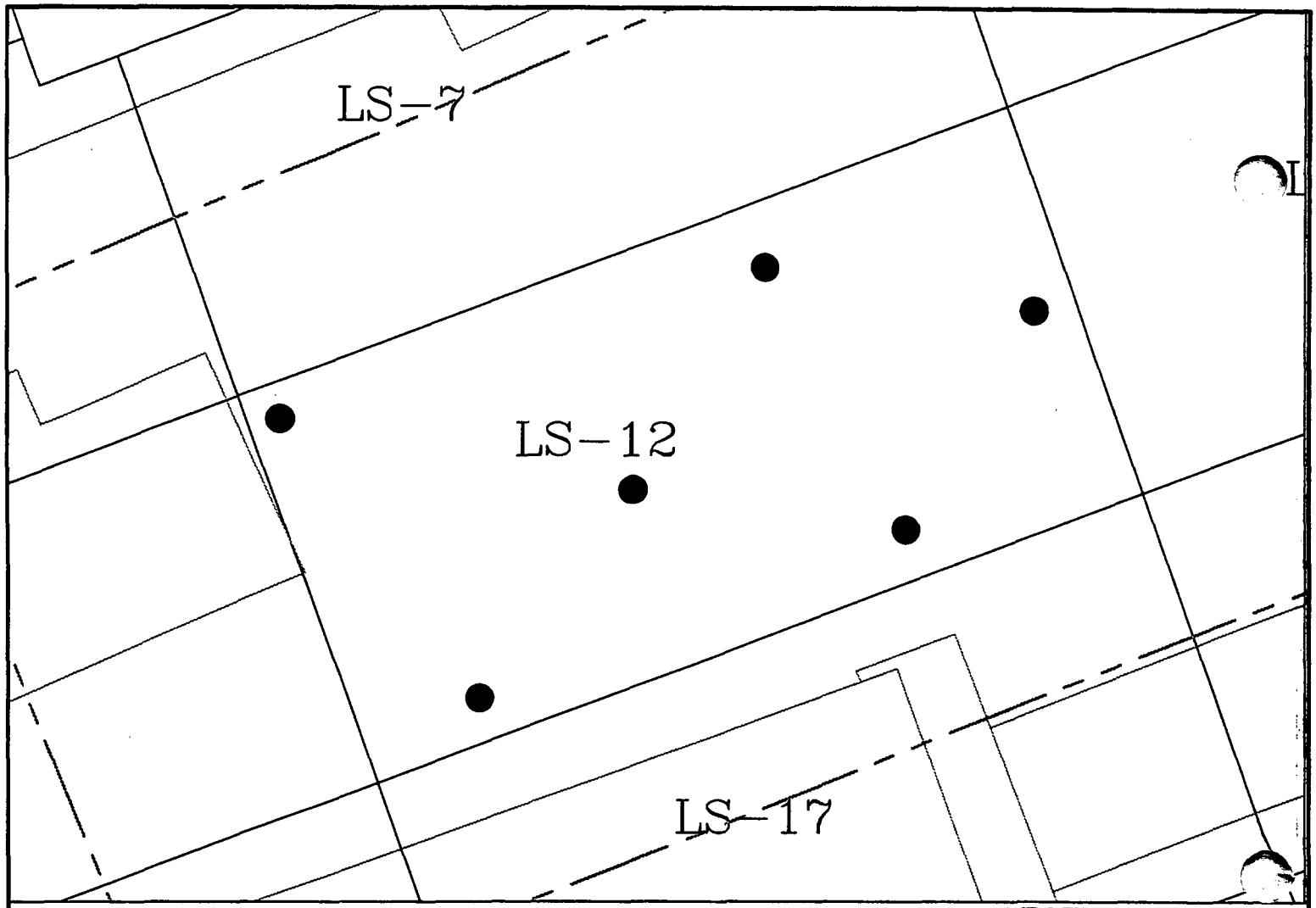

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2739	IAFA-P1A-F-LS12-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-12 (1235.30 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
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Project :		
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SCALE: AS NOTED		

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DRAWING FILE NUMBER
TAC LS12C4
AUTOCAD REL. 2000 DRAWING (DWG)

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LS-12

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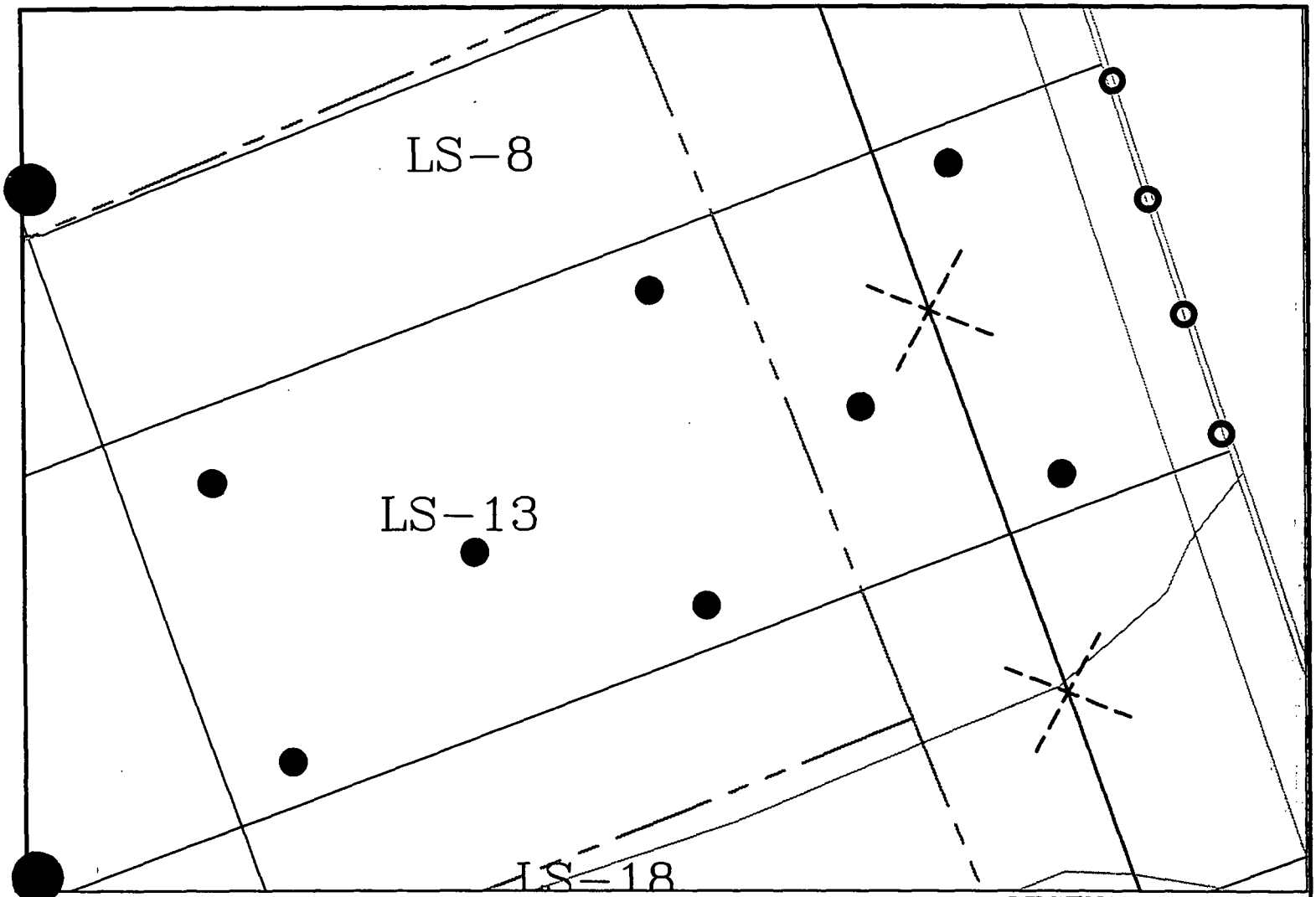

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	794	IAFA-P1A-F-LS13-C-1
PERIMETER SURFACE	123	IAFA-P1A-P-LS13-C-A-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-13 (1647.70 SQUARE FEET)
PHASE 1 - REMOVAL A (1 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
1st			
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SCALE: AS NOTED		

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DRAWING FILE NUMBER
TAC LS13C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-13

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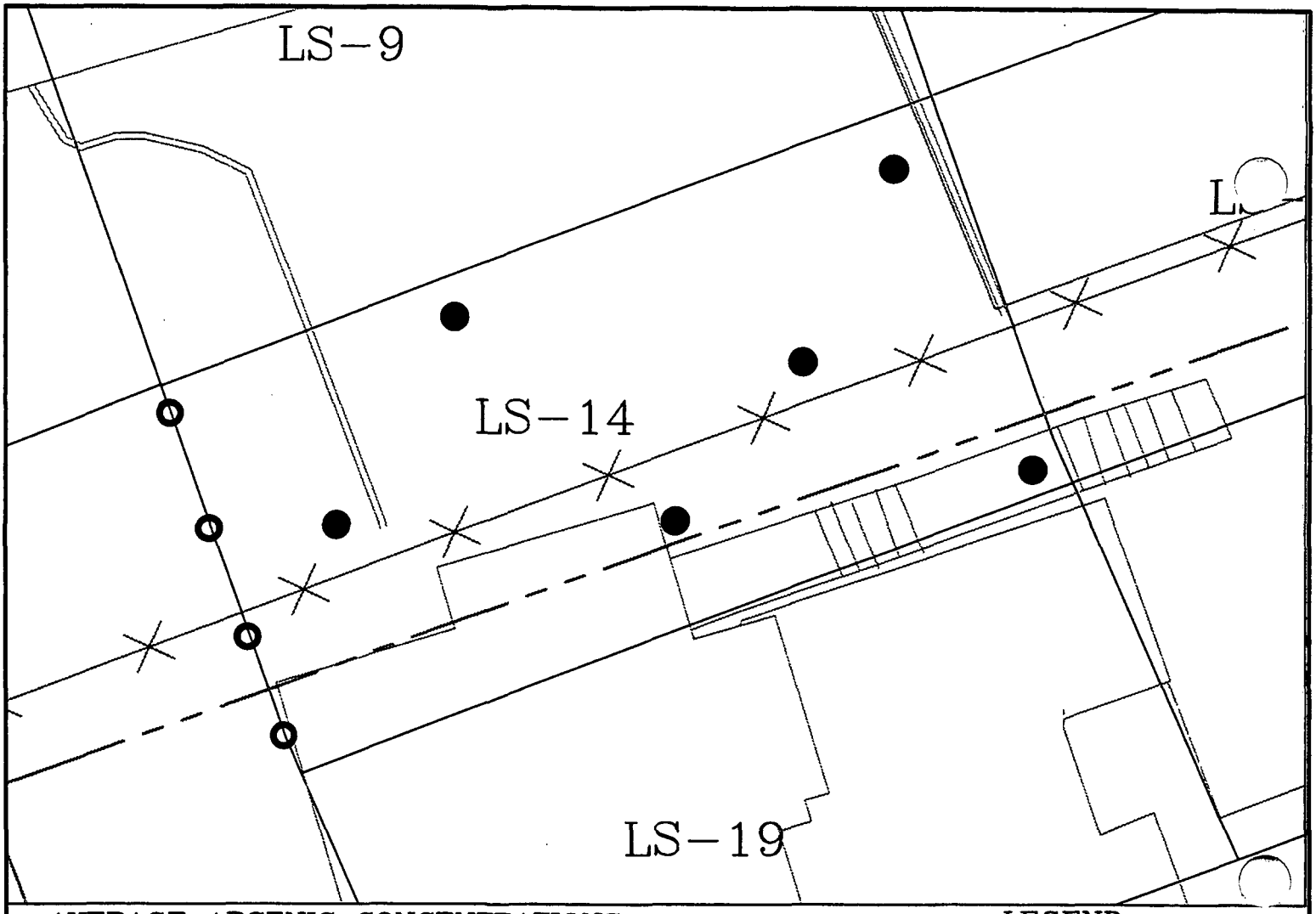

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	823	IAFA-P1A-F-LS14-C-1
PERIMETER SURFACE	563	IAFA-P1A-P-LS14-C-A-1
PERIMETER 2' DEPTH	1075	IAFA-P1A-P-LS14-C-B-1
PERIMETER 4' DEPTH	2115	IAFA-P1A-P-LS14-C-C-1
PERIMETER 6' DEPTH	321	IAFA-P1A-P-LS14-C-D-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-14 (1246.50 SQUARE FEET)
PHASE 1 - REMOVAL A (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
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Project :
DRAWN BY OOPG
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SCALE: AS NOTED

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DRAWING FILE NUMBER
TAC LS14C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-14

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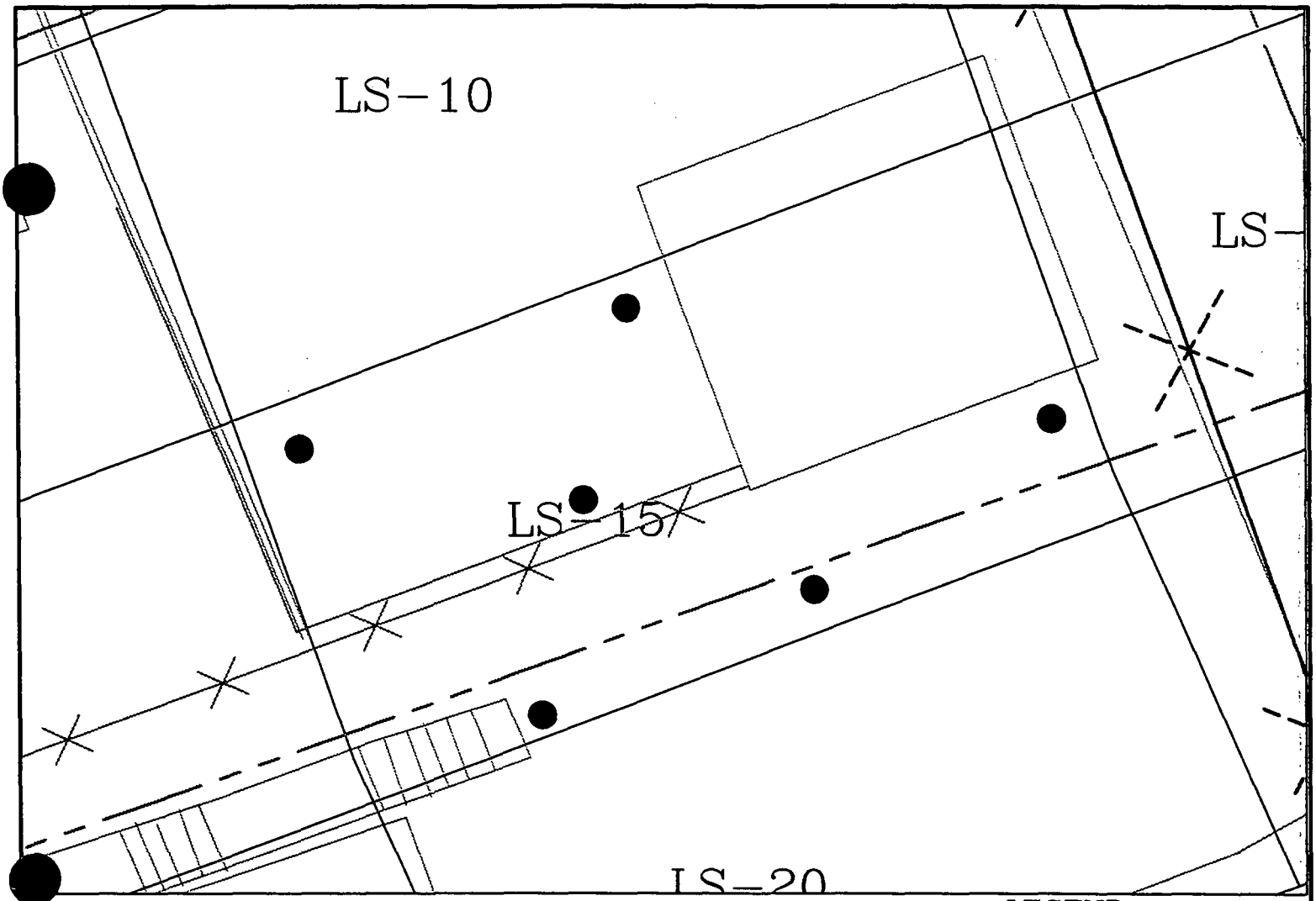

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1145	IAFA-P1A-F-LS15-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-15 (1247.30 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
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SCALE: AS NOTED		

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TAC LS15C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-15

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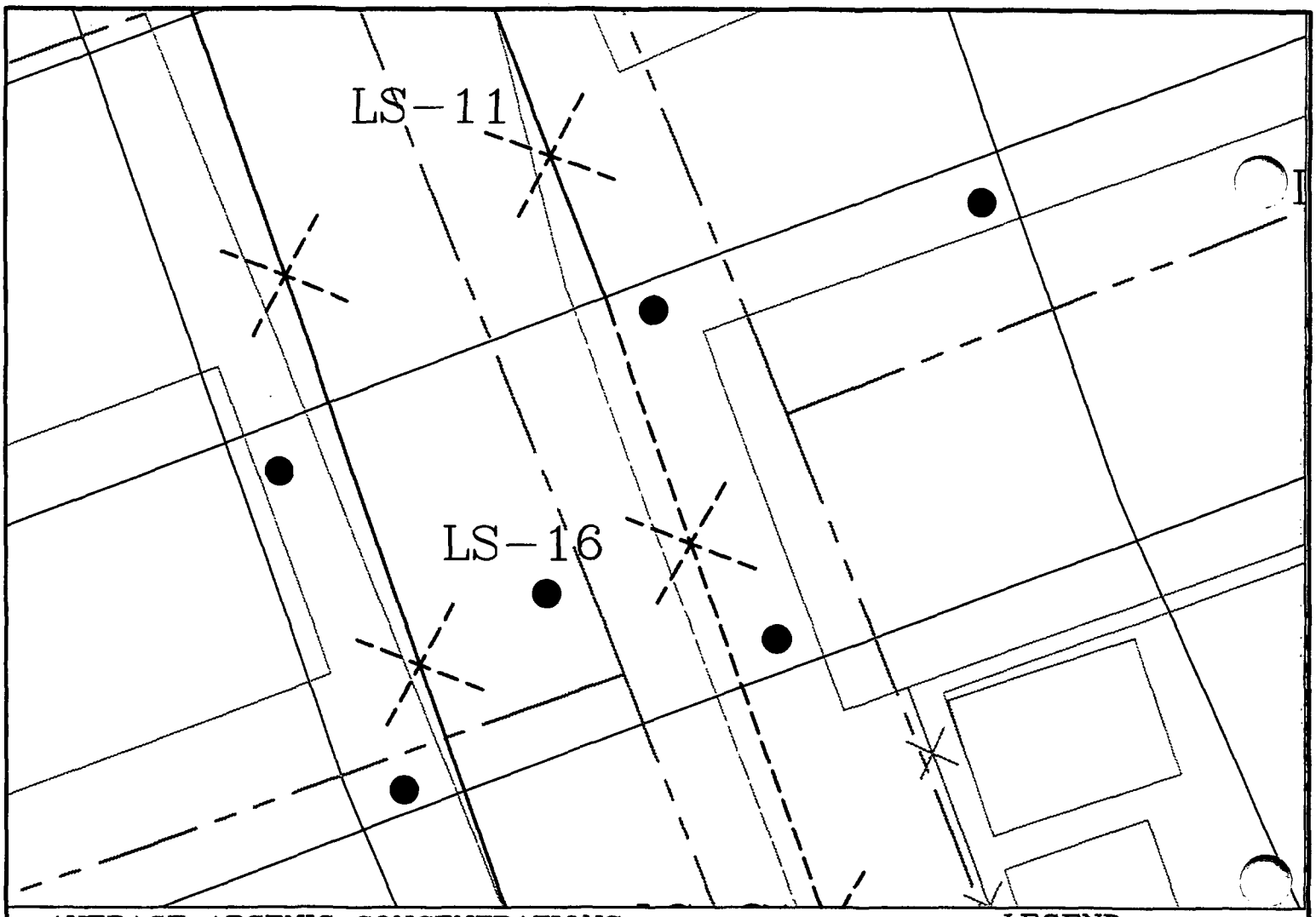

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2785	IAFA-P1A-F-LS16-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-16 (1243.50 SQUARE FEET)
PHASE 1 – REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. –Tacoma–

DRAWING SCALE: 0 – 10 FEET – 20 FEET

REVISIONS	NO	BY	DATE	
	1st			
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Project :
DRAWN BY: OOPG
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APPROVED BY:
SCALE: AS NOTED

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DRAWING-FILE-NUMBER: TAC LS16C4
AUTOCAD REL. 2000 DRAWING (DWG)
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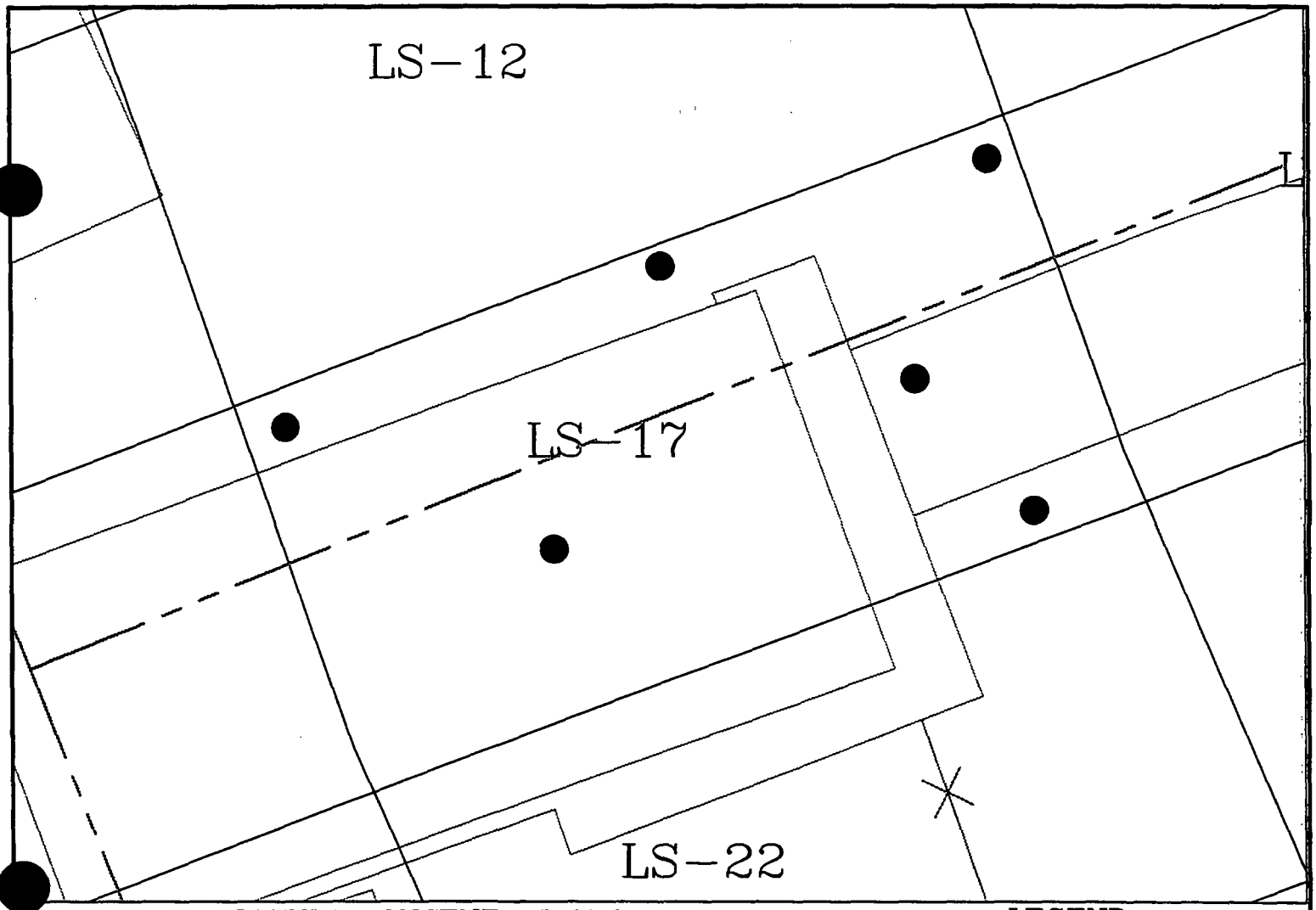

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2457	IAFA-P1A-F-LS17-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-17 (1245.00 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
1st			
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Project :		
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SCALE: AS NOTED		

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DRAWING FILE NUMBER
TAC LS17C4
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LS-17

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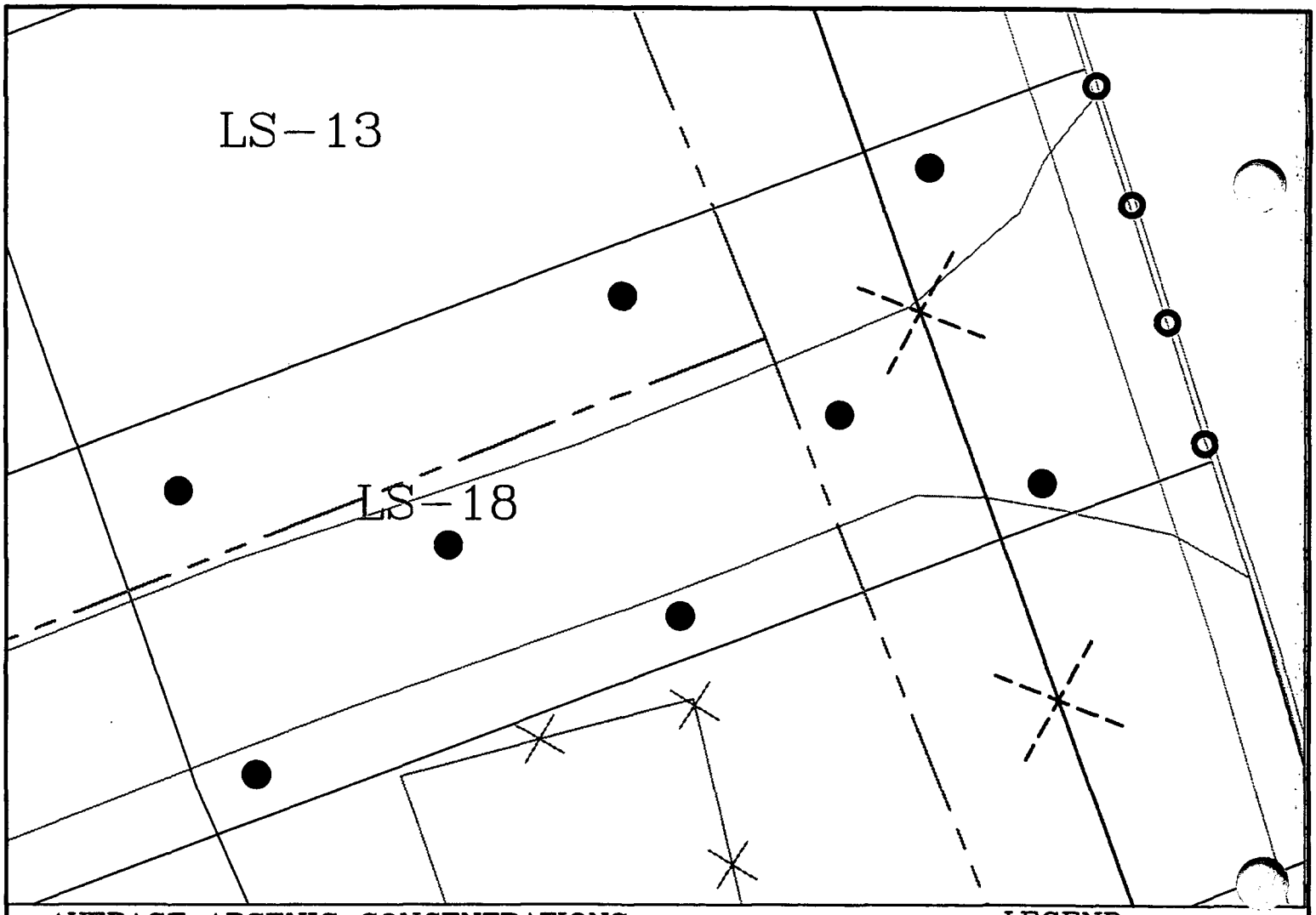

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1089	IAFA-P1A-F-LS18-C-1
PERIMETER SURFACE	210	IAFA-P1A-P-LS18-C-A-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-18 (1630.10 SQUARE FEET)
PHASE 1 - REMOVAL A (1 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
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Project :		
DRAWN BY	OOPG	
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APPROVED BY		
SCALE: AS NOTED		

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DRAWING FILE NUMBER
TAC LS18C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-18

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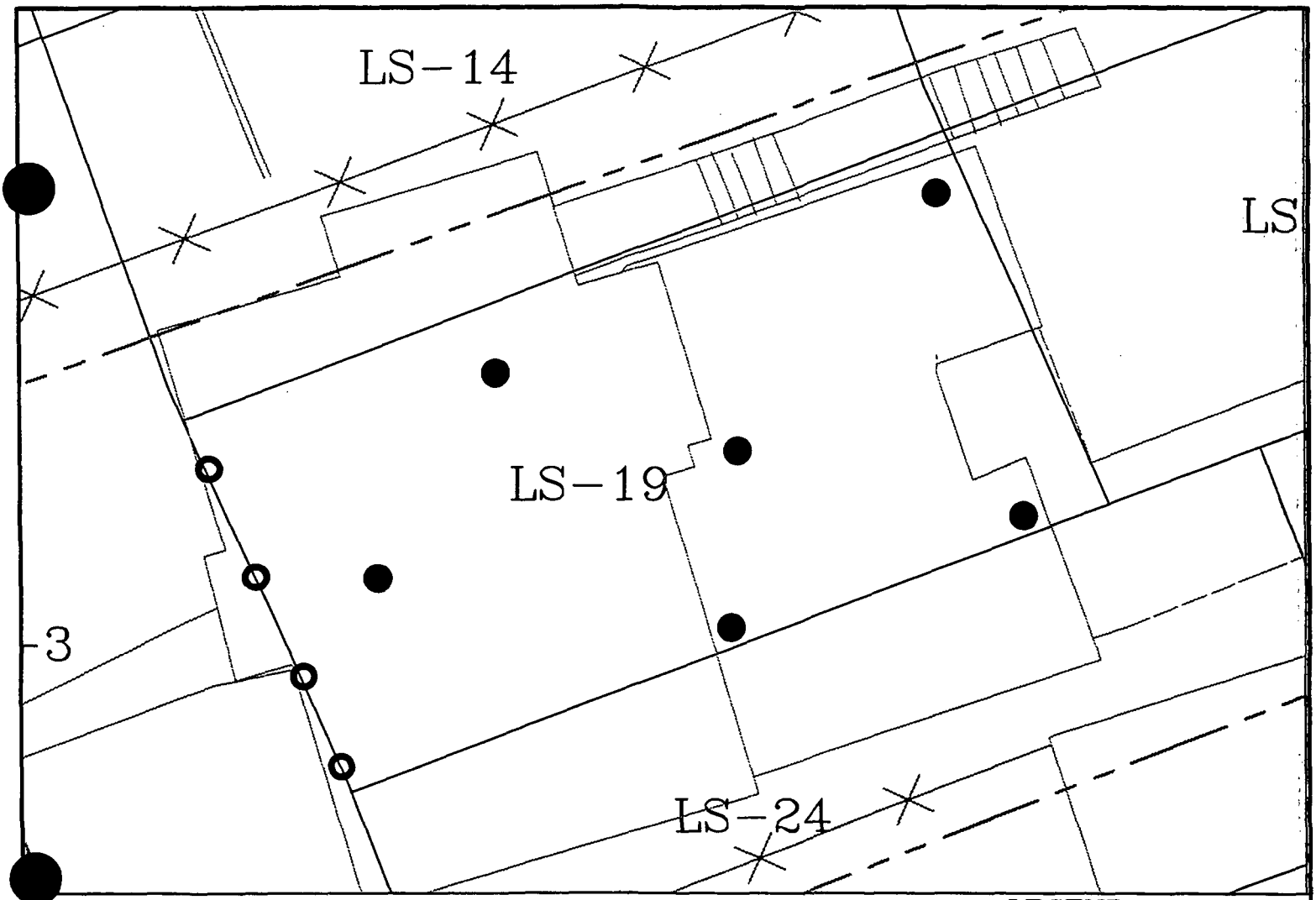

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	778	IAFA-P1A-F-LS19-C-1
PERIMETER SURFACE	2206	IAFA-P1A-P-LS19-C-A-1
PERIMETER 2' DEPTH	1549	IAFA-P1A-P-LS19-C-B-1
PERIMETER 4' DEPTH	592	IAFA-P1A-P-LS19-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-19 (1248.00 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
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SCALE: AS NOTED	

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DRAWING FILE NUMBER
TAC LS19C4
AUTOCAD REL. 2000 DRAWING (DWG)

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LS-19

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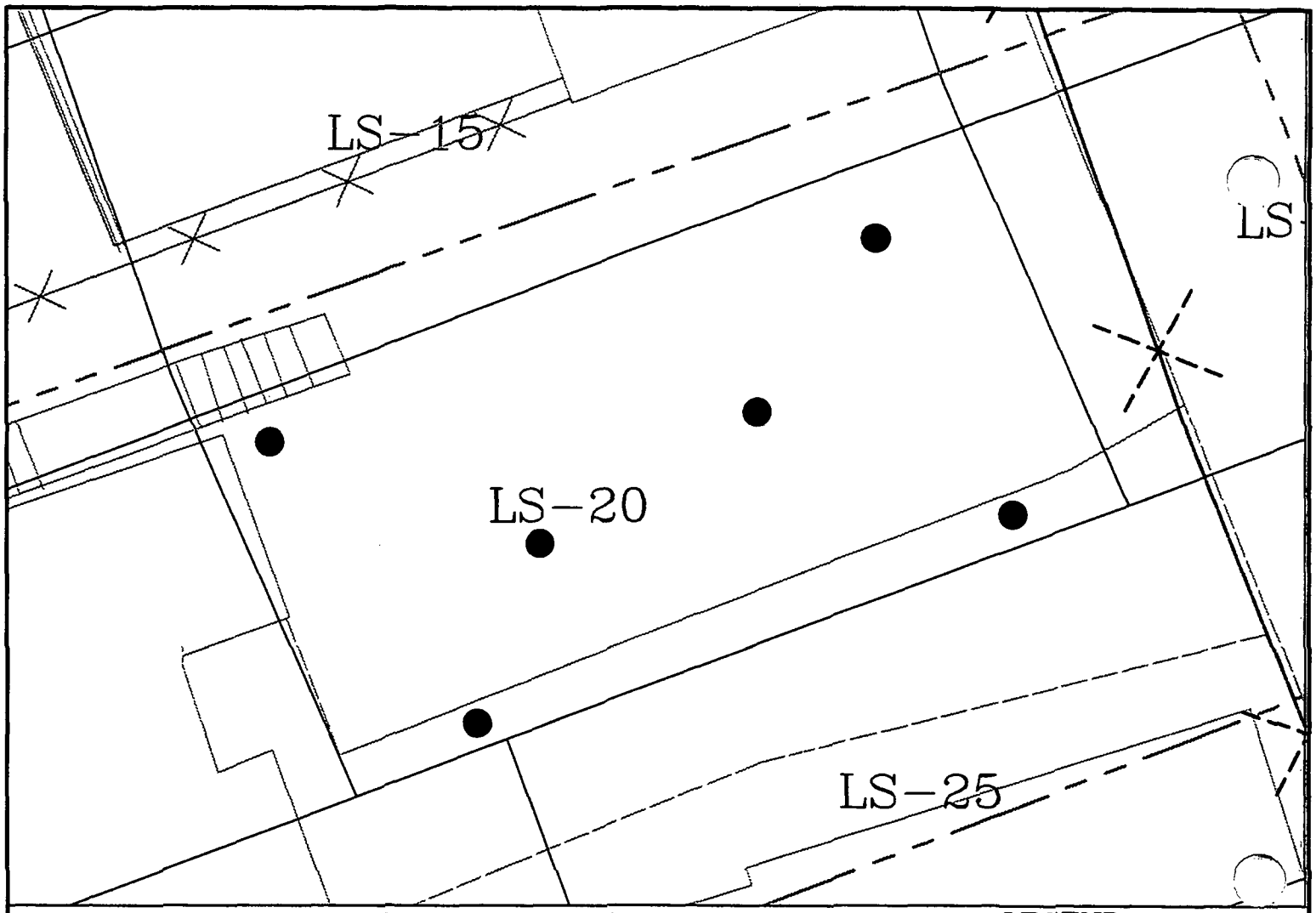

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1145	IAFA-P1A-F-LS20-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-20 (1239.30 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS NO	BY	DATE	
1st			
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Project :
DRAWN BY DDPG
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APPROVED BY
SCALE: AS NOTED

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DRAWING FILE NUMBER: TAC LS20C4
AUTOCAD REL. 2000 DRAWING (DWG)
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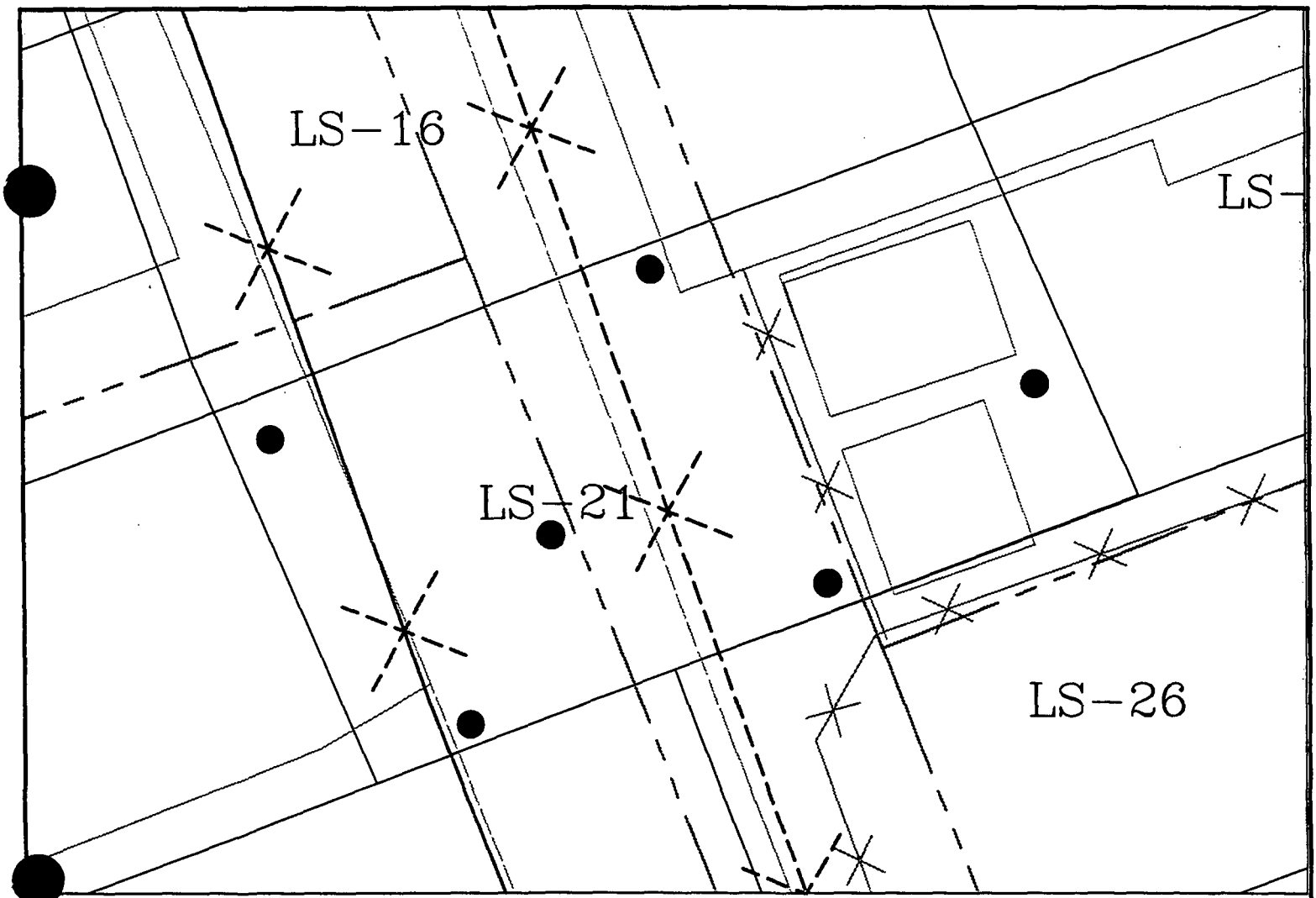

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2021	IAFA-P1A-F-LS21-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-21 (1245.00 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
1st			
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SCALE: AS NOTED		

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DRAWING FILE NUMBER
TAC LS21C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-21

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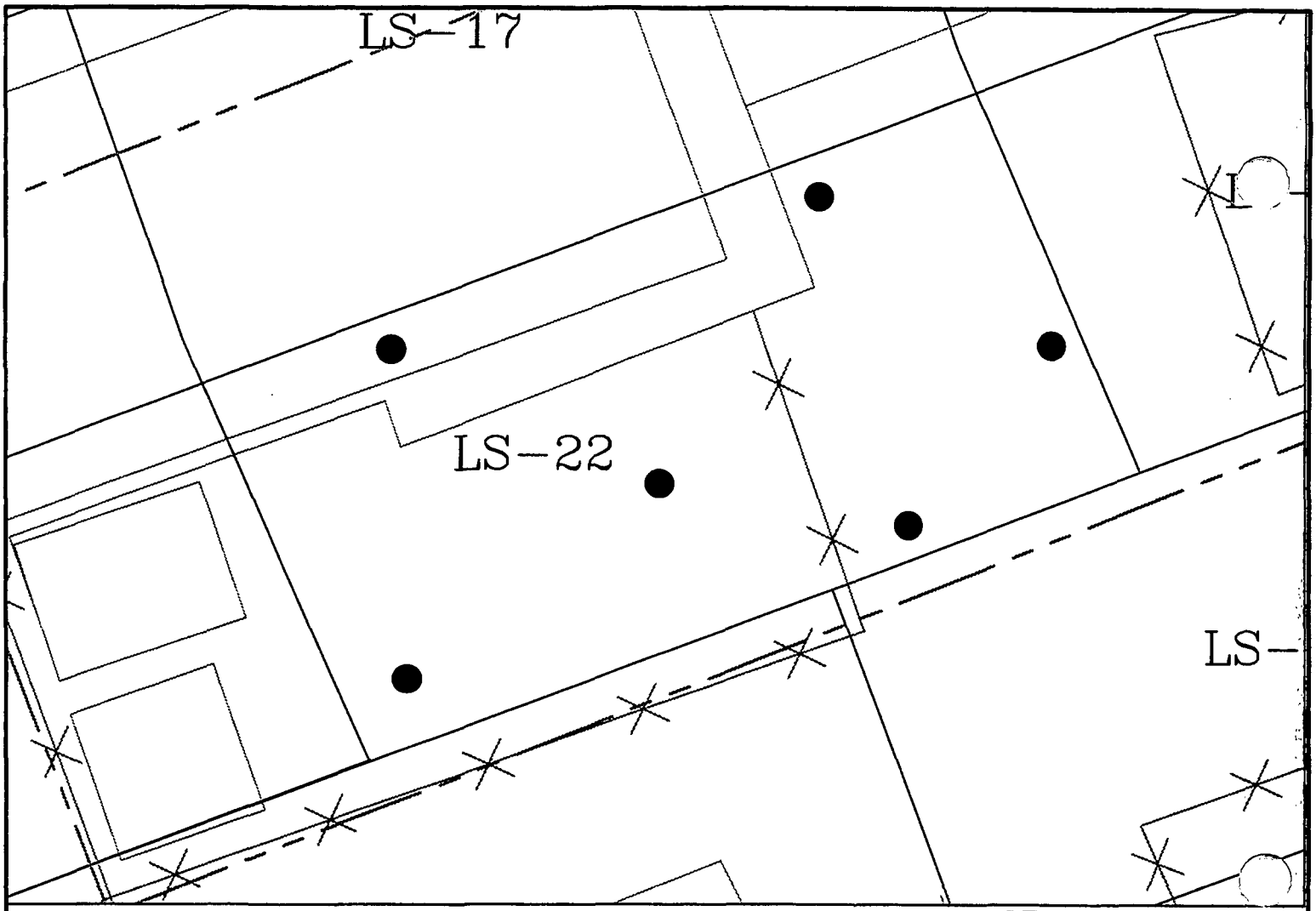

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2546	IAFA-P1A-F-LS22-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-22 (1250.70 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
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SCALE: AS NOTED		

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DRAWING FILE NUMBER
TAC LS22C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-22

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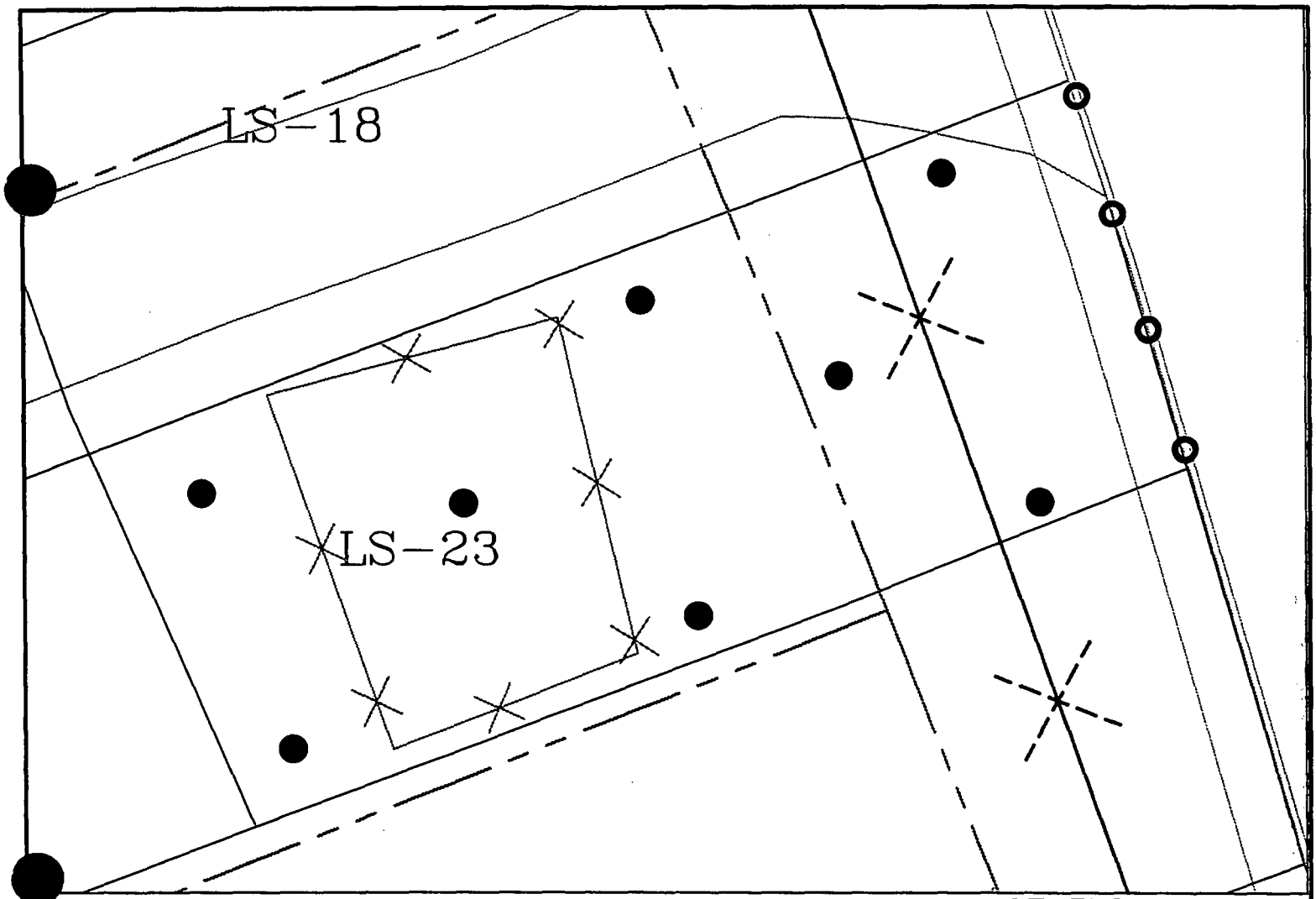

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1416	IAFA-P1A-P-LS23-C-1
PERIMETER SURFACE	305	IAFA-P1A-P-LS23-C-A-1
PERIMETER 2' DEPTH	360	IAFA-P1A-P-LS23-C-B-1
PERIMETER 4' DEPTH	849	IAFA-P1A-P-LS23-C-C-1
PERIMETER 6' DEPTH	449	IAFA-P1A-P-LS23-C-D-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-23 (1590.00 SQUARE FEET)
PHASE 1 - REMOVAL A (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS	BY	DATE
1st		
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Project :
DRAWN BY OOPG
CHECKED BY
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SCALE: AS NOTED

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DRAWING FILE NUMBER: TAC LS23C4
AUTOCAD REL. 2000 DRAWING (DWG)
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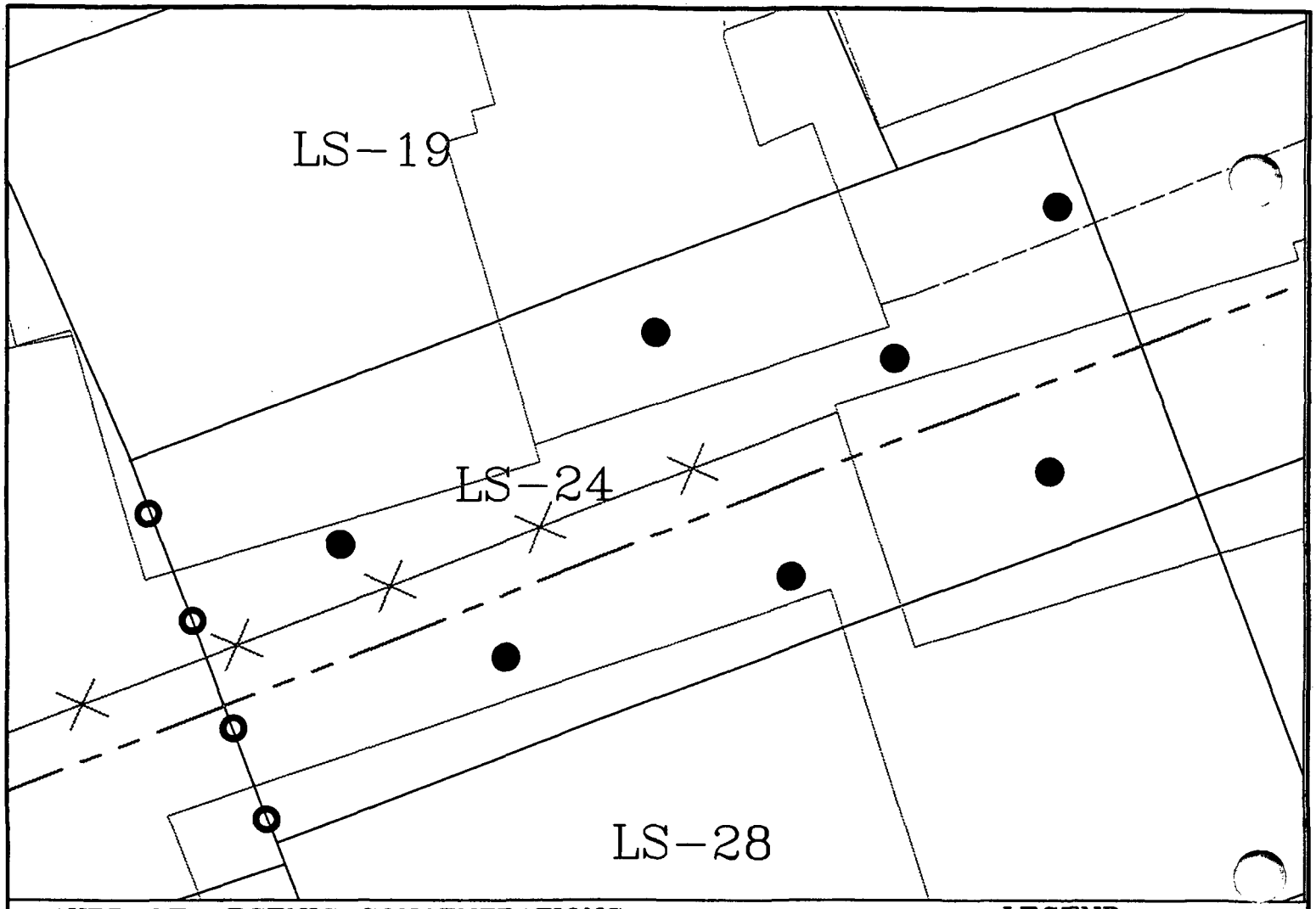

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1716	IAFA-P1A-F-LS24-C-1
PERIMETER SURFACE	1742	IAFA-P1A-P-LS24-C-A-2
PERIMETER 2' DEPTH	2243	IAFA-P1A-P-LS24-C-B-2
PERIMETER 4' DEPTH	1632	IAFA-P1B-P-LS24-C-C-2
PERIMETER 6' DEPTH	2535	IAFA-P1A-P-LS24-C-D-2

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-24 (1496.60 SQUARE FEET)
PHASE 1 - REMOVAL A (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
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APPROVED BY		
SCALE: AS NOTED		

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DRAWING FILE NUMBER
TAC LS24C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-24

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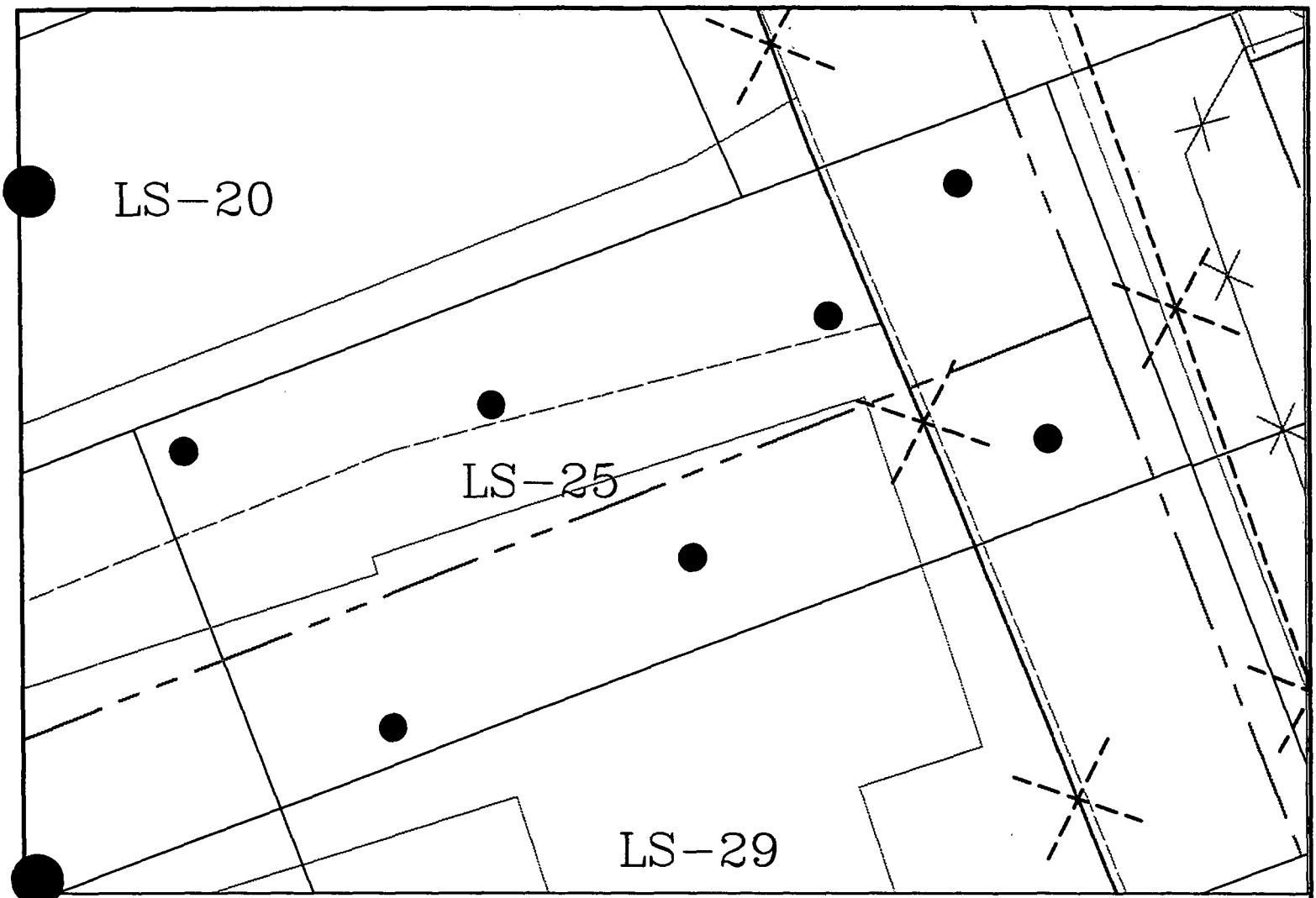

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1675	IAFA-P1A-F-LS25-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-25 (1491.00 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
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Project :
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CHECKED BY
APPROVED BY
SCALE: AS NOTED

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DRAWING FILE NUMBER
TAC LS25C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-25

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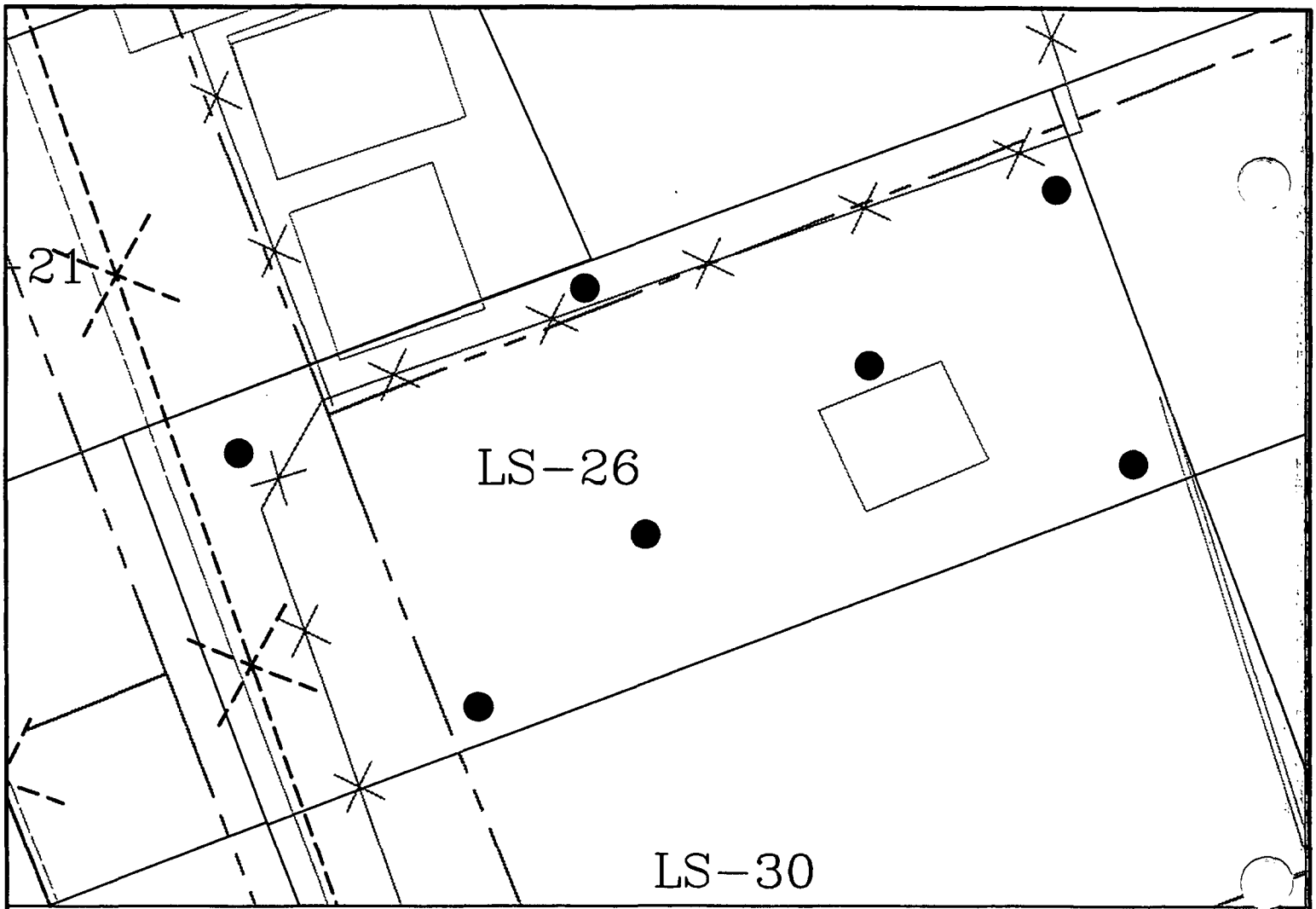

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2795	IAFA-P1A-F-LS26-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-26 (1503.00 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
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SCALE: AS NOTED	

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TAC LS26C4
AUTOCAD REL. 2000 DRAWING (DWG)

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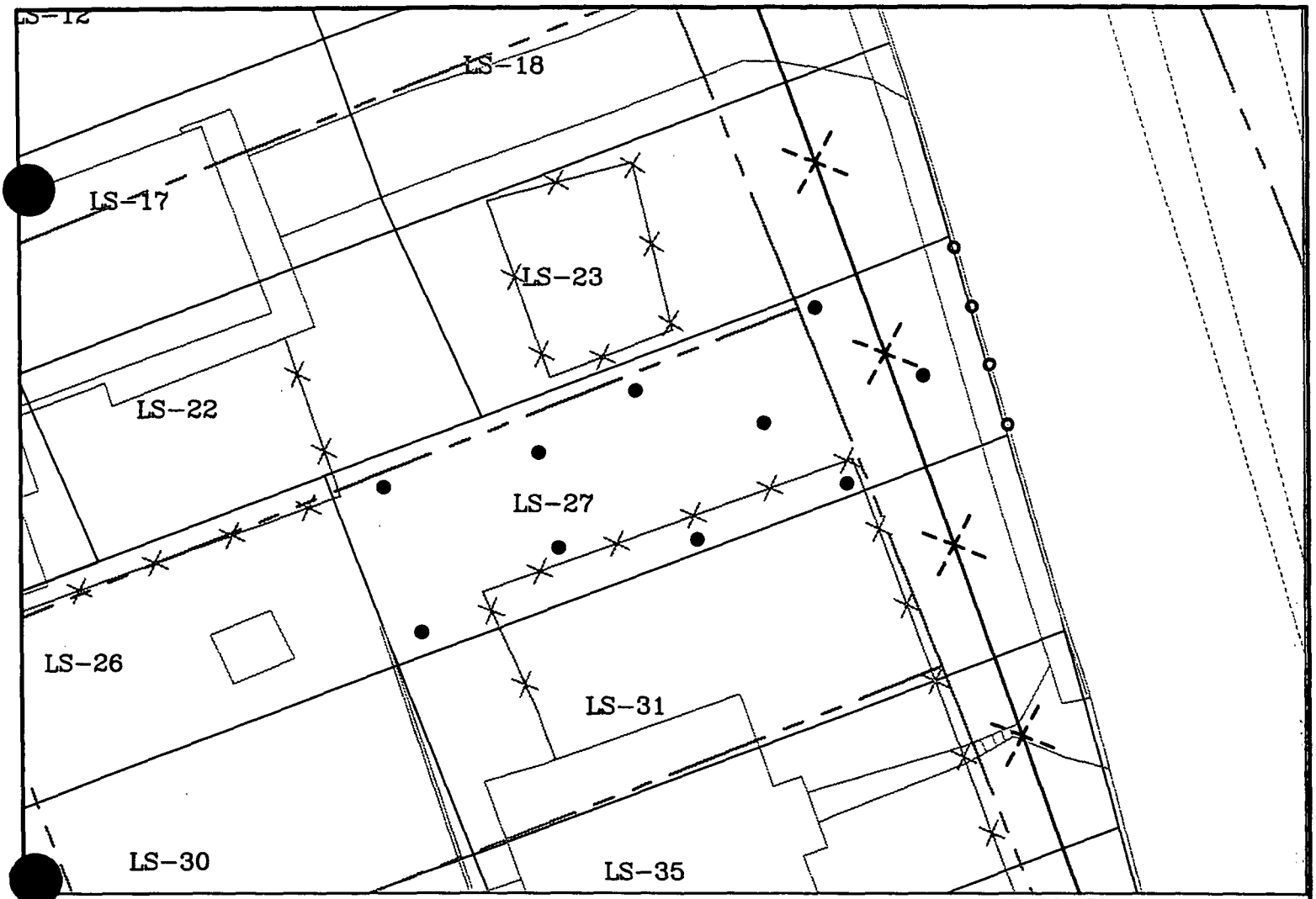

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1054	IAFA-P1A-F-LS27-C-1
PERIMETER SURFACE	197	IAFA-P1A-P-LS27-C-A-1
PERIMETER 2' DEPTH	85	IAFA-P1A-P-LS27-C-B-1
PERIMETER 4' DEPTH	608	IAFA-P1A-P-LS27-C-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-27 (2044.70 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY DDPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS27C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
LS-27
REV

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1st UPDATE:
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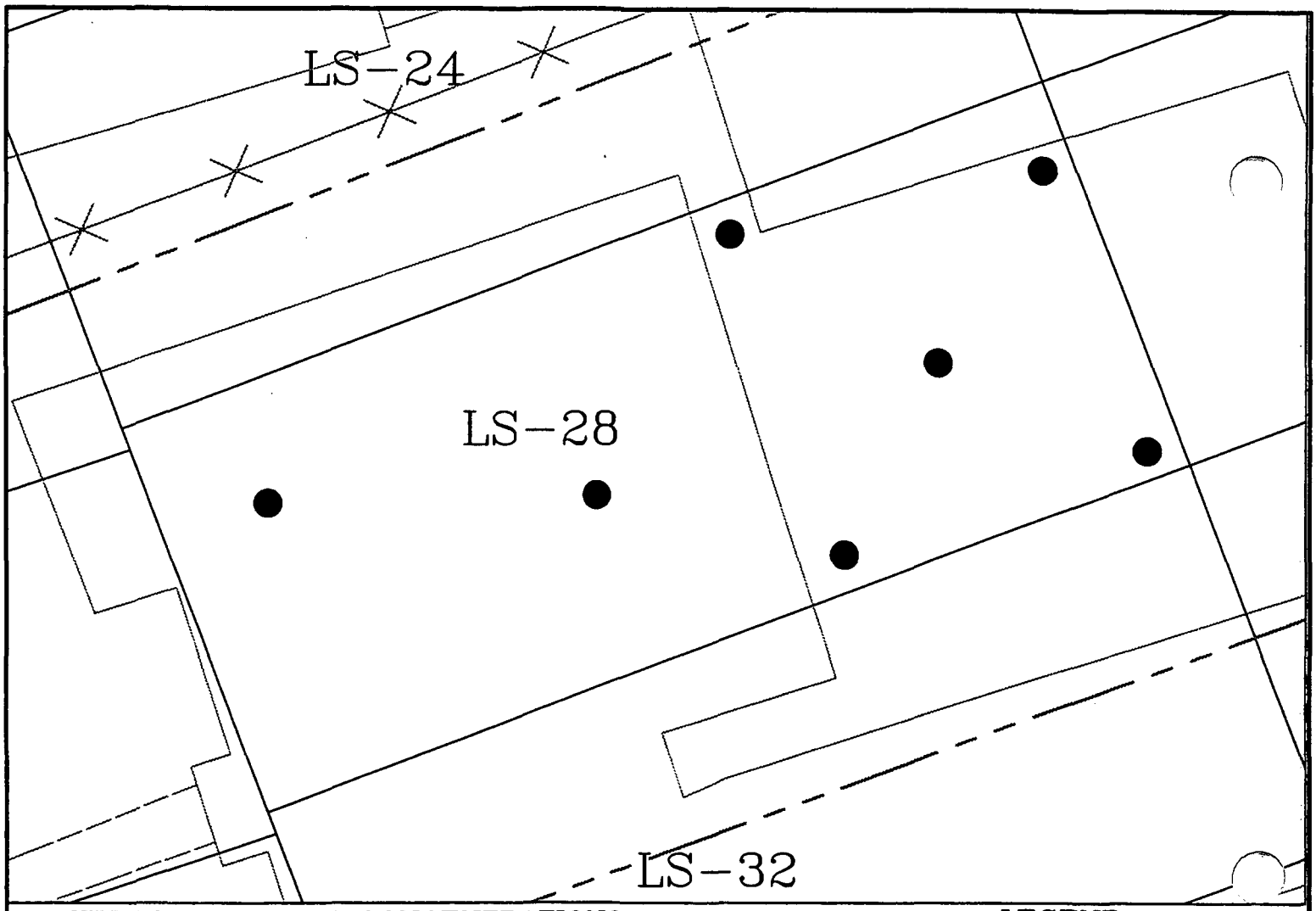

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	939	IAFA-P1A-F-LS28-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-28 (1492.80 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :		
DRAWN BY	OGPG	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS28C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-28

REV △

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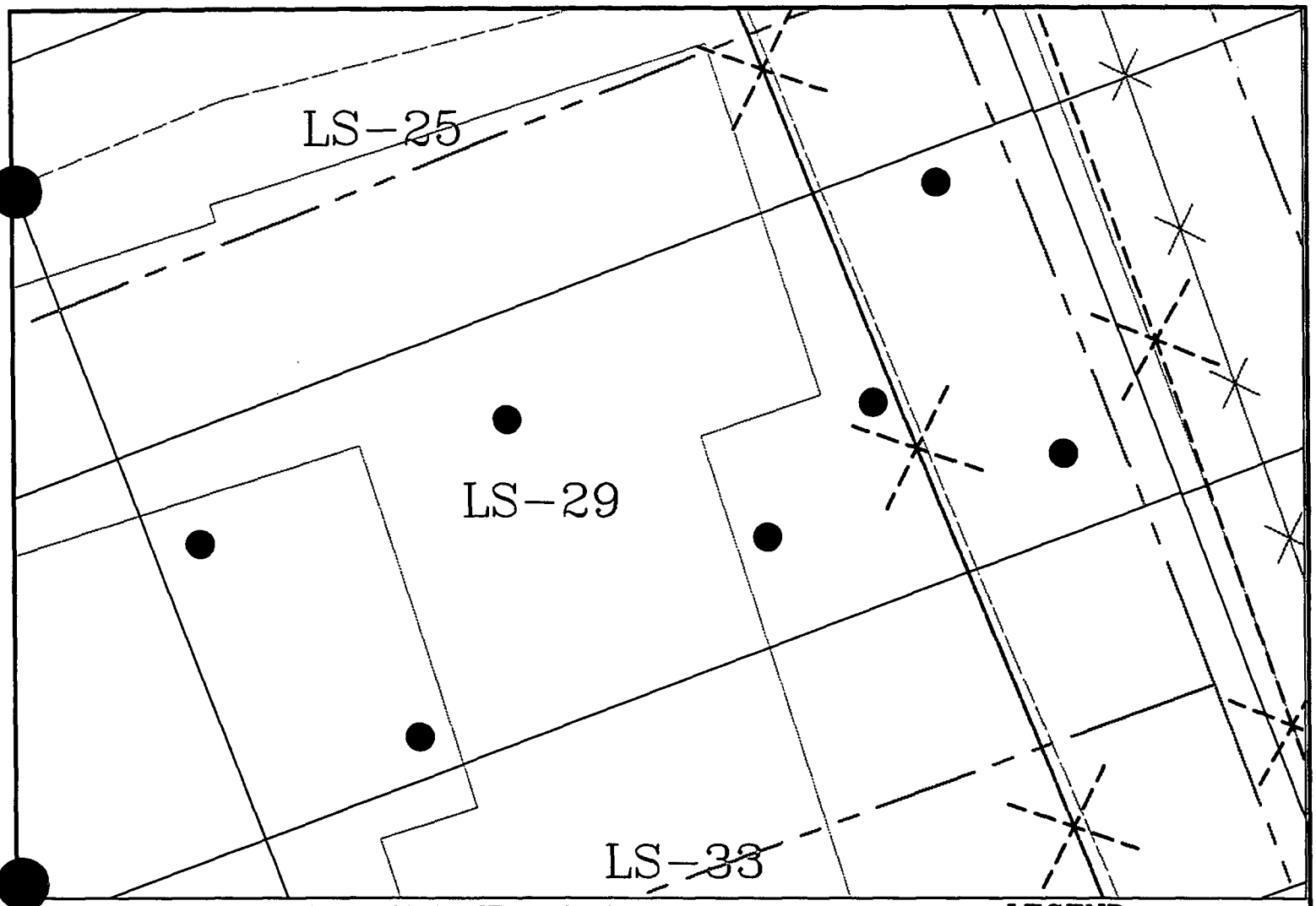

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2449	IAFA-P1A-F-LS29-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-29 (1493.30 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
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Project :		
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CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS29C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-29

REV △

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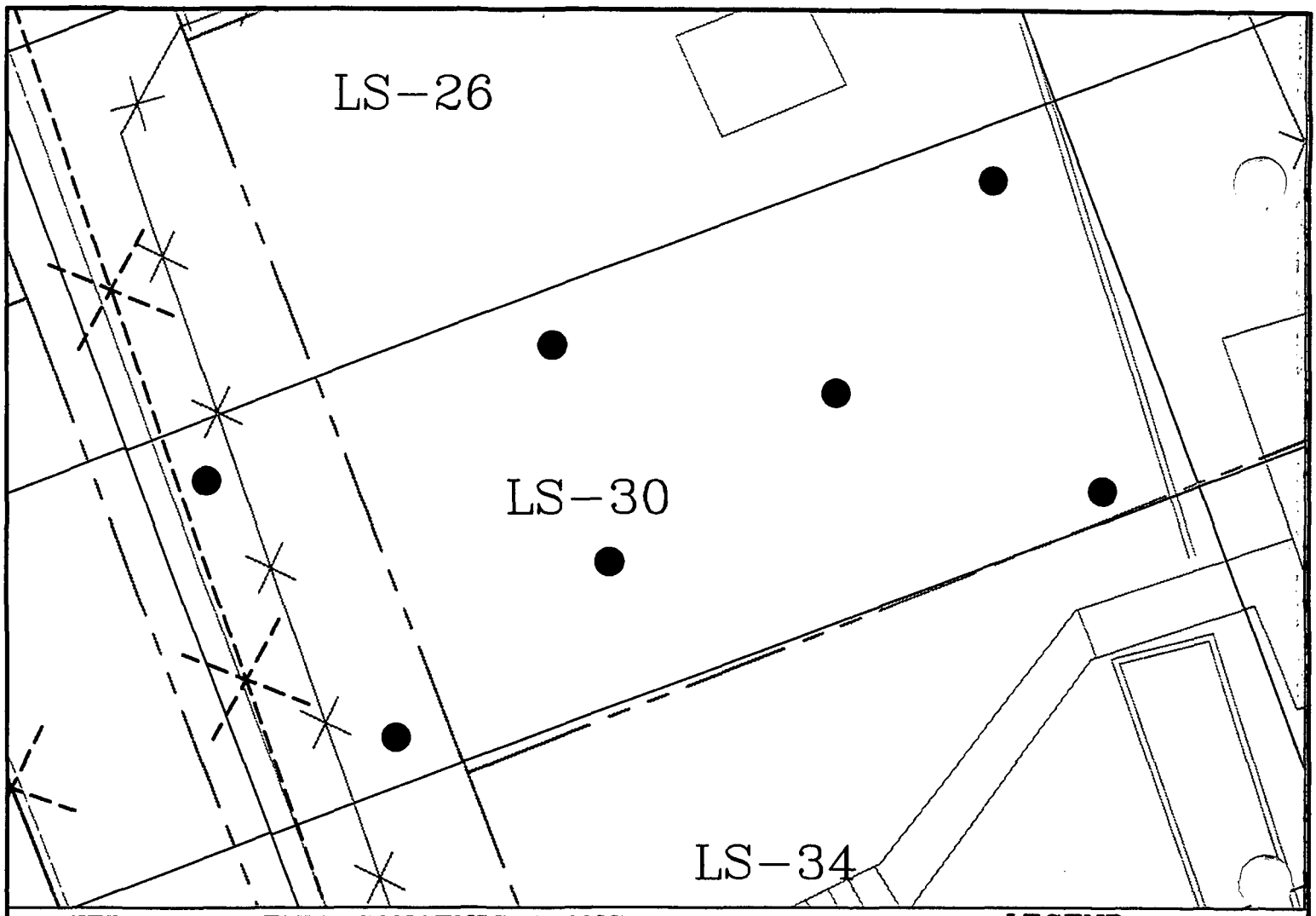

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1286	IAFA-P1A-F-LS30-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-30 (1499.30 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
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Project :		
DRAWN BY	GGPG	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS30C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-30

REV △

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1st UPDATE:
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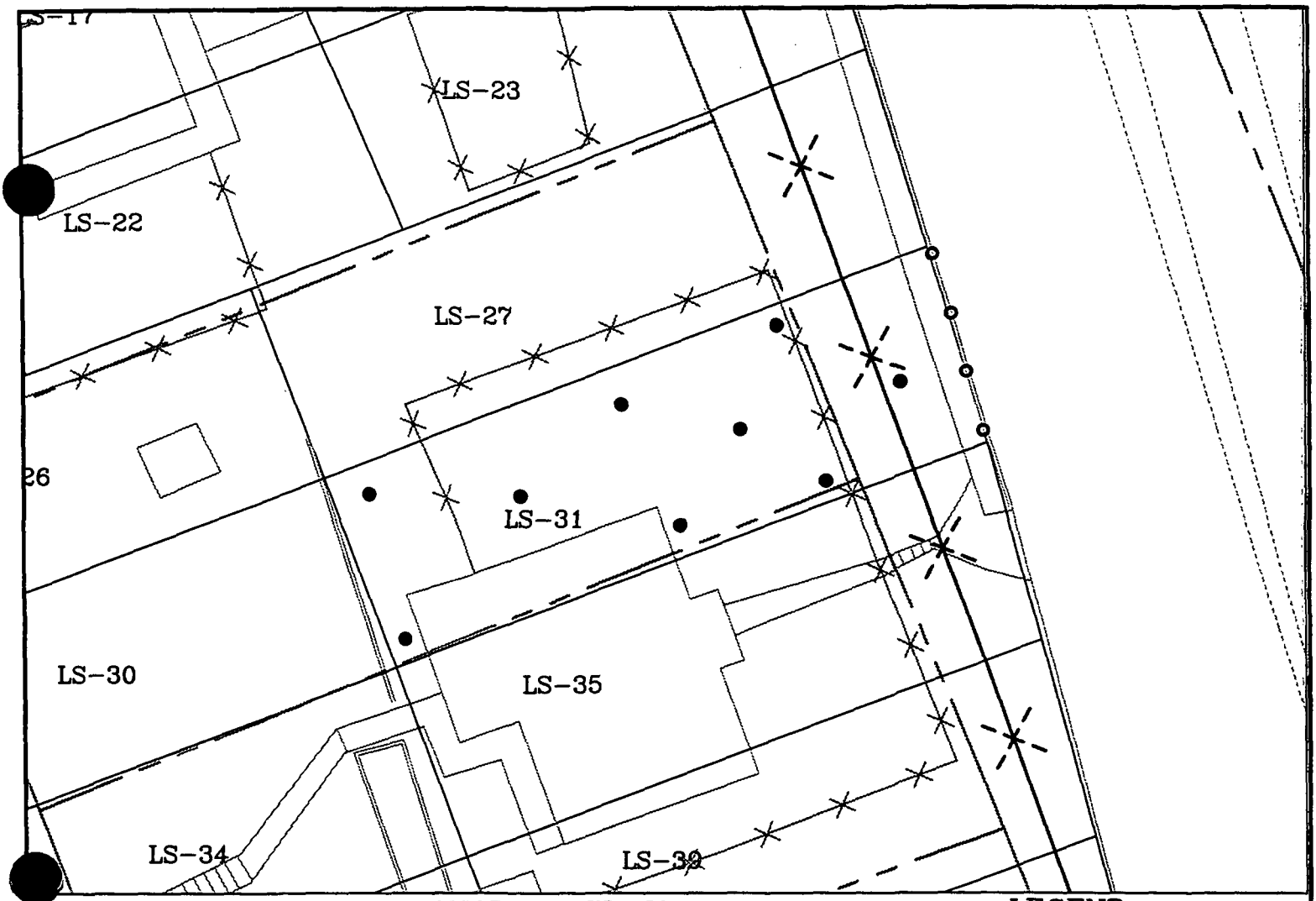

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1385	IAFA-P1A-F-LS31-C-1
PERIMETER SURFACE	341	IAFA-P1A-P-LS31-C-A-1
PERIMETER 2' DEPTH	84	IAFA-P1A-P-LS31-C-B-1
PERIMETER 4' DEPTH	973	IAFA-P1A-P-LS31-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-31 (1984 SQUARE FEET)
PHASE 1 – REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. –Tacoma–

DRAWING SCALE: 0 – 20 FEET – 40 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY: DOPG
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS31C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-31
REV

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LAST UPDATE:
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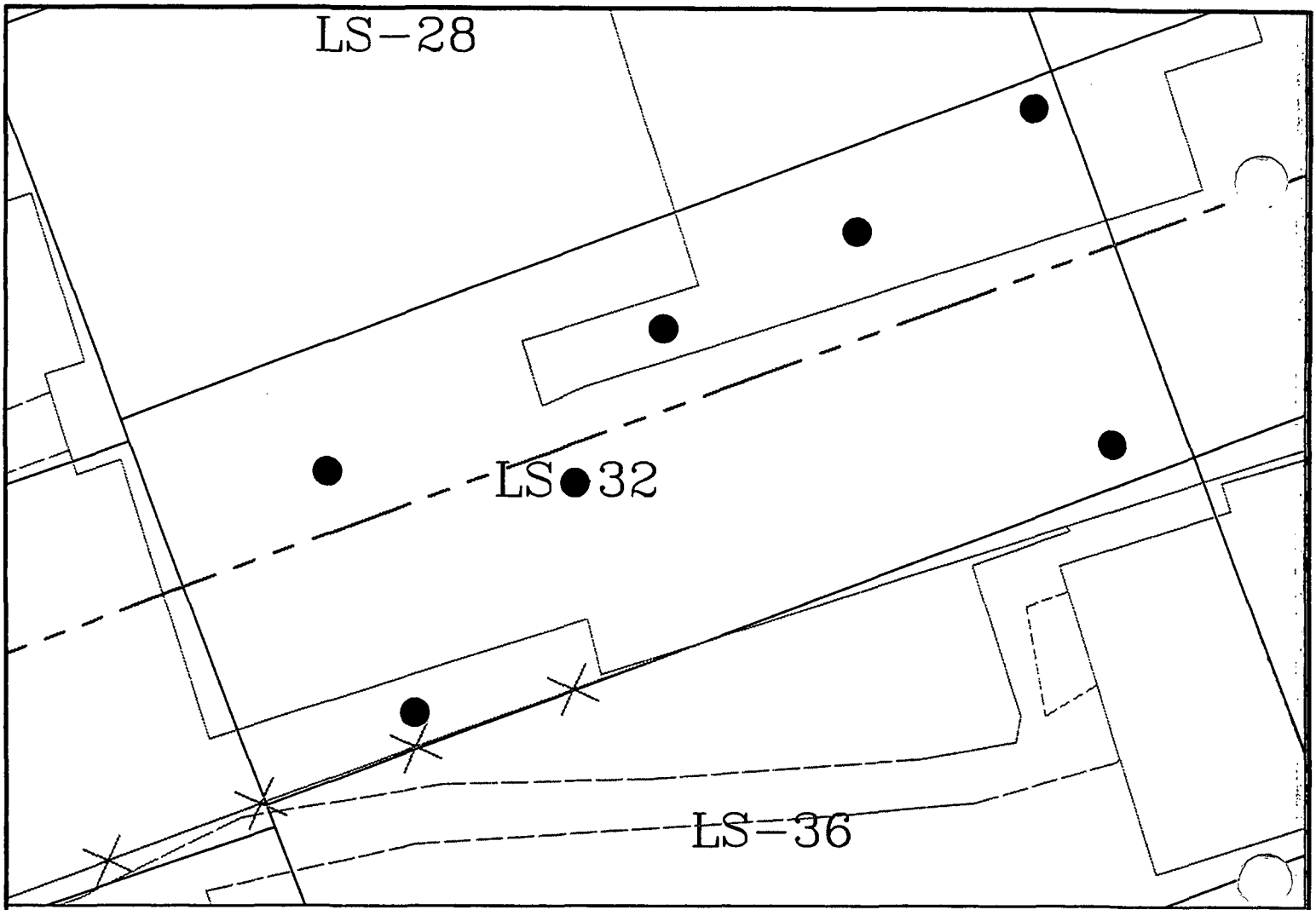

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	818	IAFA-P1A-F-LS32-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-32 (1495.50 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :		
DRAWN BY	OOPG	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407
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DRAWING FILE NUMBER
TAC LS32C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-32

REV △

NORTH

1st UPDATE:
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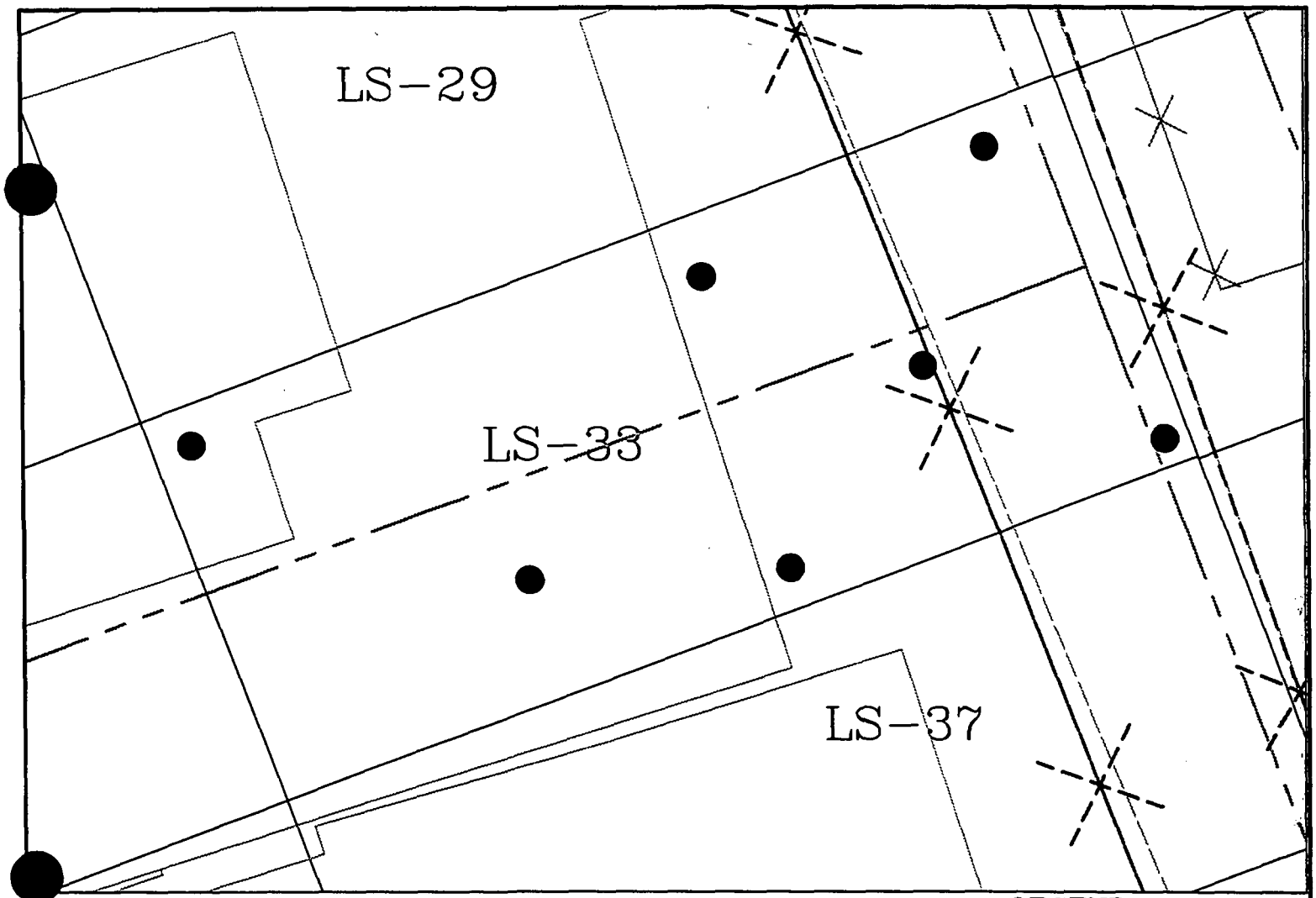

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1817	IAFA-P1A-F-LS33-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-33 (1499.00 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY 00PG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS33C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-33

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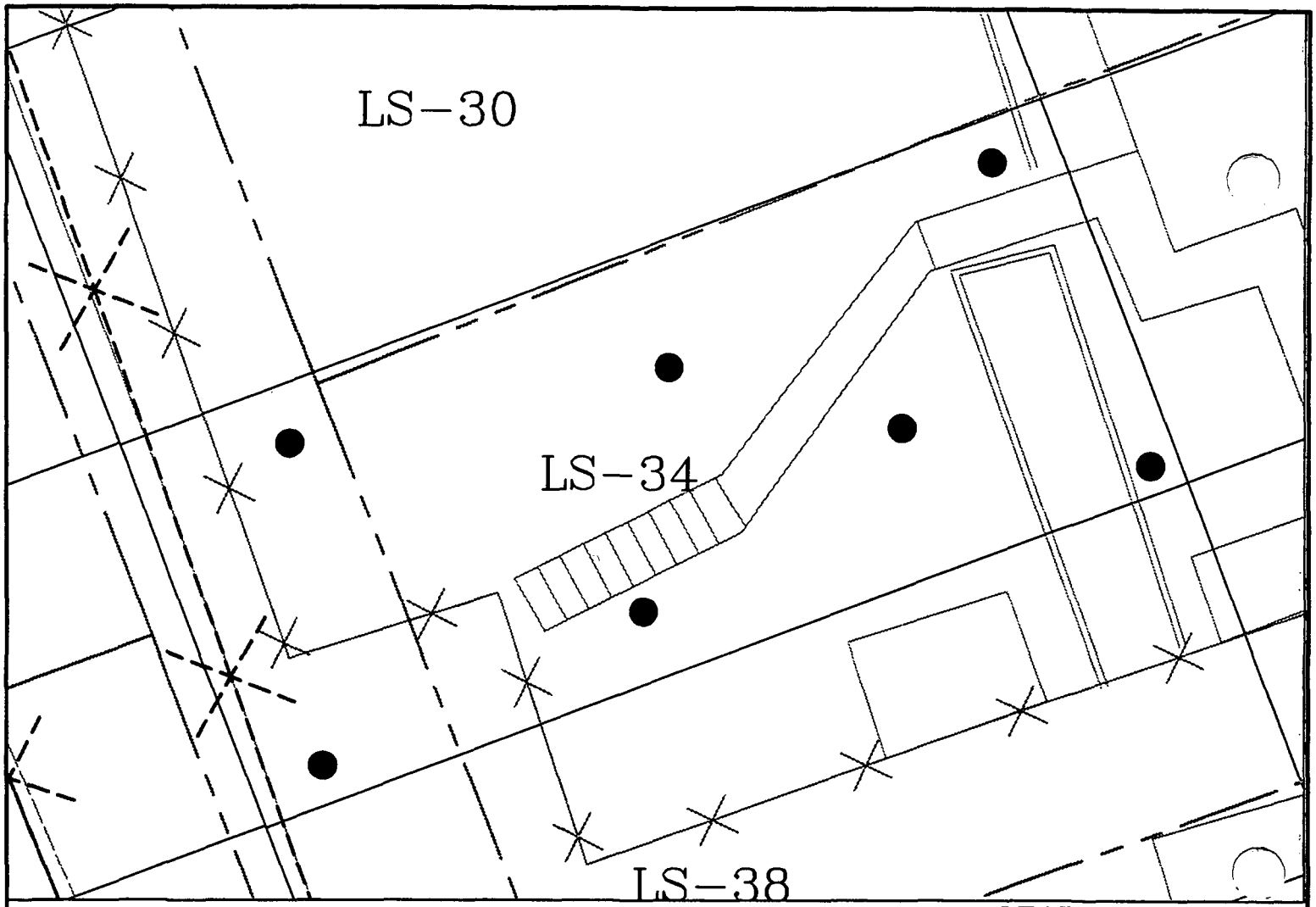

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2420	IAFA-P1A-F-LS34-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-34 (1489.80 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY 00PG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS34C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-34
REV

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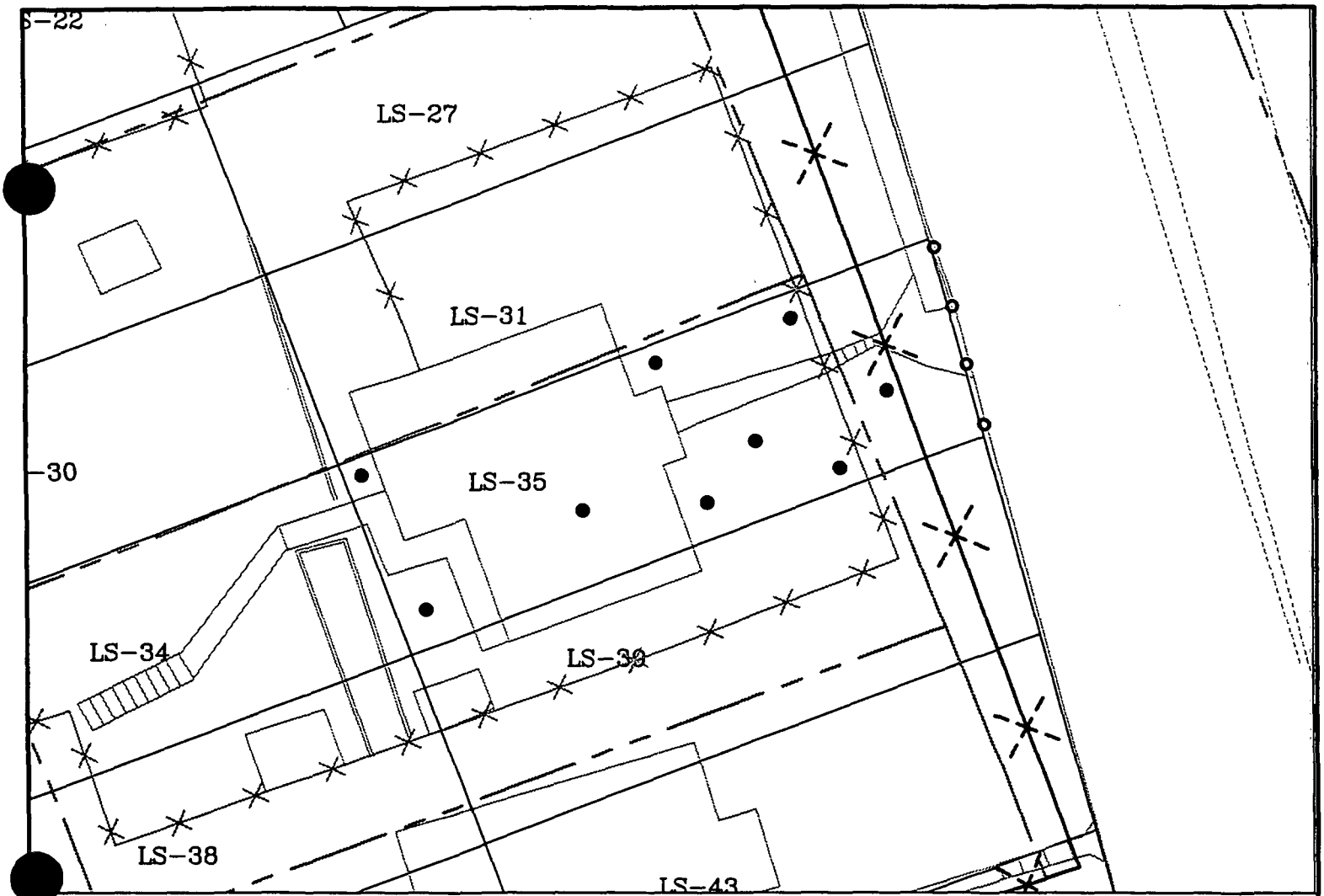

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2045	IAFA-P1A-F-LS35-C-1
PERIMETER SURFACE	1410	IAFA-P1A-P-LS35-C-A-1
PERIMETER 2' DEPTH	411	IAFA-P1A-P-LS35-C-B-1
PERIMETER 4' DEPTH	1677	IAFA-P1A-P-LS35-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-35 (1915 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY OOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS35C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
LS-35
REV

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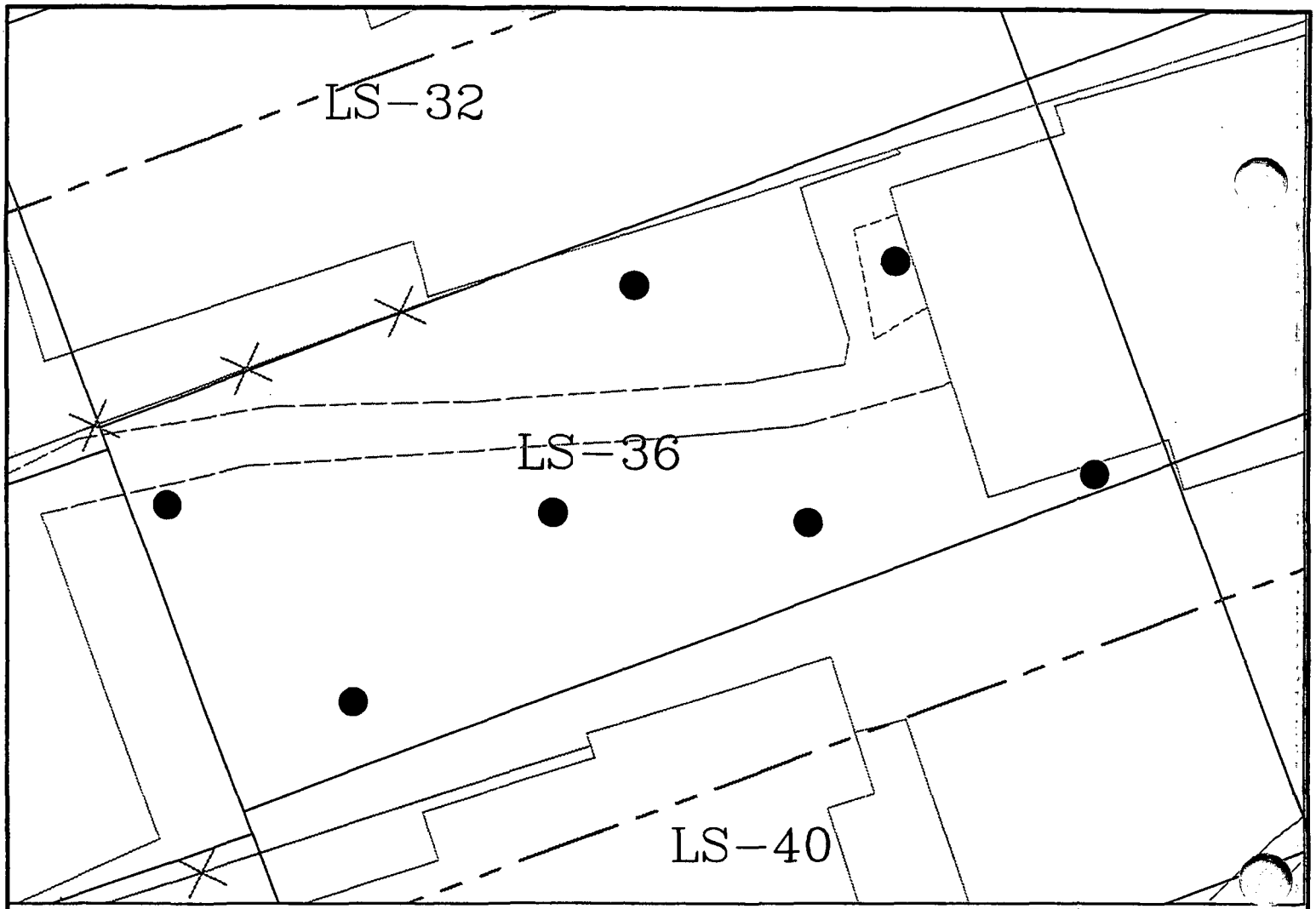

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2634	IAFA-P1A-F-LS36-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-36 (1493.40 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY DDPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS36C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-36

REV

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1st UPDATE
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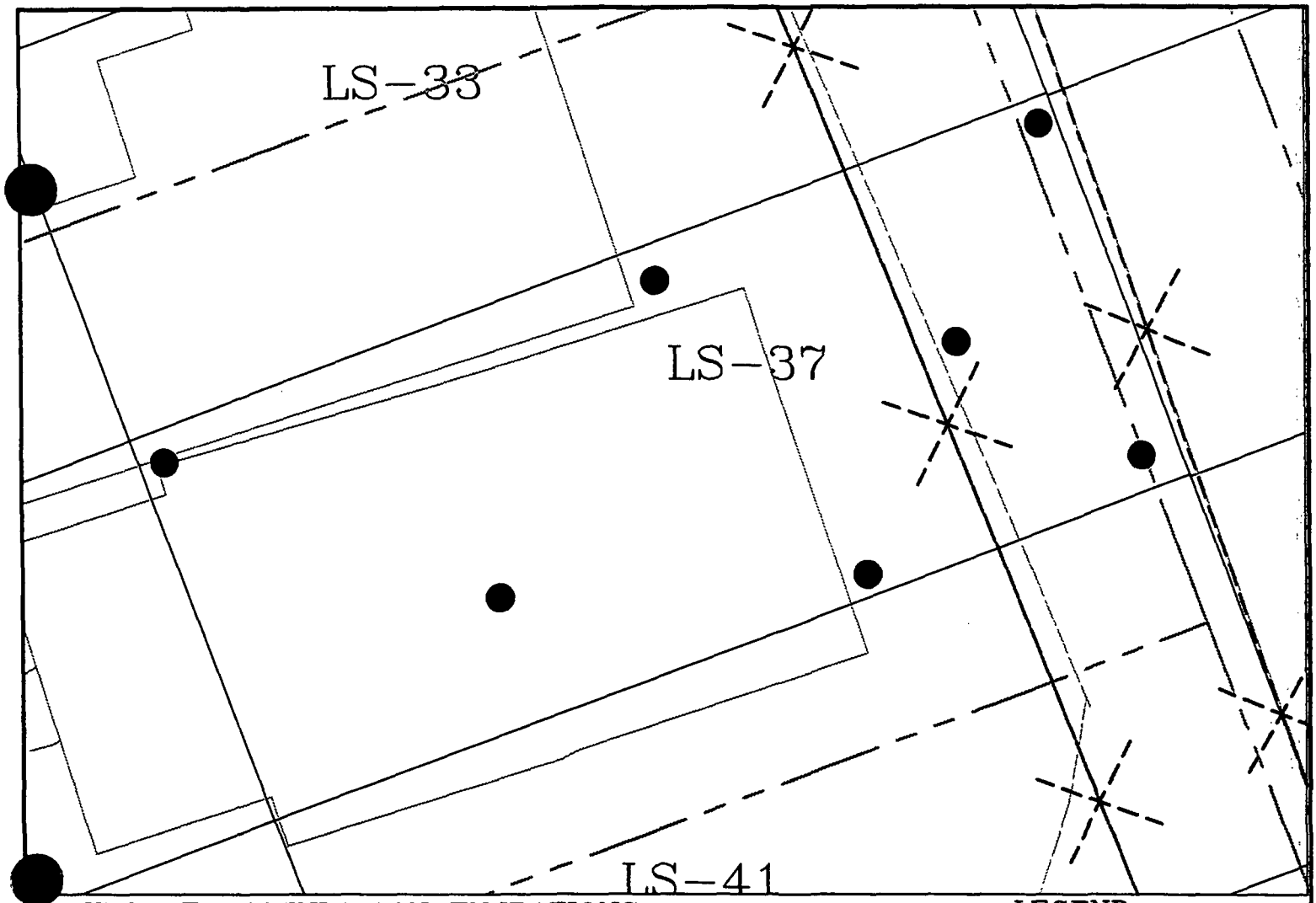

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1486	IAFA-P1A-F-LS37-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-37 (1483.60 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
1st			
2nd			
3rd			
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Project :
DRAWN BY 00PG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS37C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-37

REV △

NORTH

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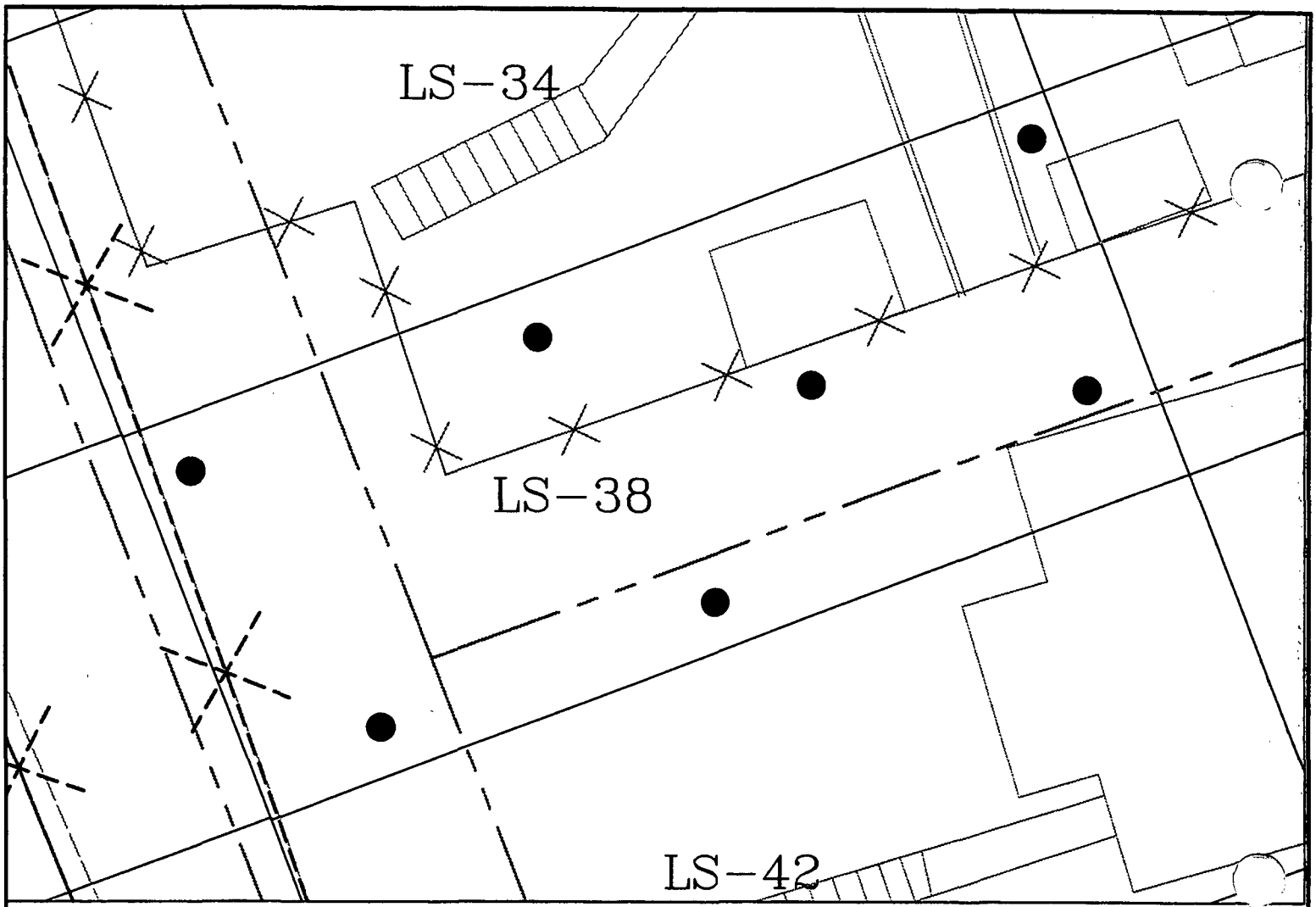

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2001	IAFA-P1A-F-LS38-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-38 (1486.30 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :		
DRAWN BY	OOPG	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS38C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-38

REV △

NORTH

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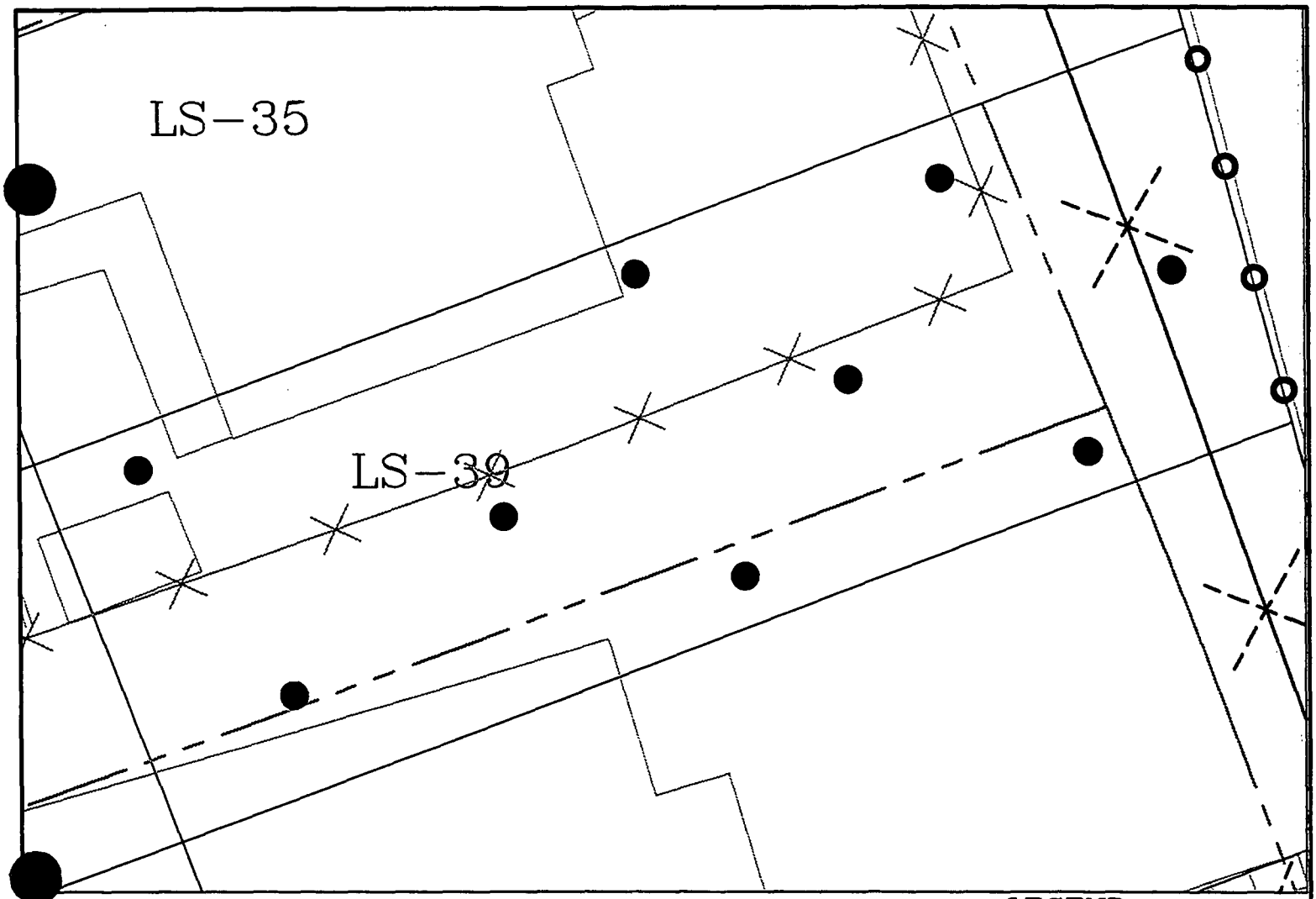

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2339	IAFA-P1A-F-LS39-C-1
PERIMETER SURFACE	167	IAFA-P1A-P-LS39-C-A-1
PERIMETER 2' DEPTH	1131	IAFA-P1A-P-LS39-C-B-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-39 (1870 SQUARE FEET)
PHASE 1 - REMOVAL A (2 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
1st			
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Project :		
DRAWN BY	OOPG	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS39C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-39

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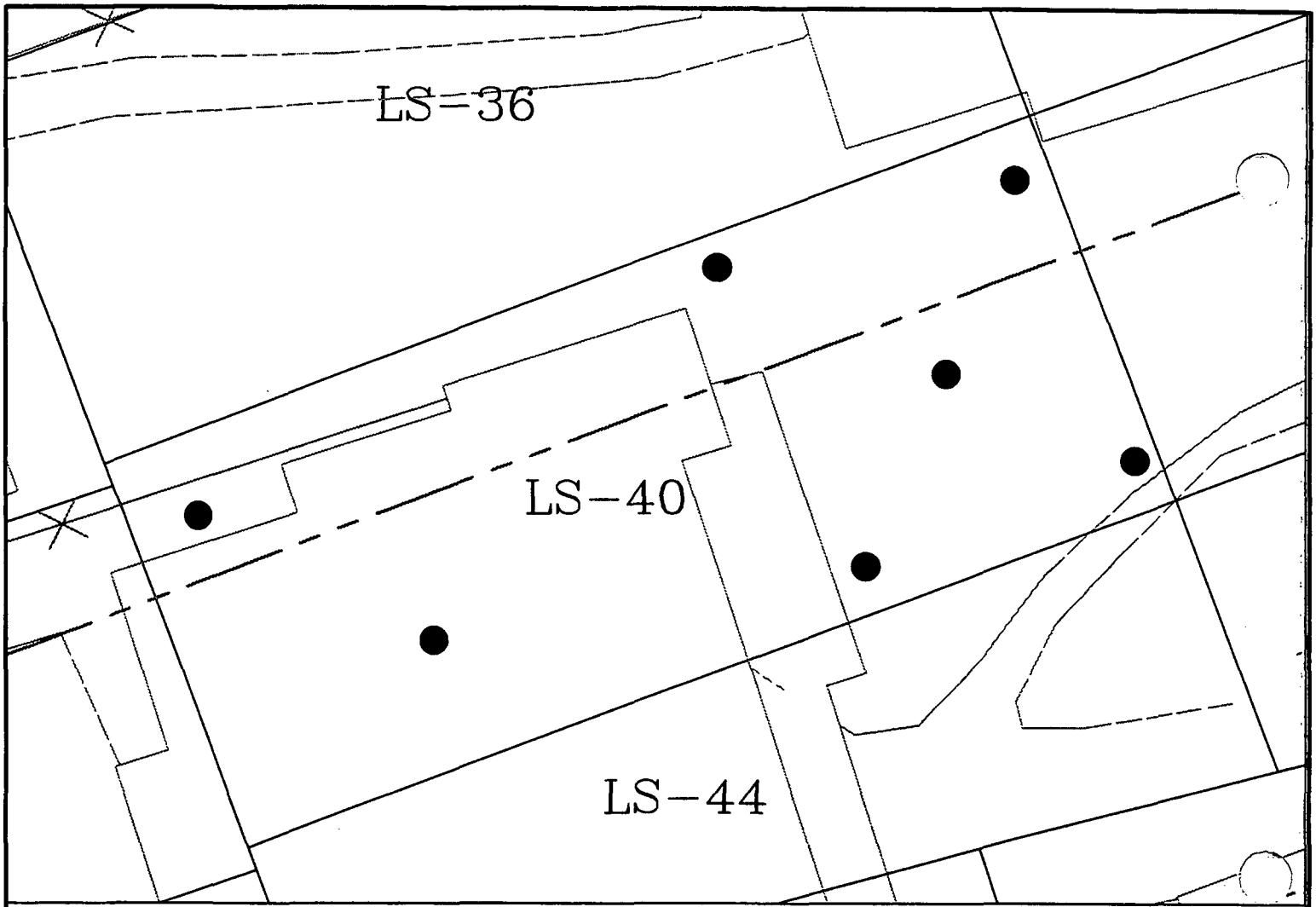

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2320	IAFA-P1A-F-LS40-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-40 (1483.50 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
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Project :		
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CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407
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DRAWING FILE NUMBER
TAC LS40C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-40

REV △

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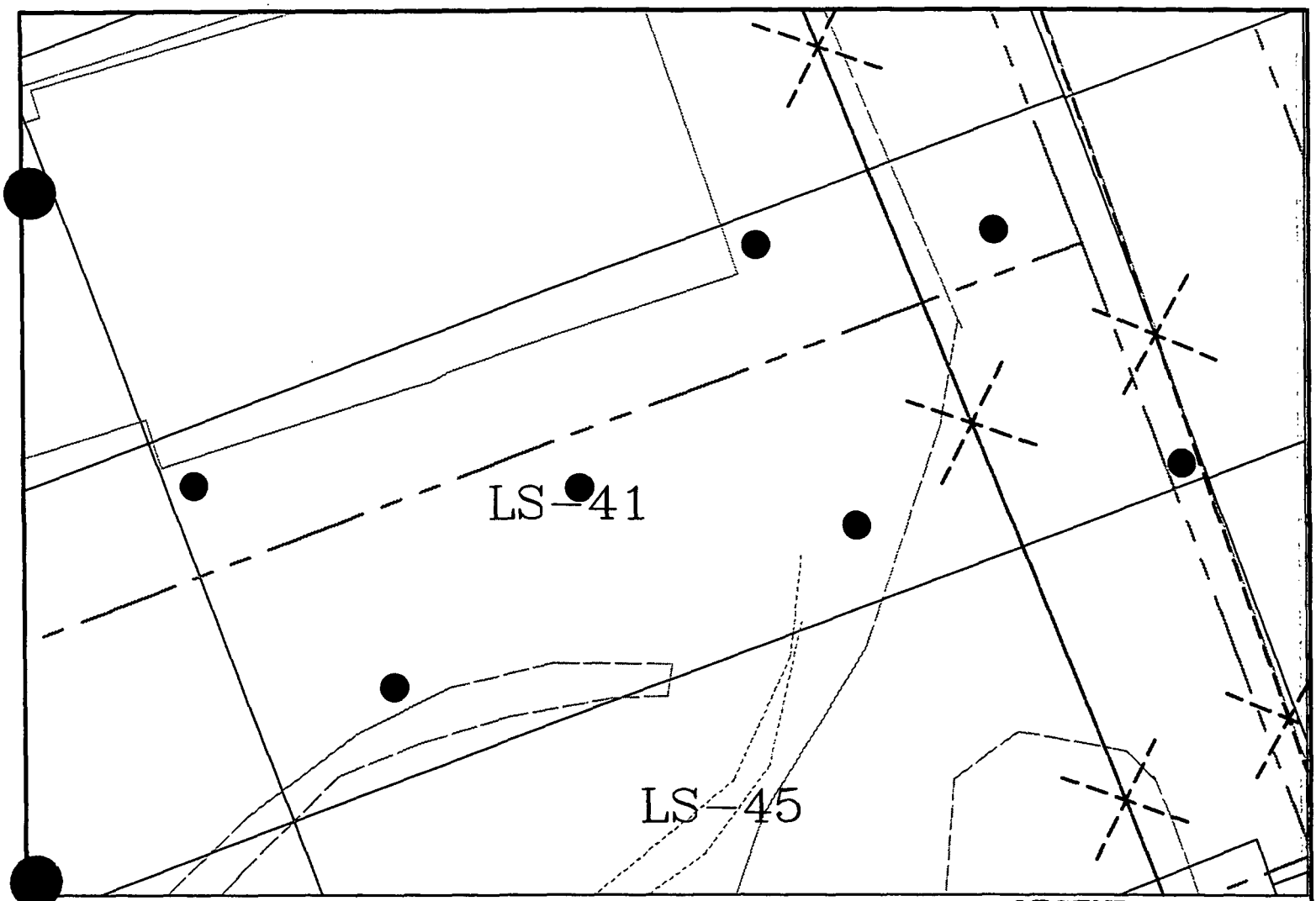

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2633	IAFA-P1A-F-LS41-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-41 (1489.50 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
1st			
2nd			
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Project :		
DRAWN BY	GGPG	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS41C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-41

REV △

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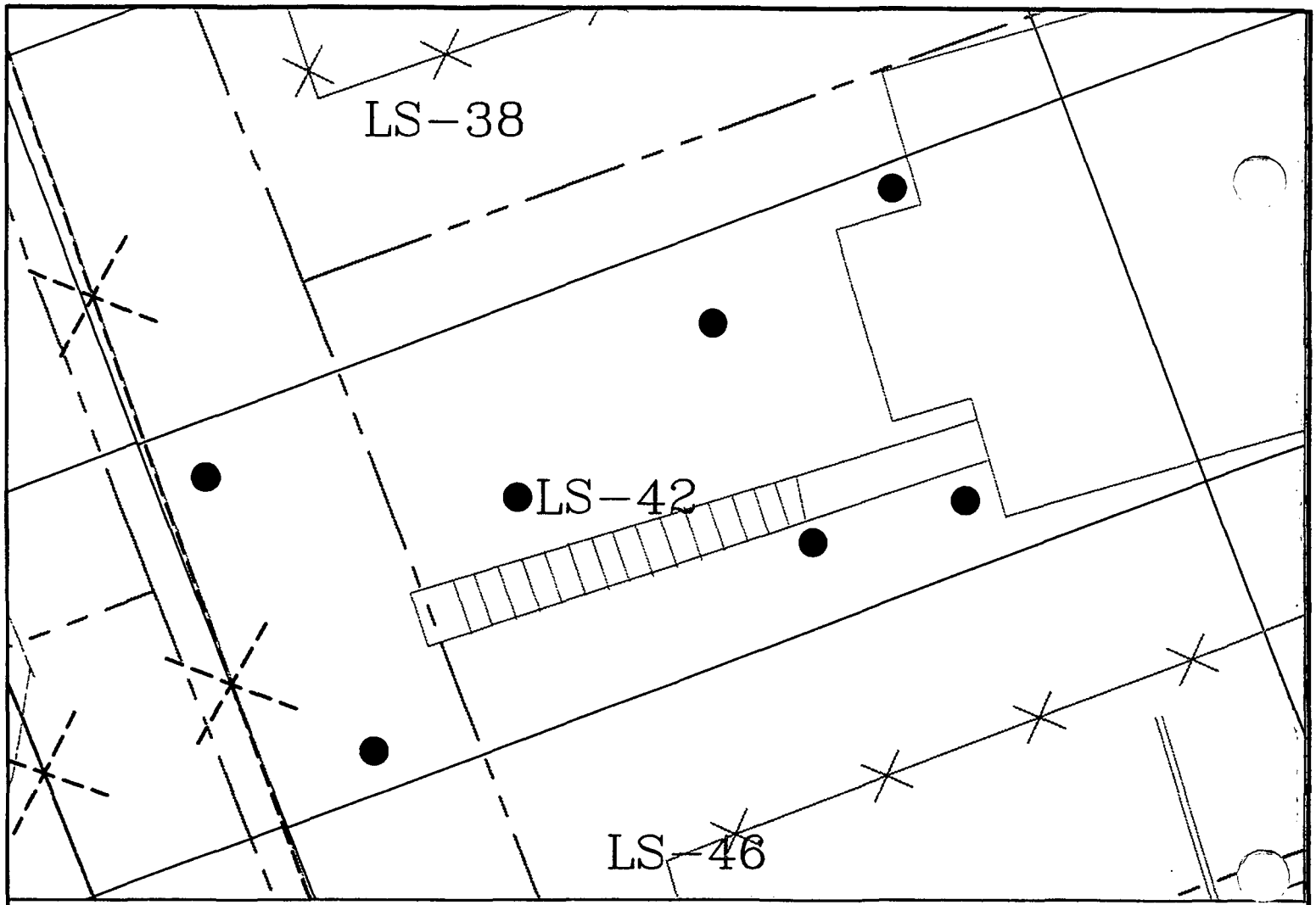

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2375	IAFA-P1A-F-LS42-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-42 (1503.60 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
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4th		

Project :
DRAWN BY OOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407
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DRAWING FILE NUMBER
TAC LS42C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-42

REV △

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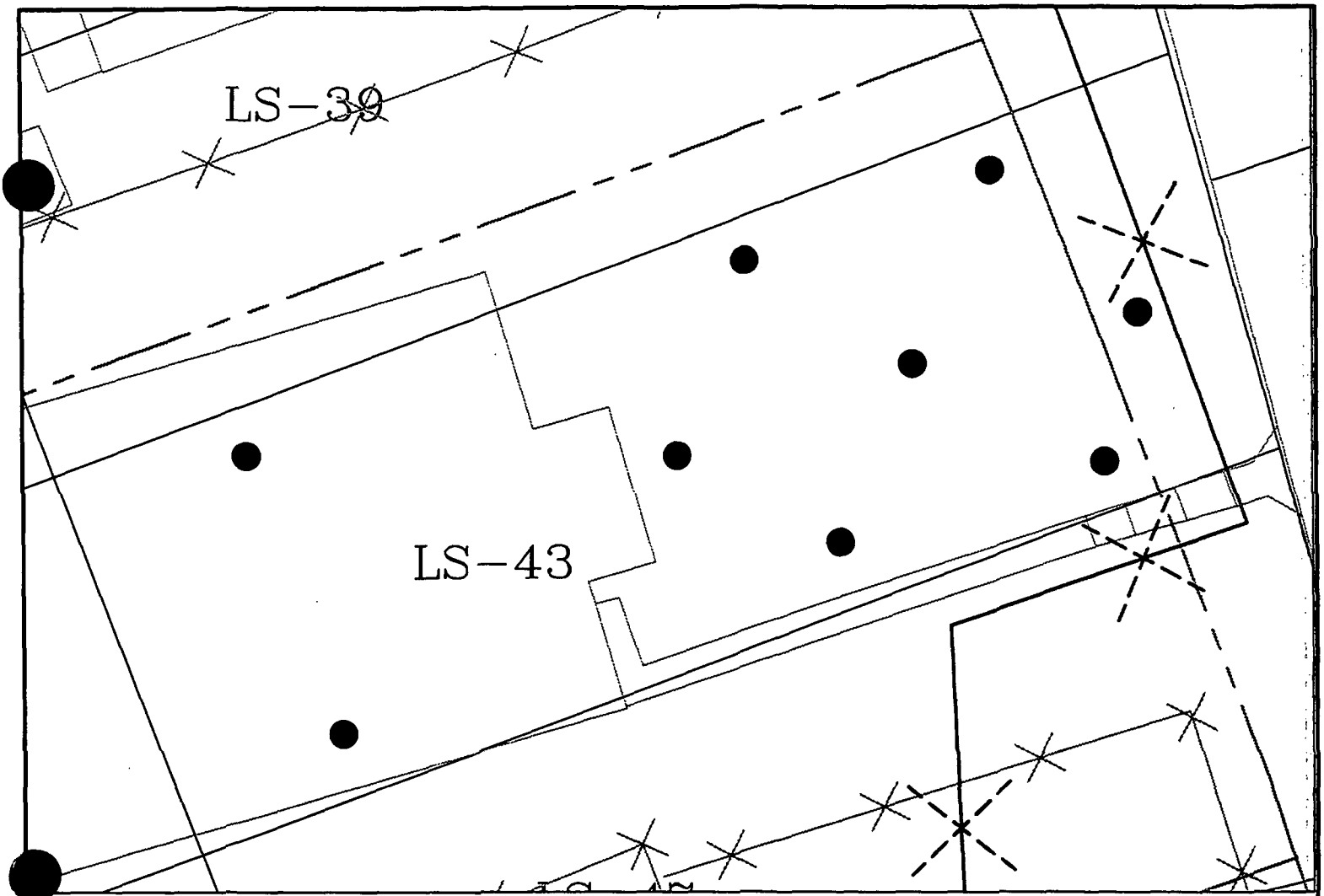

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2052	IAFA-P1A-F-LS43-C-1

The LS-43 Perimeter was excavated and sampled as part of the East Marine View Drive excavation (EMV-1).

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-43 (1811 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY: OOPC
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS43C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-43
REV

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TAC UPDATE
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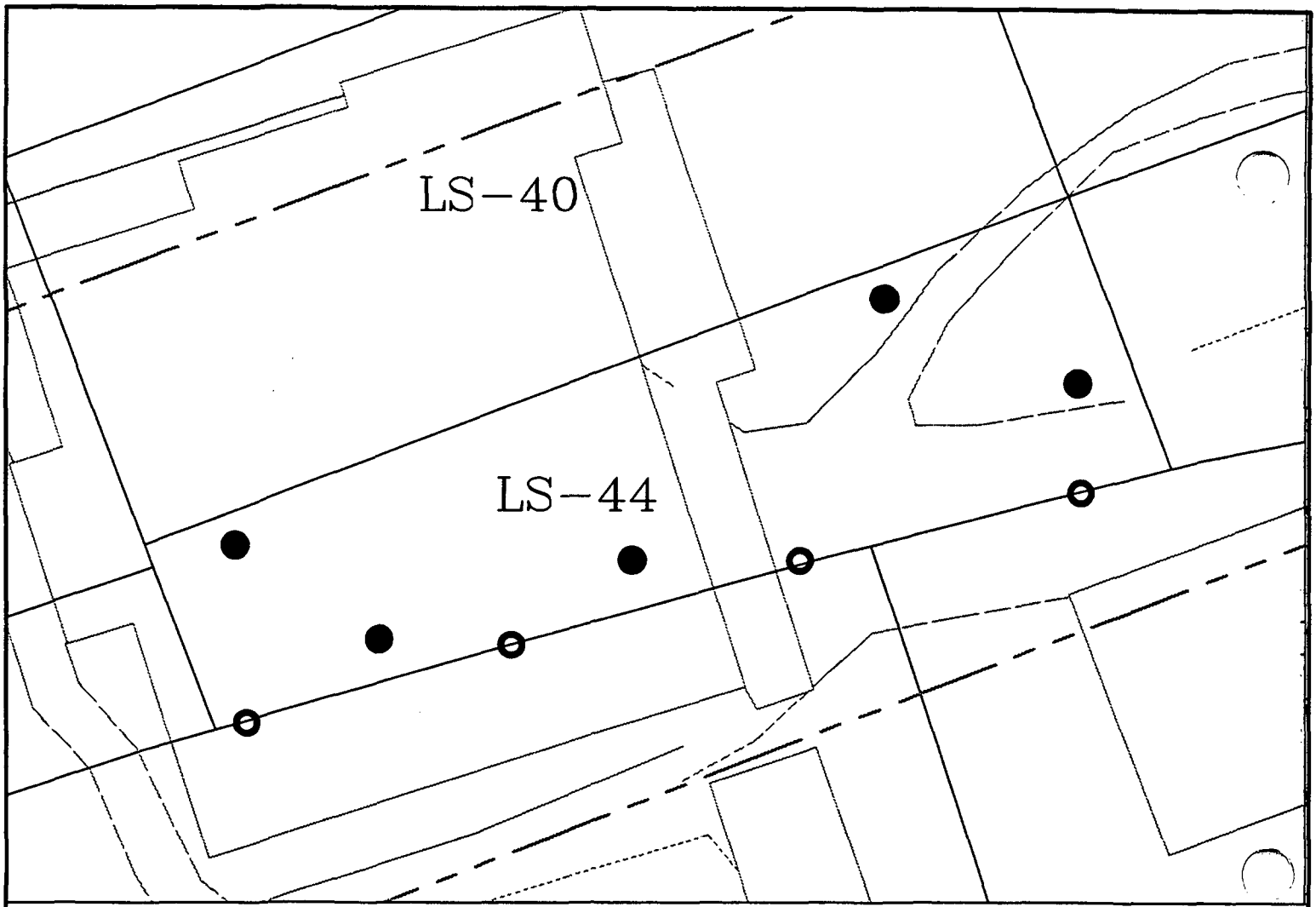

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	564	IAFA-P1A-F-LS44-C-1
PERIMETER SURFACE	1463	IAFA-P1A-P-LS44-C-A-1
PERIMETER 2' DEPTH	2450	IAFA-P1A-P-LS44-C-B-1
PERIMETER 4' DEPTH	1751	IAFA-P1A-P-LS44-C-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-44 (890.60 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
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Project :
DRAWN BY 00PG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407
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DRAWING FILE NUMBER
TAC LS44C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-44

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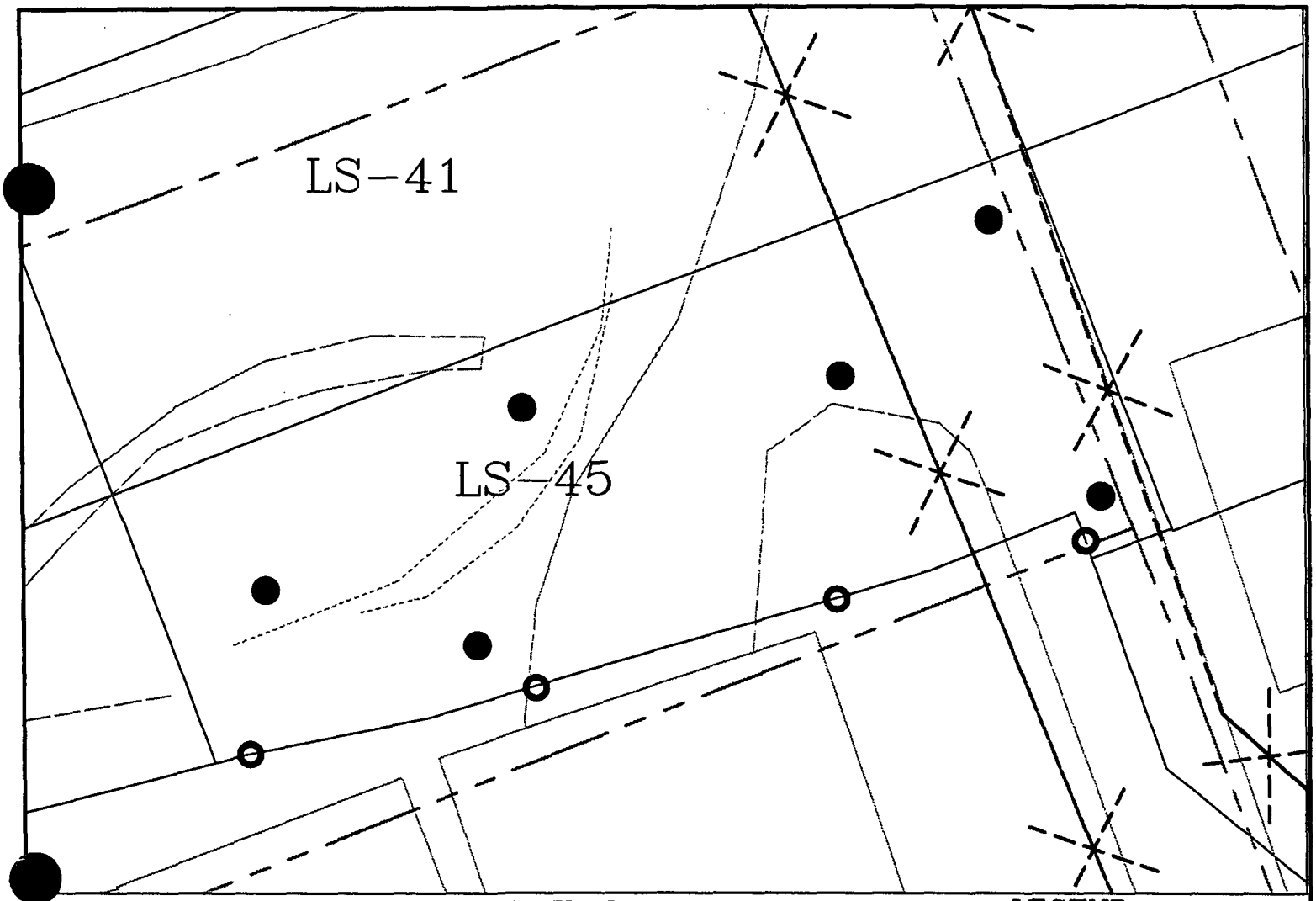

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1344	IAFA-P1A-F-LS45-C-1
PERIMETER SURFACE	1764	IAFA-P1A-P-LS45-C-A-1
PERIMETER 2' DEPTH	1408	IAFA-P1A-P-LS45-C-B-1
PERIMETER 4' DEPTH	1682	IAFA-P1A-P-LS45-C-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-45 (1264.50 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
1st		
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Project :
DRAWN BY OOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS45C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-45

REV

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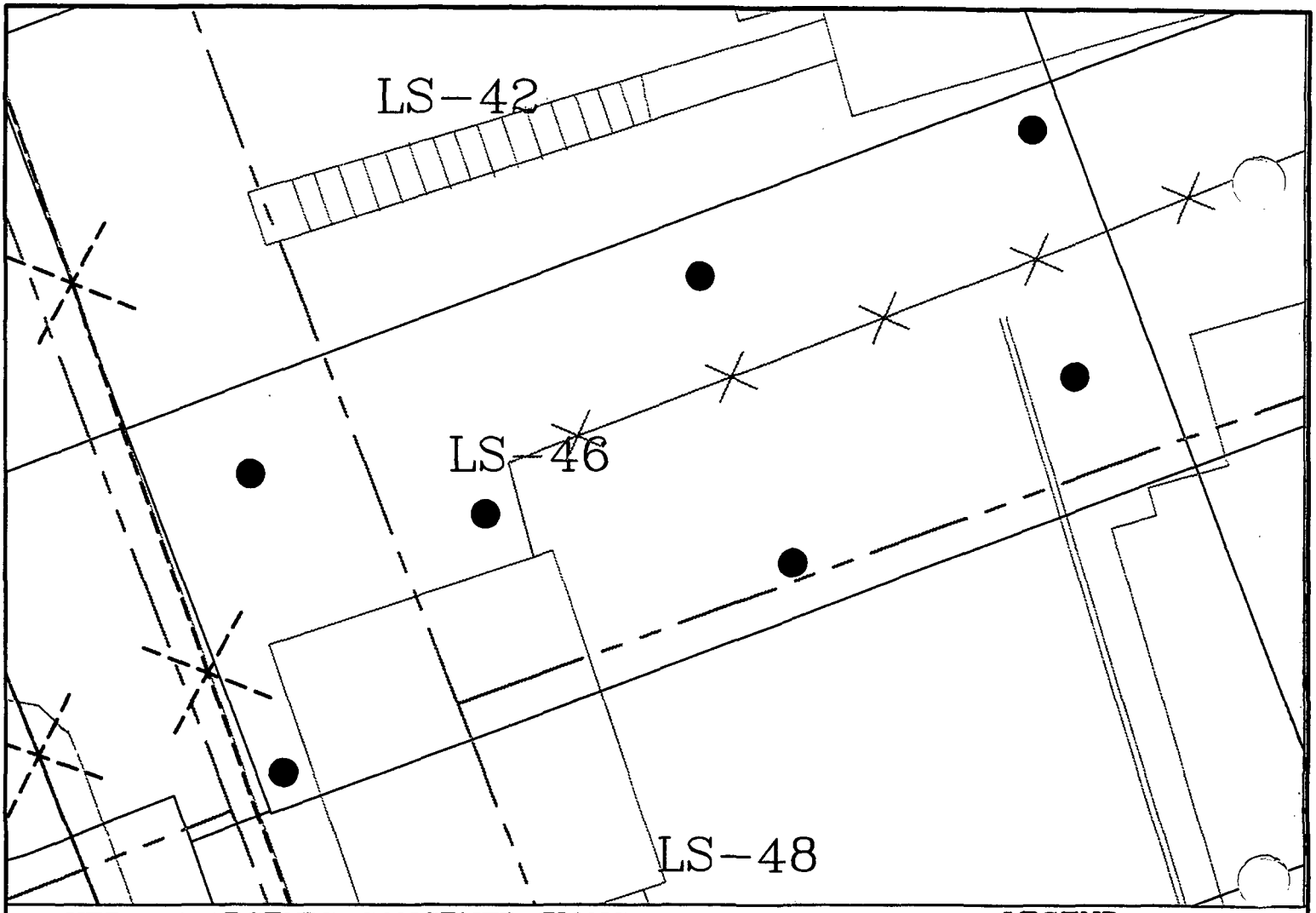

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2361	IAFA-P1A-F-LS46-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-46 (1498.00 SQUARE FEET)
PHASE 1 - REMOVAL A (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
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Project :		
DRAWN BY	OOPG	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS46C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-46

REV △

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1st UPDATE:
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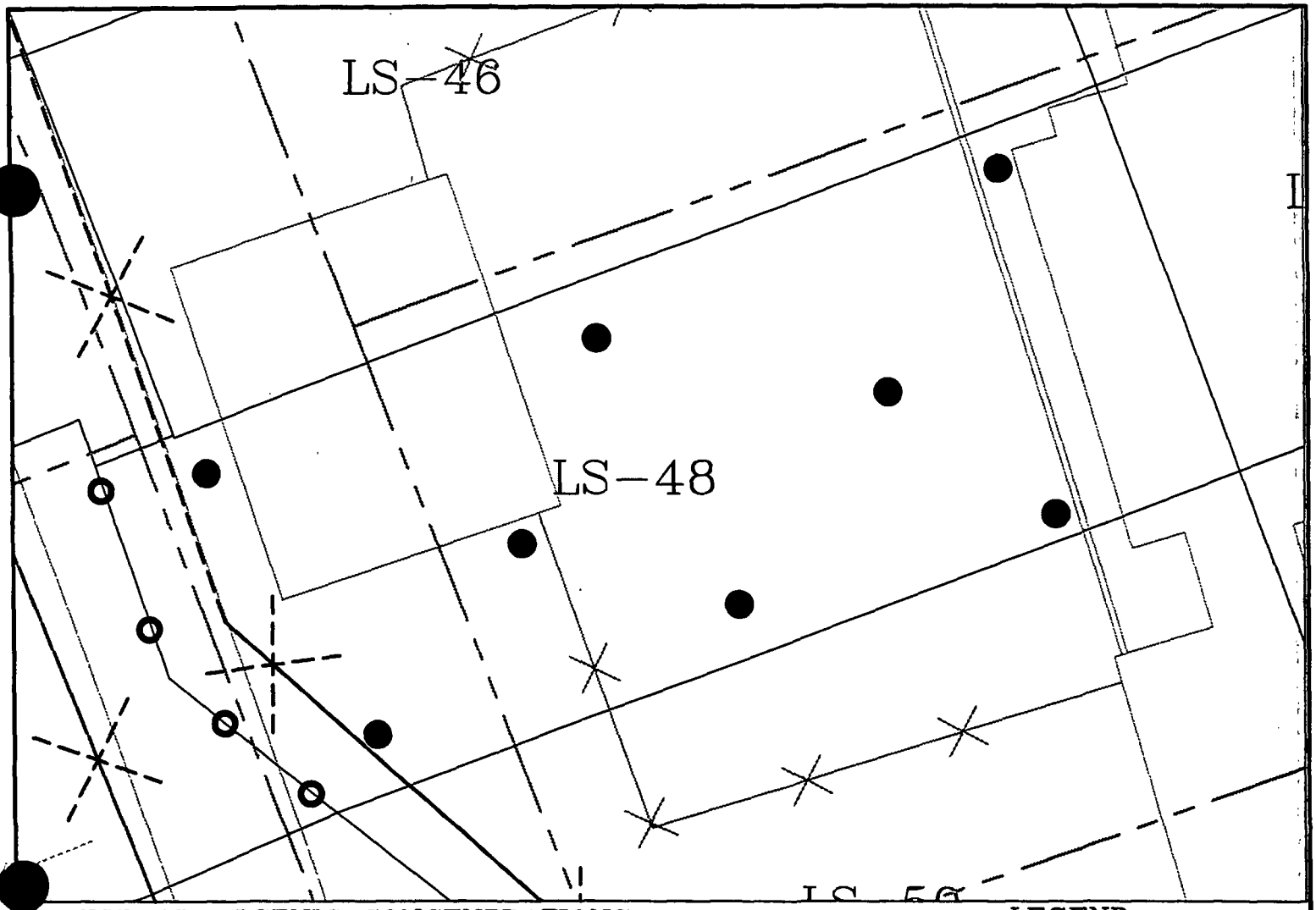

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1815	IAFA-P1A-F-LS48-C-1
PERIMETER SURFACE	719	IAFA-P1A-P-LS48-C-A-2
PERIMETER 2' DEPTH	1538	IAFA-P1A-P-LS48-C-B-2
PERIMETER 4' DEPTH	2379	IAFA-P1A-P-LS48-C-C-2
PERIMETER 6' DEPTH	634	IAFA-P1A-P-LS48-C-D-2

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-48 (1601.30 SQUARE FEET)
PHASE 1 - REMOVAL A (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
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Project :
DRAWN BY 00PG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS48C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
LS-48
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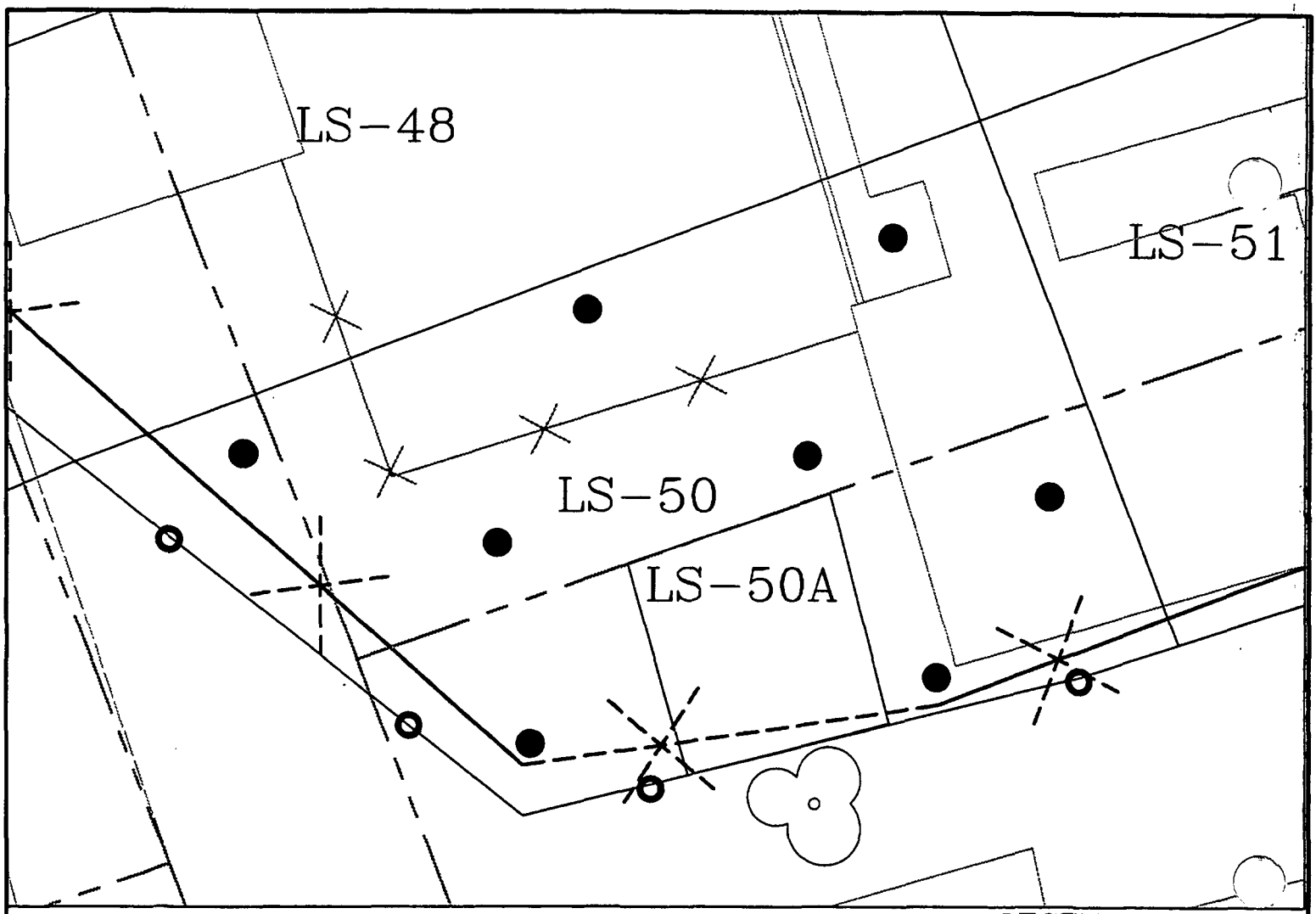

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2044	IAFA-P1A-F-LS50-C-2
PERIMETER SURFACE	1780	IAFA-P1A-P-LS50-C-A-1
PERIMETER 2' DEPTH	765	IAFA-P1A-P-LS50-C-B-1
PERIMETER 4' DEPTH	190	IAFA-P1A-P-LS50-C-C-1
PERIMETER 6' DEPTH	917	IAFA-P1A-P-LS50-C-D-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-50 (1599.00 SQUARE FEET)
PHASE 1 - REMOVAL A (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
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Project :
DRAWN BY OOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS50C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-50

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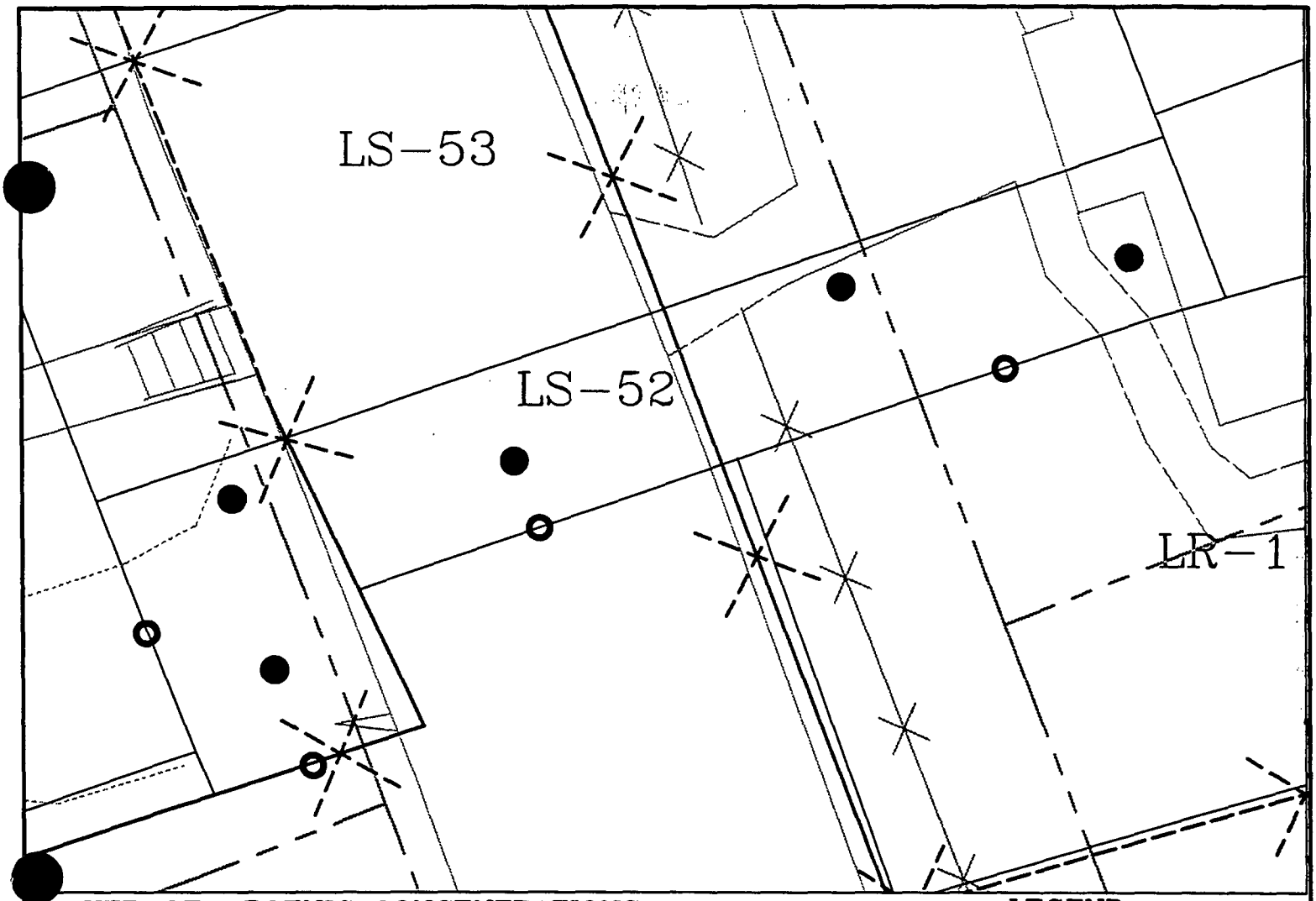

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	660	IAFA-P1A-F-LS52-C-1
PERIMETER SURFACE	941	IAFA-P1A-P-LS52-C-A-1
PERIMETER 2' DEPTH	1180	IAFA-P1A-P-LS52-C-B-1
PERIMETER 4' DEPTH	591	IAFA-P1A-P-LS52-C-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-52 (840.60 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
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Project :		
DRAWN BY	OOPC	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407
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DRAWING FILE NUMBER
TAC LS52C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-52

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1st UPDATE:
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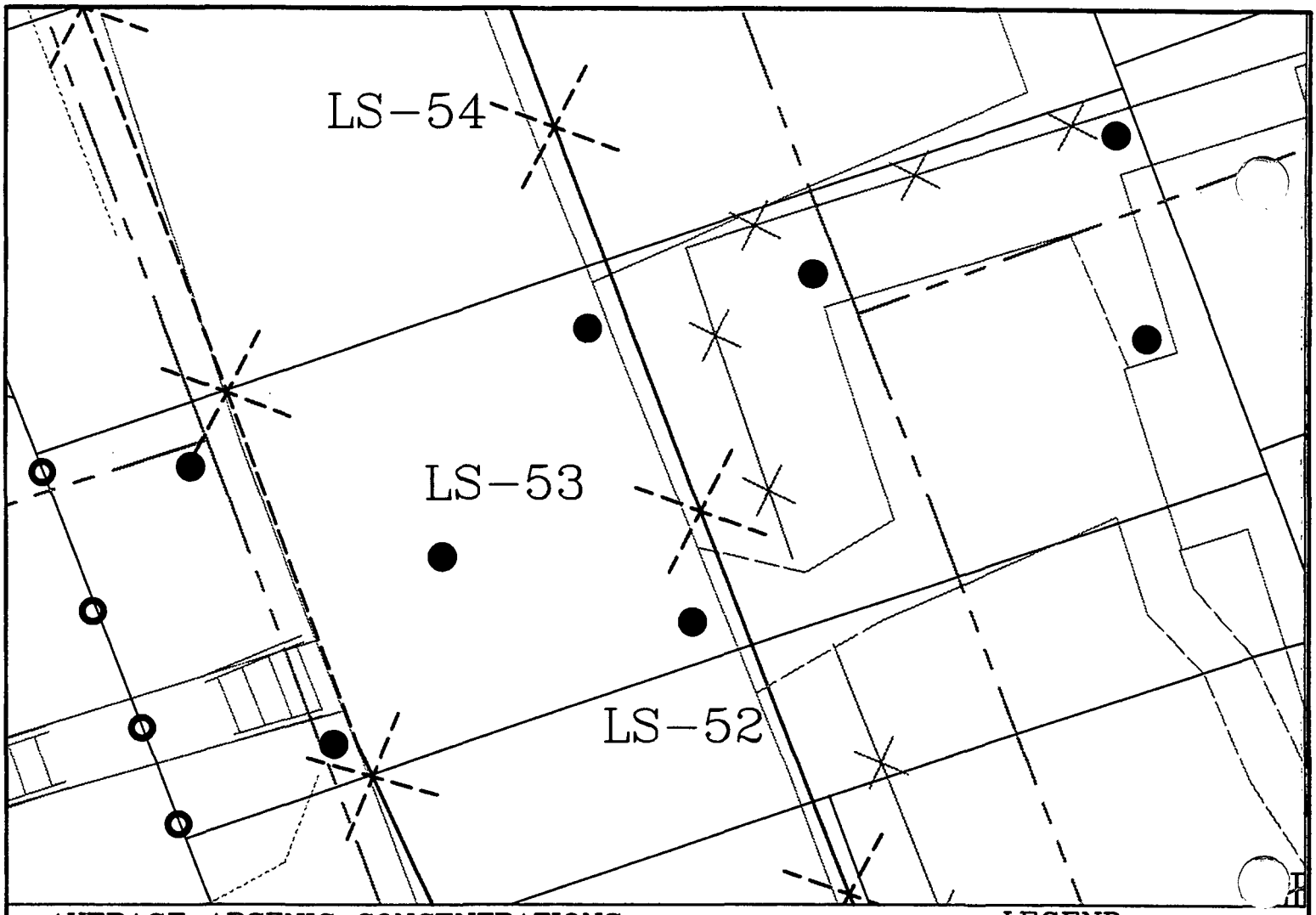

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	914	IAFA-P1A-F-LS53-C-1
PERIMETER SURFACE	508	IAFA-P1A-P-LS53-C-A-1
PERIMETER 2' DEPTH	300	IAFA-P1A-P-LS53-C-B-1
PERIMETER 4' DEPTH	854	IAFA-P1A-P-LS53-C-C-1
PERIMETER 6' DEPTH	145	IAFA-P1A-P-LS53-C-D-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-53 (1739.00 SQUARE FEET)
PHASE 1 - REMOVAL A (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
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Project :		
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APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407
5219 North Shirley Street, Suite 100
(253) 759-4470

DRAWING FILE NUMBER
TAC LS53C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-53

REV △

NORTH

1st UPDATE:
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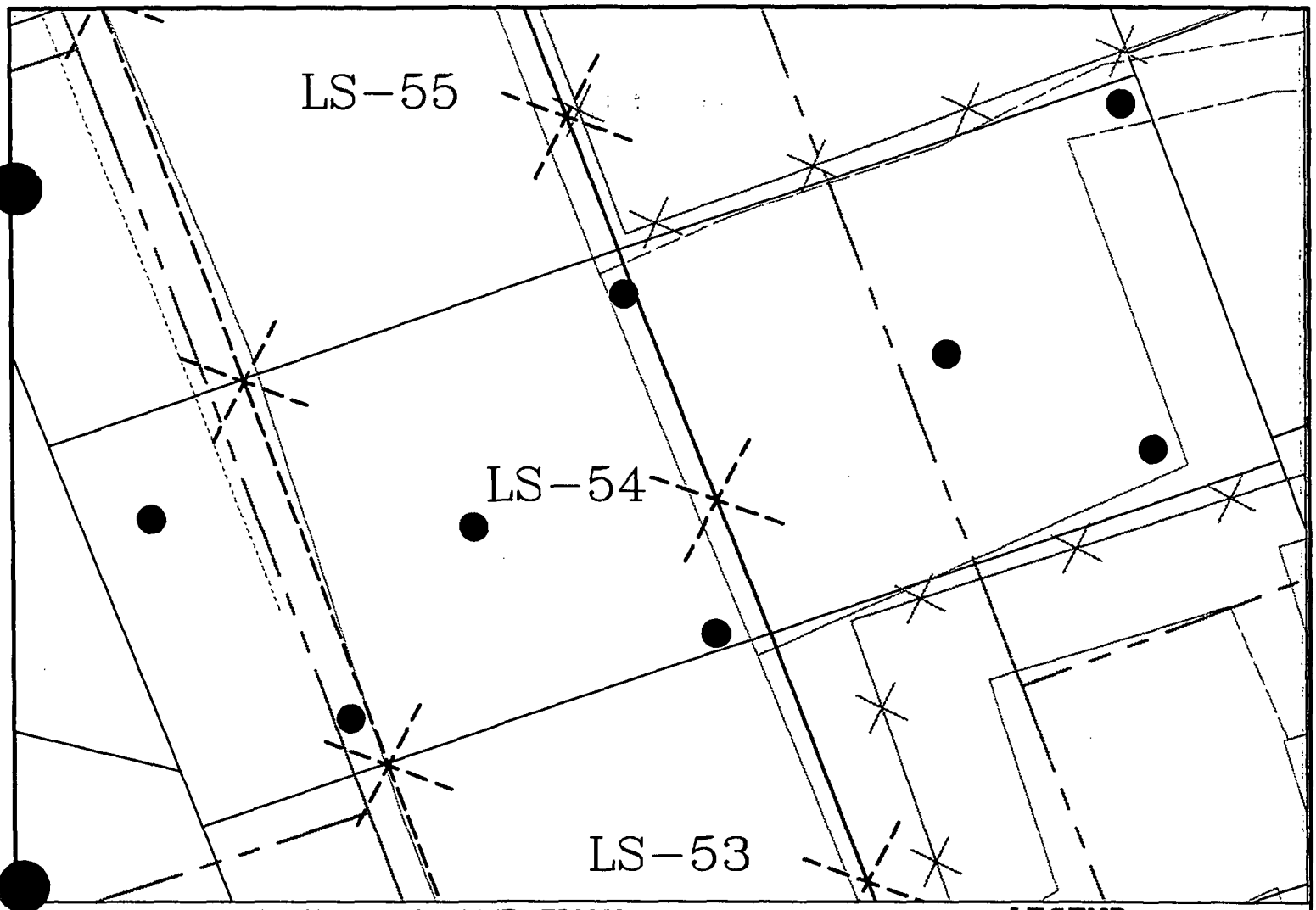

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1880	IAFA-P1A-F-LS54-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-54 (1741.80 SQUARE FEET)
PHASE 1 - REMOVAL A (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
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Project :
DRAWN BY DDPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS54C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-54

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1st UPDATE:
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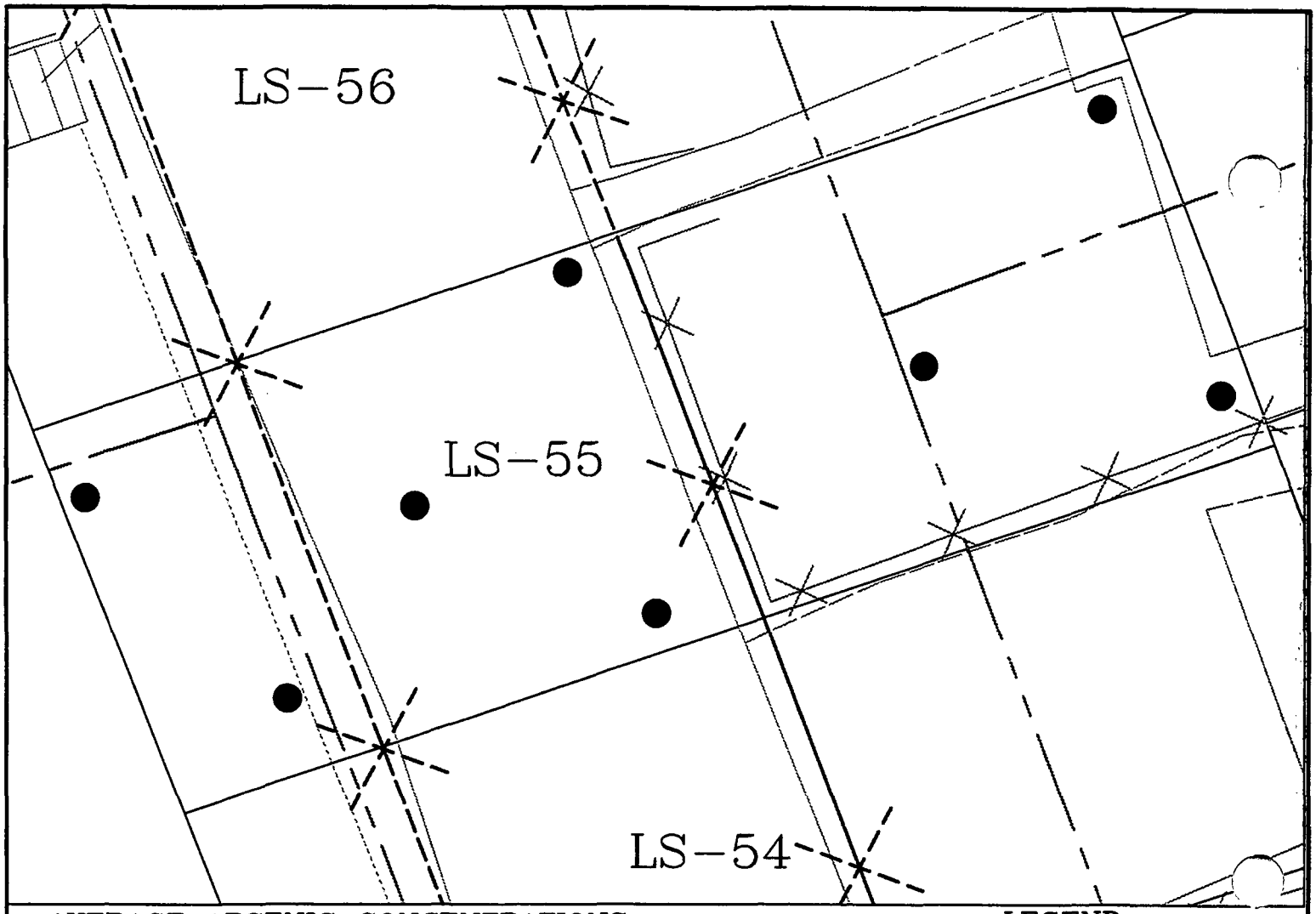

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1519	IAFA-P1A-F-LS55-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-55 (1748.60 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
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Project :
DRAWN BY 00PC
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407
2819 North Shirley Street, Suite 100
(253) 759-4470

DRAWING FILE NUMBER
TAC LS55C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
LS-55
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1st UPDATE:
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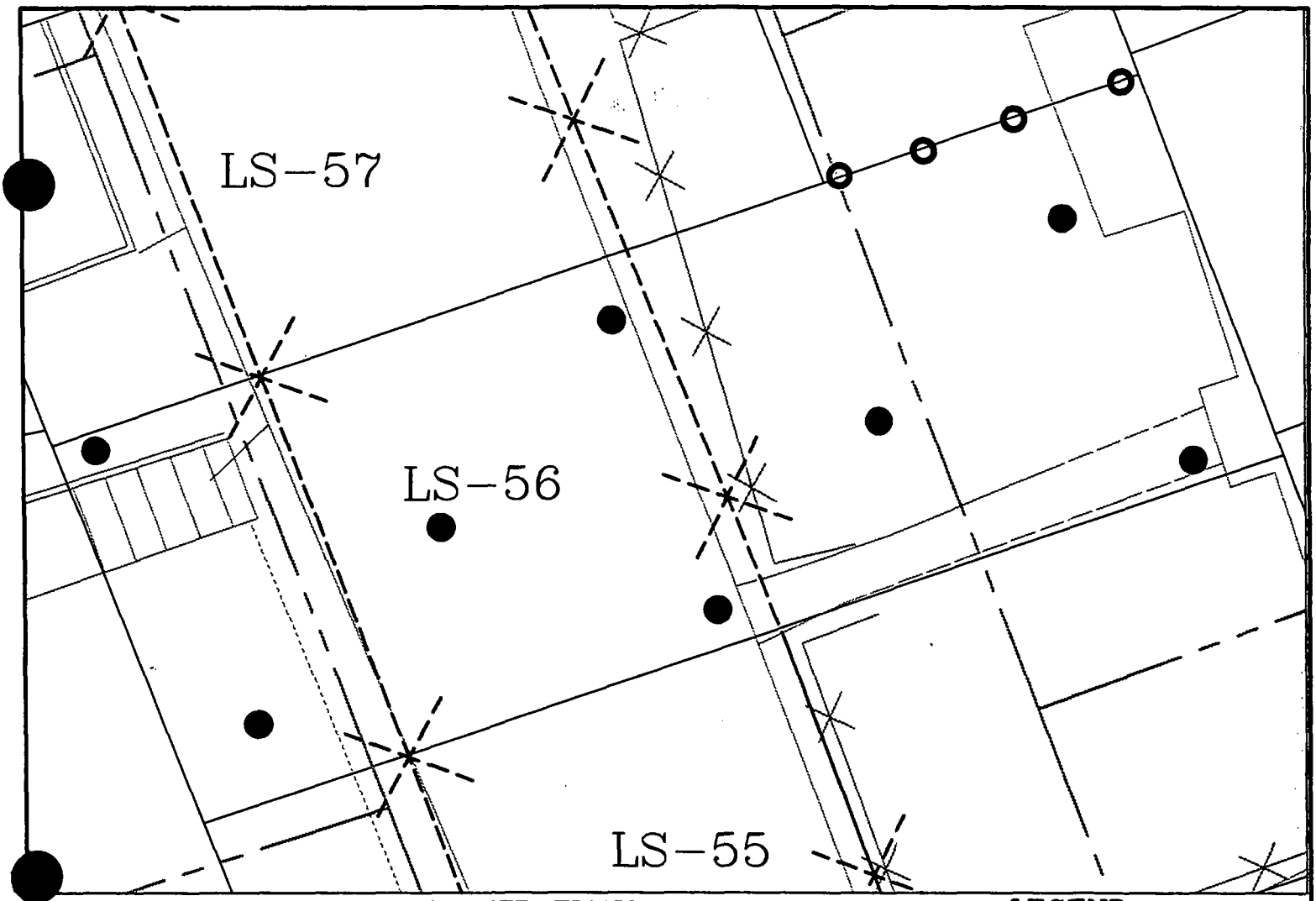

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2145	IAFA-P1A-F-LS56-C-1
PERIMETER SURFACE	1435	IAFA-P1A-P-LS56-C-A-3
PERIMETER 2' DEPTH	353	IAFA-P1A-P-LS56-C-B-3
PERIMETER 4' DEPTH	295	IAFA-P1A-P-LS56-C-C-3

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-56 (1762.50 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS	BY	DATE
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Project :
DRAWN BY: OOPC
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407
(253) 752-5470

DRAWING FILE NUMBER: TAC LS56C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-56
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TAC UPDATE
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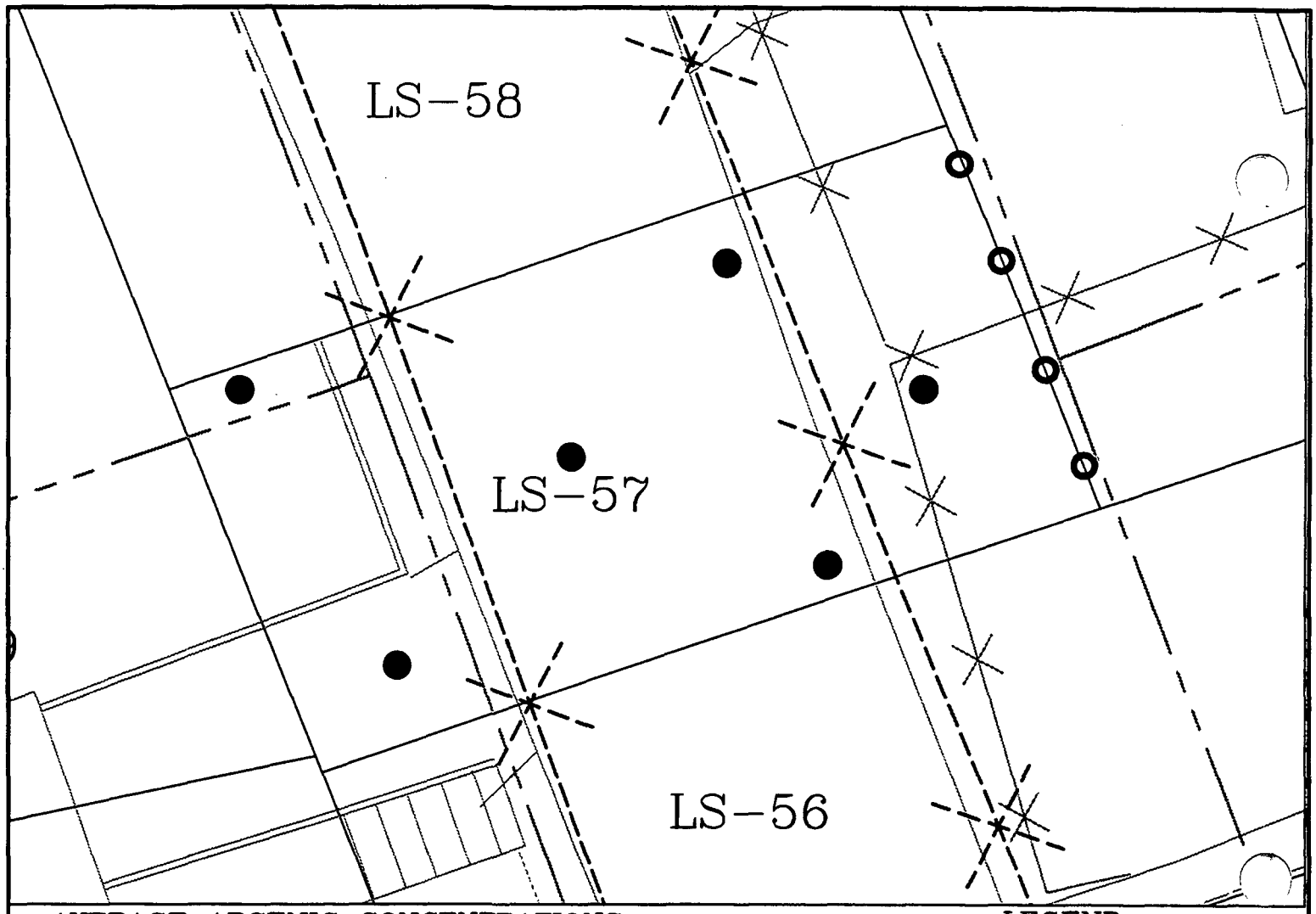

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2045	IAFA-P1A-F-LS57-C-2
PERIMETER SURFACE	1947	IAFA-P1A-P-LS57-C-A-3
PERIMETER 2' DEPTH	721	IAFA-P1A-P-LS57-C-B-3
PERIMETER 4' DEPTH	145	IAFA-P1A-P-LS57-C-C-3

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-57 (1250.00 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
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Project :
DRAWN BY OOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS57C4
AUTOCAD REL. 8000 DRAWING (DWG)
SHEET NUMBER
LS-57
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1st UPDATE:
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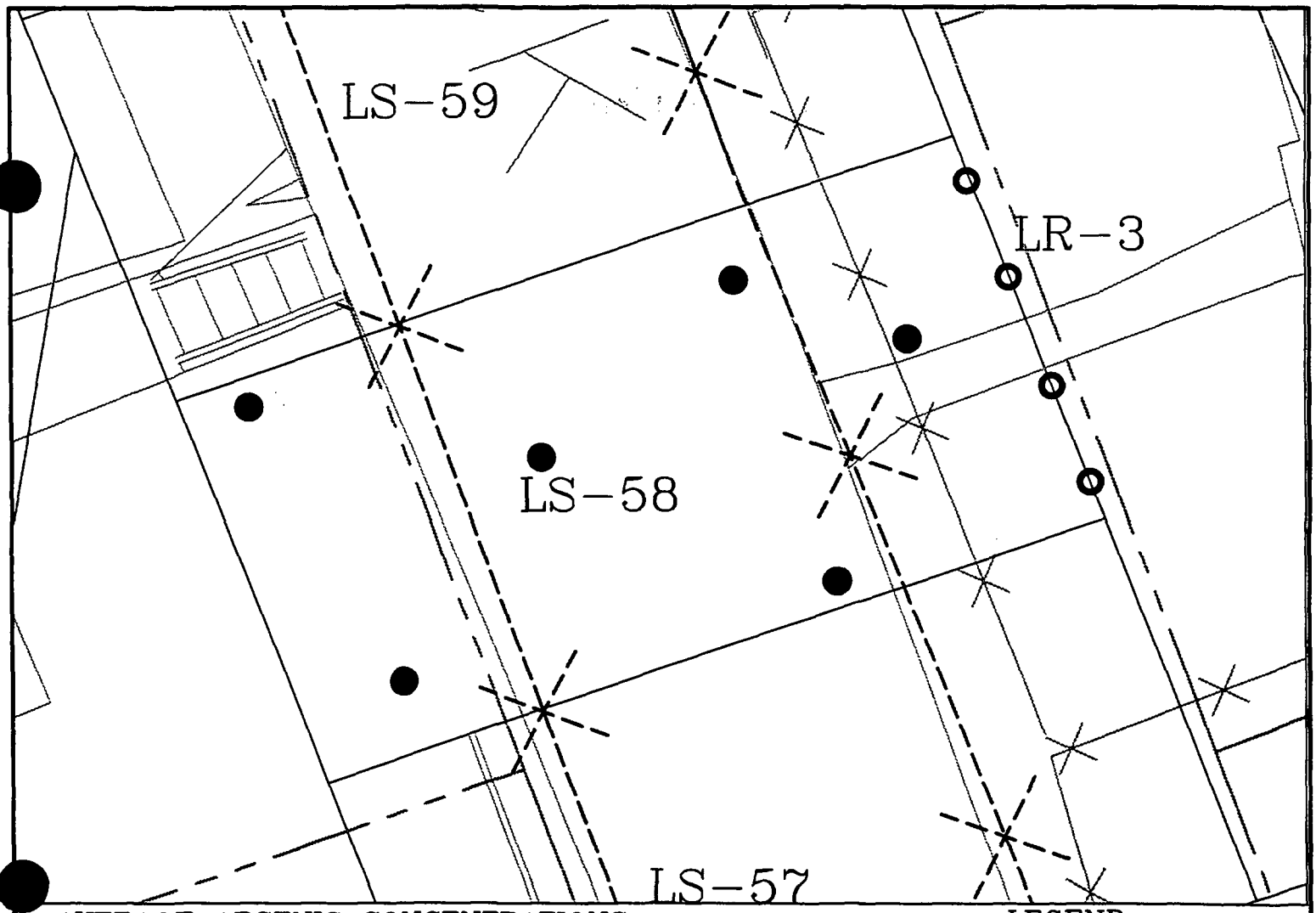

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2627	IAFA-P1A-F-LS58-C-1
PERIMETER SURFACE	2426	IAFA-P1A-P-LS58-C-A-1
PERIMETER 2' DEPTH	1266	IAFA-P1A-P-LS58-C-B-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-58 (1245.50 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
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CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS58C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-58

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1st UPDATE:
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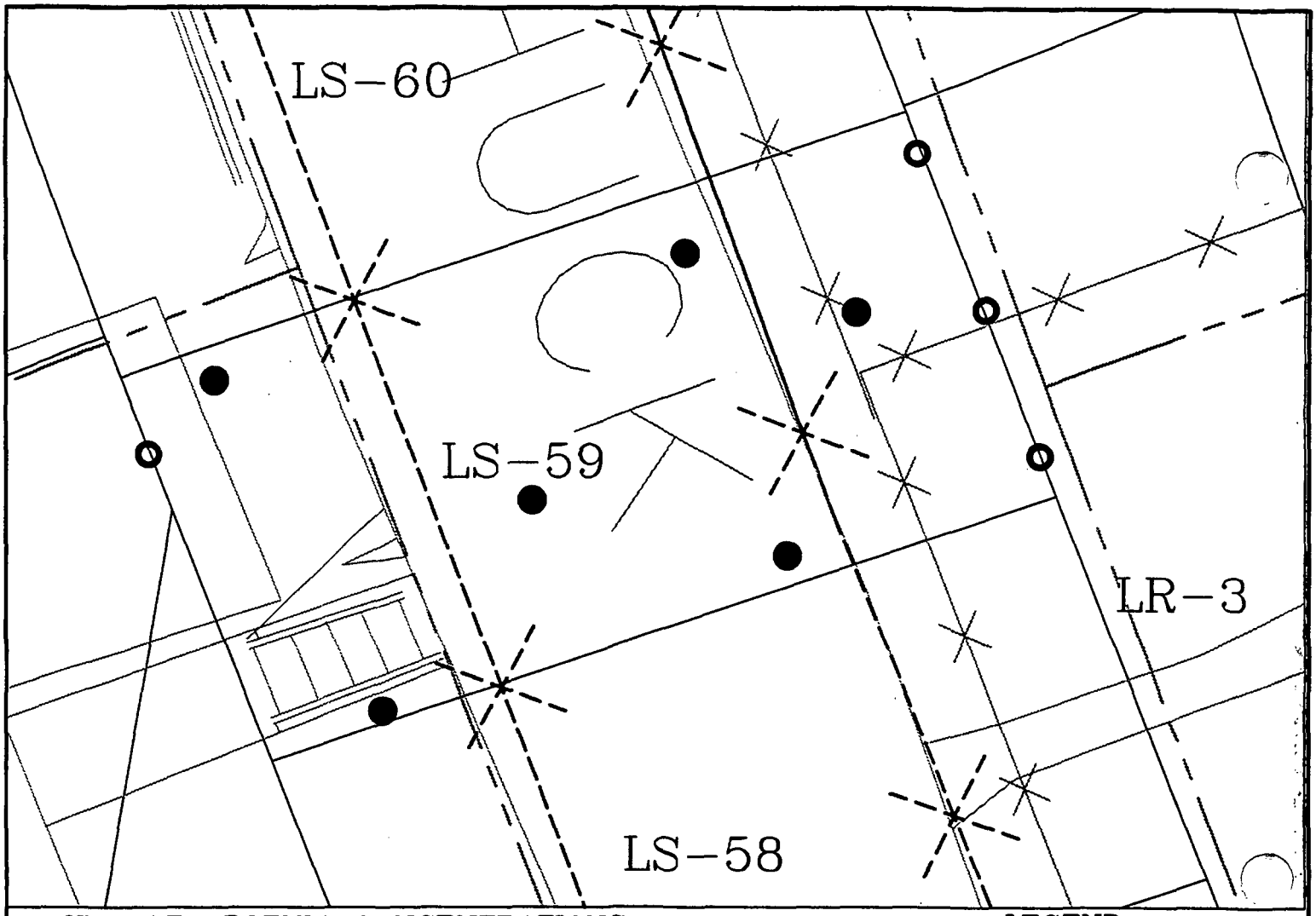

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1544	IAFA-P1A-F-LS59-C-1
PERIMETER SURFACE	1400	IAFA-P1A-P-LS59-C-A-1
PERIMETER 2' DEPTH	823	IAFA-P1A-P-LS59-C-B-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-59 (1254.00 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS	NO	BY	DATE
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Project :
DRAWN BY: OOPC
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS59C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-59
REV: △

NORTH

LST UPDATE:
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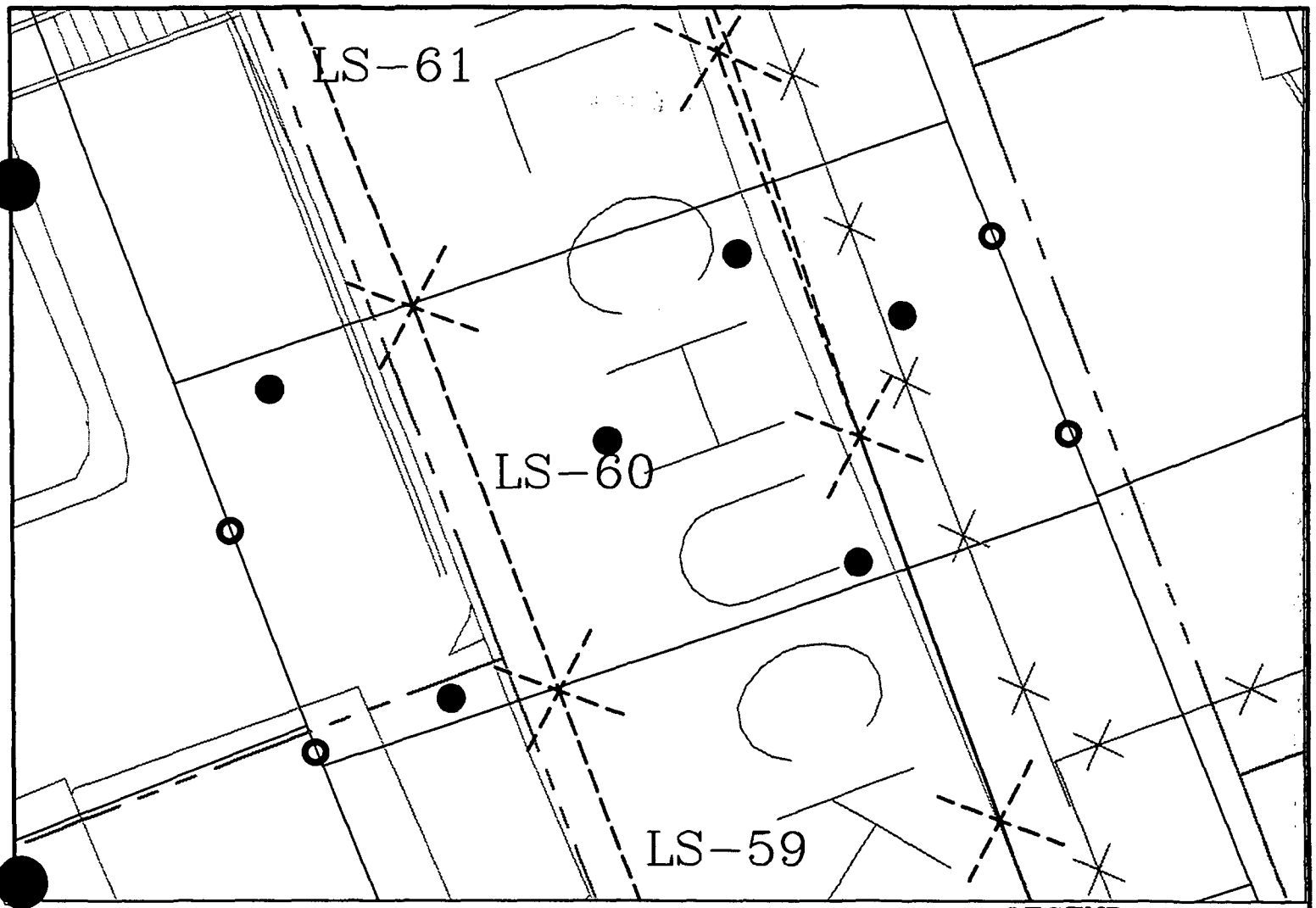

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	454	IAFA-P1A-F-LS60-C-1
PERIMETER SURFACE	597	IAFA-P1A-P-LS60-C-A-1
PERIMETER 2' DEPTH	380	IAFA-P1A-P-LS60-C-B-1
PERIMETER 4' DEPTH	79	IAFA-P1A-P-LS60-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-60 (1246.00 SQUARE FEET)
PHASE 1 – REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. –Tacoma–

DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
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Project :
DRAWN BY 00PC
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407
(253) 759-1470

DRAWING FILE NUMBER
TAC LS60C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
LS-60
REV

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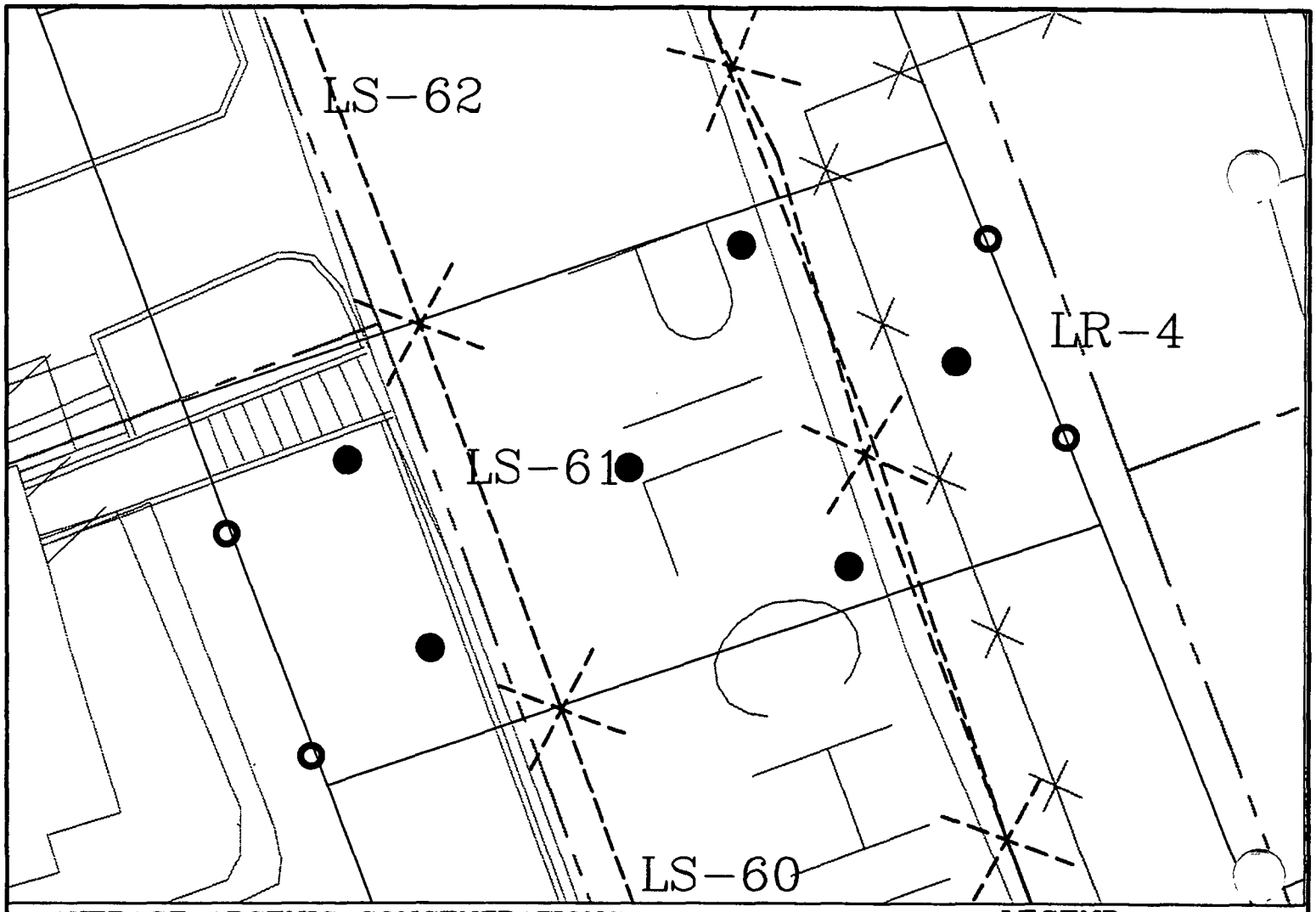

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	489	IAFA-P1A-F-LS61-C-1
PERIMETER SURFACE	569	IAFA-P1A-P-LS61-C-A-1
PERIMETER 2' DEPTH	171	IAFA-P1A-P-LS61-C-B-1
PERIMETER 4' DEPTH	54	IAFA-P1A-P-LS61-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-61 (1240.40 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS	NO	BY	DATE	
	1st			
	2nd			
	3rd			
	4th			

Project :
DRAWN BY: DOPC
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS61C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-61
REV: △

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1st UPDATE:
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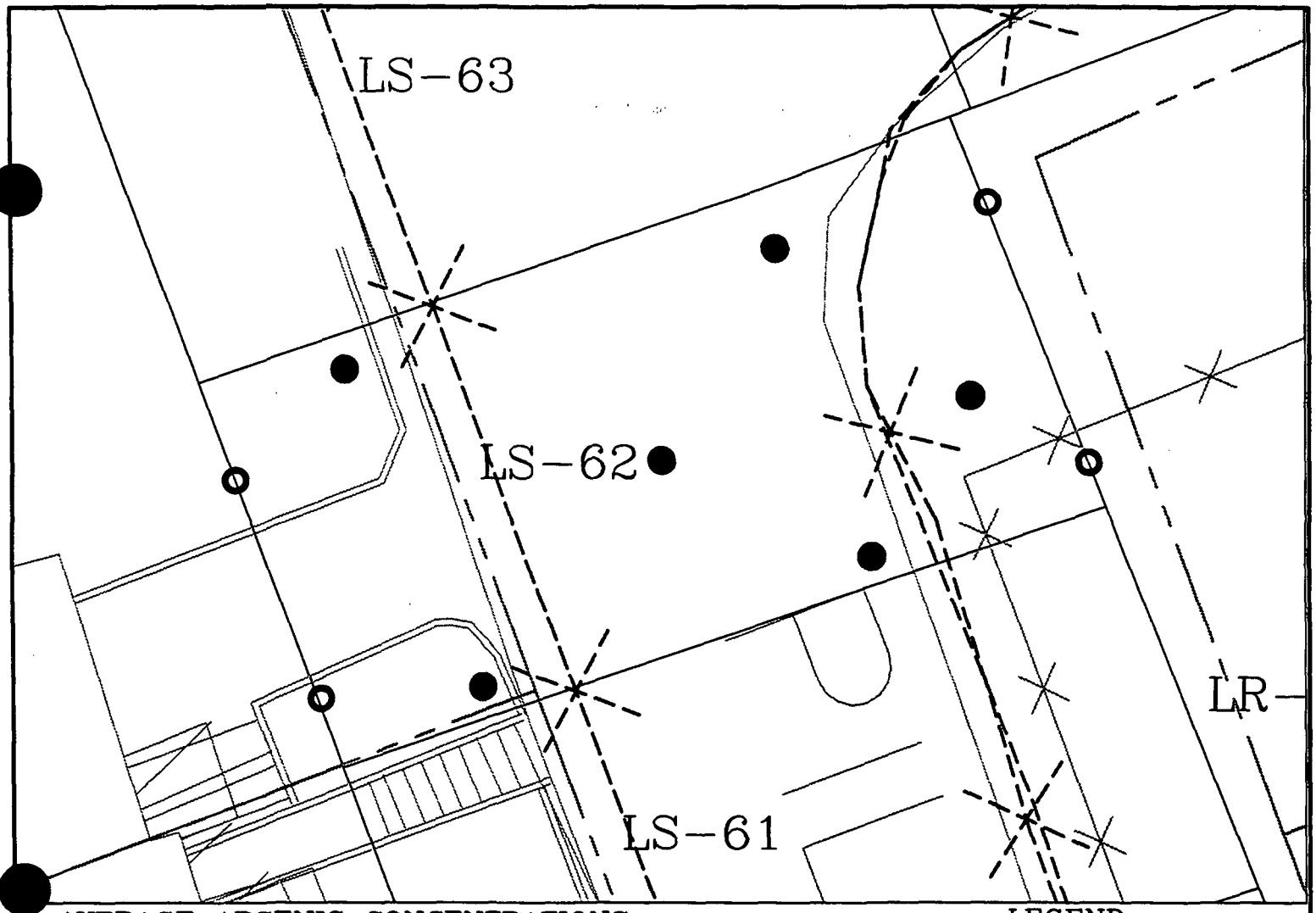

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	677	IAFA-P1A-F-LS62-C-1
PERIMETER SURFACE	2528	IAFA-P1A-P-LS62-C-A-1
PERIMETER 2' DEPTH	711	IAFA-P1A-P-LS62-C-B-1
PERIMETER 4' DEPTH	140	IAFA-P1A-P-LS62-C-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-62 (1221.50 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY OOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS62C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-62

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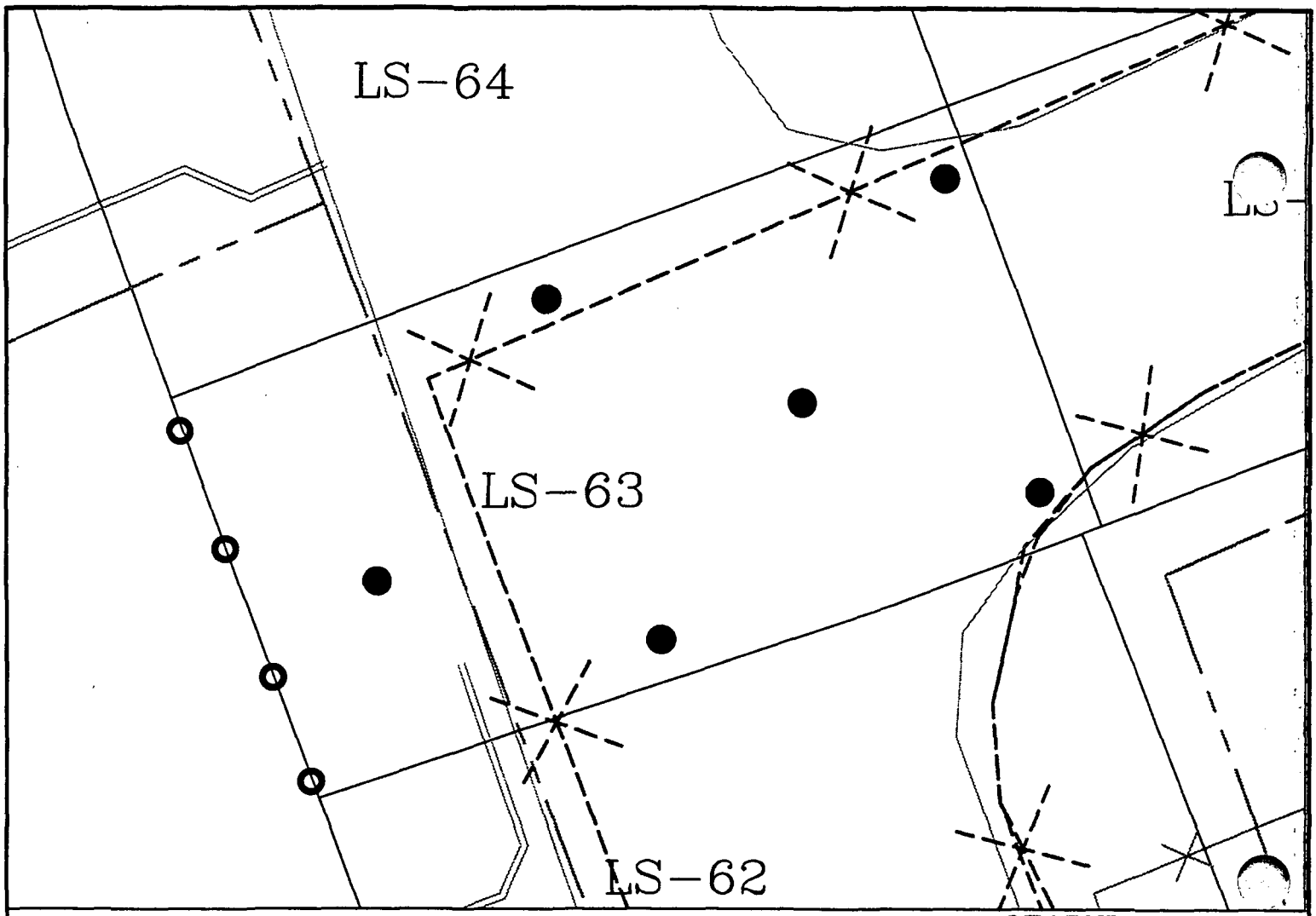

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	670	IAFA-P1A-F-LS63-C-1
PERIMETER SURFACE	1286	IAFA-P1A-P-LS63-C-A-1
PERIMETER 2' DEPTH	628	IAFA-P1A-P-LS63-C-B-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-63 (1322.70 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE	
	1st			
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	3rd			
	4th			

Project :		
DRAWN BY	OOPC	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407
5219 North Shirley Street, Suite 100
(253) 759-4470

DRAWING FILE NUMBER
TAC LS63C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-63

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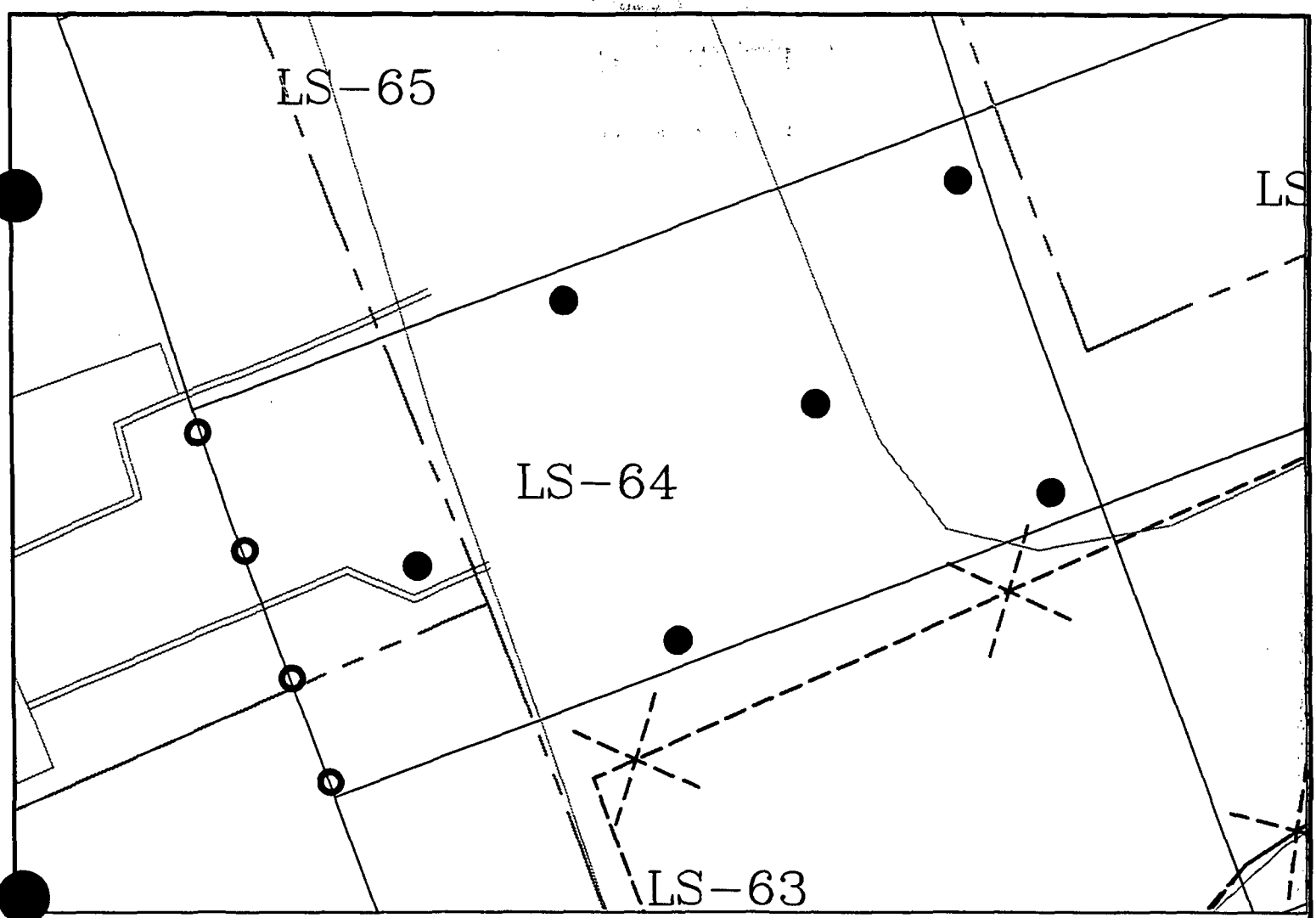

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	446	IAFA-P1A-F-LS64-C-1
PERIMETER SURFACE	759	IAFA-P1A-P-LS64-C-A-1
PERIMETER 2' DEPTH	1384	IAFA-P1A-P-LS64-C-B-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-64 (1243.00 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
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Project :		
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SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
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AUTOCAD REL. 2000 DRAWING (DWG)

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LS-64

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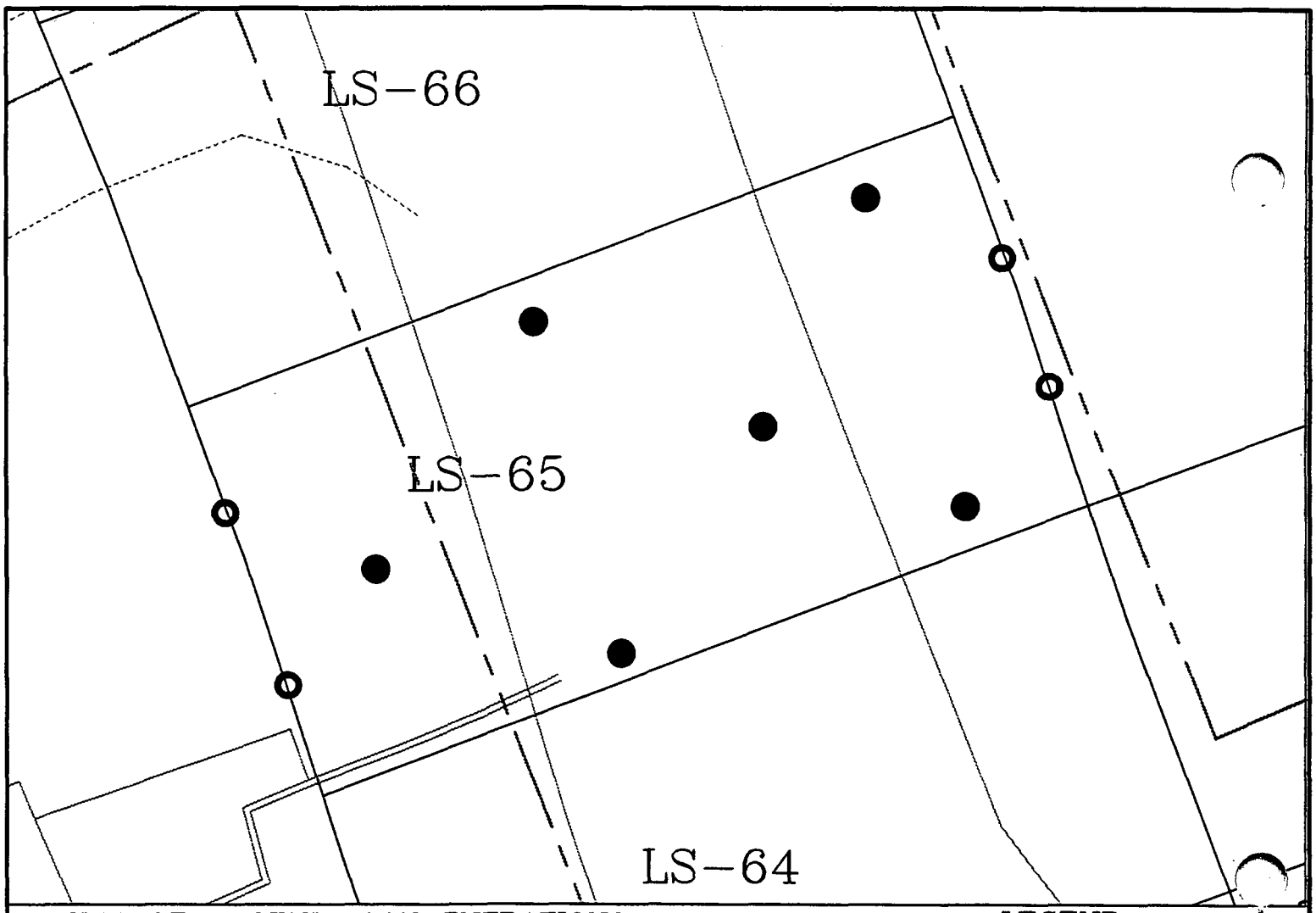

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	471	IAFA-P1A-F-LS65-C-1
PERIMETER SURFACE	772	IAFA-P1A-P-LS65-C-A-1
PERIMETER 2' DEPTH	273	IAFA-P1A-P-LS65-C-B-1
PERIMETER 4' DEPTH	495	IAFA-P1A-P-LS65-C-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-65 (1241.30 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
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DRAWN BY	OOPC	
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SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS65C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-65
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NORTH

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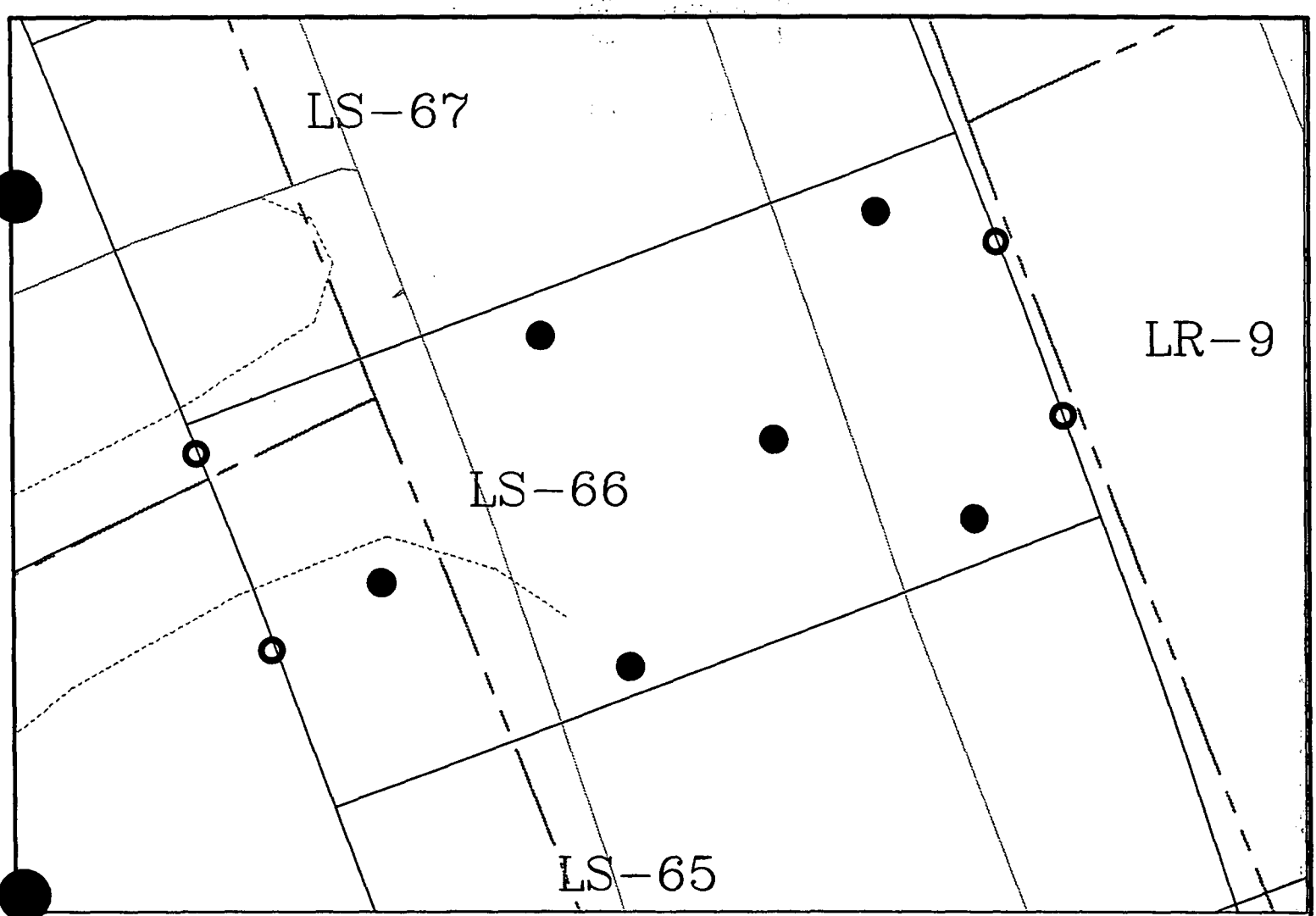

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1244	IAFA-P1A-F-LS66-C-1
PERIMETER SURFACE	2517	IAFA-P1A-P-LS66-C-A-1
PERIMETER 2' DEPTH	1877	IAFA-P1A-P-LS66-C-B-1
PERIMETER 4' DEPTH	446	IAFA-P1A-P-LS66-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-66 (1246.50 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
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Project :
DRAWN BY 00PG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS66C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
LS-66
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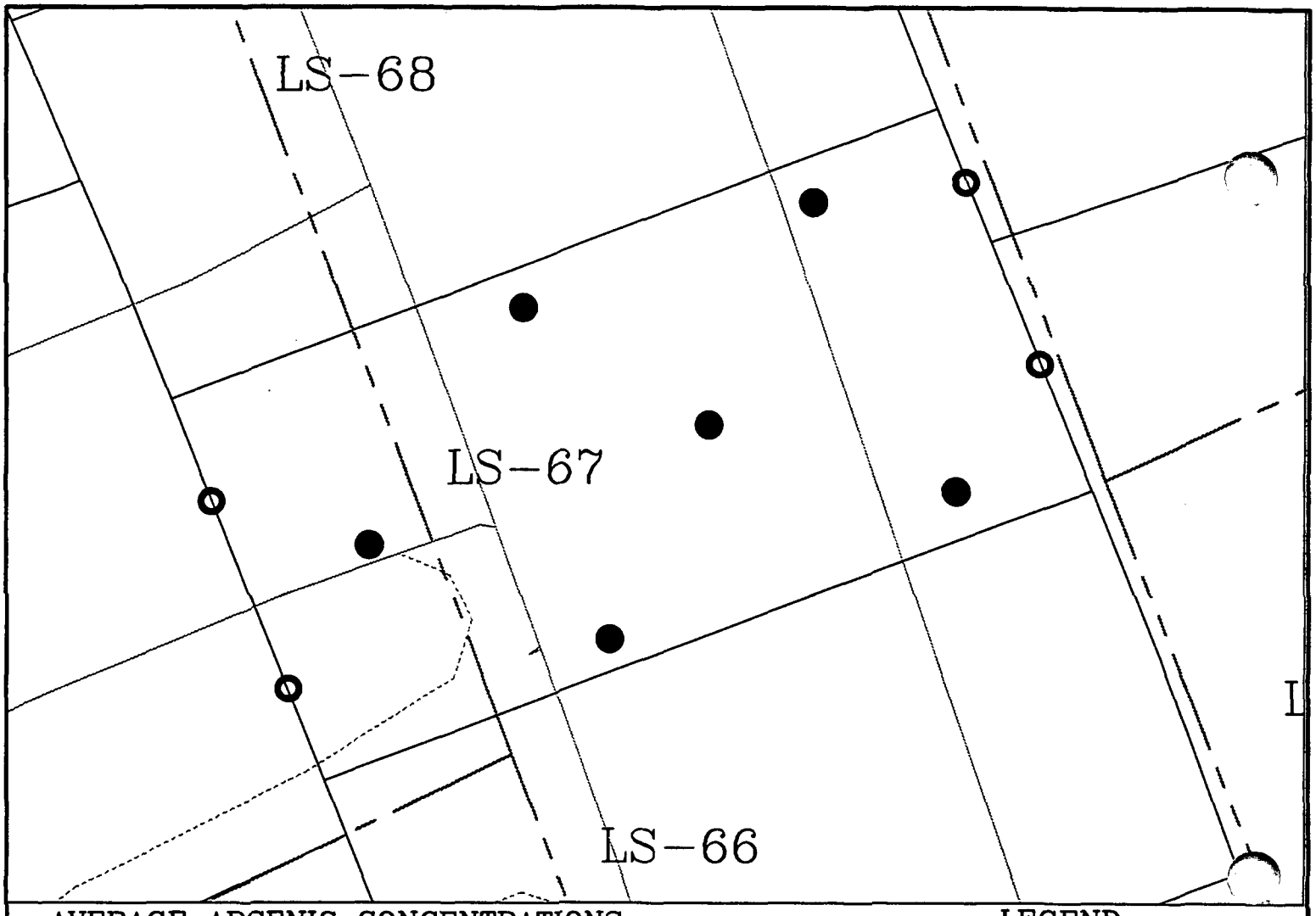

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	361	IAFA-P1A-F-LS67-C-1
PERIMETER SURFACE	2422	IAFA-P1A-P-LS67-C-A-1
PERIMETER 2' DEPTH	2881	IAFA-P1A-P-LS67-C-B-1
PERIMETER 4' DEPTH	1049	IAFA-P1A-P-LS67-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-67 (1241.30 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
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Project :
DRAWN BY 00PG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS67C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-67

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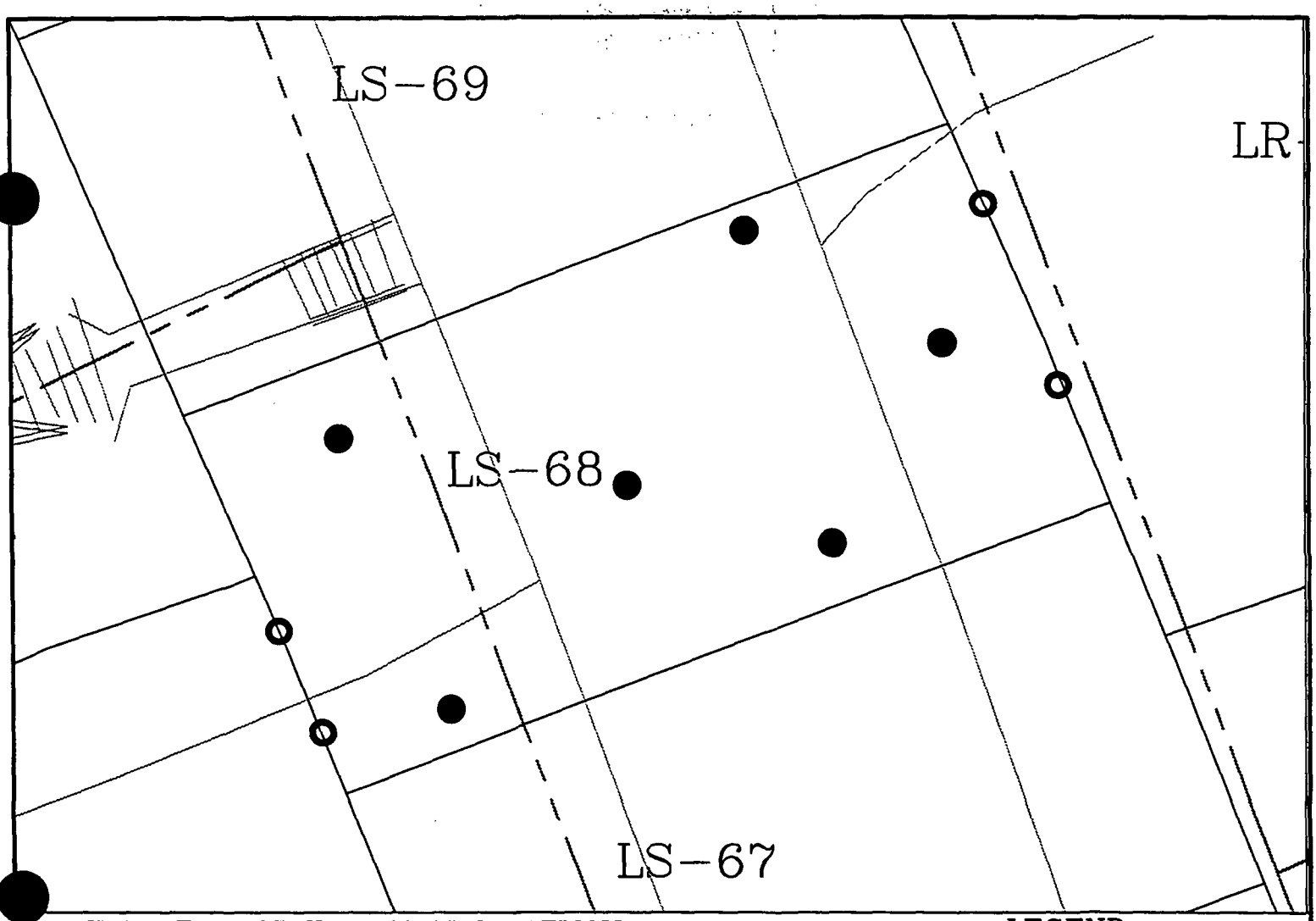

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	313	IAFA-P1A-F-LS68-C-1
PERIMETER SURFACE	2510	IAFA-P1A-P-LS68-C-A-1
PERIMETER 2' DEPTH	1182	IAFA-P1A-P-LS68-C-B-1
PERIMETER 4' DEPTH	1364	IAFA-P1A-P-LS68-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-68 (1253.70 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
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Project :
DRAWN BY OOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS68C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER LS-68
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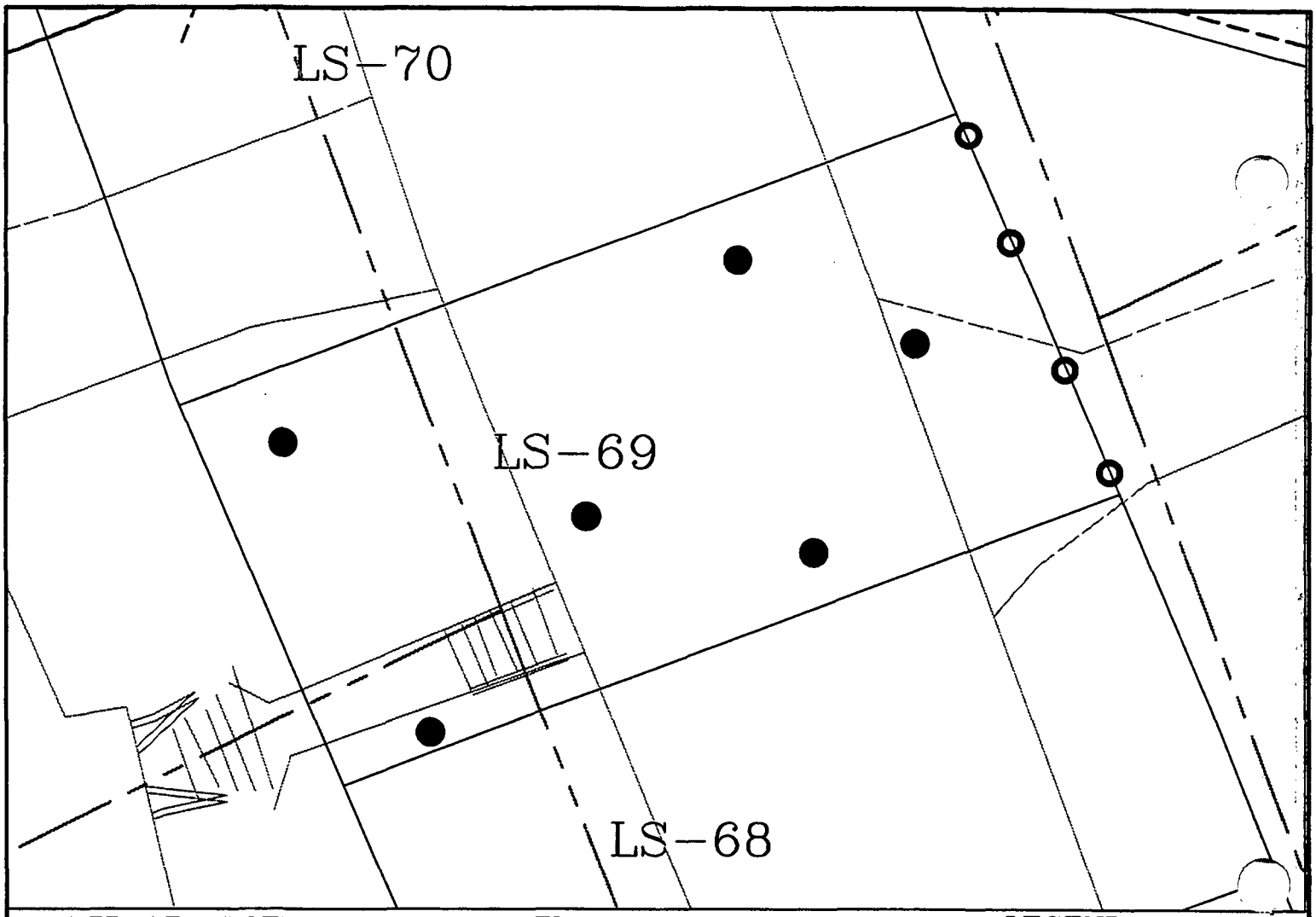

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	468	IAFA-P1A-F-LS69-C-1
PERIMETER SURFACE	1167	IAFA-P1A-P-LS69-C-A-1
PERIMETER 2' DEPTH	1912	IAFA-P1A-P-LS69-C-B-1
PERIMETER 4' DEPTH	478	IAFA-P1A-P-LS69-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-69 (1236.00 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS	NO	BY	DATE
	1st		
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Project :
DRAWN BY: 00PC
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS69C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-69
REV: △

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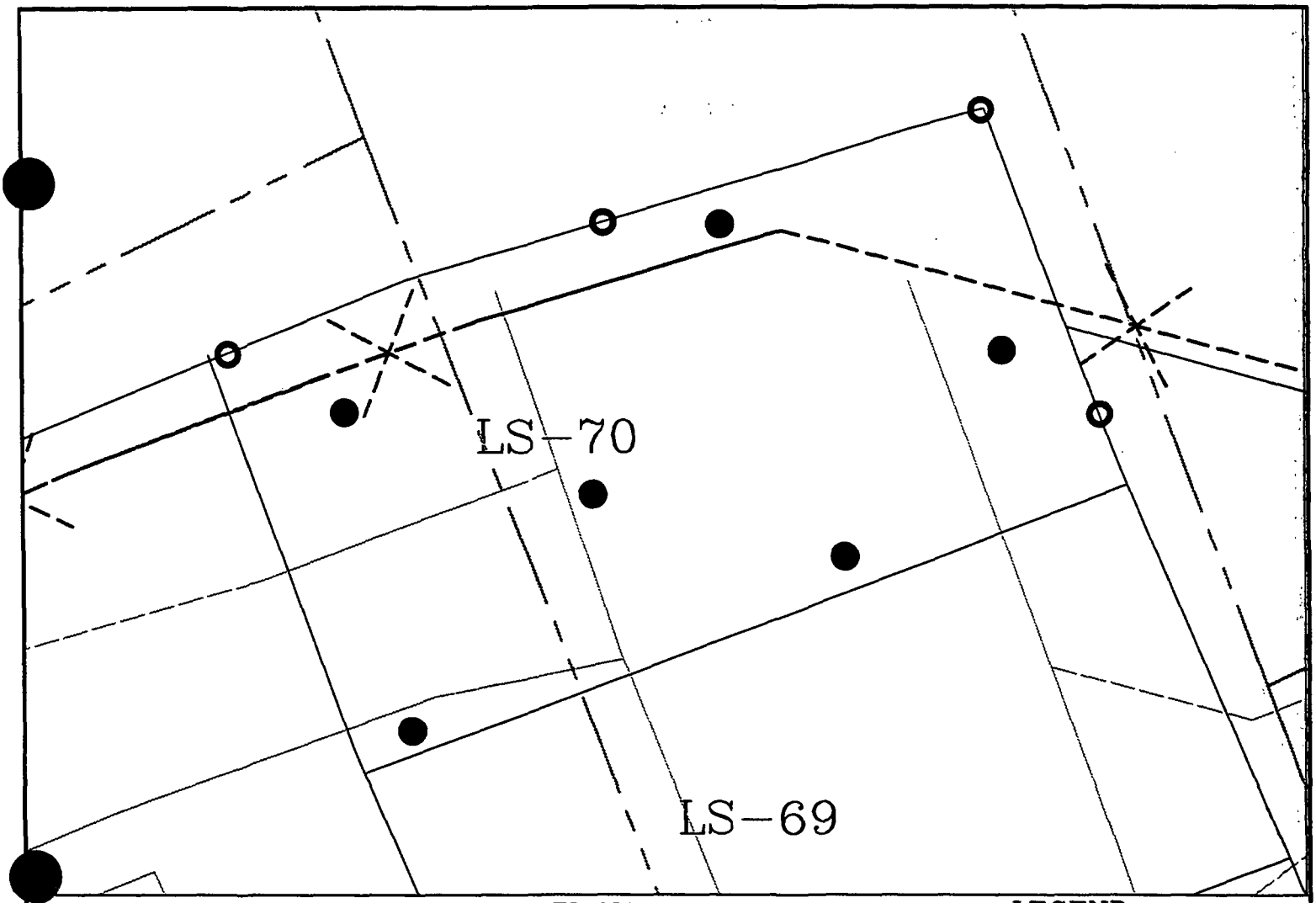

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	744	IAFA-P1A-F-LS70-C-1
PERIMETER SURFACE	1222	IAFA-P1A-P-LS70-C-A-1
PERIMETER 2' DEPTH	1883	IAFA-P1A-P-LS70-C-B-1
PERIMETER 4' DEPTH	1044	IAFA-P1A-P-LS70-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-70 (1308.52 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
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Project :
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CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS70C4
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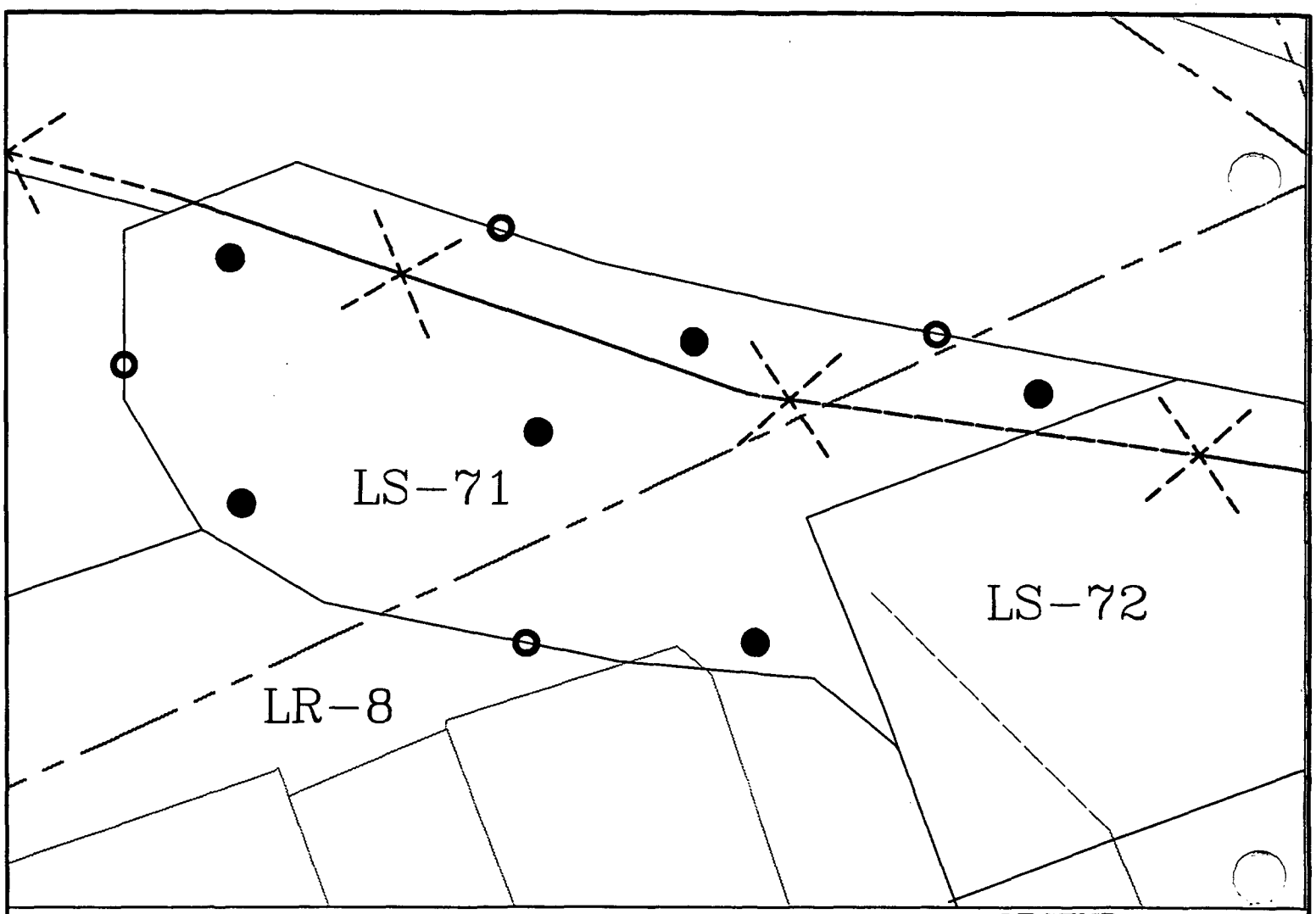

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	359	IAFA-P1A-F-LS71-C-1
PERIMETER SURFACE	1466	IAFA-P1A-P-LS71-C-A-1
PERIMETER 2' DEPTH	1806	IAFA-P1A-P-LS71-C-B-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

Perimeter samples were not taken along LR-8 because there was no perimeter. Although LR-8 was designated a "Residential" area, the decision unit contained Source Material. After the material exceeding 3,000 ppm As was removed, LR-8 was at a lower elevation than the surrounding "Lower Source" decision units.

LS-71 (1139.00 SQUARE FEET)
PHASE 1 - REMOVAL A (2 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
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Project :
DRAWN BY 00PC
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS71C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
LS-71
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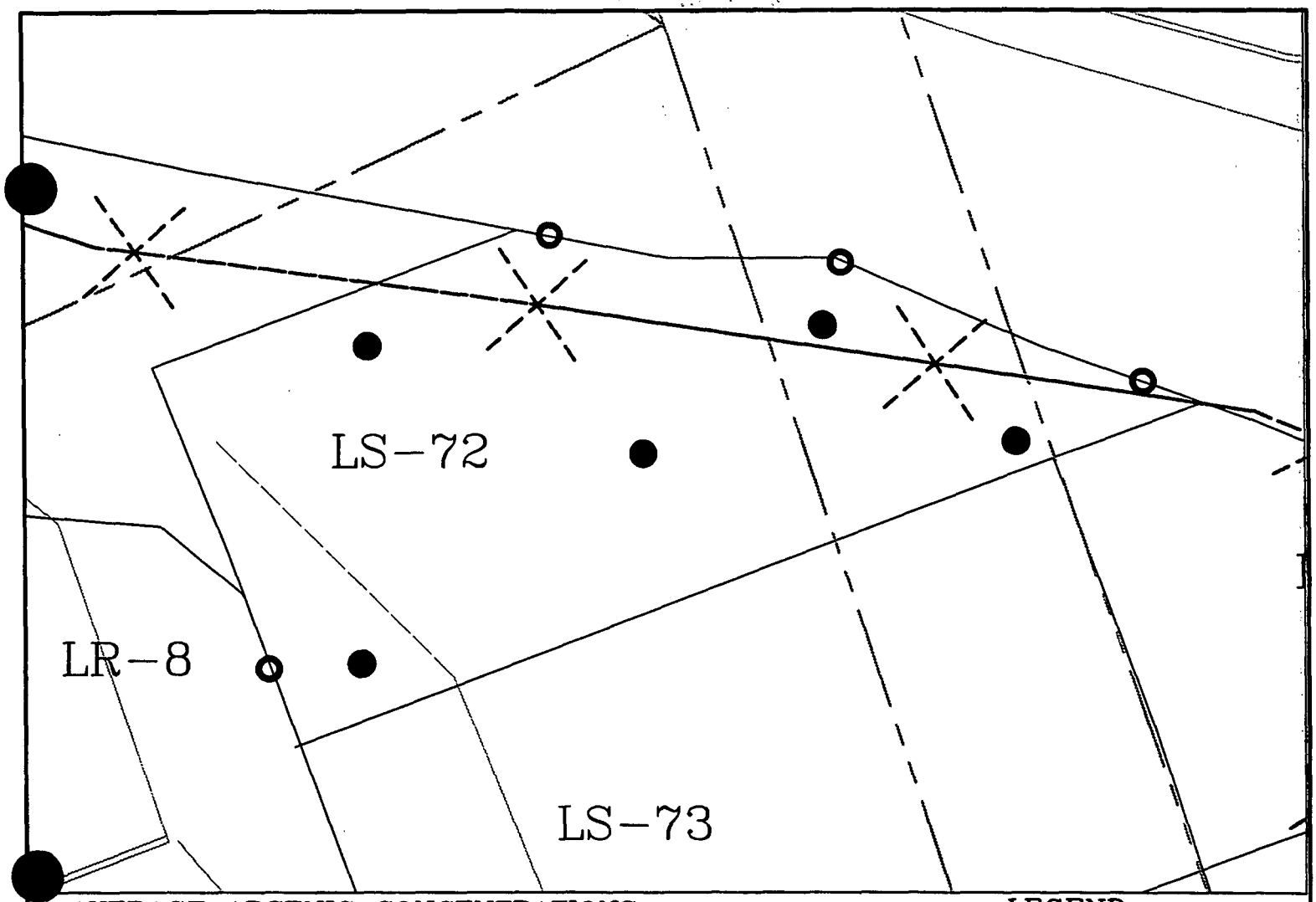

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	403	IAFA-P1A-F-LS72-C-1
PERIMETER SURFACE	2118	IAFA-P1A-P-LS72-C-A-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

Perimeter samples were not taken along LR-8 because there was no perimeter. Although LR-8 was designated a "Residential" area, the decision unit contained Source Material. After the material exceeding 3,000 ppm As was removed, LR-8 was at a lower elevation than the surrounding "Lower Source" decision units.

LS-72 (1097.60 SQUARE FEET)
PHASE 1 - REMOVAL A (1 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
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Project :
DRAWN BY 00PC
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS72C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-72

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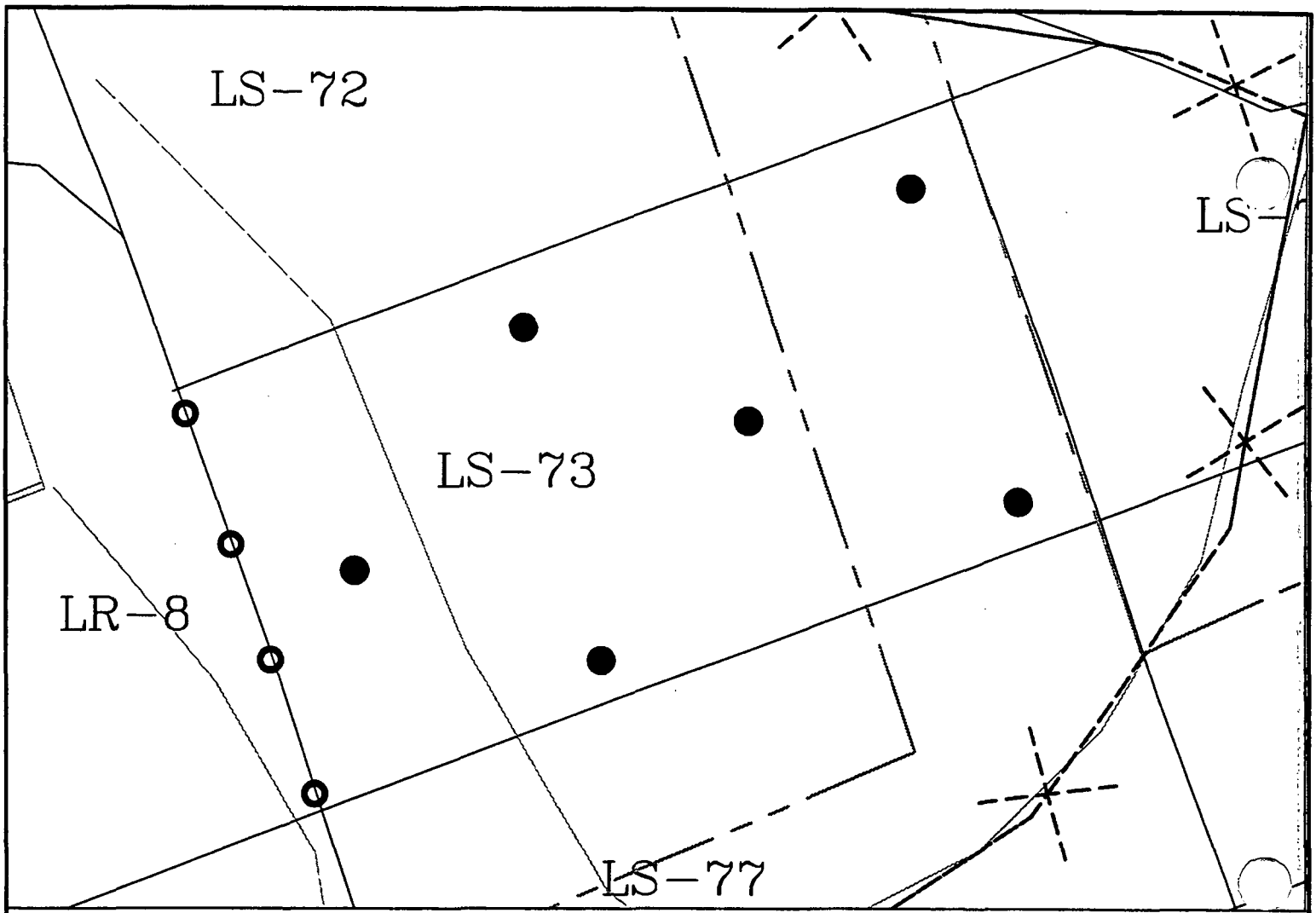

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1732	IAFA-P1A-F-LS73-C-1
PERIMETER SURFACE	NA	NA
PERIMETER 2' DEPTH	NA	NA

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

Perimeter samples were not taken along LR-8 because there was no perimeter. Although LR-8 was designated a "Residential" area, the decision unit contained Source Material. After the material exceeding 3,000 ppm As was removed, LR-8 was at a lower elevation than the surrounding "Lower Source" decision units.

LS-73 (1347.00 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
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Project :
DRAWN BY OOPC
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS73C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-73

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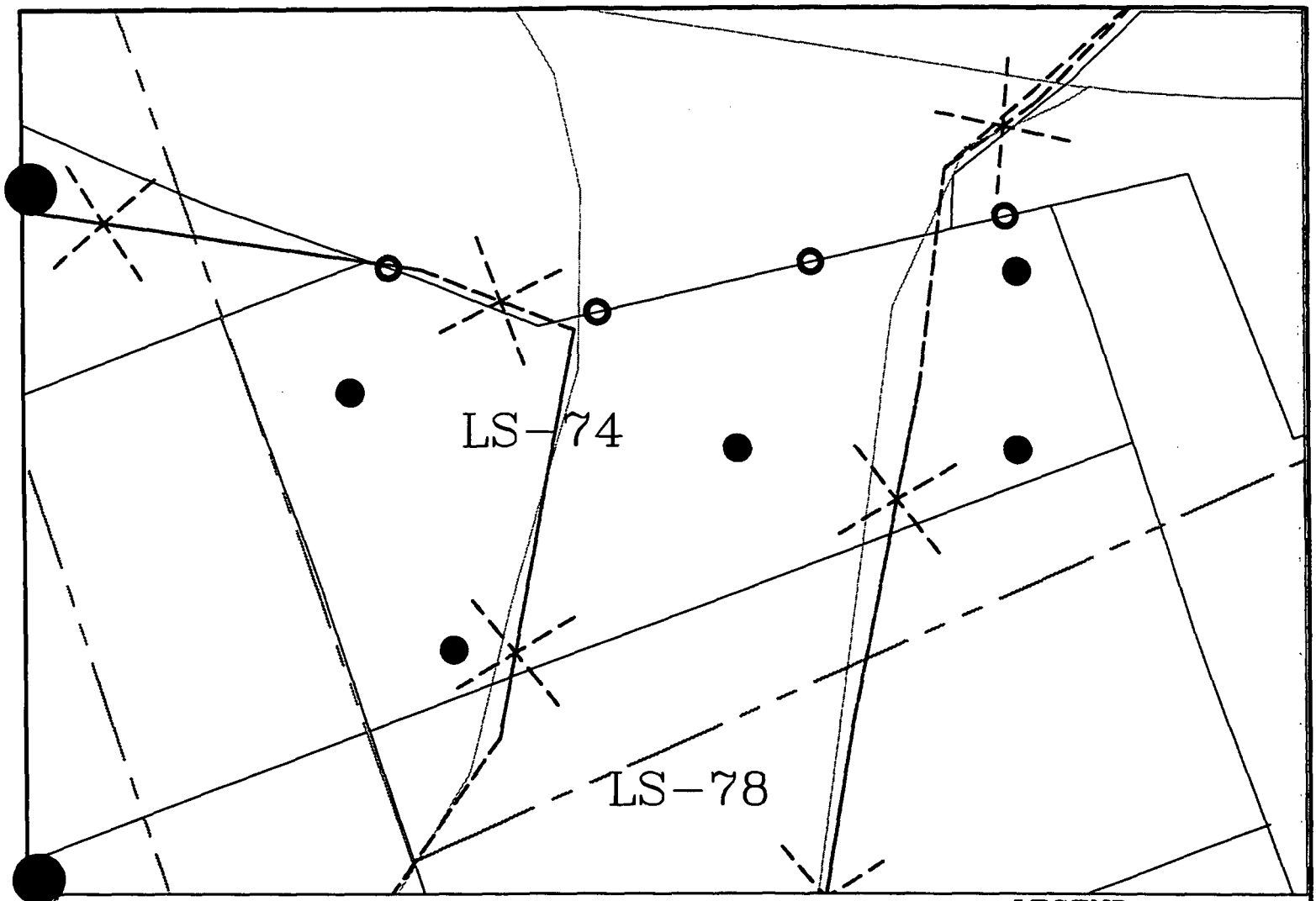

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1801	IAFA-P1A-F-LS74-C-1
PERIMETER SURFACE	1547	IAFA-P1A-P-LS74-C-A-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-74 (1013.30 SQUARE FEET)
PHASE 1 - REMOVAL A (1 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
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Project :
DRAWN BY OOPC
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS74C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-74

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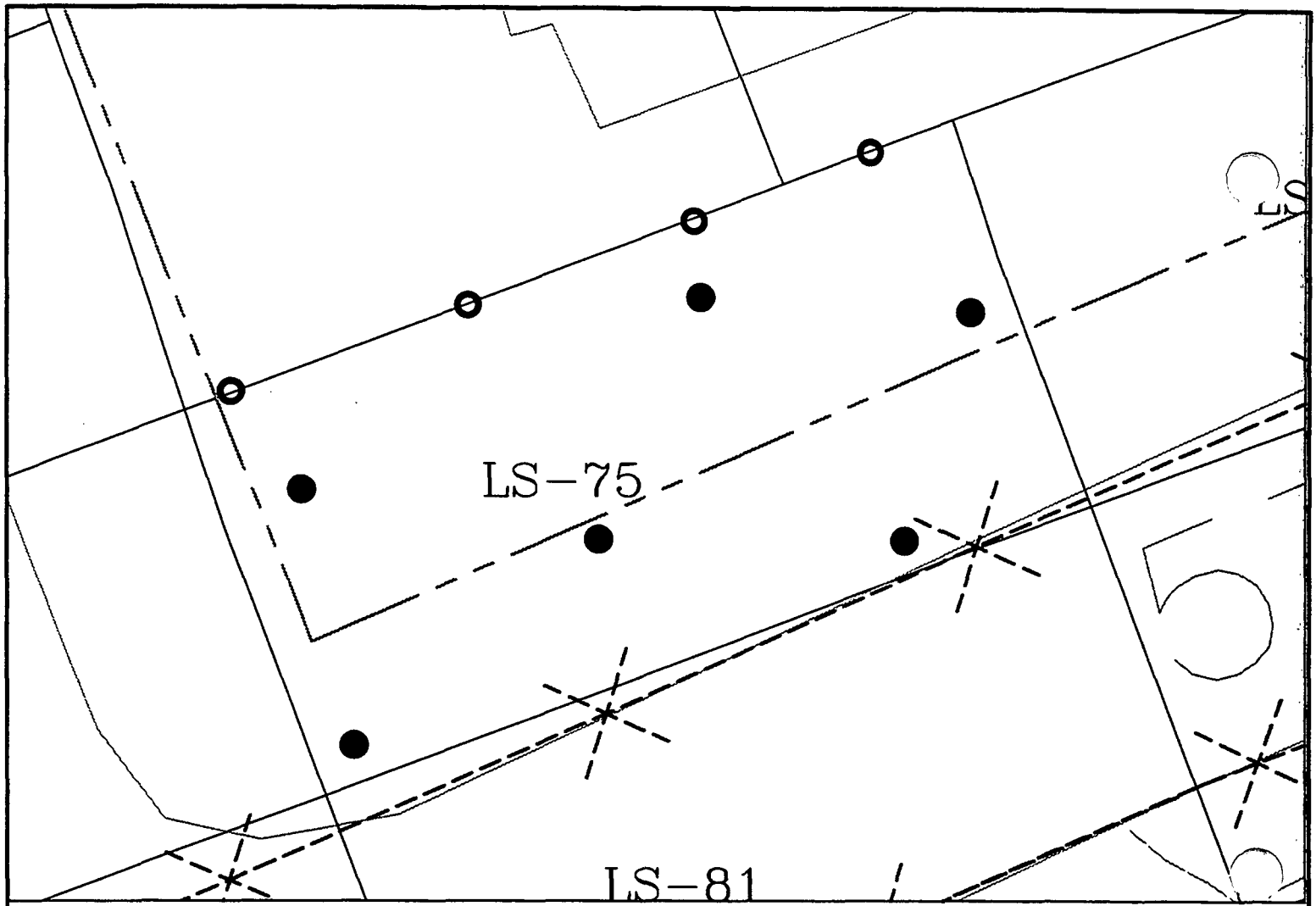

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	501	IAFA-P1A-F-LS75-C-1
PERIMETER SURFACE	194	IAFA-P1A-P-LS75-C-A-1
PERIMETER 2' DEPTH	67	IAFA-P1A-P-LS75-C-B-1
PERIMETER 4' DEPTH	134	IAFA-P1A-P-LS75-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-75 (1244.30 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY OOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407
5010 North Shirley Street, Suite 100
(253) 759-4470

DRAWING FILE NUMBER
TAC LS75C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-75

REV △

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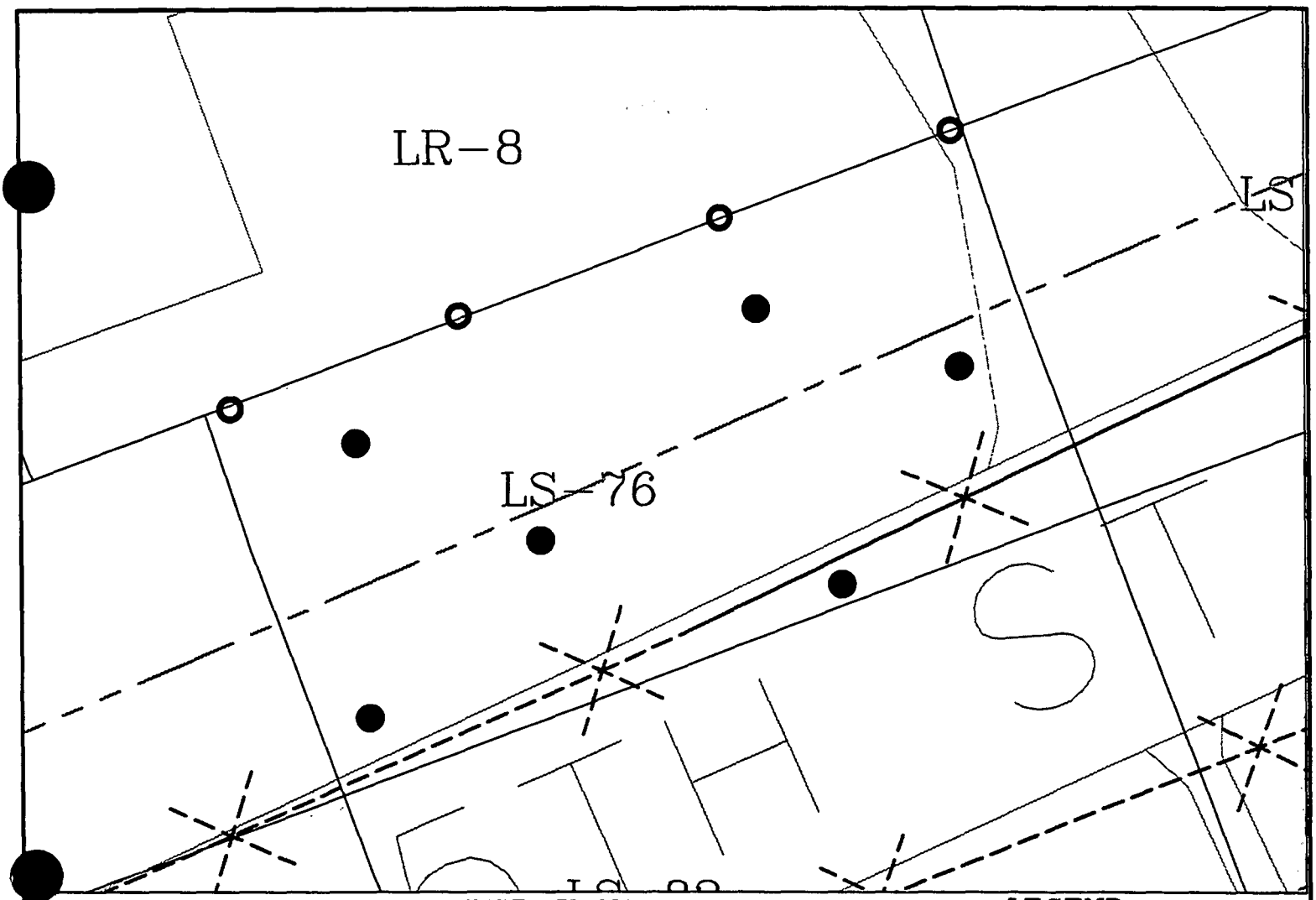
1st UPDATE:
TAC \OOPG\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 1A



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	713	IAFA-P1A-F-LS76-C-1
PERIMETER SURFACE	NA	NA
PERIMETER 2' DEPTH	NA	NA
PERIMETER 4' DEPTH	NA	NA

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

Perimeter samples were not taken along LR-8 because there was no perimeter. Although LR-8 was designated a "Residential" area, the decision unit contained Source Material. After the material exceeding 3,000 ppm As was removed, LR-8 was at a lower elevation than the surrounding "Lower Source" decision units.

LS-76 (1242.30 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY OOPG
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SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS76C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-76

REV

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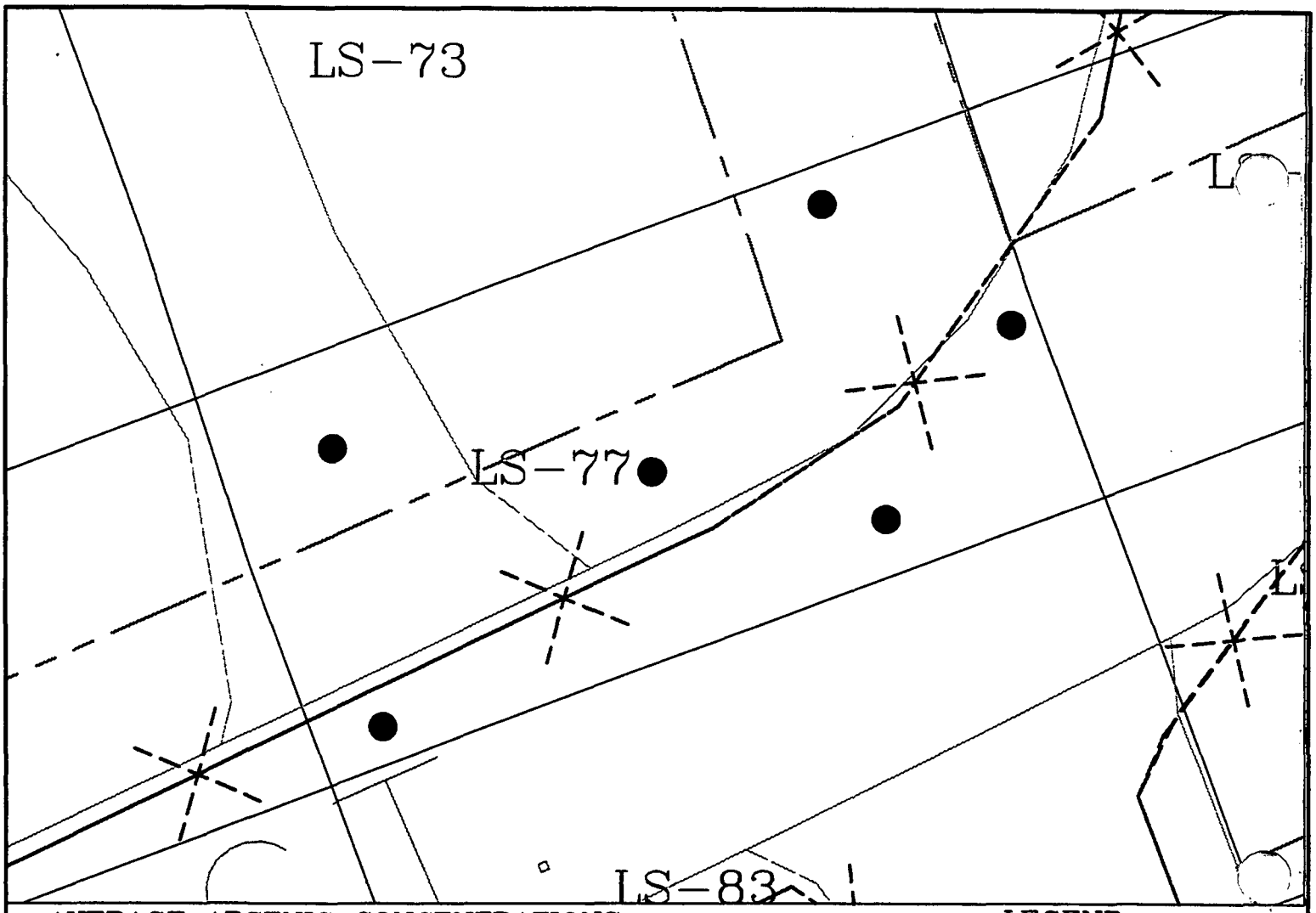

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1689	IAFA-P1A-F-LS77-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-77 (1243.00 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :		
DRAWN BY	OOPG	
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SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407
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DRAWING FILE NUMBER
TAC LS77C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-77

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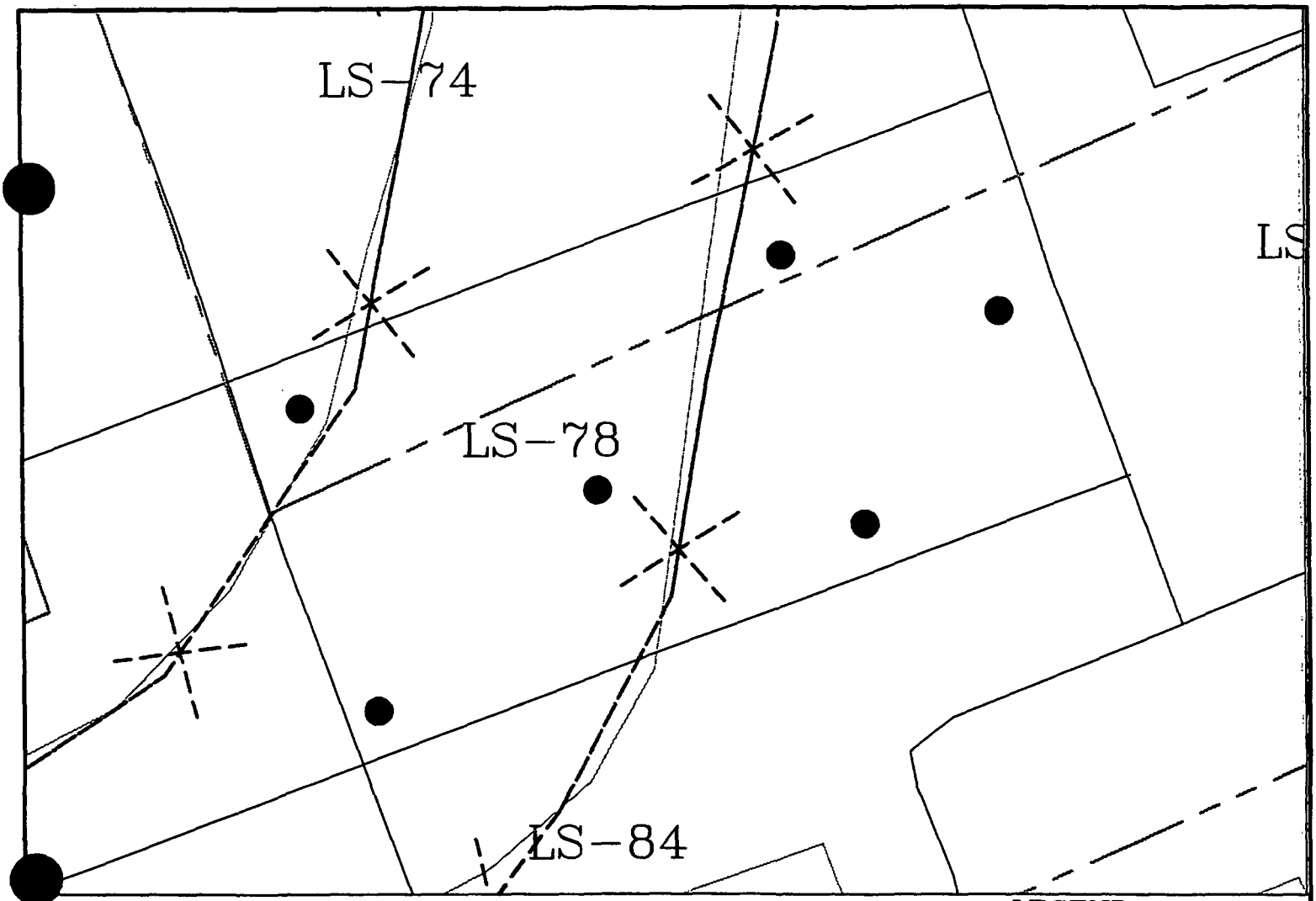

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2264	IAFA-P1A-F-LS78-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-78 (1250.00 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
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SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407
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DRAWING FILE NUMBER
TAC LS78C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-78

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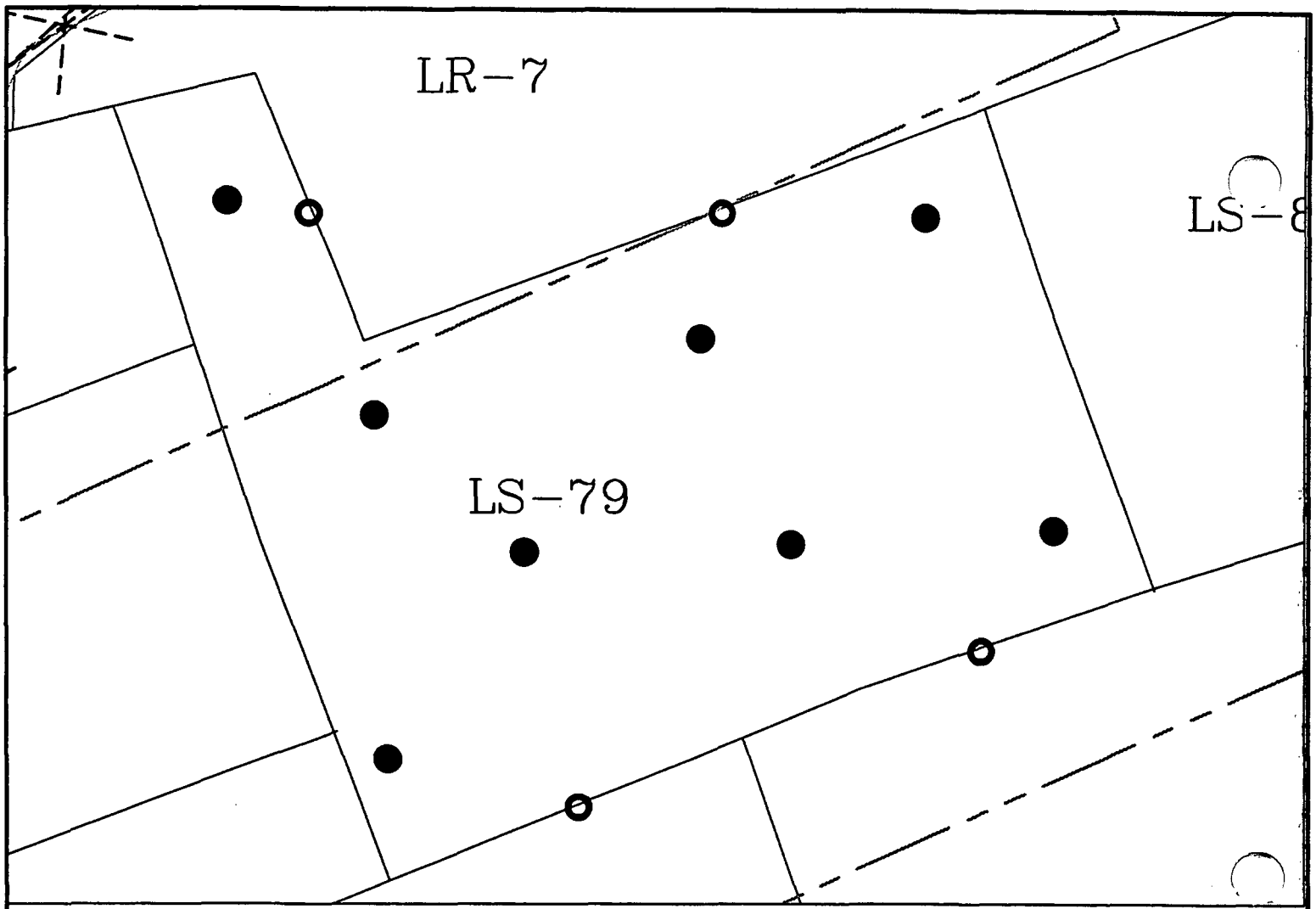

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1211	IAFA-P1A-F-LS79-C-1
PERIMETER SURFACE	1066	IAFA-P1A-P-LS79-C-A-1
PERIMETER 2' DEPTH	506	IAFA-P1A-P-LS79-C-B-1
PERIMETER 4' DEPTH	1207	IAFA-P1A-P-LS79-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-79 (1707.20 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :		
DRAWN BY	OOPG	
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APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407
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DRAWING FILE NUMBER
TAC LS79C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-79

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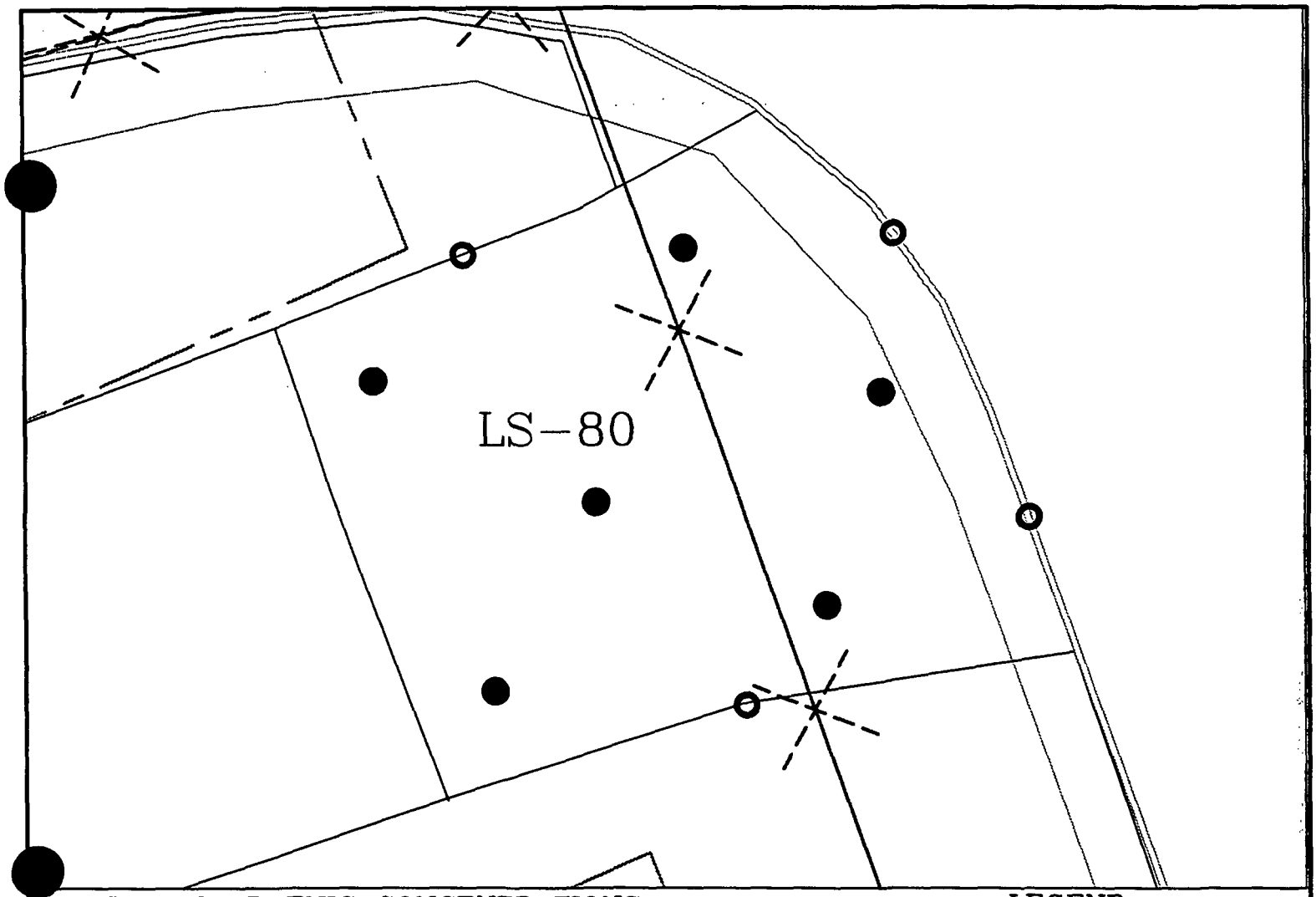

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2159	IAFA-P1A-F-LS80-C-1
PERIMETER SURFACE	712	IAFA-P1A-P-LS80-C-A-1
PERIMETER 2' DEPTH	1494	IAFA-P1A-P-LS80-C-B-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-80 (1129.70 SQUARE FEET)
PHASE 1 - REMOVAL A (2 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY OOPG
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SCALE: AS NOTED

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DRAWING FILE NUMBER
TAC LS80C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-80

REV

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1st UPDATE:
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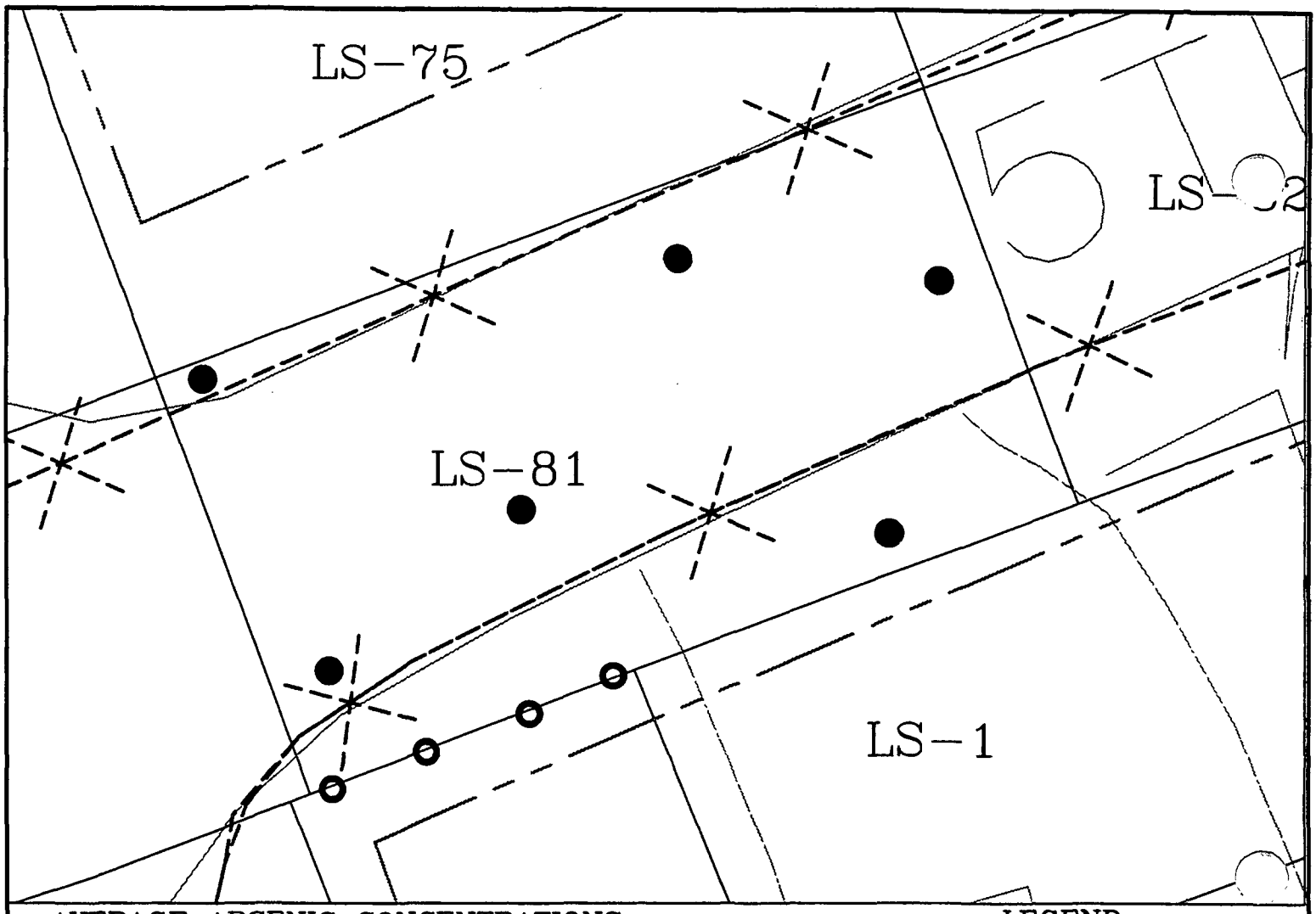

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	567	IAFA-P1A-F-LS81-C-1
PERIMETER SURFACE	2025	IAFA-P1A-P-LS81-C-A-2
PERIMETER 2' DEPTH	423	IAFA-P1A-P-LS81-C-B-2

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-81 (1343.40 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :		
DRAWN BY	GOPG	
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SCALE: AS NOTED		

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DRAWING FILE NUMBER
TAC LS81C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-81

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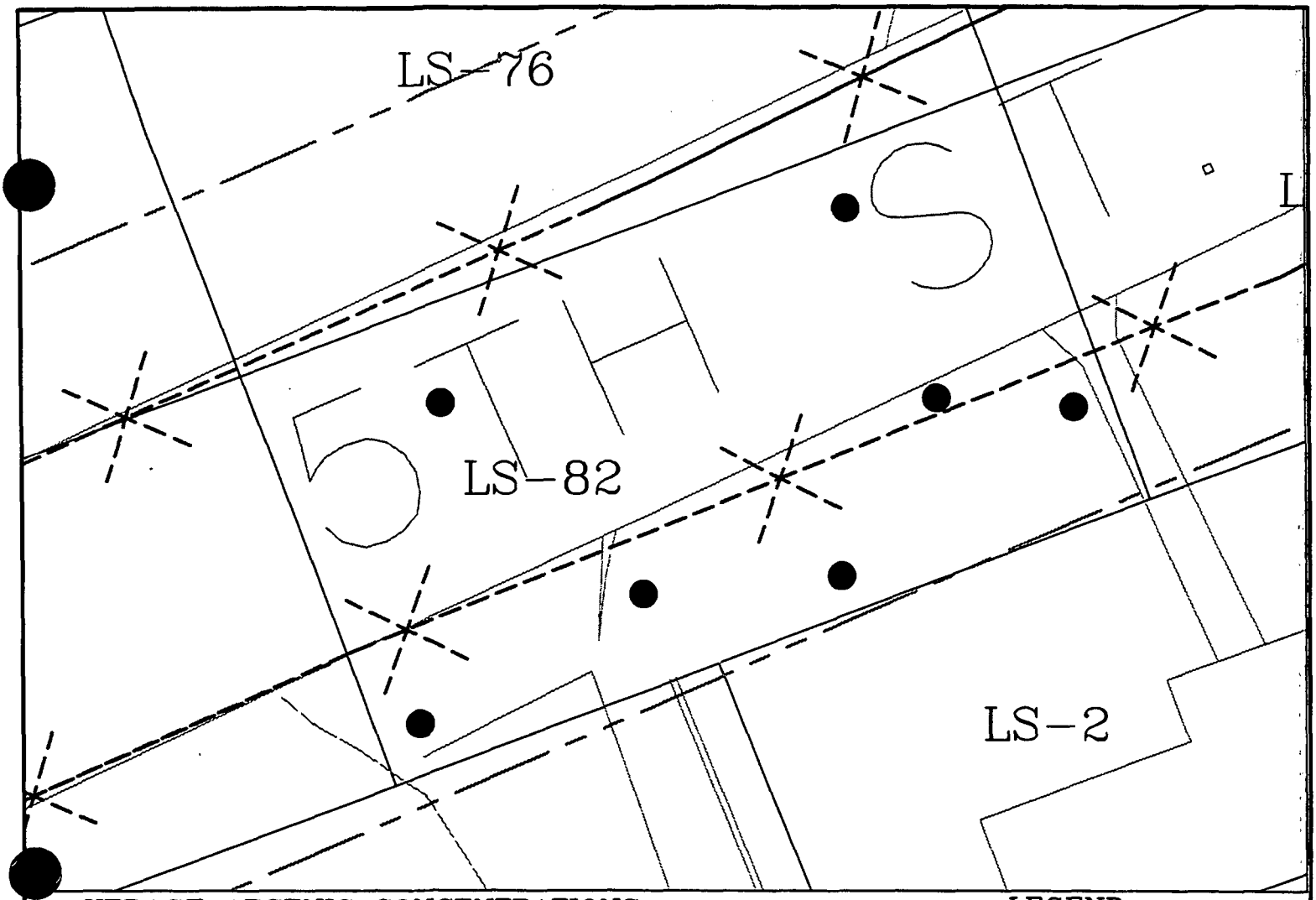

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	434	IAFA-P1A-F-LS82-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-82 (1355.00 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :	
DRAWN BY	OOPC
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SCALE: AS NOTED	

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DRAWING FILE NUMBER
TAC LS82C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-82

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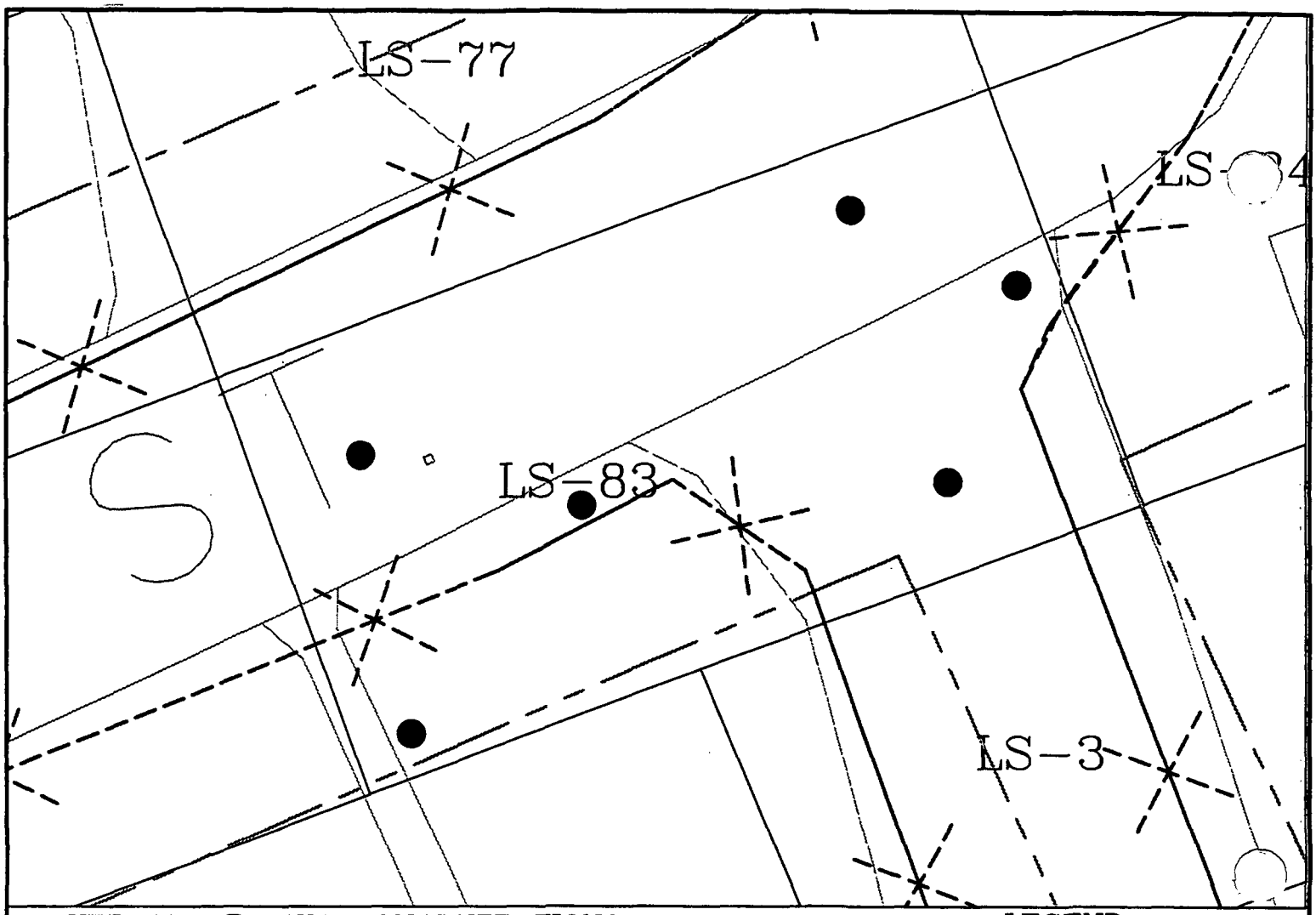

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1681	IAFA-P1A-F-LS83-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-83 (1344.60 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :		
DRAWN BY	OOPG	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
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DRAWING FILE NUMBER
TAC LS83C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-83

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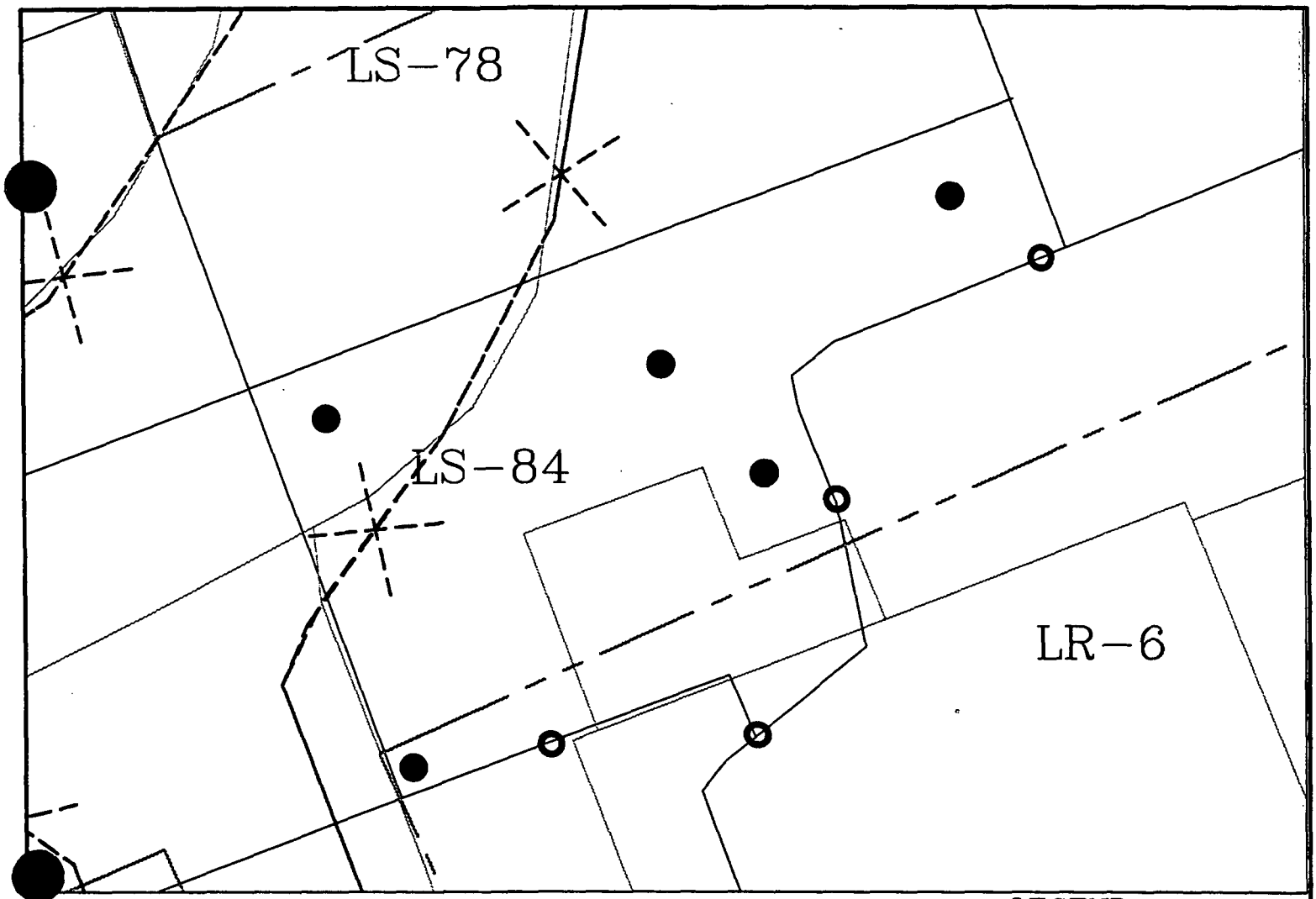

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1579	IAFA-P1A-F-LS84-C-1
PERIMETER SURFACE	1847	IAFA-P1A-P-LS84-C-A-1
PERIMETER 2' DEPTH	1052	IAFA-P1A-P-LS84-C-B-1
PERIMETER 4' DEPTH	864	IAFA-P1A-P-LS84-C-C-1
PERIMETER 6' DEPTH	469	IAFA-P1A-P-LS84-C-D-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-84 (1046.60 SQUARE FEET)
PHASE 1 - REMOVAL A (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY OOPG
CHECKED BY
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SCALE: AS NOTED

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DRAWING FILE NUMBER
TAC LS84C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-84

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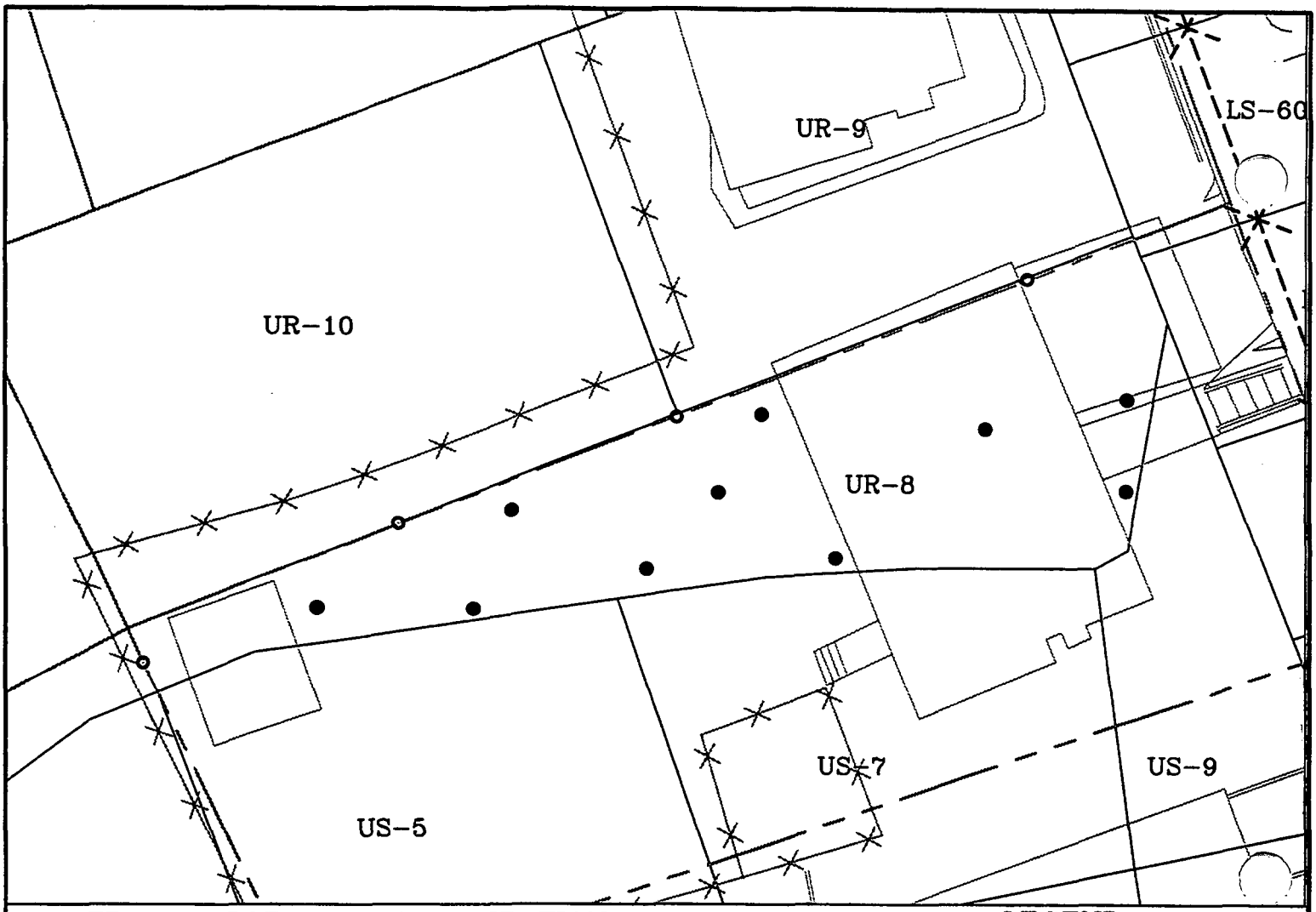

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1754	IAFA-P1A-F-UR8-C-1
PERIMETER SURFACE	1166	IAFA-P1A-P-UR8-C-A-1
PERIMETER 2' DEPTH	667	IAFA-P1A-P-UR8-C-B-1
PERIMETER 4' DEPTH	1761	IAFA-P1A-P-UR8-C-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

UR-08 (2639.60 SQUARE FEET)
PHASE 1 - REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY OOPG
CHECKED BY
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SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC UR08C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
UR-08
REV

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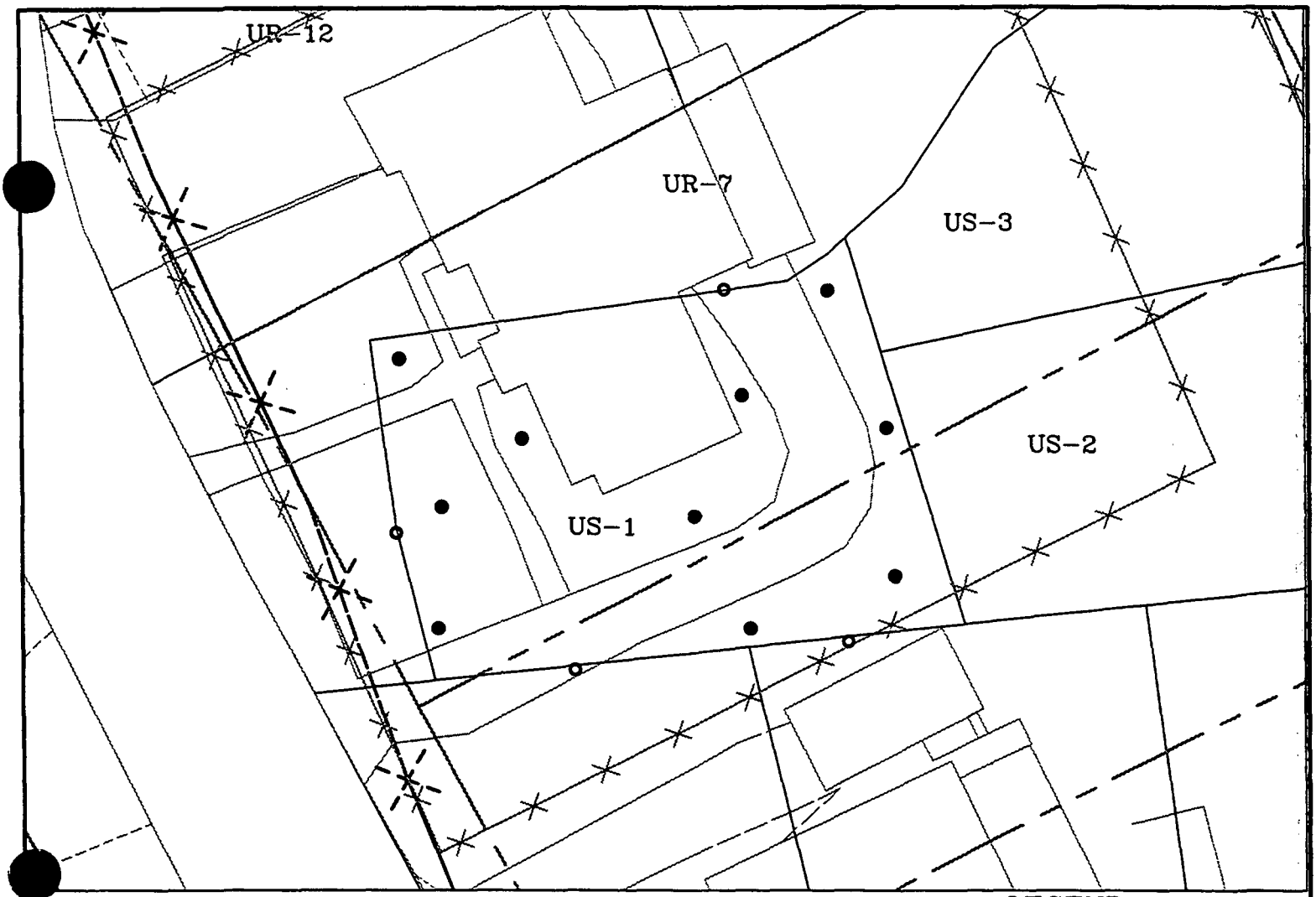

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	857	IAFA-P1A-F-US1-C-1
PERIMETER SURFACE	671	IAFA-P1A-P-US1-C-A-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

US-01 (2812.70 SQUARE FEET)
PHASE 1 - REMOVAL A (1 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY DDPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
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DRAWING FILE NUMBER
TAC US01C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER US-01
REV △

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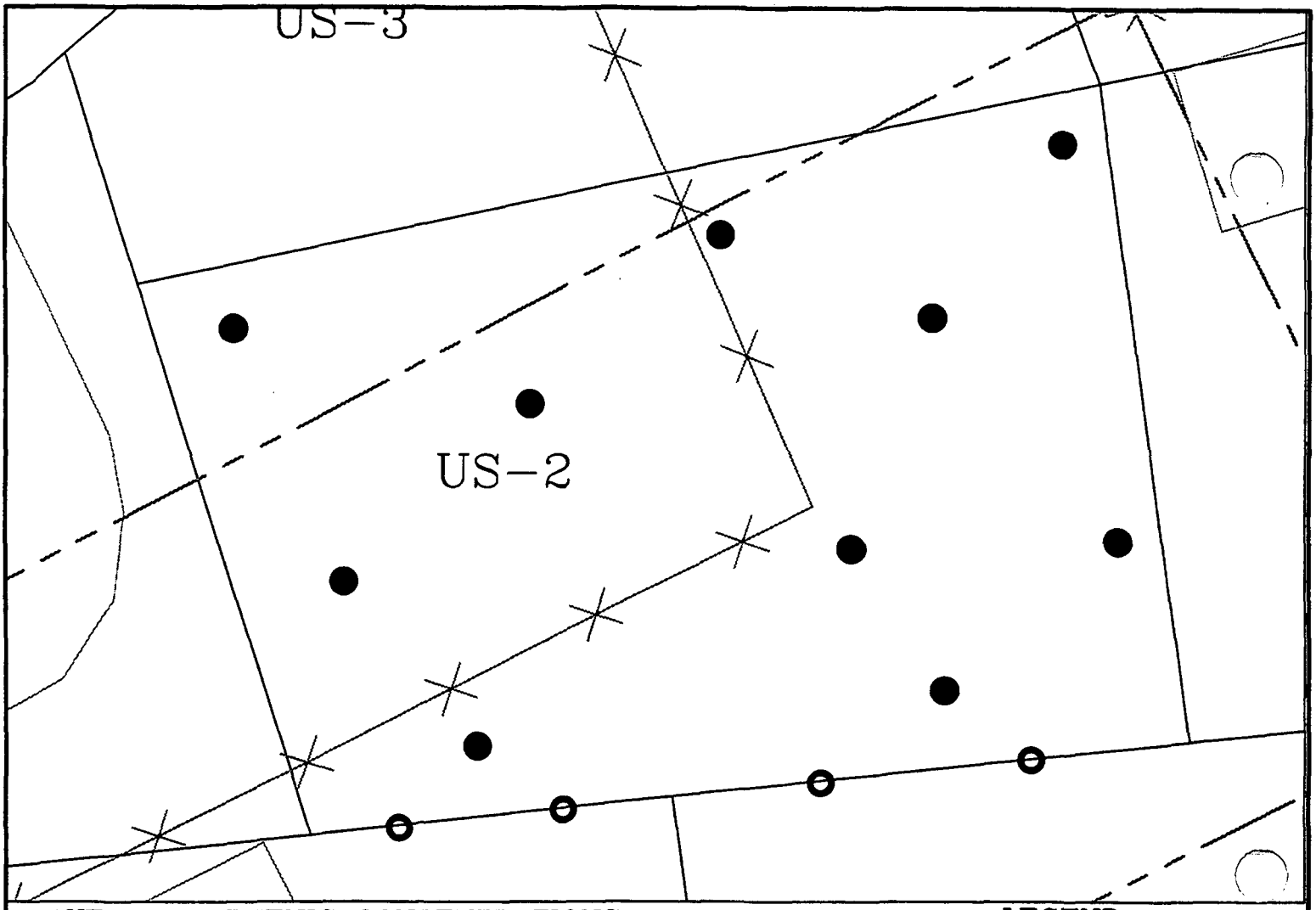

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	611	IAFA-P1A-US2-C-1
PERIMETER SURFACE	728	IAFA-P1A-P-US2-C-A-1
PERIMETER 2' DEPTH	1881	IAFA-P1A-P-US2-C-B-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

US-02 (2131.50 SQUARE FEET)
PHASE 1 - REMOVAL A (2 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :		
DRAWN BY	OOPG	
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SCALE: AS NOTED		

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6219 North Shirley Street, Suite 100
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DRAWING FILE NUMBER
TAC US02C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
US-02

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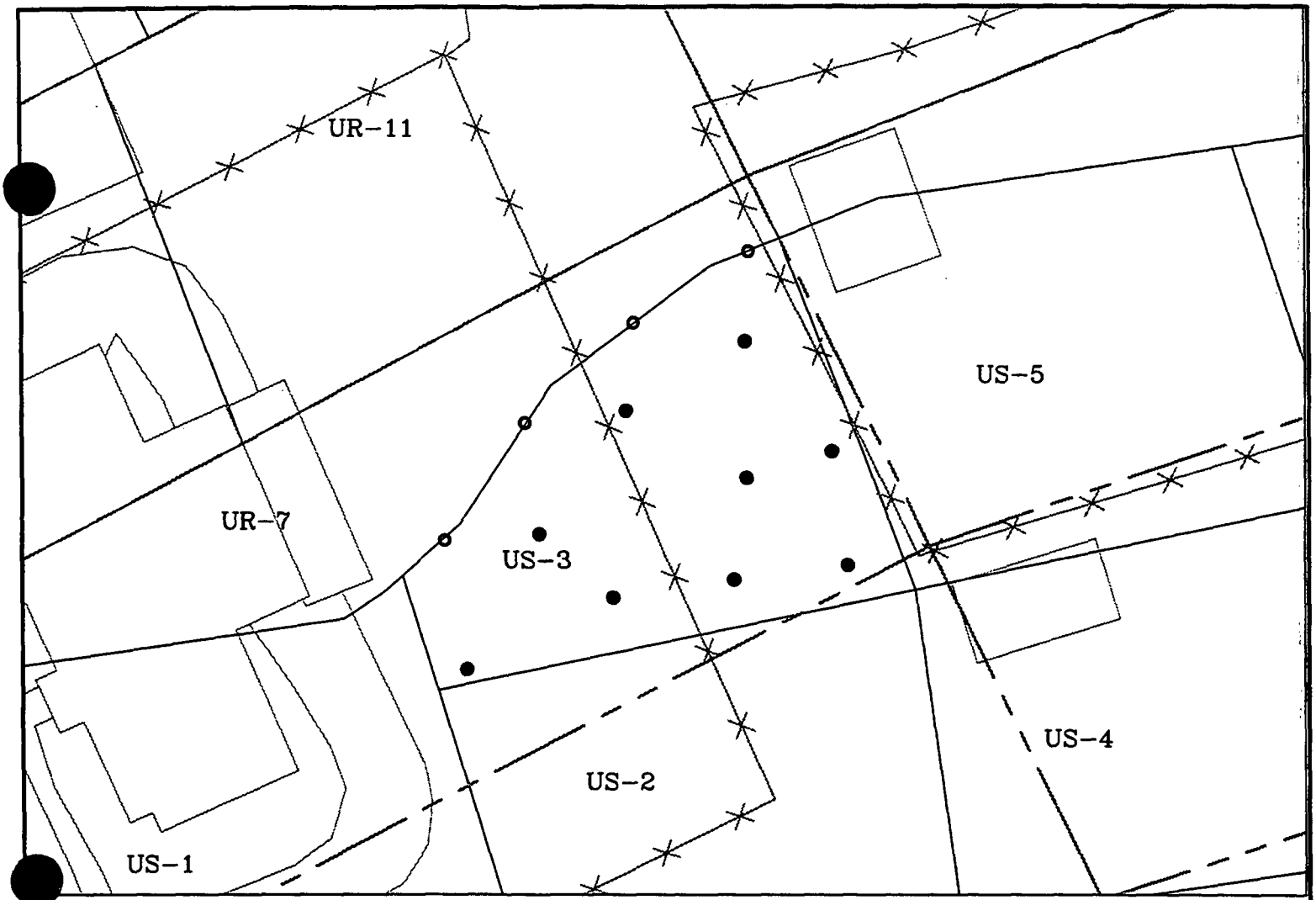

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1438	IAFA-P1A-F-US3-C-2
PERIMETER SURFACE	939	IAFA-P1A-P-US3-C-A-2
PERIMETER 2' DEPTH	1666	IAFA-P1A-P-US3-C-B-2
PERIMETER 4' DEPTH	1475	IAFA-P1A-P-US3-C-C-2

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

US-03 (1934.40 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY OOPC
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC US03C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
US-03
REV

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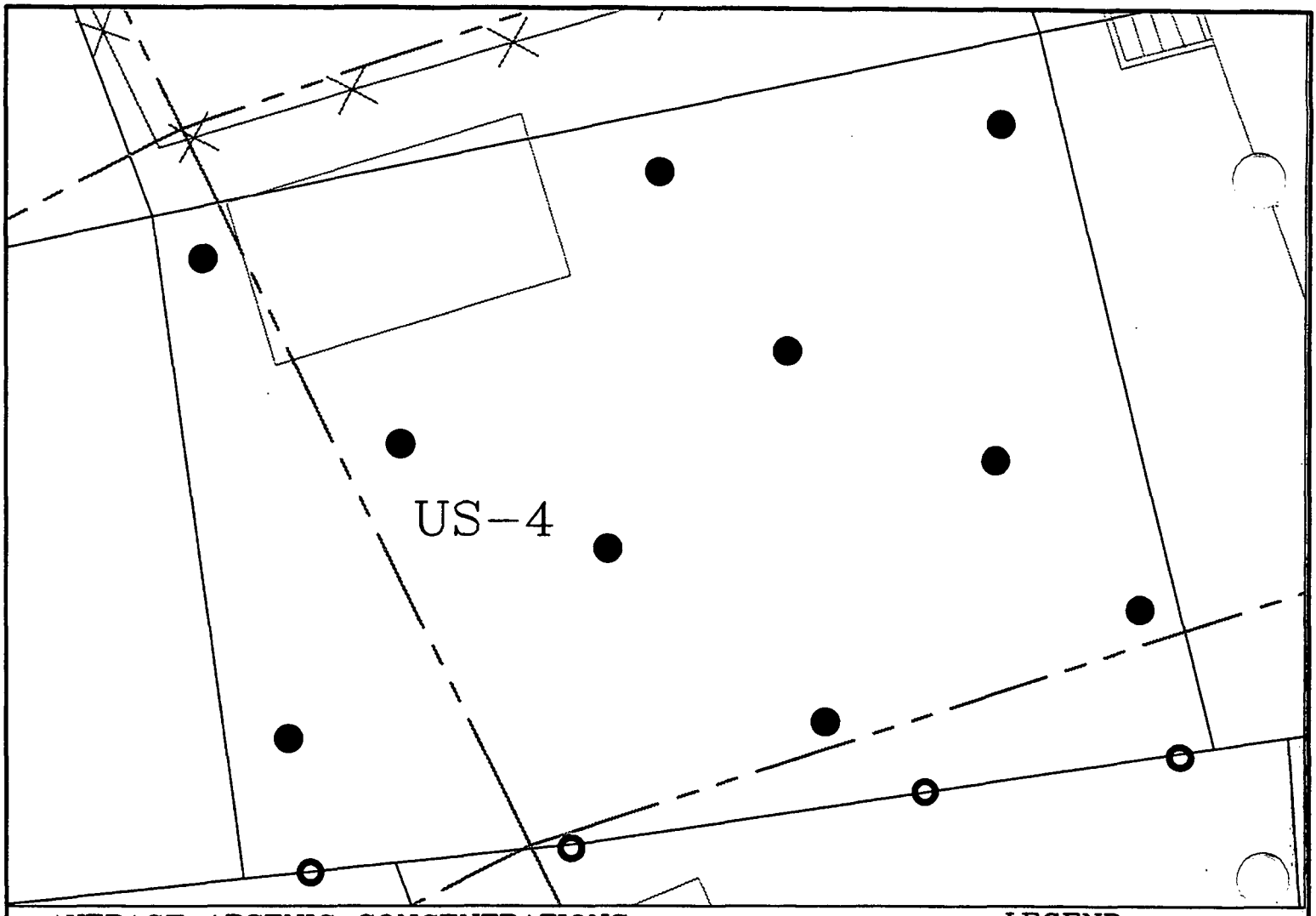
TAC \OOPC\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 1A



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	745	IAFA-P1A-F-US4-C-1
PERIMETER SURFACE	1305	IAFA-P1A-P-US4-C-A-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-04 (2446.00 SQUARE FEET)
PHASE 1 - REMOVAL A (1 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY: GOPC
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

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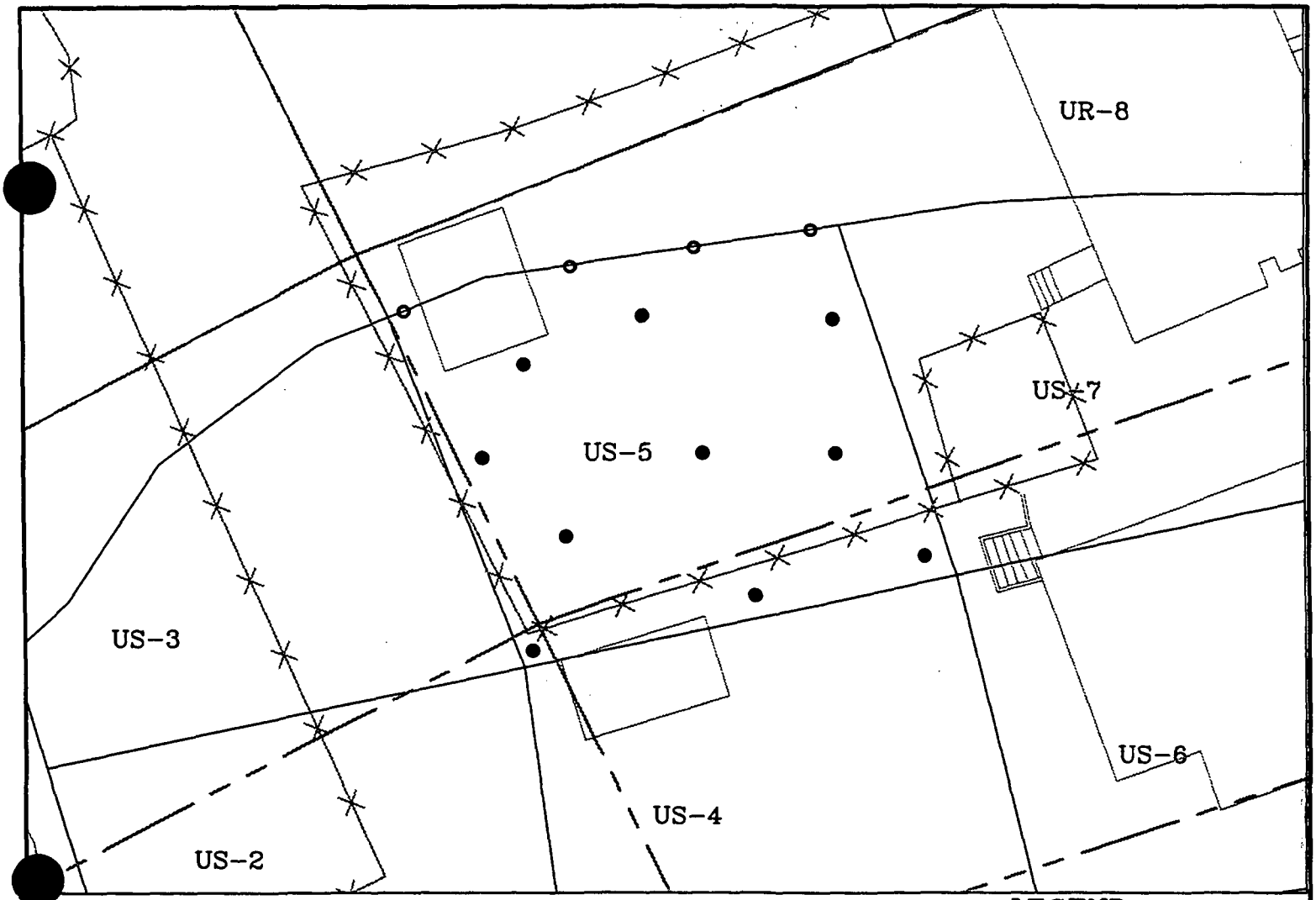
(253) 759-4476

DRAWING FILE NUMBER: TAC US04C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: US-04
REV: △

NORTH

FOR UPDATE:
TAC \GOPC\TAC\ c:\Everett Soils\Decision Unit Maps\Phase 1A



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	2875	IAFA-P1A-F-US5-C-1
PERIMETER SURFACE	1591	IAFA-P1A-P-US5-C-A-1
PERIMETER 2' DEPTH	1074	IAFA-P1A-P-US5-C-B-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

US-05 (2575.60 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY OOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

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DRAWING FILE NUMBER
TAC US05C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
US-05
REV

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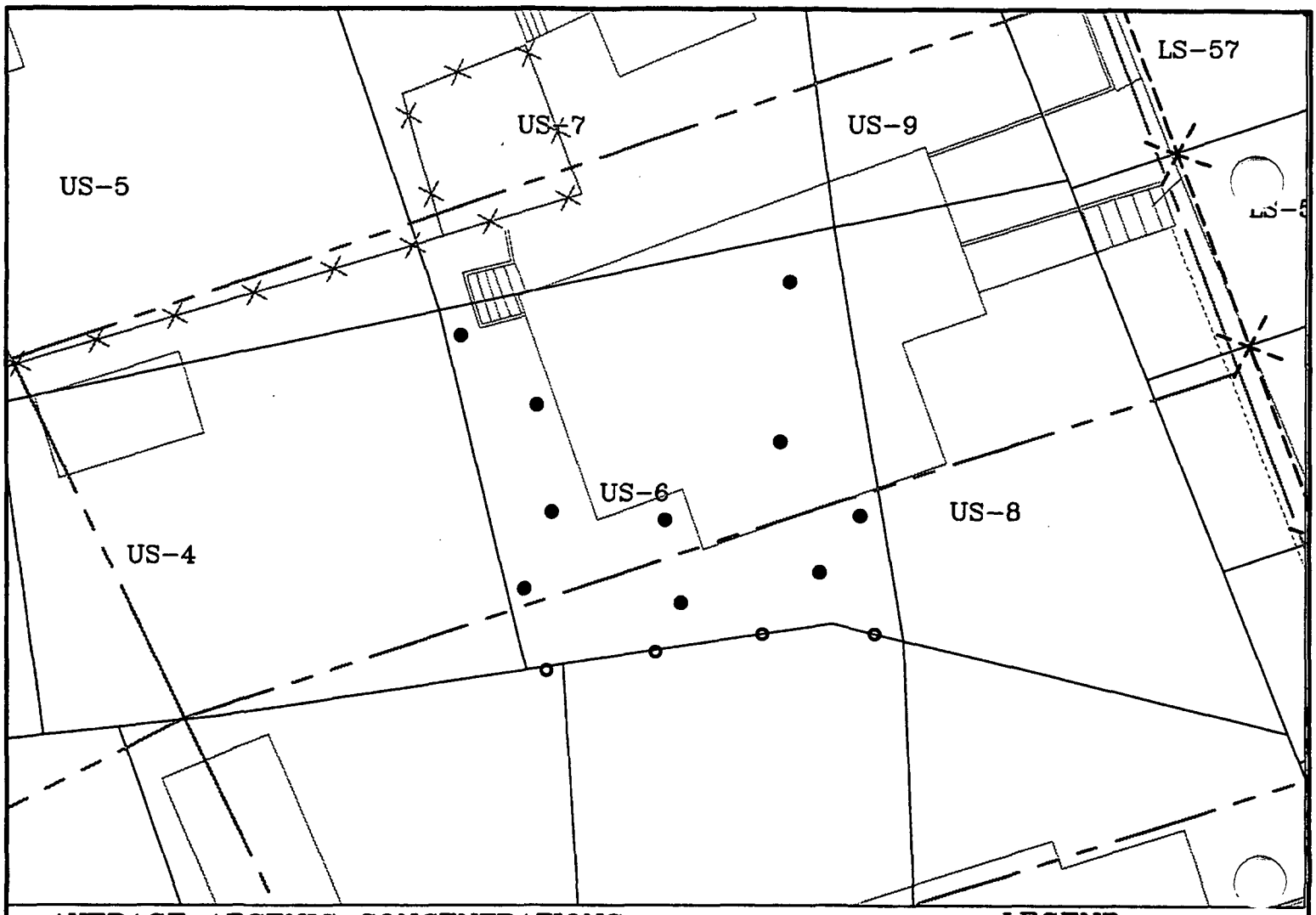

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	804	IAFA-P1A-F-US6-C-1
PERIMETER SURFACE	1208	IAFA-P1A-P-US6-C-A-1
PERIMETER 2' DEPTH	547	IAFA-P1A-P-US6-C-B-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

US-06 (2216.40 SQUARE FEET)
PHASE 1 - REMOVAL A (2 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
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SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

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TAC US06C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
US-06
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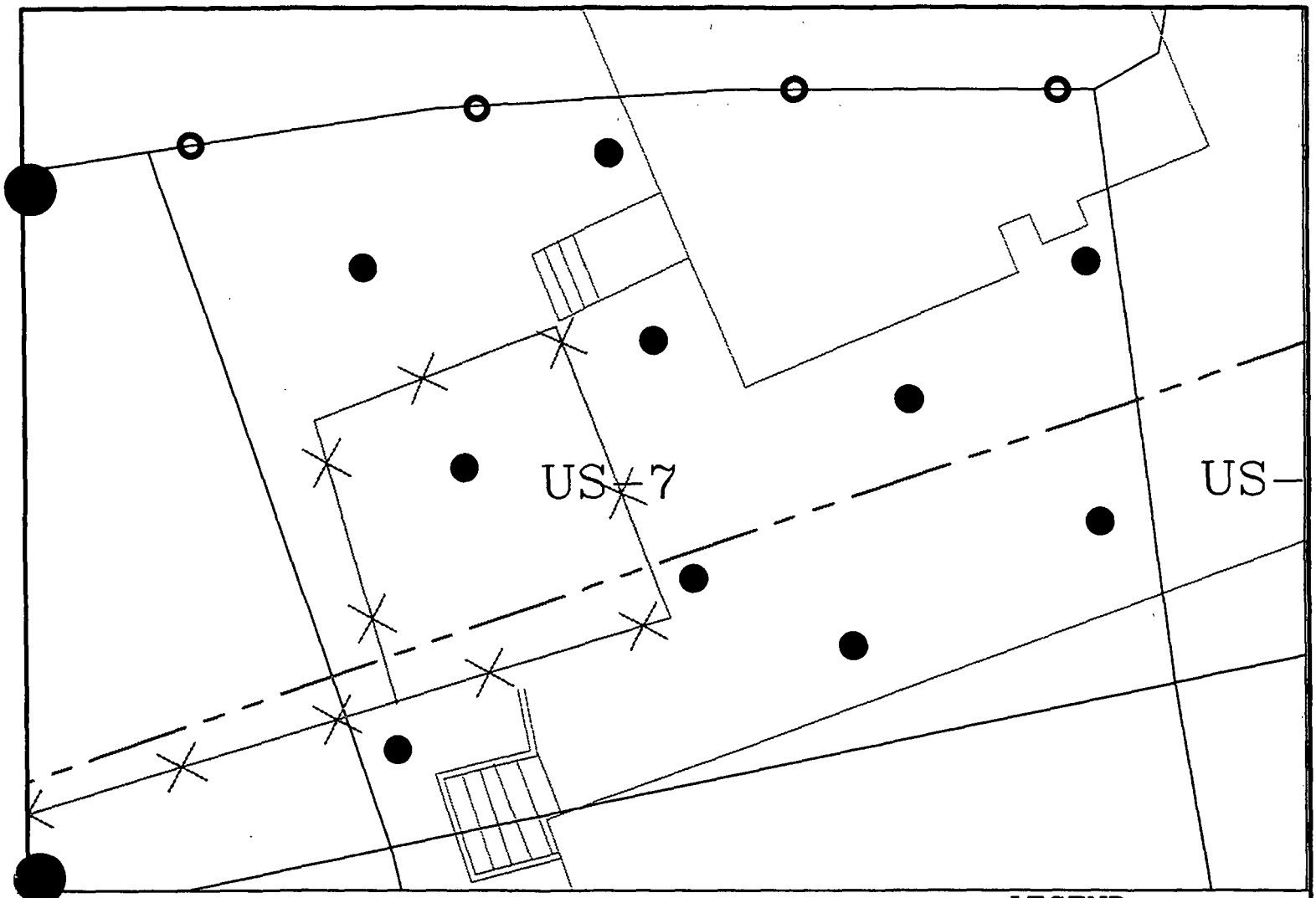

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1565	IAFA-P1A-F-US7-C-1
PERIMETER SURFACE	1238	IAFA-P1A-P-US7-C-A-1
PERIMETER 2' DEPTH	1429	IAFA-P1A-P-US7-C-B-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-07 (2236.80 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :	
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SCALE: AS NOTED	

ASARCO Consulting, Inc.
Ruston, Washington 98407
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AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
US-07

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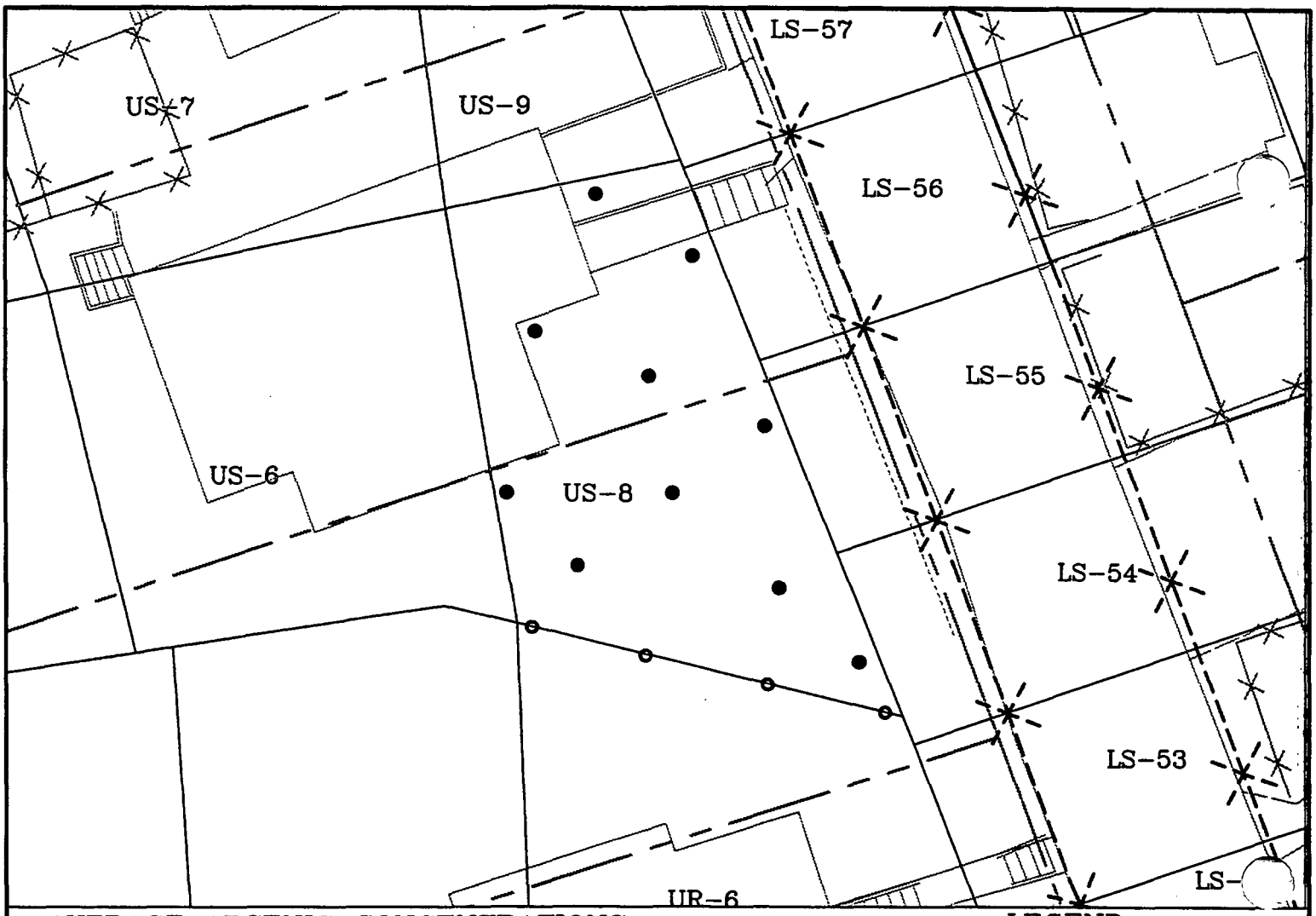

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1118	IAFA-P1A-F-US8-C-1
PERIMETER SURFACE	454	IAFA-P1A-P-US8-C-A-1
PERIMETER 2' DEPTH	446	IAFA-P1A-P-US8-C-B-1
PERIMETER 4' DEPTH	262	IAFA-P1A-P-US8-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-08 (2144.30 SQUARE FEET)
PHASE 1 – REMOVAL A (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. –Tacoma–

DRAWING SCALE: 0 – 20 FEET – 40 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
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SCALE: AS NOTED

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Ruston, Washington 98407

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SHEET NUMBER: US-08
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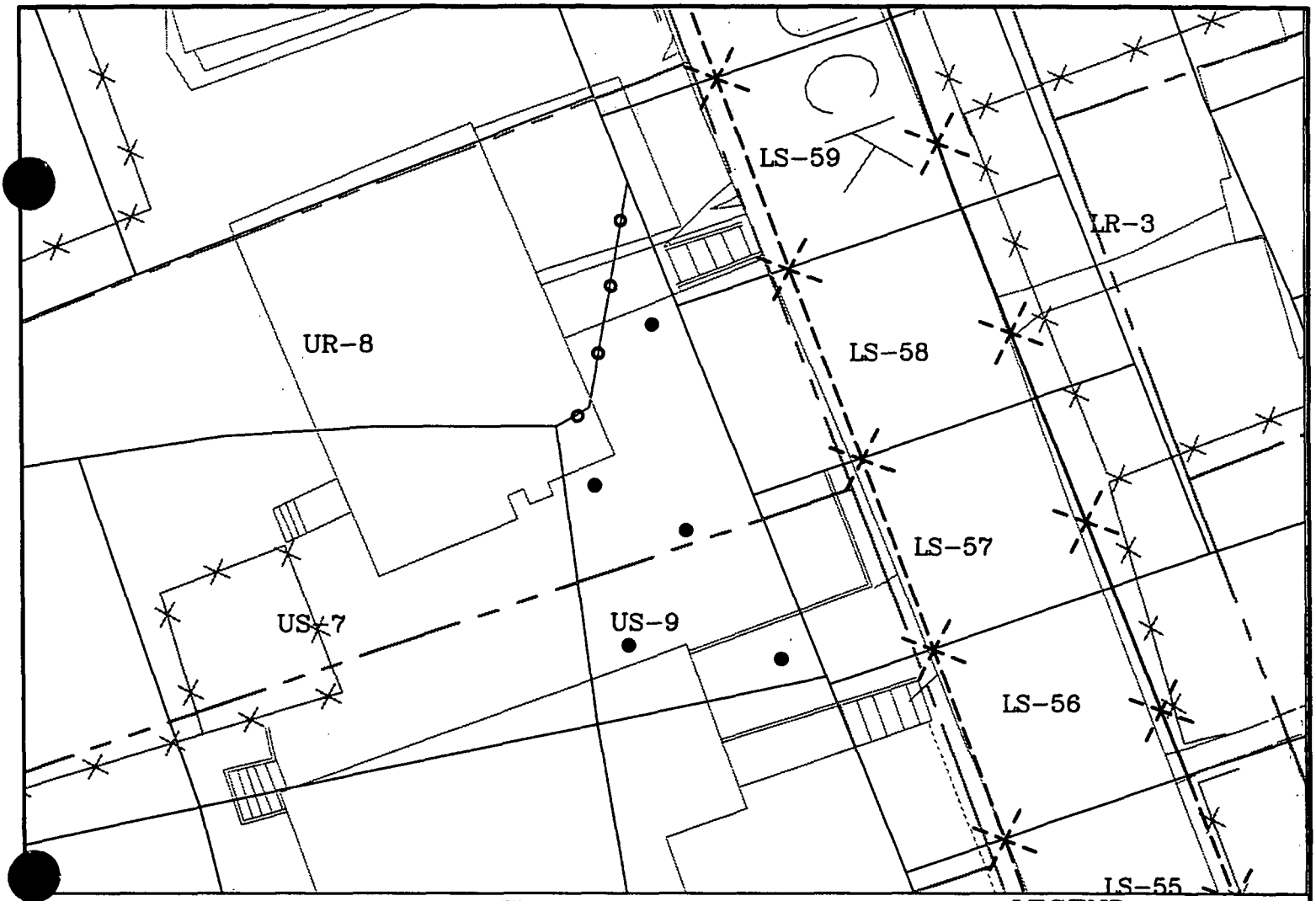

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1913	IAFA-P1A-F-US9-C-2
PERIMETER SURFACE	1084	IAFA-P1A-P-US9-C-A-1
PERIMETER 2' DEPTH	499	IAFA-P1A-P-US9-C-B-1
PERIMETER 4' DEPTH	2625	IAFA-P1A-P-US9-C-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-09 (1100.40 SQUARE FEET)
PHASE 1 – REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. –Tacoma–

DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
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SCALE: AS NOTED

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AUTOCAD REL. 2000 DRAWING (DWG)
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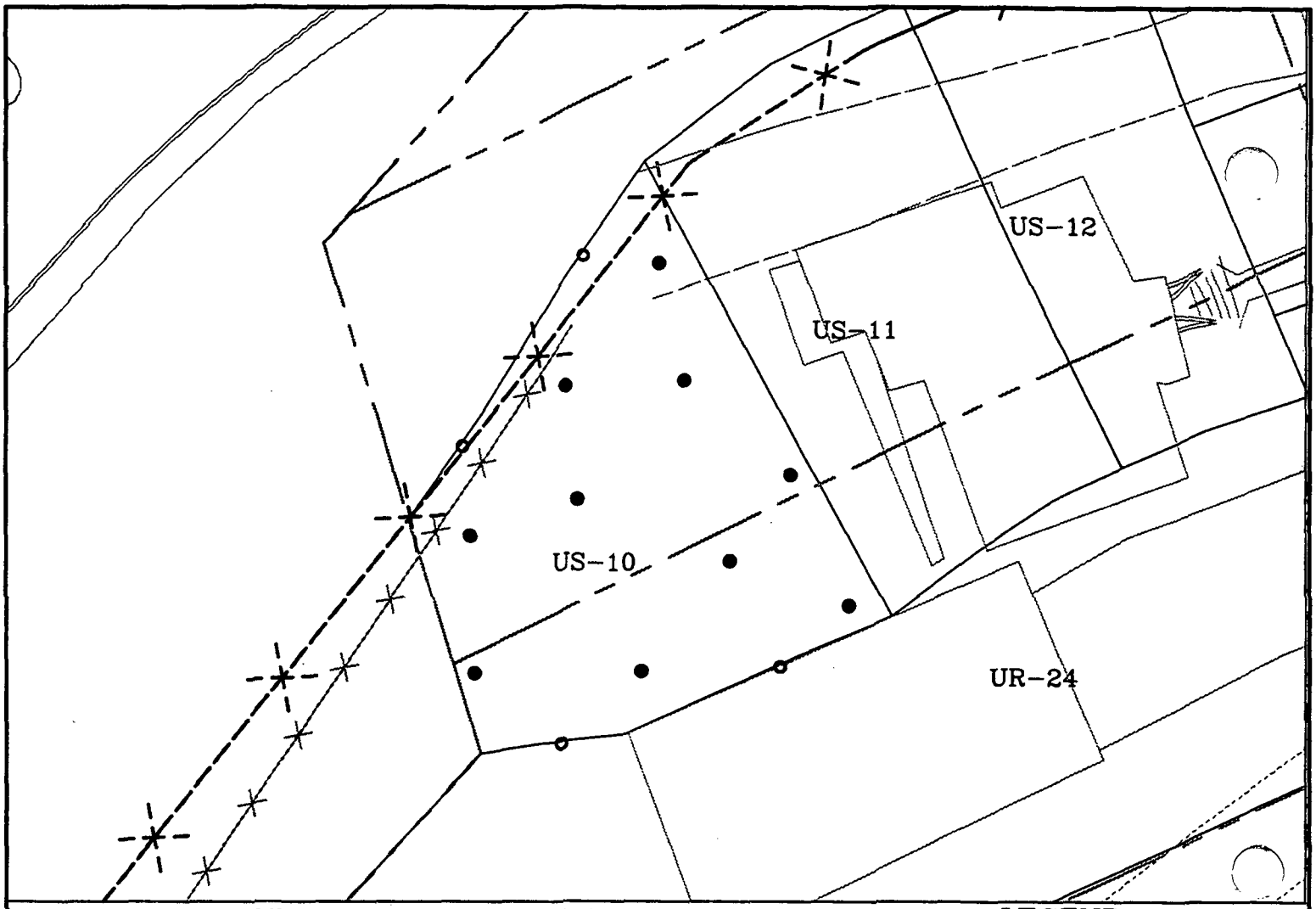

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	208	IAFA-P1A-F-US10-C-1
PERIMETER SURFACE	900	IAFA-P1A-P-US10-C-A-1
PERIMETER 2' DEPTH	1440	IAFA-P1A-P-US10-C-B-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

US-10 (2332.50 SQUARE FEET)
PHASE 1 - REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

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SCALE: AS NOTED

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DRAWING FILE NUMBER
TAC US10C4
AUTOCAD REL. 2000 DRAWING (DWG)
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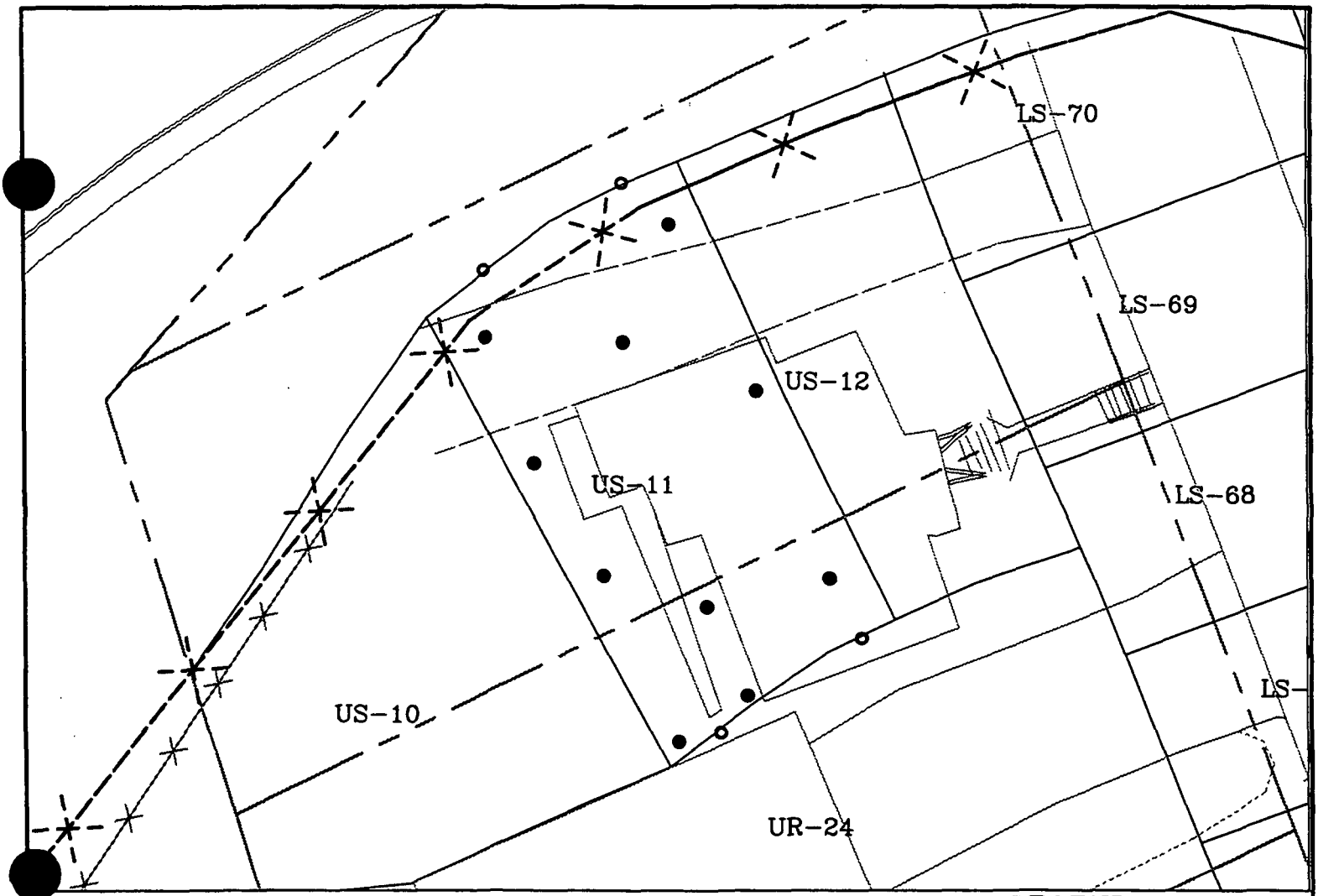

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	952	IAFA-P1A-F-US11-C-1
PERIMETER SURFACE	1887	IAFA-P1A-P-US11-C-A-2
PERIMETER 2' DEPTH	1287	IAFA-P1A-P-US11-C-B-2

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-11 (2167.80 SQUARE FEET)
PHASE 1 – REMOVAL A (3 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 – 20 FEET – 40 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY: DDPC
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC US11C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: US-11
REV

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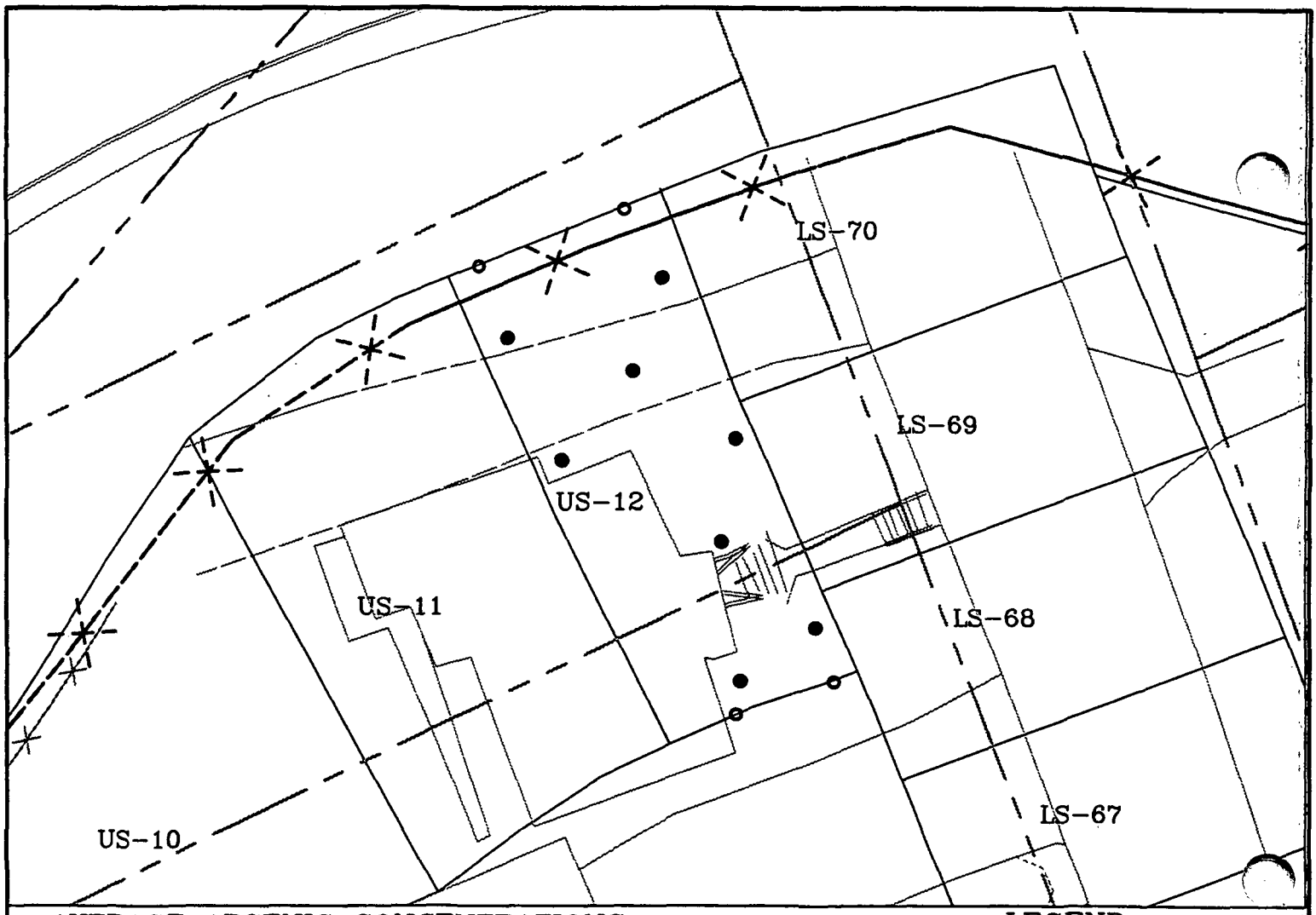

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	261	IAFA-P1A-F-US12-C-1
PERIMETER SURFACE	1505	IAFA-P1A-P-US12-C-A-2
PERIMETER 2' DEPTH	1374	IAFA-P1A-P-US12-C-B-2
PERIMETER 4' DEPTH	1824	IAFA-P1A-P-US12-C-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

US-12 (1603.40 SQUARE FEET)
PHASE 1 - REMOVAL A (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
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SCALE: AS NOTED

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Ruston, Washington 98407

DRAWING FILE NUMBER
TAC US12C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
US-12
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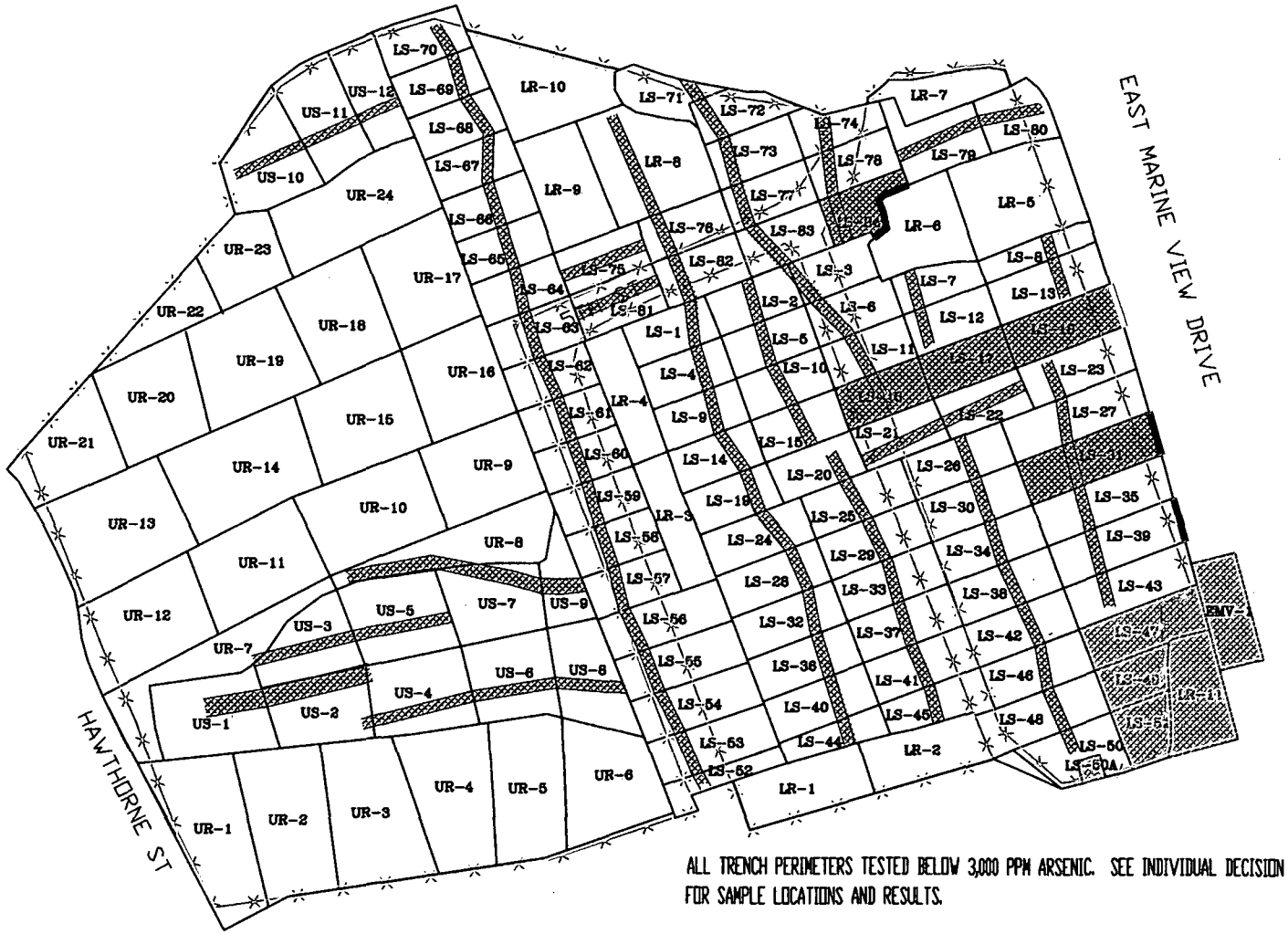
A.2 Phase 1B Sampling Results Table and Maps (Phase II Excavation)

Table A.2
Everett Fenced Area Performance Monitoring - Phase 1B Sampling

Decision Unit	Sample Number	Sample Date	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: >3,000 mg/Kg)
LS16	IAFA-P1B-F-LS16-C-1	9/21/04	Floor	6'	1145	Pass
LS17	IAFA-P1B-F-LS17-C-1	9/21/04	Floor	7'	1067	Pass
LS18	IAFA-P1B-F-LS18-C-1	9/22/04	Floor	4'	956	Pass
LS31	LS31-P1B-F-D-L1	10/7/04	Floor	7'	648	Pass
	LS31-P1B-F-D-L2	10/7/04	Floor	7'	702	Pass
	LS31-P1B-F-D-L3	10/7/04	Floor	7'	684	Pass
	LS31-P1B-F-D-L4	10/7/04	Floor	7'	1070	Pass
	LS31-P1B-F-D-L5	10/7/04	Floor	7'	794	Pass
	LS31-P1B-F-D-L6	10/7/04	Floor	7'	994	Pass
	LS31-P1B-F-D-L7	10/7/04	Floor	7'	533	Pass
	LS31-P1B-F-D-L8	10/7/04	Floor	7'	432	Pass
	LS31-P1B-F-D-L9	10/7/04	Floor	7'	533	Pass
	LS31-P1B-P-D-L1-A	10/7/04	Perimeter	1'	877	Pass
	LS31-P1B-P-D-L2-A	10/7/04	Perimeter	1'	1430	Pass
	LS31-P1B-P-D-L3-A	10/7/04	Perimeter	1'	911	Pass
	LS31-P1B-P-D-L4-A	10/7/04	Perimeter	1'	1150	Pass
	LS31-P1B-P-D-L5-A	10/7/04	Perimeter	1'	1010	Pass
	LS31-P1B-P-D-L6-A	10/7/04	Perimeter	1'	940	Pass
	LS31-P1B-P-D-L7-A	10/7/04	Perimeter	1'	640	Pass
	LS31-P1B-P-D-L8-A	10/7/04	Perimeter	1'	1400	Pass
	LS31-P1B-P-D-L9-A	10/7/04	Perimeter	1'	1290	Pass
	LS31-P1B-P-D-L10-A	10/7/04	Perimeter	1'	1070	Pass
	LS31-P1B-P-D-L1-B	10/7/04	Perimeter	2'	901	Pass
	LS31-P1B-P-D-L2-B	10/7/04	Perimeter	2'	1010	Pass
	LS31-P1B-P-D-L3-B	10/7/04	Perimeter	2'	2100	Pass
	LS31-P1B-P-D-L4-B	10/7/04	Perimeter	2'	1020	Pass
	LS31-P1B-P-D-L5-B	10/7/04	Perimeter	2'	1230	Pass
	LS31-P1B-P-D-L6-B	10/7/04	Perimeter	2'	742	Pass
	LS31-P1B-P-D-L7-B	10/7/04	Perimeter	2'	337	Pass
	LS31-P1B-P-D-L8-B	10/7/04	Perimeter	2'	950	Pass
	LS31-P1B-P-D-L9-B	10/7/04	Perimeter	2'	1340	Pass
	LS31-P1B-P-D-L10-B	10/7/04	Perimeter	2'	710	Pass
	LS31-P1B-P-D-L1-C	10/7/04	Perimeter	3'	460	Pass

Table A.2
Everett Fenced Area Performance Monitoring - Phase 1B Sampling

	LS31-P1B-P-D-L2-C	10/7/04	Perimeter	3'	407	Pass
	LS31-P1B-P-D-L3-C	10/7/04	Perimeter	3'	1130	Pass
	LS31-P1B-P-D-L4-C	10/7/04	Perimeter	3'	1300	Pass
	LS31-P1B-P-D-L5-C	10/7/04	Perimeter	3'	827	Pass
	LS31-P1B-P-D-L6-C	10/7/04	Perimeter	3	926	Pass
	LS31-P1B-P-D-L7-C	10/7/04	Perimeter	3'	351	Pass
	LS31-P1B-P-D-L8-C	10/7/04	Perimeter	3'	908	Pass
	LS31-P1B-P-D-L9-C	10/7/04	Perimeter	3'	974	Pass
	LS31-P1B-P-D-L10-C	10/7/04	Perimeter	3'	680	Pass
LS39	IAFA-P1B-P-LS39-C-A-1	9/25/04	Perimeter	surface	568	Pass
	IAFA-P1B-P-LS39-C-B-1	9/25/04	Perimeter	2'	908	Pass
	IAFA-P1B-P-LS39-C-C-1	9/25/04	Perimeter	4'	904	Pass
LS84	LS84-P1B-F-D-L1	10/7/04	Floor	7'	1400	Pass
	LS84-P1B-F-D-L2	10/7/04	Floor	7'	1280	Pass
	LS84-P1B-F-D-L3	10/7/04	Floor	7'	1340	Pass
	LS84-P1B-F-D-L4	10/7/04	Floor	7'	601	Pass
	LS84-P1B-F-D-L5	10/7/04	Floor	7'	1520	Pass
	LS84-P1B-P-D-L1-B	10/7/04	Perimeter	1'	1580	Pass
	LS84-P1B-P-D-L2-B	10/7/04	Perimeter	1'	2110	Pass
	LS84-P1B-P-D-L3-B	10/7/04	Perimeter	1'	2020	Pass
	LS84-P1B-P-D-L4-B	10/7/04	Perimeter	1'	962	Pass
	LS84-P1B-P-D-L5-B	10/7/04	Perimeter	1'	1190	Pass
	LS84-P1B-P-D-L6-B	10/7/04	Perimeter	1'	580	Pass
	LS84-P1B-P-D-L7-B	10/7/04	Perimeter	1'	753	Pass
	LS84-P1B-P-D-L8-B	10/7/04	Perimeter	1'	994	Pass



ALL TRENCH PERIMETERS TESTED BELOW 3,000 PPM ARSENIC. SEE INDIVIDUAL DECISION UNIT MAPS FOR SAMPLE LOCATIONS AND RESULTS.

10/8/04

I:Everett Soils\Decision Unit Maps\Phase IB\Phase IB Soil Removal Status

LEGEND

FAIL

PASS

PASSING PERIMETER

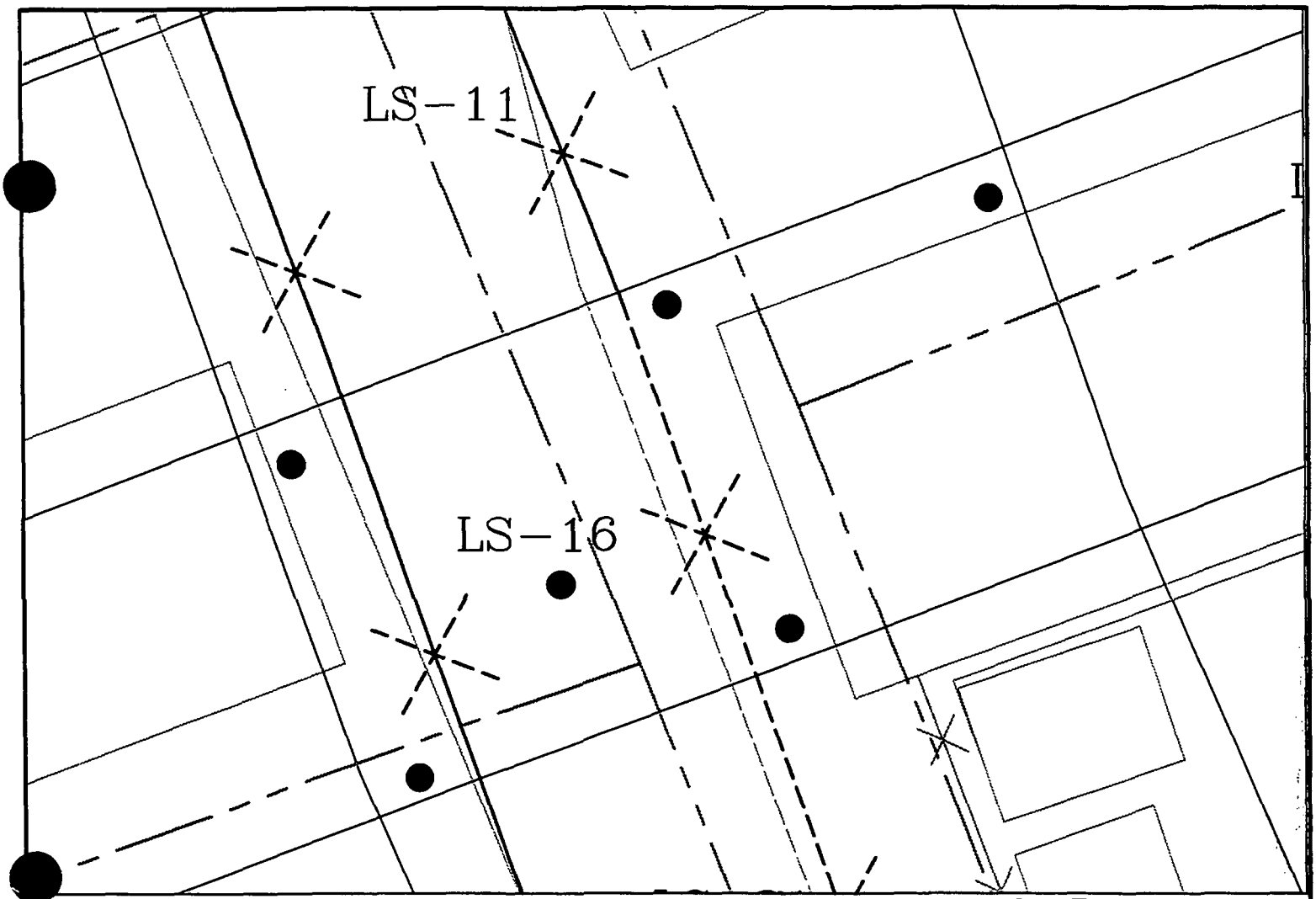
FAILING PERIMETER

PHASE 1B SAMPLING NOT CONDUCTED DUE TO THE PERFORMANCE OF PHASE 2 EXCAVATION OR A PHYSICAL BARRIER SUCH AS A ROAD OR PROPERTY LINE

Asarco Consulting, Inc.

EVERETT SMELTER INTERIM ACTION
PHASE IB SOIL REMOVAL STATUS
AND CONFIRMATION TRENCH SYSTEM

3' EXCAVATION BEYOND SOURCE EXCAVATION



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1145	IAFA-P1B-F-LS16-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-16 (1243.50 SQUARE FEET)
PHASE 1 - REMOVAL B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
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APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS16P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-16
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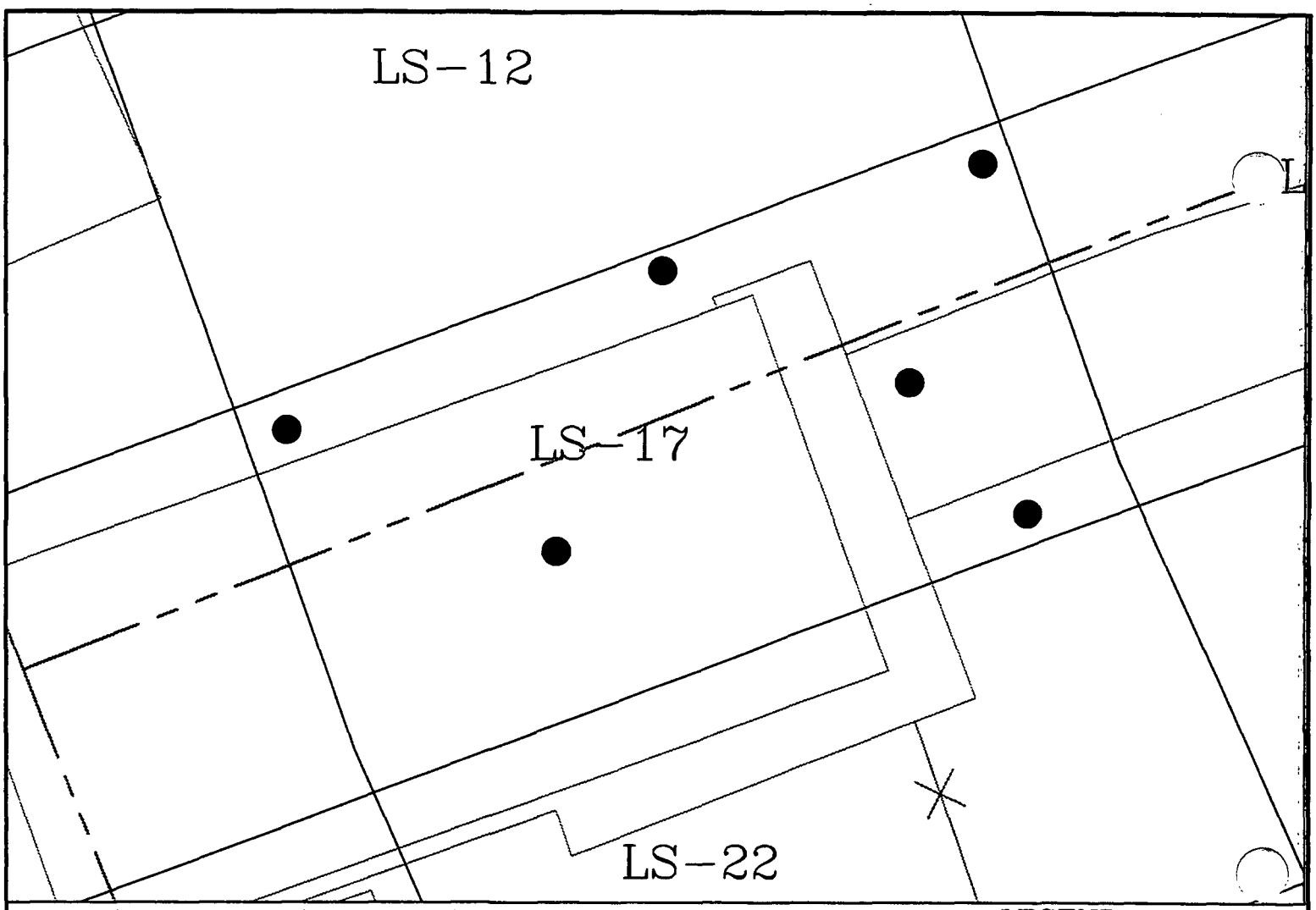

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	1067	IAFA-P1B-F-LS17-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-17 (1245.00 SQUARE FEET)
PHASE 1 - REMOVAL B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :		
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SCALE: AS NOTED		

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TAC LS17P1BC4
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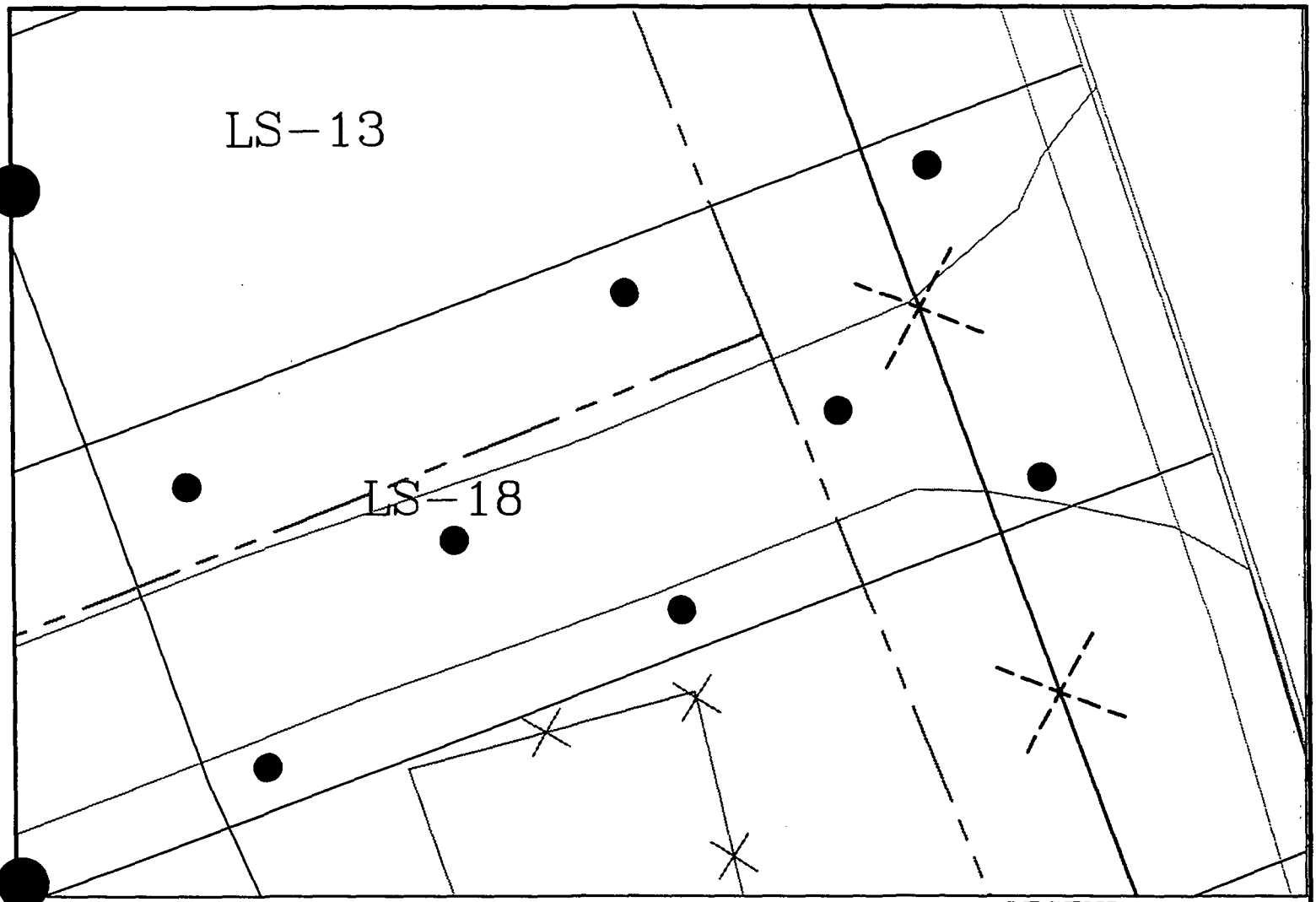

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	956	IAFA-P1B-F-LS18-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

Phase 1B excavation & sampling did not occur along the LS-18 perimeter because it abutts East Marine View Drive. Phase 1A excavation and exploratory borings confirm that all material exceeding 3,000 ppm arsenic has been removed.

LS-18 (1630.10 SQUARE FEET)
PHASE 1 - REMOVAL B (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
1st			
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Project :		
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APPROVED BY		
SCALE: AS NOTED		

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DRAWING FILE NUMBER
TAC LS18P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-18

REV △

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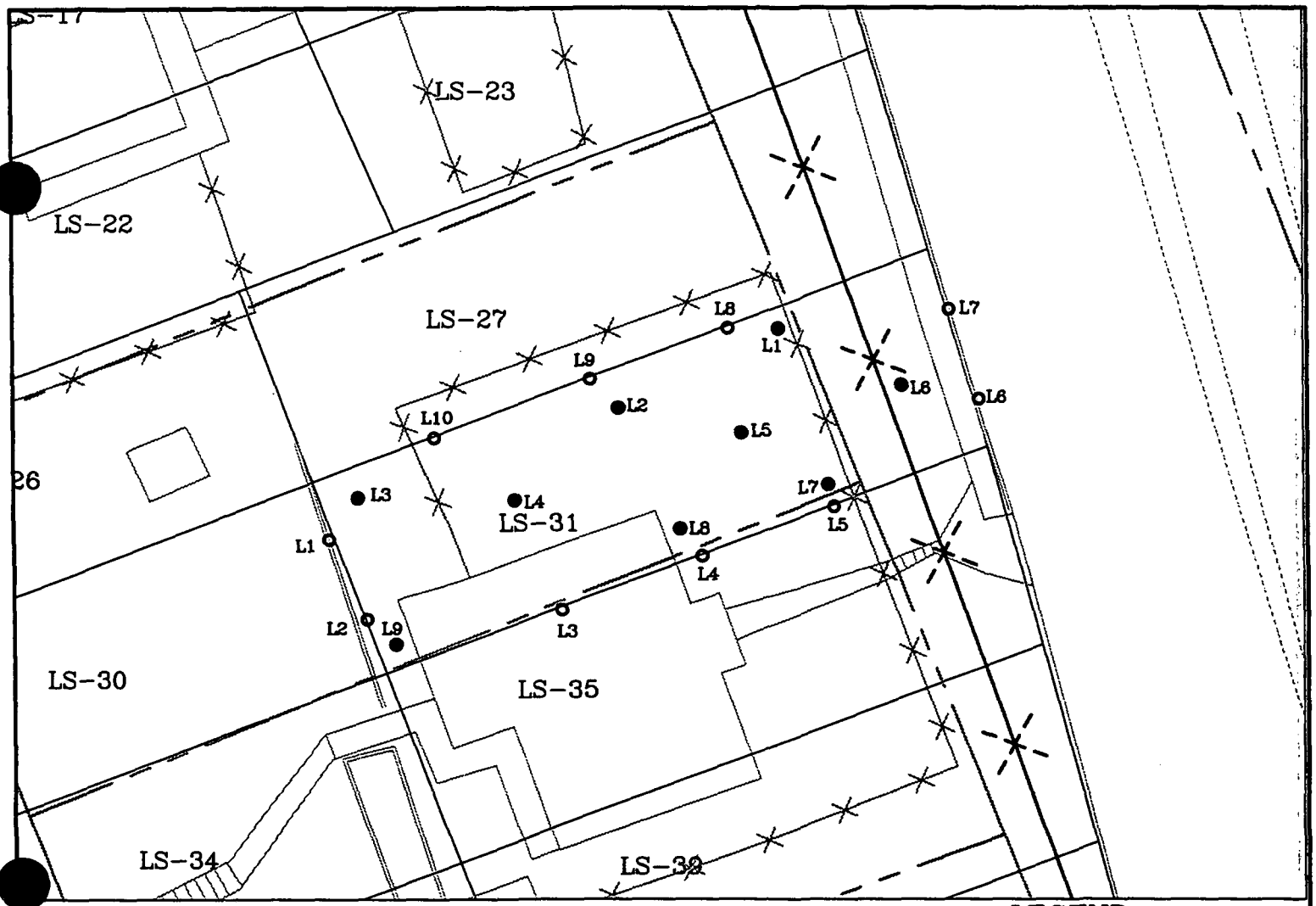

SEE ATTACHED TABLE FOR ARSENIC RESULTS

LEGEND

● FLOOR SAMPLE LOCATION

○ PERIMETER SAMPLE LOCATION

LS-31 (1984 SQUARE FEET)
PHASE 1 - REMOVAL B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 20 FEET — 40 FEET

REVISIONS	BY	DATE	
1st			
2nd			
3rd			
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Project :
DRAWN BY: DOPC
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS31P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-31
REV

NORTH

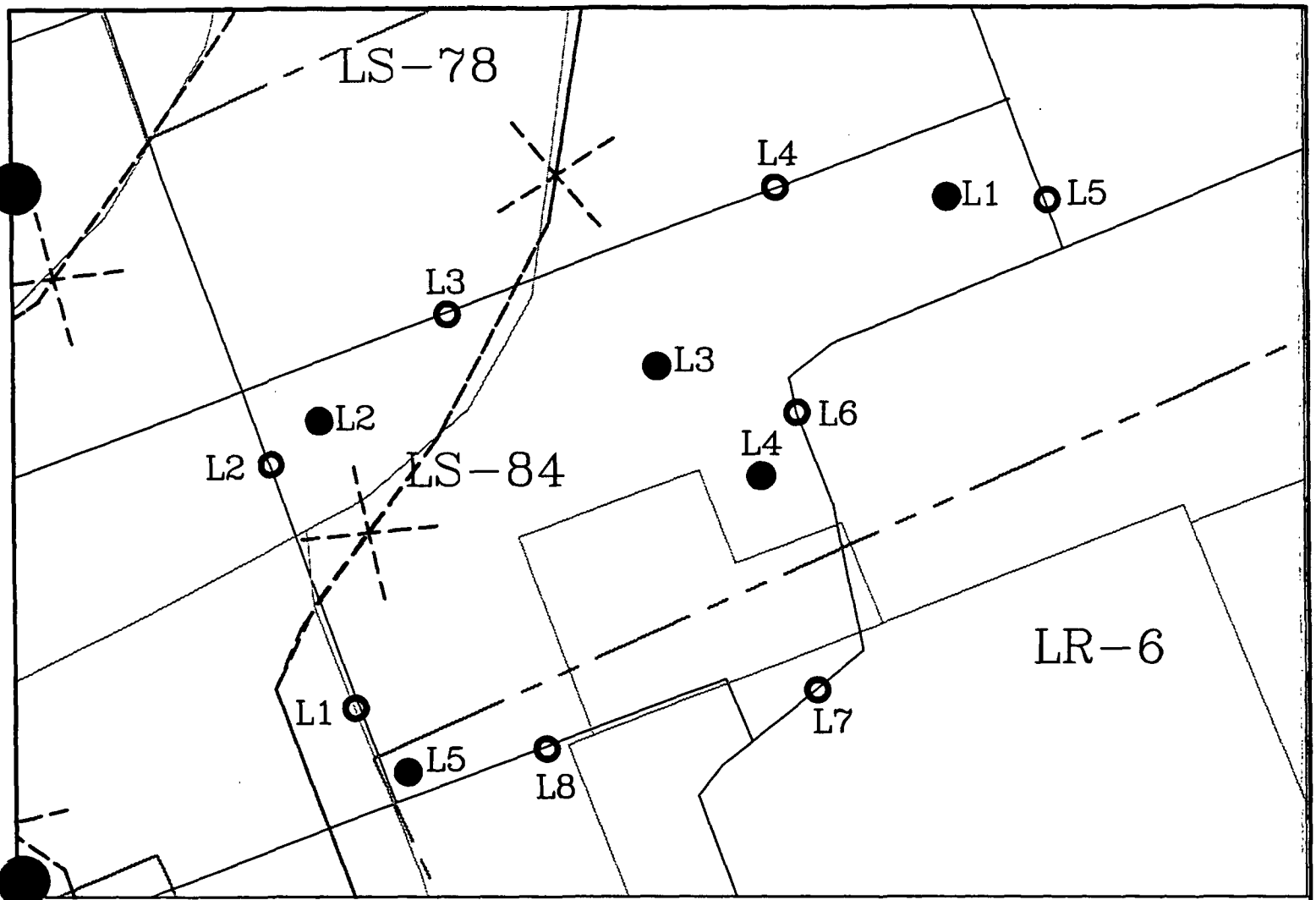
TAC UPDATE
TAC \DOPC\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 1B

Everett Fenced Area Performance Monitoring - Phase 1B Excavation

LS31	LS31-P1B-F-D-L1	10/7/04	Floor	7'	648	Pass
	LS31-P1B-F-D-L2	10/7/04	Floor	7'	702	Pass
	LS31-P1B-F-D-L3	10/7/04	Floor	7'	684	Pass
	LS31-P1B-F-D-L4	10/7/04	Floor	7'	1070	Pass
	LS31-P1B-F-D-L5	10/7/04	Floor	7'	794	Pass
	LS31-P1B-F-D-L6	10/7/04	Floor	7'	994	Pass
	LS31-P1B-F-D-L7	10/7/04	Floor	7'	533	Pass
	LS31-P1B-F-D-L8	10/7/04	Floor	7'	432	Pass
	LS31-P1B-F-D-L9	10/7/04	Floor	7'	533	Pass
	LS31-P1B-P-D-L1-A	10/7/04	Perimeter	1'	877	Pass
	LS31-P1B-P-D-L2-A	10/7/04	Perimeter	1'	1430	Pass
	LS31-P1B-P-D-L3-A	10/7/04	Perimeter	1'	911	Pass
	LS31-P1B-P-D-L4-A	10/7/04	Perimeter	1'	1150	Pass
	LS31-P1B-P-D-L5-A	10/7/04	Perimeter	1'	1010	Pass
	LS31-P1B-P-D-L6-A	10/7/04	Perimeter	1'	940	Pass
	LS31-P1B-P-D-L7-A	10/7/04	Perimeter	1'	640	Pass
	LS31-P1B-P-D-L8-A	10/7/04	Perimeter	1'	1400	Pass
	LS31-P1B-P-D-L9-A	10/7/04	Perimeter	1'	1290	Pass
	LS31-P1B-P-D-L10-A	10/7/04	Perimeter	1'	1070	Pass
	LS31-P1B-P-D-L1-B	10/7/04	Perimeter	2'	901	Pass
	LS31-P1B-P-D-L2-B	10/7/04	Perimeter	2'	1010	Pass
	LS31-P1B-P-D-L3-B	10/7/04	Perimeter	2'	2100	Pass
	LS31-P1B-P-D-L4-B	10/7/04	Perimeter	2'	1020	Pass
	LS31-P1B-P-D-L5-B	10/7/04	Perimeter	2'	1230	Pass
	LS31-P1B-P-D-L6-B	10/7/04	Perimeter	2'	742	Pass
	LS31-P1B-P-D-L7-B	10/7/04	Perimeter	2'	337	Pass
	LS31-P1B-P-D-L8-B	10/7/04	Perimeter	2'	950	Pass
	LS31-P1B-P-D-L9-B	10/7/04	Perimeter	2'	1340	Pass
	LS31-P1B-P-D-L10-B	10/7/04	Perimeter	2'	710	Pass
	LS31-P1B-P-D-L1-C	10/7/04	Perimeter	3'	460	Pass
	LS31-P1B-P-D-L2-C	10/7/04	Perimeter	3'	407	Pass
	LS31-P1B-P-D-L3-C	10/7/04	Perimeter	3'	1130	Pass
	LS31-P1B-P-D-L4-C	10/7/04	Perimeter	3'	1300	Pass
	LS31-P1B-P-D-L5-C	10/7/04	Perimeter	3'	827	Pass
	LS31-P1B-P-D-L6-C	10/7/04	Perimeter	3	926	Pass

Everett Fenced Area Performance Monitoring - Phase 1B Excavation

	LS31-P1B-P-D-L7-C	10/7/04	Perimeter	3'	351	Pass
	LS31-P1B-P-D-L8-C	10/7/04	Perimeter	3'	908	Pass
	LS31-P1B-P-D-L9-C	10/7/04	Perimeter	3'	974	Pass
	LS31-P1B-P-D-L10-C	10/7/04	Perimeter	3'	680	Pass



SEE ATTACHED TABLE FOR ARSENIC RESULTS

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-84 (1046.60 SQUARE FEET)
PHASE 1 - REMOVAL B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY: COPC
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS84P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-84
REV

NORTH

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Everett Fenced Area Performance Monitoring - Phase 1B Excavation

LS84	LS84-P1B-F-D-L1	10/7/04	Floor	7'	1400	Pass
	LS84-P1B-F-D-L2	10/7/04	Floor	7'	1280	Pass
	LS84-P1B-F-D-L3	10/7/04	Floor	7'	1340	Pass
	LS84-P1B-F-D-L4	10/7/04	Floor	7'	601	Pass
	LS84-P1B-F-D-L5	10/7/04	Floor	7'	1520	Pass
	LS84-P1B-P-D-L1-B	10/7/04	Perimeter	1'	1580	Pass
	LS84-P1B-P-D-L2-B	10/7/04	Perimeter	1'	2110	Pass
	LS84-P1B-P-D-L3-B	10/7/04	Perimeter	1'	2020	Pass
	LS84-P1B-P-D-L4-B	10/7/04	Perimeter	1'	962	Pass
	LS84-P1B-P-D-L5-B	10/7/04	Perimeter	1'	1190	Pass
	LS84-P1B-P-D-L6-B	10/7/04	Perimeter	1'	580	Pass
	LS84-P1B-P-D-L7-B	10/7/04	Perimeter	1'	753	Pass
	LS84-P1B-P-D-L8-B	10/7/04	Perimeter	1'	994	Pass

A.2.A Phase 1B Confirmation Trench Sampling Results Table and Maps (Phase II Excavation)

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
LR08	10/4/04	LR8-P1B-1F	Floor	8'	119	Pass
	10/4/04	LR8-P1B-1W-A	Sidewall	1'	901	Pass
	10/4/04	LR8-P1B-1W-B	Sidewall	2'	<100	Pass
	10/4/04	LR8-P1B-1W-C	Sidewall	3'	<100	Pass
	10/4/04	LR8-P1B-2F	Floor	8'	<100	Pass
	10/4/04	LR8-P1B-2W-A	Sidewall	1'	389	Pass
	10/4/04	LR8-P1B-2W-B	Sidewall	2'	<100	Pass
	10/4/04	LR8-P1B-2W-C	Sidewall	3'	<100	Pass
	10/4/04	LR8-P1B-3F	Floor	8'	<100	Pass
	10/4/04	LR8-P1B-3W-A	Sidewall	1'	287	Pass
	10/4/04	LR8-P1B-3W-B	Sidewall	2'	<100	Pass
	10/4/04	LR8-P1B-3W-C	Sidewall	3'	<100	Pass
	10/4/04	LR8-P1B-4F	Floor	8'	<100	Pass
	10/4/04	LR8-P1B-4W-A	Sidewall	1'	<100	Pass
	10/4/04	LR8-P1B-4W-B	Sidewall	2'	237	Pass
	10/4/04	LR8-P1B-4W-C	Sidewall	3'	<100	Pass
LS01	10/1/04	LS1-P1B-1F	Floor	9'	259	Pass
	10/1/04	LS1-P1B-1W-A	Sidewall	1'	1150	Pass
	10/1/04	LS1-P1B-1W-B	Sidewall	2'	1060	Pass
	10/1/04	LS1-P1B-1W-C	Sidewall	3'	800	Pass
	10/1/04	LS1-P1B-2F	Floor	9'	397	Pass
	10/1/04	LS1-P1B-2W-A	Sidewall	1'	1300	Pass
	10/1/04	LS1-P1B-2W-B	Sidewall	2'	564	Pass
	10/1/04	LS1-P1B-2W-C	Sidewall	3'	130	Pass
	10/1/04	LS1-P1B-3F	Floor	9'	<100	Pass
	10/1/04	LS1-P1B-3W-A	Sidewall	1'	381	Pass
	10/1/04	LS1-P1B-3W-B	Sidewall	2'	308	Pass
	10/1/04	LS1-P1B-3W-C	Sidewall	3'	280	Pass
LS02	10/4/04	LS2-P1B-1F	Floor	6'	272	Pass
	10/4/04	LS2-P1B-1W-A	Sidewall	1'	1500	Pass
	10/4/04	LS2-P1B-1W-B	Sidewall	2'	286	Pass
	10/4/04	LS2-P1B-1W-C	Sidewall	3'	230	Pass
	10/4/04	LS2-P1B-2F	Floor	6'	450	Pass
	10/4/04	LS2-P1B-2W-A	Sidewall	1'	240	Pass
	10/4/04	LS2-P1B-2W-B	Sidewall	2'	426	Pass
	10/4/04	LS2-P1B-2W-C	Sidewall	3'	220	Pass
	10/4/04	LS2-P1B-3F	Floor	6'	<100	Pass
	10/4/04	LS2-P1B-3W-A	Sidewall	1'	472	Pass
	10/4/04	LS2-P1B-3W-B	Sidewall	2'	682	Pass
	10/4/04	LS2-P1B-3W-C	Sidewall	3'	489	Pass
LS03	10/4/04	LS3-P1B-1F	Floor	4'	<100	Pass
	10/4/04	LS3-P1B-1W-A	Sidewall	1'	1900	Pass
	10/4/04	LS3-P1B-1W-B	Sidewall	2'	373	Pass
	10/4/04	LS3-P1B-1W-C	Sidewall	3'	300	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/4/04	LS3-P1B-2F	Floor	4'	<100	Pass
	10/4/04	LS3-P1B-2W-A	Sidewall	1'	1900	Pass
	10/4/04	LS3-P1B-2W-B	Sidewall	2'	934	Pass
	10/4/04	LS3-P1B-2W-C	Sidewall	3'	641	Pass
	10/4/04	LS3-P1B-3F	Floor	4'	1400	Pass
	10/4/04	LS3-P1B-3W-A	Sidewall	1'	743	Pass
	10/4/04	LS3-P1B-3W-B	Sidewall	2'	424	Pass
	10/4/04	LS3-P1B-3W-C	Sidewall	3'	560	Pass
LS04	10/1/04	LS4-P1B-1F	Floor	9'	246	Pass
	10/1/04	LS4-P1B-1W-A	Sidewall	1'	255	Pass
	10/1/04	LS4-P1B-1W-B	Sidewall	2'	180	Pass
	10/1/04	LS4-P1B-1W-C	Sidewall	3'	241	Pass
	10/1/04	LS4-P1B-2F	Floor	9'	325	Pass
	10/1/04	LS4-P1B-2W-A	Sidewall	1'	581	Pass
	10/1/04	LS4-P1B-2W-B	Sidewall	2'	320	Pass
	10/1/04	LS4-P1B-2W-C	Sidewall	3'	221	Pass
	10/1/04	LS4-P1B-3F	Floor	9'	302	Pass
	10/1/04	LS4-P1B-3W-A	Sidewall	1'	936	Pass
	10/1/04	LS4-P1B-3W-B	Sidewall	2'	349	Pass
	10/1/04	LS4-P1B-3W-C	Sidewall	3'	268	Pass
LS05	10/4/04	LS5-P1B-1F	Floor	7'	695	Pass
	10/4/04	LS5-P1B-1W-A	Sidewall	1'	723	Pass
	10/4/04	LS5-P1B-1W-B	Sidewall	2'	616	Pass
	10/4/04	LS5-P1B-1W-C	Sidewall	3'	682	Pass
	10/4/04	LS5-P1B-2F	Floor	7'	422	Pass
	10/4/04	LS5-P1B-2W-A	Sidewall	1'	512	Pass
	10/4/04	LS5-P1B-2W-B	Sidewall	2'	372	Pass
	10/4/04	LS5-P1B-2W-C	Sidewall	3'	228	Pass
	10/4/04	LS5-P1B-3F	Floor	7'	514	Pass
	10/4/04	LS5-P1B-3W-A	Sidewall	1'	741	Pass
	10/4/04	LS5-P1B-3W-B	Sidewall	2'	<100	Pass
	10/4/04	LS5-P1B-3W-C	Sidewall	3'	420	Pass
LS06	10/4/04	LS6-P1B-1F	Floor	4'	<100	Pass
	10/4/04	LS6-P1B-1W-A	Sidewall	1'	2200	Pass
	10/4/04	LS6-P1B-1W-B	Sidewall	2'	1800	Pass
	10/4/04	LS6-P1B-1W-C	Sidewall	3'	2400	Pass
	10/4/04	LS6-P1B-2F	Floor	4'	1500	Pass
	10/4/04	LS6-P1B-2W-A	Sidewall	1'	874	Pass
	10/4/04	LS6-P1B-2W-B	Sidewall	2'	878	Pass
	10/4/04	LS6-P1B-2W-C	Sidewall	3'	823	Pass
	10/4/04	LS6-P1B-3F	Floor	4'	1500	Pass
	10/4/04	LS6-P1B-3W-A	Sidewall	1'	600	Pass
	10/4/04	LS6-P1B-3W-B	Sidewall	2'	1900	Pass
	10/4/04	LS6-P1B-3W-C	Sidewall	3'	1750	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
LS07	10/5/04	LS7-P1B-1F	Floor	4'	525	Pass
	10/5/04	LS7-P1B-1W-A	Sidewall	1'	1670	Pass
	10/5/04	LS7-P1B-1W-B	Sidewall	2'	1130	Pass
	10/5/04	LS7-P1B-1W-C	Sidewall	3'	1000	Pass
	10/5/04	LS7-P1B-2F	Floor	4'	<100	Pass
	10/5/04	LS7-P1B-2W-A	Sidewall	1'	1570	Pass
	10/5/04	LS7-P1B-2W-B	Sidewall	2'	796	Pass
	10/5/04	LS7-P1B-2W-C	Sidewall	3'	671	Pass
	10/5/04	LS7-P1B-3F	Floor	4'	<100	Pass
	10/5/04	LS7-P1B-3W-A	Sidewall	1'	1400	Pass
	10/5/04	LS7-P1B-3W-B	Sidewall	2'	959	Pass
	10/5/04	LS7-P1B-3W-C	Sidewall	3'	681	Pass
LS08	10/5/04	LS8-P1B-1F	Floor	4'	<100	Pass
	10/5/04	LS8-P1B-1W-A	Sidewall	1'	<100	Pass
	10/5/04	LS8-P1B-1W-B	Sidewall	2'	1410	Pass
	10/5/04	LS8-P1B-1W-C	Sidewall	3'	1100	Pass
	10/5/04	LS8-P1B-2F	Floor	4'	971	Pass
	10/5/04	LS8-P1B-2W-A	Sidewall	1'	260	Pass
	10/5/04	LS8-P1B-2W-B	Sidewall	2'	2300	Pass
	10/5/04	LS8-P1B-2W-C	Sidewall	3'	<100	Pass
	10/5/04	LS8-P1B-3F	Floor	4'	<100	Pass
	10/5/04	LS8-P1B-3W-A	Sidewall	1'	<100	Pass
	10/5/04	LS8-P1B-3W-B	Sidewall	2'	685	Pass
	10/5/04	LS8-P1B-3W-C	Sidewall	3'	630	Pass
LS09	10/1/04	LS9-P1B-1F	Floor	9'	291	Pass
	10/1/04	LS9-P1B-1W-A	Sidewall	1'	414	Pass
	10/1/04	LS9-P1B-1W-B	Sidewall	2'	351	Pass
	10/1/04	LS9-P1B-1W-C	Sidewall	3'	282	Pass
	10/1/04	LS9-P1B-2F	Floor	9'	266	Pass
	10/1/04	LS9-P1B-2W-A	Sidewall	1'	397	Pass
	10/1/04	LS9-P1B-2W-B	Sidewall	2'	478	Pass
	10/1/04	LS9-P1B-2W-C	Sidewall	3'	285	Pass
	10/1/04	LS9-P1B-3F	Floor	9'	319	Pass
	10/1/04	LS9-P1B-3W-A	Sidewall	1'	489	Pass
	10/1/04	LS9-P1B-3W-B	Sidewall	2'	472	Pass
	10/1/04	LS9-P1B-3W-C	Sidewall	3'	204	Pass
LS10	10/4/04	LS10-P1B-1F	Floor	7'	731	Pass
	10/4/04	LS10-P1B-1W-A	Sidewall	1'	1490	Pass
	10/4/04	LS10-P1B-1W-B	Sidewall	2'	514	Pass
	10/4/04	LS10-P1B-1W-C	Sidewall	3'	343	Pass
	10/4/04	LS10-P1B-2F	Floor	7'	<100	Pass
	10/4/04	LS10-P1B-2W-A	Sidewall	1'	1080	Pass
	10/4/04	LS10-P1B-2W-B	Sidewall	2'	506	Pass
	10/4/04	LS10-P1B-2W-C	Sidewall	3'	394	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/4/04	LS10-P1B-3F	Floor	7'	274	Pass
	10/4/04	LS10-P1B-3W-A	Sidewall	1'	606	Pass
	10/4/04	LS10-P1B-3W-B	Sidewall	2'	<100	Pass
	10/4/04	LS10-P1B-3W-C	Sidewall	3'	423	Pass
LS11	10/4/04	LS11-P1B-1F	Floor	7'	1100	Pass
	10/4/04	LS11-P1B-1W-A	Sidewall	1'	1150	Pass
	10/4/04	LS11-P1B-1W-B	Sidewall	2'	655	Pass
	10/4/04	LS11-P1B-1W-C	Sidewall	3'	965	Pass
	10/4/04	LS11-P1B-2F	Floor	7'	966	Pass
	10/4/04	LS11-P1B-2W-A	Sidewall	1'	2350	Pass
	10/4/04	LS11-P1B-2W-B	Sidewall	2'	1520	Pass
	10/4/04	LS11-P1B-2W-C	Sidewall	3'	1700	Pass
	10/4/04	LS11-P1B-3F	Floor	7'	664	Pass
	10/4/04	LS11-P1B-3W-A	Sidewall	1'	2200	Pass
	10/4/04	LS11-P1B-3W-B	Sidewall	2'	1300	Pass
	10/4/04	LS11-P1B-3W-C	Sidewall	3'	737	Pass
LS12	10/5/04	LS12-P1B-1F	Floor	7'	1140	Pass
	10/5/04	LS12-P1B-1W-A	Sidewall	1'	855	Pass
	10/5/04	LS12-P1B-1W-B	Sidewall	2'	609	Pass
	10/5/04	LS12-P1B-1W-C	Sidewall	3'	300	Pass
	10/5/04	LS12-P1B-2F	Floor	7'	973	Pass
	10/5/04	LS12-P1B-2W-A	Sidewall	1'	1530	Pass
	10/5/04	LS12-P1B-2W-B	Sidewall	2'	1290	Pass
	10/5/04	LS12-P1B-2W-C	Sidewall	3'	1850	Pass
	10/5/04	LS12-P1B-3F	Floor	7'	1500	Pass
	10/5/04	LS12-P1B-3W-A	Sidewall	1'	2250	Pass
	10/5/04	LS12-P1B-3W-B	Sidewall	2'	962	Pass
	10/5/04	LS12-P1B-3W-C	Sidewall	3'	950	Pass
LS13	10/5/04	LS13-P1B-1F	Floor	4'	810	Pass
	10/5/04	LS13-P1B-1W-A	Sidewall	1'	<100	Pass
	10/5/04	LS13-P1B-1W-B	Sidewall	2'	866	Pass
	10/5/04	LS13-P1B-1W-C	Sidewall	3'	1050	Pass
	10/5/04	LS13-P1B-2F	Floor	4'	870	Pass
	10/5/04	LS13-P1B-2W-A	Sidewall	1'	632	Pass
	10/5/04	LS13-P1B-2W-B	Sidewall	2'	692	Pass
	10/5/04	LS13-P1B-2W-C	Sidewall	3'	930	Pass
	10/5/04	LS13-P1B-3F	Floor	4'	998	Pass
	10/5/04	LS13-P1B-3W-A	Sidewall	1'	450	Pass
	10/5/04	LS13-P1B-3W-B	Sidewall	2'	280	Pass
	10/5/04	LS13-P1B-3W-C	Sidewall	3'	1850	Pass
LS14	10/1/04	LS14-P1B-1F	Floor	9'	172	Pass
	10/1/04	LS14-P1B-1W-A	Sidewall	1'	547	Pass
	10/1/04	LS14-P1B-1W-B	Sidewall	2'	482	Pass
	10/1/04	LS14-P1B-1W-C	Sidewall	3'	440	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/1/04	LS14-P1B-2F	Floor	9'	225	Pass
	10/1/04	LS14-P1B-2W-A	Sidewall	1'	699	Pass
	10/1/04	LS14-P1B-2W-B	Sidewall	2'	543	Pass
	10/1/04	LS14-P1B-2W-C	Sidewall	3'	311	Pass
	10/1/04	LS14-P1B-3F	Floor	9'	376	Pass
	10/1/04	LS14-P1B-3W-A	Sidewall	1'	325	Pass
	10/1/04	LS14-P1B-3W-B	Sidewall	2'	283	Pass
	10/1/04	LS14-P1B-3W-C	Sidewall	3'	180	Pass
LS15	10/4/04	LS15-P1B-1F	Floor	7'	405	Pass
	10/4/04	LS15-P1B-1W-A	Sidewall	1'	729	Pass
	10/4/04	LS15-P1B-1W-B	Sidewall	2'	638	Pass
	10/4/04	LS15-P1B-1W-C	Sidewall	3'	507	Pass
	10/4/04	LS15-P1B-2F	Floor	7'	602	Pass
	10/4/04	LS15-P1B-2W-A	Sidewall	1'	493	Pass
	10/4/04	LS15-P1B-2W-B	Sidewall	2'	845	Pass
	10/4/04	LS15-P1B-2W-C	Sidewall	3'	518	Pass
	10/4/04	LS15-P1B-3F	Floor	7'	481	Pass
	10/4/04	LS15-P1B-3W-A	Sidewall	1'	530	Pass
	10/4/04	LS15-P1B-3W-B	Sidewall	2'	556	Pass
	10/4/04	LS15-P1B-3W-C	Sidewall	3'	586	Pass
LS19	10/1/04	LS19-P1B-1F	Floor	8'	412	Pass
	10/1/04	LS19-P1B-1W-A	Sidewall	1'	950	Pass
	10/1/04	LS19-P1B-1W-B	Sidewall	2'	785	Pass
	10/1/04	LS19-P1B-1W-C	Sidewall	3'	294	Pass
	10/1/04	LS19-P1B-2F	Floor	8'	212	Pass
	10/1/04	LS19-P1B-2W-A	Sidewall	1'	602	Pass
	10/1/04	LS19-P1B-2W-B	Sidewall	2'	436	Pass
	10/1/04	LS19-P1B-2W-C	Sidewall	3'	210	Pass
LS20	10/4/04	LS20-P1B-1F	Floor	7'	<100	Pass
	10/4/04	LS20-P1B-1W-A	Sidewall	1'	1850	Pass
	10/4/04	LS20-P1B-1W-B	Sidewall	2'	1020	Pass
	10/4/04	LS20-P1B-1W-C	Sidewall	3'	515	Pass
	10/4/04	LS20-P1B-2F	Floor	7'	822	Pass
	10/4/04	LS20-P1B-2W-A	Sidewall	1'	625	Pass
	10/4/04	LS20-P1B-2W-B	Sidewall	2'	1170	Pass
	10/4/04	LS20-P1B-2W-C	Sidewall	3'	1210	Pass
LS21	10/4/04	LS21-P1B-1F	Floor	6'	624	Pass
	10/4/04	LS21-P1B-1W-A	Sidewall	1'	952	Pass
	10/4/04	LS21-P1B-1W-B	Sidewall	2'	868	Pass
	10/4/04	LS21-P1B-1W-C	Sidewall	3'	841	Pass
	10/4/04	LS21-P1B-2F	Floor	6'	989	Pass
	10/4/04	LS21-P1B-2W-A	Sidewall	1'	1480	Pass
	10/4/04	LS21-P1B-2W-B	Sidewall	2'	2070	Pass
	10/4/04	LS21-P1B-2W-C	Sidewall	3'	1400	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/4/04	LS21-P1B-3F	Floor	6'	513	Pass
	10/4/04	LS21-P1B-3W-A	Sidewall	1'	937	Pass
	10/4/04	LS21-P1B-3W-B	Sidewall	2'	710	Pass
	10/4/04	LS21-P1B-3W-C	Sidewall	3'	619	Pass
LS22	10/4/04	LS22-P1B-1F	Floor	7'	414	Pass
	10/4/04	LS22-P1B-1W-A	Sidewall	1'	697	Pass
	10/4/04	LS22-P1B-1W-B	Sidewall	2'	<100	Pass
	10/4/04	LS22-P1B-1W-C	Sidewall	3'	240	Pass
	10/4/04	LS22-P1B-2F	Floor	7'	448	Pass
	10/4/04	LS22-P1B-2W-A	Sidewall	1'	1200	Pass
	10/4/04	LS22-P1B-2W-B	Sidewall	2'	930	Pass
	10/4/04	LS22-P1B-2W-C	Sidewall	3'	325	Pass
	10/4/04	LS22-P1B-3F	Floor	7'	372	Pass
	10/4/04	LS22-P1B-3W-A	Sidewall	1'	1080	Pass
	10/4/04	LS22-P1B-3W-B	Sidewall	2'	750	Pass
	10/4/04	LS22-P1B-3W-C	Sidewall	3'	888	Pass
LS23	10/5/04	LS23-P1B-1F	Floor	9'	543	Pass
	10/5/04	LS23-P1B-1W-A	Sidewall	1'	830	Pass
	10/5/04	LS23-P1B-1W-B	Sidewall	2'	761	Pass
	10/5/04	LS23-P1B-1W-C	Sidewall	3'	821	Pass
	10/5/04	LS23-P1B-2F	Floor	9'	720	Pass
	10/5/04	LS23-P1B-2W-A	Sidewall	1'	797	Pass
	10/5/04	LS23-P1B-2W-B	Sidewall	2'	630	Pass
	10/5/04	LS23-P1B-2W-C	Sidewall	3'	754	Pass
	10/5/04	LS23-P1B-3F	Floor	9'	802	Pass
	10/5/04	LS23-P1B-3W-A	Sidewall	1'	1180	Pass
	10/5/04	LS23-P1B-3W-B	Sidewall	2'	1280	Pass
	10/5/04	LS23-P1B-3W-C	Sidewall	3'	434	Pass
LS24	10/1/04	LS24-P1B-1F	Floor	9'	140	Pass
	10/1/04	LS24-P1B-1W-A	Sidewall	1'	600	Pass
	10/1/04	LS24-P1B-1W-B	Sidewall	2'	798	Pass
	10/1/04	LS24-P1B-1W-C	Sidewall	3'	<100	Pass
	10/1/04	LS24-P1B-2F	Floor	9'	1100	Pass
	10/1/04	LS24-P1B-2W-A	Sidewall	1'	1200	Pass
	10/1/04	LS24-P1B-2W-B	Sidewall	2'	1020	Pass
	10/1/04	LS24-P1B-2W-C	Sidewall	3'	1600	Pass
	10/1/04	LS24-P1B-3F	Floor	9'	1000	Pass
	10/1/04	LS24-P1B-3W-A	Sidewall	1'	1800	Pass
	10/1/04	LS24-P1B-3W-B	Sidewall	2'	1820	Pass
	10/1/04	LS24-P1B-3W-C	Sidewall	3'	2060	Pass
LS25	10/4/04	LS25-P1B-1F	Floor	7'	1650	Pass
	10/4/04	LS25-P1B-1W-A	Sidewall	1'	1700	Pass
	10/4/04	LS25-P1B-1W-B	Sidewall	2'	1630	Pass
	10/4/04	LS25-P1B-1W-C	Sidewall	3'	1620	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/4/04	LS25-P1B-2F	Floor	7'	739	Pass
	10/4/04	LS25-P1B-2W-A	Sidewall	1'	1800	Pass
	10/4/04	LS25-P1B-2W-B	Sidewall	2'	1130	Pass
	10/4/04	LS25-P1B-2W-C	Sidewall	3'	1420	Pass
	10/4/04	LS25-P1B-3F	Floor	7'	614	Pass
	10/4/04	LS25-P1B-3W-A	Sidewall	1'	1940	Pass
	10/4/04	LS25-P1B-3W-B	Sidewall	2'	988	Pass
	10/4/04	LS25-P1B-3W-C	Sidewall	3'	914	Pass
LS26	10/4/04	LS26-P1B-1F	Floor	8'	<100	Pass
	10/4/04	LS26-P1B-1W-A	Sidewall	1'	1910	Pass
	10/4/04	LS26-P1B-1W-B	Sidewall	2'	768	Pass
	10/4/04	LS26-P1B-1W-C	Sidewall	3'	920	Pass
	10/4/04	LS26-P1B-2F	Floor	8'	1540	Pass
	10/4/04	LS26-P1B-2W-A	Sidewall	1'	1400	Pass
	10/4/04	LS26-P1B-2W-B	Sidewall	2'	1200	Pass
	10/4/04	LS26-P1B-2W-C	Sidewall	3'	986	Pass
	10/4/04	LS26-P1B-3F	Floor	8'	734	Pass
	10/4/04	LS26-P1B-3W-A	Sidewall	1'	2590	Pass
	10/4/04	LS26-P1B-3W-B	Sidewall	2'	1310	Pass
	10/4/04	LS26-P1B-3W-C	Sidewall	3'	846	Pass
LS27	10/5/04	LS27-P1B-1F	Floor	7'	912	Pass
	10/5/04	LS27-P1B-1W-A	Sidewall	1'	1720	Pass
	10/5/04	LS27-P1B-1W-B	Sidewall	2'	1300	Pass
	10/5/04	LS27-P1B-1W-C	Sidewall	3'	1200	Pass
	10/5/04	LS27-P1B-2F	Floor	7'	680	Pass
	10/5/04	LS27-P1B-2W-A	Sidewall	1'	341	Pass
	10/5/04	LS27-P1B-2W-B	Sidewall	2'	348	Pass
	10/5/04	LS27-P1B-2W-C	Sidewall	3'	408	Pass
	10/5/04	LS27-P1B-3F	Floor	7'	456	Pass
	10/5/04	LS27-P1B-3W-A	Sidewall	1'	886	Pass
	10/5/04	LS27-P1B-3W-B	Sidewall	2'	788	Pass
	10/5/04	LS27-P1B-3W-C	Sidewall	3'	541	Pass
LS28	10/1/04	LS28-P1B-1F	Floor	7'	918	Pass
	10/1/04	LS28-P1B-1W-A	Sidewall	1'	1900	Pass
	10/1/04	LS28-P1B-1W-B	Sidewall	2'	961	Pass
	10/1/04	LS28-P1B-1W-C	Sidewall	3'	573	Pass
	10/1/04	LS28-P1B-2F	Floor	7'	571	Pass
	10/1/04	LS28-P1B-2W-A	Sidewall	1'	1370	Pass
	10/1/04	LS28-P1B-2W-B	Sidewall	2'	1270	Pass
	10/1/04	LS28-P1B-2W-C	Sidewall	3'	831	Pass
	10/1/04	LS28-P1B-3F	Floor	7'	336	Pass
	10/1/04	LS28-P1B-3W-A	Sidewall	1'	1220	Pass
	10/1/04	LS28-P1B-3W-B	Sidewall	2'	697	Pass
	10/1/04	LS28-P1B-3W-C	Sidewall	3'	287	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
LS29	10/4/04	LS29-P1B-1F	Floor	6'	<100	Pass
	10/4/04	LS29-P1B-1W-A	Sidewall	1'	993	Pass
	10/4/04	LS29-P1B-1W-B	Sidewall	2'	997	Pass
	10/4/04	LS29-P1B-1W-C	Sidewall	3'	951	Pass
	10/4/04	LS29-P1B-2F	Floor	6'	302	Pass
	10/4/04	LS29-P1B-2W-A	Sidewall	1'	950	Pass
	10/4/04	LS29-P1B-2W-B	Sidewall	2'	1000	Pass
	10/4/04	LS29-P1B-2W-C	Sidewall	3'	1210	Pass
	10/4/04	LS29-P1B-3F	Floor	6'	910	Pass
	10/4/04	LS29-P1B-3W-A	Sidewall	1'	2500	Pass
	10/4/04	LS29-P1B-3W-B	Sidewall	2'	1750	Pass
	10/4/04	LS29-P1B-3W-C	Sidewall	3'	2300	Pass
LS30	10/4/04	LS30-P1B-1F	Floor	7'	1080	Pass
	10/4/04	LS30-P1B-1W-A	Sidewall	1'	962	Pass
	10/4/04	LS30-P1B-1W-B	Sidewall	2'	1100	Pass
	10/4/04	LS30-P1B-1W-C	Sidewall	3'	989	Pass
	10/4/04	LS30-P1B-2F	Floor	7'	395	Pass
	10/4/04	LS30-P1B-2W-A	Sidewall	1'	1160	Pass
	10/4/04	LS30-P1B-2W-B	Sidewall	2'	1200	Pass
	10/4/04	LS30-P1B-2W-C	Sidewall	3'	1080	Pass
	10/4/04	LS30-P1B-3F	Floor	7'	1240	Pass
	10/4/04	LS30-P1B-3W-A	Sidewall	1'	1150	Pass
	10/4/04	LS30-P1B-3W-B	Sidewall	2'	700	Pass
	10/4/04	LS30-P1B-3W-C	Sidewall	3'	775	Pass
LS31	10/5/04	LS31-P1B-1F	Floor	7'	2650	Fail
	10/5/04	LS31-P1B-1W-A	Sidewall	1'	2200	Pass
	10/5/04	LS31-P1B-1W-B	Sidewall	2'	1400	Pass
	10/5/04	LS31-P1B-1W-C	Sidewall	3'	1210	Pass
	10/5/04	LS31-P1B-2F	Floor	7'	920	Pass
	10/5/04	LS31-P1B-2W-A	Sidewall	1'	600	Pass
	10/5/04	LS31-P1B-2W-B	Sidewall	2'	1180	Pass
	10/5/04	LS31-P1B-2W-C	Sidewall	3'	708	Pass
	10/5/04	LS31-P1B-3F	Floor	7'	750	Pass
	10/5/04	LS31-P1B-3W-A	Sidewall	1'	1150	Pass
	10/5/04	LS31-P1B-3W-B	Sidewall	2'	1590	Pass
	10/5/04	LS31-P1B-3W-C	Sidewall	3'	1020	Pass
LS32	10/1/04	LS32-P1B-1F	Floor	7'	241	Pass
	10/1/04	LS32-P1B-1W-A	Sidewall	1'	745	Pass
	10/1/04	LS32-P1B-1W-B	Sidewall	2'	414	Pass
	10/1/04	LS32-P1B-1W-C	Sidewall	3'	258	Pass
	10/1/04	LS32-P1B-2F	Floor	7'	335	Pass
	10/1/04	LS32-P1B-2W-A	Sidewall	1'	1300	Pass
	10/1/04	LS32-P1B-2W-B	Sidewall	2'	511	Pass
	10/1/04	LS32-P1B-2W-C	Sidewall	3'	276	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/1/04	LS32-P1B-3F	Floor	7'	421	Pass
	10/1/04	LS32-P1B-3W-A	Sidewall	1'	1300	Pass
	10/1/04	LS32-P1B-3W-B	Sidewall	2'	1100	Pass
	10/1/04	LS32-P1B-3W-C	Sidewall	3'	842	Pass
LS33	10/4/04	LS33-P1B-1F	Floor	6'	643	Pass
	10/4/04	LS33-P1B-1W-A	Sidewall	1'	1810	Pass
	10/4/04	LS33-P1B-1W-B	Sidewall	2'	1400	Pass
	10/4/04	LS33-P1B-1W-C	Sidewall	3'	1200	Pass
	10/4/04	LS33-P1B-2F	Floor	6'	653	Pass
	10/4/04	LS33-P1B-2W-A	Sidewall	1'	1630	Pass
	10/4/04	LS33-P1B-2W-B	Sidewall	2'	1160	Pass
	10/4/04	LS33-P1B-2W-C	Sidewall	3'	849	Pass
	10/4/04	LS33-P1B-3F	Floor	6'	758	Pass
	10/4/04	LS33-P1B-3W-A	Sidewall	1'	1400	Pass
	10/4/04	LS33-P1B-3W-B	Sidewall	2'	528	Pass
	10/4/04	LS33-P1B-3W-C	Sidewall	3'	732	Pass
LS34	10/4/04	LS34-P1B-1F	Floor	7'	<100	Pass
	10/4/04	LS34-P1B-1W-A	Sidewall	1'	975	Pass
	10/4/04	LS34-P1B-1W-B	Sidewall	2'	486	Pass
	10/4/04	LS34-P1B-1W-C	Sidewall	3'	295	Pass
	10/4/04	LS34-P1B-2F	Floor	7'	619	Pass
	10/4/04	LS34-P1B-2W-A	Sidewall	1'	738	Pass
	10/4/04	LS34-P1B-2W-B	Sidewall	2'	834	Pass
	10/4/04	LS34-P1B-2W-C	Sidewall	3'	<100	Pass
	10/4/04	LS34-P1B-3F	Floor	7'	<100	Pass
	10/4/04	LS34-P1B-3W-A	Sidewall	1'	497	Pass
	10/4/04	LS34-P1B-3W-B	Sidewall	2'	404	Pass
	10/4/04	LS34-P1B-3W-C	Sidewall	3'	419	Pass
LS35	10/5/04	LS35-P1B-1F	Floor	7'	784	Pass
	10/5/04	LS35-P1B-1W-A	Sidewall	1'	803	Pass
	10/5/04	LS35-P1B-1W-B	Sidewall	2'	999	Pass
	10/5/04	LS35-P1B-1W-C	Sidewall	3'	640	Pass
	10/5/04	LS35-P1B-2F	Floor	7'	792	Pass
	10/5/04	LS35-P1B-2W-A	Sidewall	1'	938	Pass
	10/5/04	LS35-P1B-2W-B	Sidewall	2'	858	Pass
	10/5/04	LS35-P1B-2W-C	Sidewall	3'	712	Pass
	10/5/04	LS35-P1B-3F	Floor	7'	858	Pass
	10/5/04	LS35-P1B-3W-A	Sidewall	1'	2180	Pass
	10/5/04	LS35-P1B-3W-B	Sidewall	2'	1870	Pass
	10/5/04	LS35-P1B-3W-C	Sidewall	3'	1180	Pass
LS36	10/1/04	LS36-P1B-1F	Floor	7'	<100	Pass
	10/1/04	LS36-P1B-1W-A	Sidewall	1'	1130	Pass
	10/1/04	LS36-P1B-1W-B	Sidewall	2'	447	Pass
	10/1/04	LS36-P1B-1W-C	Sidewall	3'	418	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/1/04	LS36-P1B-2F	Floor	7'	232	Pass
	10/1/04	LS36-P1B-2W-A	Sidewall	1'	371	Pass
	10/1/04	LS36-P1B-2W-B	Sidewall	2'	486	Pass
	10/1/04	LS36-P1B-2W-C	Sidewall	3'	348	Pass
	10/1/04	LS36-P1B-3F	Floor	7'	<100	Pass
	10/1/04	LS36-P1B-3W-A	Sidewall	1'	321	Pass
	10/1/04	LS36-P1B-3W-B	Sidewall	2'	456	Pass
	10/1/04	LS36-P1B-3W-C	Sidewall	3'	347	Pass
LS37	10/4/04	LS37-P1B-1F	Floor	7'	<100	Pass
	10/4/04	LS37-P1B-1W-A	Sidewall	1'	763	Pass
	10/4/04	LS37-P1B-1W-B	Sidewall	2'	436	Pass
	10/4/04	LS37-P1B-1W-C	Sidewall	3'	698	Pass
	10/4/04	LS37-P1B-2F	Floor	7'	728	Pass
	10/4/04	LS37-P1B-2W-A	Sidewall	1'	1550	Pass
	10/4/04	LS37-P1B-2W-B	Sidewall	2'	1780	Pass
	10/4/04	LS37-P1B-2W-C	Sidewall	3'	1450	Pass
	10/4/04	LS37-P1B-3F	Floor	7'	568	Pass
	10/4/04	LS37-P1B-3W-A	Sidewall	1'	1300	Pass
	10/4/04	LS37-P1B-3W-B	Sidewall	2'	642	Pass
	10/4/04	LS37-P1B-3W-C	Sidewall	3'	666	Pass
LS38	10/4/04	LS38-P1B-1F	Floor	6'	500	Pass
	10/4/04	LS38-P1B-1W-A	Sidewall	1'	571	Pass
	10/4/04	LS38-P1B-1W-B	Sidewall	2'	1220	Pass
	10/4/04	LS38-P1B-1W-C	Sidewall	3'	713	Pass
	10/4/04	LS38-P1B-2F	Floor	6'	460	Pass
	10/4/04	LS38-P1B-2W-A	Sidewall	1'	694	Pass
	10/4/04	LS38-P1B-2W-B	Sidewall	2'	512	Pass
	10/4/04	LS38-P1B-2W-C	Sidewall	3'	449	Pass
	10/4/04	LS38-P1B-3F	Floor	6'	636	Pass
	10/4/04	LS38-P1B-3W-A	Sidewall	1'	2250	Pass
	10/4/04	LS38-P1B-3W-B	Sidewall	2'	998	Pass
	10/4/04	LS38-P1B-3W-C	Sidewall	3'	1120	Pass
LS39	10/5/04	LS39-P1B-1F	Floor	5'	990	Pass
	10/5/04	LS39-P1B-1W-A	Sidewall	1'	898	Pass
	10/5/04	LS39-P1B-1W-B	Sidewall	2'	1110	Pass
	10/5/04	LS39-P1B-1W-C	Sidewall	3'	950	Pass
	10/5/04	LS39-P1B-2F	Floor	5'	1350	Pass
	10/5/04	LS39-P1B-2W-A	Sidewall	1'	1260	Pass
	10/5/04	LS39-P1B-2W-B	Sidewall	2'	1310	Pass
	10/5/04	LS39-P1B-2W-C	Sidewall	3'	980	Pass
	10/5/04	LS39-P1B-3F	Floor	5'	1050	Pass
	10/5/04	LS39-P1B-3W-A	Sidewall	1'	1230	Pass
	10/5/04	LS39-P1B-3W-B	Sidewall	2'	2210	Pass
	10/5/04	LS39-P1B-3W-C	Sidewall	3'	1830	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
LS40	10/1/04	LS40-P1B-1F	Floor	8'	518	Pass
	10/1/04	LS40-P1B-1W-A	Sidewall	1'	643	Pass
	10/1/04	LS40-P1B-1W-B	Sidewall	2'	660	Pass
	10/1/04	LS40-P1B-1W-C	Sidewall	3'	541	Pass
	10/1/04	LS40-P1B-2F	Floor	8'	977	Pass
	10/1/04	LS40-P1B-2W-A	Sidewall	1'	788	Pass
	10/1/04	LS40-P1B-2W-B	Sidewall	2'	2100	Pass
	10/1/04	LS40-P1B-2W-C	Sidewall	3'	1100	Pass
	10/1/04	LS40-P1B-3F	Floor	8'	570	Pass
	10/1/04	LS40-P1B-3W-A	Sidewall	1'	1500	Pass
	10/1/04	LS40-P1B-3W-B	Sidewall	2'	1110	Pass
	10/1/04	LS40-P1B-3W-C	Sidewall	3'	1190	Pass
LS41	10/4/04	LS41-P1B-1F	Floor	7'	<100	Pass
	10/4/04	LS41-P1B-1W-A	Sidewall	1'	1100	Pass
	10/4/04	LS41-P1B-1W-B	Sidewall	2'	726	Pass
	10/4/04	LS41-P1B-1W-C	Sidewall	3'	336	Pass
	10/4/04	LS41-P1B-2F	Floor	7'	<100	Pass
	10/4/04	LS41-P1B-2W-A	Sidewall	1'	439	Pass
	10/4/04	LS41-P1B-2W-B	Sidewall	2'	268	Pass
	10/4/04	LS41-P1B-2W-C	Sidewall	3'	515	Pass
	10/4/04	LS41-P1B-3F	Floor	7'	<100	Pass
	10/4/04	LS41-P1B-3W-A	Sidewall	1'	1140	Pass
	10/4/04	LS41-P1B-3W-B	Sidewall	2'	1310	Pass
	10/4/04	LS41-P1B-3W-C	Sidewall	3'	650	Pass
LS42	10/4/04	LS42-P1B-1F	Floor	6'	397	Pass
	10/4/04	LS42-P1B-1W-A	Sidewall	1'	2120	Pass
	10/4/04	LS42-P1B-1W-B	Sidewall	2'	1300	Pass
	10/4/04	LS42-P1B-1W-C	Sidewall	3'	820	Pass
	10/4/04	LS42-P1B-2F	Floor	6'	990	Pass
	10/4/04	LS42-P1B-2W-A	Sidewall	1'	940	Pass
	10/4/04	LS42-P1B-2W-B	Sidewall	2'	811	Pass
	10/4/04	LS42-P1B-2W-C	Sidewall	3'	814	Pass
	10/4/04	LS42-P1B-3F	Floor	6'	558	Pass
	10/4/04	LS42-P1B-3W-A	Sidewall	1'	1840	Pass
	10/4/04	LS42-P1B-3W-B	Sidewall	2'	2700	Pass
	10/4/04	LS42-P1B-3W-C	Sidewall	3'	472	Pass
LS43	10/5/04	LS43-P1B-1F	Floor	8'	885	Pass
	10/5/04	LS43-P1B-1W-A	Sidewall	1'	1210	Pass
	10/5/04	LS43-P1B-1W-B	Sidewall	2'	644	Pass
	10/5/04	LS43-P1B-1W-C	Sidewall	3'	678	Pass
	10/5/04	LS43-P1B-2F	Floor	8'	372	Pass
	10/5/04	LS43-P1B-2W-A	Sidewall	1'	994	Pass
	10/5/04	LS43-P1B-2W-B	Sidewall	2'	618	Pass
	10/5/04	LS43-P1B-2W-C	Sidewall	3'	380	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/5/04	LS43-P1B-3F	Floor	8'	<100	Pass
	10/5/04	LS43-P1B-3W-A	Sidewall	1'	710	Pass
	10/5/04	LS43-P1B-3W-B	Sidewall	2'	870	Pass
	10/5/04	LS43-P1B-3W-C	Sidewall	3'	509	Pass
LS44	10/1/04	LS44-P1B-1F	Floor	8'	485	Pass
	10/1/04	LS44-P1B-1W-A	Sidewall	1'	248	Pass
	10/1/04	LS44-P1B-1W-B	Sidewall	2'	462	Pass
	10/1/04	LS44-P1B-1W-C	Sidewall	3'	572	Pass
	10/1/04	LS44-P1B-2F	Floor	8'	1000	Pass
	10/1/04	LS44-P1B-2W-A	Sidewall	1'	486	Pass
	10/1/04	LS44-P1B-2W-B	Sidewall	2'	790	Pass
	10/1/04	LS44-P1B-2W-C	Sidewall	3'	1000	Pass
LS45	10/4/04	LS45-P1B-1F	Floor	7'	823	Pass
	10/4/04	LS45-P1B-1W-A	Sidewall	1'	361	Pass
	10/4/04	LS45-P1B-1W-B	Sidewall	2'	321	Pass
	10/4/04	LS45-P1B-1W-C	Sidewall	3'	452	Pass
	10/4/04	LS45-P1B-2F	Floor	7'	644	Pass
	10/4/04	LS45-P1B-2W-A	Sidewall	1'	796	Pass
	10/4/04	LS45-P1B-2W-B	Sidewall	2'	669	Pass
	10/4/04	LS45-P1B-2W-C	Sidewall	3'	997	Pass
	10/4/04	LS45-P1B-3F	Floor	7'	<100	Pass
	10/4/04	LS45-P1B-3W-A	Sidewall	1'	671	Pass
	10/4/04	LS45-P1B-3W-B	Sidewall	2'	274	Pass
	10/4/04	LS45-P1B-3W-C	Sidewall	3'	434	Pass
LS46	10/4/04	LS46-P1B-1F	Floor	9'	<100	Pass
	10/4/04	LS46-P1B-1W-A	Sidewall	1'	870	Pass
	10/4/04	LS46-P1B-1W-B	Sidewall	2'	795	Pass
	10/4/04	LS46-P1B-1W-C	Sidewall	3'	995	Pass
	10/4/04	LS46-P1B-2F	Floor	9'	<100	Pass
	10/4/04	LS46-P1B-2W-A	Sidewall	1'	1080	Pass
	10/4/04	LS46-P1B-2W-B	Sidewall	2'	698	Pass
	10/4/04	LS46-P1B-2W-C	Sidewall	3'	704	Pass
	10/4/04	LS46-P1B-3F	Floor	9'	<100	Pass
	10/4/04	LS46-P1B-3W-A	Sidewall	1'	819	Pass
	10/4/04	LS46-P1B-3W-B	Sidewall	2'	570	Pass
	10/4/04	LS46-P1B-3W-C	Sidewall	3'	210	Pass
LS48	10/4/04	LS48-P1B-1F	Floor	9'	<100	Pass
	10/4/04	LS48-P1B-1W-A	Sidewall	1'	880	Pass
	10/4/04	LS48-P1B-1W-B	Sidewall	2'	420	Pass
	10/4/04	LS48-P1B-1W-C	Sidewall	3'	200	Pass
	10/4/04	LS48-P1B-2F	Floor	9'	<100	Pass
	10/4/04	LS48-P1B-2W-A	Sidewall	1'	464	Pass
	10/4/04	LS48-P1B-2W-B	Sidewall	2'	<100	Pass
	10/4/04	LS48-P1B-2W-C	Sidewall	3'	500	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/4/04	LS48-P1B-3F	Floor	9'	<100	Pass
	10/4/04	LS48-P1B-3W-A	Sidewall	1'	438	Pass
	10/4/04	LS48-P1B-3W-B	Sidewall	2'	704	Pass
	10/4/04	LS48-P1B-3W-C	Sidewall	3'	210	Pass
LS50	10/4/04	LS50-P1B-1F	Floor	10'	<100	Pass
	10/4/04	LS50-P1B-1W-A	Sidewall	1'	<100	Pass
	10/4/04	LS50-P1B-1W-B	Sidewall	2'	<100	Pass
	10/4/04	LS50-P1B-1W-C	Sidewall	3'	<100	Pass
	10/4/04	LS50-P1B-2F	Floor	10'	<100	Pass
	10/4/04	LS50-P1B-2W-A	Sidewall	1'	823	Pass
	10/4/04	LS50-P1B-2W-B	Sidewall	2'	300	Pass
	10/4/04	LS50-P1B-2W-C	Sidewall	3'	330	Pass
LS52	10/1/04	LS52-P1B-1F	Floor	7'	<100	Pass
	10/1/04	LS52-P1B-1W-A	Sidewall	1'	902	Pass
	10/1/04	LS52-P1B-1W-B	Sidewall	2'	1000	Pass
	10/1/04	LS52-P1B-1W-C	Sidewall	3'	953	Pass
	10/1/04	LS52-P1B-2F	Floor	7'	<100	Pass
	10/1/04	LS52-P1B-2W-A	Sidewall	1'	1300	Pass
	10/1/04	LS52-P1B-2W-B	Sidewall	2'	<100	Pass
	10/1/04	LS52-P1B-2W-C	Sidewall	3'	<100	Pass
LS53	10/1/04	LS53-P1B-1F	Floor	9'	<100	Pass
	10/1/04	LS53-P1B-1W-A	Sidewall	1'	<100	Pass
	10/1/04	LS53-P1B-1W-B	Sidewall	2'	<100	Pass
	10/1/04	LS53-P1B-1W-C	Sidewall	3'	<100	Pass
	10/1/04	LS53-P1B-2F	Floor	9'	<100	Pass
	10/1/04	LS53-P1B-2W-A	Sidewall	1'	2100	Pass
	10/1/04	LS53-P1B-2W-B	Sidewall	2'	1400	Pass
	10/1/04	LS53-P1B-2W-C	Sidewall	3'	1700	Pass
	10/1/04	LS53-P1B-3F	Floor	9'	<100	Pass
	10/1/04	LS53-P1B-3W-A	Sidewall	1'	<100	Pass
	10/1/04	LS53-P1B-3W-B	Sidewall	2'	<100	Pass
	10/1/04	LS53-P1B-3W-C	Sidewall	3'	<100	Pass
LS54	10/1/04	LS54-P1B-1F	Floor	9'	176	Pass
	10/1/04	LS54-P1B-1W-A	Sidewall	1'	1600	Pass
	10/1/04	LS54-P1B-1W-B	Sidewall	2'	570	Pass
	10/1/04	LS54-P1B-1W-C	Sidewall	3'	257	Pass
	10/1/04	LS54-P1B-2F	Floor	9'	141	Pass
	10/1/04	LS54-P1B-2W-A	Sidewall	1'	120	Pass
	10/1/04	LS54-P1B-2W-B	Sidewall	2'	237	Pass
	10/1/04	LS54-P1B-2W-C	Sidewall	3'	114	Pass
	10/1/04	LS54-P1B-3F	Floor	9'	155	Pass
	10/1/04	LS54-P1B-3W-A	Sidewall	1'	624	Pass
	10/1/04	LS54-P1B-3W-B	Sidewall	2'	2100	Pass
	10/1/04	LS54-P1B-3W-C	Sidewall	3'	1900	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
LS55	10/1/04	LS55-P1B-1F	Floor	8'	388	Pass
	10/1/04	LS55-P1B-1W-A	Sidewall	1'	681	Pass
	10/1/04	LS55-P1B-1W-B	Sidewall	2'	455	Pass
	10/1/04	LS55-P1B-1W-C	Sidewall	3'	557	Pass
	10/1/04	LS55-P1B-2F	Floor	8'	328	Pass
	10/1/04	LS55-P1B-2W-A	Sidewall	1'	338	Pass
	10/1/04	LS55-P1B-2W-B	Sidewall	2'	758	Pass
	10/1/04	LS55-P1B-2W-C	Sidewall	3'	345	Pass
	10/1/04	LS55-P1B-3F	Floor	8'	234	Pass
	10/1/04	LS55-P1B-3W-A	Sidewall	1'	403	Pass
	10/1/04	LS55-P1B-3W-B	Sidewall	2'	473	Pass
	10/1/04	LS55-P1B-3W-C	Sidewall	3'	<100	Pass
LS56	10/1/04	LS56-P1B-1F	Floor	8'	543	Pass
	10/1/04	LS56-P1B-1W-A	Sidewall	1'	1800	Pass
	10/1/04	LS56-P1B-1W-B	Sidewall	2'	958	Pass
	10/1/04	LS56-P1B-1W-C	Sidewall	3'	1400	Pass
	10/1/04	LS56-P1B-2F	Floor	8'	376	Pass
	10/1/04	LS56-P1B-2W-A	Sidewall	1'	955	Pass
	10/1/04	LS56-P1B-2W-B	Sidewall	2'	484	Pass
	10/1/04	LS56-P1B-2W-C	Sidewall	3'	436	Pass
	10/1/04	LS56-P1B-3F	Floor	8'	694	Pass
	10/1/04	LS56-P1B-3W-A	Sidewall	1'	1510	Pass
	10/1/04	LS56-P1B-3W-B	Sidewall	2'	998	Pass
	10/1/04	LS56-P1B-3W-C	Sidewall	3'	593	Pass
LS57	10/1/04	LS57-P1B-1F	Floor	8'	729	Pass
	10/1/04	LS57-P1B-1W-A	Sidewall	1'	2850	Pass
	10/1/04	LS57-P1B-1W-B	Sidewall	2'	2200	Pass
	10/1/04	LS57-P1B-1W-C	Sidewall	3'	1100	Pass
	10/1/04	LS57-P1B-2F	Floor	8'	967	Pass
	10/1/04	LS57-P1B-2W-A	Sidewall	1'	2300	Pass
	10/1/04	LS57-P1B-2W-B	Sidewall	2'	2180	Pass
	10/1/04	LS57-P1B-2W-C	Sidewall	3'	444	Pass
	10/1/04	LS57-P1B-3F	Floor	8'	404	Pass
	10/1/04	LS57-P1B-3W-A	Sidewall	1'	2850	Pass
	10/1/04	LS57-P1B-3W-B	Sidewall	2'	2100	Pass
	10/1/04	LS57-P1B-3W-C	Sidewall	3'	558	Pass
LS58	10/1/04	LS58-P1B-1F	Floor	6'	158	Pass
	10/1/04	LS58-P1B-1W-A	Sidewall	1'	420	Pass
	10/1/04	LS58-P1B-1W-B	Sidewall	2'	292	Pass
	10/1/04	LS58-P1B-1W-C	Sidewall	3'	237	Pass
	10/1/04	LS58-P1B-2F	Floor	6'	148	Pass
	10/1/04	LS58-P1B-2W-A	Sidewall	1'	460	Pass
	10/1/04	LS58-P1B-2W-B	Sidewall	2'	238	Pass
	10/1/04	LS58-P1B-2W-C	Sidewall	3'	235	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
LS59	10/1/04	LS59-P1B-1F	Floor	6'	120	Pass
	10/1/04	LS59-P1B-1W-A	Sidewall	1'	479	Pass
	10/1/04	LS59-P1B-1W-B	Sidewall	2'	240	Pass
	10/1/04	LS59-P1B-1W-C	Sidewall	3'	<100	Pass
	10/1/04	LS59-P1B-2F	Floor	6'	107	Pass
	10/1/04	LS59-P1B-2W-A	Sidewall	1'	353	Pass
	10/1/04	LS59-P1B-2W-B	Sidewall	2'	<100	Pass
	10/1/04	LS59-P1B-2W-C	Sidewall	3'	<100	Pass
	10/1/04	LS59-P1B-3F	Floor	6'	233	Pass
	10/1/04	LS59-P1B-3W-A	Sidewall	1'	448	Pass
	10/1/04	LS59-P1B-3W-B	Sidewall	2'	203	Pass
	10/1/04	LS59-P1B-3W-C	Sidewall	3'	<100	Pass
LS60	10/1/04	LS60-P1B-1F	Floor	7'	143	Pass
	10/1/04	LS60-P1B-1W-A	Sidewall	1'	191	Pass
	10/1/04	LS60-P1B-1W-B	Sidewall	2'	<100	Pass
	10/1/04	LS60-P1B-1W-C	Sidewall	3'	150	Pass
	10/1/04	LS60-P1B-2F	Floor	7'	<100	Pass
	10/1/04	LS60-P1B-2W-A	Sidewall	1'	<100	Pass
	10/1/04	LS60-P1B-2W-B	Sidewall	2'	<100	Pass
	10/1/04	LS60-P1B-2W-C	Sidewall	3'	135	Pass
	10/1/04	LS60-P1B-3F	Floor	7'	<100	Pass
	10/1/04	LS60-P1B-3W-A	Sidewall	1'	<100	Pass
	10/1/04	LS60-P1B-3W-B	Sidewall	2'	<100	Pass
	10/1/04	LS60-P1B-3W-C	Sidewall	3'	<100	Pass
LS61	10/1/04	LS61-P1B-1F	Floor	8'	<100	Pass
	10/1/04	LS61-P1B-1W-A	Sidewall	1'	310	Pass
	10/1/04	LS61-P1B-1W-B	Sidewall	2'	<100	Pass
	10/1/04	LS61-P1B-1W-C	Sidewall	3'	<100	Pass
	10/1/04	LS61-P1B-2F	Floor	8'	<100	Pass
	10/1/04	LS61-P1B-2W-A	Sidewall	1'	256	Pass
	10/1/04	LS61-P1B-2W-B	Sidewall	2'	<100	Pass
	10/1/04	LS61-P1B-2W-C	Sidewall	3'	<100	Pass
	10/1/04	LS61-P1B-3F	Floor	8'	<100	Pass
	10/1/04	LS61-P1B-3W-A	Sidewall	1'	278	Pass
	10/1/04	LS61-P1B-3W-B	Sidewall	2'	<100	Pass
	10/1/04	LS61-P1B-3W-C	Sidewall	3'	<100	Pass
LS62	10/1/04	LS62-P1B-1F	Floor	7'	<100	Pass
	10/1/04	LS62-P1B-1W-A	Sidewall	1'	567	Pass
	10/1/04	LS62-P1B-1W-B	Sidewall	2'	258	Pass
	10/1/04	LS62-P1B-1W-C	Sidewall	3'	<100	Pass
	10/1/04	LS62-P1B-2F	Floor	7'	<100	Pass
	10/1/04	LS62-P1B-2W-A	Sidewall	1'	212	Pass
	10/1/04	LS62-P1B-2W-B	Sidewall	2'	<100	Pass
	10/1/04	LS62-P1B-2W-C	Sidewall	3'	<100	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/1/04	LS62-P1B-3F	Floor	7'	<100	Pass
	10/1/04	LS62-P1B-3W-A	Sidewall	1'	297	Pass
	10/1/04	LS62-P1B-3W-B	Sidewall	2'	170	Pass
	10/1/04	LS62-P1B-3W-C	Sidewall	3'	<100	Pass
LS63	10/1/04	LS63-P1B-1F	Floor	6'	<100	Pass
	10/1/04	LS63-P1B-1W-A	Sidewall	1'	557	Pass
	10/1/04	LS63-P1B-1W-B	Sidewall	2'	374	Pass
	10/1/04	LS63-P1B-1W-C	Sidewall	3'	<100	Pass
	10/1/04	LS63-P1B-2F	Floor	6'	<100	Pass
	10/1/04	LS63-P1B-2W-A	Sidewall	1'	400	Pass
	10/1/04	LS63-P1B-2W-B	Sidewall	2'	142	Pass
	10/1/04	LS63-P1B-2W-C	Sidewall	3'	<100	Pass
	10/1/04	LS63-P1B-3F	Floor	6'	134	Pass
	10/1/04	LS63-P1B-3W-A	Sidewall	1'	285	Pass
	10/1/04	LS63-P1B-3W-B	Sidewall	2'	363	Pass
	10/1/04	LS63-P1B-3W-C	Sidewall	3'	<100	Pass
LS64	10/1/04	LS64-P1B-1F	Floor	6'	<100	Pass
	10/1/04	LS64-P1B-1W-A	Sidewall	1'	<100	Pass
	10/1/04	LS64-P1B-1W-B	Sidewall	2'	<100	Pass
	10/1/04	LS64-P1B-1W-C	Sidewall	3'	133	Pass
	10/1/04	LS64-P1B-2F	Floor	6'	<100	Pass
	10/1/04	LS64-P1B-2W-A	Sidewall	1'	252	Pass
	10/1/04	LS64-P1B-2W-B	Sidewall	2'	<100	Pass
	10/1/04	LS64-P1B-2W-C	Sidewall	3'	<100	Pass
	10/1/04	LS64-P1B-3F	Floor	6'	<100	Pass
	10/1/04	LS64-P1B-3W-A	Sidewall	1'	<100	Pass
	10/1/04	LS64-P1B-3W-B	Sidewall	2'	<100	Pass
	10/1/04	LS64-P1B-3W-C	Sidewall	3'	<100	Pass
LS65	10/1/04	LS65-P1B-1F	Floor	7'	<100	Pass
	10/1/04	LS65-P1B-1W-A	Sidewall	1'	650	Pass
	10/1/04	LS65-P1B-1W-B	Sidewall	2'	<100	Pass
	10/1/04	LS65-P1B-1W-C	Sidewall	3'	<100	Pass
	10/1/04	LS65-P1B-2F	Floor	7'	<100	Pass
	10/1/04	LS65-P1B-2W-A	Sidewall	1'	171	Pass
	10/1/04	LS65-P1B-2W-B	Sidewall	2'	<100	Pass
	10/1/04	LS65-P1B-2W-C	Sidewall	3'	<100	Pass
	10/1/04	LS65-P1B-3F	Floor	7'	<100	Pass
	10/1/04	LS65-P1B-3W-A	Sidewall	1'	<100	Pass
	10/1/04	LS65-P1B-3W-B	Sidewall	2'	<100	Pass
	10/1/04	LS65-P1B-3W-C	Sidewall	3'	<100	Pass
LS66	10/1/04	LS66-P1B-1F	Floor	7'	<100	Pass
	10/1/04	LS66-P1B-1W-A	Sidewall	1'	492	Pass
	10/1/04	LS66-P1B-1W-B	Sidewall	2'	387	Pass
	10/1/04	LS66-P1B-1W-C	Sidewall	3'	438	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/1/04	LS66-P1B-2F	Floor	7'	<100	Pass
	10/1/04	LS66-P1B-2W-A	Sidewall	1'	351	Pass
	10/1/04	LS66-P1B-2W-B	Sidewall	2'	826	Pass
	10/1/04	LS66-P1B-2W-C	Sidewall	3'	1300	Pass
	10/1/04	LS66-P1B-3F	Floor	7'	235	Pass
	10/1/04	LS66-P1B-3W-A	Sidewall	1'	<100	Pass
	10/1/04	LS66-P1B-3W-B	Sidewall	2'	320	Pass
	10/1/04	LS66-P1B-3W-C	Sidewall	3'	<100	Pass
LS67	10/1/04	LS67-P1B-1F	Floor	7'	373	Pass
	10/1/04	LS67-P1B-1W-A	Sidewall	1'	900	Pass
	10/1/04	LS67-P1B-1W-B	Sidewall	2'	834	Pass
	10/1/04	LS67-P1B-1W-C	Sidewall	3'	580	Pass
	10/1/04	LS67-P1B-2F	Floor	7'	320	Pass
	10/1/04	LS67-P1B-2W-A	Sidewall	1'	310	Pass
	10/1/04	LS67-P1B-2W-B	Sidewall	2'	375	Pass
	10/1/04	LS67-P1B-2W-C	Sidewall	3'	302	Pass
	10/1/04	LS67-P1B-3F	Floor	7'	974	Pass
	10/1/04	LS67-P1B-3W-A	Sidewall	1'	1000	Pass
	10/1/04	LS67-P1B-3W-B	Sidewall	2'	585	Pass
	10/1/04	LS67-P1B-3W-C	Sidewall	3'	535	Pass
LS68	10/1/04	LS68-P1B-1F	Floor	7'	165	Pass
	10/1/04	LS68-P1B-1W-A	Sidewall	1'	480	Pass
	10/1/04	LS68-P1B-1W-B	Sidewall	2'	677	Pass
	10/1/04	LS68-P1B-1W-C	Sidewall	3'	394	Pass
	10/1/04	LS68-P1B-2F	Floor	7'	773	Pass
	10/1/04	LS68-P1B-2W-A	Sidewall	1'	490	Pass
	10/1/04	LS68-P1B-2W-B	Sidewall	2'	654	Pass
	10/1/04	LS68-P1B-2W-C	Sidewall	3'	413	Pass
LS69	10/1/04	LS69-P1B-1F	Floor	8'	113	Pass
	10/1/04	LS69-P1B-1W-A	Sidewall	1'	280	Pass
	10/1/04	LS69-P1B-1W-B	Sidewall	2'	<100	Pass
	10/1/04	LS69-P1B-1W-C	Sidewall	3'	<100	Pass
	10/1/04	LS69-P1B-2F	Floor	8'	<100	Pass
	10/1/04	LS69-P1B-2W-A	Sidewall	1'	700	Pass
	10/1/04	LS69-P1B-2W-B	Sidewall	2'	411	Pass
	10/1/04	LS69-P1B-2W-C	Sidewall	3'	<100	Pass
	10/1/04	LS69-P1B-3F	Floor	8'	<100	Pass
	10/1/04	LS69-P1B-3W-A	Sidewall	1'	418	Pass
	10/1/04	LS69-P1B-3W-B	Sidewall	2'	180	Pass
	10/1/04	LS69-P1B-3W-C	Sidewall	3'	<100	Pass
LS70	10/1/04	LS70-P1B-1F	Floor	8'	<100	Pass
	10/1/04	LS70-P1B-1W-A	Sidewall	1'	730	Pass
	10/1/04	LS70-P1B-1W-B	Sidewall	2'	210	Pass
	10/1/04	LS70-P1B-1W-C	Sidewall	3'	<100	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/1/04	LS70-P1B-2F	Floor	8'	301	Pass
	10/1/04	LS70-P1B-2W-A	Sidewall	1'	2200	Pass
	10/1/04	LS70-P1B-2W-B	Sidewall	2'	260	Pass
	10/1/04	LS70-P1B-2W-C	Sidewall	3'	404	Pass
LS71	10/4/04	LS71-P1B-1F	Floor	5'	<100	Pass
	10/4/04	LS71-P1B-1W-A	Sidewall	1'	272	Pass
	10/4/04	LS71-P1B-1W-B	Sidewall	2'	250	Pass
	10/4/04	LS71-P1B-1W-C	Sidewall	3'	<100	Pass
	10/4/04	LS71-P1B-2F	Floor	5'	<100	Pass
	10/4/04	LS71-P1B-2W-A	Sidewall	1'	<100	Pass
	10/4/04	LS71-P1B-2W-B	Sidewall	2'	<100	Pass
	10/4/04	LS71-P1B-2W-C	Sidewall	3'	<100	Pass
	10/4/04	LS71-P1B-3F	Floor	5'	<100	Pass
	10/4/04	LS71-P1B-3W-A	Sidewall	1'	<100	Pass
	10/4/04	LS71-P1B-3W-B	Sidewall	2'	<100	Pass
	10/4/04	LS71-P1B-3W-C	Sidewall	3'	<100	Pass
LS72	10/4/04	LS72-P1B-1F	Floor	4'	<100	Pass
	10/4/04	LS72-P1B-1W-A	Sidewall	1'	<100	Pass
	10/4/04	LS72-P1B-1W-B	Sidewall	2'	<100	Pass
	10/4/04	LS72-P1B-1W-C	Sidewall	3'	<100	Pass
	10/4/04	LS72-P1B-2F	Floor	4'	538	Pass
	10/4/04	LS72-P1B-2W-A	Sidewall	1'	<100	Pass
	10/4/04	LS72-P1B-2W-B	Sidewall	2'	<100	Pass
	10/4/04	LS72-P1B-2W-C	Sidewall	3'	293	Pass
	10/4/04	LS72-P1B-3F	Floor	4'	<100	Pass
	10/4/04	LS72-P1B-3W-A	Sidewall	1'	<100	Pass
	10/4/04	LS72-P1B-3W-B	Sidewall	2'	<100	Pass
	10/4/04	LS72-P1B-3W-C	Sidewall	3'	<100	Pass
LS73	10/4/04	LS73-P1B-1F	Floor	6'	<100	Pass
	10/4/04	LS73-P1B-1W-A	Sidewall	1'	1500	Pass
	10/4/04	LS73-P1B-1W-B	Sidewall	2'	307	Pass
	10/4/04	LS73-P1B-1W-C	Sidewall	3'	<100	Pass
	10/4/04	LS73-P1B-2F	Floor	6'	<100	Pass
	10/4/04	LS73-P1B-2W-A	Sidewall	1'	<100	Pass
	10/4/04	LS73-P1B-2W-B	Sidewall	2'	138	Pass
	10/4/04	LS73-P1B-2W-C	Sidewall	3'	<100	Pass
	10/4/04	LS73-P1B-3F	Floor	6'	<100	Pass
	10/4/04	LS73-P1B-3W-A	Sidewall	1'	<100	Pass
	10/4/04	LS73-P1B-3W-B	Sidewall	2'	<100	Pass
	10/4/04	LS73-P1B-3W-C	Sidewall	3'	<100	Pass
LS74	10/5/04	LS74-P1B-1F	Floor	8'	980	Pass
	10/5/04	LS74-P1B-1W-A	Sidewall	1'	1100	Pass
	10/5/04	LS74-P1B-1W-B	Sidewall	2'	810	Pass
	10/5/04	LS74-P1B-1W-C	Sidewall	3'	918	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/5/04	LS74-P1B-2F	Floor	8'	1300	Pass
	10/5/04	LS74-P1B-2W-A	Sidewall	1'	1020	Pass
	10/5/04	LS74-P1B-2W-B	Sidewall	2'	916	Pass
	10/5/04	LS74-P1B-2W-C	Sidewall	3'	1100	Pass
	10/5/04	LS74-P1B-3F	Floor	8'	1410	Pass
	10/5/04	LS74-P1B-3W-A	Sidewall	1'	2400	Pass
	10/5/04	LS74-P1B-3W-B	Sidewall	2'	1430	Pass
	10/5/04	LS74-P1B-3W-C	Sidewall	3'	2200	Pass
LS75	10/4/04	LS75-P1B-1F	Floor	7'	239	Pass
	10/4/04	LS75-P1B-1W-A	Sidewall	1'	320	Pass
	10/4/04	LS75-P1B-1W-B	Sidewall	2'	400	Pass
	10/4/04	LS75-P1B-1W-C	Sidewall	3'	<100	Pass
	10/4/04	LS75-P1B-2F	Floor	7'	<100	Pass
	10/4/04	LS75-P1B-2W-A	Sidewall	1'	297	Pass
	10/4/04	LS75-P1B-2W-B	Sidewall	2'	<100	Pass
	10/4/04	LS75-P1B-2W-C	Sidewall	3'	<100	Pass
	10/4/04	LS75-P1B-3F	Floor	7'	<100	Pass
	10/4/04	LS75-P1B-3W-A	Sidewall	1'	<100	Pass
	10/4/04	LS75-P1B-3W-B	Sidewall	2'	<100	Pass
	10/4/04	LS75-P1B-3W-C	Sidewall	3'	<100	Pass
	10/4/04	LS75-P1B-4F	Floor	7'	<100	Pass
	10/4/04	LS75-P1B-4W-A	Sidewall	1'	<100	Pass
	10/4/04	LS75-P1B-4W-B	Sidewall	2'	<100	Pass
	10/4/04	LS75-P1B-4W-C	Sidewall	3'	120	Pass
LS76	10/4/04	LS76-P1B-1F	Floor	8'	272	Pass
	10/4/04	LS76-P1B-1W-A	Sidewall	1'	151	Pass
	10/4/04	LS76-P1B-1W-B	Sidewall	2'	240	Pass
	10/4/04	LS76-P1B-1W-C	Sidewall	3'	147	Pass
	10/4/04	LS76-P1B-2F	Floor	8'	152	Pass
	10/4/04	LS76-P1B-2W-A	Sidewall	1'	315	Pass
	10/4/04	LS76-P1B-2W-B	Sidewall	2'	<100	Pass
	10/4/04	LS76-P1B-2W-C	Sidewall	3'	238	Pass
	10/4/04	LS76-P1B-3F	Floor	8'	<100	Pass
	10/4/04	LS76-P1B-3W-A	Sidewall	1'	274	Pass
	10/4/04	LS76-P1B-3W-B	Sidewall	2'	<100	Pass
	10/4/04	LS76-P1B-3W-C	Sidewall	3'	235	Pass
LS77	10/4/04	LS77-P1B-1F	Floor	8'	<100	Pass
	10/4/04	LS77-P1B-1W-A	Sidewall	1'	<100	Pass
	10/4/04	LS77-P1B-1W-B	Sidewall	2'	<100	Pass
	10/4/04	LS77-P1B-1W-C	Sidewall	3'	<100	Pass
	10/4/04	LS77-P1B-2F	Floor	8'	<100	Pass
	10/4/04	LS77-P1B-2W-A	Sidewall	1'	730	Pass
	10/4/04	LS77-P1B-2W-B	Sidewall	2'	781	Pass
	10/4/04	LS77-P1B-2W-C	Sidewall	3'	212	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/4/04	LS77-P1B-3F	Floor	8'	<100	Pass
	10/4/04	LS77-P1B-3W-A	Sidewall	1'	690	Pass
	10/4/04	LS77-P1B-3W-B	Sidewall	2'	432	Pass
	10/4/04	LS77-P1B-3W-C	Sidewall	3'	<100	Pass
LS78	10/5/04	LS78-P1B-1F	Floor	6'	1320	Pass
	10/5/04	LS78-P1B-1W-A	Sidewall	1'	2350	Pass
	10/5/04	LS78-P1B-1W-B	Sidewall	2'	2400	Pass
	10/5/04	LS78-P1B-1W-C	Sidewall	3'	2500	Pass
	10/5/04	LS78-P1B-2F	Floor	6'	1740	Pass
	10/5/04	LS78-P1B-2W-A	Sidewall	1'	1550	Pass
	10/5/04	LS78-P1B-2W-B	Sidewall	2'	1600	Pass
	10/5/04	LS78-P1B-2W-C	Sidewall	3'	1210	Pass
	10/5/04	LS78-P1B-3F	Floor	6'	971	Pass
	10/5/04	LS78-P1B-3W-A	Sidewall	1'	815	Pass
	10/5/04	LS78-P1B-3W-B	Sidewall	2'	1130	Pass
	10/5/04	LS78-P1B-3W-C	Sidewall	3'	860	Pass
LS79	10/5/04	LS79-P1B-1F	Floor	8'	<100	Pass
	10/5/04	LS79-P1B-1W-A	Sidewall	1'	2100	Pass
	10/5/04	LS79-P1B-1W-B	Sidewall	2'	1270	Pass
	10/5/04	LS79-P1B-1W-C	Sidewall	3'	1500	Pass
	10/5/04	LS79-P1B-2F	Floor	8'	1870	Pass
	10/5/04	LS79-P1B-2W-A	Sidewall	1'	1510	Pass
	10/5/04	LS79-P1B-2W-B	Sidewall	2'	1760	Pass
	10/5/04	LS79-P1B-2W-C	Sidewall	3'	2200	Pass
	10/5/04	LS79-P1B-3F	Floor	8'	1290	Pass
	10/5/04	LS79-P1B-3W-A	Sidewall	1'	1200	Pass
	10/5/04	LS79-P1B-3W-B	Sidewall	2'	1250	Pass
	10/5/04	LS79-P1B-3W-C	Sidewall	3'	1100	Pass
	10/5/04	LS79-P1B-4F	Floor	8'	1470	Pass
	10/5/04	LS79-P1B-4W-A	Sidewall	1'	2000	Pass
	10/5/04	LS79-P1B-4W-B	Sidewall	2'	1780	Pass
	10/5/04	LS79-P1B-4W-C	Sidewall	3'	1650	Pass
LS80	10/5/04	LS80-P1B-1F	Floor	5'	1460	Pass
	10/5/04	LS80-P1B-1W-A	Sidewall	1'	1200	Pass
	10/5/04	LS80-P1B-1W-B	Sidewall	2'	1330	Pass
	10/5/04	LS80-P1B-1W-C	Sidewall	3'	964	Pass
	10/5/04	LS80-P1B-2F	Floor	5'	982	Pass
	10/5/04	LS80-P1B-2W-A	Sidewall	1'	2200	Pass
	10/5/04	LS80-P1B-2W-B	Sidewall	2'	1940	Pass
	10/5/04	LS80-P1B-2W-C	Sidewall	3'	1750	Pass
	10/5/04	LS80-P1B-3F	Floor	5'	280	Pass
	10/5/04	LS80-P1B-3W-A	Sidewall	1'	2370	Pass
	10/5/04	LS80-P1B-3W-B	Sidewall	2'	474	Pass
	10/5/04	LS80-P1B-3W-C	Sidewall	3'	515	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/5/04	LS80-P1B-4F	Floor	5'	879	Pass
	10/5/04	LS80-P1B-4W-A	Sidewall	1'	1810	Pass
	10/5/04	LS80-P1B-4W-B	Sidewall	2'	1900	Pass
	10/5/04	LS80-P1B-4W-C	Sidewall	3'	1150	Pass
LS81	10/4/04	LS81-P1B-1F	Floor	6'	<100	Pass
	10/4/04	LS81-P1B-1W-A	Sidewall	1'	2300	Pass
	10/4/04	LS81-P1B-1W-B	Sidewall	2'	2100	Pass
	10/4/04	LS81-P1B-1W-C	Sidewall	3'	1300	Pass
	10/4/04	LS81-P1B-2F	Floor	6'	<100	Pass
	10/4/04	LS81-P1B-2W-A	Sidewall	1'	1200	Pass
	10/4/04	LS81-P1B-2W-B	Sidewall	2'	391	Pass
	10/4/04	LS81-P1B-2W-C	Sidewall	3'	416	Pass
	10/4/04	LS81-P1B-3F	Floor	6'	207	Pass
	10/4/04	LS81-P1B-3W-A	Sidewall	1'	568	Pass
	10/4/04	LS81-P1B-3W-B	Sidewall	2'	<100	Pass
	10/4/04	LS81-P1B-3W-C	Sidewall	3'	<100	Pass
	10/4/04	LS81-P1B-4F	Floor	6'	209	Pass
	10/4/04	LS81-P1B-4W-A	Sidewall	1'	358	Pass
	10/4/04	LS81-P1B-4W-B	Sidewall	2'	<100	Pass
	10/4/04	LS81-P1B-4W-C	Sidewall	3'	<100	Pass
LS82	10/4/04	LS82-P1B-1F	Floor	8'	<100	Pass
	10/4/04	LS82-P1B-1W-A	Sidewall	1'	<100	Pass
	10/4/04	LS82-P1B-1W-B	Sidewall	2'	<100	Pass
	10/4/04	LS82-P1B-1W-C	Sidewall	3'	<100	Pass
	10/4/04	LS82-P1B-2F	Floor	8'	<100	Pass
	10/4/04	LS82-P1B-2W-A	Sidewall	1'	348	Pass
	10/4/04	LS82-P1B-2W-B	Sidewall	2'	317	Pass
	10/4/04	LS82-P1B-2W-C	Sidewall	3'	292	Pass
	10/4/04	LS82-P1B-3F	Floor	8'	<100	Pass
	10/4/04	LS82-P1B-3W-A	Sidewall	1'	106	Pass
	10/4/04	LS82-P1B-3W-B	Sidewall	2'	<100	Pass
	10/4/04	LS82-P1B-3W-C	Sidewall	3'	262	Pass
LS83	10/4/04	LS83-P1B-1F	Floor	8'	<100	Pass
	10/4/04	LS83-P1B-1W-A	Sidewall	1'	<100	Pass
	10/4/04	LS83-P1B-1W-B	Sidewall	2'	<100	Pass
	10/4/04	LS83-P1B-1W-C	Sidewall	3'	<100	Pass
	10/4/04	LS83-P1B-2F	Floor	8'	<100	Pass
	10/4/04	LS83-P1B-2W-A	Sidewall	1'	2100	Pass
	10/4/04	LS83-P1B-2W-B	Sidewall	2'	1400	Pass
	10/4/04	LS83-P1B-2W-C	Sidewall	3'	974	Pass
	10/4/04	LS83-P1B-3F	Floor	8'	740	Pass
	10/4/04	LS83-P1B-3W-A	Sidewall	1'	<100	Pass
	10/4/04	LS83-P1B-3W-B	Sidewall	2'	488	Pass
	10/4/04	LS83-P1B-3W-C	Sidewall	3'	311	Pass

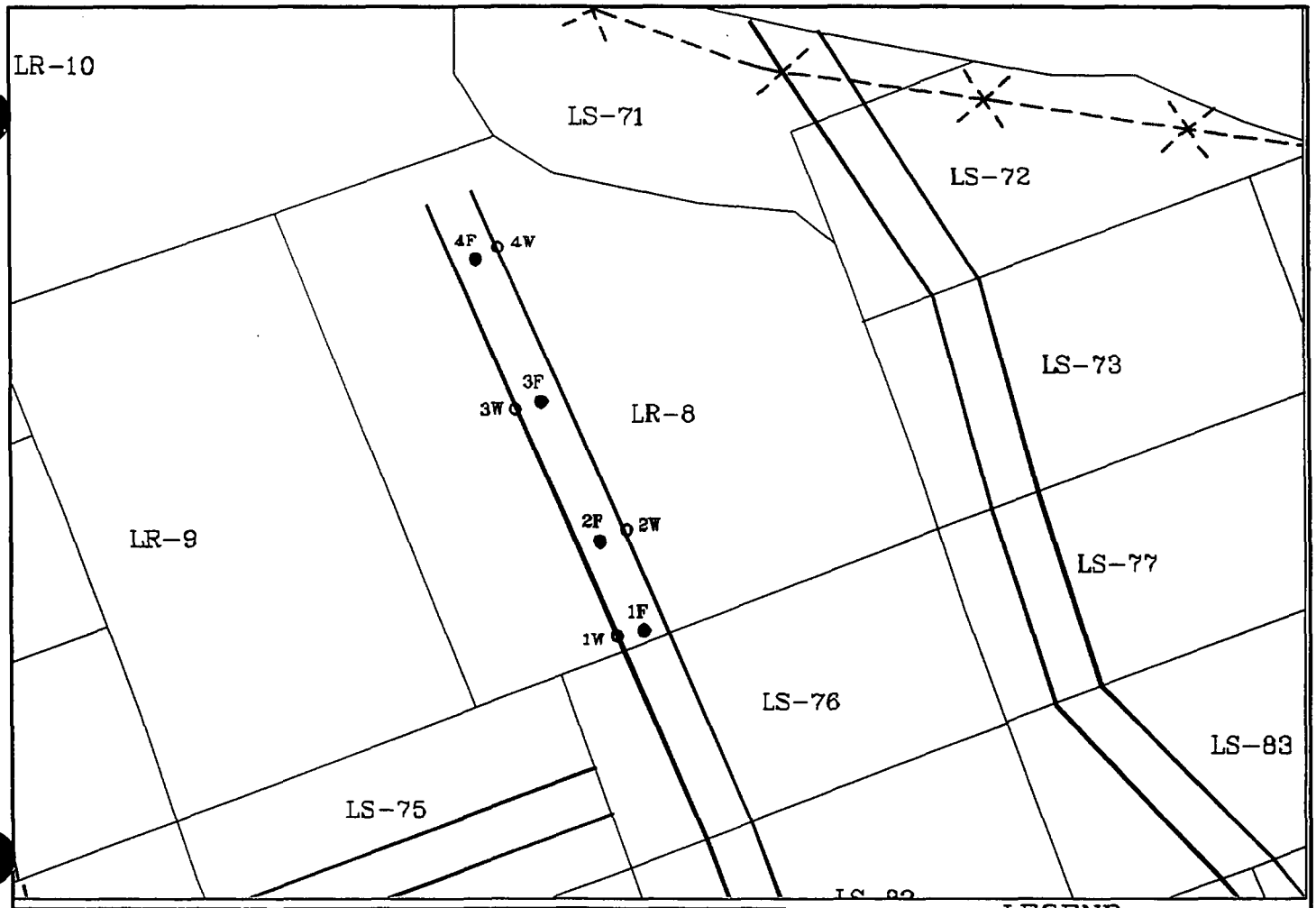
Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
LS84	10/5/04	LS84-P1B-1F	Floor	9'	<100	Pass
	10/5/04	LS84-P1B-1W-A	Sidewall	1'	2600	Pass
	10/5/04	LS84-P1B-1W-B	Sidewall	2'	2710	Pass
	10/5/04	LS84-P1B-1W-C	Sidewall	3'	1270	Pass
	10/5/04	LS84-P1B-2F	Floor	9'	1650	Pass
	10/5/04	LS84-P1B-2W-A	Sidewall	1'	1300	Pass
	10/5/04	LS84-P1B-2W-B	Sidewall	2'	2080	Pass
	10/5/04	LS84-P1B-2W-C	Sidewall	3'	1110	Pass
UR08	10/5/04	UR8-P1B-1F	Floor	7'	892	Pass
	10/5/04	UR8-P1B-1W-A	Sidewall	1'	907	Pass
	10/5/04	UR8-P1B-1W-B	Sidewall	2'	319	Pass
	10/5/04	UR8-P1B-1W-C	Sidewall	3'	274	Pass
	10/5/04	UR8-P1B-2F	Floor	7'	1170	Pass
	10/5/04	UR8-P1B-2W-A	Sidewall	1'	1100	Pass
	10/5/04	UR8-P1B-2W-B	Sidewall	2'	353	Pass
	10/5/04	UR8-P1B-2W-C	Sidewall	3'	228	Pass
	10/5/04	UR8-P1B-3F	Floor	7'	562	Pass
	10/5/04	UR8-P1B-3W-A	Sidewall	1'	719	Pass
	10/5/04	UR8-P1B-3W-B	Sidewall	2'	1070	Pass
	10/5/04	UR8-P1B-3W-C	Sidewall	3'	987	Pass
	10/5/04	UR8-P1B-4F	Floor	7'	856	Pass
	10/5/04	UR8-P1B-4W-A	Sidewall	1'	704	Pass
	10/5/04	UR8-P1B-4W-B	Sidewall	2'	374	Pass
	10/5/04	UR8-P1B-4W-C	Sidewall	3'	1350	Pass
US01	10/5/04	US1-P1B-1F	Floor	4'	126	Pass
	10/5/04	US1-P1B-1W-A	Sidewall	1'	582	Pass
	10/5/04	US1-P1B-1W-B	Sidewall	2'	210	Pass
	10/5/04	US1-P1B-1W-C	Sidewall	3'	<100	Pass
	10/5/04	US1-P1B-2F	Floor	4'	184	Pass
	10/5/04	US1-P1B-2W-A	Sidewall	1'	<100	Pass
	10/5/04	US1-P1B-2W-B	Sidewall	2'	<100	Pass
	10/5/04	US1-P1B-2W-C	Sidewall	3'	<100	Pass
	10/5/04	US1-P1B-3F	Floor	4'	320	Pass
	10/5/04	US1-P1B-3W-A	Sidewall	1'	380	Pass
	10/5/04	US1-P1B-3W-B	Sidewall	2'	185	Pass
	10/5/04	US1-P1B-3W-C	Sidewall	3'	206	Pass
US02	10/5/04	US2-P1B-1F	Floor	5'	190	Pass
	10/5/04	US2-P1B-1W-A	Sidewall	1'	327	Pass
	10/5/04	US2-P1B-1W-B	Sidewall	2'	420	Pass
	10/5/04	US2-P1B-1W-C	Sidewall	3'	403	Pass
	10/5/04	US2-P1B-2F	Floor	5'	476	Pass
	10/5/04	US2-P1B-2W-A	Sidewall	1'	204	Pass
	10/5/04	US2-P1B-2W-B	Sidewall	2'	169	Pass
	10/5/04	US2-P1B-2W-C	Sidewall	3'	143	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/5/04	US2-P1B-3F	Floor	5'	410	Pass
	10/5/04	US2-P1B-3W-A	Sidewall	1'	263	Pass
	10/5/04	US2-P1B-3W-B	Sidewall	2'	205	Pass
	10/5/04	US2-P1B-3W-C	Sidewall	3'	184	Pass
US03	10/5/04	US3-P1B-1F	Floor	8'	420	Pass
	10/5/04	US3-P1B-1W-A	Sidewall	1'	686	Pass
	10/5/04	US3-P1B-1W-B	Sidewall	2'	305	Pass
	10/5/04	US3-P1B-1W-C	Sidewall	3'	244	Pass
	10/5/04	US3-P1B-2F	Floor	8'	758	Pass
	10/5/04	US3-P1B-2W-A	Sidewall	1'	412	Pass
	10/5/04	US3-P1B-2W-B	Sidewall	2'	274	Pass
	10/5/04	US3-P1B-2W-C	Sidewall	3'	385	Pass
	10/5/04	US3-P1B-3F	Floor	8'	285	Pass
	10/5/04	US3-P1B-3W-A	Sidewall	1'	383	Pass
	10/5/04	US3-P1B-3W-B	Sidewall	2'	411	Pass
	10/5/04	US3-P1B-3W-C	Sidewall	3'	278	Pass
	10/5/04	US3-P1B-4F	Floor	8'	448	Pass
	10/5/04	US3-P1B-4W-A	Sidewall	1'	1210	Pass
	10/5/04	US3-P1B-4W-B	Sidewall	2'	2340	Pass
	10/5/04	US3-P1B-4W-C	Sidewall	3'	2380	Pass
US04	10/5/04	US4-P1B-1F	Floor	4'	<100	Pass
	10/5/04	US4-P1B-1W-A	Sidewall	1'	<100	Pass
	10/5/04	US4-P1B-1W-B	Sidewall	2'	137	Pass
	10/5/04	US4-P1B-1W-C	Sidewall	3'	123	Pass
	10/5/04	US4-P1B-2F	Floor	4'	113	Pass
	10/5/04	US4-P1B-2W-A	Sidewall	1'	130	Pass
	10/5/04	US4-P1B-2W-B	Sidewall	2'	125	Pass
	10/5/04	US4-P1B-2W-C	Sidewall	3'	124	Pass
	10/5/04	US4-P1B-3F	Floor	4'	121	Pass
	10/5/04	US4-P1B-3W-A	Sidewall	1'	118	Pass
	10/5/04	US4-P1B-3W-B	Sidewall	2'	115	Pass
	10/5/04	US4-P1B-3W-C	Sidewall	3'	112	Pass
	10/5/04	US4-P1B-4F	Floor	4'	<100	Pass
	10/5/04	US4-P1B-4W-A	Sidewall	1'	274	Pass
	10/5/04	US4-P1B-4W-B	Sidewall	2'	<100	Pass
	10/5/04	US4-P1B-4W-C	Sidewall	3'	<100	Pass
US05	10/5/04	US5-P1B-1F	Floor	6'	502	Pass
	10/5/04	US5-P1B-1W-A	Sidewall	1'	734	Pass
	10/5/04	US5-P1B-1W-B	Sidewall	2'	646	Pass
	10/5/04	US5-P1B-1W-C	Sidewall	3'	691	Pass
	10/5/04	US5-P1B-2F	Floor	6'	1120	Pass
	10/5/04	US5-P1B-2W-A	Sidewall	1'	1510	Pass
	10/5/04	US5-P1B-2W-B	Sidewall	2'	2000	Pass
	10/5/04	US5-P1B-2W-C	Sidewall	3'	1480	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/5/04	US5-P1B-3F	Floor	6'	1000	Pass
	10/5/04	US5-P1B-3W-A	Sidewall	1'	1350	Pass
	10/5/04	US5-P1B-3W-B	Sidewall	2'	1400	Pass
	10/5/04	US5-P1B-3W-C	Sidewall	3'	949	Pass
	10/5/04	US5-P1B-4F	Floor	6'	394	Pass
	10/5/04	US5-P1B-4W-A	Sidewall	1'	855	Pass
	10/5/04	US5-P1B-4W-B	Sidewall	2'	1460	Pass
	10/5/04	US5-P1B-4W-C	Sidewall	3'	870	Pass
US06	10/5/04	US6-P1B-1F	Floor	5'	<100	Pass
	10/5/04	US6-P1B-1W-A	Sidewall	1'	220	Pass
	10/5/04	US6-P1B-1W-B	Sidewall	2'	289	Pass
	10/5/04	US6-P1B-1W-C	Sidewall	3'	302	Pass
	10/5/04	US6-P1B-2F	Floor	5'	260	Pass
	10/5/04	US6-P1B-2W-A	Sidewall	1'	234	Pass
	10/5/04	US6-P1B-2W-B	Sidewall	2'	208	Pass
	10/5/04	US6-P1B-2W-C	Sidewall	3'	214	Pass
	10/5/04	US6-P1B-3F	Floor	5'	278	Pass
	10/5/04	US6-P1B-3W-A	Sidewall	1'	330	Pass
	10/5/04	US6-P1B-3W-B	Sidewall	2'	339	Pass
	10/5/04	US6-P1B-3W-C	Sidewall	3'	313	Pass
US07	10/5/04	US7-P1B-1F	Floor	6'	873	Pass
	10/5/04	US7-P1B-1W-A	Sidewall	1'	558	Pass
	10/5/04	US7-P1B-1W-B	Sidewall	2'	990	Pass
	10/5/04	US7-P1B-1W-C	Sidewall	3'	748	Pass
	10/5/04	US7-P1B-2F	Floor	6'	506	Pass
	10/5/04	US7-P1B-2W-A	Sidewall	1'	828	Pass
	10/5/04	US7-P1B-2W-B	Sidewall	2'	247	Pass
	10/5/04	US7-P1B-2W-C	Sidewall	3'	341	Pass
	10/5/04	US7-P1B-3F	Floor	6'	240	Pass
	10/5/04	US7-P1B-3W-A	Sidewall	1'	866	Pass
	10/5/04	US7-P1B-3W-B	Sidewall	2'	750	Pass
	10/5/04	US7-P1B-3W-C	Sidewall	3'	627	Pass
US08	10/5/04	US8-P1B-1F	Floor	7'	656	Pass
	10/5/04	US8-P1B-1W-A	Sidewall	1'	223	Pass
	10/5/04	US8-P1B-1W-B	Sidewall	2'	702	Pass
	10/5/04	US8-P1B-1W-C	Sidewall	3'	414	Pass
	10/5/04	US8-P1B-2F	Floor	7'	570	Pass
	10/5/04	US8-P1B-2W-A	Sidewall	1'	1250	Pass
	10/5/04	US8-P1B-2W-B	Sidewall	2'	332	Pass
	10/5/04	US8-P1B-2W-C	Sidewall	3'	375	Pass
	10/5/04	US8-P1B-3F	Floor	7'	600	Pass
	10/5/04	US8-P1B-3W-A	Sidewall	1'	253	Pass
	10/5/04	US8-P1B-3W-B	Sidewall	2'	217	Pass
	10/5/04	US8-P1B-3W-C	Sidewall	3'	331	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	Date	Field XRFSample #	Floor or Sidewall	Depth	Arsenic Result	Pass/Fail (F: 3,000+ As)
	10/5/04	US8-P1B-4F	Floor	7'	480	Pass
	10/5/04	US8-P1B-4W-A	Sidewall	1'	426	Pass
	10/5/04	US8-P1B-4W-B	Sidewall	2'	580	Pass
	10/5/04	US8-P1B-4W-C	Sidewall	3'	<100	Pass
US09	10/5/04	US9-P1B-1F	Floor	8'	438	Pass
	10/5/04	US9-P1B-1W-A	Sidewall	1'	780	Pass
	10/5/04	US9-P1B-1W-B	Sidewall	2'	567	Pass
	10/5/04	US9-P1B-1W-C	Sidewall	3'	493	Pass
	10/5/04	US9-P1B-2F	Floor	8'	746	Pass
	10/5/04	US9-P1B-2W-A	Sidewall	1'	1250	Pass
	10/5/04	US9-P1B-2W-B	Sidewall	2'	840	Pass
	10/5/04	US9-P1B-2W-C	Sidewall	3'	360	Pass
	10/5/04	US9-P1B-3F	Floor	8'	740	Pass
	10/5/04	US9-P1B-3W-A	Sidewall	1'	1300	Pass
	10/5/04	US9-P1B-3W-B	Sidewall	2'	1270	Pass
	10/5/04	US9-P1B-3W-C	Sidewall	3'	264	Pass
US10	10/1/04	US10-P1B-1F	Floor	6'	872	Pass
	10/1/04	US10-P1B-1W-A	Sidewall	1'	1590	Pass
	10/1/04	US10-P1B-1W-B	Sidewall	2'	750	Pass
	10/1/04	US10-P1B-1W-C	Sidewall	3'	1140	Pass
	10/1/04	US10-P1B-2F	Floor	6'	710	Pass
	10/1/04	US10-P1B-2W-A	Sidewall	1'	285	Pass
	10/1/04	US10-P1B-2W-B	Sidewall	2'	410	Pass
	10/1/04	US10-P1B-2W-C	Sidewall	3'	260	Pass
	10/1/04	US10-P1B-3F	Floor	6'	720	Pass
	10/1/04	US10-P1B-3W-A	Sidewall	1'	1270	Pass
	10/1/04	US10-P1B-3W-B	Sidewall	2'	960	Pass
	10/1/04	US10-P1B-3W-C	Sidewall	3'	885	Pass
US11	10/1/04	US11-P1B-1F	Floor	6'	796	Pass
	10/1/04	US11-P1B-1W-A	Sidewall	1'	480	Pass
	10/1/04	US11-P1B-1W-B	Sidewall	2'	320	Pass
	10/1/04	US11-P1B-1W-C	Sidewall	3'	760	Pass
	10/1/04	US11-P1B-2F	Floor	6'	<100	Pass
	10/1/04	US11-P1B-2W-A	Sidewall	1'	1410	Pass
	10/1/04	US11-P1B-2W-B	Sidewall	2'	1600	Pass
	10/1/04	US11-P1B-2W-C	Sidewall	3'	<100	Pass
	10/1/04	US11-P1B-3F	Floor	6'	128	Pass
	10/1/04	US11-P1B-3W-A	Sidewall	1'	748	Pass
	10/1/04	US11-P1B-3W-B	Sidewall	2'	370	Pass
	10/1/04	US11-P1B-3W-C	Sidewall	3'	230	Pass
US12	10/1/04	US12-P1B-1F	Floor	8'	<100	Pass
	10/1/04	US12-P1B-1W-A	Sidewall	1'	180	Pass
	10/1/04	US12-P1B-1W-B	Sidewall	2'	190	Pass
	10/1/04	US12-P1B-1W-C	Sidewall	3'	<100	Pass

Table A.2.A Phase 1B Confirmation Trench Sampling						
Decision Unit	**Date**	**Field XRFSample #**	**Floor or Sidewall**	**Depth**	**Arsenic Result**	**Pass/Fail** (F: 3,000+ As)
	10/1/04	US12-P1B-2F	Floor	8'	<100	Pass
	10/1/04	US12-P1B-2W-A	Sidewall	1'	<100	Pass
	10/1/04	US12-P1B-2W-B	Sidewall	2'	<100	Pass
	10/1/04	US12-P1B-2W-C	Sidewall	3'	<100	Pass
	10/1/04	US12-P1B-3F	Floor	8'	<100	Pass
	10/1/04	US12-P1B-3W-A	Sidewall	1'	252	Pass
	10/1/04	US12-P1B-3W-B	Sidewall	2'	<100	Pass
	10/1/04	US12-P1B-3W-C	Sidewall	3'	<100	Pass



LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	119	LR8-P1B-1F
1 SIDEWALL 1' DEPTH	901	LR8-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LR8-P1B-1W-B
1 SIDEWALL 3' DEPTH	<100	LR8-P1B-1W-C
FLOOR 2	<100	LR8-P1B-2F
2 SIDEWALL 1' DEPTH	389	LR8-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LR8-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LR8-P1B-2W-C
FLOOR 3	<100	LR8-P1B-3F
3 SIDEWALL 1' DEPTH	287	LR8-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LR8-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LR8-P1B-3W-C
FLOOR 4	<100	LR8-P1B-4F
4 SIDEWALL 1' DEPTH	<100	LR8-P1B-4W-A
4 SIDEWALL 2' DEPTH	237	LR8-P1B-4W-B
4 SIDEWALL 3' DEPTH	<100	LR8-P1B-4W-C

LEGEND

● FLOOR SAMPLE LOCATION

○ PERIMETER SAMPLE LOCATION

CONFIRMATION TRENCH SAMPLING

LR-8 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 20FEET 40FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: NOTED

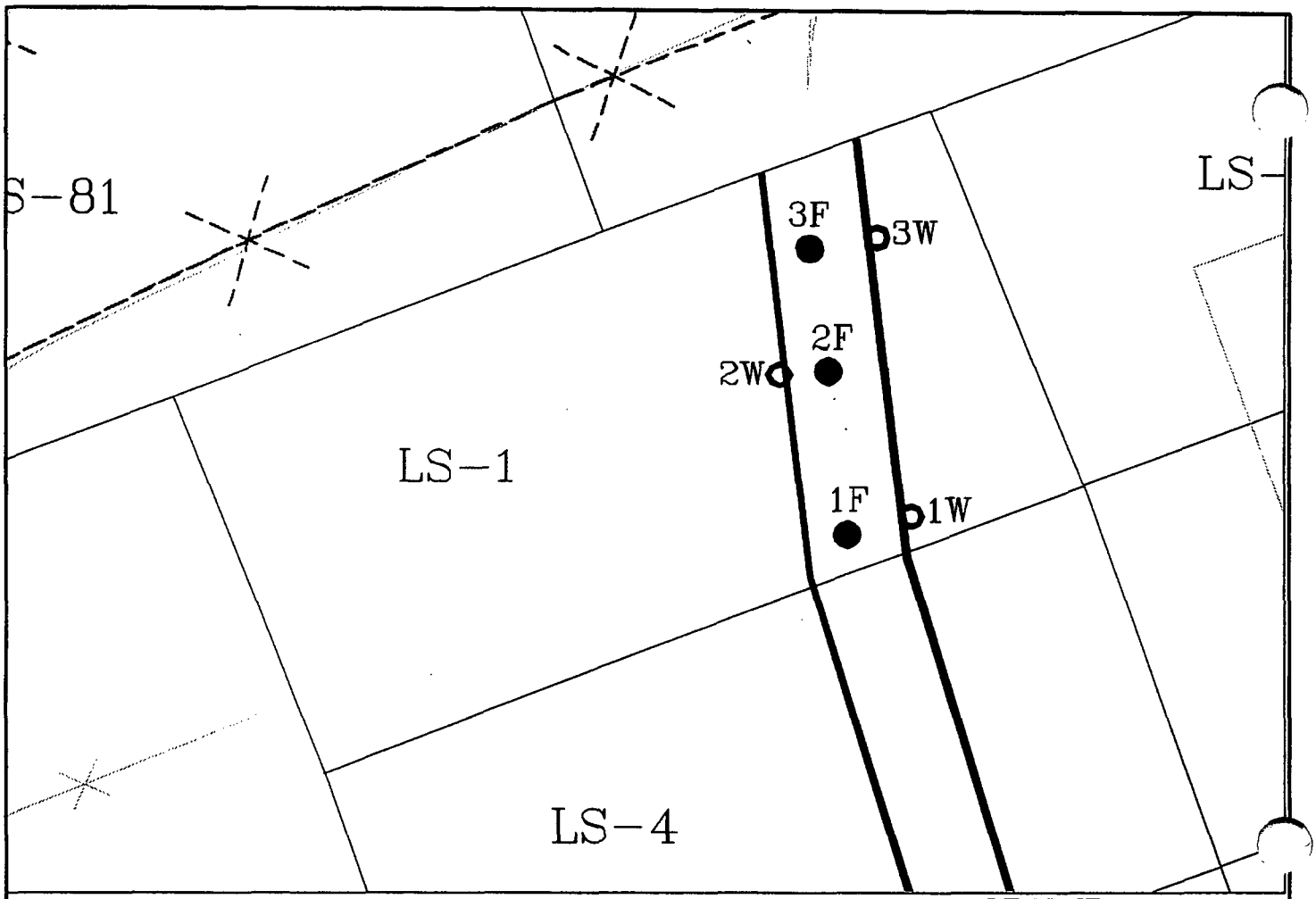
Ruston, WA 98407

DRAWING FILE NUMBER: TAC LR08P1BC4

FIGURE: LR-08

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	259	LS1-P1B-1F
1 SIDEWALL 1' DEPTH	1150	LS1-P1B-1W-A
1 SIDEWALL 2' DEPTH	1060	LS1-P1B-IW-B
1 SIDEWALL 3' DEPTH	800	LS1-P1B-1W-C
FLOOR 2	397	LS1-P1B-2F
2 SIDEWALL 1' DEPTH	1300	LS1-P1B-2W-A
2 SIDEWALL 2' DEPTH	564	LS1-P1B-2W-B
2 SIDEWALL 3' DEPTH	130	LS1-P1B-2W-C
FLOOR 3	<100	LS1-P1B-3F
3 SIDEWALL 1' DEPTH	381	LS1-P1B-3W-A
3 SIDEWALL 2' DEPTH	308	LS1-P1B-3W-B
3 SIDEWALL 3' DEPTH	280	LS1-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-1 PHASE 1B (9 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

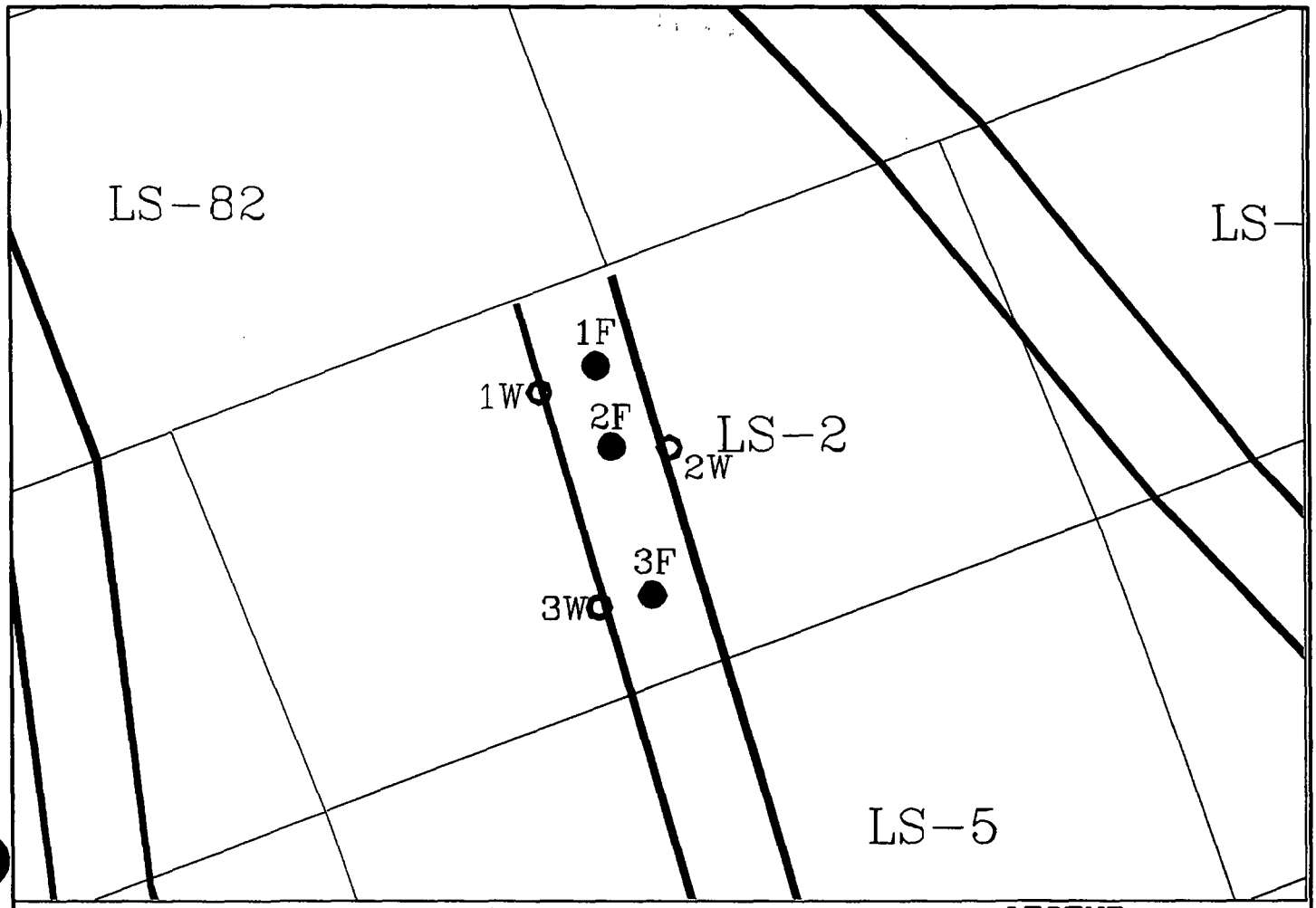
DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER: TAC LS01P1BC4
SHEET NUMBER: LS-1
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	272	LS2-P1B-1F
1 SIDEWALL 1' DEPTH	1500	LS2-P1B-1W-A
1 SIDEWALL 2' DEPTH	286	LS2-P1B-IW-B
1 SIDEWALL 3' DEPTH	230	LS2-P1B-1W-C
FLOOR 2	450	LS2-P1B-2F
2 SIDEWALL 1' DEPTH	240	LS2-P1B-2W-A
2 SIDEWALL 2' DEPTH	426	LS2-P1B-2W-B
2 SIDEWALL 3' DEPTH	220	LS2-P1B-2W-C
FLOOR 3	<100	LS2-P1B-3F
3 SIDEWALL 1' DEPTH	472	LS2-P1B-3W-A
3 SIDEWALL 2' DEPTH	682	LS2-P1B-3W-B
3 SIDEWALL 3' DEPTH	489	LS2-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-2 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
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APPROVED BY
SCALE: AS NOTED

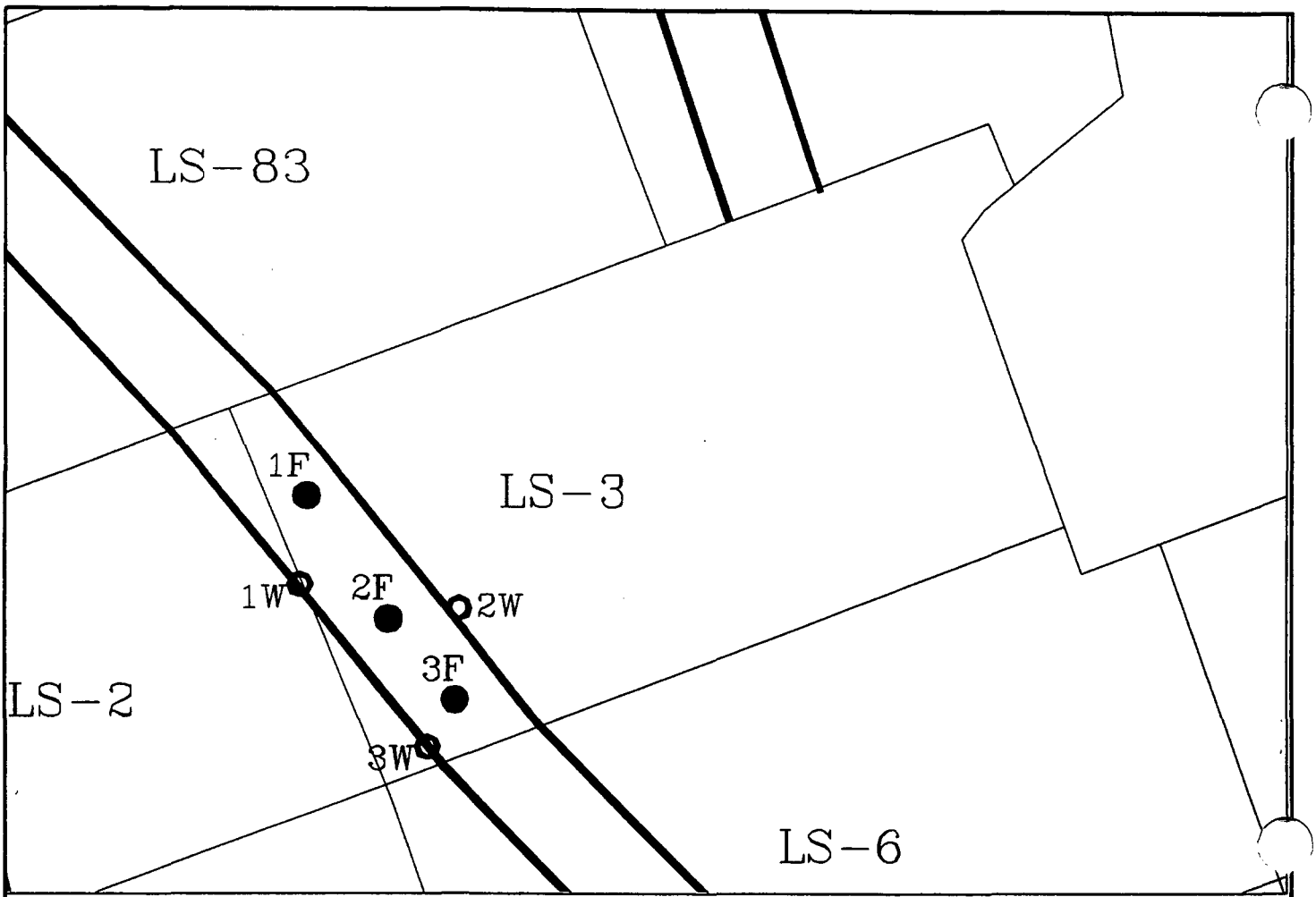
Fusion, Washington 98407

DRAWING FILE NUMBER
TAC LS02P1BC4
AUTOCAD EXL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-02

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS3-P1B-1F
1 SIDEWALL 1' DEPTH	1900	LS3-P1B-1W-A
1 SIDEWALL 2' DEPTH	373	LS3-P1B-IW-B
1 SIDEWALL 3' DEPTH	300	LS3-P1B-1W-C
FLOOR 2	<100	LS3-P1B-2F
2 SIDEWALL 1' DEPTH	1900	LS3-P1B-2W-A
2 SIDEWALL 2' DEPTH	934	LS3-P1B-2W-B
2 SIDEWALL 3' DEPTH	641	LS3-P1B-2W-C
FLOOR 3	1400	LS3-P1B-3F
3 SIDEWALL 1' DEPTH	743	LS3-P1B-3W-A
3 SIDEWALL 2' DEPTH	424	LS3-P1B-3W-B
3 SIDEWALL 3' DEPTH	560	LS3-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-3 PHASE 1B (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

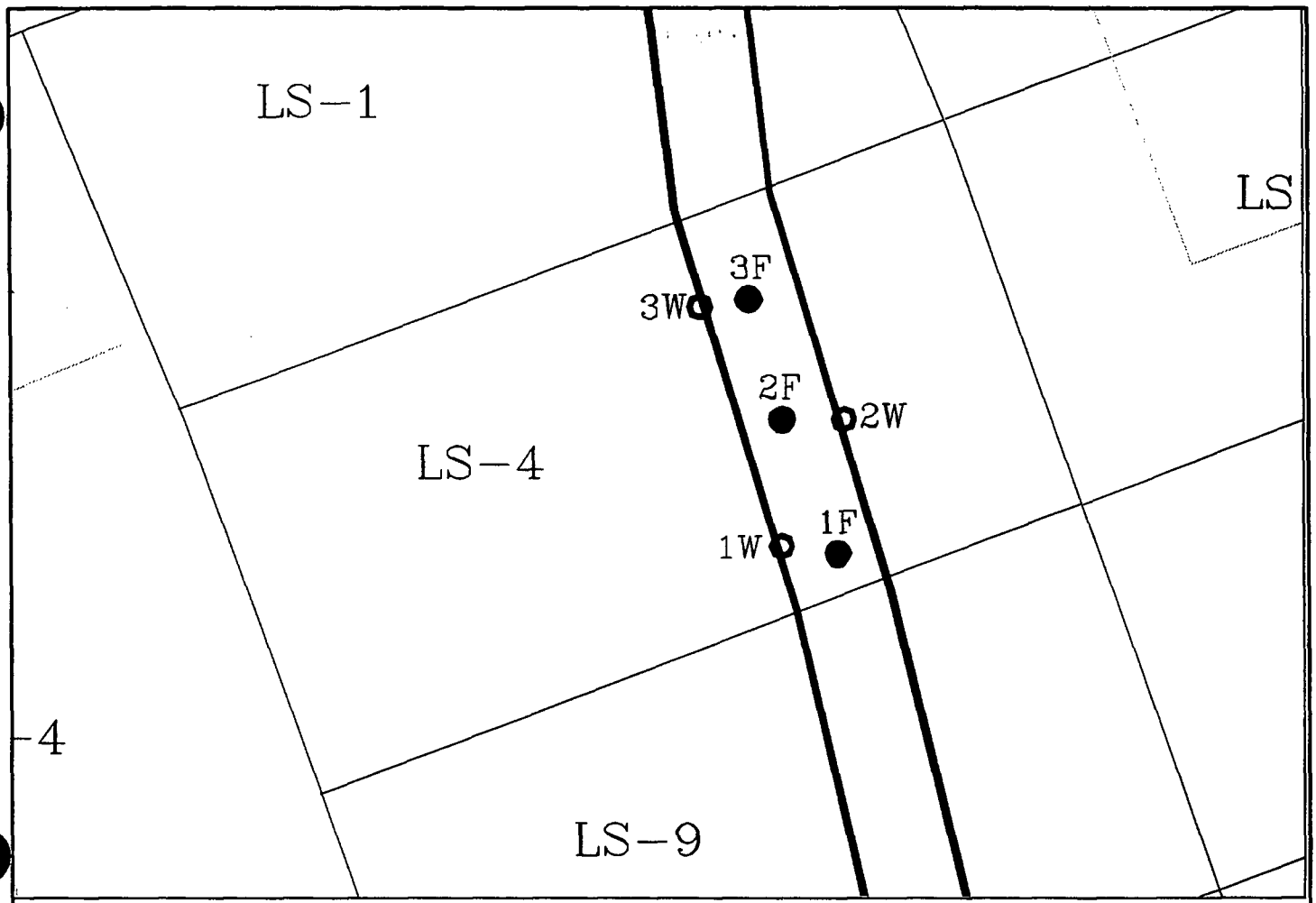
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Tacoma, Washington 98407

DRAWING FILE NUMBER: TAC LS03P1BC4
SHEET NUMBER: LS-03
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	246	LS4-P1B-1F
1 SIDEWALL 1' DEPTH	255	LS4-P1B-1W-A
1 SIDEWALL 2' DEPTH	180	LS4-P1B-1W-B
1 SIDEWALL 3' DEPTH	241	LS4-P1B-1W-C
FLOOR 2	325	LS4-P1B-2F
2 SIDEWALL 1' DEPTH	581	LS4-P1B-2W-A
2 SIDEWALL 2' DEPTH	320	LS4-P1B-2W-B
2 SIDEWALL 3' DEPTH	221	LS4-P1B-2W-C
FLOOR 3	302	LS4-P1B-3F
3 SIDEWALL 1' DEPTH	936	LS4-P1B-3W-A
3 SIDEWALL 2' DEPTH	349	LS4-P1B-3W-B
3 SIDEWALL 3' DEPTH	268	LS4-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-4 PHASE 1B (9 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

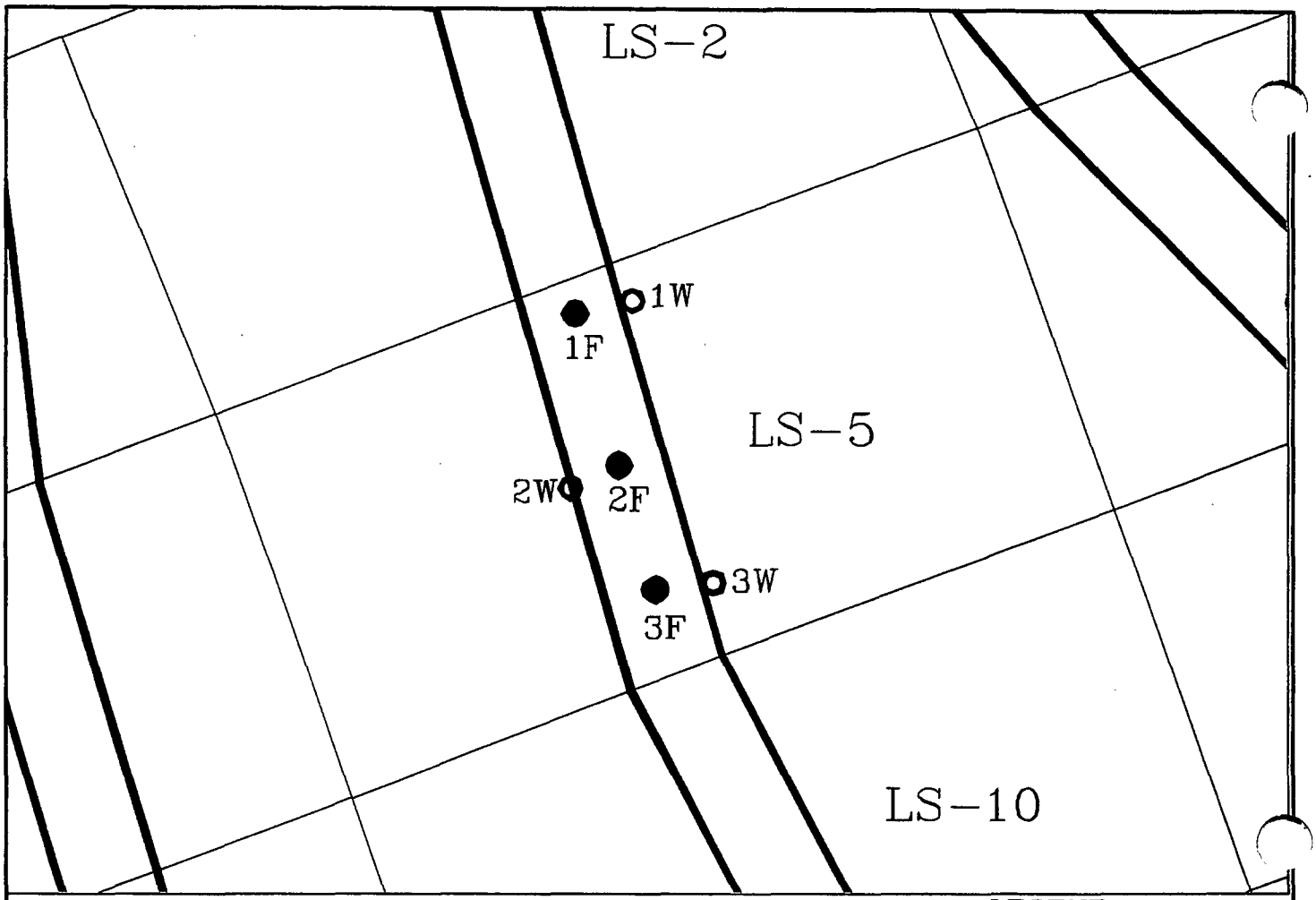
REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS04P1BC4
AUTOCAD XRL, GOOD DRAWING (DWG)
SHEET NUMBER LS-4
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	695	LS5-P1B-1F
1 SIDEWALL 1' DEPTH	723	LS5-P1B-1W-A
1 SIDEWALL 2' DEPTH	616	LS5-P1B-IW-B
1 SIDEWALL 3' DEPTH	682	LS5-P1B-1W-C
FLOOR 2	422	LS5-P1B-2F
2 SIDEWALL 1' DEPTH	512	LS5-P1B-2W-A
2 SIDEWALL 2' DEPTH	372	LS5-P1B-2W-B
2 SIDEWALL 3' DEPTH	228	LS5-P1B-2W-C
FLOOR 3	514	LS5-P1B-3F
3 SIDEWALL 1' DEPTH	741	LS5-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS5-P1B-3W-B
3 SIDEWALL 3' DEPTH	420	LS5-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-5 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY DDPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

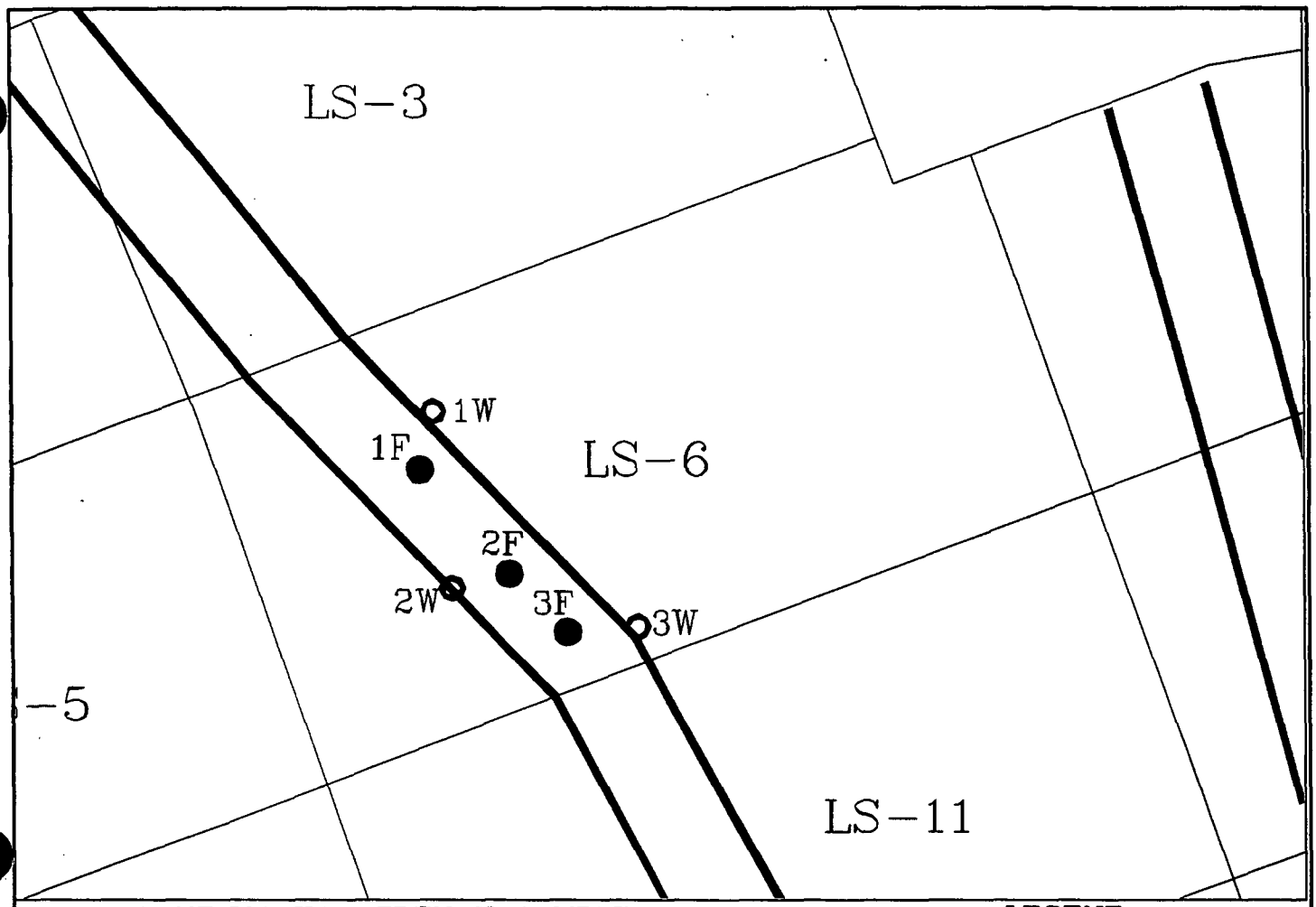
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS05P1BC4
AUTOCAD RDL. GOOD DRAWING (DWG)

SHEET NUMBER
LS-05

REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS6-P1B-1F
1 SIDEWALL 1' DEPTH	2200	LS6-P1B-1W-A
1 SIDEWALL 2' DEPTH	1800	LS6-P1B-IW-B
1 SIDEWALL 3' DEPTH	2400	LS6-P1B-1W-C
FLOOR 2	1500	LS6-P1B-2F
2 SIDEWALL 1' DEPTH	874	LS6-P1B-2W-A
2 SIDEWALL 2' DEPTH	878	LS6-P1B-2W-B
2 SIDEWALL 3' DEPTH	823	LS6-P1B-2W-C
FLOOR 3	1500	LS6-P1B-3F
3 SIDEWALL 1' DEPTH	600	LS6-P1B-3W-A
3 SIDEWALL 2' DEPTH	1900	LS6-P1B-3W-B
3 SIDEWALL 3' DEPTH	1750	LS6-P1B-3W-C

LEGEND

- FLOOR SAMPLE LOCATION
- PERIMETER SAMPLE LOCATION

LS-6 PHASE 1B (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

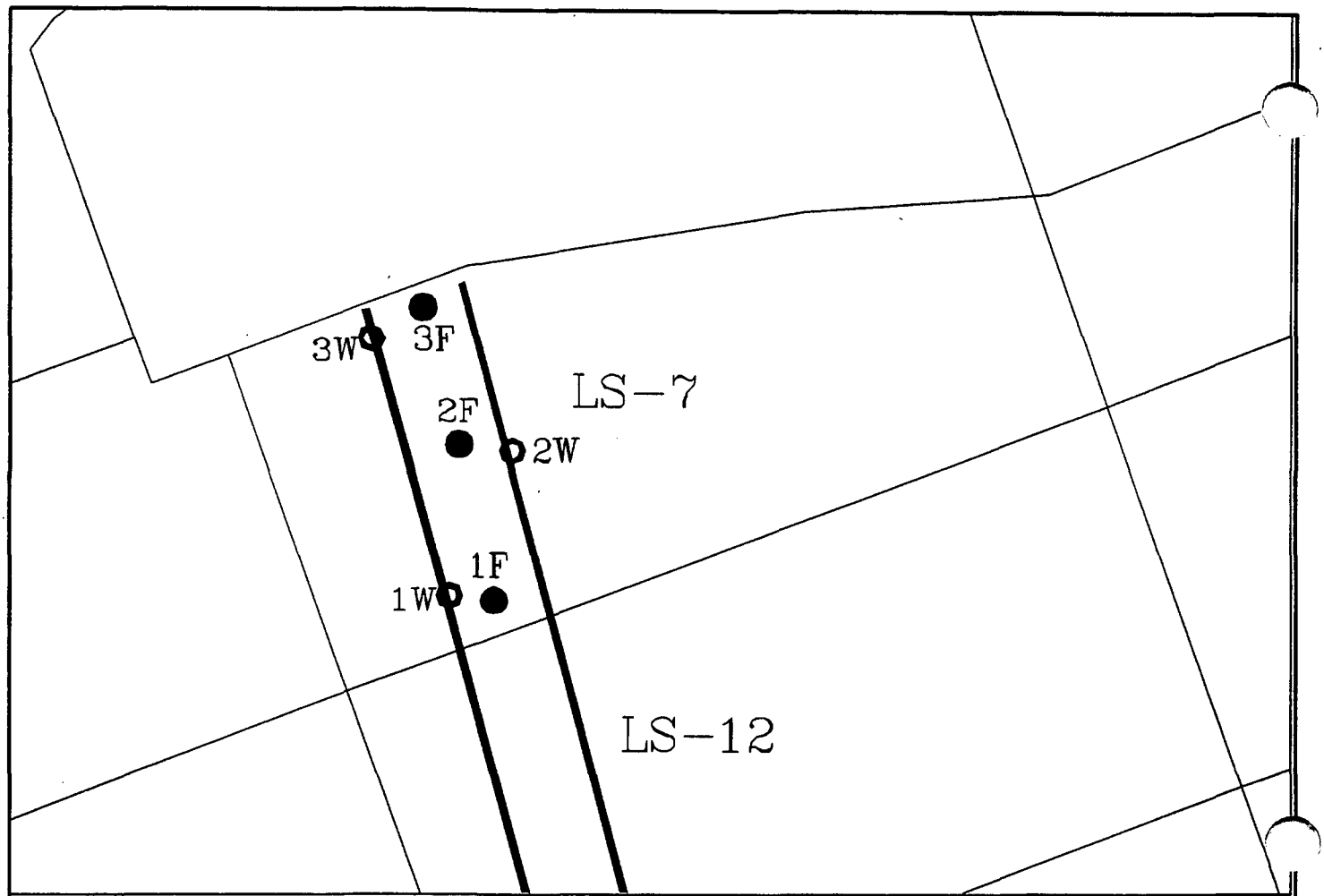
DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER: TAC LS06P1BC4
SHEET NUMBER: LS-06
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	525	LS7-P1B-1F
1 SIDEWALL 1' DEPTH	1670	LS7-P1B-1W-A
1 SIDEWALL 2' DEPTH	1130	LS7-P1B-IW-B
1 SIDEWALL 3' DEPTH	1000	LS7-P1B-1W-C
FLOOR 2	<100	LS7-P1B-2F
2 SIDEWALL 1' DEPTH	1570	LS7-P1B-2W-A
2 SIDEWALL 2' DEPTH	796	LS7-P1B-2W-B
2 SIDEWALL 3' DEPTH	671	LS7-P1B-2W-C
FLOOR 3	<100	LS7-P1B-3F
3 SIDEWALL 1' DEPTH	1400	LS7-P1B-3W-A
3 SIDEWALL 2' DEPTH	959	LS7-P1B-3W-B
3 SIDEWALL 3' DEPTH	681	LS7-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-7 PHASE 1B (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

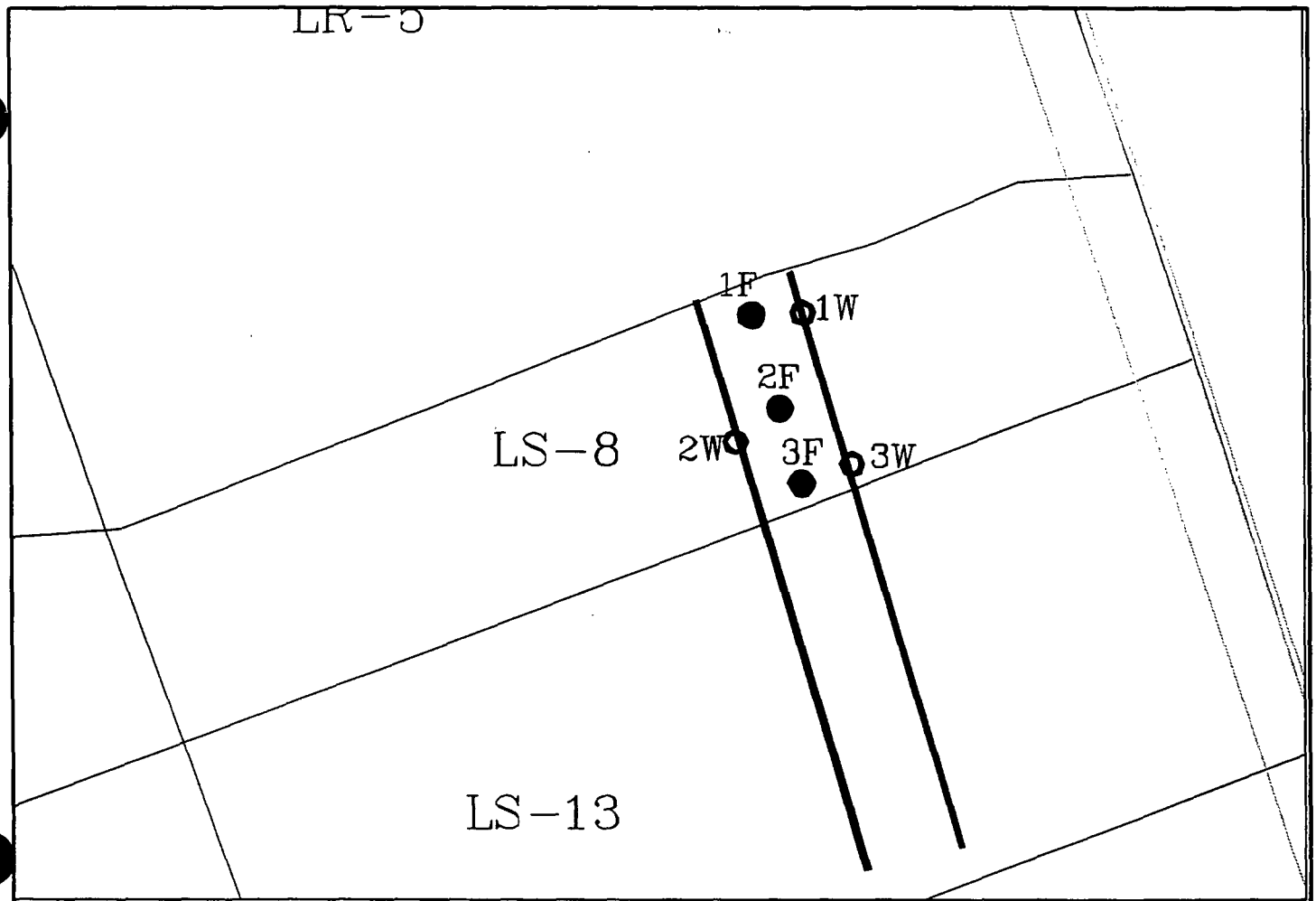
Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS07P1BC4
AUTOCAD REL. DOOD DRAWING (DWG)
SHEET NUMBER
LS-07
REV

NORTH

LR-5



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS8-P1B-1F
1 SIDEWALL 1' DEPTH	<100	LS8-P1B-1W-A
1 SIDEWALL 2' DEPTH	1410	LS8-P1B-IW-B
1 SIDEWALL 3' DEPTH	1100	LS8-P1B-1W-C
FLOOR 2	971	LS8-P1B-2F
2 SIDEWALL 1' DEPTH	260	LS8-P1B-2W-A
2 SIDEWALL 2' DEPTH	2300	LS8-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS8-P1B-2W-C
FLOOR 3	<100	LS8-P1B-3F
3 SIDEWALL 1' DEPTH	<100	LS8-P1B-3W-A
3 SIDEWALL 2' DEPTH	685	LS8-P1B-3W-B
3 SIDEWALL 3' DEPTH	630	LS8-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-8 PHASE 1B (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

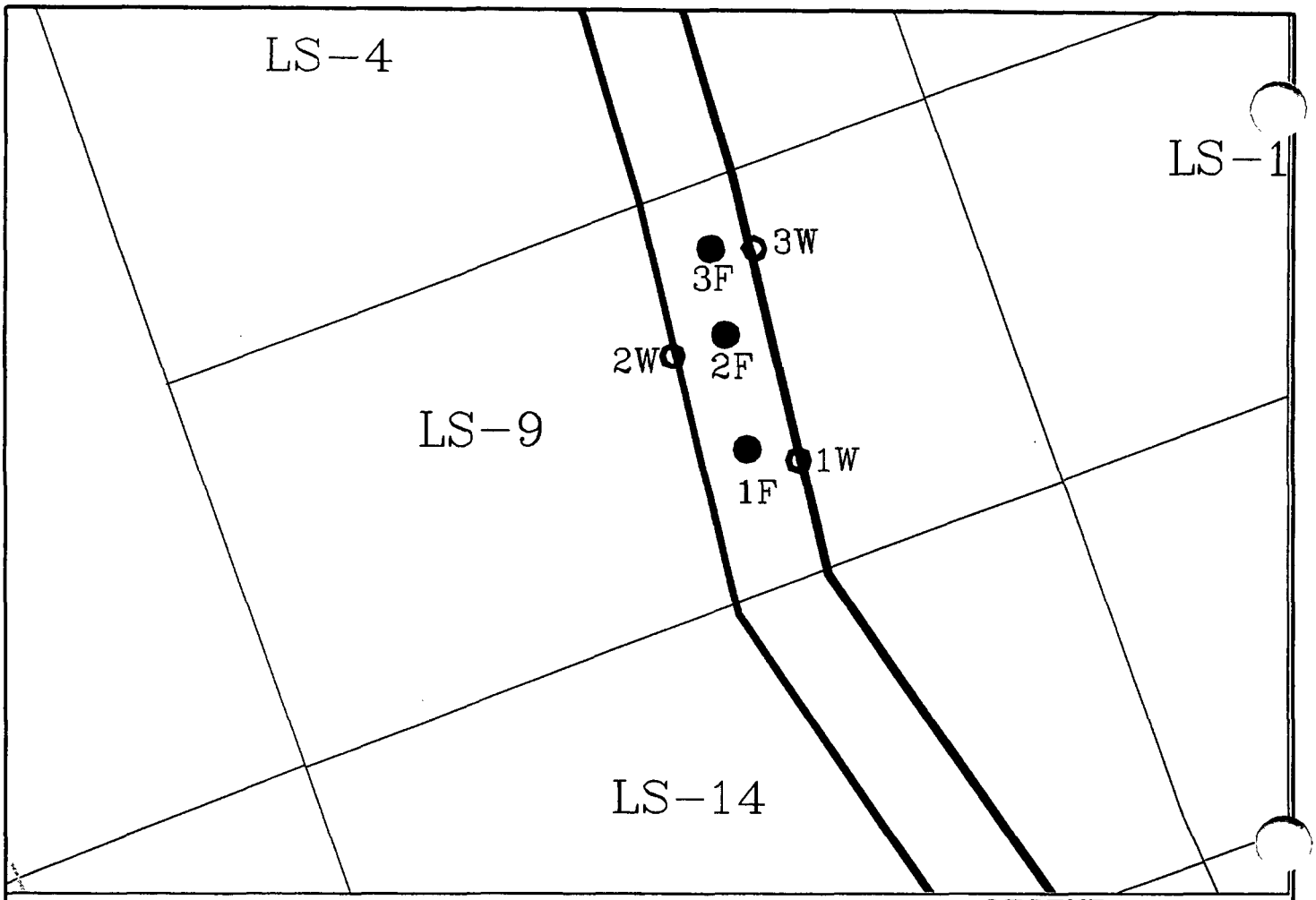
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Everett, Washington 98207

DRAWING FILE NUMBER: TAC LS08P1BC4
SHEET NUMBER: LS-08

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	291	LS9-P1B-1F
1 SIDEWALL 1' DEPTH	414	LS9-P1B-1W-A
1 SIDEWALL 2' DEPTH	351	LS9-P1B-IW-B
1 SIDEWALL 3' DEPTH	282	LS9-P1B-1W-C
FLOOR 2	266	LS9-P1B-2F
2 SIDEWALL 1' DEPTH	397	LS9-P1B-2W-A
2 SIDEWALL 2' DEPTH	478	LS9-P1B-2W-B
2 SIDEWALL 3' DEPTH	285	LS9-P1B-2W-C
FLOOR 3	319	LS9-P1B-3F
3 SIDEWALL 1' DEPTH	489	LS9-P1B-3W-A
3 SIDEWALL 2' DEPTH	472	LS9-P1B-3W-B
3 SIDEWALL 3' DEPTH	204	LS9-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-9 PHASE 1B (9 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

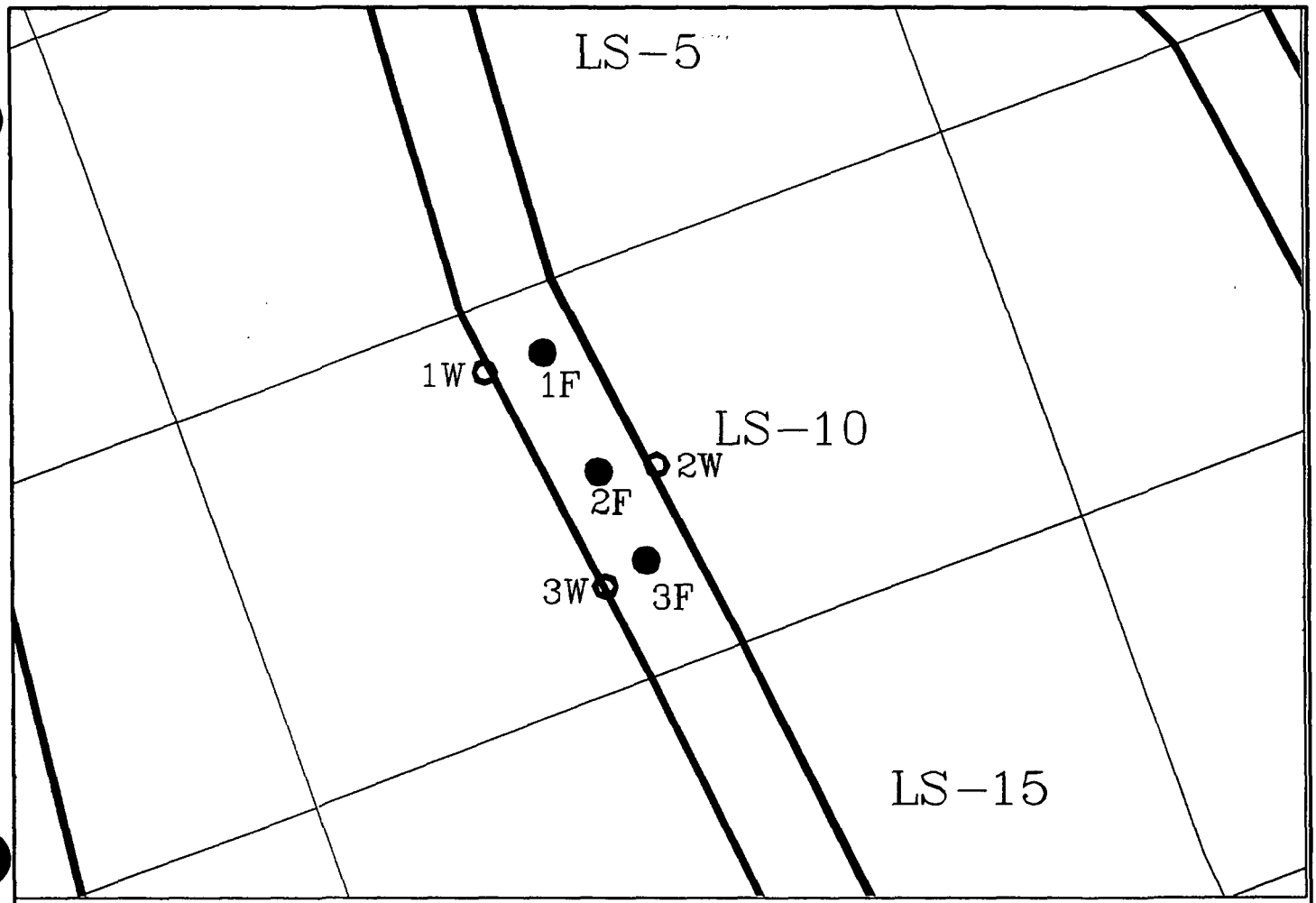
REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS09P1BC4
AUTOCAD EXE. 2000 DRAWING (DWG)
SHEET NUMBER LS-9
REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	731	LS10-P1B-1F
1 SIDEWALL 1' DEPTH	1490	LS10-P1B-1W-A
1 SIDEWALL 2' DEPTH	514	LS10-P1B-IW-B
1 SIDEWALL 3' DEPTH	343	LS10-P1B-1W-C
FLOOR 2	<100	LS10-P1B-2F
2 SIDEWALL 1' DEPTH	1080	LS10-P1B-2W-A
2 SIDEWALL 2' DEPTH	506	LS10-P1B-2W-B
2 SIDEWALL 3' DEPTH	394	LS10-P1B-2W-C
FLOOR 3	274	LS10-P1B-3F
3 SIDEWALL 1' DEPTH	606	LS10-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS10-P1B-3W-B
3 SIDEWALL 3' DEPTH	423	LS10-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-10 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

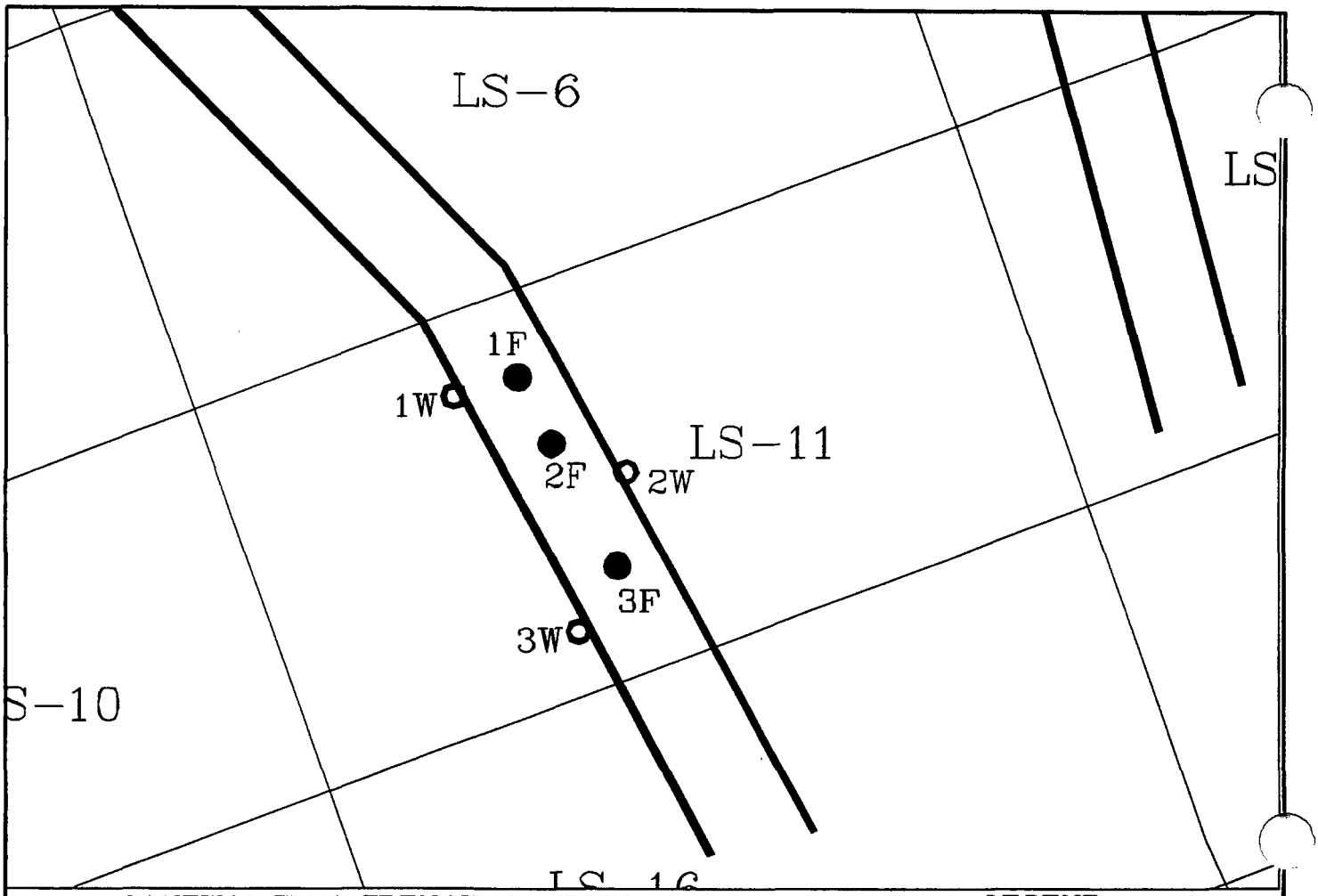
REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS10P1BC4
AUTOCAD EXT. 2000 DRAWING (DWG)
SHEET NUMBER LS-10
REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	1100	LS11-P1B-1F
1 SIDEWALL 1' DEPTH	1150	LS11-P1B-1W-A
1 SIDEWALL 2' DEPTH	655	LS11-P1B-IW-B
1 SIDEWALL 3' DEPTH	965	LS11-P1B-1W-C
FLOOR 2	966	LS11-P1B-2F
2 SIDEWALL 1' DEPTH	2350	LS11-P1B-2W-A
2 SIDEWALL 2' DEPTH	1520	LS11-P1B-2W-B
2 SIDEWALL 3' DEPTH	1700	LS11-P1B-2W-C
FLOOR 3	664	LS11-P1B-3F
3 SIDEWALL 1' DEPTH	2200	LS11-P1B-3W-A
3 SIDEWALL 2' DEPTH	1300	LS11-P1B-3W-B
3 SIDEWALL 3' DEPTH	737	LS11-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-11 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

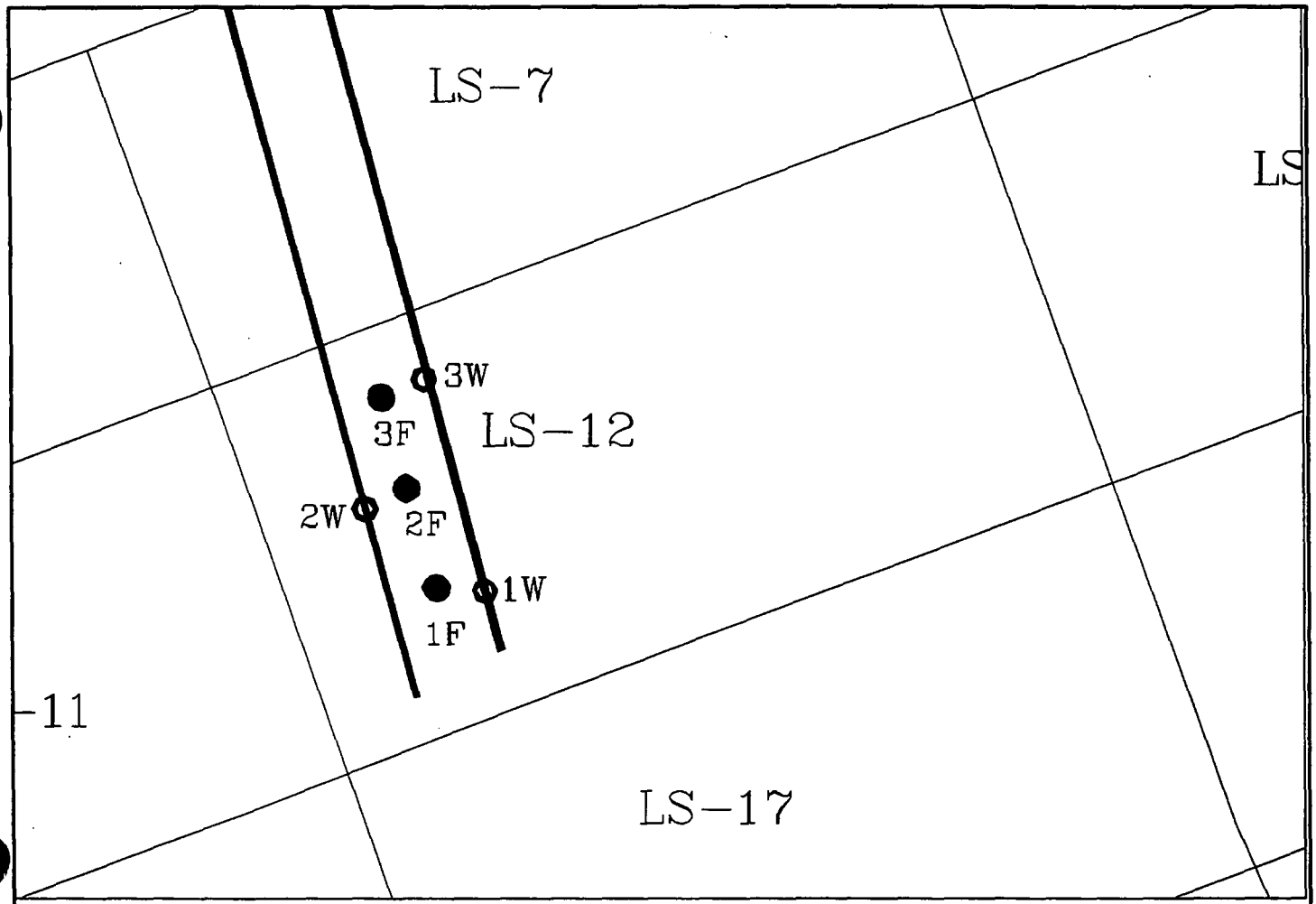
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS11P1BC4
AUTOCAD ENL. BOND DRAWING (DWG)

SHEET NUMBER
LS-11

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	1140	LS12-P1B-1F
1 SIDEWALL 1' DEPTH	855	LS12-P1B-1W-A
1 SIDEWALL 2' DEPTH	609	LS12-P1B-IW-B
1 SIDEWALL 3' DEPTH	300	LS12-P1B-1W-C
FLOOR 2	973	LS12-P1B-2F
2 SIDEWALL 1' DEPTH	1530	LS12-P1B-2W-A
2 SIDEWALL 2' DEPTH	1290	LS12-P1B-2W-B
2 SIDEWALL 3' DEPTH	1850	LS12-P1B-2W-C
FLOOR 3	1500	LS12-P1B-3F
3 SIDEWALL 1' DEPTH	2250	LS12-P1B-3W-A
3 SIDEWALL 2' DEPTH	962	LS12-P1B-3W-B
3 SIDEWALL 3' DEPTH	950	LS12-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-12 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY DDPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

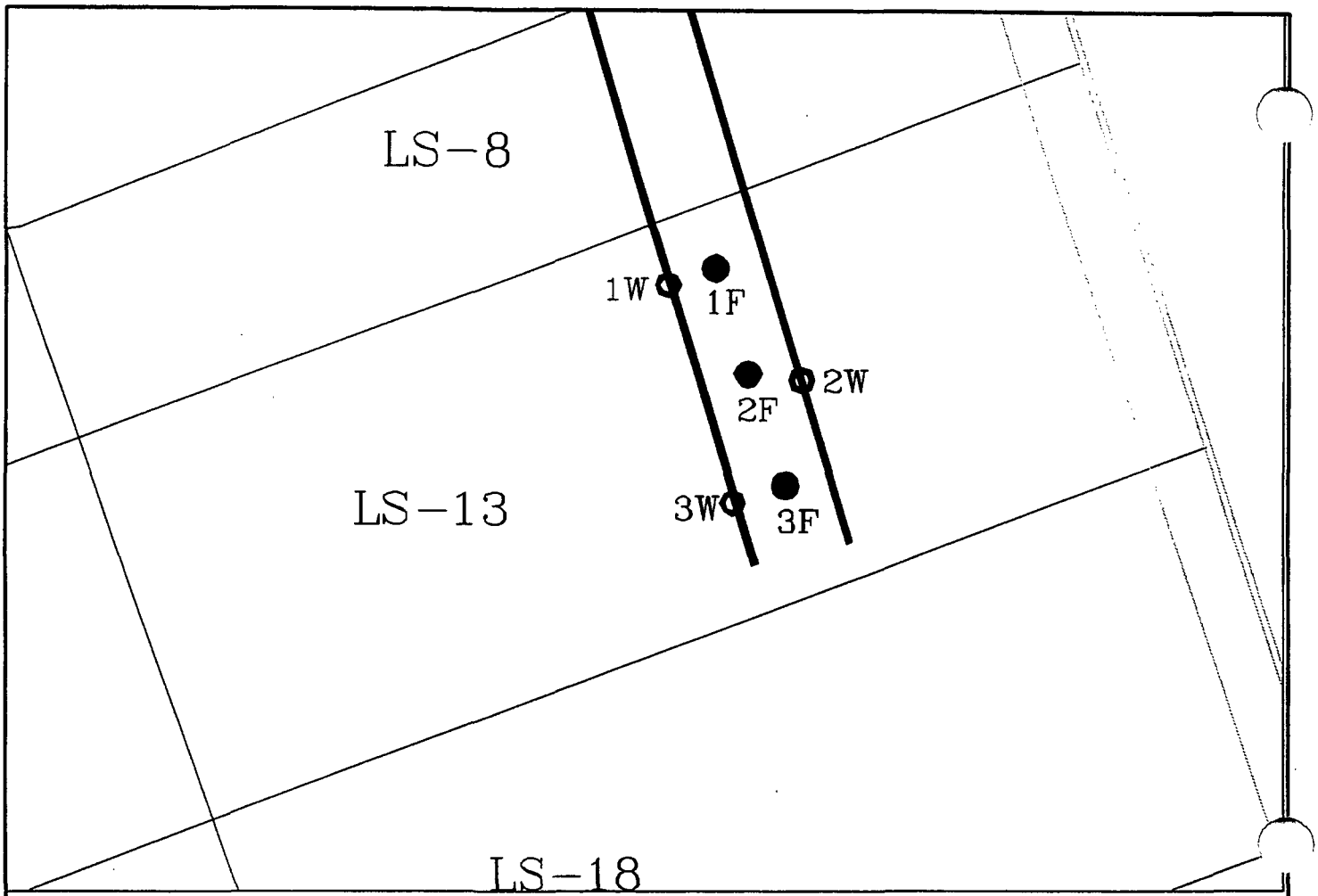
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS12P1BC4
AUTOCAD ENL. SEED DRAWING (DWG)

SHEET NUMBER
LS-12

REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	810	LS13-P1B-1F
1 SIDEWALL 1' DEPTH	<100	LS13-P1B-1W-A
1 SIDEWALL 2' DEPTH	866	LS13-P1B-IW-B
1 SIDEWALL 3' DEPTH	1050	LS13-P1B-1W-C
FLOOR 2	870	LS13-P1B-2F
2 SIDEWALL 1' DEPTH	632	LS13-P1B-2W-A
2 SIDEWALL 2' DEPTH	692	LS13-P1B-2W-B
2 SIDEWALL 3' DEPTH	930	LS13-P1B-2W-C
FLOOR 3	998	LS13-P1B-3F
3 SIDEWALL 1' DEPTH	450	LS13-P1B-3W-A
3 SIDEWALL 2' DEPTH	280	LS13-P1B-3W-B
3 SIDEWALL 3' DEPTH	1850	LS13-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-13 PHASE 1B (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

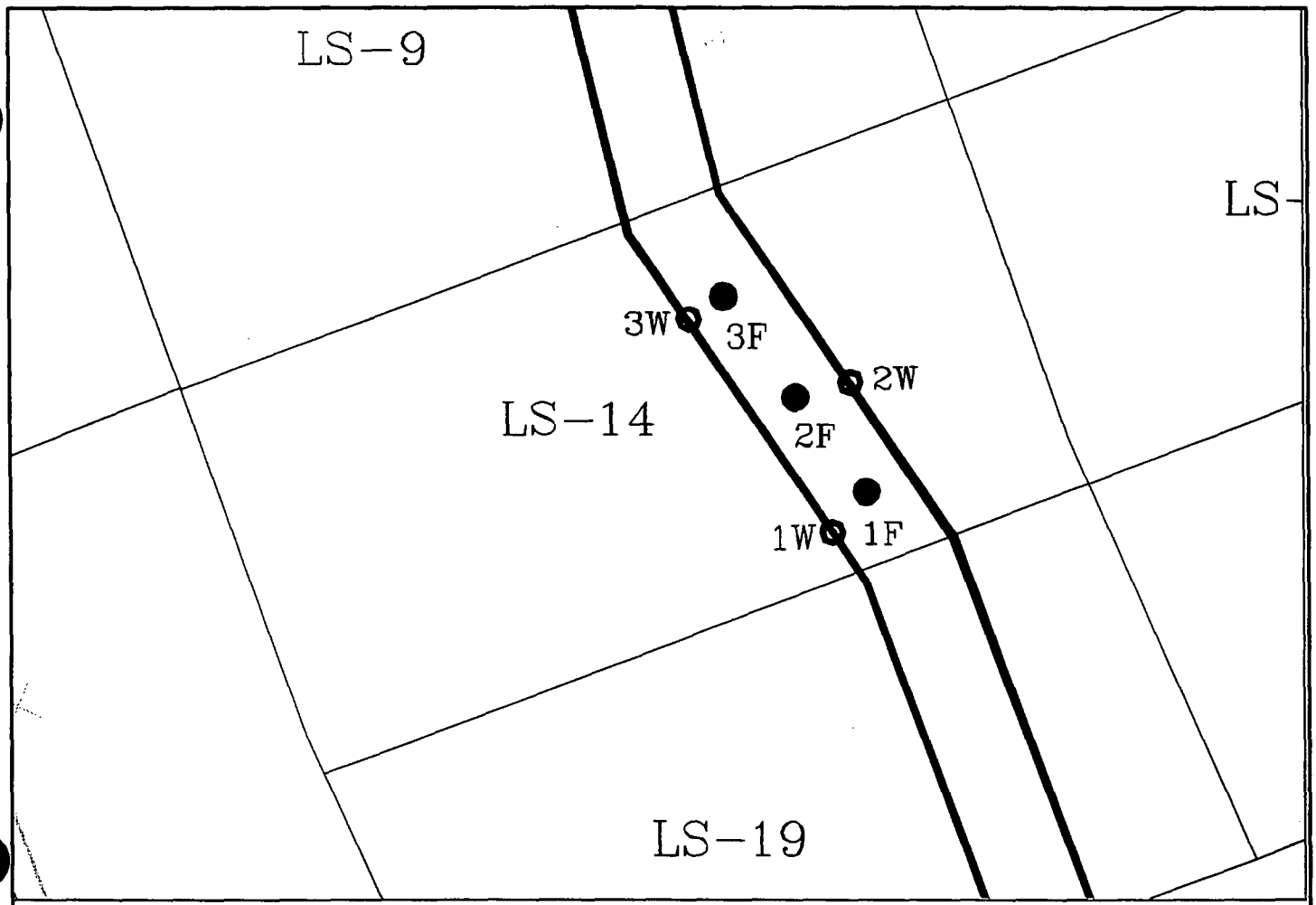
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS13P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-13

REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	172	LS14-P1B-1F
1 SIDEWALL 1' DEPTH	547	LS14-P1B-1W-A
1 SIDEWALL 2' DEPTH	482	LS14-P1B-IW-B
1 SIDEWALL 3' DEPTH	440	LS14-P1B-1W-C
FLOOR 2	225	LS14-P1B-2F
2 SIDEWALL 1' DEPTH	699	LS14-P1B-2W-A
2 SIDEWALL 2' DEPTH	543	LS14-P1B-2W-B
2 SIDEWALL 3' DEPTH	311	LS14-P1B-2W-C
FLOOR 3	376	LS14-P1B-3F
3 SIDEWALL 1' DEPTH	325	LS14-P1B-3W-A
3 SIDEWALL 2' DEPTH	283	LS14-P1B-3W-B
3 SIDEWALL 3' DEPTH	180	LS14-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-14 PHASE 1B (9 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

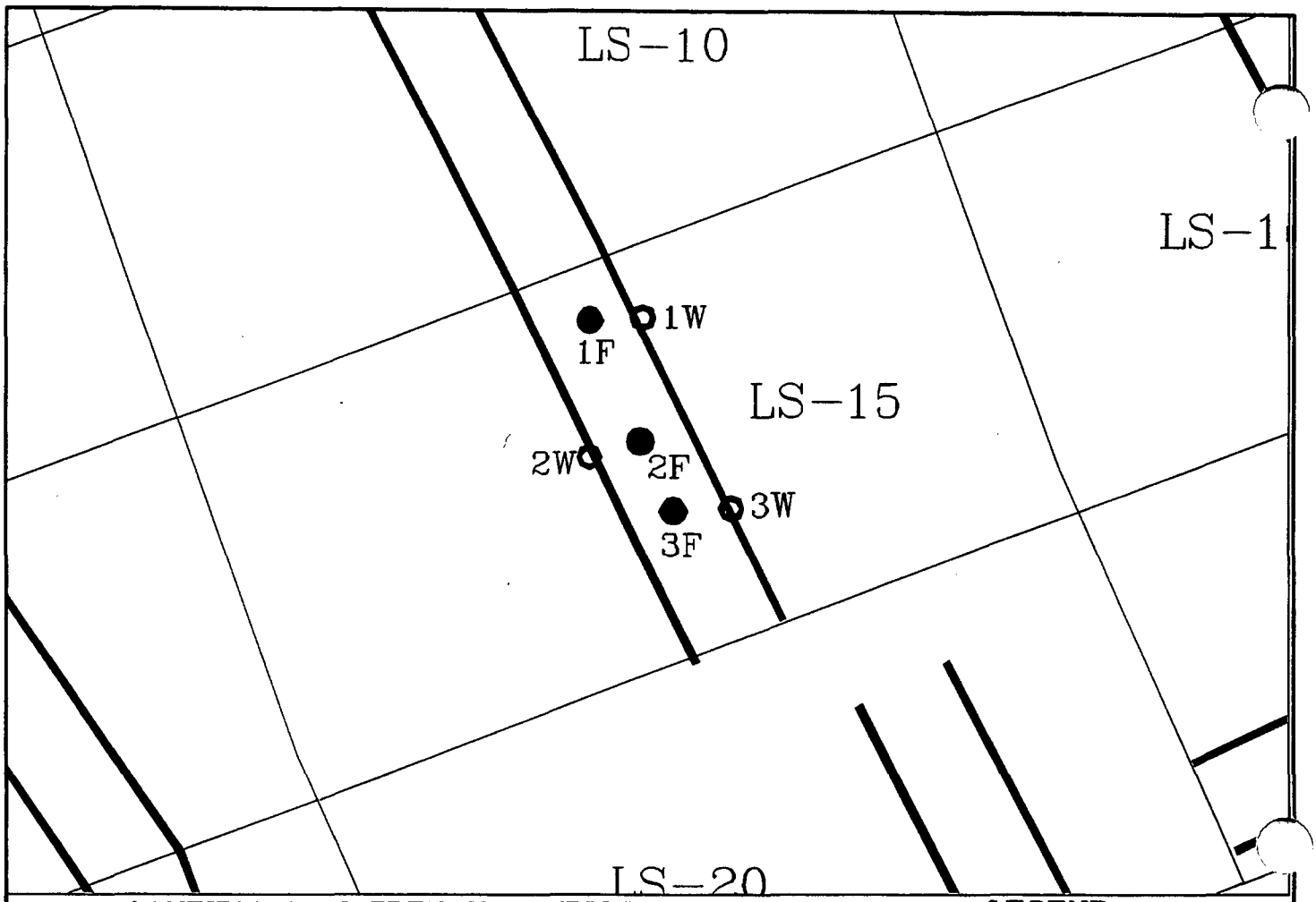
DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER: TAC LS14P1BC4
SHEET NUMBER: LS-14
REF

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	405	LS15-P1B-1F
1 SIDEWALL 1' DEPTH	729	LS15-P1B-1W-A
1 SIDEWALL 2' DEPTH	638	LS15-P1B-IW-B
1 SIDEWALL 3' DEPTH	507	LS15-P1B-1W-C
FLOOR 2	602	LS15-P1B-2F
2 SIDEWALL 1' DEPTH	493	LS15-P1B-2W-A
2 SIDEWALL 2' DEPTH	845	LS15-P1B-2W-B
2 SIDEWALL 3' DEPTH	518	LS15-P1B-2W-C
FLOOR 3	481	LS15-P1B-3F
3 SIDEWALL 1' DEPTH	530	LS15-P1B-3W-A
3 SIDEWALL 2' DEPTH	556	LS15-P1B-3W-B
3 SIDEWALL 3' DEPTH	586	LS15-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-15 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
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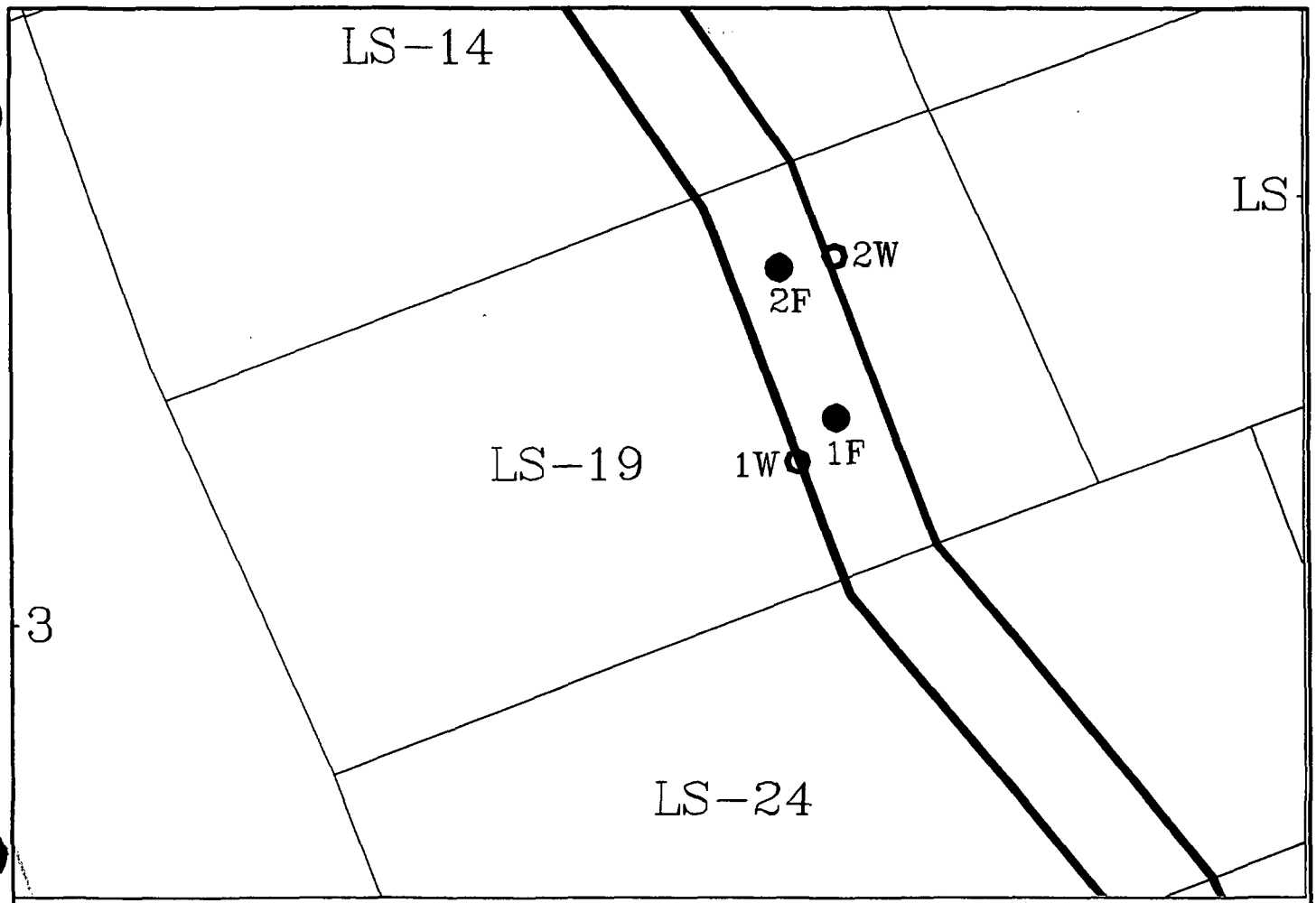
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS15P1BC4
AUTOCAD REL. SIZE DRAWING (DWG)
SHEET NUMBER LS-15
REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	412	LS19-P1B-1F
1 SIDEWALL 1' DEPTH	950	LS19-P1B-1W-A
1 SIDEWALL 2' DEPTH	785	LS19-P1B-IW-B
1 SIDEWALL 3' DEPTH	294	LS19-P1B-1W-C
FLOOR 2	212	LS19-P1B-2F
2 SIDEWALL 1' DEPTH	602	LS19-P1B-2W-A
2 SIDEWALL 2' DEPTH	436	LS19-P1B-2W-B
2 SIDEWALL 3' DEPTH	210	LS19-P1B-2W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-19 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

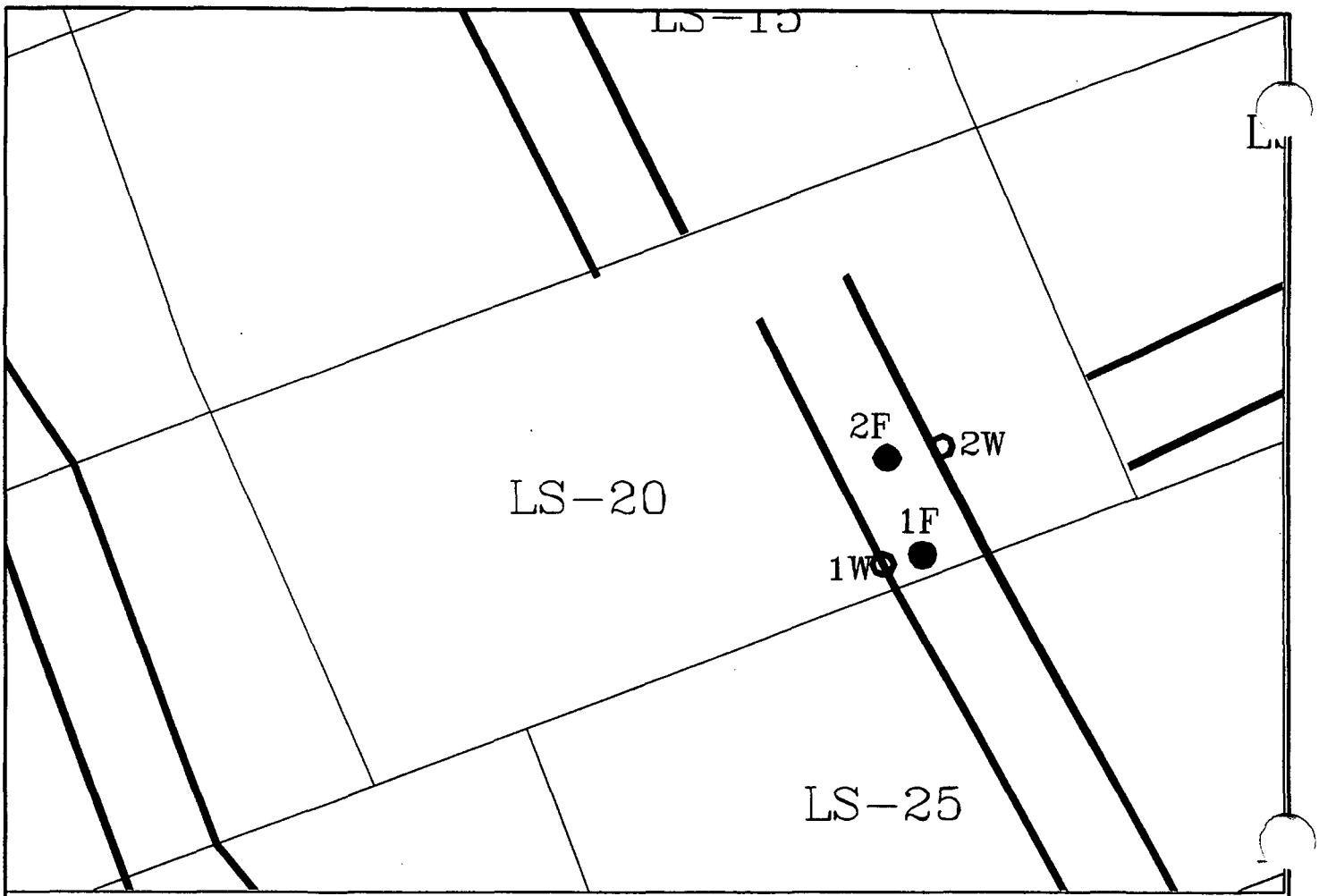
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS19P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-19

REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS20-P1B-1F
1 SIDEWALL 1' DEPTH	1850	LS20-P1B-1W-A
1 SIDEWALL 2' DEPTH	1020	LS20-P1B-IW-B
1 SIDEWALL 3' DEPTH	515	LS20-P1B-1W-C
FLOOR 2	822	LS20-P1B-2F
2 SIDEWALL 1' DEPTH	625	LS20-P1B-2W-A
2 SIDEWALL 2' DEPTH	1170	LS20-P1B-2W-B
2 SIDEWALL 3' DEPTH	1210	LS20-P1B-2W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-20 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

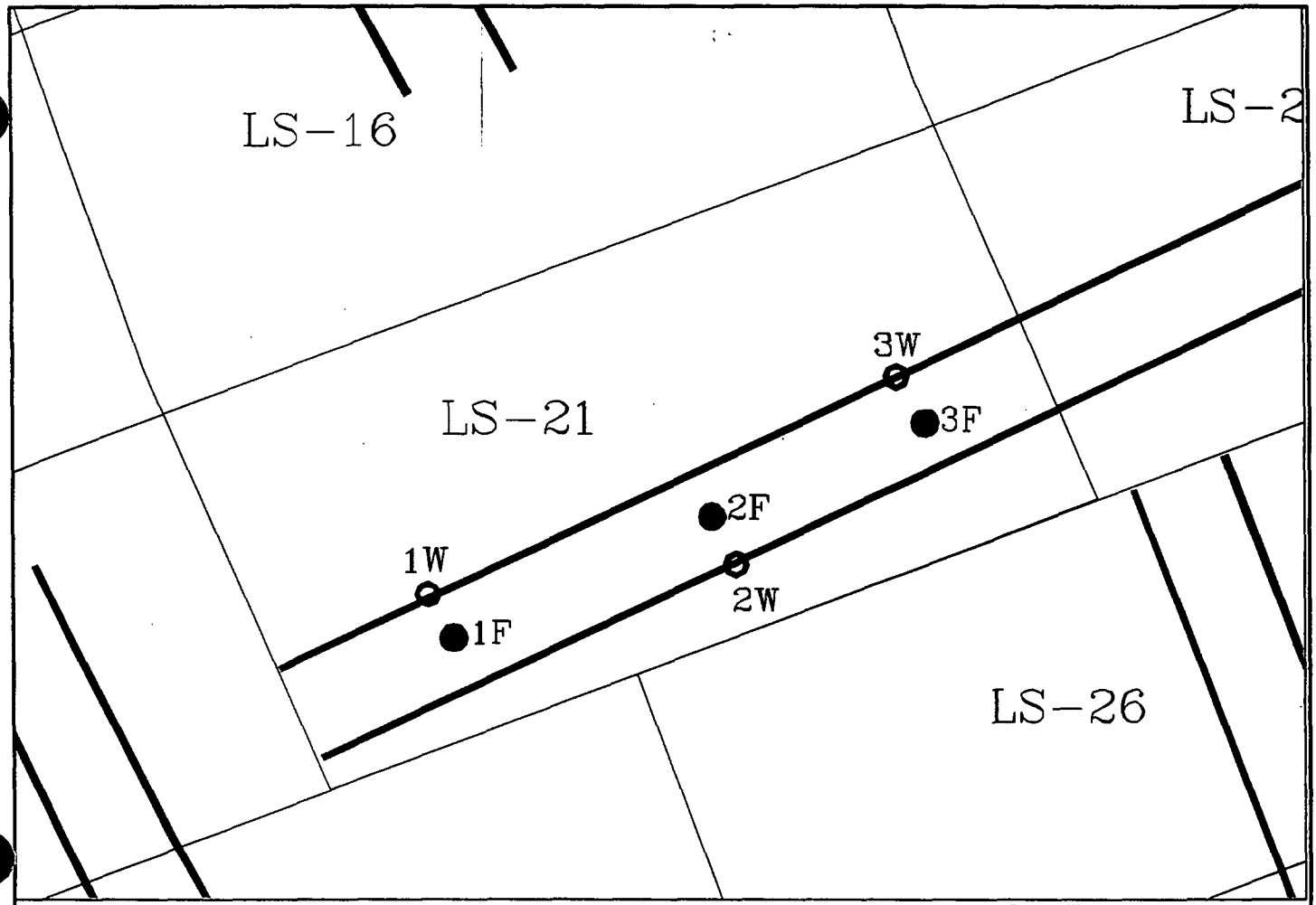
REVISIONS	NO	BY	DATE
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Eugene, Washington 97477

DRAWING FILE NUMBER: TAC LS20P1BC4
SHEET NUMBER: LS-20
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	624	LS21-P1B-1F
1 SIDEWALL 1' DEPTH	952	LS21-P1B-1W-A
1 SIDEWALL 2' DEPTH	868	LS21-P1B-IW-B
1 SIDEWALL 3' DEPTH	841	LS21-P1B-1W-C
FLOOR 2	989	LS21-P1B-2F
2 SIDEWALL 1' DEPTH	1480	LS21-P1B-2W-A
2 SIDEWALL 2' DEPTH	2070	LS21-P1B-2W-B
2 SIDEWALL 3' DEPTH	1400	LS21-P1B-2W-C
FLOOR 3	513	LS21-P1B-3F
3 SIDEWALL 1' DEPTH	937	LS21-P1B-3W-A
3 SIDEWALL 2' DEPTH	710	LS21-P1B-3W-B
3 SIDEWALL 3' DEPTH	619	LS21-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-21 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

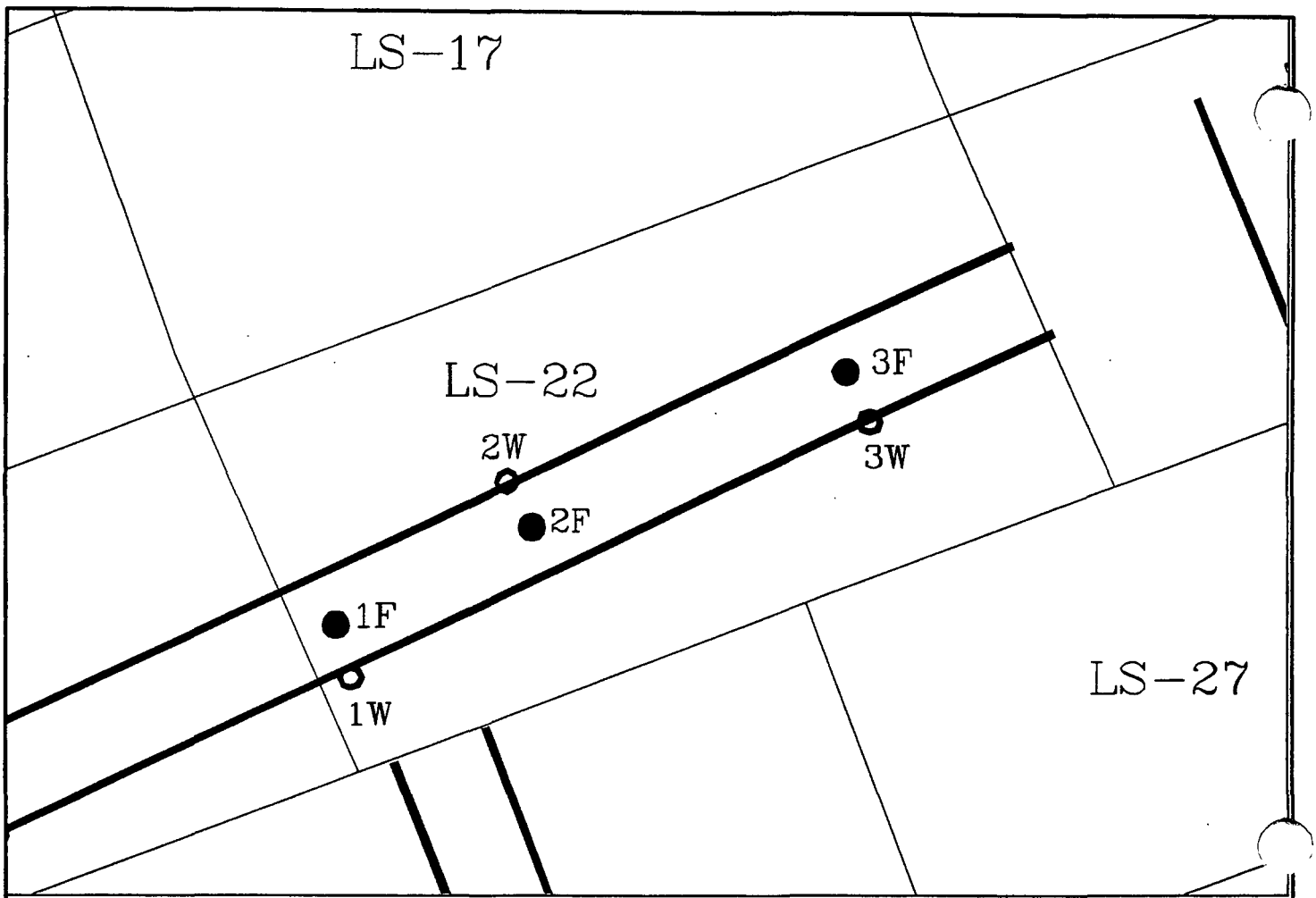
DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER: TAC LS21P1BC4
SHEET NUMBER: LS-21
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	414	LS22-P1B-1F
1 SIDEWALL 1' DEPTH	697	LS22-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LS22-P1B-IW-B
1 SIDEWALL 3' DEPTH	240	LS22-P1B-1W-C
FLOOR 2	448	LS22-P1B-2F
2 SIDEWALL 1' DEPTH	1200	LS22-P1B-2W-A
2 SIDEWALL 2' DEPTH	930	LS22-P1B-2W-B
2 SIDEWALL 3' DEPTH	325	LS22-P1B-2W-C
FLOOR 3	372	LS22-P1B-3F
3 SIDEWALL 1' DEPTH	1080	LS22-P1B-3W-A
3 SIDEWALL 2' DEPTH	750	LS22-P1B-3W-B
3 SIDEWALL 3' DEPTH	888	LS22-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-22 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

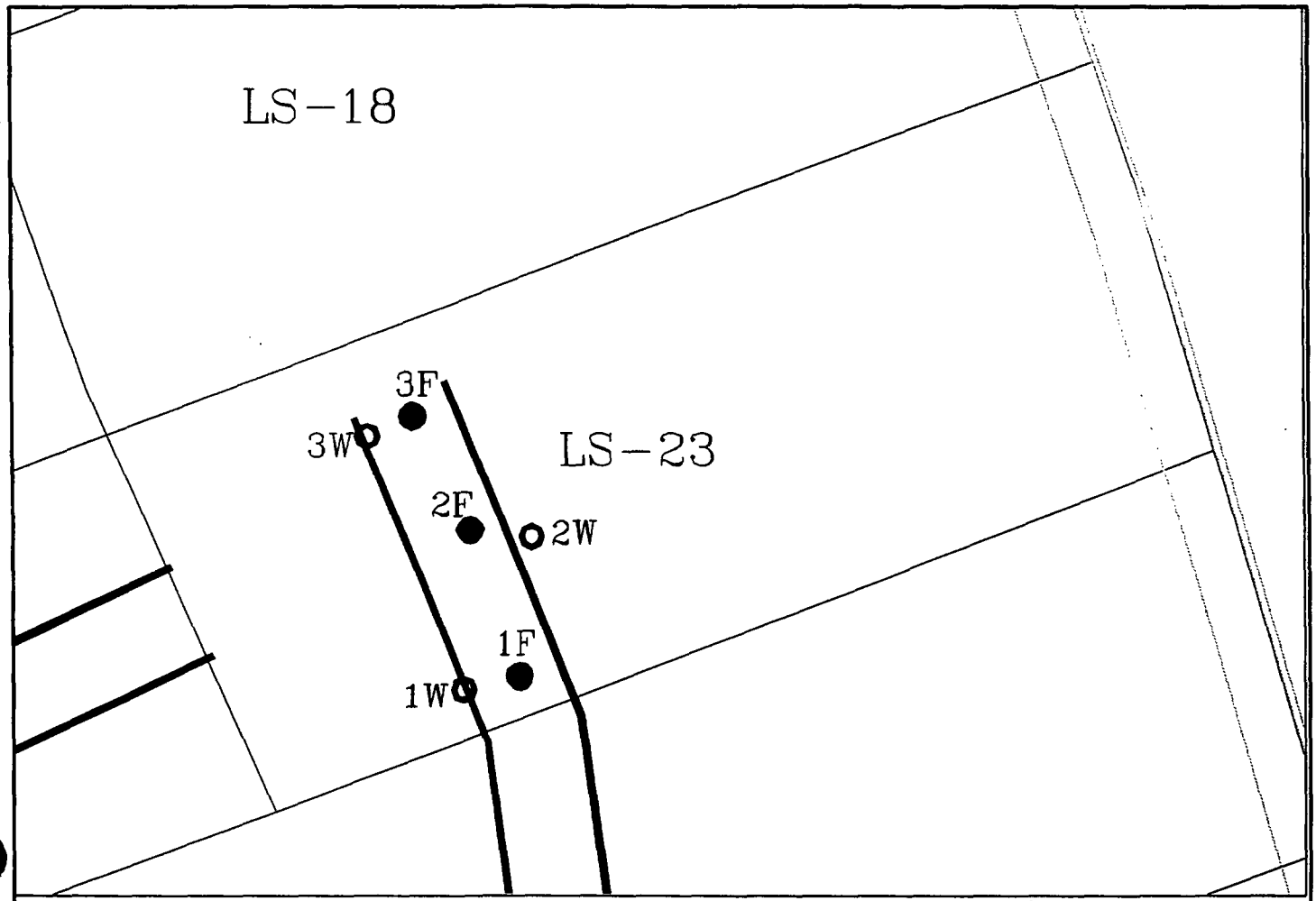
REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY DDPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS22P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
LS-22
REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	543	LS23-P1B-1F
1 SIDEWALL 1' DEPTH	830	LS23-P1B-1W-A
1 SIDEWALL 2' DEPTH	761	LS23-P1B-IW-B
1 SIDEWALL 3' DEPTH	821	LS23-P1B-1W-C
FLOOR 2	720	LS23-P1B-2F
2 SIDEWALL 1' DEPTH	797	LS23-P1B-2W-A
2 SIDEWALL 2' DEPTH	630	LS23-P1B-2W-B
2 SIDEWALL 3' DEPTH	754	LS23-P1B-2W-C
FLOOR 3	802	LS23-P1B-3F
3 SIDEWALL 1' DEPTH	1180	LS23-P1B-3W-A
3 SIDEWALL 2' DEPTH	1280	LS23-P1B-3W-B
3 SIDEWALL 3' DEPTH	434	LS23-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-23 PHASE 1B (9 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

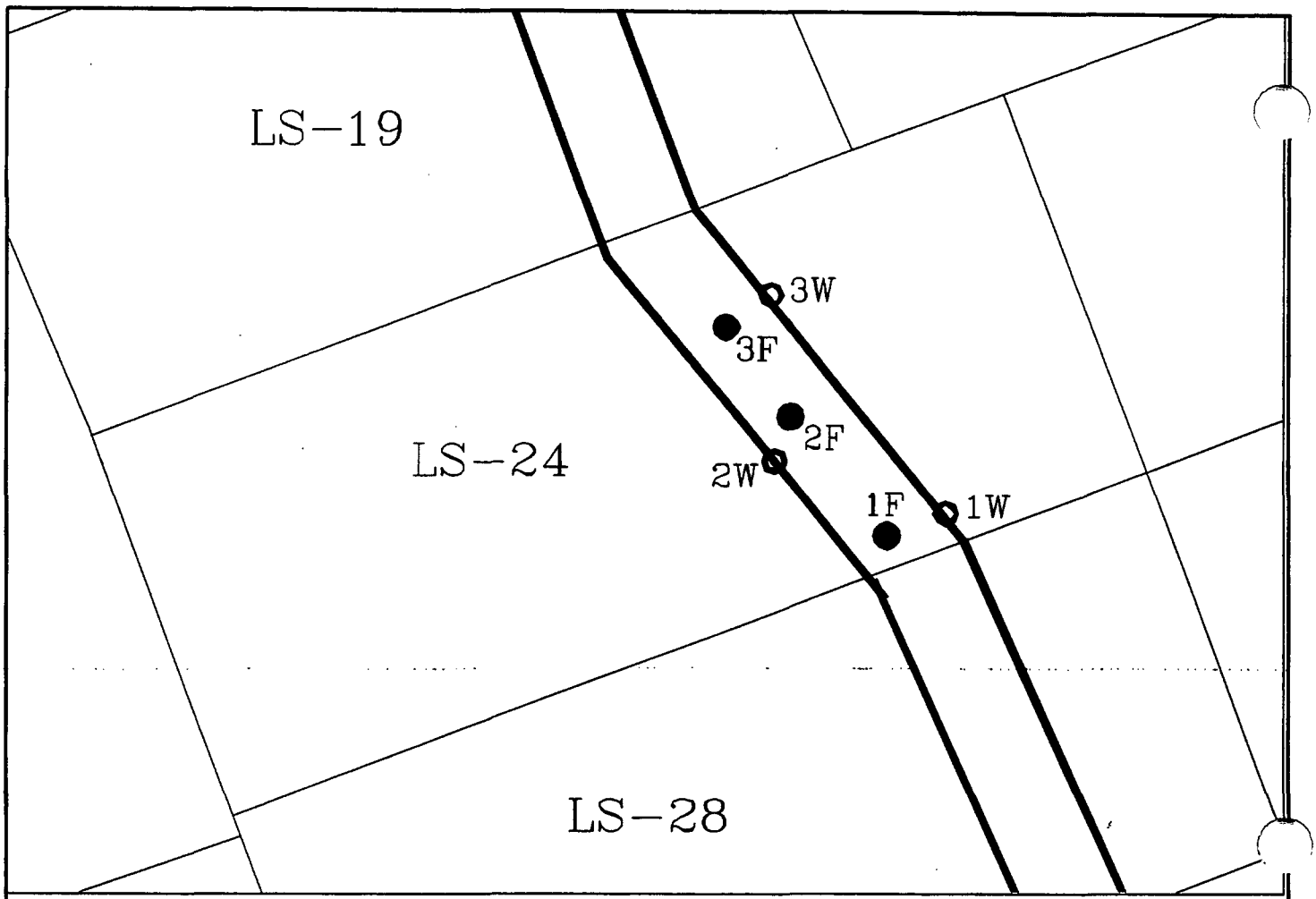
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS23P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-23

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	140	LS24-P1B-1F
1 SIDEWALL 1' DEPTH	600	LS24-P1B-1W-A
1 SIDEWALL 2' DEPTH	798	LS24-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS24-P1B-1W-C
FLOOR 2	1100	LS24-P1B-2F
2 SIDEWALL 1' DEPTH	1200	LS24-P1B-2W-A
2 SIDEWALL 2' DEPTH	1020	LS24-P1B-2W-B
2 SIDEWALL 3' DEPTH	1600	LS24-P1B-2W-C
FLOOR 3	1000	LS24-P1B-3F
3 SIDEWALL 1' DEPTH	1800	LS24-P1B-3W-A
3 SIDEWALL 2' DEPTH	1820	LS24-P1B-3W-B
3 SIDEWALL 3' DEPTH	2060	LS24-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-24 PHASE 1B (9 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS24P1BC4
AUTOCAD ENL. SEED SLAVING (DWG)

SHEET NUMBER
LS-24

REV △

NORTH

CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	1650	LS25-P1B-1F
1 SIDEWALL 1' DEPTH	1700	LS25-P1B-1W-A
1 SIDEWALL 2' DEPTH	1630	LS25-P1B-IW-B
1 SIDEWALL 3' DEPTH	1620	LS25-P1B-1W-C
FLOOR 2	739	LS25-P1B-2F
2 SIDEWALL 1' DEPTH	1800	LS25-P1B-2W-A
2 SIDEWALL 2' DEPTH	1130	LS25-P1B-2W-B
2 SIDEWALL 3' DEPTH	1420	LS25-P1B-2W-C
FLOOR 3	614	LS25-P1B-3F
3 SIDEWALL 1' DEPTH	1940	LS25-P1B-3W-A
3 SIDEWALL 2' DEPTH	988	LS25-P1B-3W-B
3 SIDEWALL 3' DEPTH	914	LS25-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-25 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

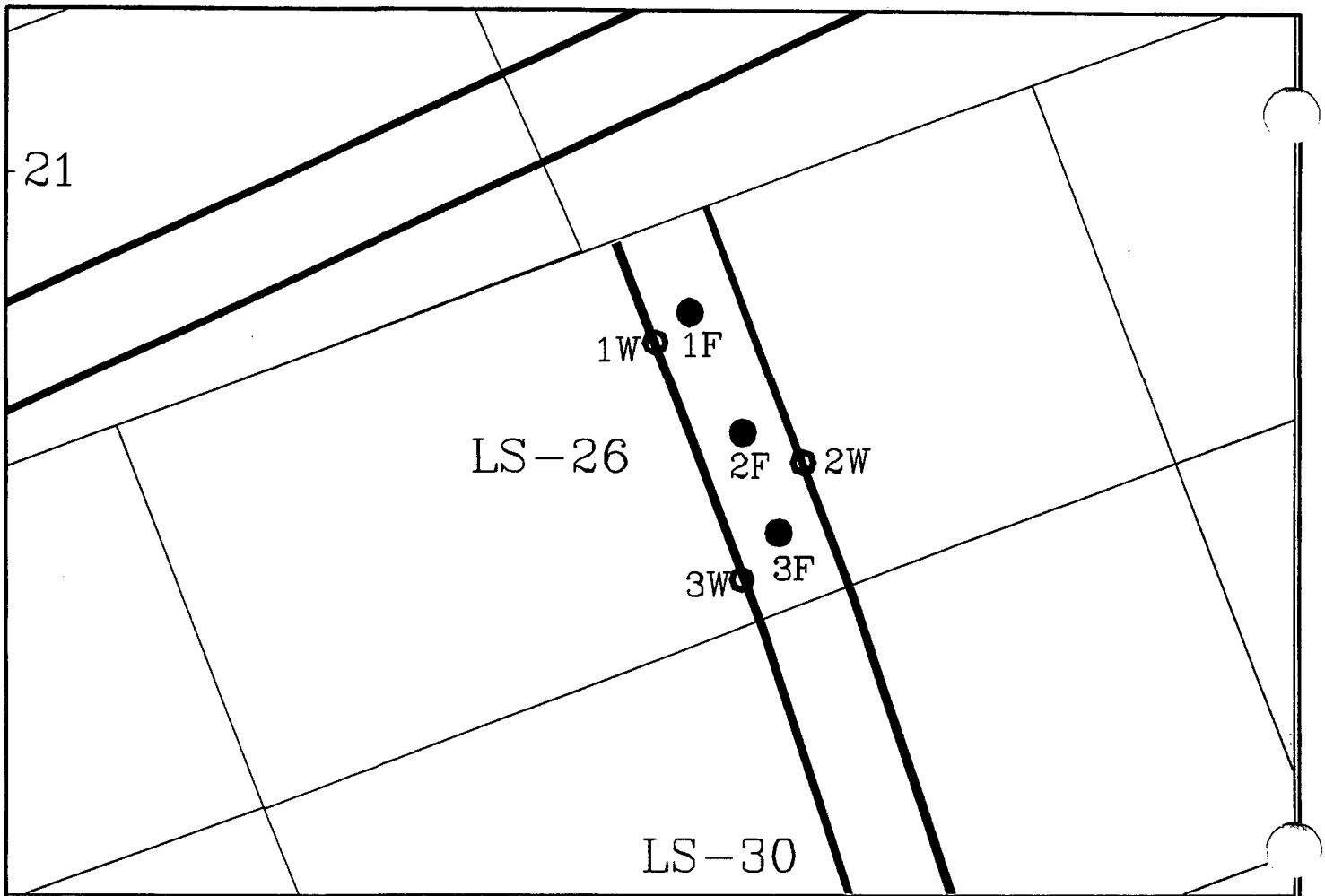
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS25P1BC4
AUTOCAD NEL. DOOD DRAWING (DWG)

SHEET NUMBER
LS-25

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS26-P1B-1F
1 SIDEWALL 1' DEPTH	1910	LS26-P1B-1W-A
1 SIDEWALL 2' DEPTH	768	LS26-P1B-IW-B
1 SIDEWALL 3' DEPTH	920	LS26-P1B-1W-C
FLOOR 2	1540	LS26-P1B-2F
2 SIDEWALL 1' DEPTH	1400	LS26-P1B-2W-A
2 SIDEWALL 2' DEPTH	1200	LS26-P1B-2W-B
2 SIDEWALL 3' DEPTH	986	LS26-P1B-2W-C
FLOOR 3	734	LS26-P1B-3F
3 SIDEWALL 1' DEPTH	2590	LS26-P1B-3W-A
3 SIDEWALL 2' DEPTH	1310	LS26-P1B-3W-B
3 SIDEWALL 3' DEPTH	846	LS26-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-26 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

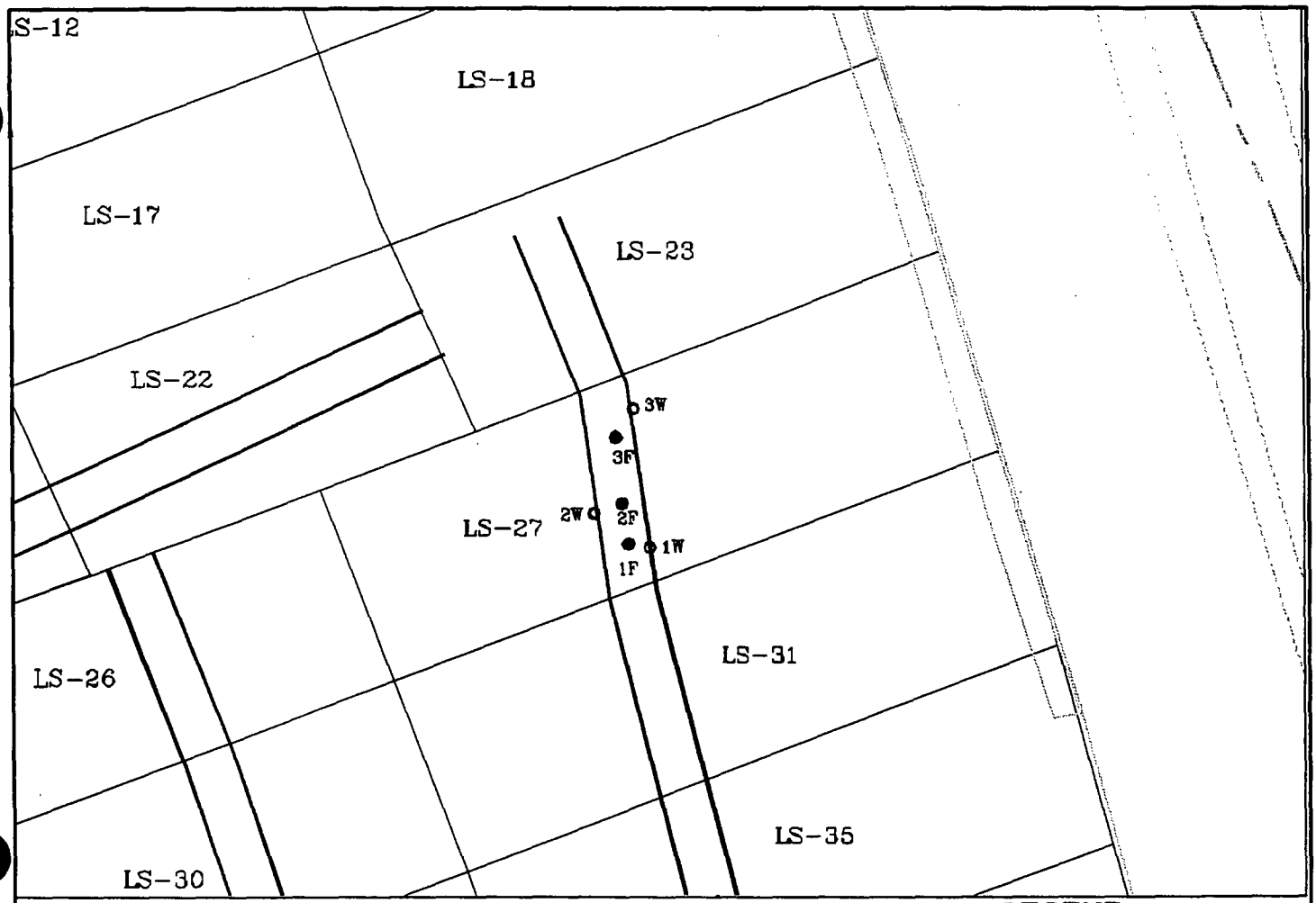
DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER: TAC LS26P1BC4
SHEET NUMBER: LS-26

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	912	LS27-P1B-1F
1 SIDEWALL 1' DEPTH	1720	LS27-P1B-1W-A
1 SIDEWALL 2' DEPTH	1300	LS27-P1B-IW-B
1 SIDEWALL 3' DEPTH	1200	LS27-P1B-1W-C
FLOOR 2	680	LS27-P1B-2F
2 SIDEWALL 1' DEPTH	341	LS27-P1B-2W-A
2 SIDEWALL 2' DEPTH	348	LS27-P1B-2W-B
2 SIDEWALL 3' DEPTH	408	LS27-P1B-2W-C
FLOOR 3	456	LS27-P1B-3F
3 SIDEWALL 1' DEPTH	886	LS27-P1B-3W-A
3 SIDEWALL 2' DEPTH	788	LS27-P1B-3W-B
3 SIDEWALL 3' DEPTH	541	LS27-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-27 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

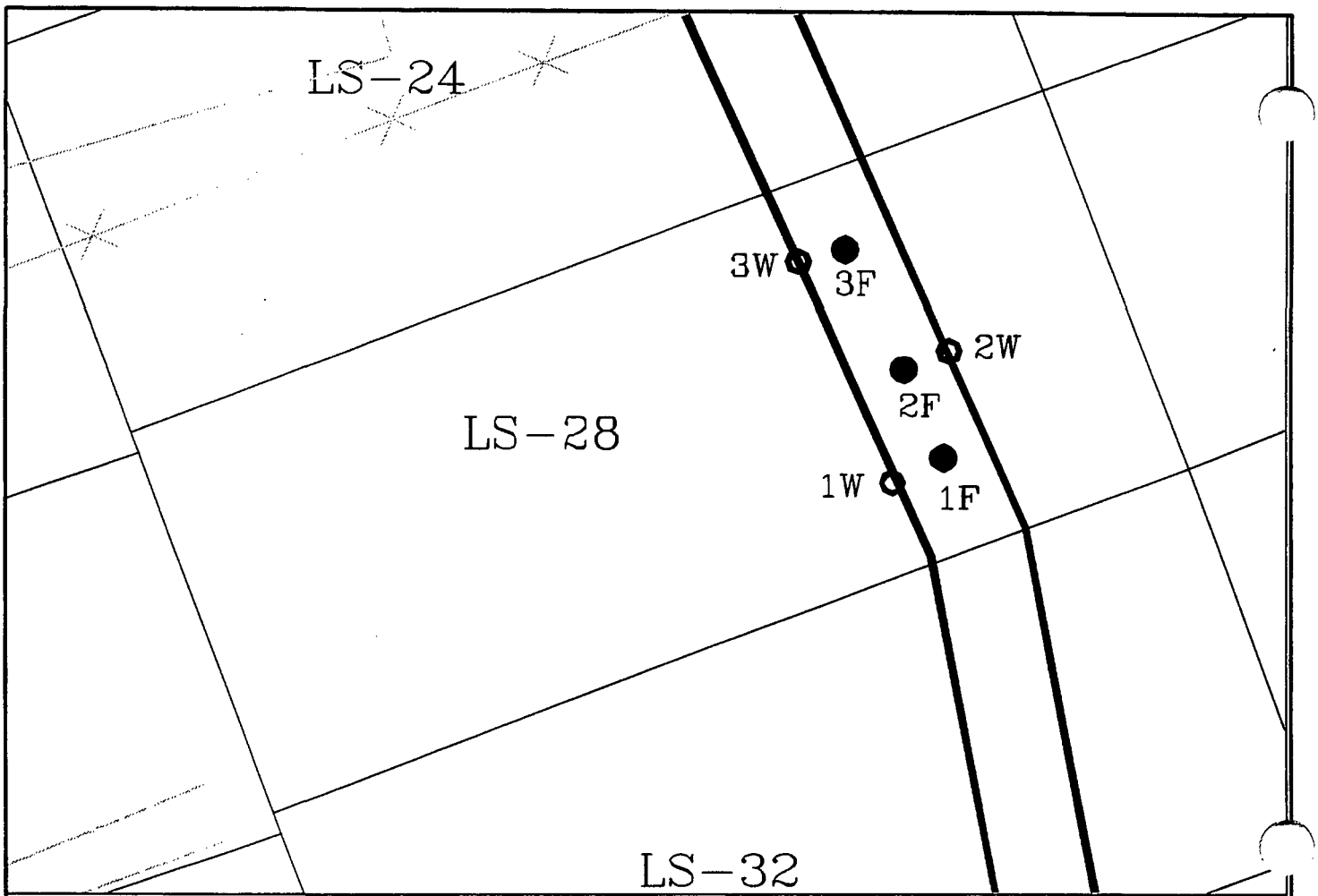
DRAWING SCALE: 0 — 20 FEET — 40 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER: TAC LS27P1BC4
SHEET NUMBER: LS-27
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	918	LS28-P1B-1F
1 SIDEWALL 1' DEPTH	1900	LS28-P1B-1W-A
1 SIDEWALL 2' DEPTH	961	LS28-P1B-IW-B
1 SIDEWALL 3' DEPTH	573	LS28-P1B-1W-C
FLOOR 2	571	LS28-P1B-2F
2 SIDEWALL 1' DEPTH	1370	LS28-P1B-2W-A
2 SIDEWALL 2' DEPTH	1270	LS28-P1B-2W-B
2 SIDEWALL 3' DEPTH	831	LS28-P1B-2W-C
FLOOR 3	336	LS28-P1B-3F
3 SIDEWALL 1' DEPTH	1220	LS28-P1B-3W-A
3 SIDEWALL 2' DEPTH	697	LS28-P1B-3W-B
3 SIDEWALL 3' DEPTH	287	LS28-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-28 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY DDP9
CHECKED BY
APPROVED BY
SCALE: AS NOTED

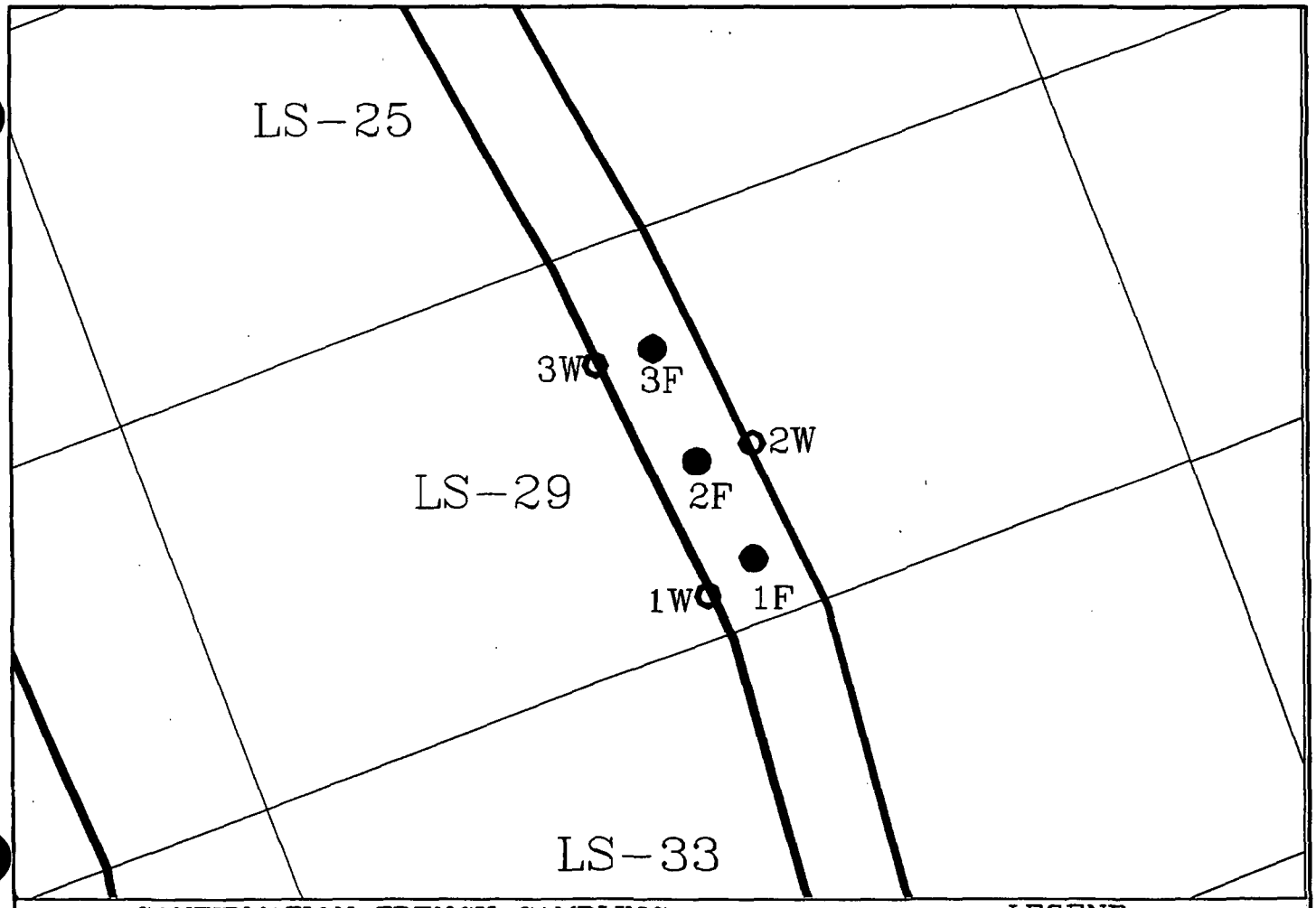
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS28P1BC4
AUTOCAD XRL, GOOD DRAWING (DWG)

SHEET NUMBER
LS-28

REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS29-P1B-1F
1 SIDEWALL 1' DEPTH	993	LS29-P1B-1W-A
1 SIDEWALL 2' DEPTH	997	LS29-P1B-IW-B
1 SIDEWALL 3' DEPTH	951	LS29-P1B-1W-C
FLOOR 2	302	LS29-P1B-2F
2 SIDEWALL 1' DEPTH	950	LS29-P1B-2W-A
2 SIDEWALL 2' DEPTH	1000	LS29-P1B-2W-B
2 SIDEWALL 3' DEPTH	1210	LS29-P1B-2W-C
FLOOR 3	910	LS29-P1B-3F
3 SIDEWALL 1' DEPTH	2500	LS29-P1B-3W-A
3 SIDEWALL 2' DEPTH	1750	LS29-P1B-3W-B
3 SIDEWALL 3' DEPTH	2300	LS29-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-29 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

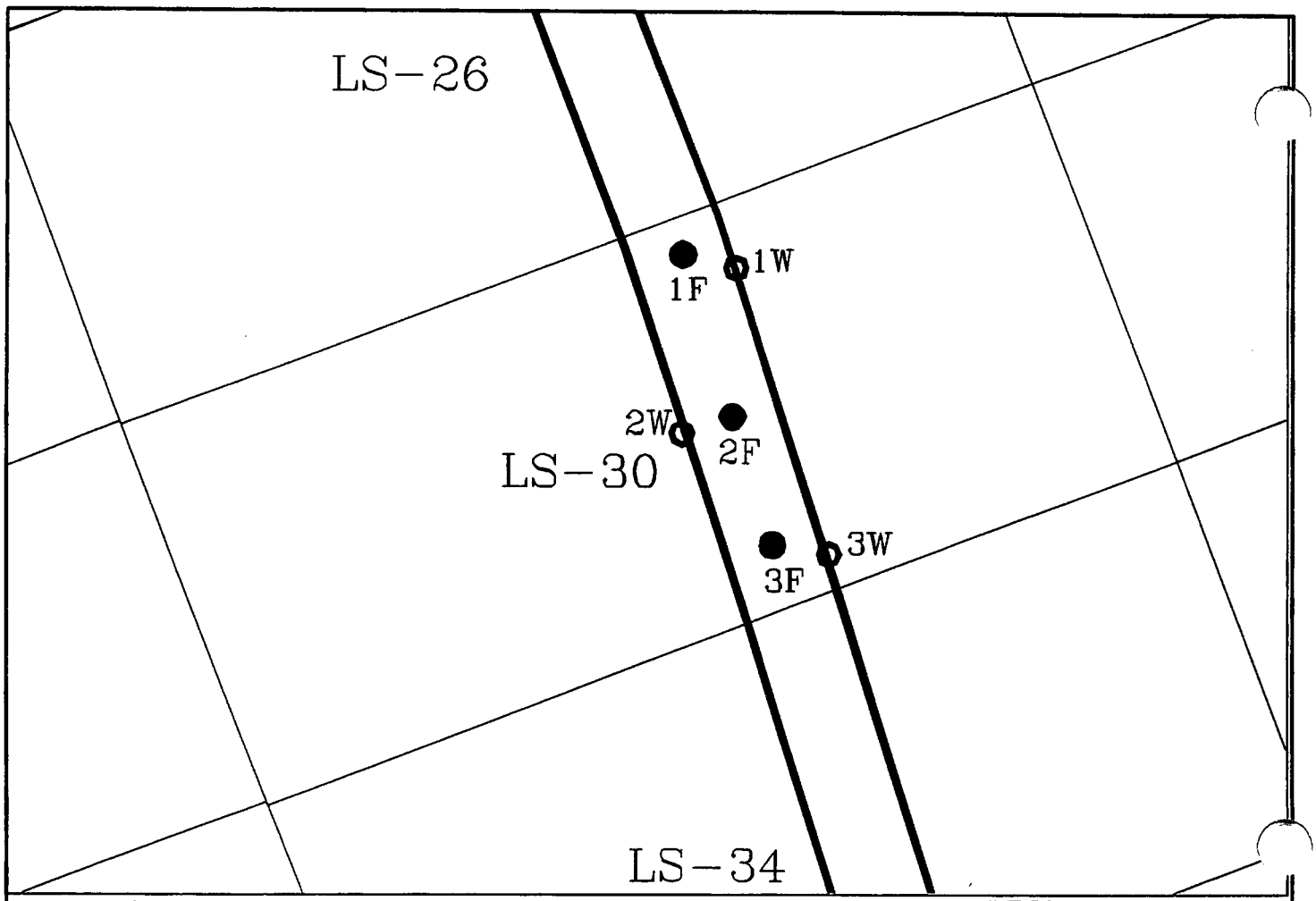
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY DGPB
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Everett, Washington 98207

DRAWING FILE NUMBER: TAC LS29P1BC4
AUTOCAD REL. 2000 SAVED (DWG)
SHEET NUMBER: LS-29
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	1080	LS30-P1B-1F
1 SIDEWALL 1' DEPTH	962	LS30-P1B-1W-A
1 SIDEWALL 2' DEPTH	1100	LS30-P1B-IW-B
1 SIDEWALL 3' DEPTH	989	LS30-P1B-1W-C
FLOOR 2	395	LS30-P1B-2F
2 SIDEWALL 1' DEPTH	1160	LS30-P1B-2W-A
2 SIDEWALL 2' DEPTH	1200	LS30-P1B-2W-B
2 SIDEWALL 3' DEPTH	1080	LS30-P1B-2W-C
FLOOR 3	1240	LS30-P1B-3F
3 SIDEWALL 1' DEPTH	1150	LS30-P1B-3W-A
3 SIDEWALL 2' DEPTH	700	LS30-P1B-3W-B
3 SIDEWALL 3' DEPTH	775	LS30-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-30 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS30P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-30

REV

NORTH

CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	2650	LS31-P1B-1F
1 SIDEWALL 1' DEPTH	2200	LS31-P1B-1W-A
1 SIDEWALL 2' DEPTH	1400	LS31-P1B-IW-B
1 SIDEWALL 3' DEPTH	1210	LS31-P1B-1W-C
FLOOR 2	920	LS31-P1B-2F
2 SIDEWALL 1' DEPTH	600	LS31-P1B-2W-A
2 SIDEWALL 2' DEPTH	1180	LS31-P1B-2W-B
2 SIDEWALL 3' DEPTH	708	LS31-P1B-2W-C
FLOOR 3	750	LS31-P1B-3F
3 SIDEWALL 1' DEPTH	1160	LS31-P1B-3W-A
3 SIDEWALL 2' DEPTH	1590	LS31-P1B-3W-B
3 SIDEWALL 3' DEPTH	1020	LS31-P1B-3W-C

LEGEND

- FLOOR SAMPLE LOCATION
- PERIMETER SAMPLE LOCATION

LS-31 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 20 FEET — 40 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY GGPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

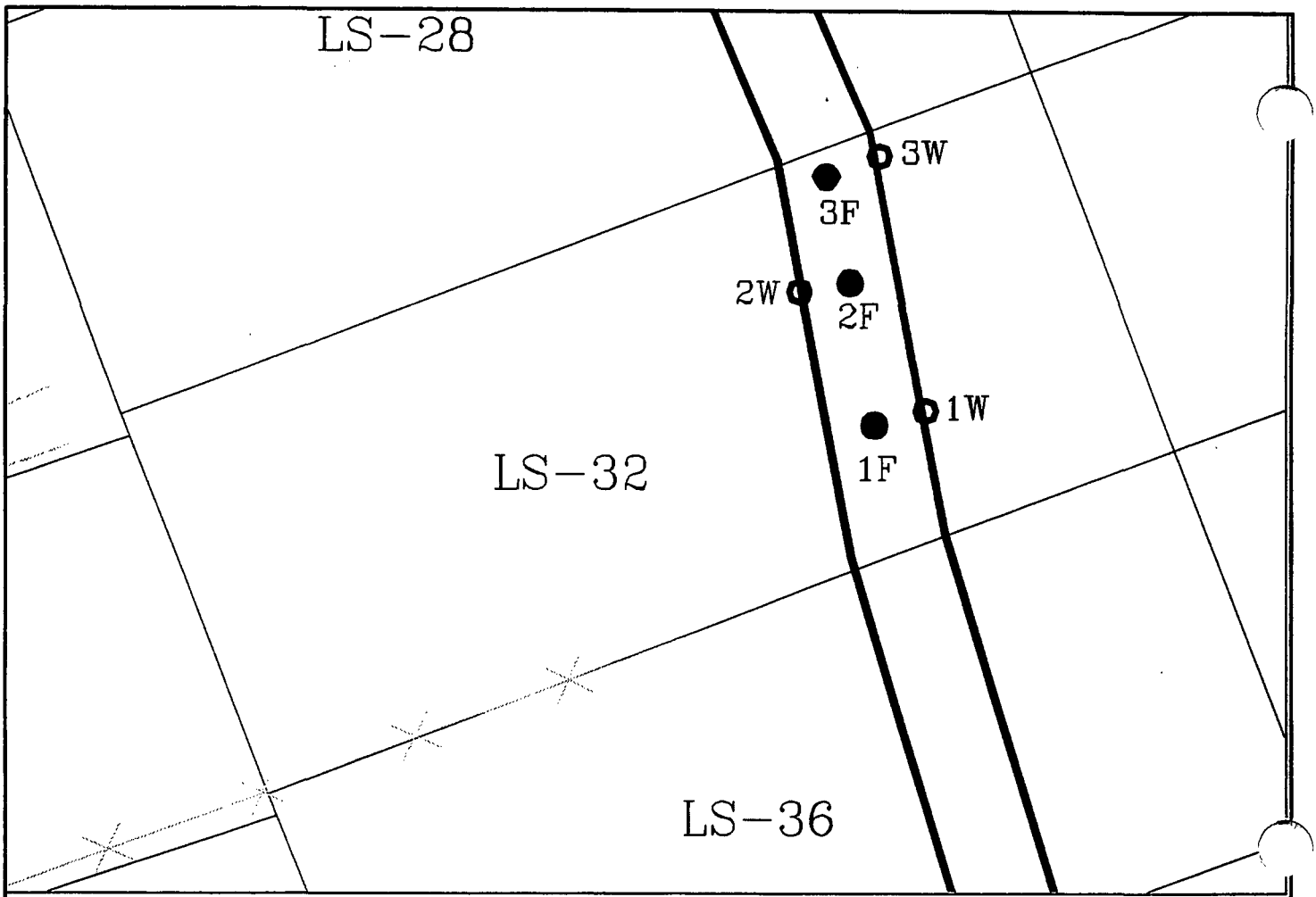
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS31P1BTC4
AUTOCAD ENL. SEED DRAWING (DWG)

SHEET NUMBER
LS-31

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	241	LS32-P1B-1F
1 SIDEWALL 1' DEPTH	745	LS32-P1B-1W-A
1 SIDEWALL 2' DEPTH	414	LS32-P1B-IW-B
1 SIDEWALL 3' DEPTH	258	LS32-P1B-1W-C
FLOOR 2	335	LS32-P1B-2F
2 SIDEWALL 1' DEPTH	1300	LS32-P1B-2W-A
2 SIDEWALL 2' DEPTH	511	LS32-P1B-2W-B
2 SIDEWALL 3' DEPTH	276	LS32-P1B-2W-C
FLOOR 3	421	LS32-P1B-3F
3 SIDEWALL 1' DEPTH	1300	LS32-P1B-3W-A
3 SIDEWALL 2' DEPTH	1100	LS32-P1B-3W-B
3 SIDEWALL 3' DEPTH	842	LS32-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-32 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

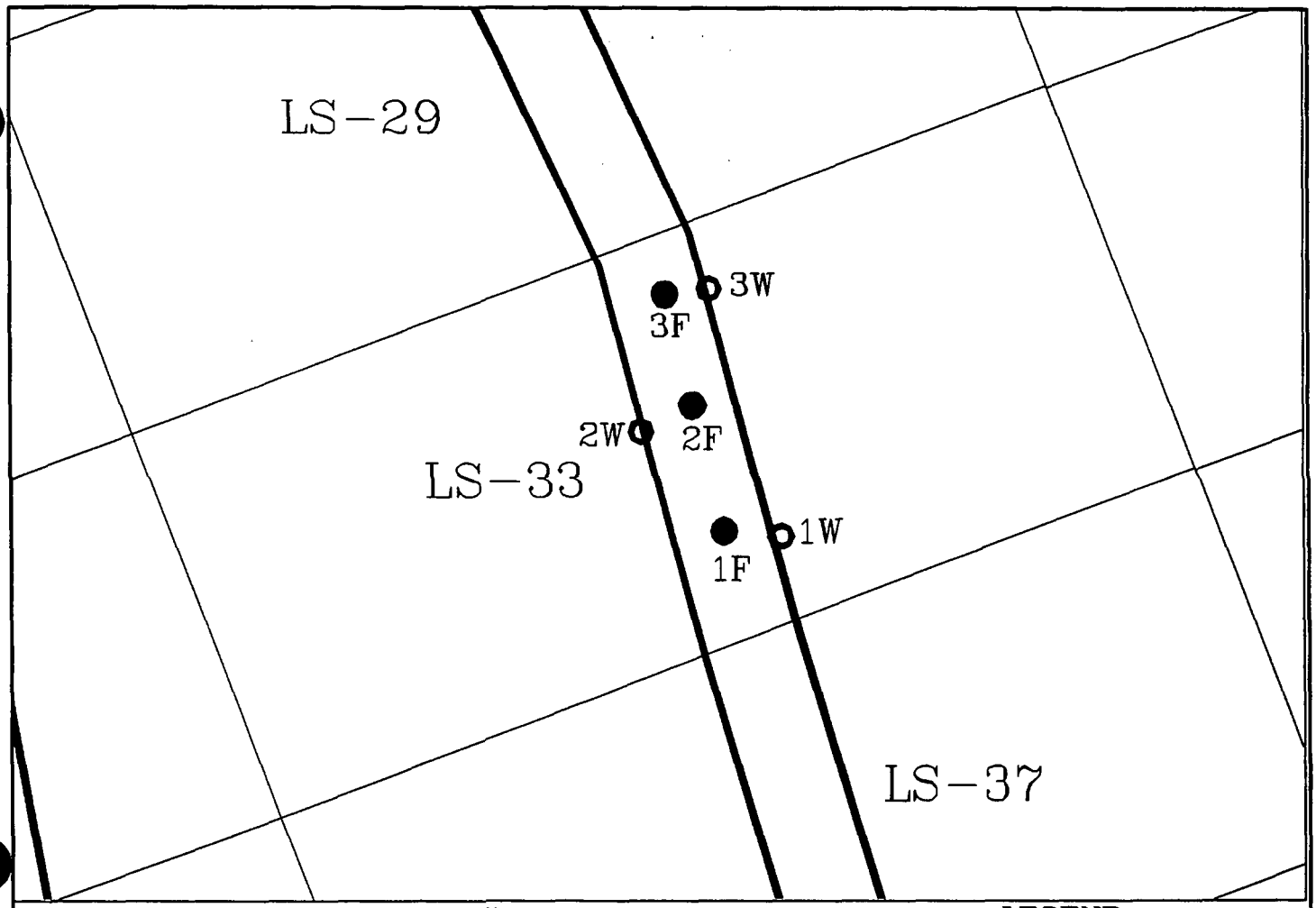
DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER: TAC LS32P1BC4
SHEET NUMBER: LS-32
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	643	LS33-P1B-1F
1 SIDEWALL 1' DEPTH	1810	LS33-P1B-1W-A
1 SIDEWALL 2' DEPTH	1400	LS33-P1B-IW-B
1 SIDEWALL 3' DEPTH	1200	LS33-P1B-1W-C
FLOOR 2	653	LS33-P1B-2F
2 SIDEWALL 1' DEPTH	1630	LS33-P1B-2W-A
2 SIDEWALL 2' DEPTH	1160	LS33-P1B-2W-B
2 SIDEWALL 3' DEPTH	849	LS33-P1B-2W-C
FLOOR 3	758	LS33-P1B-3F
3 SIDEWALL 1' DEPTH	1400	LS33-P1B-3W-A
3 SIDEWALL 2' DEPTH	528	LS33-P1B-3W-B
3 SIDEWALL 3' DEPTH	732	LS33-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-33 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

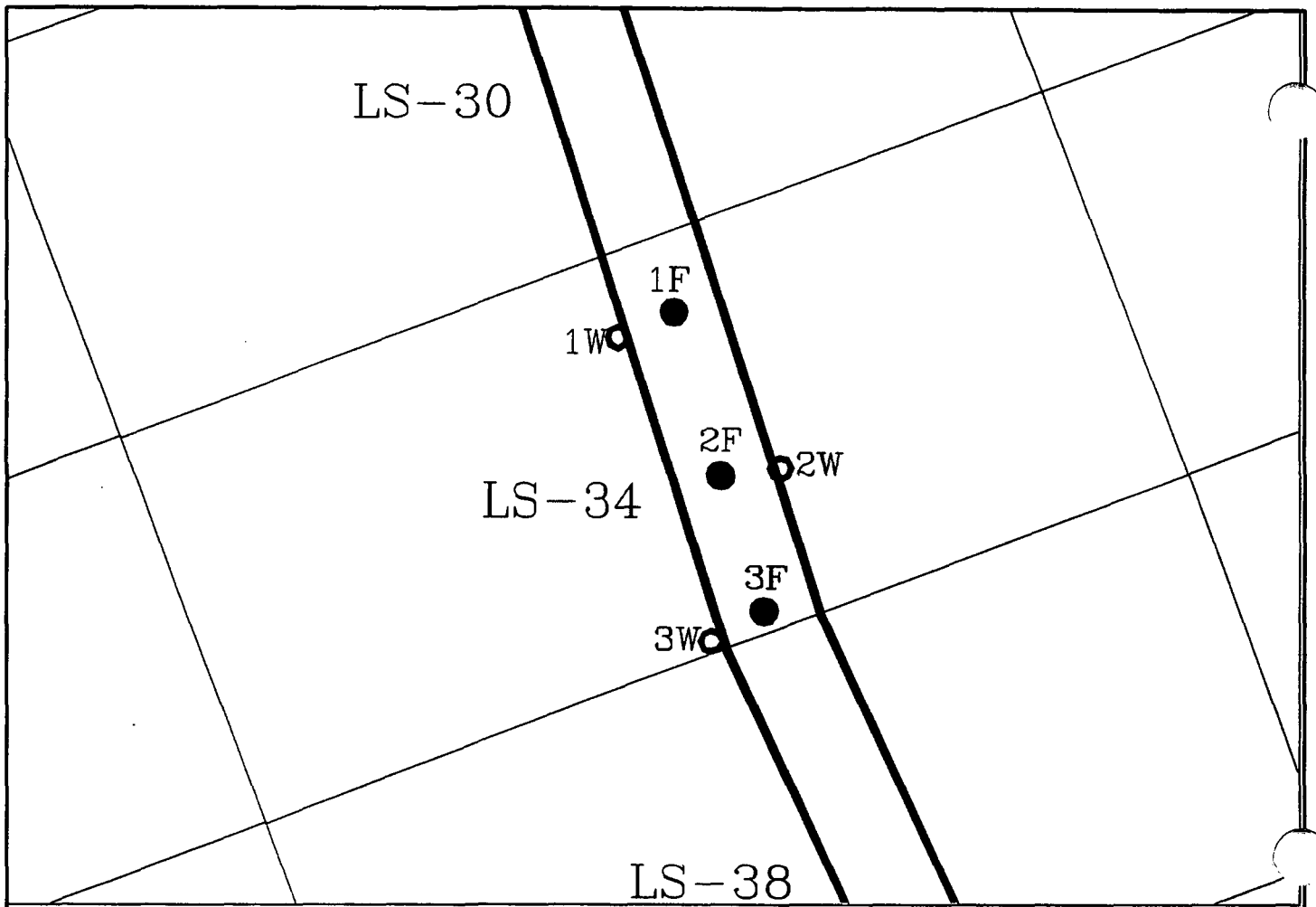
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS33P1BC4
AUTOCAD EXE. GRID DRAWING (DWG)

SHEET NUMBER
LS-33

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS34-P1B-1F
1 SIDEWALL 1' DEPTH	975	LS34-P1B-1W-A
1 SIDEWALL 2' DEPTH	486	LS34-P1B-IW-B
1 SIDEWALL 3' DEPTH	295	LS34-P1B-1W-C
FLOOR 2	619	LS34-P1B-2F
2 SIDEWALL 1' DEPTH	738	LS34-P1B-2W-A
2 SIDEWALL 2' DEPTH	834	LS34-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS34-P1B-2W-C
FLOOR 3	<100	LS34-P1B-3F
3 SIDEWALL 1' DEPTH	497	LS34-P1B-3W-A
3 SIDEWALL 2' DEPTH	404	LS34-P1B-3W-B
3 SIDEWALL 3' DEPTH	419	LS34-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-34 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY CDFG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Puyallup, Washington 98371

DRAWING FILE NUMBER
TAC LS34P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-34

REV

NORTH

CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	784	LS35-P1B-1F
1 SIDEWALL 1' DEPTH	803	LS35-P1B-1W-A
1 SIDEWALL 2' DEPTH	999	LS35-P1B-IW-B
1 SIDEWALL 3' DEPTH	640	LS35-P1B-1W-C
FLOOR 2	792	LS35-P1B-2F
2 SIDEWALL 1' DEPTH	938	LS35-P1B-2W-A
2 SIDEWALL 2' DEPTH	858	LS35-P1B-2W-B
2 SIDEWALL 3' DEPTH	712	LS35-P1B-2W-C
FLOOR 3	858	LS35-P1B-3F
3 SIDEWALL 1' DEPTH	2180	LS35-P1B-3W-A
3 SIDEWALL 2' DEPTH	1870	LS35-P1B-3W-B
3 SIDEWALL 3' DEPTH	1180	LS35-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-35 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

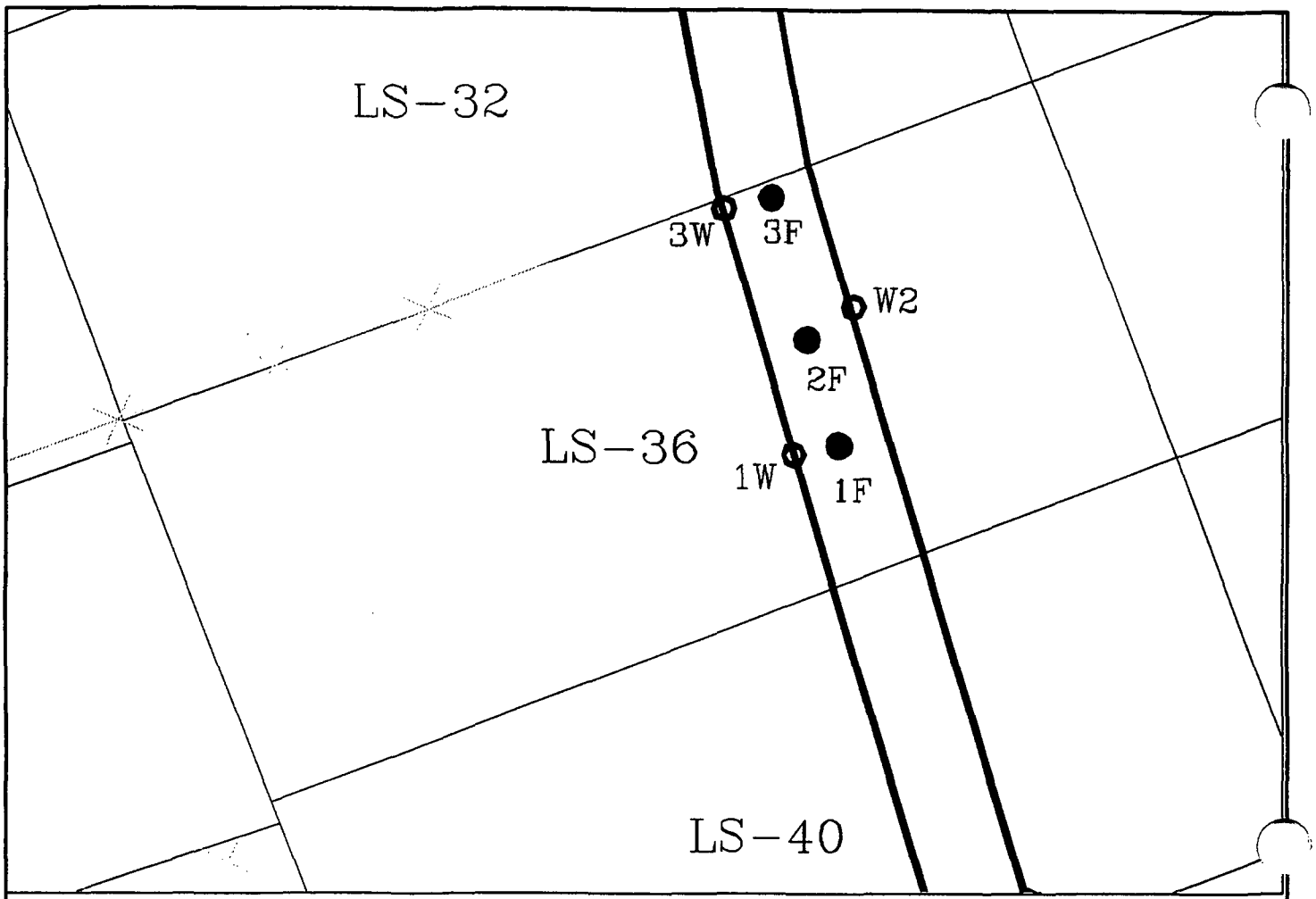
DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER
TAC LS35P1BC4
SHEET NUMBER
LS-35
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS36-P1B-1F
1 SIDEWALL 1' DEPTH	1130	LS36-P1B-1W-A
1 SIDEWALL 2' DEPTH	447	LS36-P1B-IW-B
1 SIDEWALL 3' DEPTH	418	LS36-P1B-1W-C
FLOOR 2	232	LS36-P1B-2F
2 SIDEWALL 1' DEPTH	371	LS36-P1B-2W-A
2 SIDEWALL 2' DEPTH	486	LS36-P1B-2W-B
2 SIDEWALL 3' DEPTH	348	LS36-P1B-2W-C
FLOOR 3	<100	LS36-P1B-3F
3 SIDEWALL 1' DEPTH	321	LS36-P1B-3W-A
3 SIDEWALL 2' DEPTH	456	LS36-P1B-3W-B
3 SIDEWALL 3' DEPTH	347	LS36-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-36 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 – 10 FEET – 20 FEET

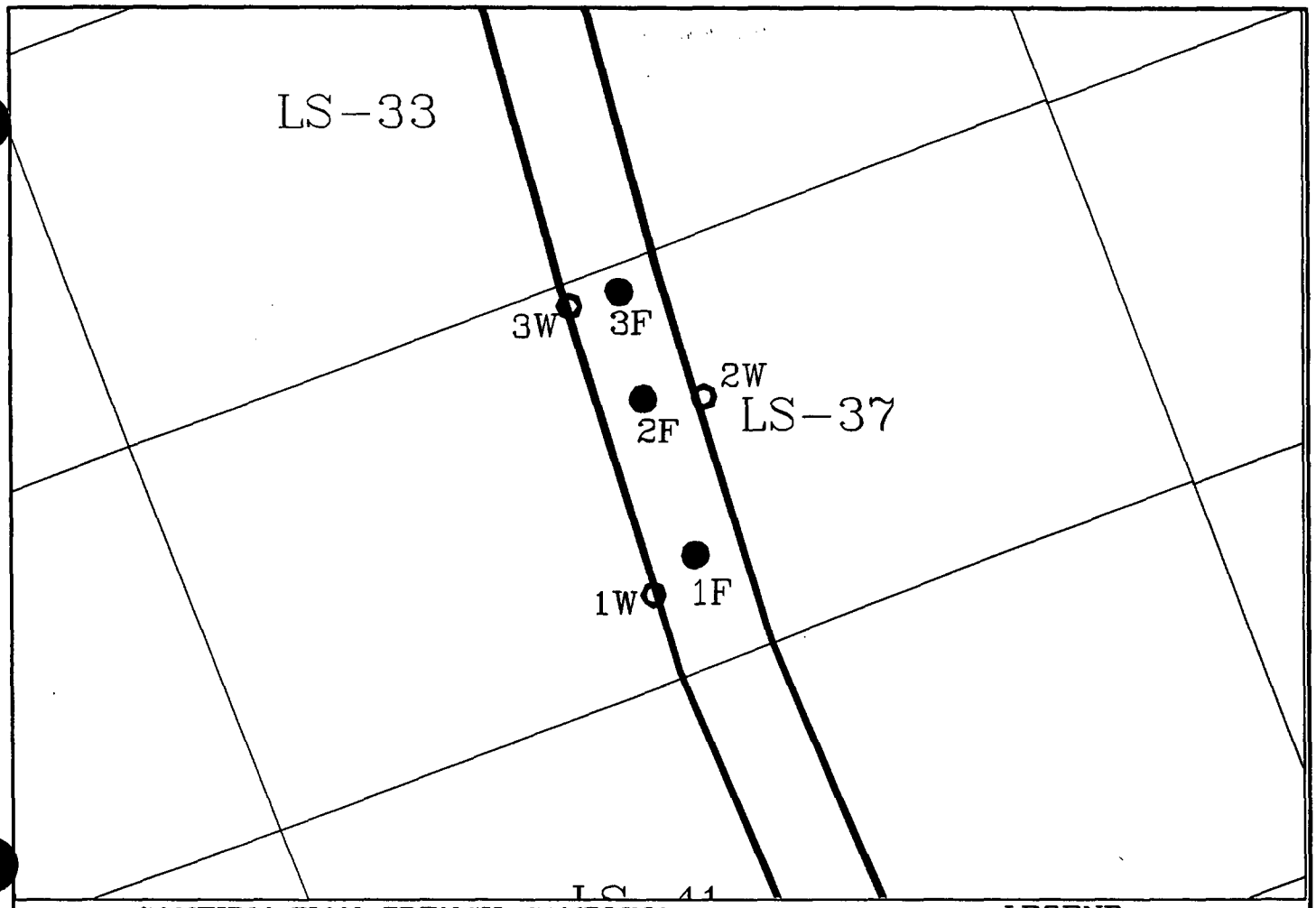
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Tacoma, Washington

DRAWING FILE NUMBER: TAC LS36P1BC4
SHEET NUMBER: LS-36
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS37-P1B-1F
1 SIDEWALL 1' DEPTH	763	LS37-P1B-1W-A
1 SIDEWALL 2' DEPTH	436	LS37-P1B-IW-B
1 SIDEWALL 3' DEPTH	698	LS37-P1B-1W-C
FLOOR 2	728	LS37-P1B-2F
2 SIDEWALL 1' DEPTH	1550	LS37-P1B-2W-A
2 SIDEWALL 2' DEPTH	1780	LS37-P1B-2W-B
2 SIDEWALL 3' DEPTH	1450	LS37-P1B-2W-C
FLOOR 3	568	LS37-P1B-3F
3 SIDEWALL 1' DEPTH	1300	LS37-P1B-3W-A
3 SIDEWALL 2' DEPTH	642	LS37-P1B-3W-B
3 SIDEWALL 3' DEPTH	666	LS37-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-37 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

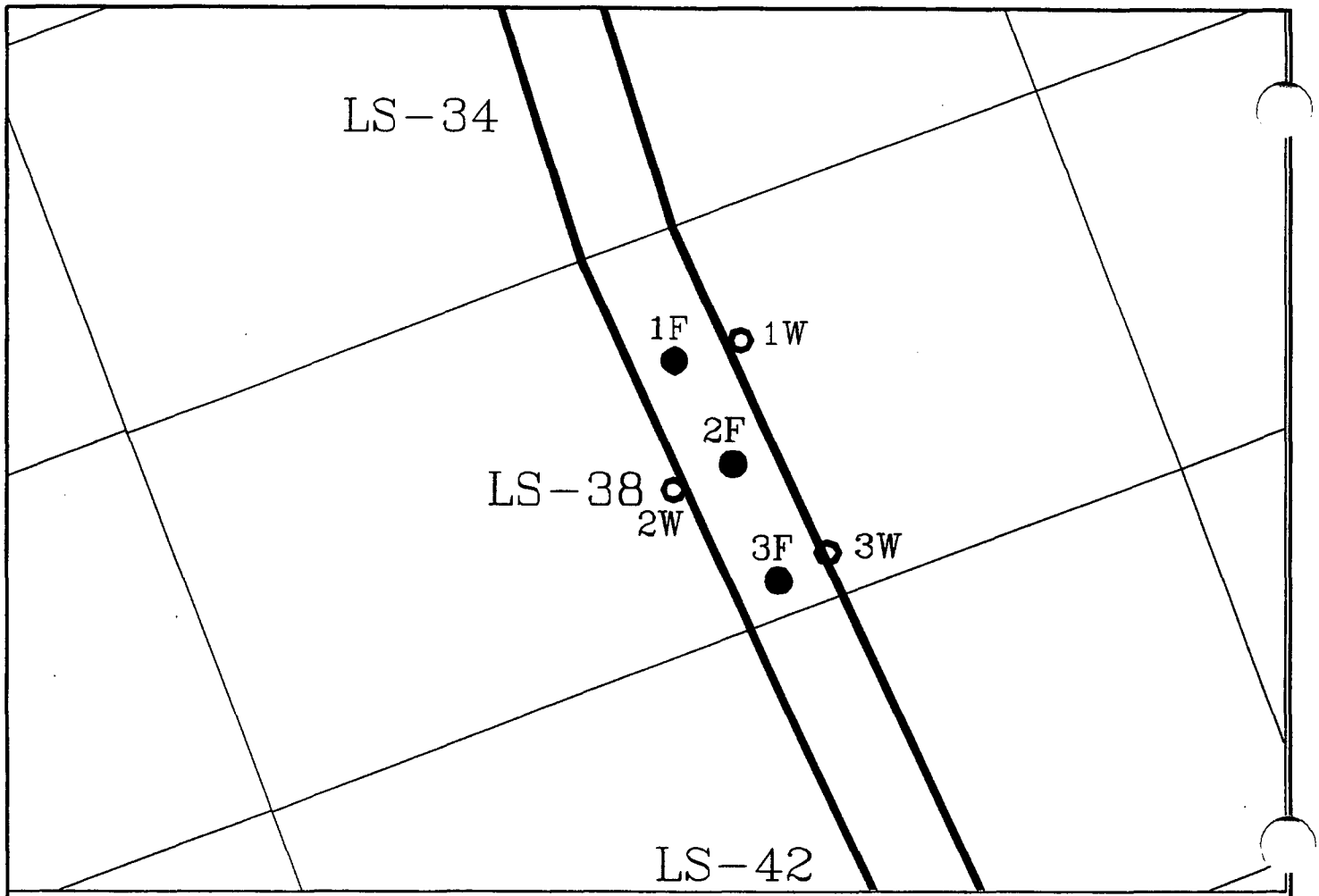
REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Tacoma, Washington 98407

DRAWING FILE NUMBER: TAC LS37P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-37
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	500	LS38-P1B-1F
1 SIDEWALL 1' DEPTH	571	LS38-P1B-1W-A
1 SIDEWALL 2' DEPTH	1220	LS38-P1B-IW-B
1 SIDEWALL 3' DEPTH	713	LS38-P1B-1W-C
FLOOR 2	460	LS38-P1B-2F
2 SIDEWALL 1' DEPTH	694	LS38-P1B-2W-A
2 SIDEWALL 2' DEPTH	512	LS38-P1B-2W-B
2 SIDEWALL 3' DEPTH	449	LS38-P1B-2W-C
FLOOR 3	636	LS38-P1B-3F
3 SIDEWALL 1' DEPTH	2250	LS38-P1B-3W-A
3 SIDEWALL 2' DEPTH	998	LS38-P1B-3W-B
3 SIDEWALL 3' DEPTH	1120	LS38-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-38 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

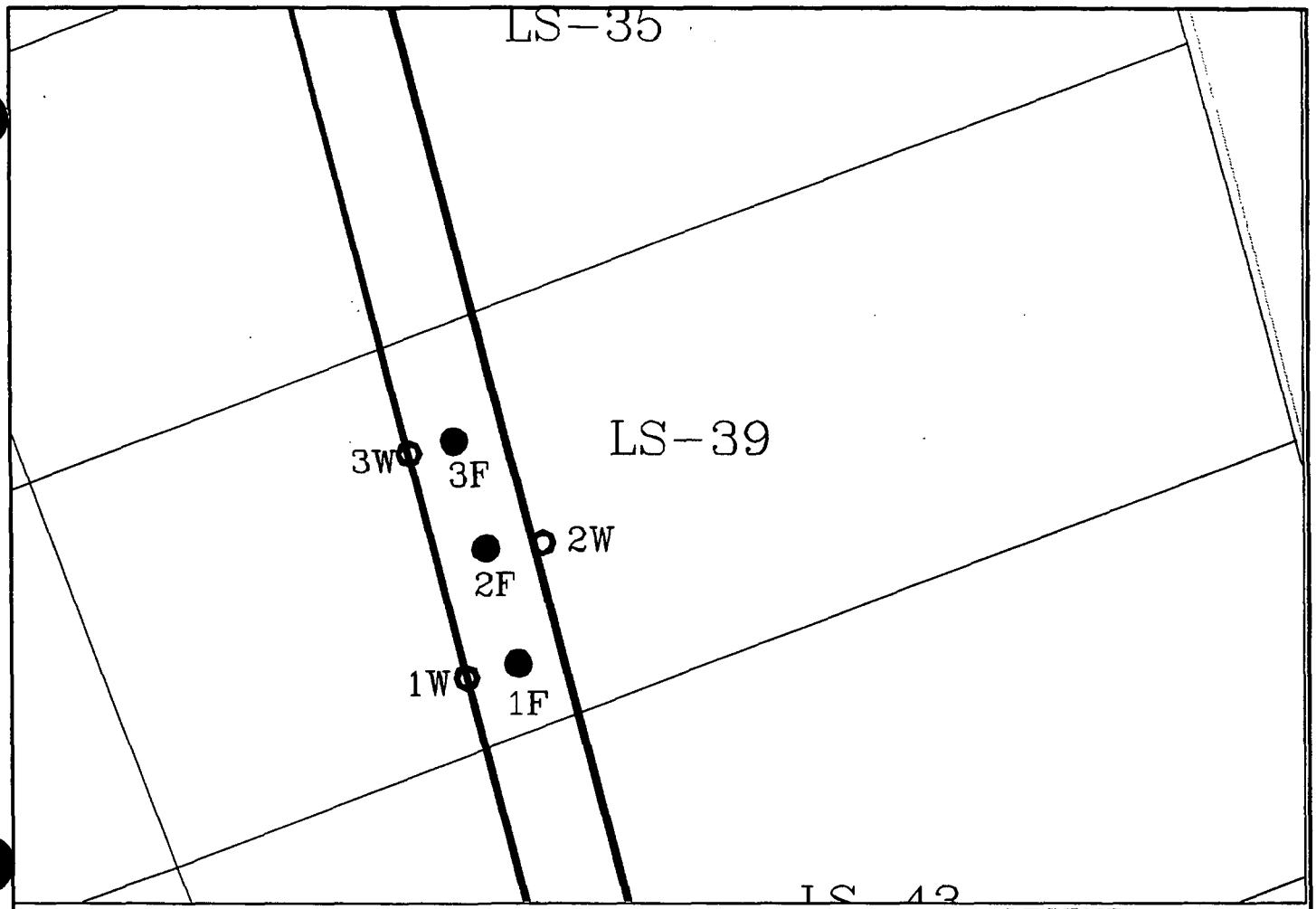
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS38P1BC4
AUTOCAD REL. 2000 SHAVING (DWG)

SHEET NUMBER
LS-38

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	990	LS40-P1B-1F
1 SIDEWALL 1' DEPTH	898	LS40-P1B-1W-A
1 SIDEWALL 2' DEPTH	1110	LS40-P1B-IW-B
1 SIDEWALL 3' DEPTH	950	LS40-P1B-1W-C
FLOOR 2	1350	LS40-P1B-2F
2 SIDEWALL 1' DEPTH	1260	LS40-P1B-2W-A
2 SIDEWALL 2' DEPTH	1310	LS40-P1B-2W-B
2 SIDEWALL 3' DEPTH	980	LS40-P1B-2W-C
FLOOR 3	1050	LS40-P1B-3F
3 SIDEWALL 1' DEPTH	1230	LS40-P1B-3W-A
3 SIDEWALL 2' DEPTH	2210	LS40-P1B-3W-B
3 SIDEWALL 3' DEPTH	1830	LS40-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-39 PHASE 1B (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

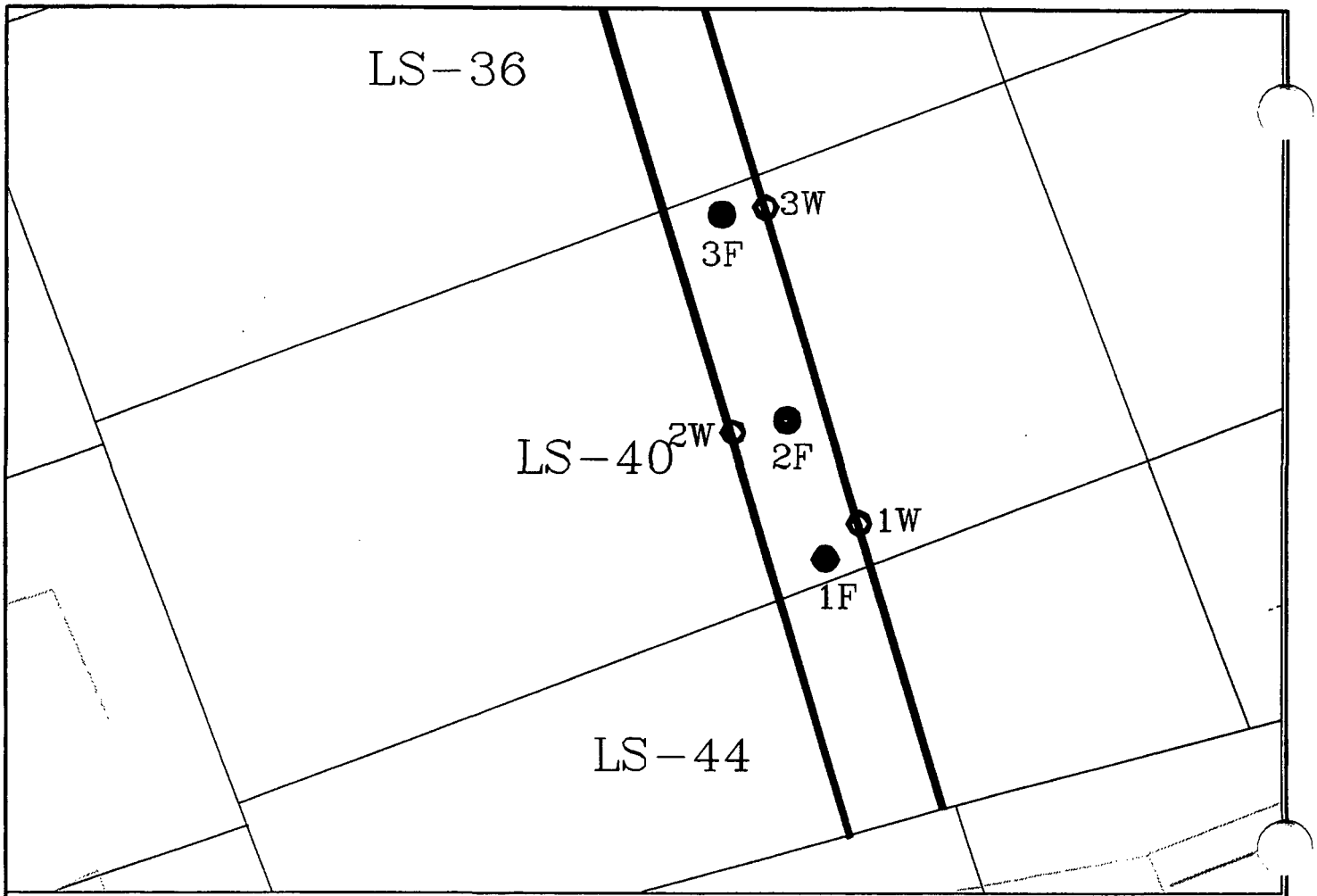
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Puyallup, Washington 98371

DRAWING FILE NUMBER: TAC LS39P1BC4
SHEET NUMBER: LS-39
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	518	LS40-P1B-1F
1 SIDEWALL 1' DEPTH	643	LS40-P1B-1W-A
1 SIDEWALL 2' DEPTH	660	LS40-P1B-IW-B
1 SIDEWALL 3' DEPTH	541	LS40-P1B-1W-C
FLOOR 2	977	LS40-P1B-2F
2 SIDEWALL 1' DEPTH	788	LS40-P1B-2W-A
2 SIDEWALL 2' DEPTH	2100	LS40-P1B-2W-B
2 SIDEWALL 3' DEPTH	1100	LS40-P1B-2W-C
FLOOR 3	570	LS40-P1B-3F
3 SIDEWALL 1' DEPTH	1500	LS40-P1B-3W-A
3 SIDEWALL 2' DEPTH	1110	LS40-P1B-3W-B
3 SIDEWALL 3' DEPTH	1190	LS40-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-40 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

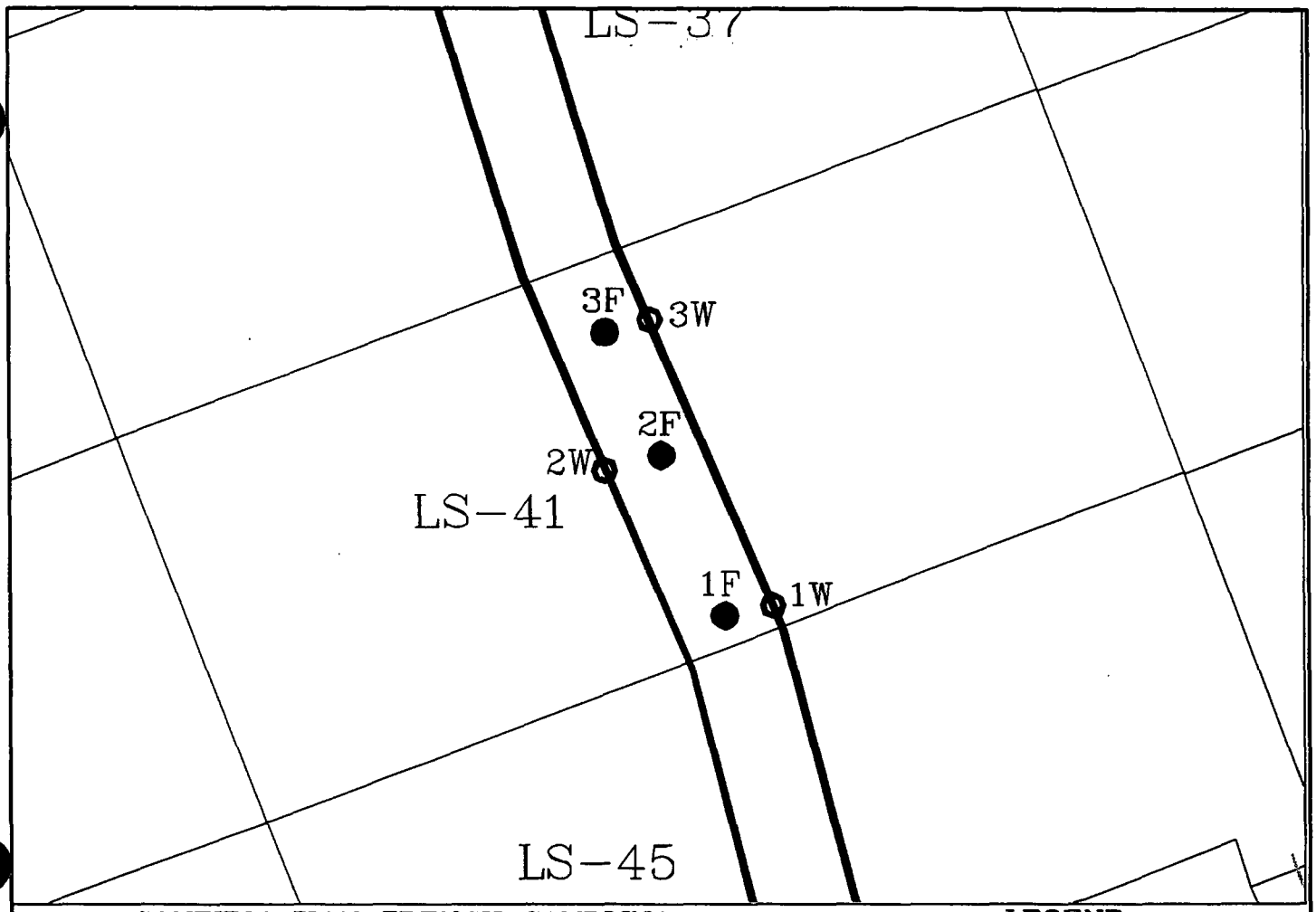
REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Everett, Washington

DRAWING FILE NUMBER: TAC LS40P1BC4
SHEET NUMBER: LS-40
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS41-P1B-1F
1 SIDEWALL 1' DEPTH	1100	LS41-P1B-1W-A
1 SIDEWALL 2' DEPTH	726	LS41-P1B-IW-B
1 SIDEWALL 3' DEPTH	336	LS41-P1B-1W-C
FLOOR 2	<100	LS41-P1B-2F
2 SIDEWALL 1' DEPTH	439	LS41-P1B-2W-A
2 SIDEWALL 2' DEPTH	268	LS41-P1B-2W-B
2 SIDEWALL 3' DEPTH	515	LS41-P1B-2W-C
FLOOR 3	<100	LS41-P1B-3F
3 SIDEWALL 1' DEPTH	1140	LS41-P1B-3W-A
3 SIDEWALL 2' DEPTH	1310	LS41-P1B-3W-B
3 SIDEWALL 3' DEPTH	650	LS41-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-41 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

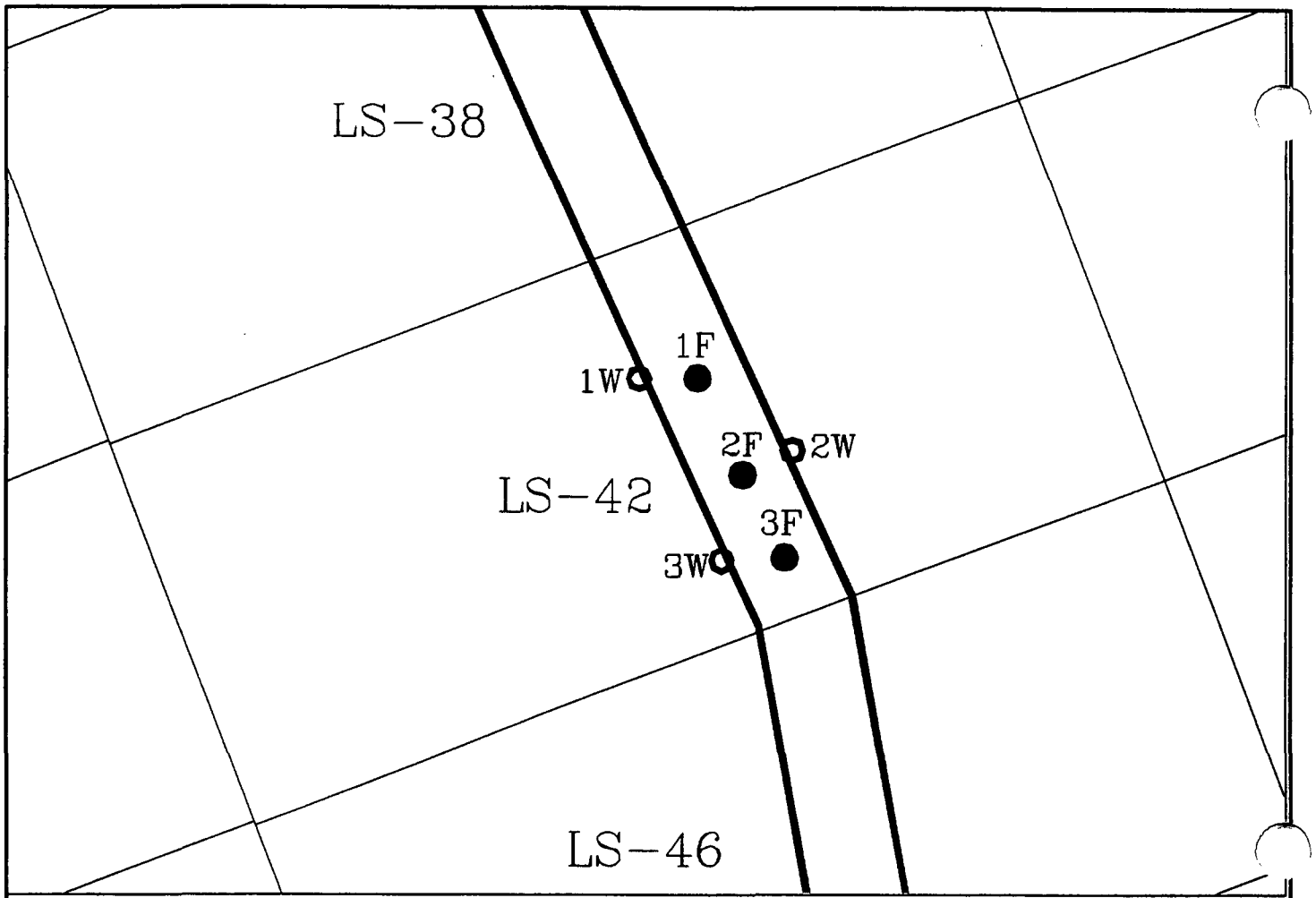
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Everett, Washington 98437

DRAWING FILE NUMBER: TAC LS41P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-41
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	397	LS42-P1B-1F
1 SIDEWALL 1' DEPTH	2120	LS42-P1B-1W-A
1 SIDEWALL 2' DEPTH	1300	LS42-P1B-IW-B
1 SIDEWALL 3' DEPTH	820	LS42-P1B-1W-C
FLOOR 2	990	LS42-P1B-2F
2 SIDEWALL 1' DEPTH	940	LS42-P1B-2W-A
2 SIDEWALL 2' DEPTH	811	LS42-P1B-2W-B
2 SIDEWALL 3' DEPTH	814	LS42-P1B-2W-C
FLOOR 3	558	LS42-P1B-3F
3 SIDEWALL 1' DEPTH	1840	LS42-P1B-3W-A
3 SIDEWALL 2' DEPTH	2700	LS42-P1B-3W-B
3 SIDEWALL 3' DEPTH	472	LS42-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-42 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

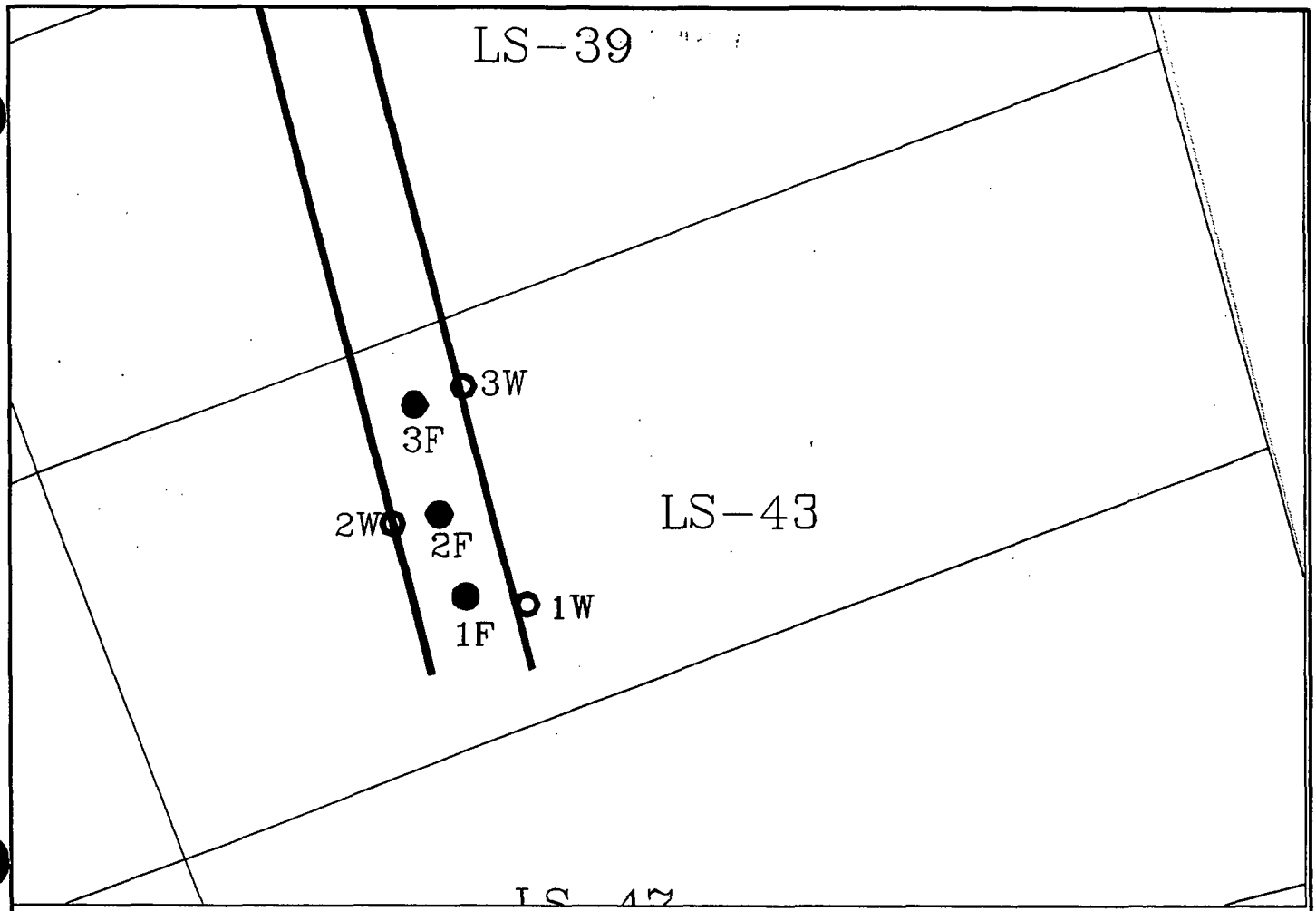
DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER: TAC LS42P1BC4
SHEET NUMBER: LS-42
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	885	LS43-P1B-1F
1 SIDEWALL 1' DEPTH	1210	LS43-P1B-1W-A
1 SIDEWALL 2' DEPTH	844	LS43-P1B-IW-B
1 SIDEWALL 3' DEPTH	678	LS43-P1B-1W-C
FLOOR 2	372	LS43-P1B-2F
2 SIDEWALL 1' DEPTH	994	LS43-P1B-2W-A
2 SIDEWALL 2' DEPTH	618	LS43-P1B-2W-B
2 SIDEWALL 3' DEPTH	380	LS43-P1B-2W-C
FLOOR 3	<100	LS43-P1B-3F
3 SIDEWALL 1' DEPTH	710	LS43-P1B-3W-A
3 SIDEWALL 2' DEPTH	870	LS43-P1B-3W-B
3 SIDEWALL 3' DEPTH	509	LS43-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-43 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS43P1BC4
SHEET NUMBER: LS-43
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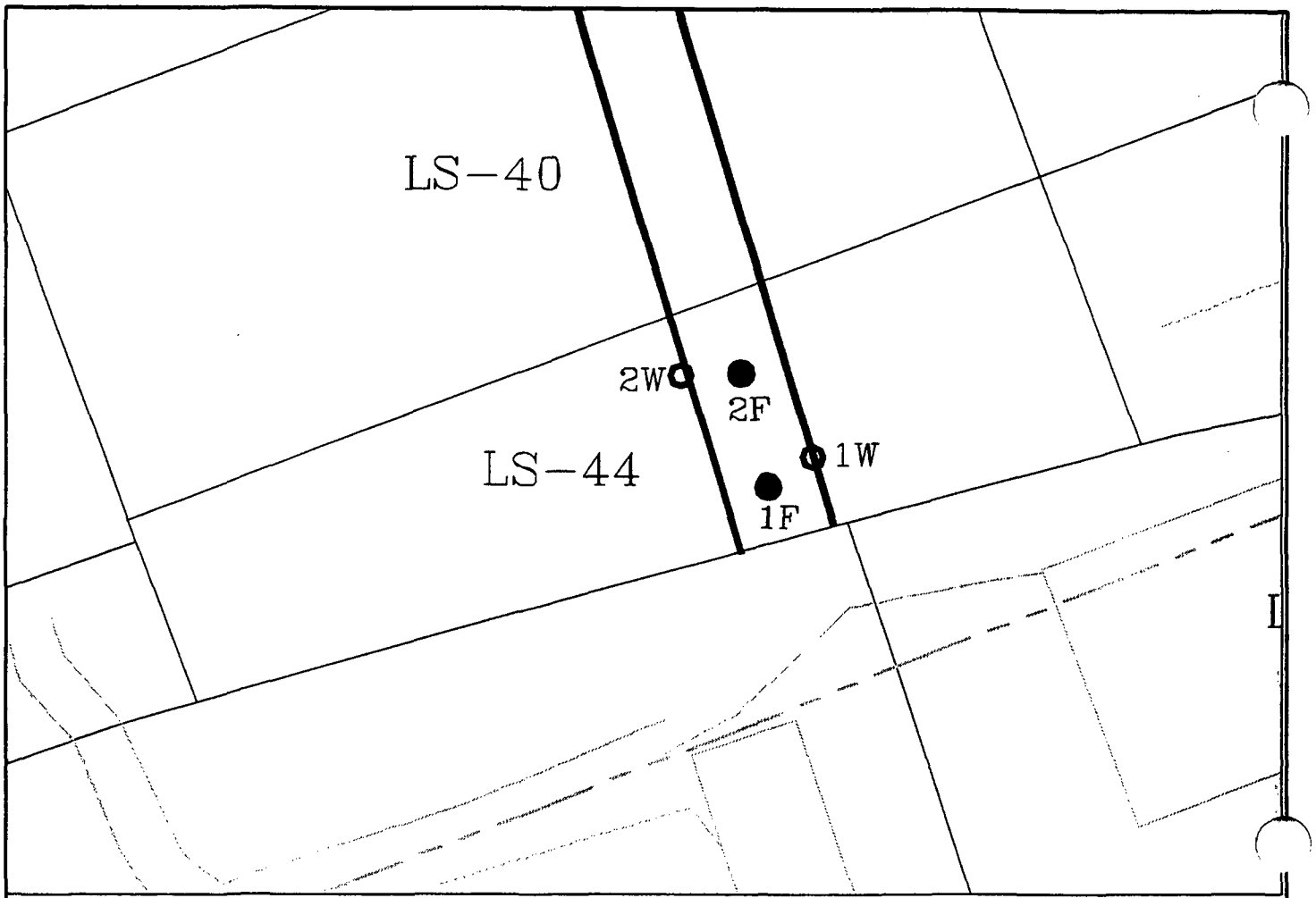
NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	485	LS44-P1B-1F
1 SIDEWALL 1' DEPTH	248	LS44-P1B-1W-A
1 SIDEWALL 2' DEPTH	462	LS44-P1B-1W-B
1 SIDEWALL 3' DEPTH	572	LS44-P1B-1W-C
FLOOR 2	1000	LS44-P1B-2F
2 SIDEWALL 1' DEPTH	486	LS44-P1B-2W-A
2 SIDEWALL 2' DEPTH	790	LS44-P1B-2W-B
2 SIDEWALL 3' DEPTH	1000	LS44-P1B-2W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-44 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

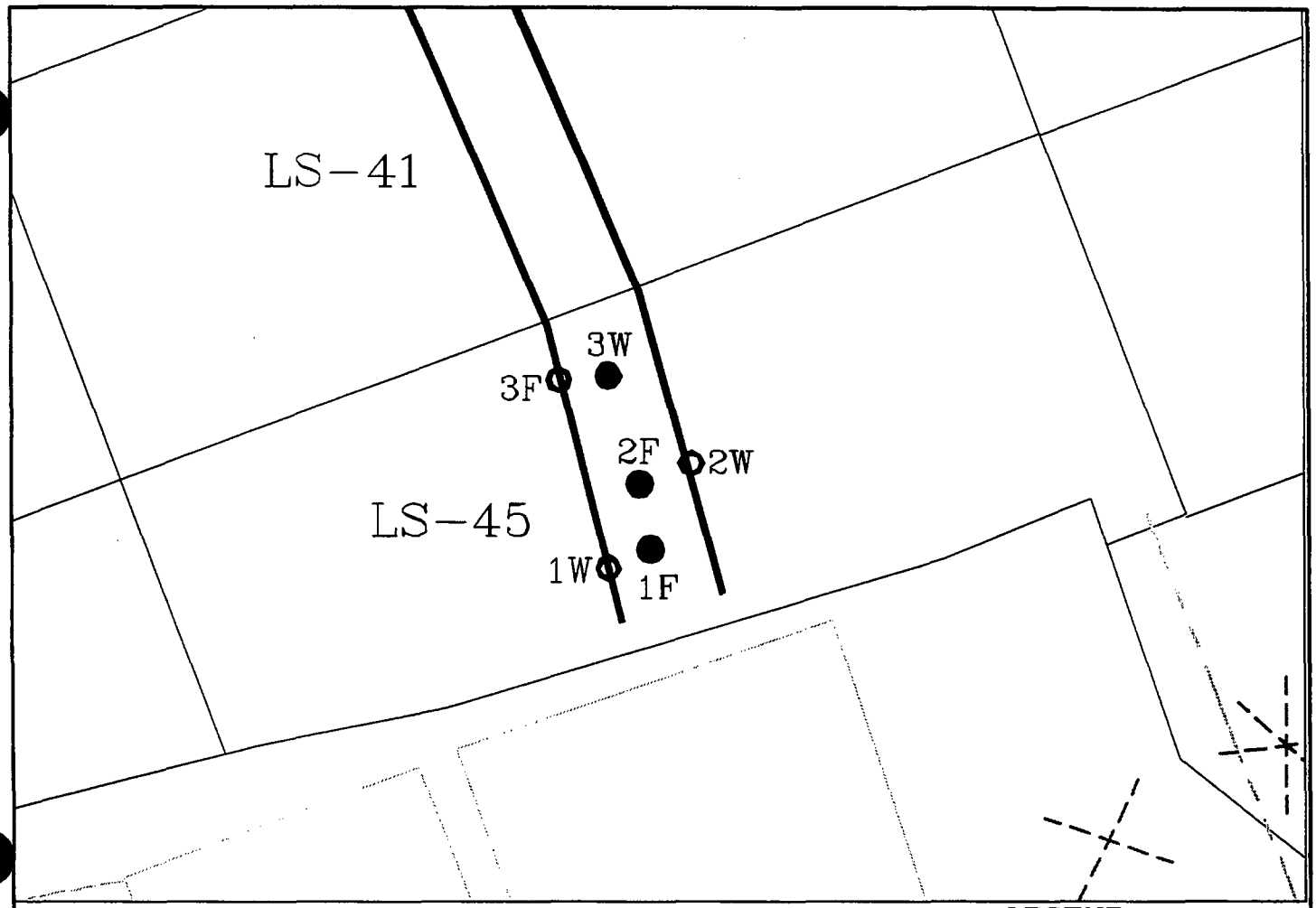
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS44P1BC4
SHEET NUMBER: LS-44

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	823	LS45-P1B-1F
1 SIDEWALL 1' DEPTH	361	LS45-P1B-1W-A
1 SIDEWALL 2' DEPTH	321	LS45-P1B-IW-B
1 SIDEWALL 3' DEPTH	452	LS45-P1B-1W-C
FLOOR 2	644	LS45-P1B-2F
2 SIDEWALL 1' DEPTH	796	LS45-P1B-2W-A
2 SIDEWALL 2' DEPTH	669	LS45-P1B-2W-B
2 SIDEWALL 3' DEPTH	997	LS45-P1B-2W-C
FLOOR 3	<100	LS45-P1B-3F
3 SIDEWALL 1' DEPTH	671	LS45-P1B-3W-A
3 SIDEWALL 2' DEPTH	274	LS45-P1B-3W-B
3 SIDEWALL 3' DEPTH	434	LS45-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-45 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

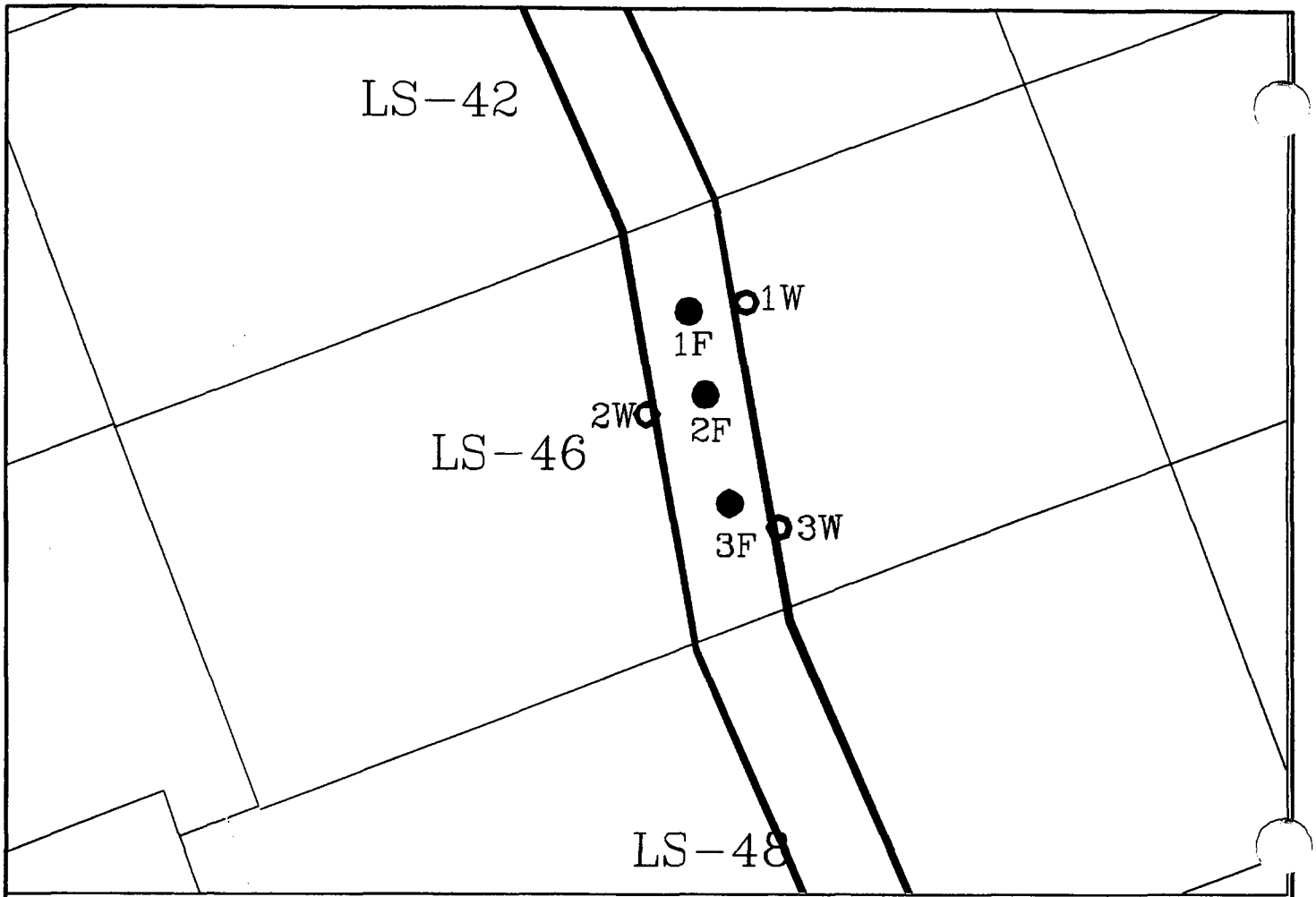
Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS45P1BC4
AUTOCAD EBL. 9000 DRAWING (DWG)

SHEET NUMBER
LS-45
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS46-P1B-1F
1 SIDEWALL 1' DEPTH	870	LS46-P1B-1W-A
1 SIDEWALL 2' DEPTH	795	LS46-P1B-IW-B
1 SIDEWALL 3' DEPTH	995	LS46-P1B-1W-C
FLOOR 2	<100	LS46-P1B-2F
2 SIDEWALL 1' DEPTH	1080	LS46-P1B-2W-A
2 SIDEWALL 2' DEPTH	698	LS46-P1B-2W-B
2 SIDEWALL 3' DEPTH	704	LS46-P1B-2W-C
FLOOR 3	<100	LS46-P1B-3F
3 SIDEWALL 1' DEPTH	819	LS46-P1B-3W-A
3 SIDEWALL 2' DEPTH	570	LS46-P1B-3W-B
3 SIDEWALL 3' DEPTH	210	LS46-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-46 PHASE 1B (9 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

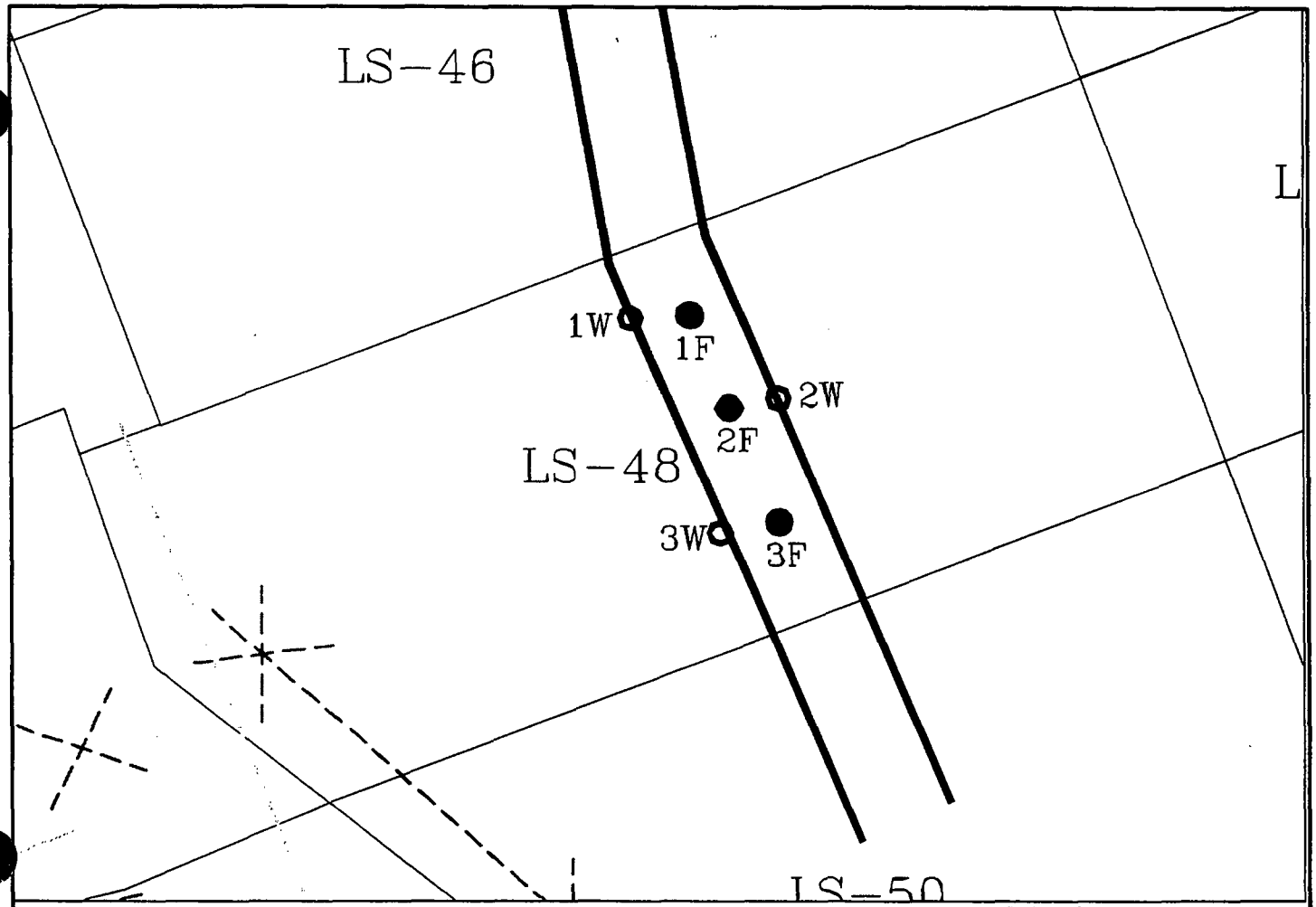
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS46P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
LS-46
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS48-P1B-1F
1 SIDEWALL 1' DEPTH	880	LS48-P1B-1W-A
1 SIDEWALL 2' DEPTH	420	LS48-P1B-IW-B
1 SIDEWALL 3' DEPTH	200	LS48-P1B-1W-C
FLOOR 2	<100	LS48-P1B-2F
2 SIDEWALL 1' DEPTH	464	LS48-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LS48-P1B-2W-B
2 SIDEWALL 3' DEPTH	500	LS48-P1B-2W-C
FLOOR 3	<100	LS48-P1B-3F
3 SIDEWALL 1' DEPTH	438	LS48-P1B-3W-A
3 SIDEWALL 2' DEPTH	704	LS48-P1B-3W-B
3 SIDEWALL 3' DEPTH	210	LS48-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-48 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

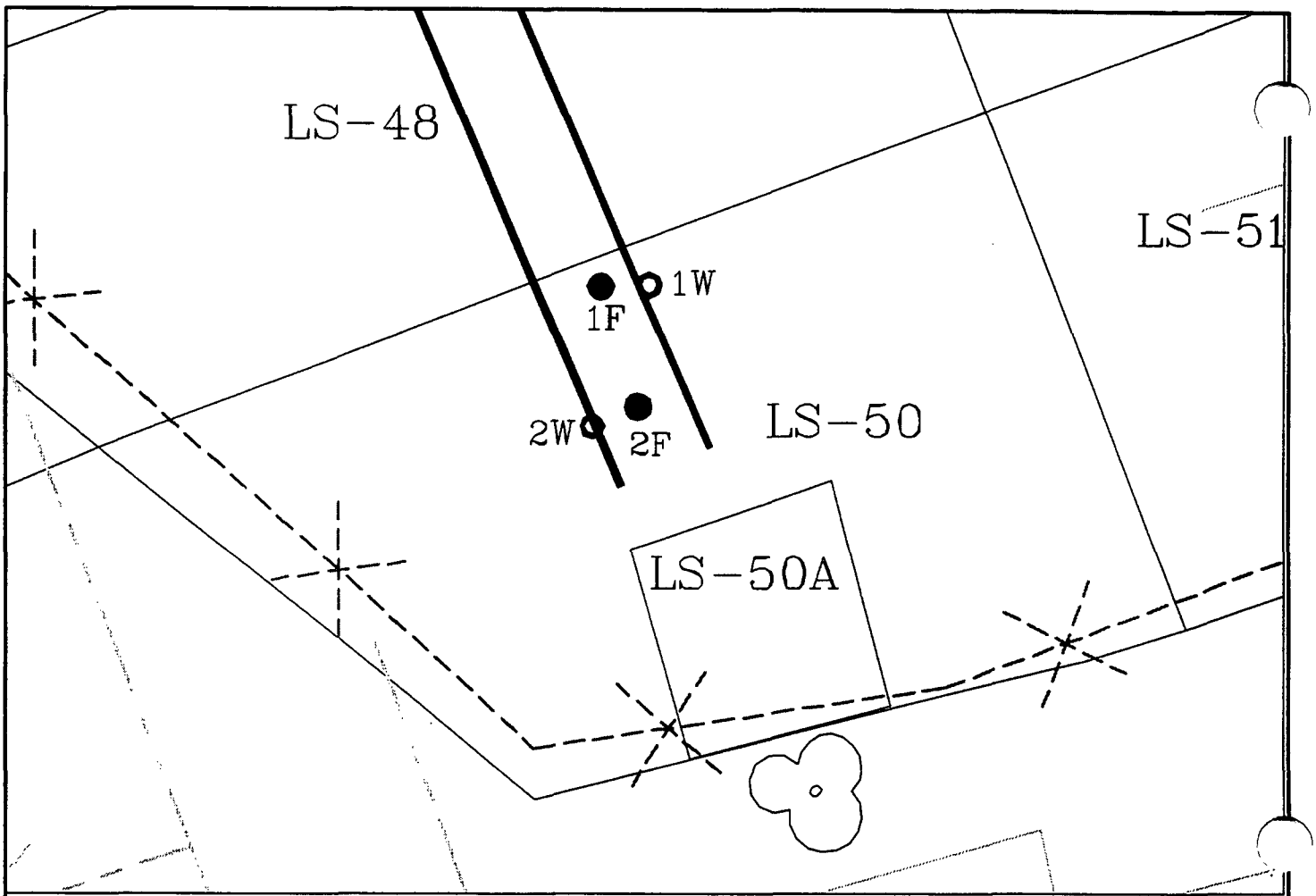
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Tacoma, Washington 98407

DRAWING FILE NUMBER: TAC LS48P1BC4
SHEET NUMBER: LS-48
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS50-P1B-1F
1 SIDEWALL 1' DEPTH	<100	LS50-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LS50-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS50-P1B-1W-C
FLOOR 2	<100	LS50-P1B-2F
2 SIDEWALL 1' DEPTH	823	LS50-P1B-2W-A
2 SIDEWALL 2' DEPTH	300	LS50-P1B-2W-B
2 SIDEWALL 3' DEPTH	330	LS50-P1B-2W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-50 PHASE 1B (10 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
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3rd		
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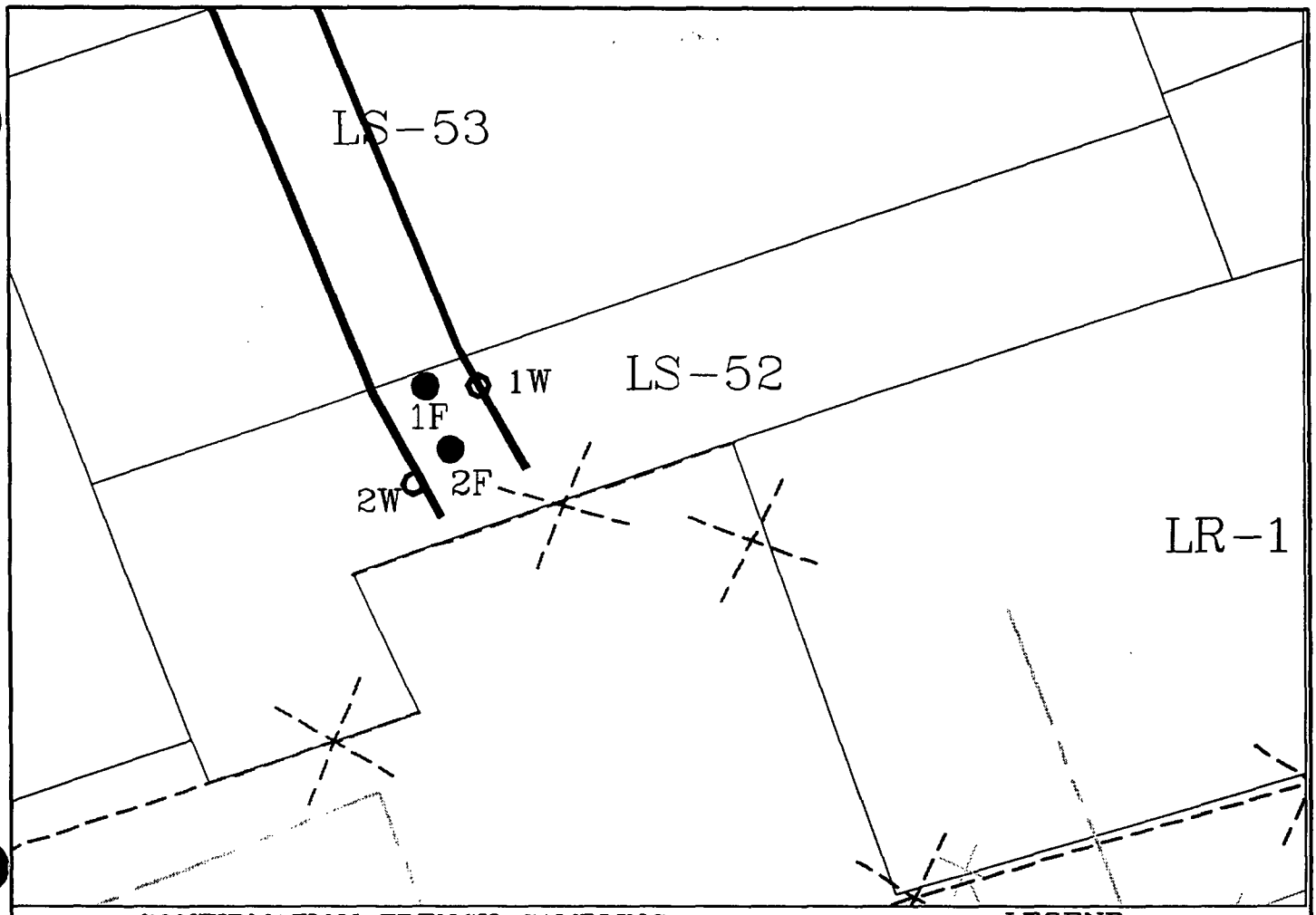
Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS50P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER LS-50
REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS52-P1B-1F
1 SIDEWALL 1' DEPTH	902	LS52-P1B-1W-A
1 SIDEWALL 2' DEPTH	1000	LS52-P1B-IW-B
1 SIDEWALL 3' DEPTH	953	LS52-P1B-1W-C
FLOOR 2	<100	LS52-P1B-2F
2 SIDEWALL 1' DEPTH	1300	LS52-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LS52-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS52-P1B-2W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-52 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

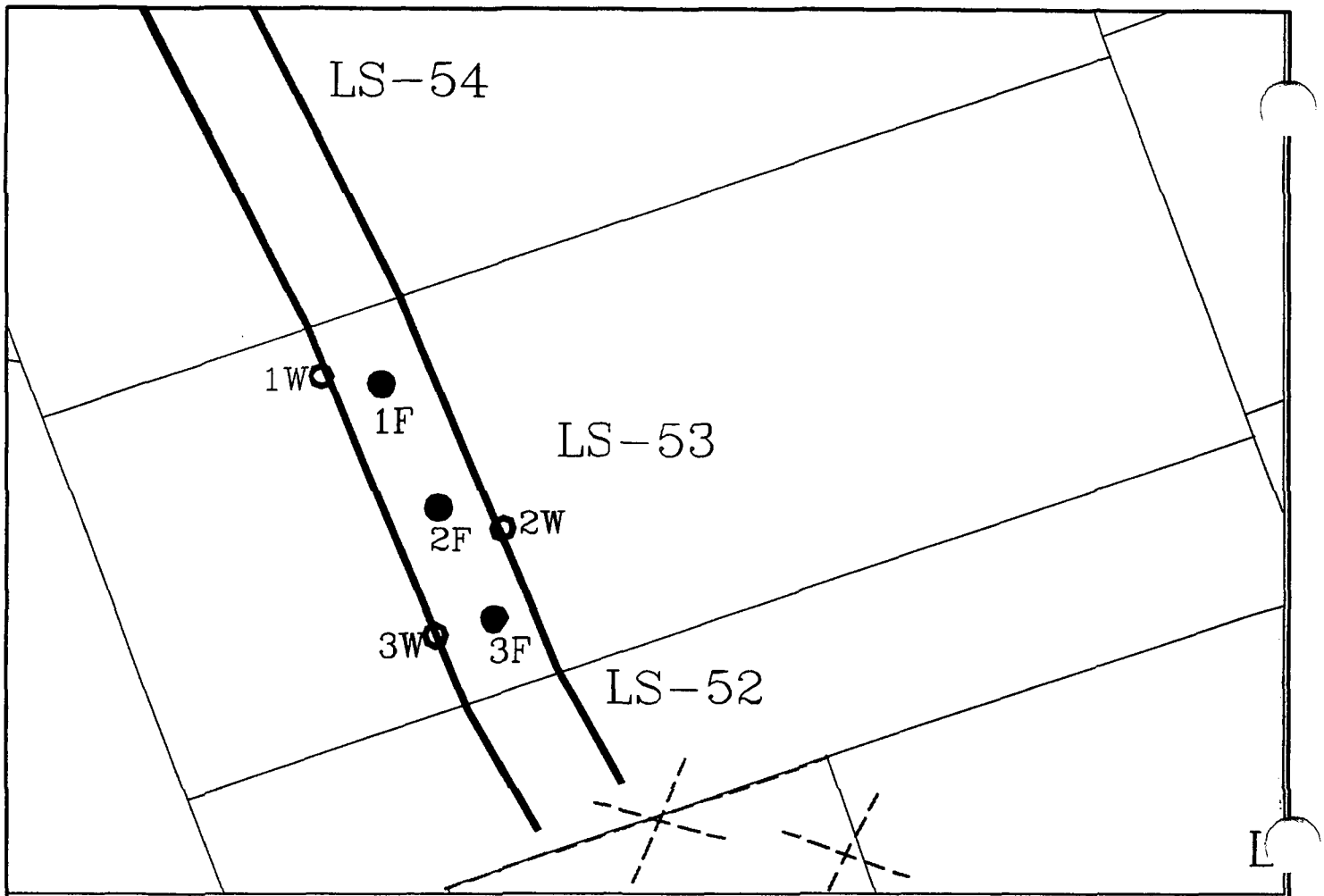
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY: DGFG
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

Tacoma, Washington 98407

DRAWING FILE NUMBER: TAC LS52P1BC4
AUTOCAD REL. 2000 SOLAVORD (DWG)
SHEET NUMBER: LS-52
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS53-P1B-1F
1 SIDEWALL 1' DEPTH	<100	LS53-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LS53-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS53-P1B-1W-C
FLOOR 2	<100	LS53-P1B-2F
2 SIDEWALL 1' DEPTH	2100	LS53-P1B-2W-A
2 SIDEWALL 2' DEPTH	1400	LS53-P1B-2W-B
2 SIDEWALL 3' DEPTH	1700	LS53-P1B-2W-C
FLOOR 3	<100	LS53-P1B-3F
3 SIDEWALL 1' DEPTH	<100	LS53-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS53-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS53-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-53 PHASE 1B (9 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 – 10 FEET – 20 FEET

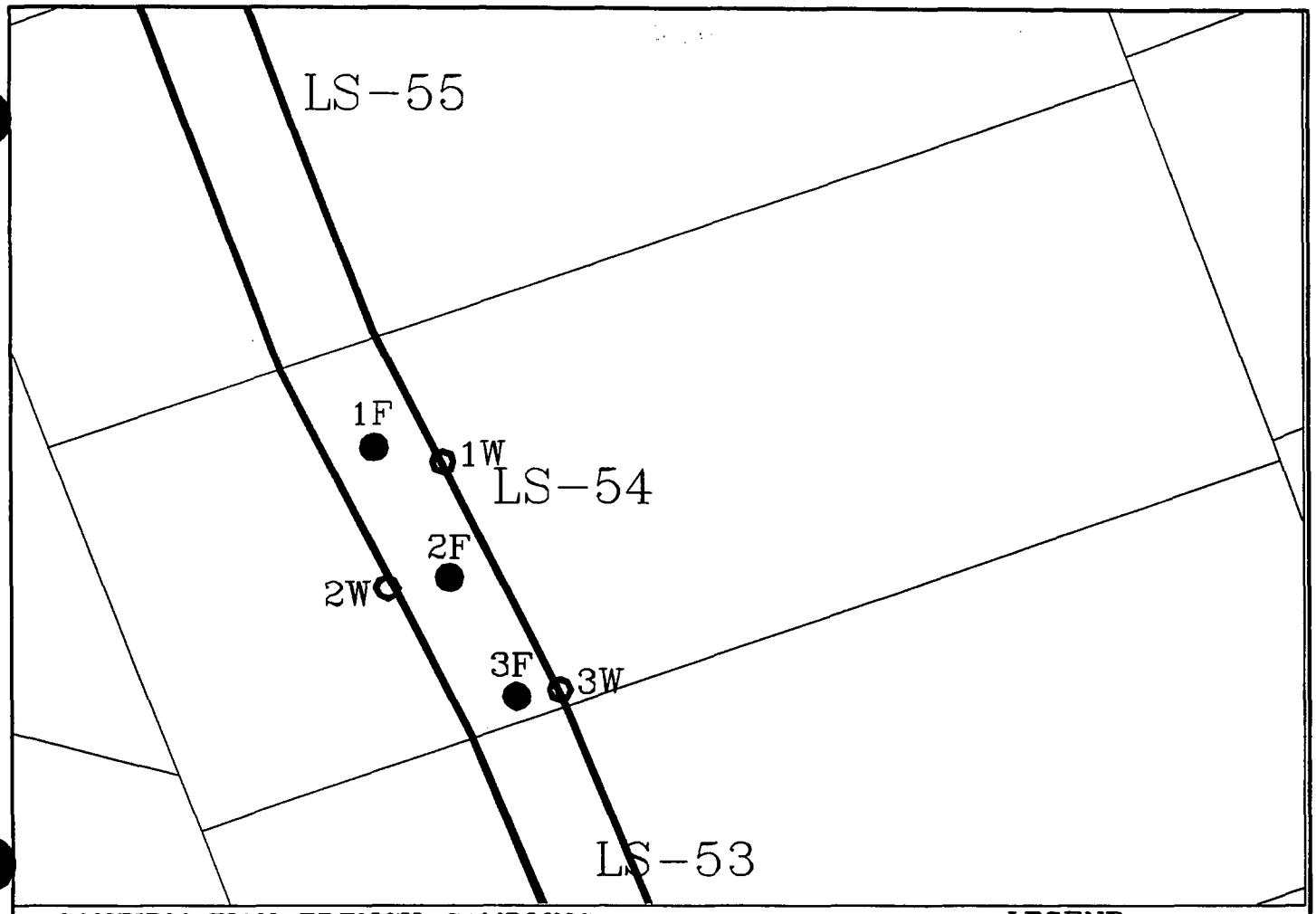
REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY DOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Tacoma, Washington 98407

DRAWING FILE NUMBER: TAC LS53P1BC4
SHEET NUMBER: LS-53
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	176	LS54-P1B-1F
1 SIDEWALL 1' DEPTH	1600	LS54-P1B-1W-A
1 SIDEWALL 2' DEPTH	570	LS54-P1B-IW-B
1 SIDEWALL 3' DEPTH	257	LS54-P1B-1W-C
FLOOR 2	141	LS54-P1B-2F
2 SIDEWALL 1' DEPTH	120	LS54-P1B-2W-A
2 SIDEWALL 2' DEPTH	237	LS54-P1B-2W-B
2 SIDEWALL 3' DEPTH	114	LS54-P1B-2W-C
FLOOR 3	155	LS54-P1B-3F
3 SIDEWALL 1' DEPTH	624	LS54-P1B-3W-A
3 SIDEWALL 2' DEPTH	2100	LS54-P1B-3W-B
3 SIDEWALL 3' DEPTH	1900	LS54-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-54 PHASE 1B (9 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

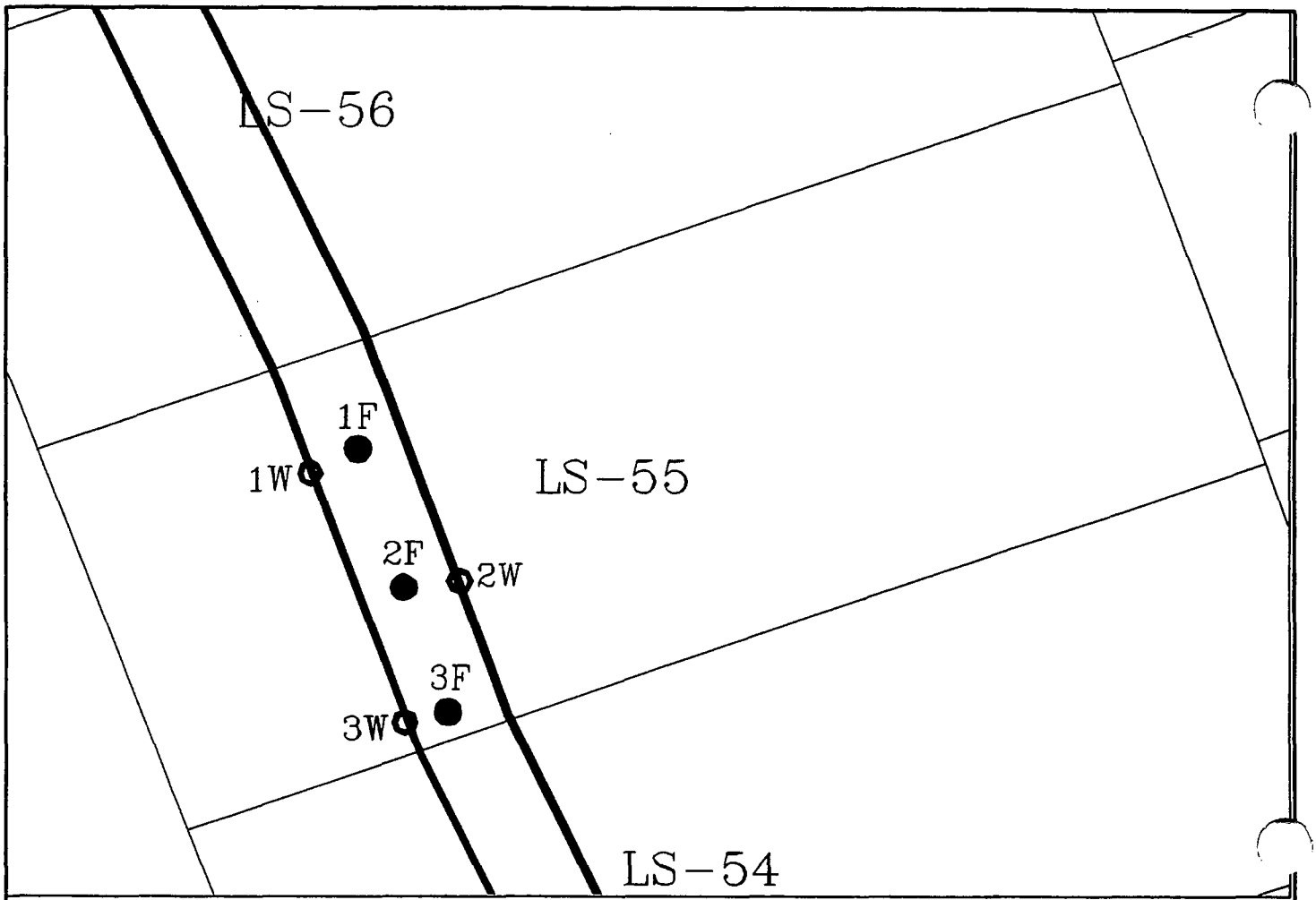
REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS54P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
LS-54
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	388	LS55-P1B-1F
1 SIDEWALL 1' DEPTH	681	LS55-P1B-1W-A
1 SIDEWALL 2' DEPTH	455	LS55-P1B-IW-B
1 SIDEWALL 3' DEPTH	557	LS55-P1B-1W-C
FLOOR 2	328	LS55-P1B-2F
2 SIDEWALL 1' DEPTH	338	LS55-P1B-2W-A
2 SIDEWALL 2' DEPTH	758	LS55-P1B-2W-B
2 SIDEWALL 3' DEPTH	345	LS55-P1B-2W-C
FLOOR 3	234	LS55-P1B-3F
3 SIDEWALL 1' DEPTH	403	LS55-P1B-3W-A
3 SIDEWALL 2' DEPTH	473	LS55-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS55-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-55 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
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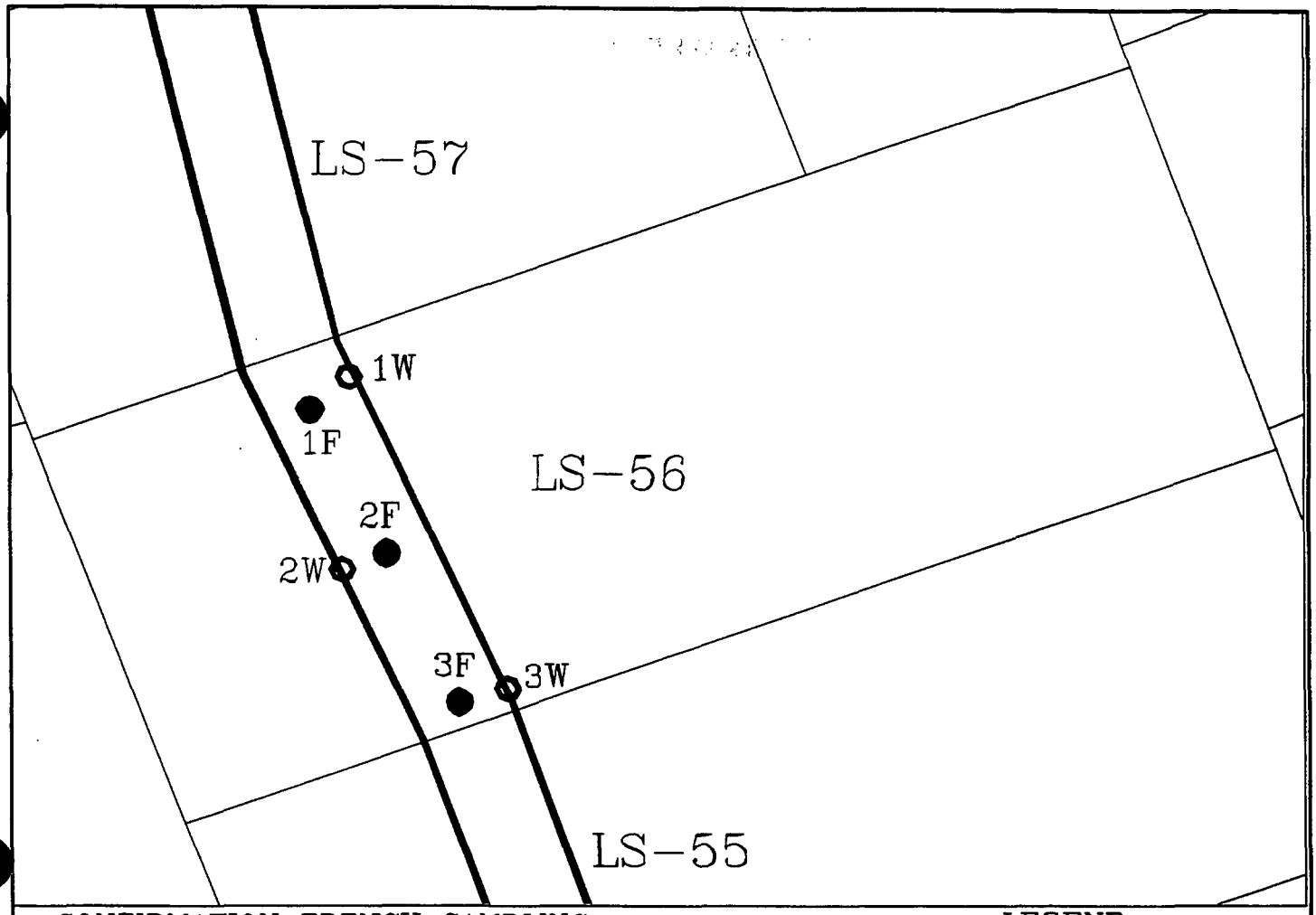
Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Everett, Washington 98207

DRAWING FILE NUMBER: TAC LS55P1BC4
SHEET NUMBER: LS-55
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	543	LS56-P1B-1F
1 SIDEWALL 1' DEPTH	1800	LS56-P1B-1W-A
1 SIDEWALL 2' DEPTH	958	LS56-P1B-IW-B
1 SIDEWALL 3' DEPTH	1400	LS56-P1B-1W-C
FLOOR 2	376	LS56-P1B-2F
2 SIDEWALL 1' DEPTH	955	LS56-P1B-2W-A
2 SIDEWALL 2' DEPTH	484	LS56-P1B-2W-B
2 SIDEWALL 3' DEPTH	436	LS56-P1B-2W-C
FLOOR 3	694	LS56-P1B-3F
3 SIDEWALL 1' DEPTH	1510	LS56-P1B-3W-A
3 SIDEWALL 2' DEPTH	998	LS56-P1B-3W-B
3 SIDEWALL 3' DEPTH	593	LS56-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-56 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
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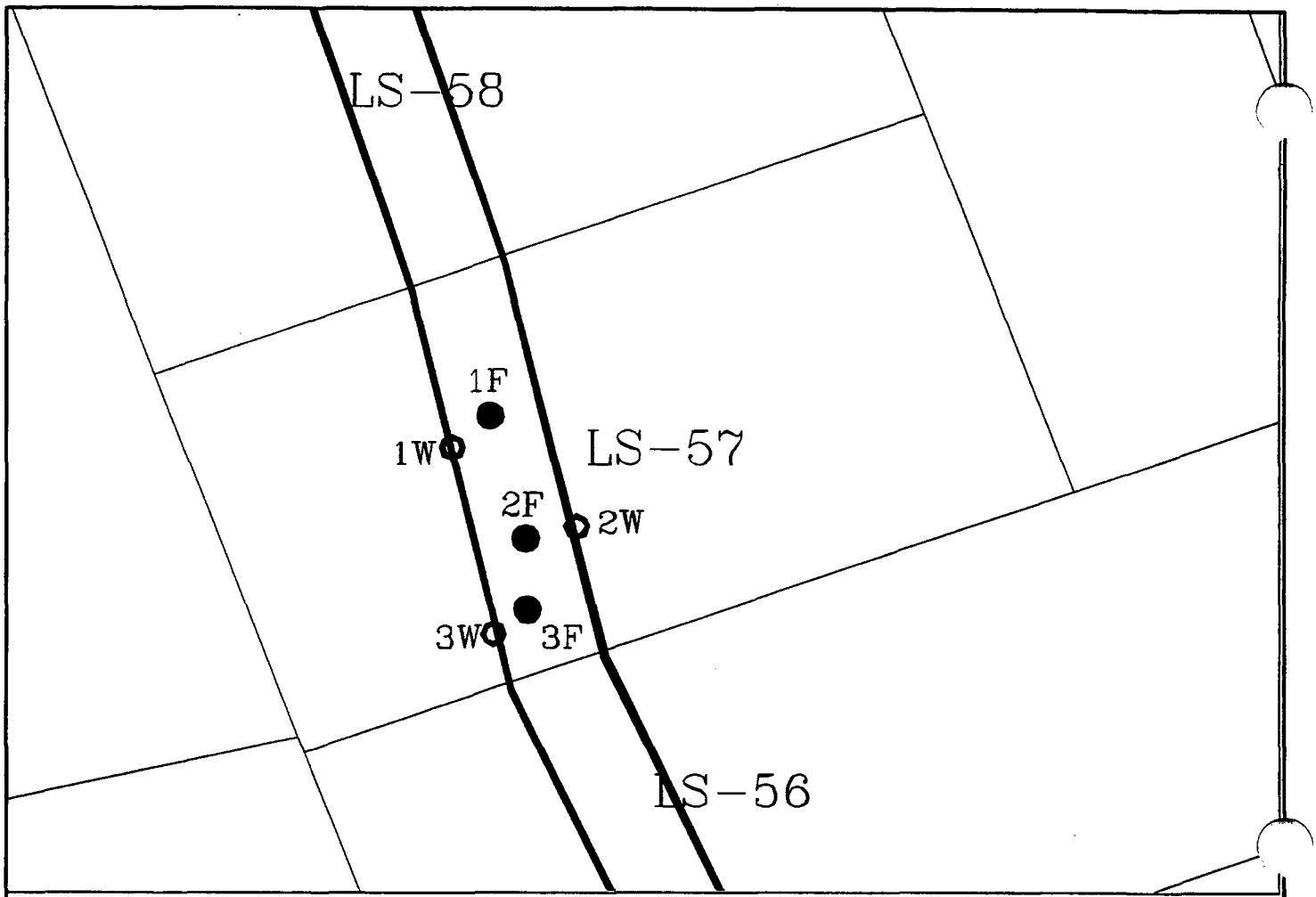
Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER: TAC LS56P1BC4
SHEET NUMBER: LS-56

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	729	LS57-P1B-1F
1 SIDEWALL 1' DEPTH	2850	LS57-P1B-1W-A
1 SIDEWALL 2' DEPTH	2200	LS57-P1B-IW-B
1 SIDEWALL 3' DEPTH	1100	LS57-P1B-1W-C
FLOOR 2	967	LS57-P1B-2F
2 SIDEWALL 1' DEPTH	2300	LS57.-P1B-2W-A
2 SIDEWALL 2' DEPTH	2180	LS57-P1B-2W-B
2 SIDEWALL 3' DEPTH	444	LS57-P1B-2W-C
FLOOR 3	404	LS57-P1B-3F
3 SIDEWALL 1' DEPTH	2850	LS57-P1B-3W-A
3 SIDEWALL 2' DEPTH	2100	LS57-P1B-3W-B
3 SIDEWALL 3' DEPTH	558	LS57-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-57 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
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Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

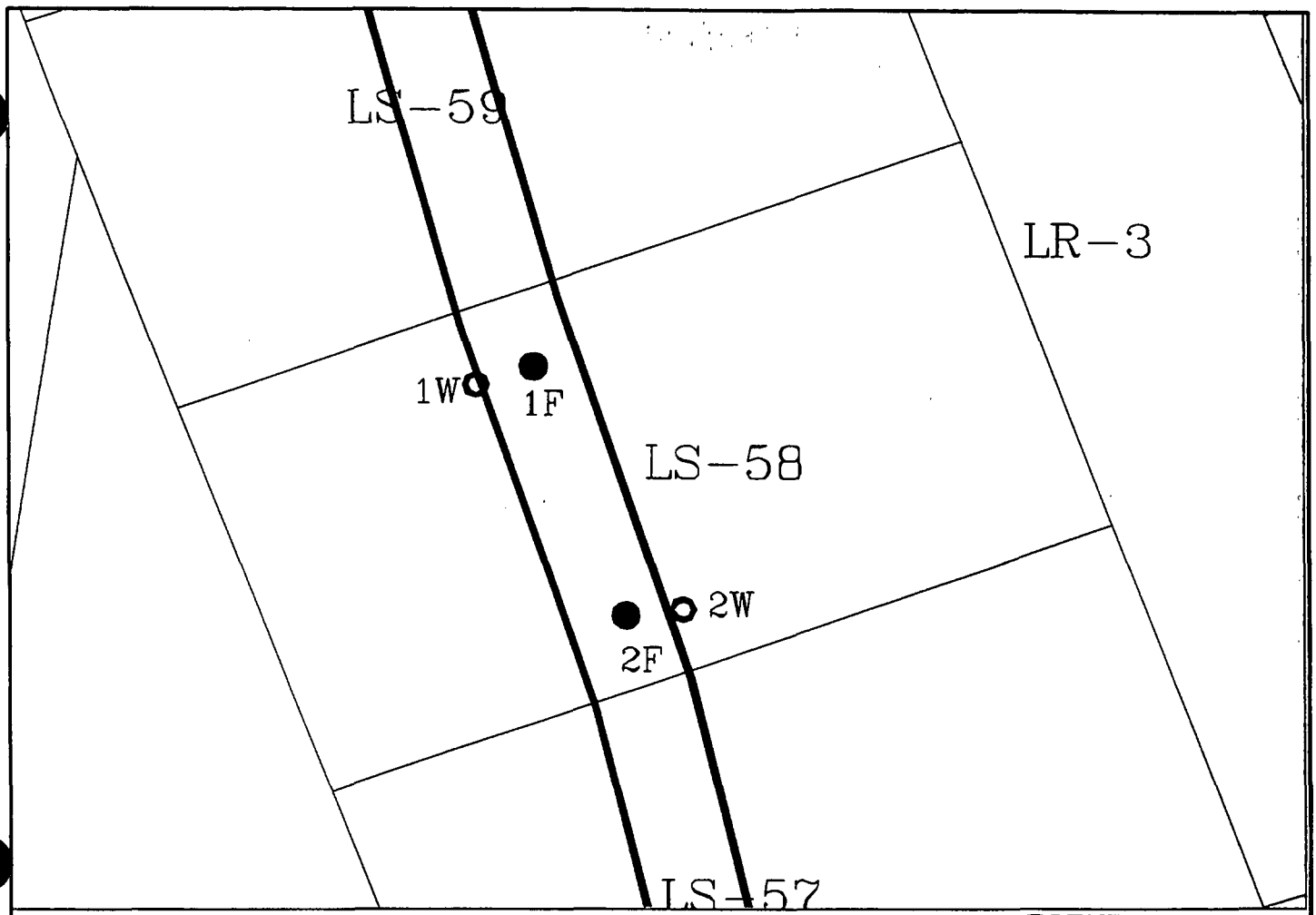
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS57P1BC4
AUTOCAD ENG. BOND DRAWING (DWG)

SHEET NUMBER
LS-57

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	158	LS58-P1B-1F
1 SIDEWALL 1' DEPTH	420	LS58-P1B-1W-A
1 SIDEWALL 2' DEPTH	292	LS58-P1B-IW-B
1 SIDEWALL 3' DEPTH	237	LS58-P1B-1W-C
FLOOR 2	148	LS58-P1B-2F
2 SIDEWALL 1' DEPTH	460	LS58-P1B-2W-A
2 SIDEWALL 2' DEPTH	238	LS58-P1B-2W-B
2 SIDEWALL 3' DEPTH	235	LS58-P1B-2W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-58 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS NO	BY	DATE	
1st			
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Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Tacoma, Washington 98437

DRAWING FILE NUMBER: TAC LS58P1BC4
SHEET NUMBER: LS-58
REV

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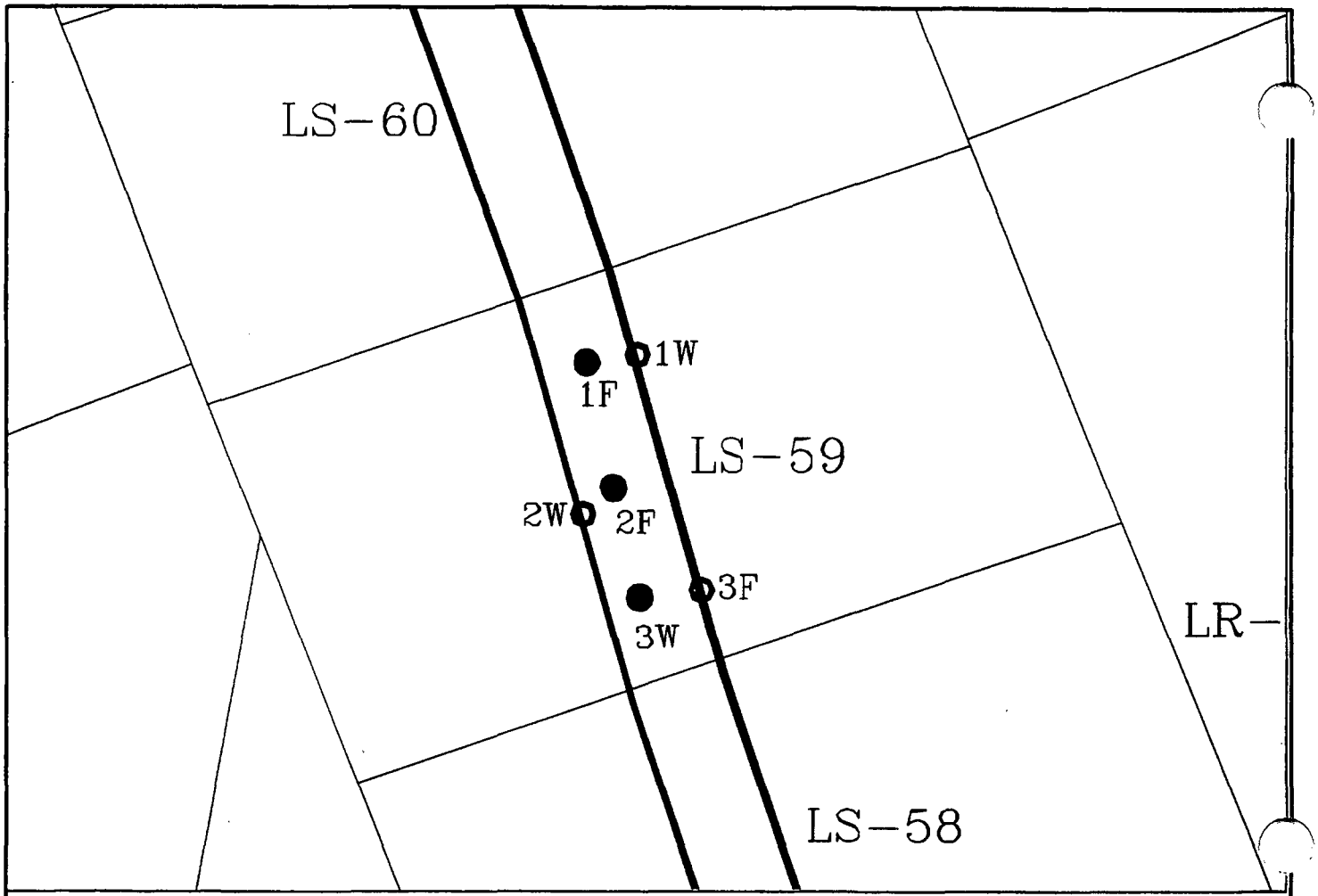

CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	120	LS59-P1B-1F
1 SIDEWALL 1' DEPTH	479	LS59-P1B-1W-A
1 SIDEWALL 2' DEPTH	240	LS59-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS59-P1B-1W-C
FLOOR 2	107	LS59-P1B-2F
2 SIDEWALL 1' DEPTH	353	LS59-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LS59-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS59-P1B-2W-C
FLOOR 3	233	LS59-P1B-3F
3 SIDEWALL 1' DEPTH	448	LS59-P1B-3W-A
3 SIDEWALL 2' DEPTH	203	LS59-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS59-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-59 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
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Project :
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CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER
TAC LS59P1BC4
SHEET NUMBER LS-59
REV

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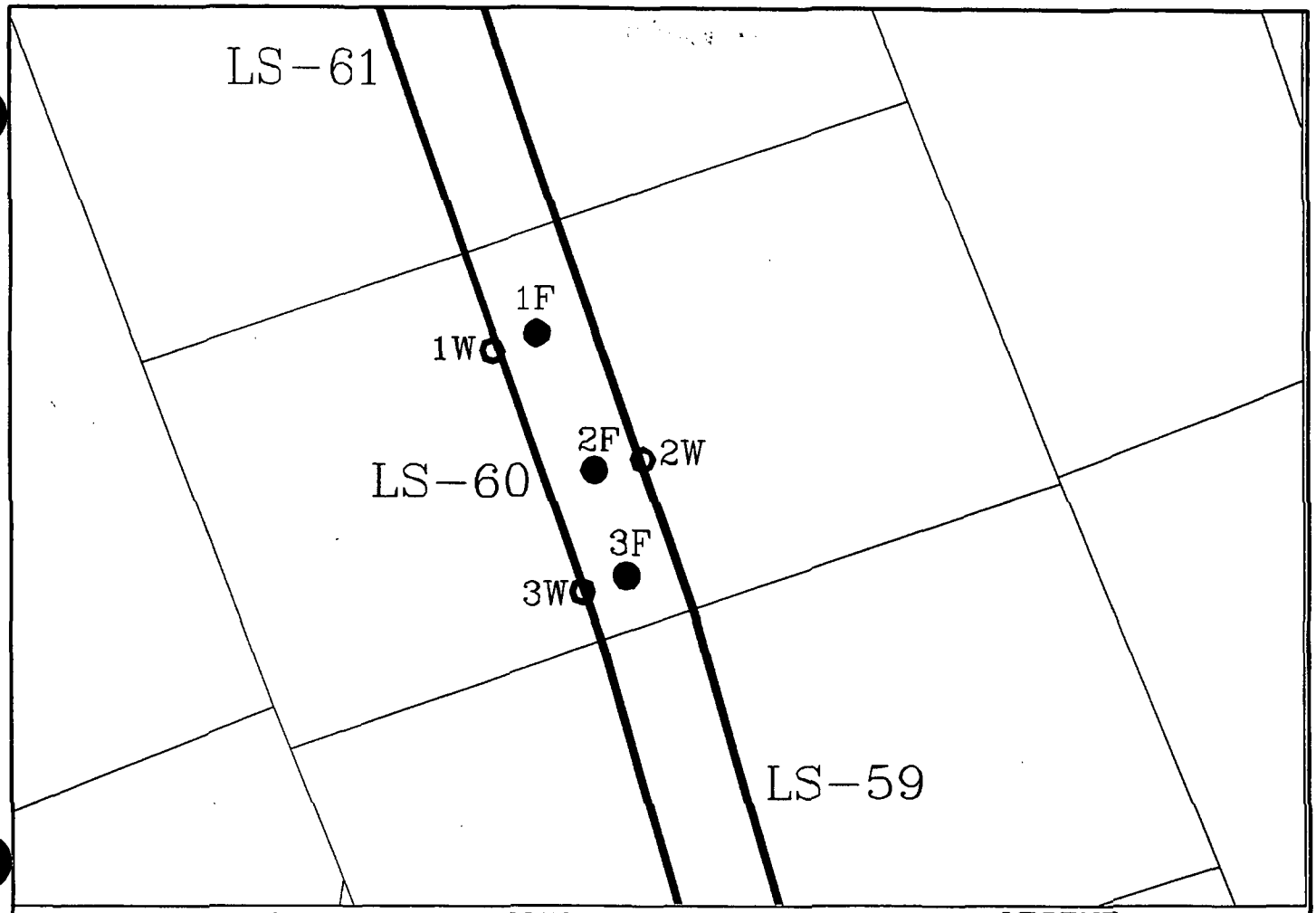

CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	143	LS60-P1B-1F
1 SIDEWALL 1' DEPTH	191	LS60-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LS60-P1B-IW-B
1 SIDEWALL 3' DEPTH	150	LS60-P1B-1W-C
FLOOR 2	<100	LS60-P1B-2F
2 SIDEWALL 1' DEPTH	<100	LS60-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LS60-P1B-2W-B
2 SIDEWALL 3' DEPTH	135	LS60-P1B-2W-C
FLOOR 3	<100	LS60-P1B-3F
3 SIDEWALL 1' DEPTH	<100	LS60-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS60-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS60-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-60 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 – 10 FEET – 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
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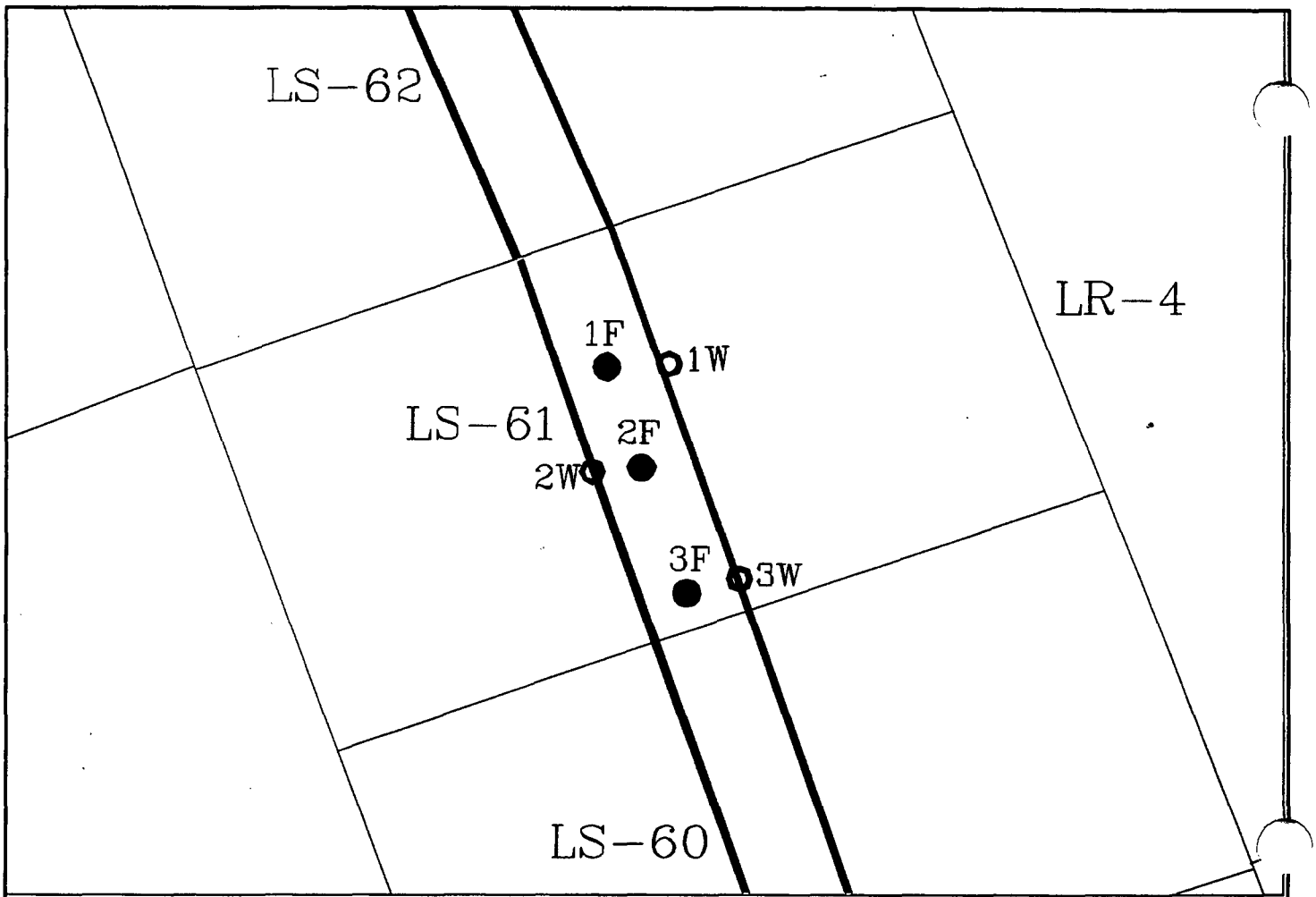
Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER: TAC LS60P1BC4
SHEET NUMBER: LS-60
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS61-P1B-1F
1 SIDEWALL 1' DEPTH	310	LS61-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LS61-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS61-P1B-1W-C
FLOOR 2	<100	LS61-P1B-2F
2 SIDEWALL 1' DEPTH	256	LS61-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LS61-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS61-P1B-2W-C
FLOOR 3	<100	LS61-P1B-3F
3 SIDEWALL 1' DEPTH	297	LS61-P1B-3W-A
3 SIDEWALL 2' DEPTH	170	LS61-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS61-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-61 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

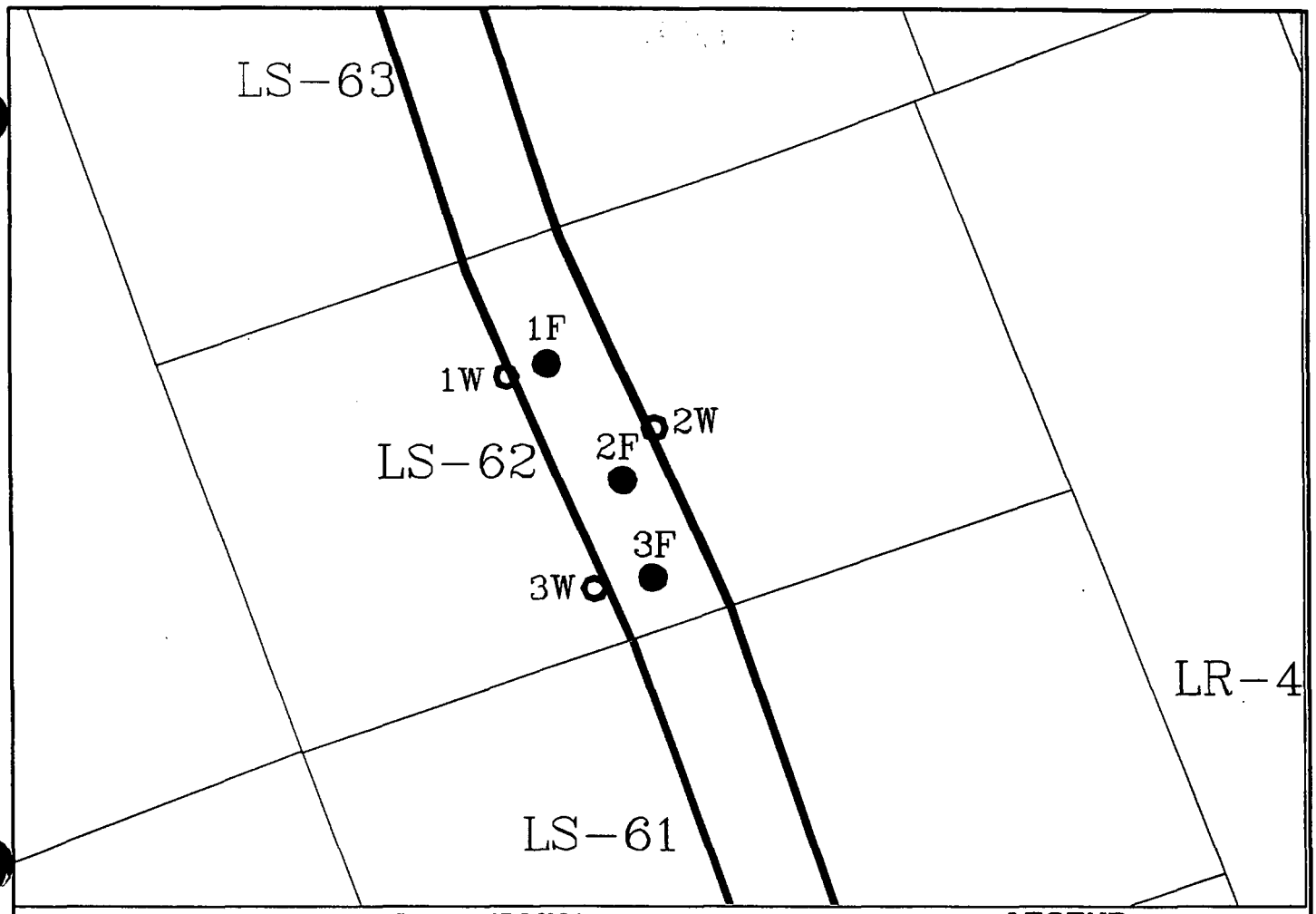
REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY DDPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS61P1BC4
AUTOCAD ENL. 2000 DRAWING (DWG)
SHEET NUMBER LS-61
REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS62-P1B-1F
1 SIDEWALL 1' DEPTH	567	LS62-P1B-1W-A
1 SIDEWALL 2' DEPTH	268	LS62-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS62-P1B-1W-C
FLOOR 2	<100	LS62-P1B-2F
2 SIDEWALL 1' DEPTH	212	LS62-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LS62-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS62-P1B-2W-C
FLOOR 3	<100	LS62-P1B-3F
3 SIDEWALL 1' DEPTH	297	LS62-P1B-3W-A
3 SIDEWALL 2' DEPTH	170	LS62-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS62-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-62 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

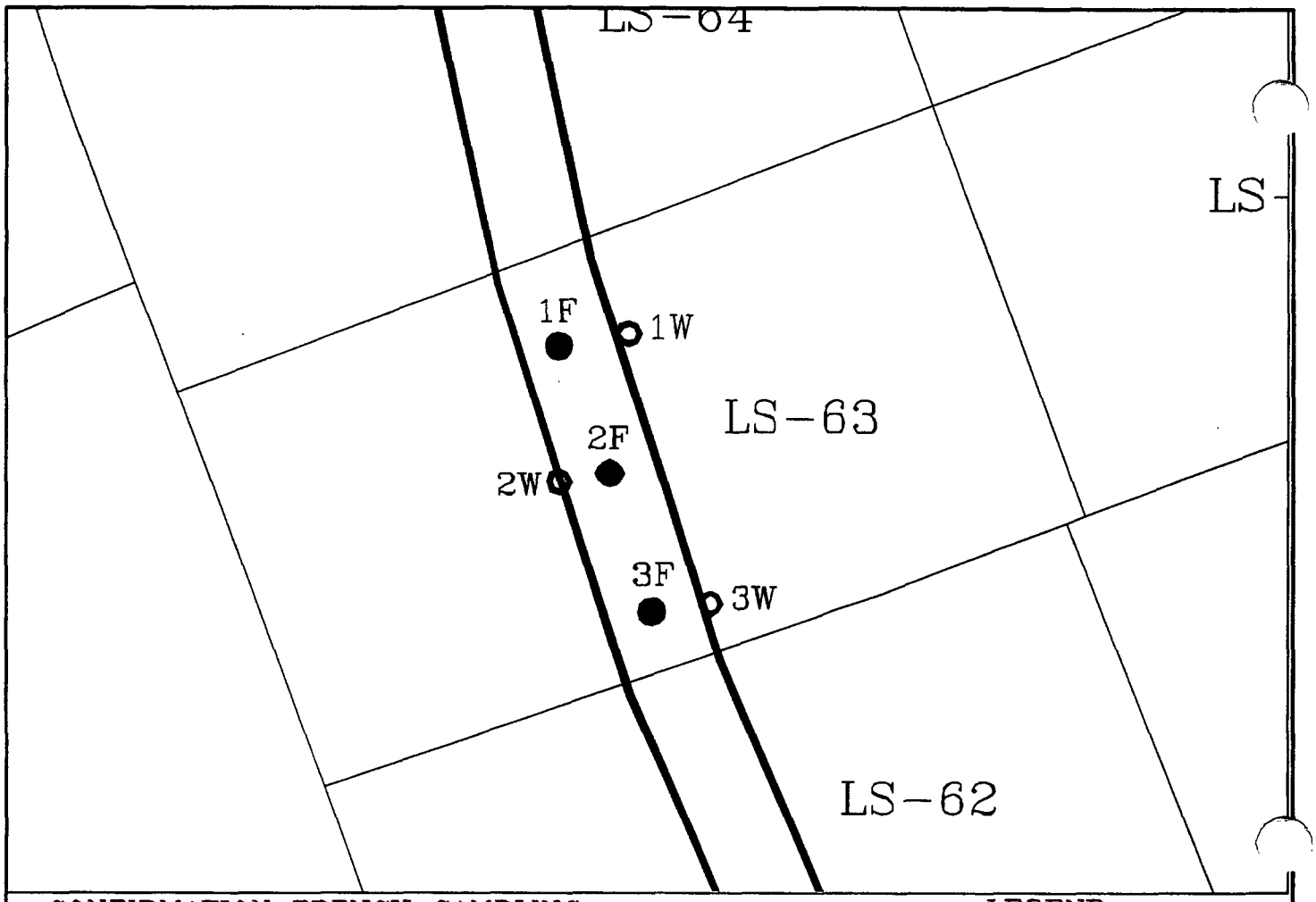
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Everett, Washington 98207

DRAWING FILE NUMBER
TAC LS62P1BC4
SHEET NUMBER
LS-62
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS63-P1B-1F
1 SIDEWALL 1' DEPTH	557	LS63-P1B-1W-A
1 SIDEWALL 2' DEPTH	374	LS63-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS63-P1B-1W-C
FLOOR 2	<100	LS63-P1B-2F
2 SIDEWALL 1' DEPTH	400	LS63-P1B-2W-A
2 SIDEWALL 2' DEPTH	142	LS63-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS63-P1B-2W-C
FLOOR 3	134	LS63-P1B-3F
3 SIDEWALL 1' DEPTH	285	LS63-P1B-3W-A
3 SIDEWALL 2' DEPTH	363	LS63-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS63-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-63 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
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Project :
DRAWN BY DDFG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

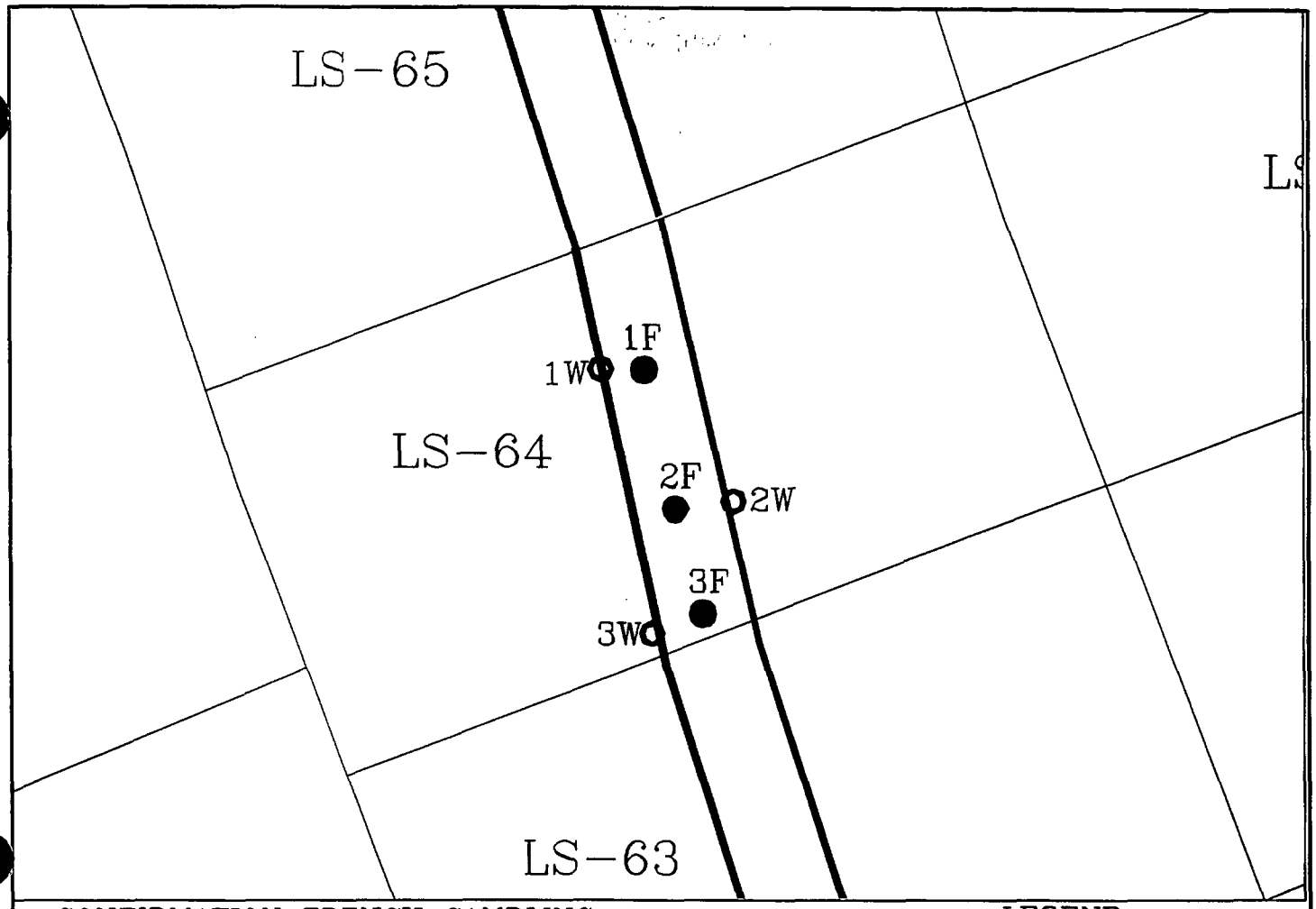
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS63P1BC4
AUTOCAD REL. 2000 SHAWING (DWG)

SHEET NUMBER
LS-63

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS64-P1B-1F
1 SIDEWALL 1' DEPTH	<100	LS64-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LS64-P1B-IW-B
1 SIDEWALL 3' DEPTH	133	LS64-P1B-1W-C
FLOOR 2	<100	LS64-P1B-2F
2 SIDEWALL 1' DEPTH	252	LS64-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LS64-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS64-P1B-2W-C
FLOOR 3	<100	LS64-P1B-3F
3 SIDEWALL 1' DEPTH	<100	LS64-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS64-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS64-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-64 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Puyallup, Washington 98371

DRAWING FILE NUMBER: TAC LS64P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER: LS-64

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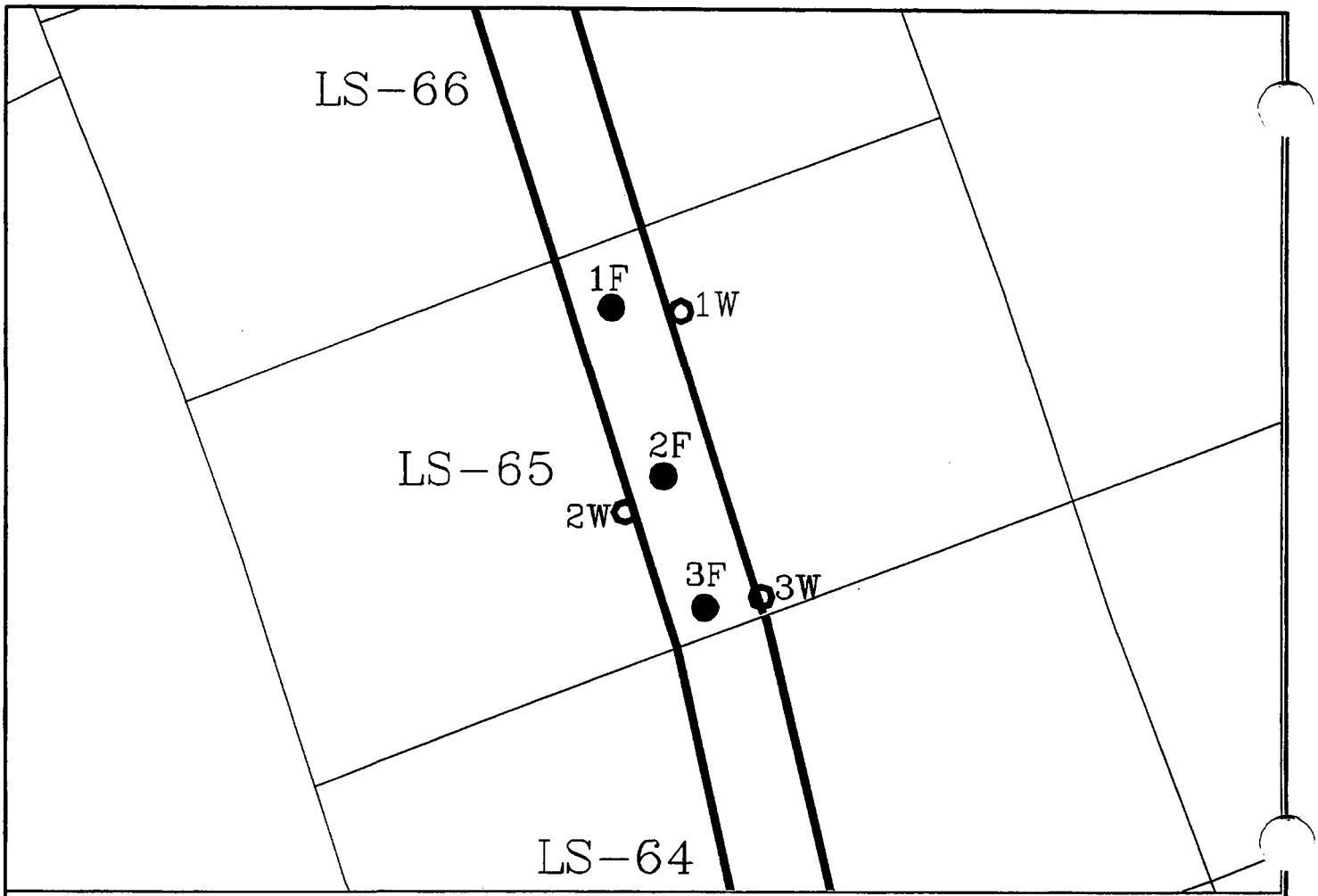
NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS65-P1B-1F
1 SIDEWALL 1' DEPTH	650	LS65-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LS65-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS65-P1B-1W-C
FLOOR 2	<100	LS65-P1B-2F
2 SIDEWALL 1' DEPTH	171	LS65-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LS65-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS65-P1B-2W-C
FLOOR 3	<100	LS65-P1B-3F
3 SIDEWALL 1' DEPTH	<100	LS65-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS65-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS65-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-65 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
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Project :
DRAWN BY DDFG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

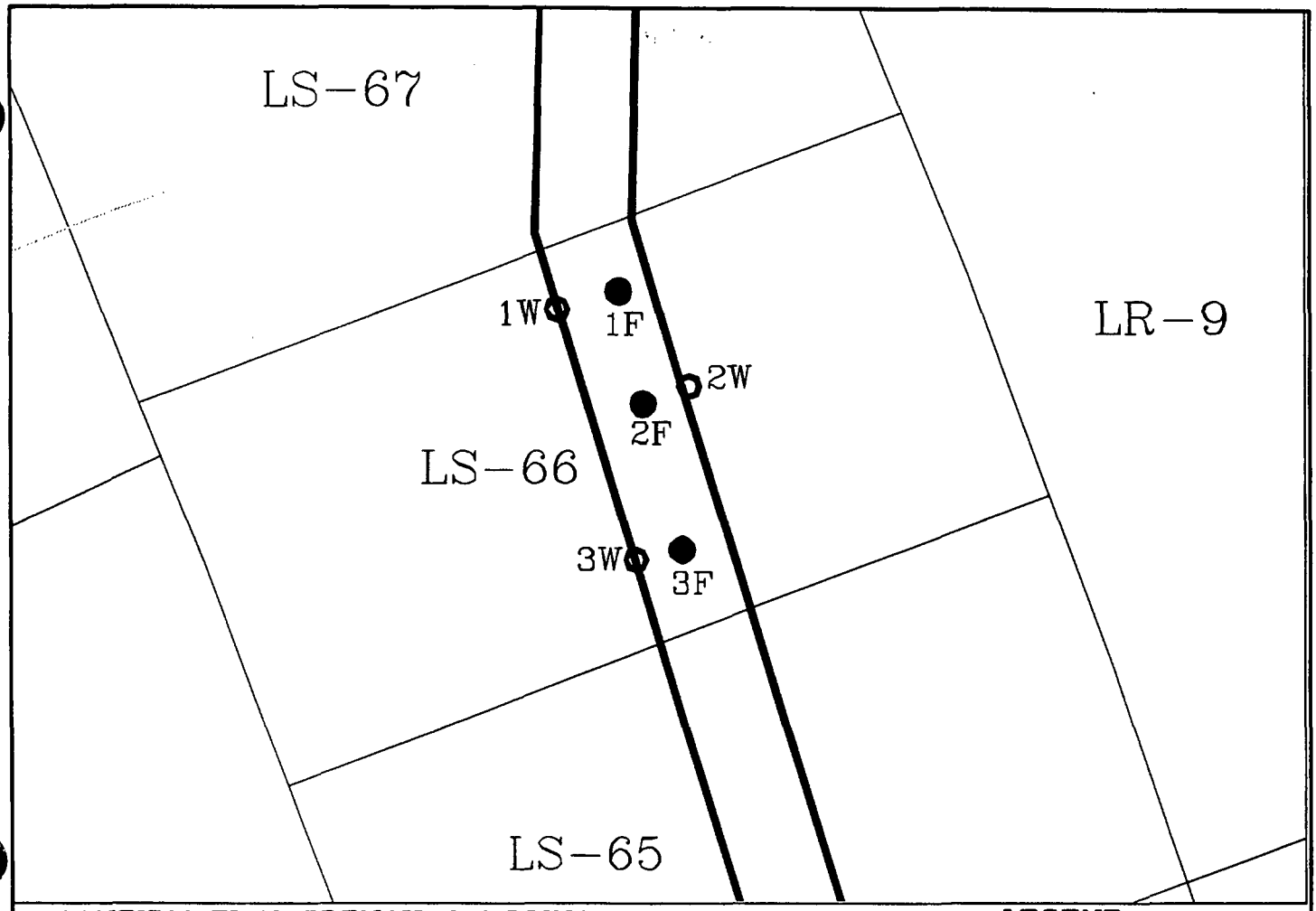
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS65P1BC4
AUTOCAD RIL. DOCD DRAWING (DWG)

SHEET NUMBER
LS-65

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS66-P1B-1F
1 SIDEWALL 1' DEPTH	492	LS66-P1B-1W-A
1 SIDEWALL 2' DEPTH	387	LS66-P1B-IW-B
1 SIDEWALL 3' DEPTH	438	LS66-P1B-1W-C
FLOOR 2	<100	LS66-P1B-2F
2 SIDEWALL 1' DEPTH	351	LS66-P1B-2W-A
2 SIDEWALL 2' DEPTH	826	LS66-P1B-2W-B
2 SIDEWALL 3' DEPTH	1300	LS66-P1B-2W-C
FLOOR 3	235	LS66-P1B-3F
3 SIDEWALL 1' DEPTH	<100	LS66-P1B-3W-A
3 SIDEWALL 2' DEPTH	320	LS66-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS66-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-66 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
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Project :
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SCALE: AS NOTED

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SHEET NUMBER: LS-66
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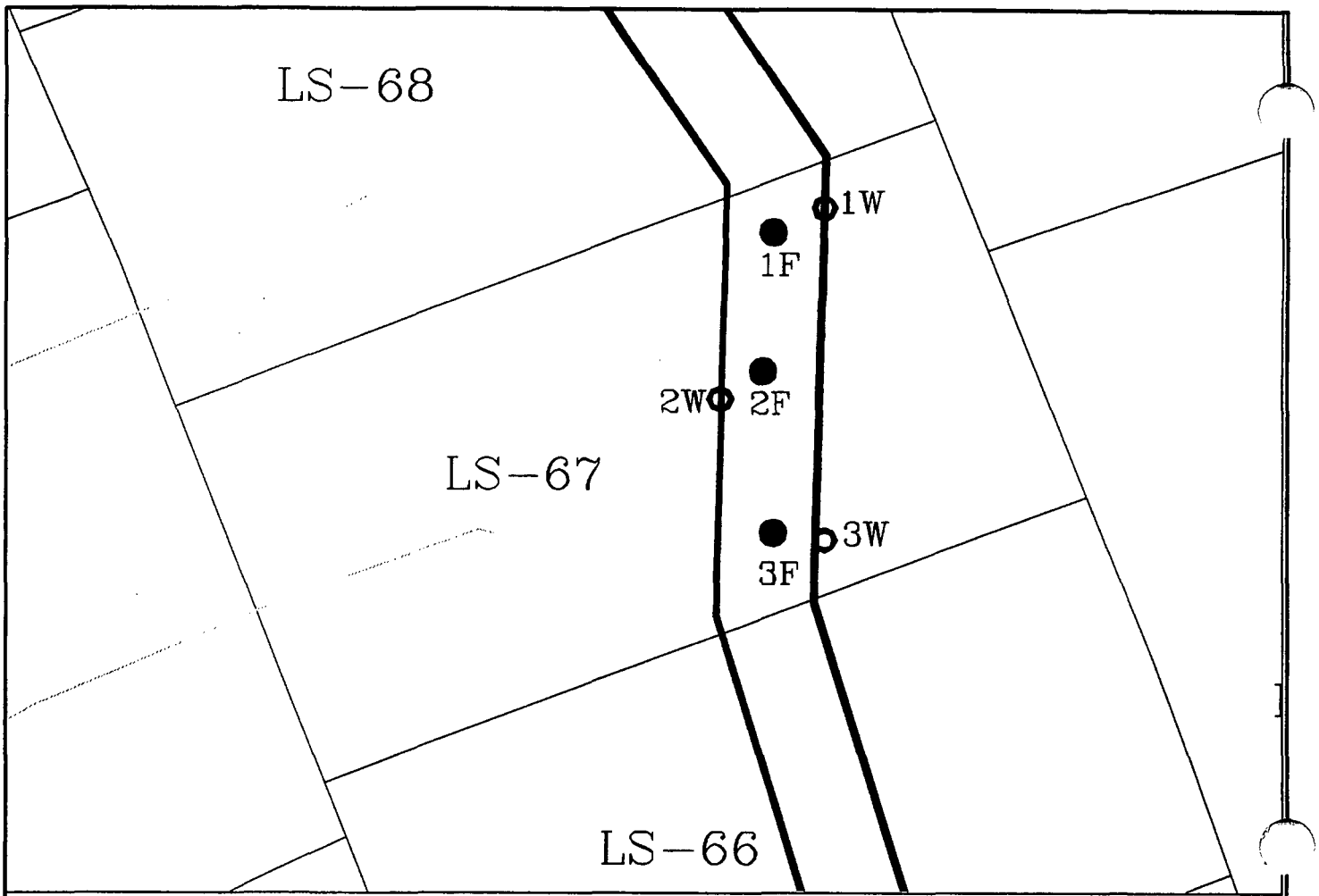

CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	373	LS67-P1B-1F
1 SIDEWALL 1' DEPTH	900	LS67-P1B-1W-A
1 SIDEWALL 2' DEPTH	834	LS67-P1B-IW-B
1 SIDEWALL 3' DEPTH	580	LS67-P1B-1W-C
FLOOR 2	320	LS67-P1B-2F
2 SIDEWALL 1' DEPTH	310	LS67-P1B-2W-A
2 SIDEWALL 2' DEPTH	375	LS67-P1B-2W-B
2 SIDEWALL 3' DEPTH	302	LS67-P1B-2W-C
FLOOR 3	974	LS67-P1B-3F
3 SIDEWALL 1' DEPTH	1000	LS67-P1B-3W-A
3 SIDEWALL 2' DEPTH	585	LS67-P1B-3W-B
3 SIDEWALL 3' DEPTH	535	LS67-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-67 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
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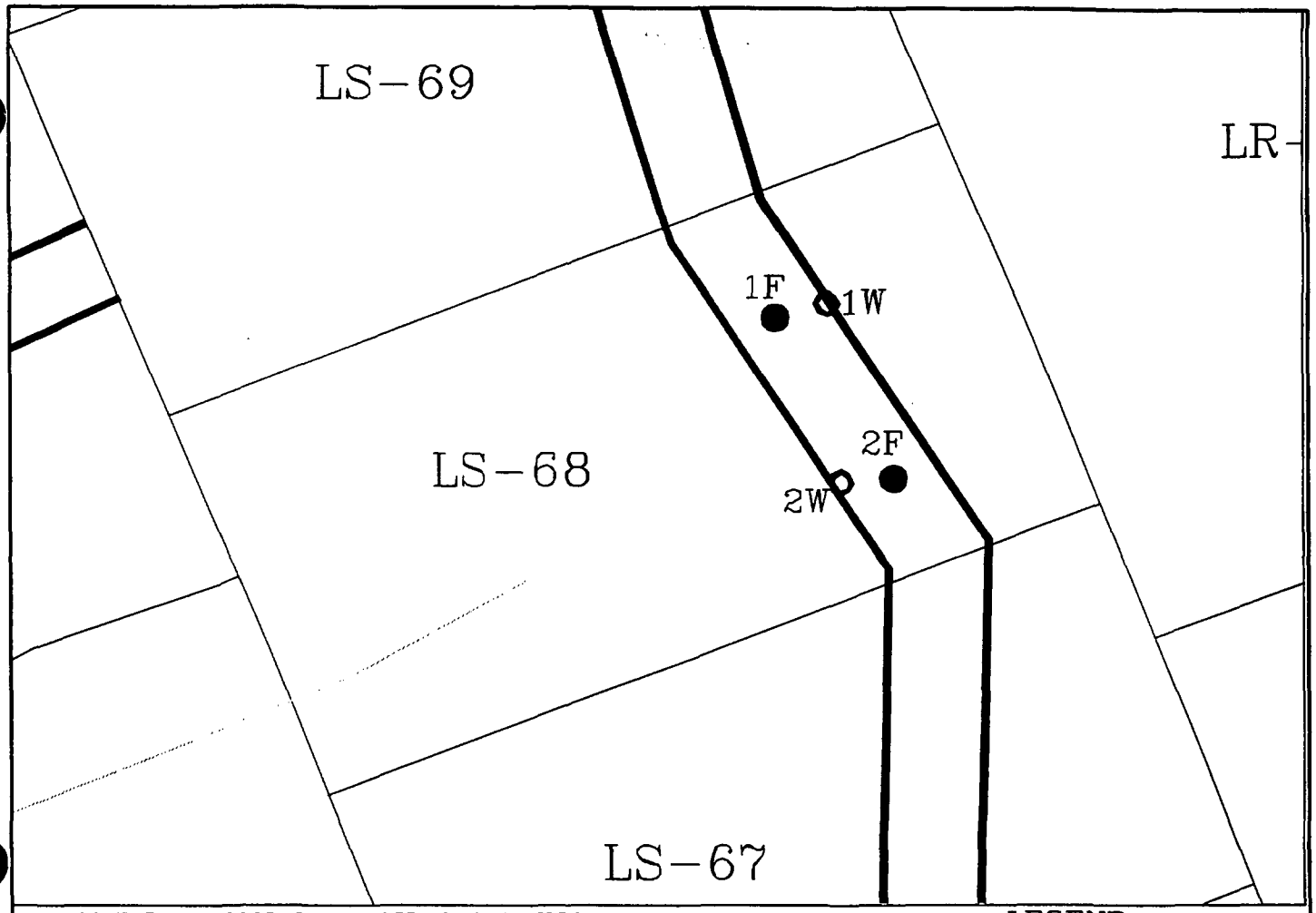
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS67P1BC4
AUTOCAD REL. DOED DRAWING (DWG)
SHEET NUMBER
LS-67
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	165	LS68-P1B-1F
1 SIDEWALL 1' DEPTH	480	LS68-P1B-1W-A
1 SIDEWALL 2' DEPTH	677	LS68-P1B-IW-B
1 SIDEWALL 3' DEPTH	394	LS68-P1B-1W-C
FLOOR 2	773	LS68-P1B-2F
2 SIDEWALL 1' DEPTH	490	LS68-P1B-2W-A
2 SIDEWALL 2' DEPTH	654	LS68-P1B-2W-B
2 SIDEWALL 3' DEPTH	413	LS68-P1B-2W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-68 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
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Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

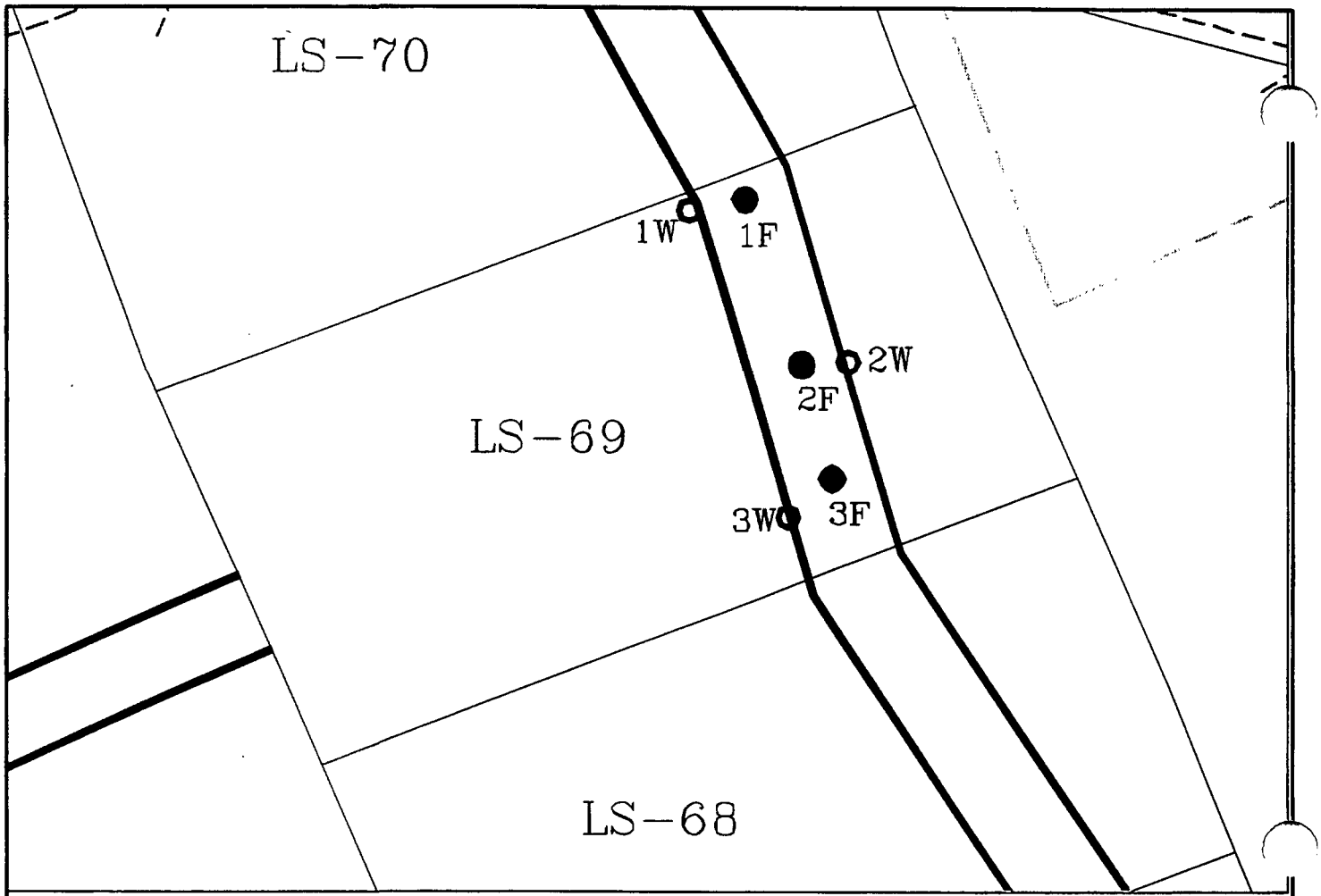
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS68P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-68

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	113	LS69-P1B-1F
1 SIDEWALL 1' DEPTH	280	LS69-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LS69-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS69-P1B-1W-C
FLOOR 2	<100	LS69-P1B-2F
2 SIDEWALL 1' DEPTH	700	LS69-P1B-2W-A
2 SIDEWALL 2' DEPTH	411	LS69-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS69-P1B-2W-C
FLOOR 3	<100	LS69-P1B-3F
3 SIDEWALL 1' DEPTH	418	LS69-P1B-3W-A
3 SIDEWALL 2' DEPTH	180	LS69-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS69-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-69 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
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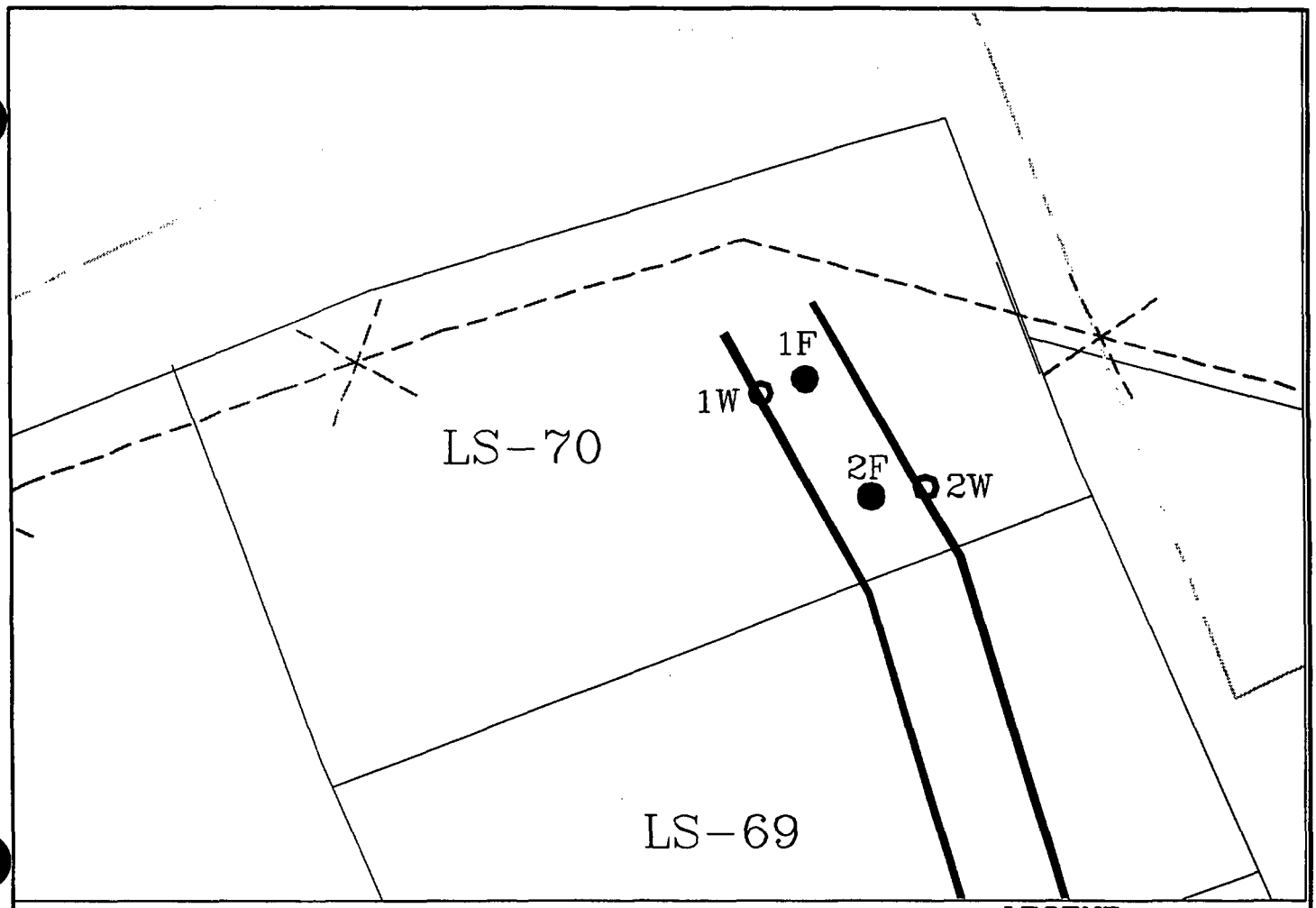
Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER: TAC LS69P1BC4
SHEET NUMBER: LS-69
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS70-P1B-1F
1 SIDEWALL 1' DEPTH	730	LS70-P1B-1W-A
1 SIDEWALL 2' DEPTH	210	LS70-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS70-P1B-1W-C
FLOOR 2	301	LS70-P1B-2F
2 SIDEWALL 1' DEPTH	2200	LS70-P1B-2W-A
2 SIDEWALL 2' DEPTH	260	LS70-P1B-2W-B
2 SIDEWALL 3' DEPTH	404	LS70-P1B-2W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-70 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE
1st		
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Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

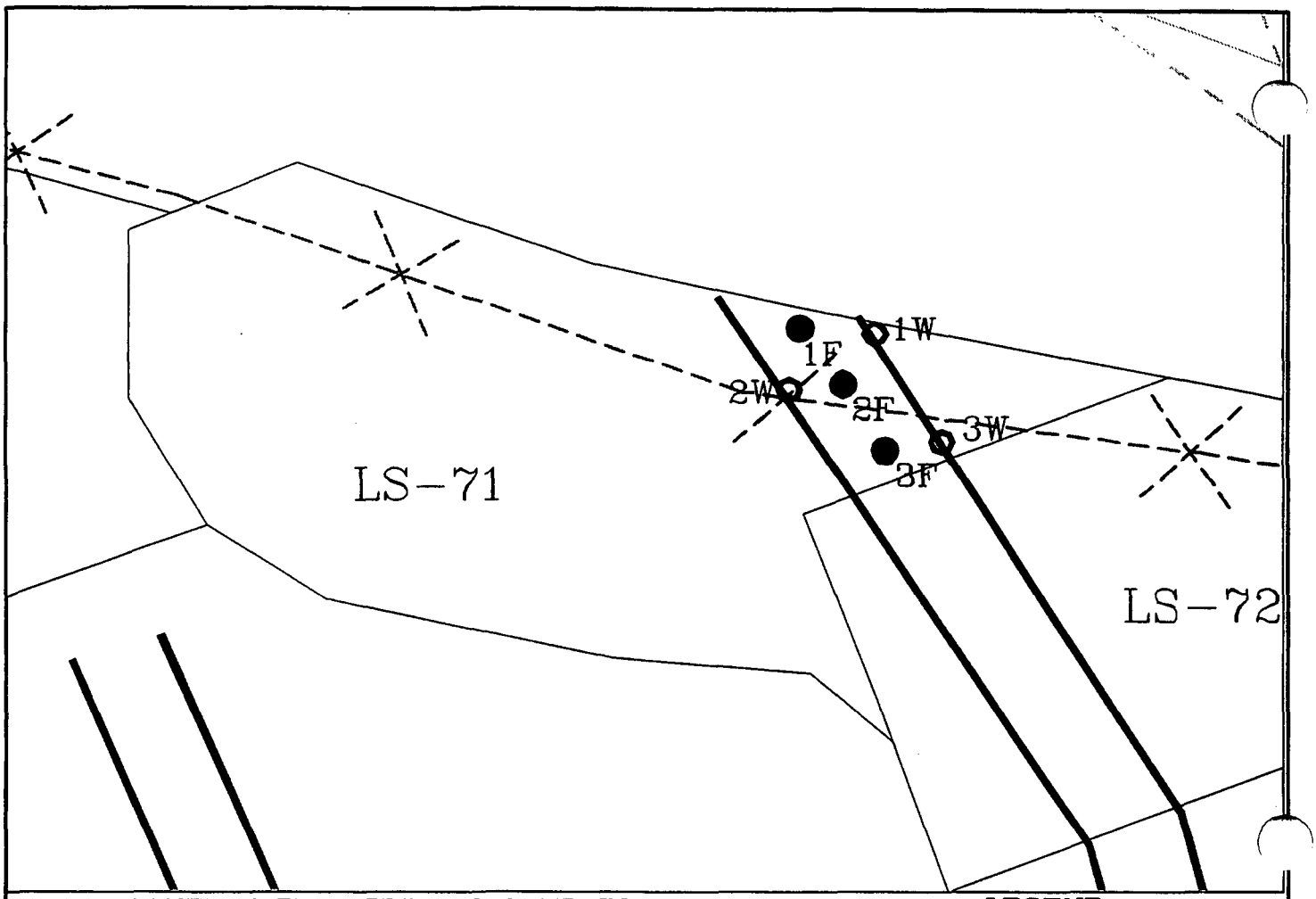
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS70P1BC4
AUTOCAD ENL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-70

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS71-P1B-1F
1 SIDEWALL 1' DEPTH	272	LS71-P1B-1W-A
1 SIDEWALL 2' DEPTH	260	LS71-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS71-P1B-1W-C
FLOOR 2	<100	LS71-P1B-2F
2 SIDEWALL 1' DEPTH	<100	LS71-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LS71-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS71-P1B-2W-C
FLOOR 3	<100	LS71-P1B-3F
3 SIDEWALL 1' DEPTH	<100	LS71-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS71-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS71-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-71 PHASE 1B (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 – 10 FEET – 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
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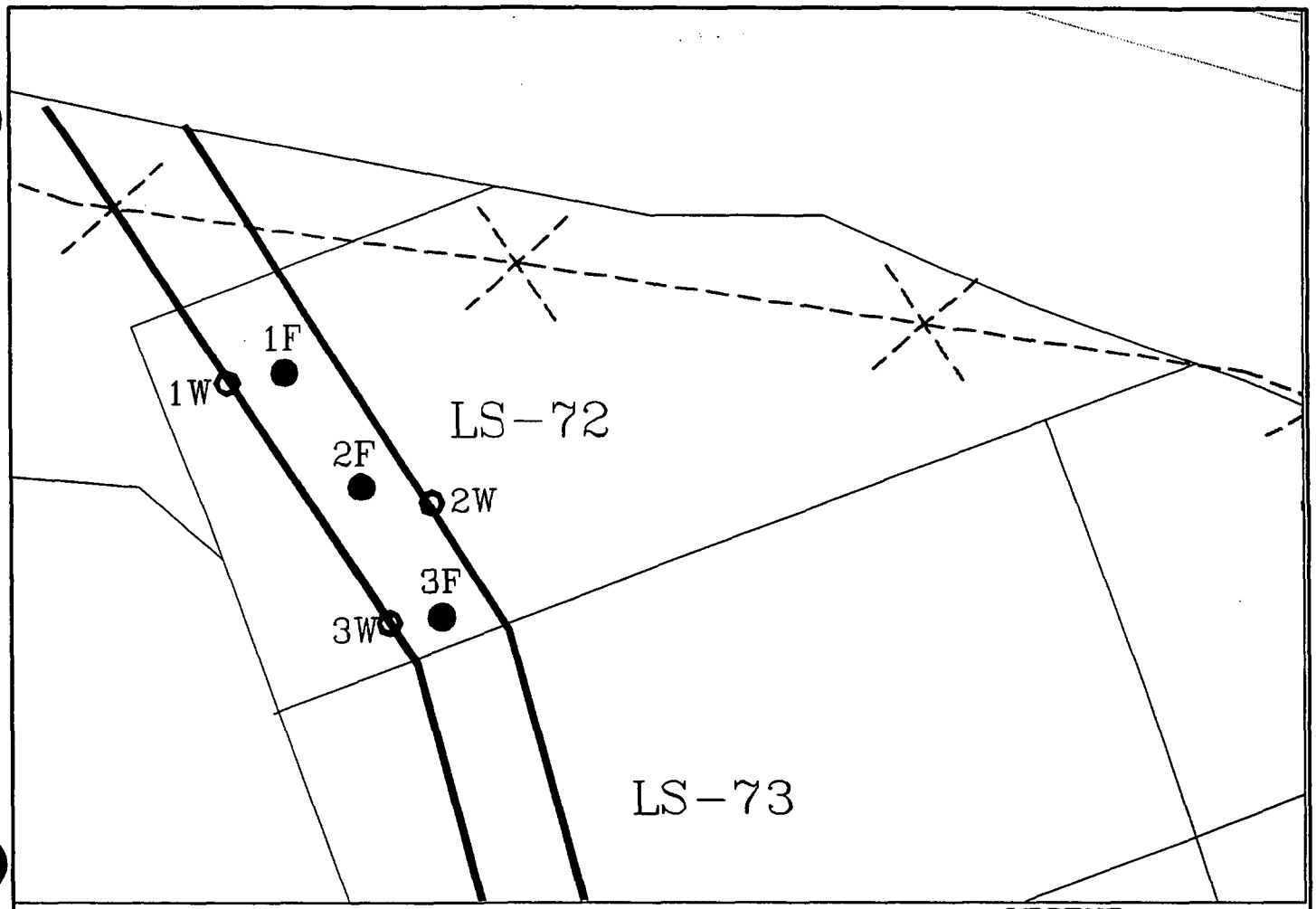
Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

DRAWING FILE NUMBER: TAC LS71P1BC4
SHEET NUMBER: LS-71
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS72-P1B-1F
1 SIDEWALL 1' DEPTH	<100	LS72-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LS72-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS72-P1B-1W-C
FLOOR 2	538	LS72-P1B-2F
2 SIDEWALL 1' DEPTH	<100	LS72-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LS72-P1B-2W-B
2 SIDEWALL 3' DEPTH	293	LS72-P1B-2W-C
FLOOR 3	<100	LS72-P1B-3F
3 SIDEWALL 1' DEPTH	<100	LS72-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS72-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS72-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-72 PHASE 1B (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
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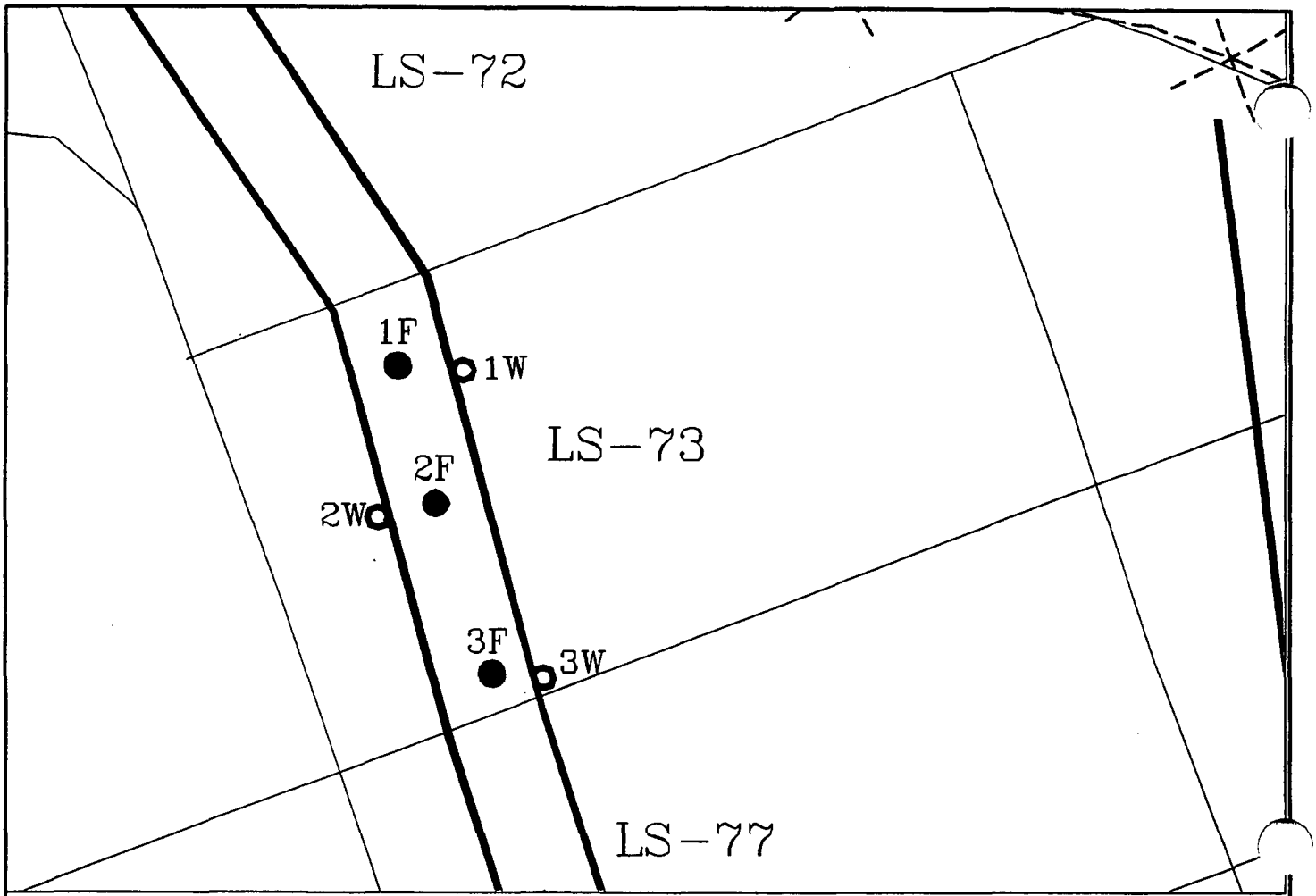
Project :
DRAWN BY COPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Everett, Washington 98207

DRAWING FILE NUMBER: TAC LS72P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-72
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS73-P1B-1F
1 SIDEWALL 1' DEPTH	1500	LS73-P1B-1W-A
1 SIDEWALL 2' DEPTH	307	LS73-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS73-P1B-1W-C
FLOOR 2	<100	LS73-P1B-2F
2 SIDEWALL 1' DEPTH	<100	LS73-P1B-2W-A
2 SIDEWALL 2' DEPTH	138	LS73-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS73-P1B-2W-C
FLOOR 3	<100	LS73-P1B-3F
3 SIDEWALL 1' DEPTH	<100	LS73-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS73-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS73-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-73 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

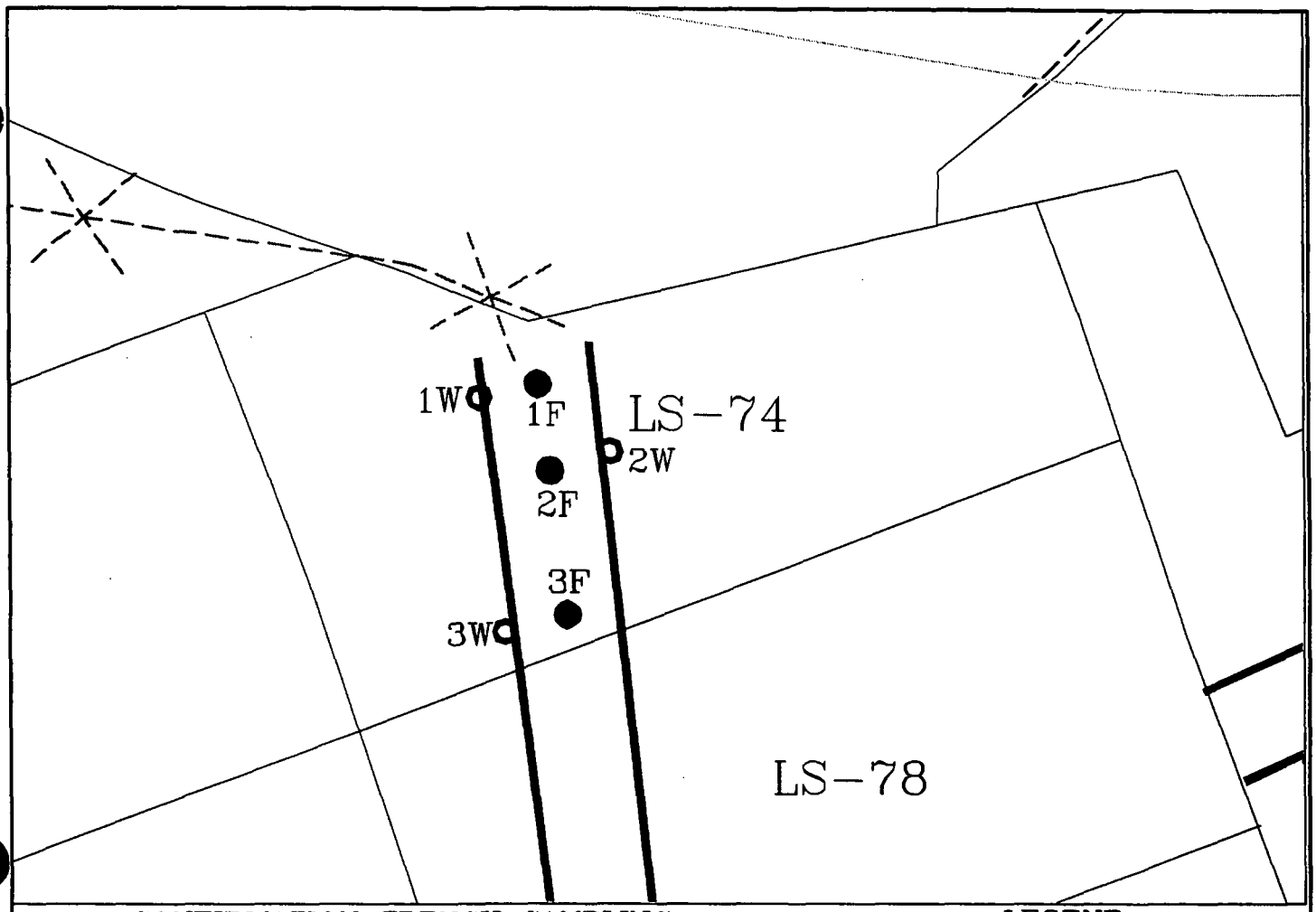
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY DOFG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Fusion, Washington 98407

DRAWING FILE NUMBER: TAC LS73P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-73
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	980	LS74-P1B-1F
1 SIDEWALL 1' DEPTH	1100	LS74-P1B-1W-A
1 SIDEWALL 2' DEPTH	810	LS74-P1B-IW-B
1 SIDEWALL 3' DEPTH	918	LS74-P1B-1W-C
FLOOR 2	1300	LS74-P1B-2F
2 SIDEWALL 1' DEPTH	1020	LS74-P1B-2W-A
2 SIDEWALL 2' DEPTH	916	LS74-P1B-2W-B
2 SIDEWALL 3' DEPTH	1100	LS74-P1B-2W-C
FLOOR 3	1410	LS74-P1B-3F
3 SIDEWALL 1' DEPTH	2400	LS74-P1B-3W-A
3 SIDEWALL 2' DEPTH	1430	LS74-P1B-3W-B
3 SIDEWALL 3' DEPTH	2200	LS74-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-74 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

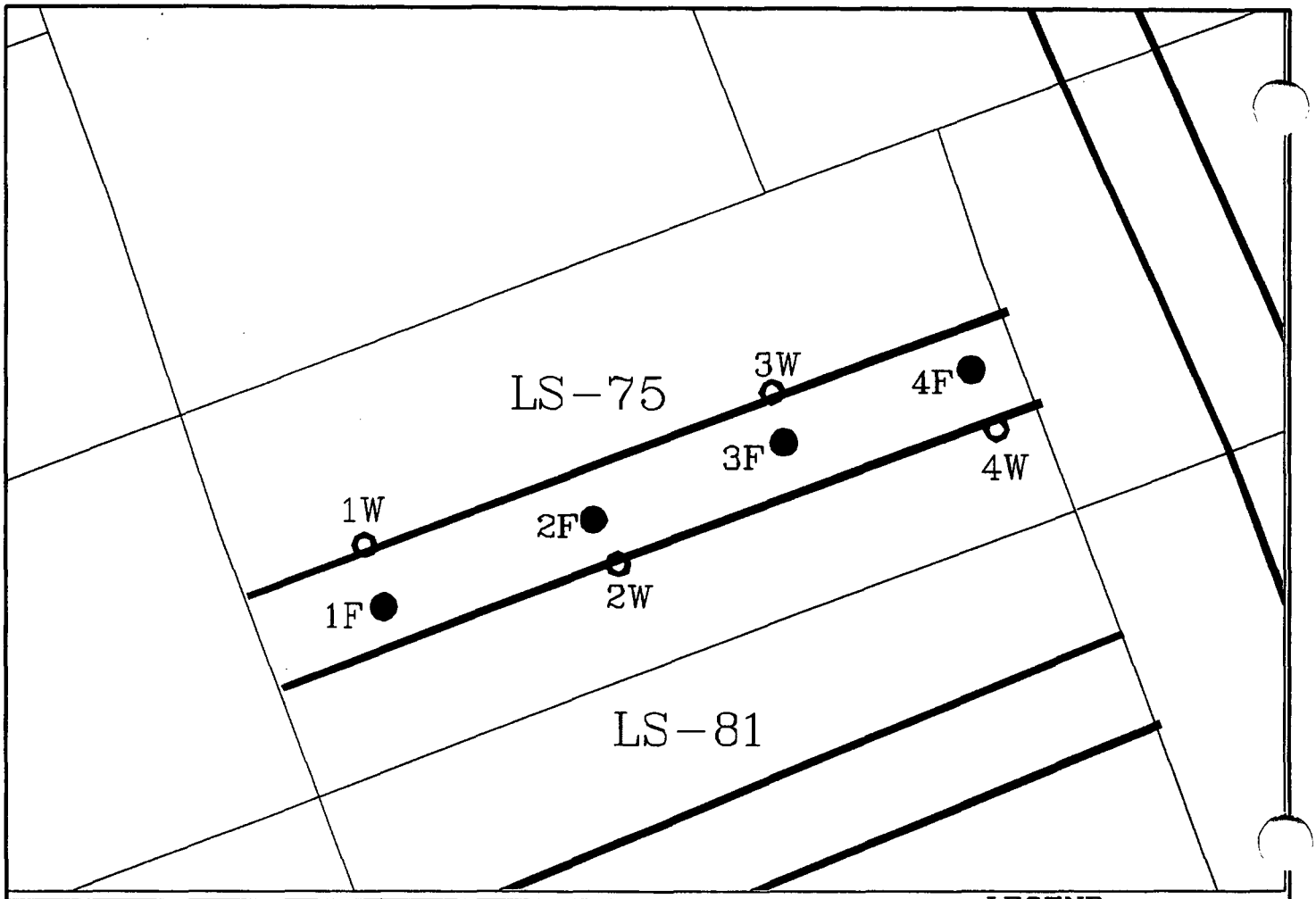
REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY DDPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS74P1BC4
AUTOCAD ENL. 2000 SHAWOOD (DWG)
SHEET NUMBER LS-74
REV △

NORTH



LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	239	LS75-P1B-1F
1 SIDEWALL 1' DEPTH	320	LS75-P1B-1W-A
1 SIDEWALL 2' DEPTH	400	LS75-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS75-P1B-1W-C
FLOOR 2	<100	LS75-P1B-2F
2 SIDEWALL 1' DEPTH	297	LS75-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LS75-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	LS75-P1B-2W-C
FLOOR 3	<100	LS75-P1B-3F
3 SIDEWALL 1' DEPTH	<100	LS75-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS75-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS75-P1B-3W-C
FLOOR 4	<100	LS75-P1B-4F
4 SIDEWALL 1' DEPTH	<100	LS75-P1B-4W-A
4 SIDEWALL 2' DEPTH	<100	LS75-P1B-4W-B
4 SIDEWALL 3' DEPTH	120	LS75-P1B-4W-C

LEGEND

● FLOOR SAMPLE LOCATION

○ PERIMETER SAMPLE LOCATION

CONFIRMATION TRENCH SAMPLING

LS-75 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 20FEET 40FEET

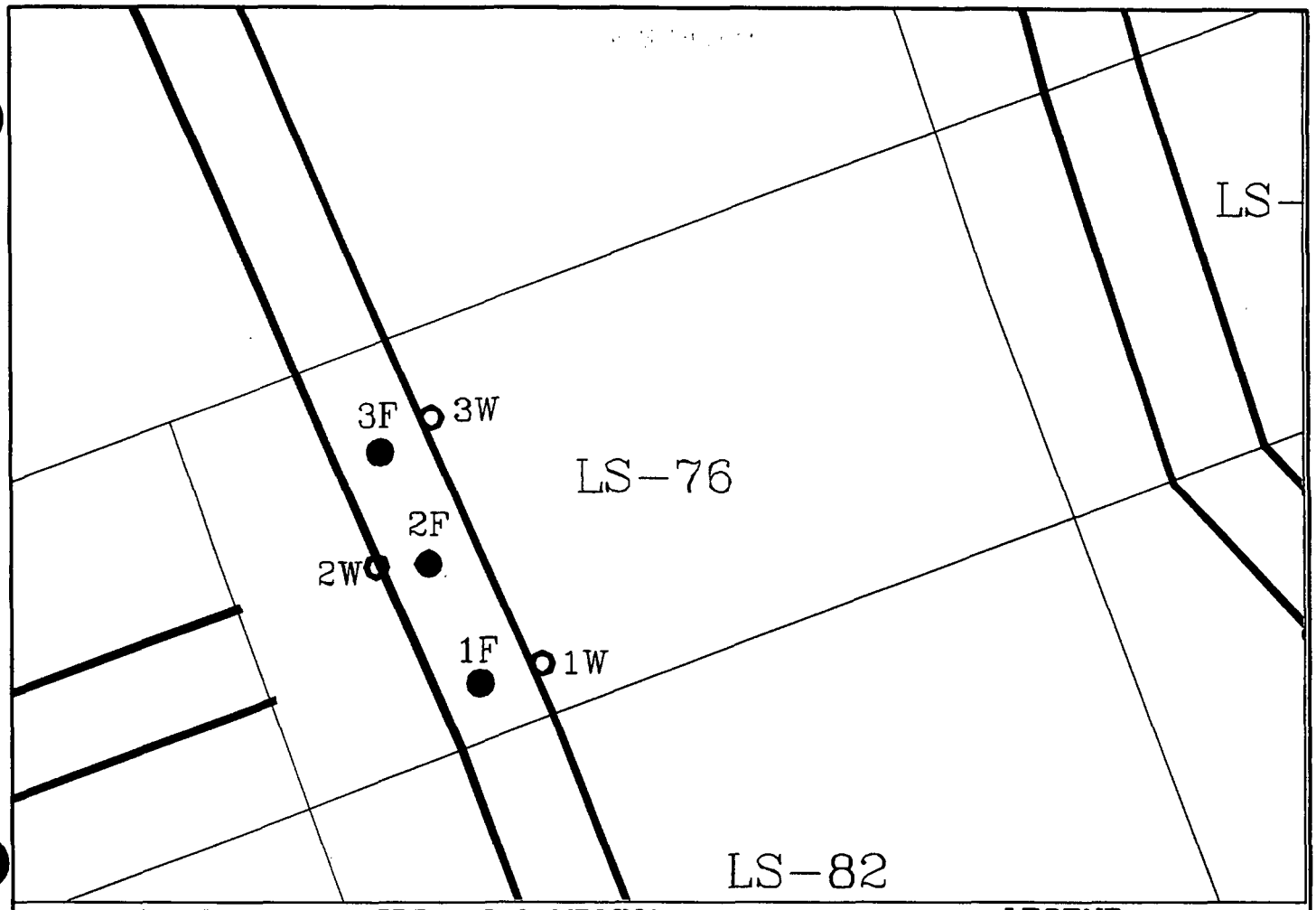
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY DGPG
CHECKED BY
APPROVED BY
SCALE: NOTED

Ruston, WA 98407

DRAWING FILE NUMBER: TAC LS75P1BC4
FIGURE: LS-75
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	272	LS76-P1B-1F
1 SIDEWALL 1' DEPTH	151	LS76-P1B-1W-A
1 SIDEWALL 2' DEPTH	240	LS76-P1B-IW-B
1 SIDEWALL 3' DEPTH	147	LS76-P1B-1W-C
FLOOR 2	152	LS76-P1B-2F
2 SIDEWALL 1' DEPTH	315	LS76-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	LS76-P1B-2W-B
2 SIDEWALL 3' DEPTH	238	LS76-P1B-2W-C
FLOOR 3	<100	LS76-P1B-3F
3 SIDEWALL 1' DEPTH	274	LS76-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS76-P1B-3W-B
3 SIDEWALL 3' DEPTH	235	LS76-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-76 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

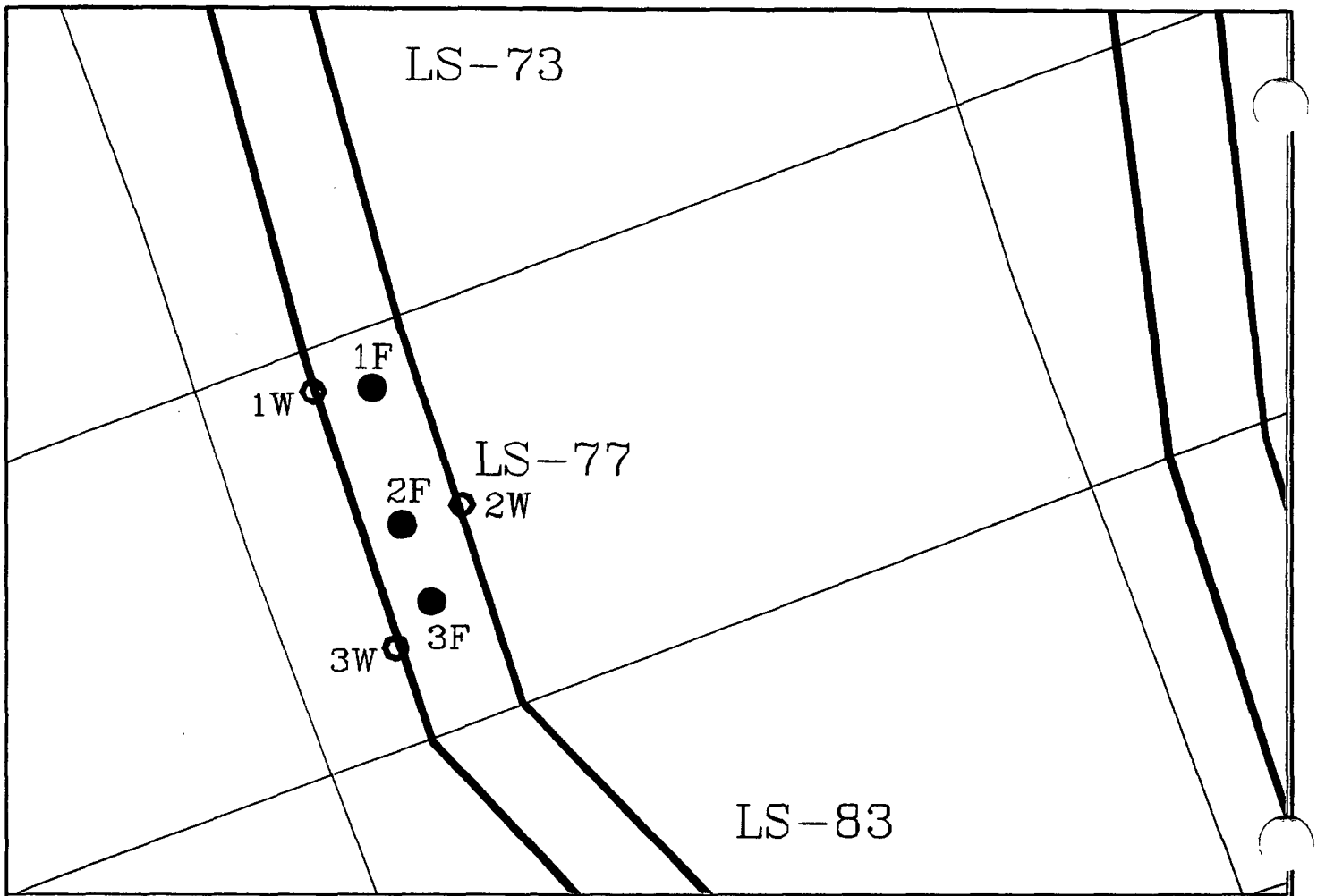
REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Everett, Washington 98207

DRAWING FILE NUMBER: TAC LS76P1BC4
SHEET NUMBER: LS-76
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS77-P1B-1F
1 SIDEWALL 1' DEPTH	<100	LS77-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LS77-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS77-P1B-1W-C
FLOOR 2	<100	LS77-P1B-2F
2 SIDEWALL 1' DEPTH	730	LS77-P1B-2W-A
2 SIDEWALL 2' DEPTH	781	LS77-P1B-2W-B
2 SIDEWALL 3' DEPTH	212	LS77-P1B-2W-C
FLOOR 3	<100	LS77-P1B-3F
3 SIDEWALL 1' DEPTH	690	LS77-P1B-3W-A
3 SIDEWALL 2' DEPTH	432	LS77-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS77-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-77 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

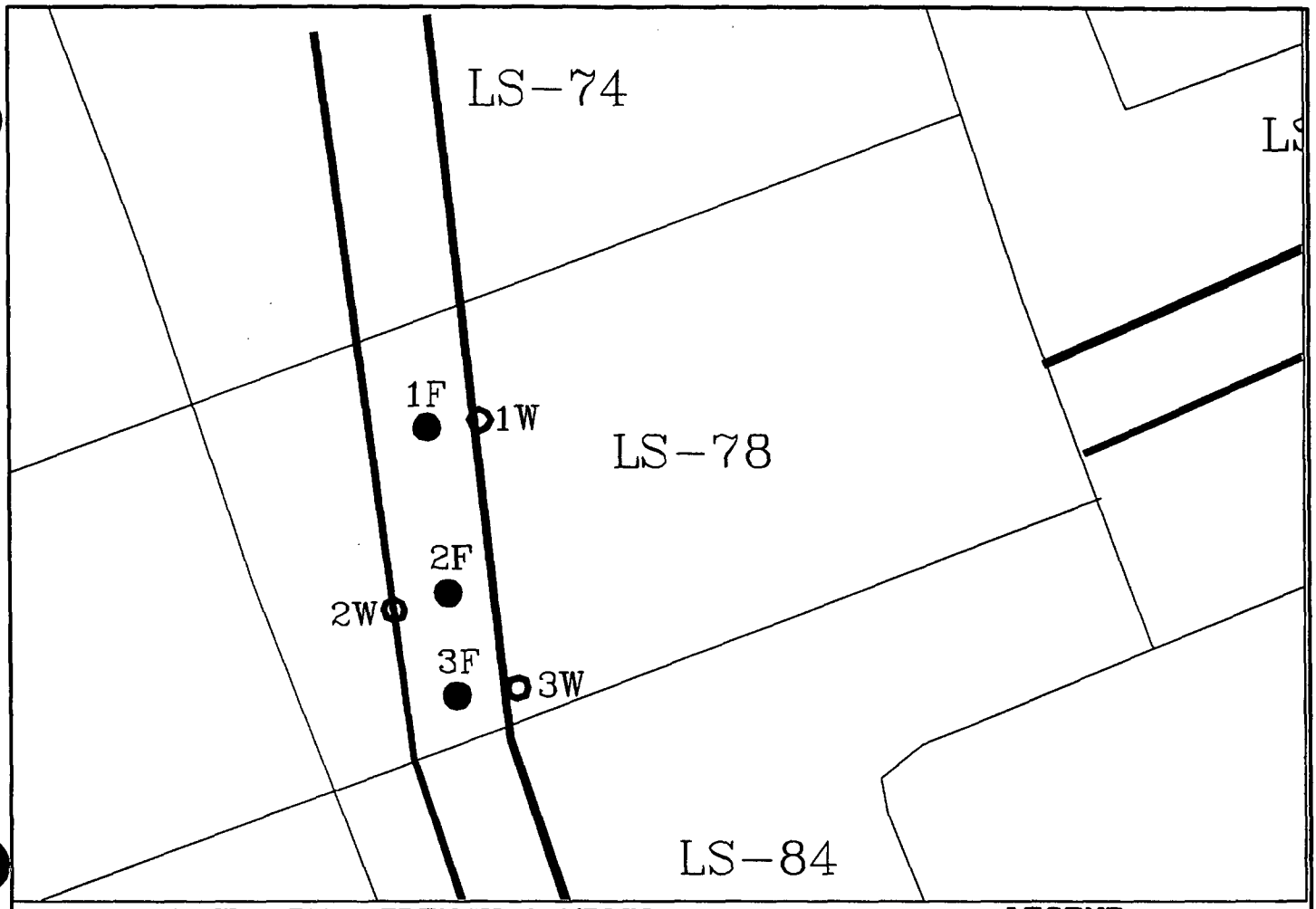
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY DCPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Tacoma, Washington 98407

DRAWING FILE NUMBER: TAC LS77P1BC4
SHEET NUMBER: LS-77
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	1320	LS78-P1B-1F
1 SIDEWALL 1' DEPTH	2350	LS78-P1B-1W-A
1 SIDEWALL 2' DEPTH	2400	LS78-P1B-IW-B
1 SIDEWALL 3' DEPTH	2500	LS78-P1B-1W-C
FLOOR 2	1740	LS78-P1B-2F
2 SIDEWALL 1' DEPTH	1550	LS78-P1B-2W-A
2 SIDEWALL 2' DEPTH	1600	LS78-P1B-2W-B
2 SIDEWALL 3' DEPTH	1210	LS78-P1B-2W-C
FLOOR 3	971	LS78-P1B-3F
3 SIDEWALL 1' DEPTH	815	LS78-P1B-3W-A
3 SIDEWALL 2' DEPTH	1130	LS78-P1B-3W-B
3 SIDEWALL 3' DEPTH	860	LS78-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-78 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

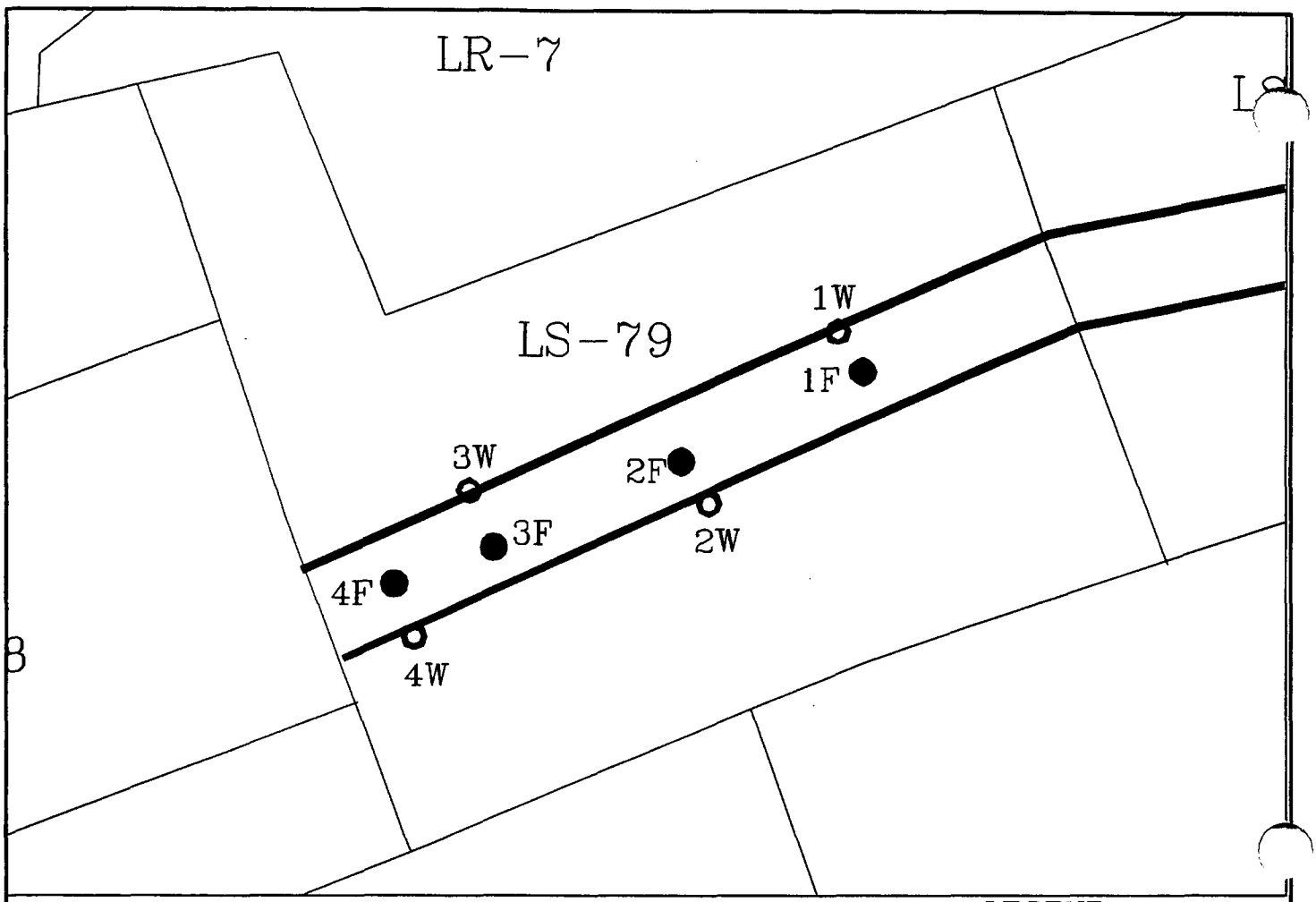
REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS78P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
LS-78
REV

NORTH



LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS79-P1B-1F
1 SIDEWALL 1' DEPTH	2100	LS79-P1B-1W-A
1 SIDEWALL 2' DEPTH	1270	LS79-P1B-IW-B
1 SIDEWALL 3' DEPTH	1500	LS79-P1B-1W-C
FLOOR 2	1870	LS79-P1B-2F
2 SIDEWALL 1' DEPTH	1510	LS79-P1B-2W-A
2 SIDEWALL 2' DEPTH	1760	LS79-P1B-2W-B
2 SIDEWALL 3' DEPTH	2200	LS79-P1B-2W-C
FLOOR 3	1290	LS79-P1B-3F
3 SIDEWALL 1' DEPTH	1200	LS79-P1B-3W-A
3 SIDEWALL 2' DEPTH	1250	LS79-P1B-3W-B
3 SIDEWALL 3' DEPTH	1100	LS79-P1B-3W-C
FLOOR 4	1470	LS79-P1B-4F
4 SIDEWALL 1' DEPTH	2000	LS79-P1B-4W-A
4 SIDEWALL 2' DEPTH	1780	LS79-P1B-4W-B
4 SIDEWALL 3' DEPTH	1650	LS79-P1B-4W-C

LEGEND

● FLOOR SAMPLE LOCATION

○ PERIMETER SAMPLE LOCATION

CONFIRMATION TRENCH SAMPLING

LS-79 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10FEET 20FEET

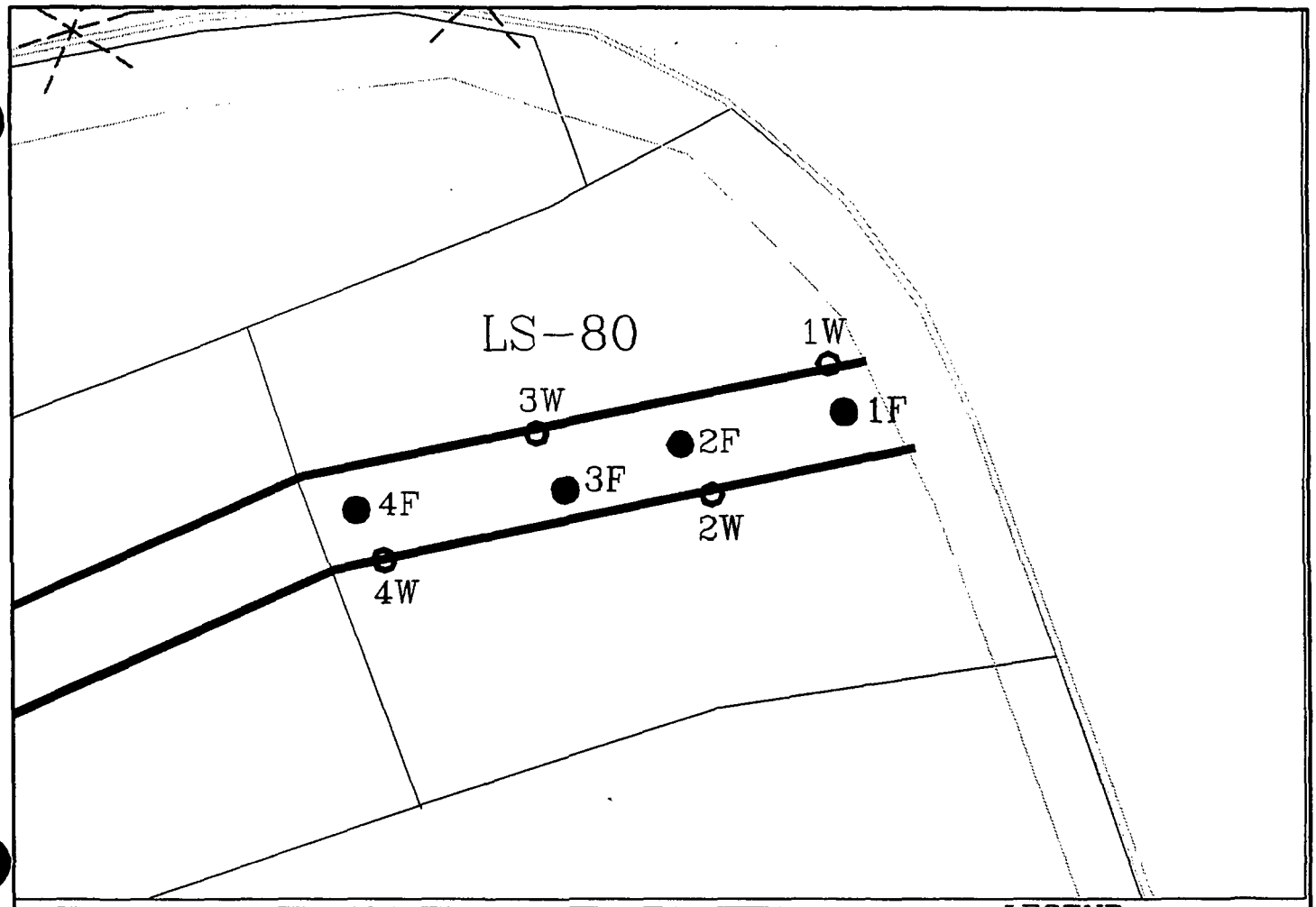
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: NOTED

Ruston, WA 98407

DRAWING FILE NUMBER
TAC LS79P1BC4
FIGURE
LS-79
REV

NORTH



LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	1460	LS80-P1B-1F
1 SIDEWALL 1' DEPTH	1200	LS80-P1B-1W-A
1 SIDEWALL 2' DEPTH	1330	LS80-P1B-IW-B
1 SIDEWALL 3' DEPTH	964	LS80-P1B-1W-C
FLOOR 2	982	LS80-P1B-2F
2 SIDEWALL 1' DEPTH	2200	LS80-P1B-2W-A
2 SIDEWALL 2' DEPTH	1940	LS80-P1B-2W-B
2 SIDEWALL 3' DEPTH	1750	LS80-P1B-2W-C
FLOOR 3	280	LS80-P1B-3F
3 SIDEWALL 1' DEPTH	2370	LS80-P1B-3W-A
3 SIDEWALL 2' DEPTH	474	LS80-P1B-3W-B
3 SIDEWALL 3' DEPTH	515	LS80-P1B-3W-C
FLOOR 4	879	LS80-P1B-4F
4 SIDEWALL 1' DEPTH	1610	LS80-P1B-4W-A
4 SIDEWALL 2' DEPTH	1900	LS80-P1B-4W-B
4 SIDEWALL 3' DEPTH	1150	LS80-P1B-4W-C

LEGEND

● FLOOR SAMPLE LOCATION

○ PERIMETER SAMPLE LOCATION

CONFIRMATION TRENCH SAMPLING

LS-80 PHASE 1B (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10FEET 20FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: NOTED

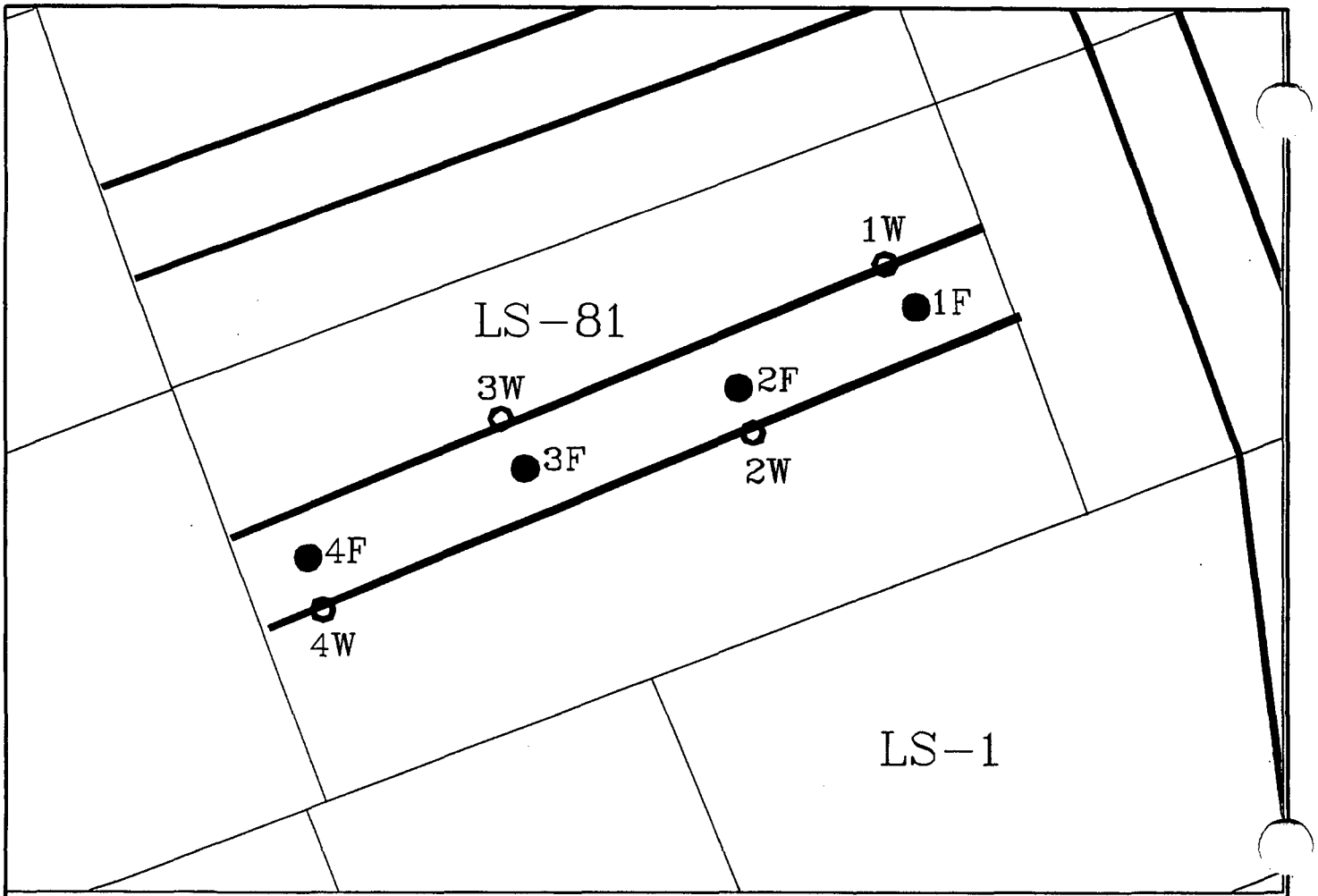
Ruston, WA 98407

DRAWING FILE NUMBER: TAC LS80P1BC4

FIGURE: LS-80

REV

NORTH



LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS81-P1B-1F
1 SIDEWALL 1' DEPTH	2300	LS81-P1B-1W-A
1 SIDEWALL 2' DEPTH	2100	LS81-P1B-IW-B
1 SIDEWALL 3' DEPTH	1300	LS81-P1B-1W-C
FLOOR 2	<100	LS81-P1B-2F
2 SIDEWALL 1' DEPTH	1200	LS81-P1B-2W-A
2 SIDEWALL 2' DEPTH	391	LS81-P1B-2W-B
2 SIDEWALL 3' DEPTH	416	LS81-P1B-2W-C
FLOOR 3	207	LS81-P1B-3F
3 SIDEWALL 1' DEPTH	568	LS81-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS81-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	LS81-P1B-3W-C
FLOOR 4	209	LS81-P1B-4F
4 SIDEWALL 1' DEPTH	358	LS81-P1B-4W-A
4 SIDEWALL 2' DEPTH	<100	LS81-P1B-4W-B
4 SIDEWALL 3' DEPTH	<100	LS81-P1B-4W-C

LEGEND

● FLOOR SAMPLE LOCATION

○ PERIMETER SAMPLE LOCATION

CONFIRMATION TRENCH SAMPLING

LS-81 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE 0 10FEET 20FEET

REVISIONS	NO	BY	DATE
1st			
2nd			
3rd			
4th			

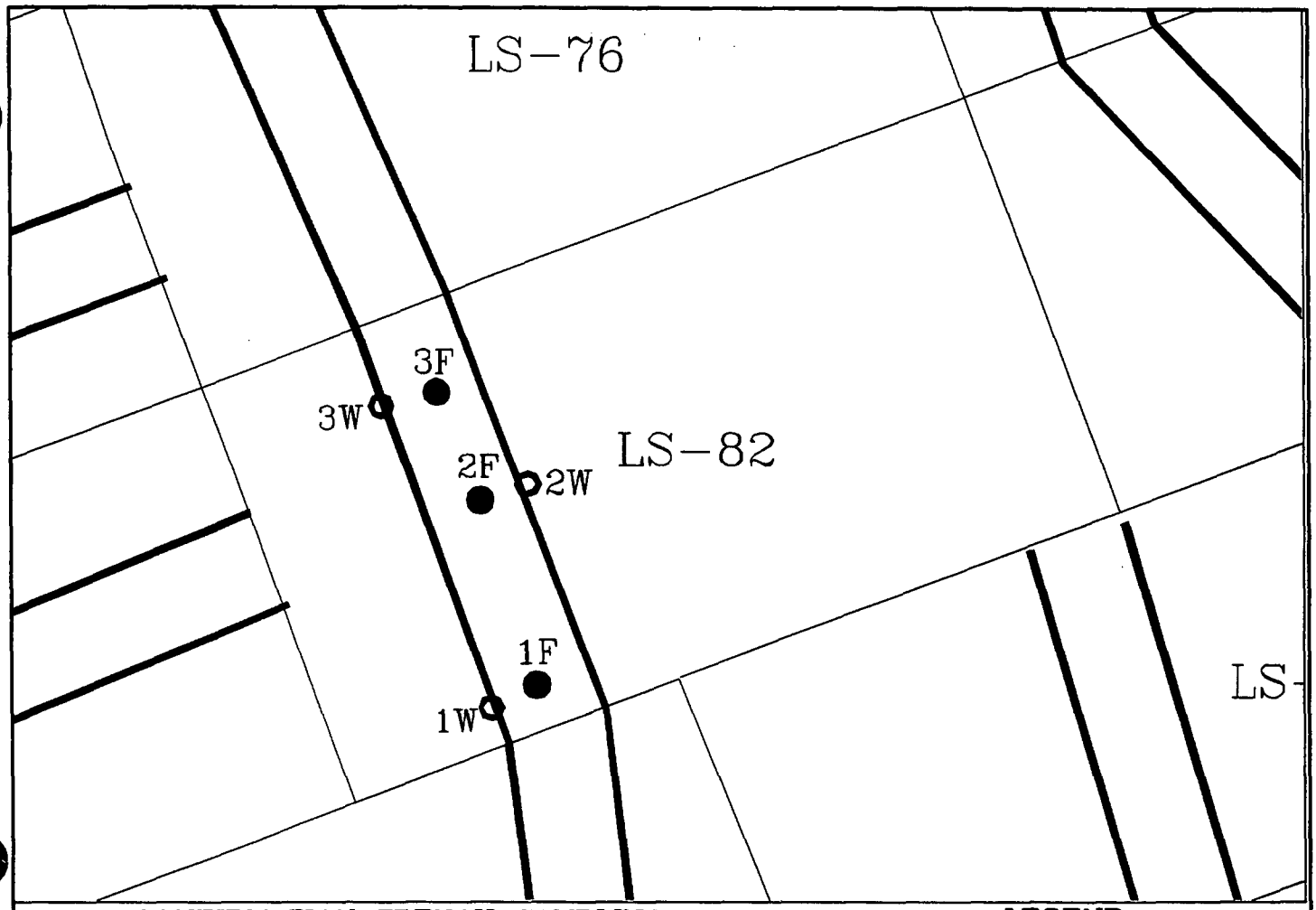
Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: NOTED

Ruston, WA 98407

DRAWING FILE NUMBER
TAC LS81P1BC4

FIGURE LS-81 REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS82-P1B-1F
1 SIDEWALL 1' DEPTH	<100	LS82-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LS82-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS82-P1B-1W-C
FLOOR 2	<100	LS82-P1B-2F
2 SIDEWALL 1' DEPTH	348	LS82-P1B-2W-A
2 SIDEWALL 2' DEPTH	317	LS82-P1B-2W-B
2 SIDEWALL 3' DEPTH	292	LS82-P1B-2W-C
FLOOR 3	<100	LS82-P1B-3F
3 SIDEWALL 1' DEPTH	106	LS82-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	LS82-P1B-3W-B
3 SIDEWALL 3' DEPTH	262	LS82-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-82 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

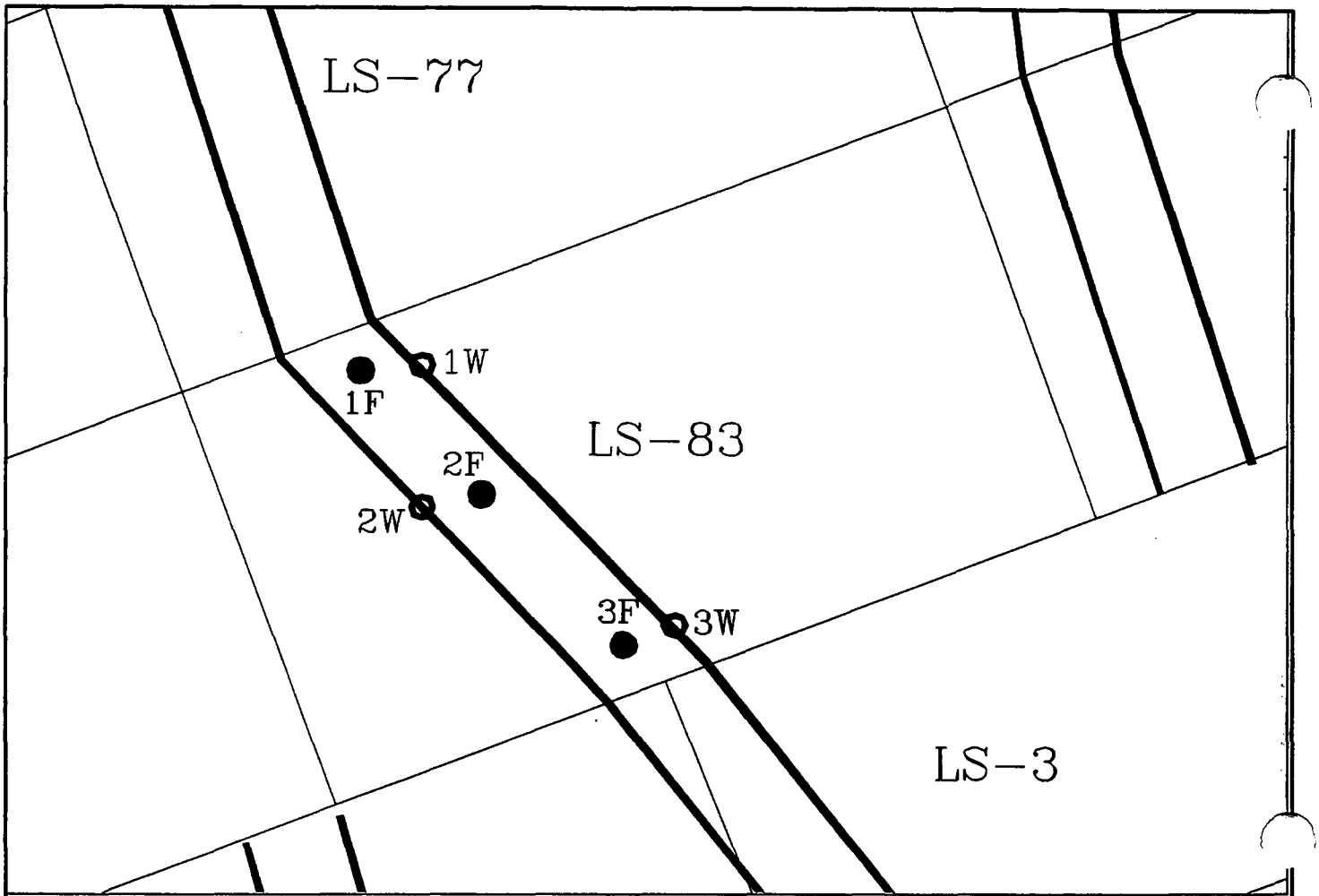
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY DGPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Everett, Washington 98201

DRAWING FILE NUMBER: TAC LS82P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-82
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS83-P1B-1F
1 SIDEWALL 1' DEPTH	<100	LS83-P1B-1W-A
1 SIDEWALL 2' DEPTH	<100	LS83-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	LS83-P1B-1W-C
FLOOR 2	<100	LS83-P1B-2F
2 SIDEWALL 1' DEPTH	2100	LS83-P1B-2W-A
2 SIDEWALL 2' DEPTH	1400	LS83-P1B-2W-B
2 SIDEWALL 3' DEPTH	974	LS83-P1B-2W-C
FLOOR 3	740	LS83-P1B-3F
3 SIDEWALL 1' DEPTH	<100	LS83-P1B-3W-A
3 SIDEWALL 2' DEPTH	488	LS83-P1B-3W-B
3 SIDEWALL 3' DEPTH	311	LS83-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-83 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

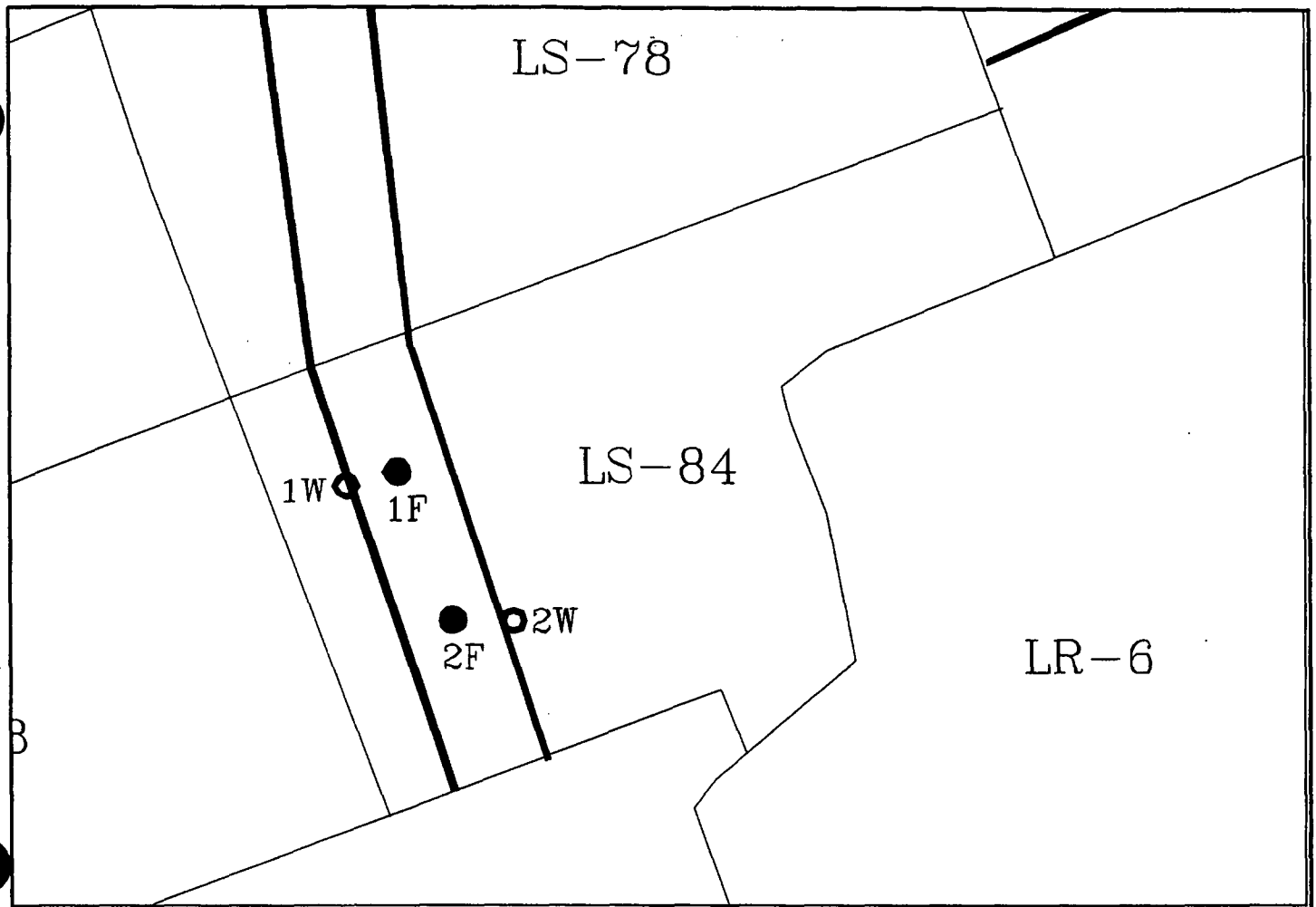
REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY DDPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS83P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
LS-83
REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	LS84-P1B-1F
1 SIDEWALL 1' DEPTH	2600	LS84-P1B-1W-A
1 SIDEWALL 2' DEPTH	2710	LS84-P1B-IW-B
1 SIDEWALL 3' DEPTH	1270	LS84-P1B-1W-C
FLOOR 2	1650	LS84-P1B-2F
2 SIDEWALL 1' DEPTH	1300	LS84-P1B-2W-A
2 SIDEWALL 2' DEPTH	2080	LS84-P1B-2W-B
2 SIDEWALL 3' DEPTH	1110	LS84-P1B-2W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-84 PHASE 1B (9 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

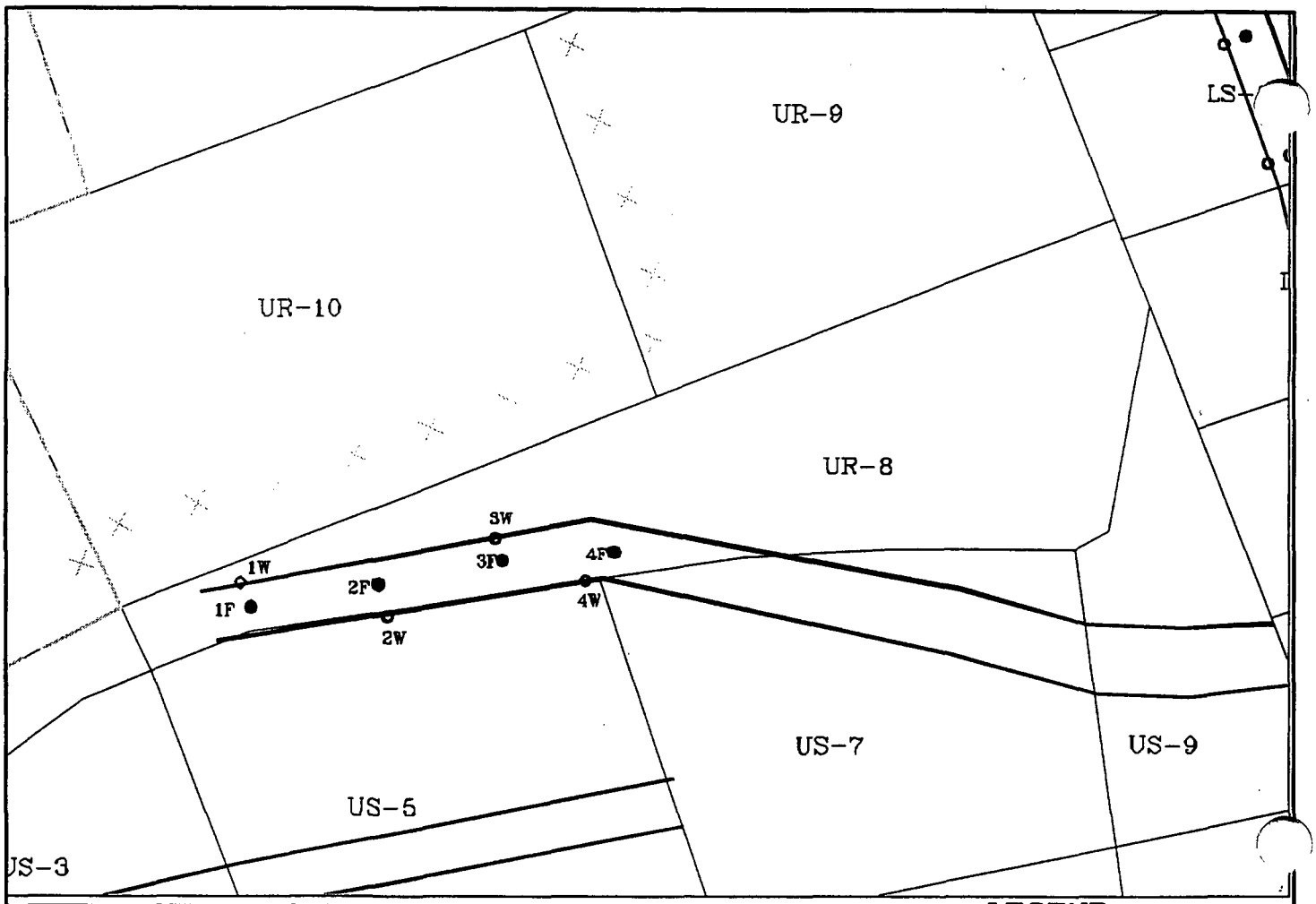
REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Everett, Washington 98207

DRAWING FILE NUMBER: TAC LS84P1BTC4
SHEET NUMBER: LS-84
REV

NORTH



LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	892	UR8-P1B-1F
1 SIDEWALL 1' DEPTH	907	UR8-P1B-1W-A
1 SIDEWALL 2' DEPTH	319	UR8-P1B-1W-B
1 SIDEWALL 3' DEPTH	274	UR8-P1B-1W-C
FLOOR 2	1170	UR8-P1B-2F
2 SIDEWALL 1' DEPTH	1100	UR8-P1B-2W-A
2 SIDEWALL 2' DEPTH	363	UR8-P1B-2W-B
2 SIDEWALL 3' DEPTH	228	UR8-P1B-2W-C
FLOOR 3	562	UR8-P1B-3F
3 SIDEWALL 1' DEPTH	719	UR8-P1B-3W-A
3 SIDEWALL 2' DEPTH	1070	UR8-P1B-3W-B
3 SIDEWALL 3' DEPTH	987	UR8-P1B-3W-C
FLOOR 4	856	UR8-P1B-4F
4 SIDEWALL 1' DEPTH	704	UR8-P1B-4W-A
4 SIDEWALL 2' DEPTH	374	UR8-P1B-4W-B
4 SIDEWALL 3' DEPTH	1350	UR8-P1B-4W-C

LEGEND

● FLOOR SAMPLE LOCATION

○ PERIMETER SAMPLE LOCATION

CONFIRMATION TRENCH SAMPLING

UR-8 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 – 20 FEET – 40 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: NOTED

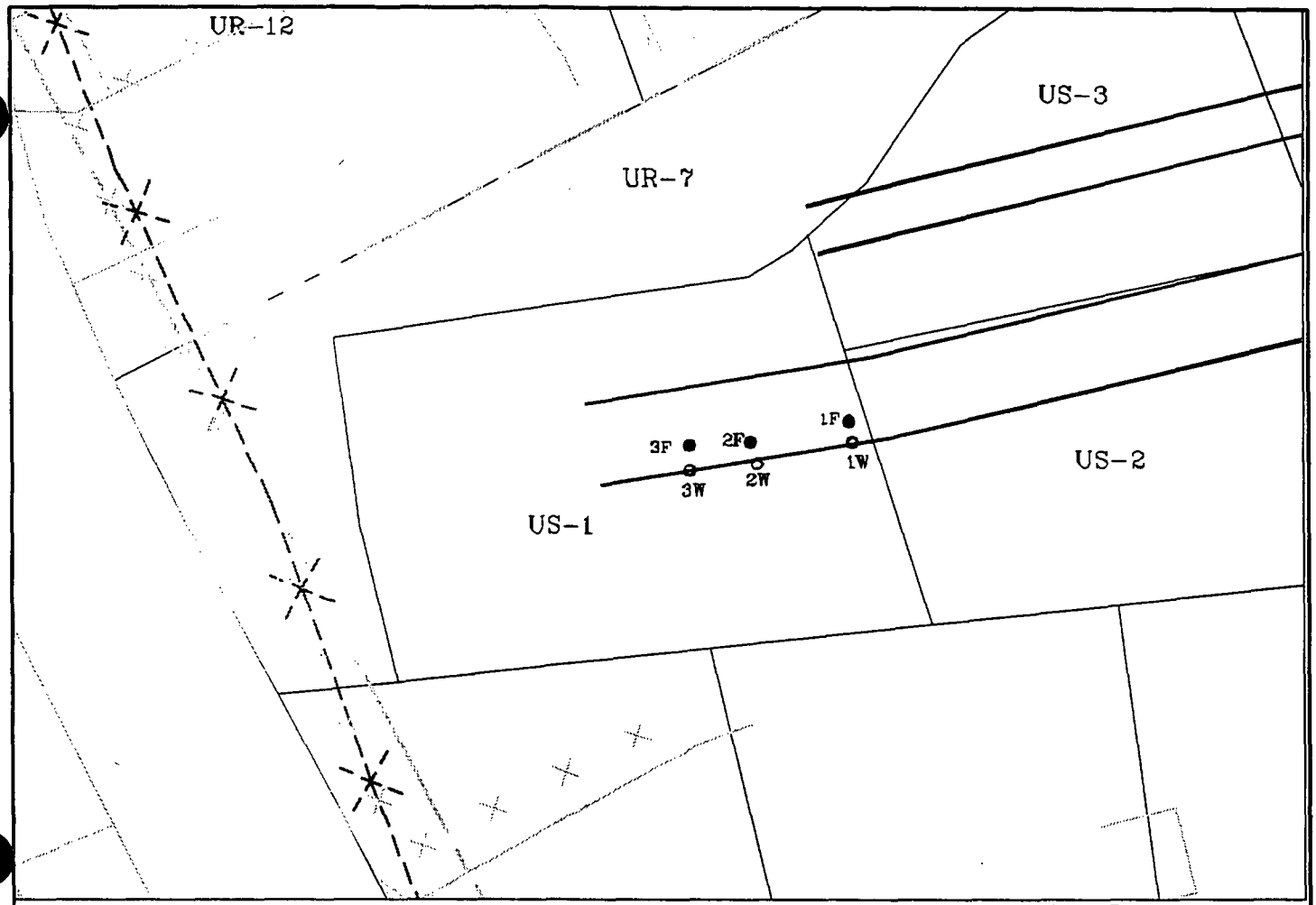
Ruston, WA 98407

DRAWING FILE NUMBER: TAC UR08P1BC4

FIGURE: UR-08

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	126	US1-P1B-1F
1 SIDEWALL 1' DEPTH	582	US1-P1B-1W-A
1 SIDEWALL 2' DEPTH	210	US1-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	US1-P1B-1W-C
FLOOR 2	184	US1-P1B-2F
2 SIDEWALL 1' DEPTH	<100	US1-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	US1-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	US1-P1B-2W-C
FLOOR 3	320	US1-P1B-3F
3 SIDEWALL 1' DEPTH	380	US1-P1B-3W-A
3 SIDEWALL 2' DEPTH	185	US1-P1B-3W-B
3 SIDEWALL 3' DEPTH	206	US1-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-1 PHASE 1B (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

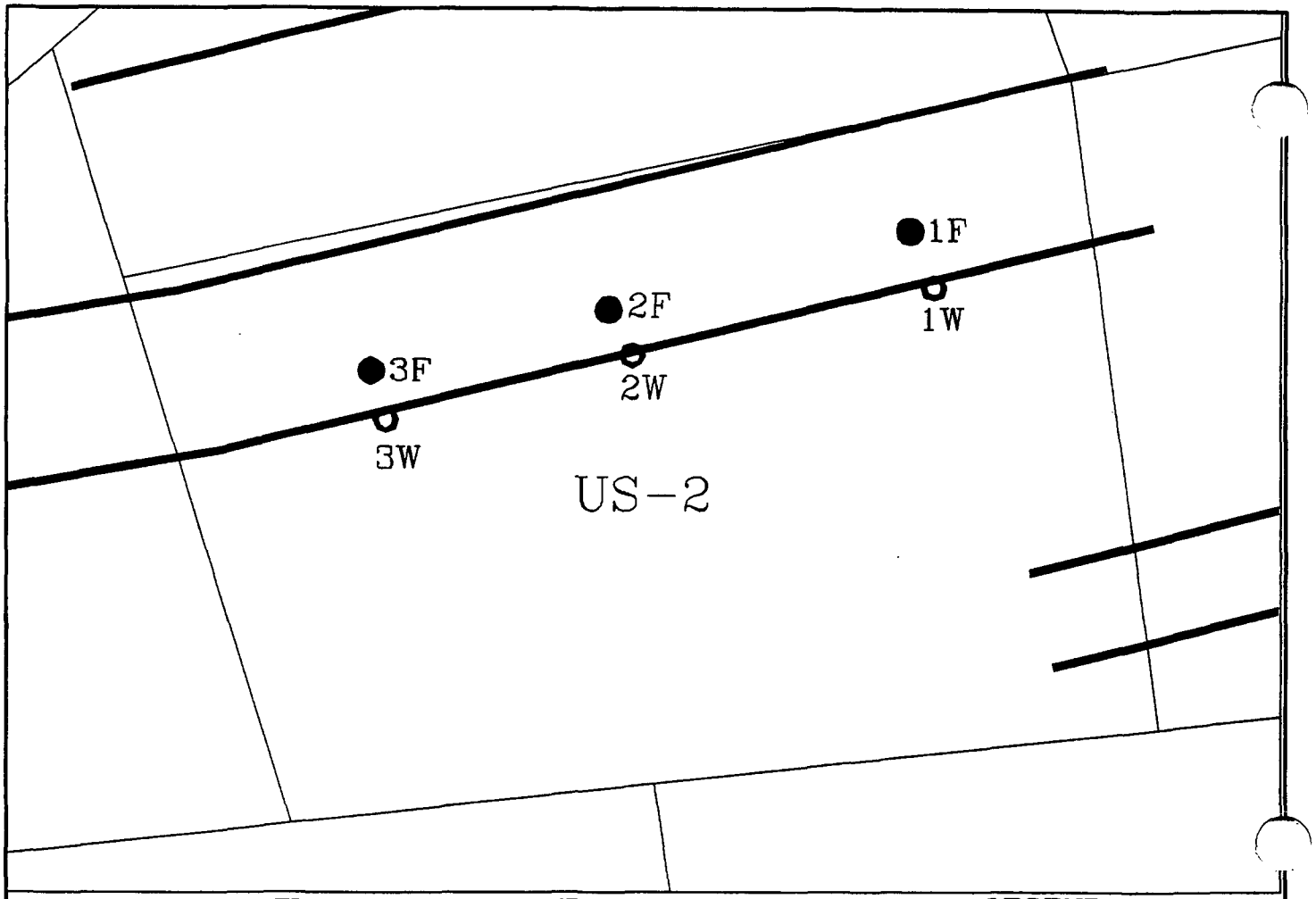
Project :
DRAWN BY DDPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC US01P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER US-01
REV △

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	0	US2-P1B-1F
1 SIDEWALL 1' DEPTH	0	US2-P1B-1W-A
1 SIDEWALL 2' DEPTH	0	US2-P1B-IW-B
1 SIDEWALL 3' DEPTH	0	US2-P1B-1W-C
FLOOR 2	0	US2-P1B-2F
2 SIDEWALL 1' DEPTH	0	US2-P1B-2W-A
2 SIDEWALL 2' DEPTH	0	US2-P1B-2W-B
2 SIDEWALL 3' DEPTH	0	US2-P1B-2W-C
FLOOR 3	0	US2-P1B-3F
3 SIDEWALL 1' DEPTH	0	US2-P1B-3W-A
3 SIDEWALL 2' DEPTH	0	US2-P1B-3W-B
3 SIDEWALL 3' DEPTH	0	US2-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-2 PHASE 1B (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

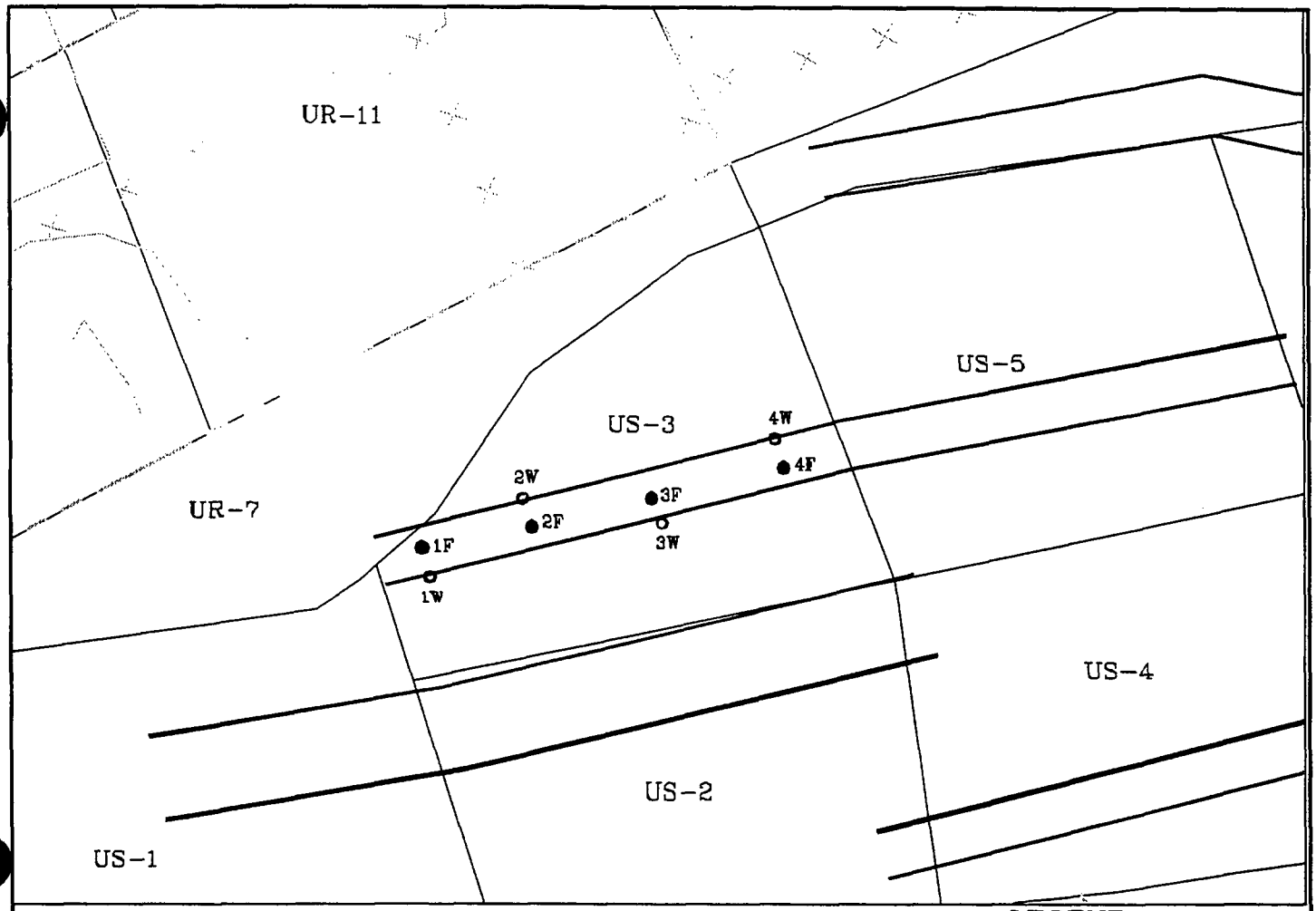
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Puyallup, Washington 98407

DRAWING FILE NUMBER: TAC US02P1BC4
SHEET NUMBER: US-02
REV

NORTH



LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	420	US3-P1B-1F
1 SIDEWALL 1' DEPTH	686	US3-P1B-1W-A
1 SIDEWALL 2' DEPTH	305	US3-P1B-IW-B
1 SIDEWALL 3' DEPTH	244	US3-P1B-1W-C
FLOOR 2	758	US3-P1B-2F
2 SIDEWALL 1' DEPTH	412	US3-P1B-2W-A
2 SIDEWALL 2' DEPTH	274	US3-P1B-2W-B
2 SIDEWALL 3' DEPTH	385	US3-P1B-2W-C
FLOOR 3	285	US3-P1B-3F
3 SIDEWALL 1' DEPTH	383	US3-P1B-3W-A
3 SIDEWALL 2' DEPTH	411	US3-P1B-3W-B
3 SIDEWALL 3' DEPTH	278	US3-P1B-3W-C
FLOOR 4	448	US3-P1B-4F
4 SIDEWALL 1' DEPTH	1210	US3-P1B-4W-A
4 SIDEWALL 2' DEPTH	2340	US3-P1B-4W-B
4 SIDEWALL 3' DEPTH	2380	US3-P1B-4W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

CONFIRMATION TRENCH SAMPLING

US-3 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE 0 20FEET 40FEET

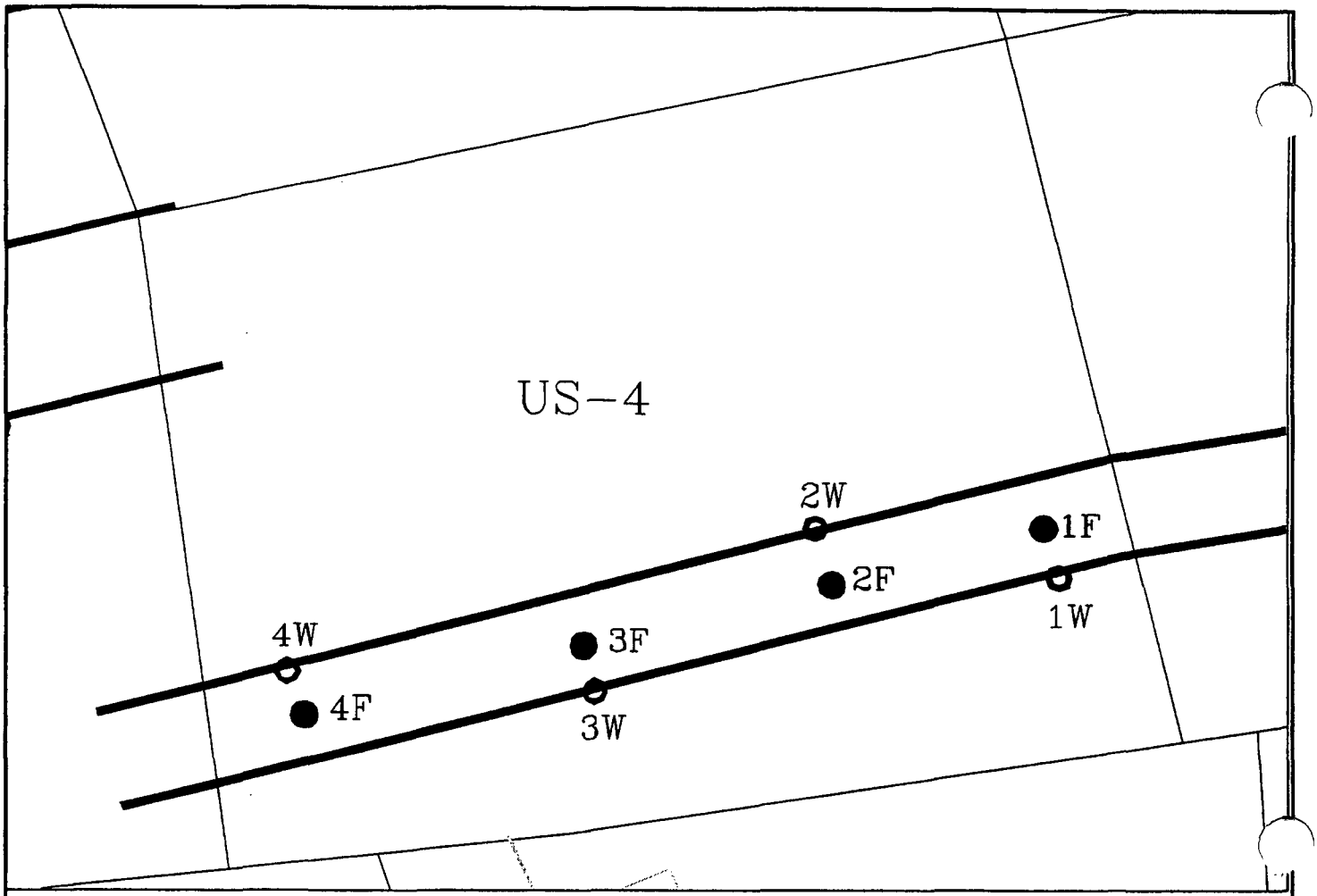
REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: NOTED

Ruston, WA 98407

DRAWING FILE NUMBER
TAC US03P1BC4
FIGURE US-03
REV

NORTH



LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	US4-P1B-1F
1 SIDEWALL 1' DEPTH	<100	US4-P1B-1W-A
1 SIDEWALL 2' DEPTH	137	US4-P1B-IW-B
1 SIDEWALL 3' DEPTH	123	US4-P1B-1W-C
FLOOR 2	113	US4-P1B-2F
2 SIDEWALL 1' DEPTH	130	US4-P1B-2W-A
2 SIDEWALL 2' DEPTH	125	US4-P1B-2W-B
2 SIDEWALL 3' DEPTH	124	US4-P1B-2W-C
FLOOR 3	121	US4-P1B-3F
3 SIDEWALL 1' DEPTH	118	US4-P1B-3W-A
3 SIDEWALL 2' DEPTH	115	US4-P1B-3W-B
3 SIDEWALL 3' DEPTH	112	US4-P1B-3W-C
FLOOR 4	<100	US4-P1B-4F
4 SIDEWALL 1' DEPTH	274	US4-P1B-4W-A
4 SIDEWALL 2' DEPTH	<100	US4-P1B-4W-B
4 SIDEWALL 3' DEPTH	<100	US4-P1B-4W-C

LEGEND

● FLOOR SAMPLE LOCATION

○ PERIMETER SAMPLE LOCATION

CONFIRMATION TRENCH SAMPLING

US-4 PHASE 1B (4 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10FEET 20FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: NOTED

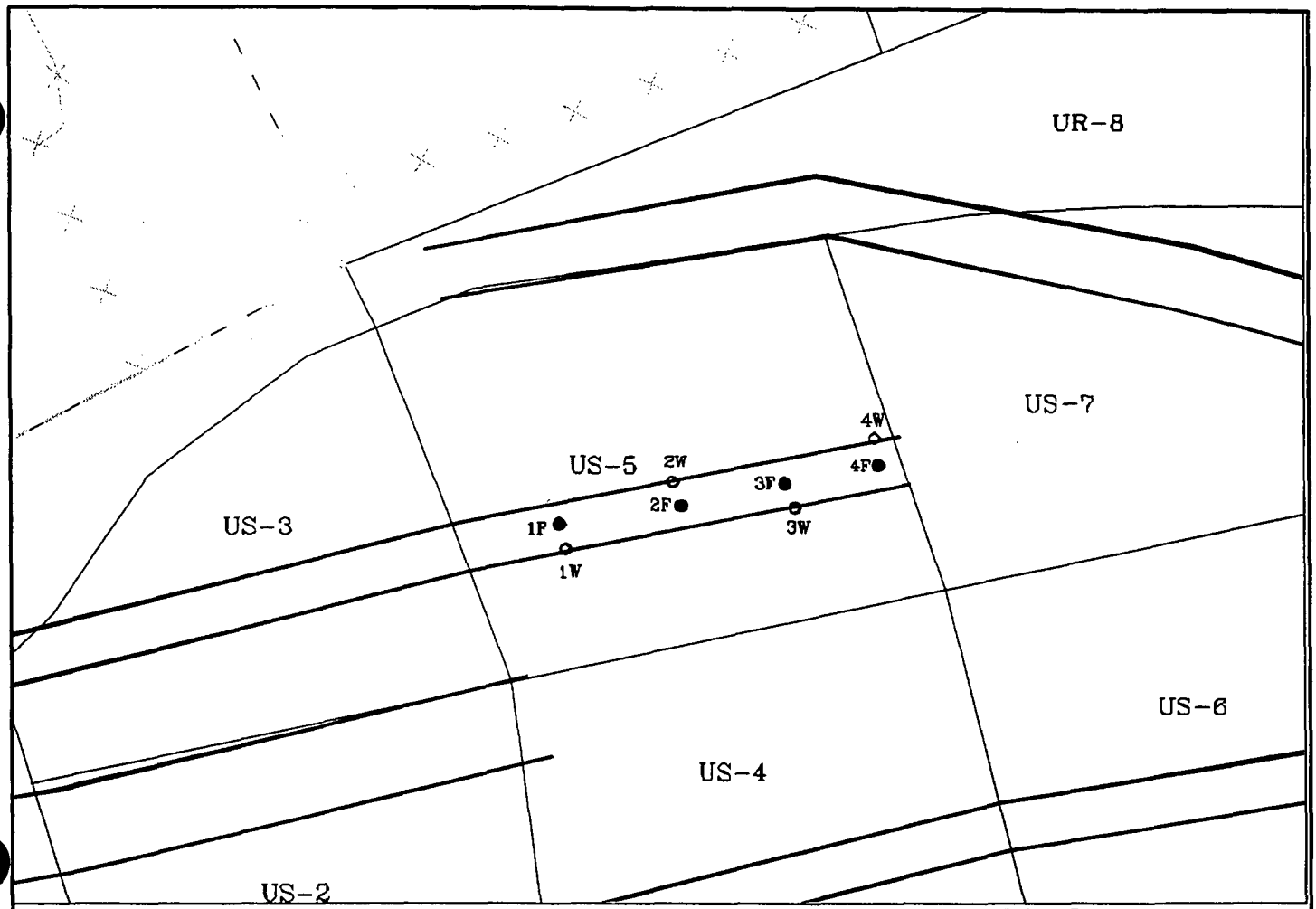
Ruston, WA 98407

DRAWING FILE NUMBER: TAC US04P1BC4

FIGURE: US-04

REV

NORTH



LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	502	US5-P1B-1F
1 SIDEWALL 1' DEPTH	734	US5-P1B-1W-A
1 SIDEWALL 2' DEPTH	646	US5-P1B-IW-B
1 SIDEWALL 3' DEPTH	691	US5-P1B-1W-C
FLOOR 2	1120	US5-P1B-2F
2 SIDEWALL 1' DEPTH	1510	US5-P1B-2W-A
2 SIDEWALL 2' DEPTH	2000	US5-P1B-2W-B
2 SIDEWALL 3' DEPTH	1480	US5-P1B-2W-C
FLOOR 3	1000	US5-P1B-3F
3 SIDEWALL 1' DEPTH	1360	US5-P1B-3W-A
3 SIDEWALL 2' DEPTH	1400	US5-P1B-3W-B
3 SIDEWALL 3' DEPTH	949	US5-P1B-3W-C
FLOOR 4	394	US5-P1B-4F
4 SIDEWALL 1' DEPTH	855	US5-P1B-4W-A
4 SIDEWALL 2' DEPTH	1460	US5-P1B-4W-B
4 SIDEWALL 3' DEPTH	870	US5-P1B-4W-C

LEGEND

● FLOOR SAMPLE LOCATION

○ PERIMETER SAMPLE LOCATION

CONFIRMATION TRENCH SAMPLING

US-5 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 20FEET 40FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: NOTED

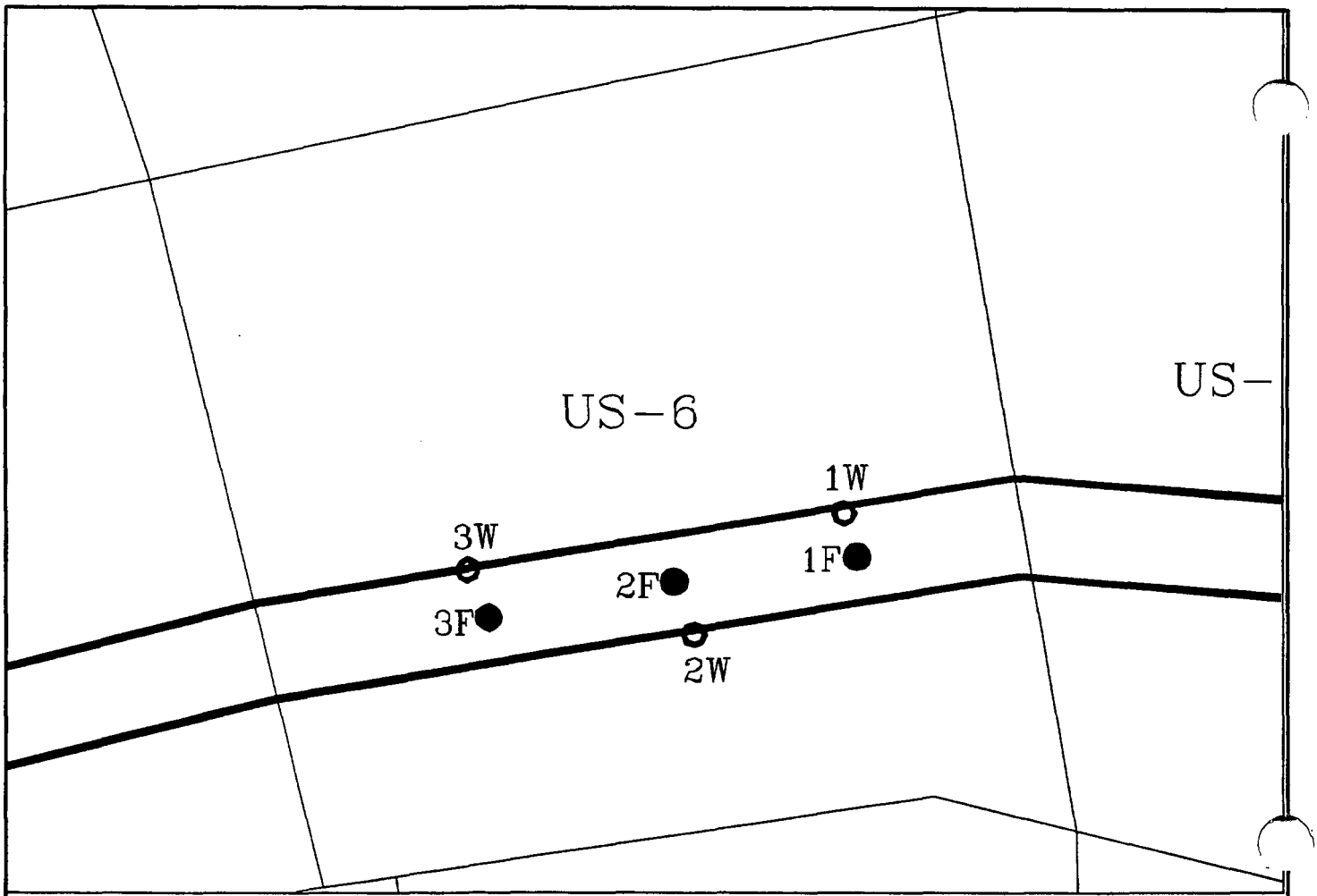
Renton, WA 98407

DRAWING FILE NUMBER: TAC US05P1BC4

FIGURE: US-05

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	US6-P1B-1F
1 SIDEWALL 1' DEPTH	220	US6-P1B-1W-A
1 SIDEWALL 2' DEPTH	289	US6-P1B-IW-B
1 SIDEWALL 3' DEPTH	302	US6-P1B-1W-C
FLOOR 2	260	US6-P1B-2F
2 SIDEWALL 1' DEPTH	234	US6-P1B-2W-A
2 SIDEWALL 2' DEPTH	208	US6-P1B-2W-B
2 SIDEWALL 3' DEPTH	214	US6-P1B-2W-C
FLOOR 3	278	US6-P1B-3F
3 SIDEWALL 1' DEPTH	330	US6-P1B-3W-A
3 SIDEWALL 2' DEPTH	339	US6-P1B-3W-B
3 SIDEWALL 3' DEPTH	313	US6-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-6 PHASE 1B (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

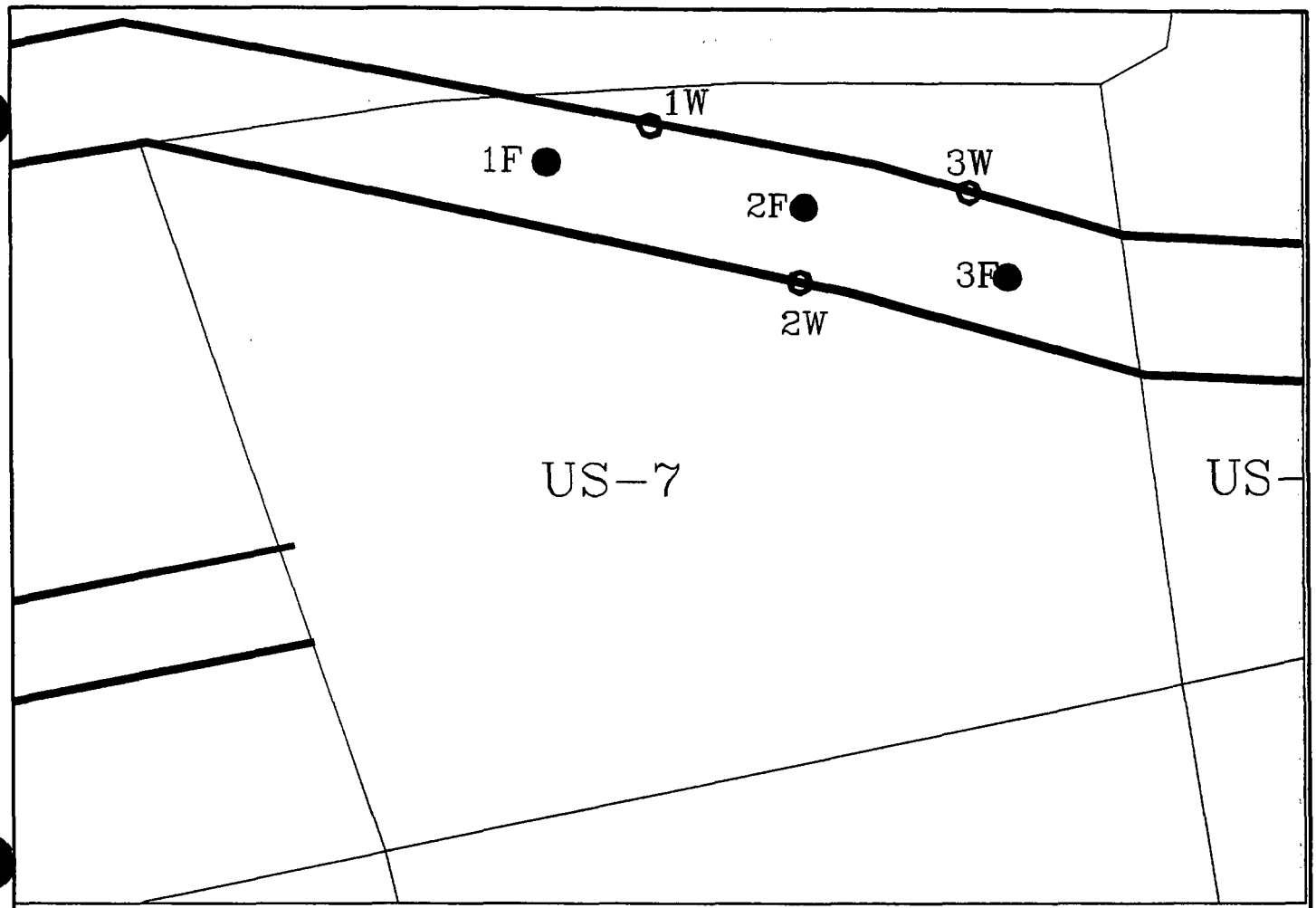
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Renton, Washington 98407

DRAWING FILE NUMBER: TAC US06P1BC4
SHEET NUMBER: US-06
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	673	US7-P1B-1F
1 SIDEWALL 1' DEPTH	558	US7-P1B-1W-A
1 SIDEWALL 2' DEPTH	990	US7-P1B-IW-B
1 SIDEWALL 3' DEPTH	748	US7-P1B-1W-C
FLOOR 2	506	US7-P1B-2F
2 SIDEWALL 1' DEPTH	828	US7-P1B-2W-A
2 SIDEWALL 2' DEPTH	247	US7-P1B-2W-B
2 SIDEWALL 3' DEPTH	341	US7-P1B-2W-C
FLOOR 3	240	US7-P1B-3F
3 SIDEWALL 1' DEPTH	866	US7-P1B-3W-A
3 SIDEWALL 2' DEPTH	750	US7-P1B-3W-B
3 SIDEWALL 3' DEPTH	627	US7-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-7 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

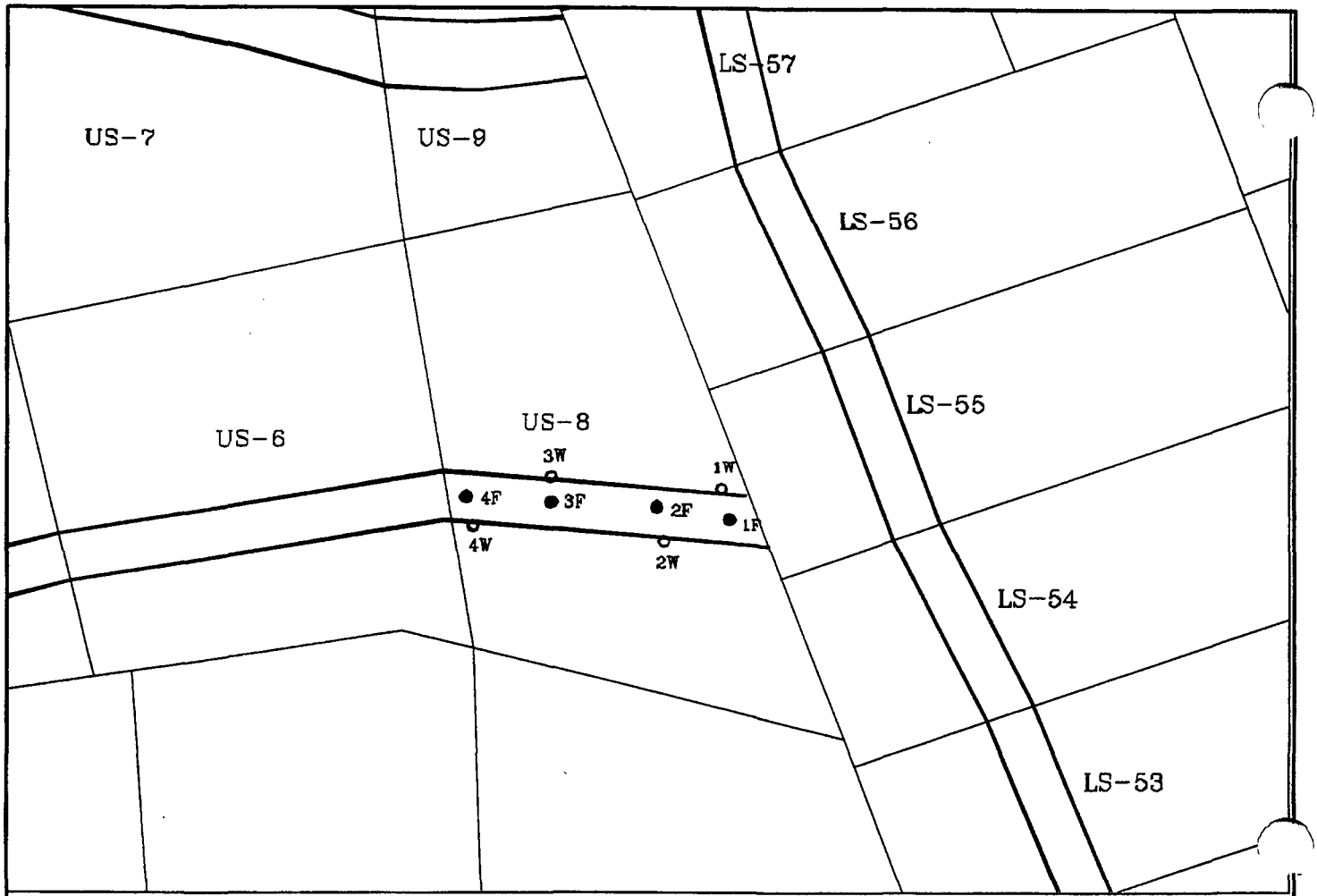
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC US07P1BC4
AUTOCAD REL. DWG DRAWING (DWG)

SHEET NUMBER
US-07

REV

NORTH



LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	656	US8-P1B-1F
1 SIDEWALL 1' DEPTH	223	US8-P1B-1W-A
1 SIDEWALL 2' DEPTH	702	US8-P1B-IW-B
1 SIDEWALL 3' DEPTH	414	US8-P1B-1W-C
FLOOR 2	570	US8-P1B-2F
2 SIDEWALL 1' DEPTH	1250	US8-P1B-2W-A
2 SIDEWALL 2' DEPTH	332	US8-P1B-2W-B
2 SIDEWALL 3' DEPTH	375	US8-P1B-2W-C
FLOOR 3	600	US8-P1B-3F
3 SIDEWALL 1' DEPTH	253	US8-P1B-3W-A
3 SIDEWALL 2' DEPTH	217	US8-P1B-3W-B
3 SIDEWALL 3' DEPTH	331	US8-P1B-3W-C
FLOOR 4	480	US8-P1B-4F
4 SIDEWALL 1' DEPTH	426	US8-P1B-4W-A
4 SIDEWALL 2' DEPTH	580	US8-P1B-4W-B
4 SIDEWALL 3' DEPTH	<100	US8-P1B-4W-C

LEGEND

● FLOOR SAMPLE LOCATION

○ PERIMETER SAMPLE LOCATION

CONFIRMATION TRENCH SAMPLING

US-8 PHASE 1B (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 20FEET 40FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: NOTED

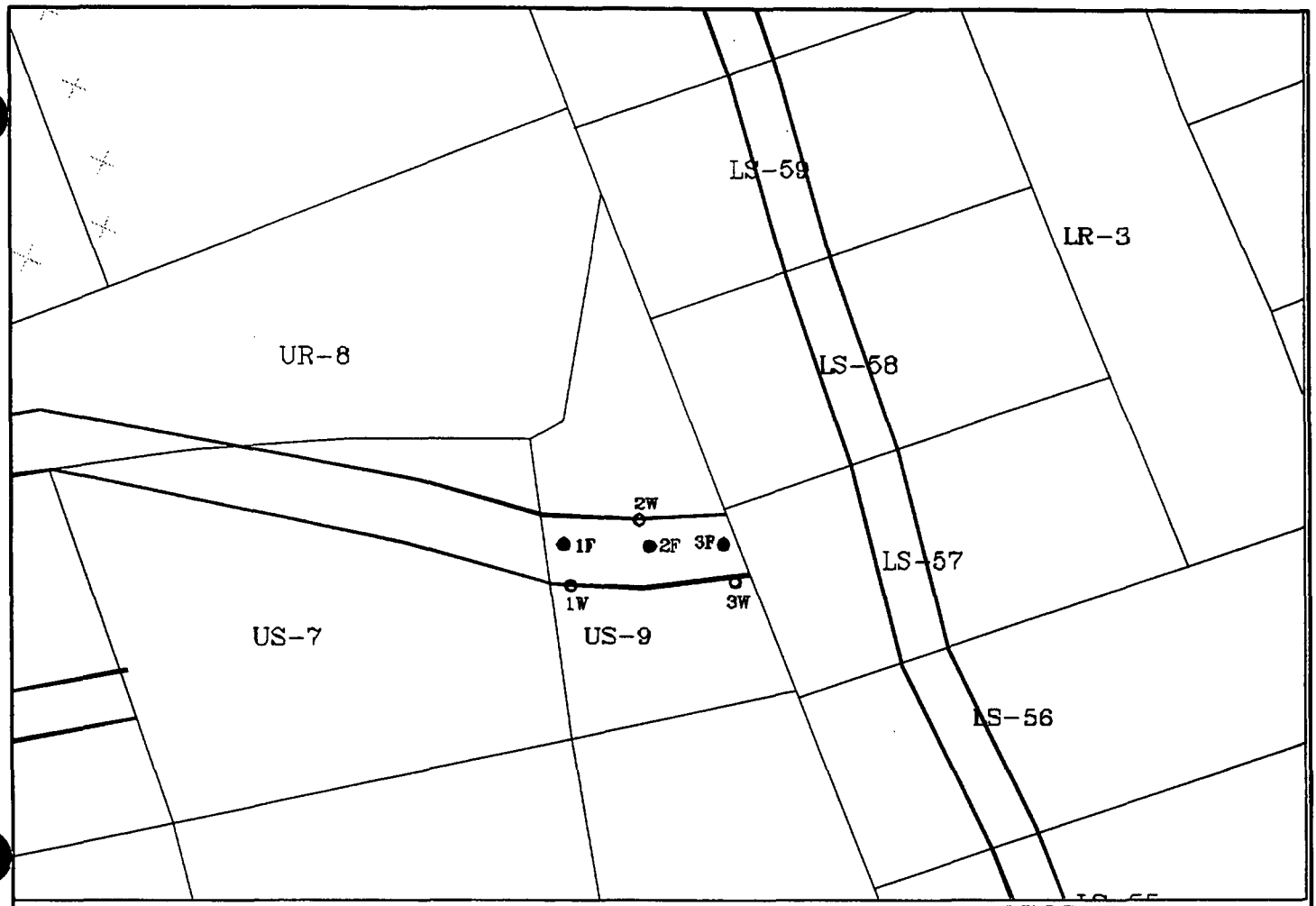
Ruston, WA 98407

DRAWING FILE NUMBER: TAC US08P1BC4

FIGURE: US-08

REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	438	US9-P1B-1F
1 SIDEWALL 1' DEPTH	780	US9-P1B-1W-A
1 SIDEWALL 2' DEPTH	567	US9-P1B-IW-B
1 SIDEWALL 3' DEPTH	493	US9-P1B-1W-C
FLOOR 2	746	US9-P1B-2F
2 SIDEWALL 1' DEPTH	1250	US9-P1B-2W-A
2 SIDEWALL 2' DEPTH	840	US9-P1B-2W-B
2 SIDEWALL 3' DEPTH	360	US9-P1B-2W-C
FLOOR 3	740	US9-P1B-3F
3 SIDEWALL 1' DEPTH	1300	US9-P1B-3W-A
3 SIDEWALL 2' DEPTH	1270	US9-P1B-3W-B
3 SIDEWALL 3' DEPTH	264	US9-P1B-3W-C

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

US-9 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

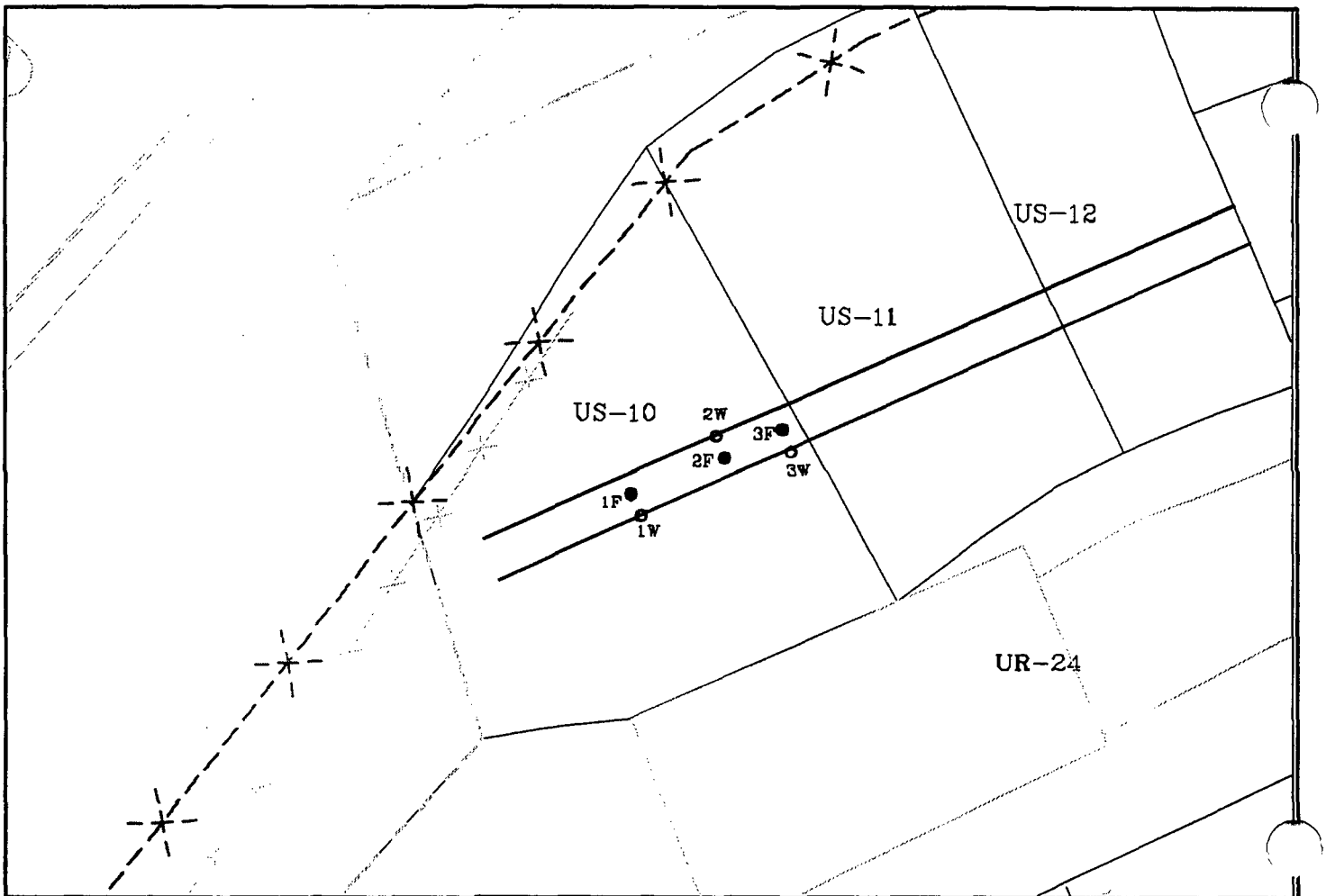
REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC US09P1BC4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER
US-09
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	872	US10-P1B-1F
1 SIDEWALL 1' DEPTH	1590	US10-P1B-1W-A
1 SIDEWALL 2' DEPTH	750	US10-P1B-IW-B
1 SIDEWALL 3' DEPTH	1140	US10-P1B-1W-C
FLOOR 2	710	US10-P1B-2F
2 SIDEWALL 1' DEPTH	285	US10-P1B-2W-A
2 SIDEWALL 2' DEPTH	410	US10-P1B-2W-B
2 SIDEWALL 3' DEPTH	260	US10-P1B-2W-C
FLOOR 3	720	US10-P1B-3F
3 SIDEWALL 1' DEPTH	1270	US10-P1B-3W-A
3 SIDEWALL 2' DEPTH	960	US10-P1B-3W-B
3 SIDEWALL 3' DEPTH	885	US10-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-10 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 20 FEET — 40 FEET

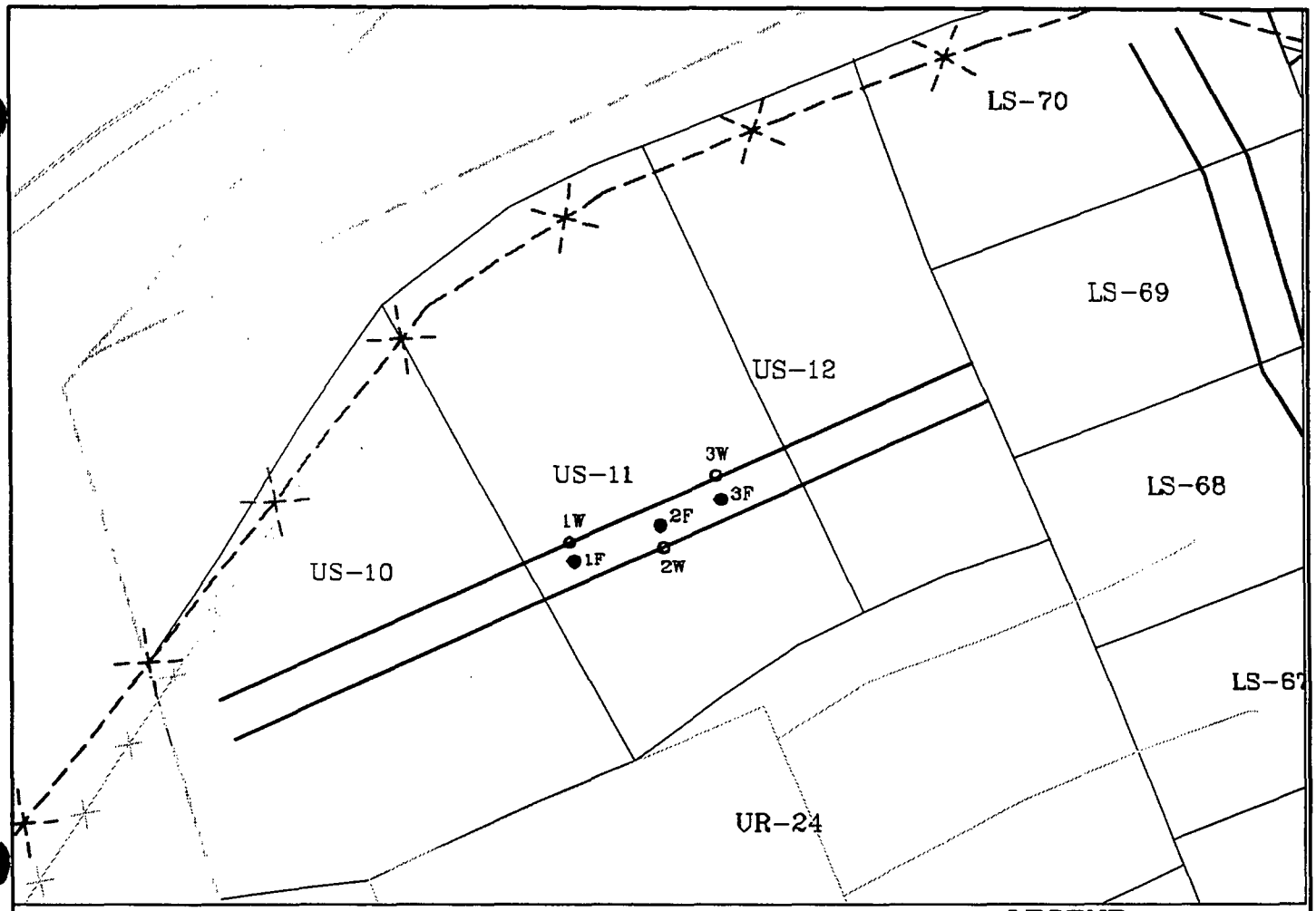
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Everett, Washington 98207

DRAWING FILE NUMBER: TAC US10P1BC4
SHEET NUMBER: US-10
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	796	US11-P1B-1F
1 SIDEWALL 1' DEPTH	480	US11-P1B-1W-A
1 SIDEWALL 2' DEPTH	320	US11-P1B-IW-B
1 SIDEWALL 3' DEPTH	760	US11-P1B-1W-C
FLOOR 2	<100	US11-P1B-2F
2 SIDEWALL 1' DEPTH	1410	US11-P1B-2W-A
2 SIDEWALL 2' DEPTH	1600	US11-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	US11-P1B-2W-C
FLOOR 3	128	US11-P1B-3F
3 SIDEWALL 1' DEPTH	748	US11-P1B-3W-A
3 SIDEWALL 2' DEPTH	370	US11-P1B-3W-B
3 SIDEWALL 3' DEPTH	230	US11-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-11 PHASE 1B (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 20 FEET 40 FEET

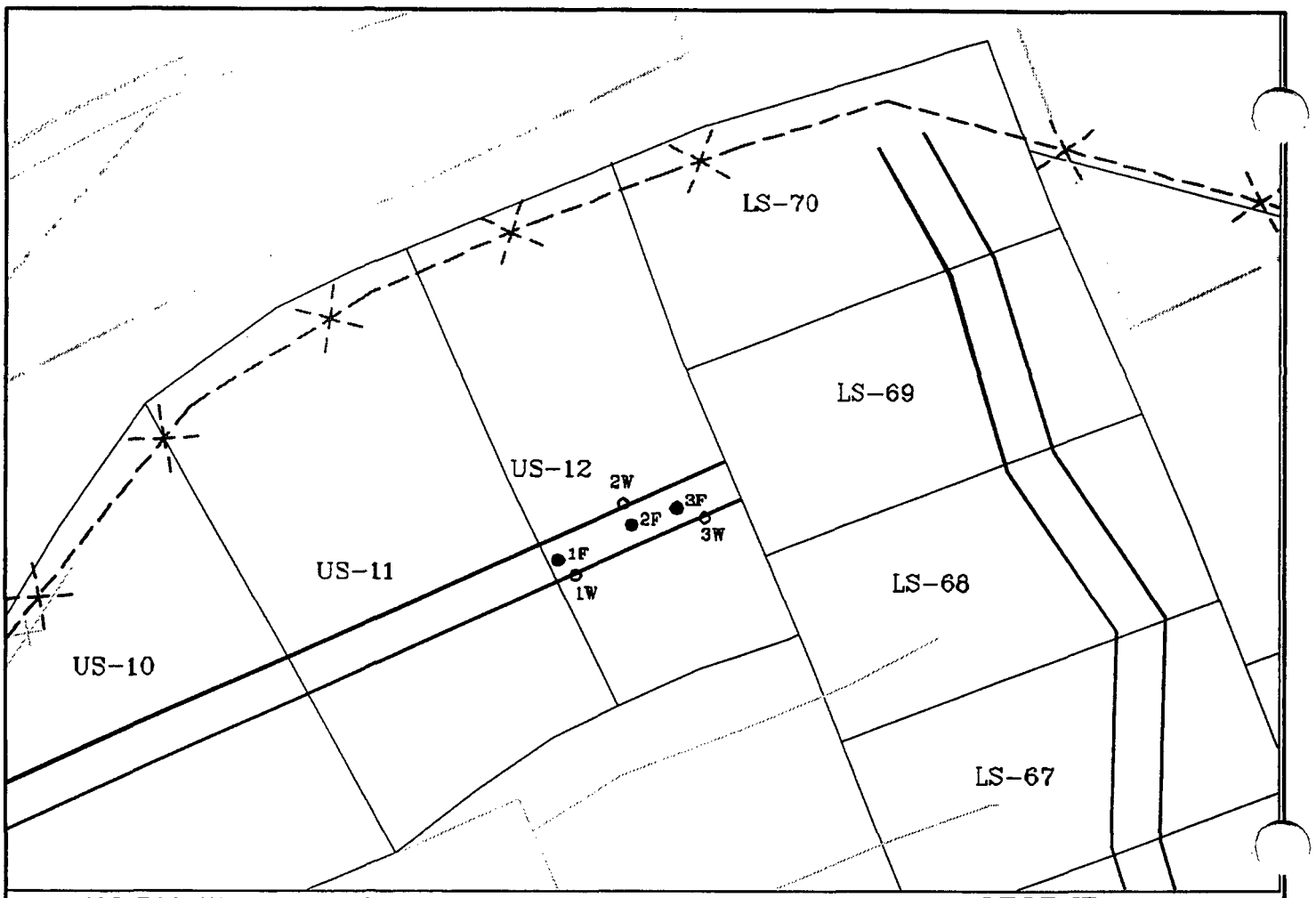
REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Everett, Washington 98137

DRAWING FILE NUMBER: TAC US11P1BC4
SHEET NUMBER: US-11
REV

NORTH



CONFIRMATION TRENCH SAMPLING

LOCATION	TOTAL ARSENIC (ppm)	SAMPLE ID. NUMBER
FLOOR 1	<100	US12-P1B-1F
1 SIDEWALL 1' DEPTH	180	US12-P1B-1W-A
1 SIDEWALL 2' DEPTH	190	US12-P1B-IW-B
1 SIDEWALL 3' DEPTH	<100	US12-P1B-1W-C
FLOOR 2	<100	US12-P1B-2F
2 SIDEWALL 1' DEPTH	<100	US12-P1B-2W-A
2 SIDEWALL 2' DEPTH	<100	US12-P1B-2W-B
2 SIDEWALL 3' DEPTH	<100	US12-P1B-2W-C
FLOOR 3	<100	US12-P1B-3F
3 SIDEWALL 1' DEPTH	252	US12-P1B-3W-A
3 SIDEWALL 2' DEPTH	<100	US12-P1B-3W-B
3 SIDEWALL 3' DEPTH	<100	US12-P1B-3W-C

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-12 PHASE 1B (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS NO	BY	DATE
1st		
2nd		
3rd		
4th		

Project :
DRAWN BY DOFG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

Ruston, Washington 98407

DRAWING FILE NUMBER
TAC US12P1BC4
AUTOCAD ENG. DOOD DRAWING (DWG)
SHEET NUMBER
US-12
REV

NORTH

A.3 Phase 2 Sampling Results Table and Maps (Phase IIIB Excavation)

Table A.3
Everett Fenced Area Performance Monitoring - Phase 2 Sampling

Decision Unit	Sample Number	Sample Date	Composite or Discrete	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: ave.>150 mg/Kg; max.>500 mg/Kg)
LS01	IAFA-P2-F-LS1-C-1	10/26/04	Composite	Floor	9'	234	Fail
LS04	IAFA-P2-F-LS4-C-1	10/26/04	Composite	Floor	9'	52	Pass
LS47[1]	IAFA-P2-F-LS47-C-1	7/26/04	Composite	Floor	8'	166	Fail
	IAFA-P2-F-LS47-C-2	9/21/04	Composite	Floor	9'	94	Pass
	IAFA-P2-P-LS47-C-A-1	7/26/04	Composite	Perimeter	surface	821	Fail[2]
	IAFA-P2-P-LS47-C-B-1	7/26/04	Composite	Perimeter	2'	583	Fail[2]
	IAFA-P2-P-LS47-C-C-1	7/26/04	Composite	Perimeter	4'	4768	Fail[2]
	IAFA-P2-P-LS47-C-D-1	7/26/04	Composite	Perimeter	6'	813	Fail[2]
	IAFA-P2-P-LS47-C-E-1	7/26/04	Composite	Perimeter	8'	295	Fail[2]
LS49[1]	IAFA-P2-F-LS49-C-1	7/26/04	Composite	Floor	10.5'	96	Pass
LS50A	FIELD XRF - 1	9/17/04	Discrete	Floor	8'	85	Pass
	FIELD XRF - 2	9/17/04	Discrete	Floor	8'	76	Pass
	FIELD XRF - 3	9/17/04	Discrete	Floor	8'	110	Pass
	FIELD XRF - 4	9/17/04	Discrete	Floor	8'	92	Pass
	FIELD XRF - 5	9/17/04	Discrete	Floor	8'	135	Pass
	FIELD XRF - 6	9/17/04	Discrete	Floor	8'	120	Pass
	FIELD XRF - 7	9/17/04	Discrete	Floor	8'	130	Pass
LS51[1]	IAFA-P2-F-LS51-C-1	7/31/04	Composite	Floor	12'	84	Pass
	IAFA-P2-P-LS51-C-A-1	7/29/04	Composite	Perimeter	surface	2171	Fail[3]
	IAFA-P2-P-LS51-D-A-L1-1	7/29/04	Discrete	Perimeter	surface	2766	Fail[3]
	IAFA-P2-P-LS51-D-A-L2-1	7/29/04	Discrete	Perimeter	surface	1345	Fail[3]
	IAFA-P2-P-LS51-D-A-L3-1	7/29/04	Discrete	Perimeter	surface	739	Fail[3]
	IAFA-P2-P-LS51-D-A-L4-1	7/29/04	Discrete	Perimeter	surface	2760	Fail[3]
	IAFA-P2-P-LS51-C-B-1	7/29/04	Composite	Perimeter	2'	684	Fail[3]
	IAFA-P2-P-LS51-D-B-L1-1	7/29/04	Discrete	Perimeter	2'	1204	Fail[3]
	IAFA-P2-P-LS51-D-B-L2-1	7/29/04	Discrete	Perimeter	2'	875	Fail[3]
	IAFA-P2-P-LS51-D-B-L3-1	7/29/04	Discrete	Perimeter	2'	74	Pass
	IAFA-P2-P-LS51-D-B-L4-1	7/29/04	Discrete	Perimeter	2'	304	Pass
	IAFA-P2-P-LS51-C-C-1	7/29/04	Composite	Perimeter	4'	89	Pass
	IAFA-P2-P-LS51-D-C-L1-1	7/29/04	Discrete	Perimeter	4'	176	Pass
	IAFA-P2-P-LS51-D-C-L2-1	7/29/04	Discrete	Perimeter	4'	26	Pass
	IAFA-P2-P-LS51-D-C-L3-1	7/29/04	Discrete	Perimeter	4'	20	Pass

Discrete samples analyzed if composite sample indicates an arsenic concentration between 105 and 150 ppm.

Table A.3
Everett Fenced Area Performance Monitoring - Phase 2 Sampling

Decision Unit	Sample Number	Sample Date	Composite or Discrete	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: ave.>150 mg/Kg; max.>500 mg/Kg)
	IAFA-P2-P-LS51-D-C-L4-1	7/29/04	Discrete	Perimeter	4'	156	Pass
	IAFA-P2-P-LS51-C-D-1	7/29/04	Composite	Perimeter	6'	74	Pass
	IAFA-P2-P-LS51-D-D-L1-1	7/29/04	Discrete	Perimeter	6'	57	Pass
	IAFA-P2-P-LS51-D-D-L2-1	7/29/04	Discrete	Perimeter	6'	36	Pass
	IAFA-P2-P-LS51-D-D-L3-1	7/29/04	Discrete	Perimeter	6'	75	Pass
	IAFA-P2-P-LS51-D-D-L4-1	7/29/04	Discrete	Perimeter	6'	138	Pass
	IAFA-P2-P-LS51-C-E-1	7/29/04	Composite	Perimeter	8'	73	Pass
	IAFA-P2-P-LS51-D-E-L1-1	7/29/04	Discrete	Perimeter	8'	125	Pass
	IAFA-P2-P-LS51-D-E-L2-1	7/29/04	Discrete	Perimeter	8'	84	Pass
	IAFA-P2-P-LS51-D-E-L3-1	7/29/04	Discrete	Perimeter	8'	<10	Pass
	IAFA-P2-P-LS51-D-E-L4-1	7/29/04	Discrete	Perimeter	8'	64	Pass
	IAFA-P2-P-LS51-C-F-1	7/29/04	Composite	Perimeter	10'	61	Pass
	IAFA-P2-P-LS51-D-F-L1-1	7/29/04	Discrete	Perimeter	10'	108	Pass
	IAFA-P2-P-LS51-D-F-L2-1	7/29/04	Discrete	Perimeter	10'	14	Pass
	IAFA-P2-P-LS51-D-F-L3-1	7/29/04	Discrete	Perimeter	10'	11	Pass
	IAFA-P2-P-LS51-D-F-L4-1	7/29/04	Discrete	Perimeter	10'	116	Pass
	IAFA-P2-P-LS51-C-G-1	7/29/04	Composite	Perimeter	12'	69	Pass
	IAFA-P2-P-LS51-D-G-L1-1	7/29/04	Discrete	Perimeter	12'	95	Pass
	IAFA-P2-P-LS51-D-G-L2-1	7/29/04	Discrete	Perimeter	12'	66	Pass
	IAFA-P2-P-LS51-D-G-L3-1	7/29/04	Discrete	Perimeter	12'	35	Pass
	IAFA-P2-P-LS51-D-G-L4-1	7/29/04	Discrete	Perimeter	12'	62	Pass
LS62	IAFA-P2-F-LS62-C-1	10/20/04	Composite	Floor	7'	<10	Pass
LS63	IAFA-P2-F-LS63-C-1	10/20/04	Composite	Floor	6'	100	Pass
LS64	IAFA-P2-F-LS64-C-1	10/19/04	Composite	Floor	6'	10	Pass
LS65	IAFA-P2-F-LS65-C-1	10/19/04	Composite	Floor	7'	<10	Pass
LS66	IAFA-P2-F-LS66-C-1	10/26/04	Composite	Floor	7'	<10	Pass
LS67	IAFA-P2-F-LS67-C-1	10/26/04	Composite	Floor	7'	193	**Fail**
LS75	IAFA-P2-F-LS75-C-1	10/20/04	Composite	Floor	7'	21	Pass
LS81	IAFA-P2-F-LS81-C-1	10/20/04	Composite	Floor	6'	75	Pass
LR08	IAFA-P2-F-LR8-C-1	10/26/04	Composite	Floor	8'	10	Pass
LR11[1]	IAFA-P2-F-LR11-C-1	7/26/04	Composite	Floor	8'	147	Pass- run discretes
	IAFA-P2-F-LR11-D-L1-1	7/26/04	Discrete	Floor	8'	143	Pass

Discrete samples analyzed if composite sample indicates an arsenic concentration between 105 and 150 ppm.

Table A.3
Everett Fenced Area Performance Monitoring - Phase 2 Sampling

Decision Unit	Sample Number	Sample Date	Composite or Discrete	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: ave.>150 mg/Kg; max.>500 mg/Kg)
	IAFA-P2-F-LR11-D-L2-1	7/26/04	Discrete	Floor	8'	93	Pass
	IAFA-P2-F-LR11-D-L3-1	7/26/04	Discrete	Floor	8'	141	Pass
	IAFA-P2-F-LR11-D-L4-1	7/26/04	Discrete	Floor	8'	162	Pass
	IAFA-P2-F-LR11-D-L5-1	7/26/04	Discrete	Floor	8'	158	Pass
	IAFA-P2-F-LR11-D-L6-1	7/26/04	Discrete	Floor	8'	135	Pass
	IAFA-P2-F-LR11-D-L7-1	7/26/04	Discrete	Floor	8'	130	Pass
	IAFA-P2-F-LR11-D-L8-1	7/26/04	Discrete	Floor	8'	91	Pass
	IAFA-P2-F-LR11-D-L9-1	7/26/04	Discrete	Floor	8'	167	Pass
	IAFA-P2-P-LR11-C-A-1	7/26/04	Composite	Perimeter	surface	946	**Fail**
	IAFA-P2-P-LR11-C-A-2	7/29/04	Composite	Perimeter	surface	2314	**Fail**(4)
	IAFA-P2-P-LR11-D-A-L1-2	7/29/04	Discrete	Perimeter	surface	2162	**Fail**(4)
	IAFA-P2-P-LR11-D-A-L2-2	7/29/04	Discrete	Perimeter	surface	1683	**Fail**(4)
	IAFA-P2-P-LR11-D-A-L3-2	7/29/04	Discrete	Perimeter	surface	5047	**Fail**(4)
	IAFA-P2-P-LR11-D-A-L4-2	7/29/04	Discrete	Perimeter	surface	2151	**Fail**(4)
	IAFA-P2-P-LR11-C-B-1	7/26/04	Composite	Perimeter	2'	481	**Fail**
	IAFA-P2-P-LR11-C-B-2	7/29/04	Composite	Perimeter	2'	807	**Fail**(4)
	IAFA-P2-P-LR11-D-B-L1-2	7/29/04	Discrete	Perimeter	2'	1129	**Fail**(4)
	IAFA-P2-P-LR11-D-B-L2-2	7/29/04	Discrete	Perimeter	2'	704	**Fail**(4)
	IAFA-P2-P-LR11-D-B-L3-2	7/29/04	Discrete	Perimeter	2'	763	**Fail**(4)
	IAFA-P2-P-LR11-D-B-L4-2	7/29/04	Discrete	Perimeter	2'	425	Pass
	IAFA-P2-P-LR11-C-C-1	7/26/04	Composite	Perimeter	4'	1292	**Fail**
	IAFA-P2-P-LR11-C-C-2	7/29/04	Composite	Perimeter	4'	165	**Fail**(4)
	IAFA-P2-P-LR11-C-D-1	7/26/04	Composite	Perimeter	6'	285	**Fail**
	IAFA-P2-P-LR11-C-D-2	7/29/04	Composite	Perimeter	6'	129	Pass- run discretes
	IAFA-P2-P-LR11-D-D-L1-2	7/29/04	Discrete	Perimeter	6'	90	Pass
	IAFA-P2-P-LR11-D-D-L2-2	7/29/04	Discrete	Perimeter	6'	163	Pass
	IAFA-P2-P-LR11-D-D-L3-2	7/29/04	Discrete	Perimeter	6'	150	Pass
	IAFA-P2-P-LR11-D-D-L4-2	7/29/04	Discrete	Perimeter	6'	156	Pass
	IAFA-P2-P-LR11-C-E-1	7/26/04	Composite	Perimeter	8'	350	**Fail**
	IAFA-P2-P-LR11-C-E-2	7/29/04	Composite	Perimeter	8'	116	Pass- run discretes
	IAFA-P2-P-LR11-D-E-L1-2	7/29/04	Discrete	Perimeter	8'	134	Pass
	IAFA-P2-P-LR11-D-E-L2-2	7/29/04	Discrete	Perimeter	8'	148	Pass

Discrete samples analyzed if composite sample indicates an arsenic concentration between 105 and 150 ppm.

Table A.3
Everett Fenced Area Performance Monitoring - Phase 2 Sampling

Decision Unit	Sample Number	Sample Date	Composite or Discrete	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: ave.>150 mg/Kg; max.>500 mg/Kg)
	IAFA-P2-P-LR11-D-E-L3-2	7/29/04	Discrete	Perimeter	8'	137	Pass
	IAFA-P2-P-LR11-D-E-L4-2	7/29/04	Discrete	Perimeter	8'	84	Pass
US01	IAFA-P2-F-US1-C-1	10/26/04	Composite	Floor	4'	279	**Fail**
US05	IAFA-P2-F-US5-C-1	10/26/04	Composite	Floor	6'	416	**Fail**
US06	IAFA-P2-F-US6-C-1	10/26/04	Composite	Floor	5'	49	Pass
US07	IAFA-P2-F-US7-C-1	10/26/04	Composite	Floor	6'	251	**Fail**
US08	IAFA-P2-F-US8-C-1	10/26/04	Composite	Floor	7'	67	Pass
US10	IAFA-P2-F-US10-C-1	10/18/04	Composite	Floor	6'	<10	Pass
				Perimeter	surface		
				Perimeter	2'		
				Perimeter	4'		
				Perimeter	6'		
US11	IAFA-P2-F-US11-C-1	10/19/04	Composite	Floor	6'	34	Pass
				Perimeter	surface		
				Perimeter	2'		
				Perimeter	4'		
				Perimeter	6'		
UR01	IAFA-P2-F-UR1-C-1	9/23/04	Composite	Floor	4'	43	Pass
	IAFA-P2-P-UR1-C-A-1	9/23/04	Composite	Perimeter	surface	1291	**Fail**
	IAFA-P2-P-UR1-C-B-1	9/23/04	Composite	Perimeter	2'	148	Pass(5)
	IAFA-P2-P-UR1-C-C-1	9/23/04	Composite	Perimeter	4'	62	Pass
UR07				Floor	5'		
	IAFA-P2-P-UR07-C-A-1	9/23/04	Composite	Perimeter	surface	761	**Fail**
	IAFA-P2-P-UR07-C-B-1	9/23/04	Composite	Perimeter	2'	1227	**Fail**
	IAFA-P2-P-UR07-C-C-1	9/23/04	Composite	Perimeter	4'	123	Pass(5)

(1) Upon beginning soil removal at LS51, a decision was made to expedite the construction of the detention pond. The area included LR11, LS47, and LS49 as well as LS51. Therefore, complete Phase 1 sampling was not conducted. All removed soil from these four units were managed as hazardous waste. Additional soil was removed from East Marine View Drive if arsenic concentrations exceeded 3,000 mg/Kg.

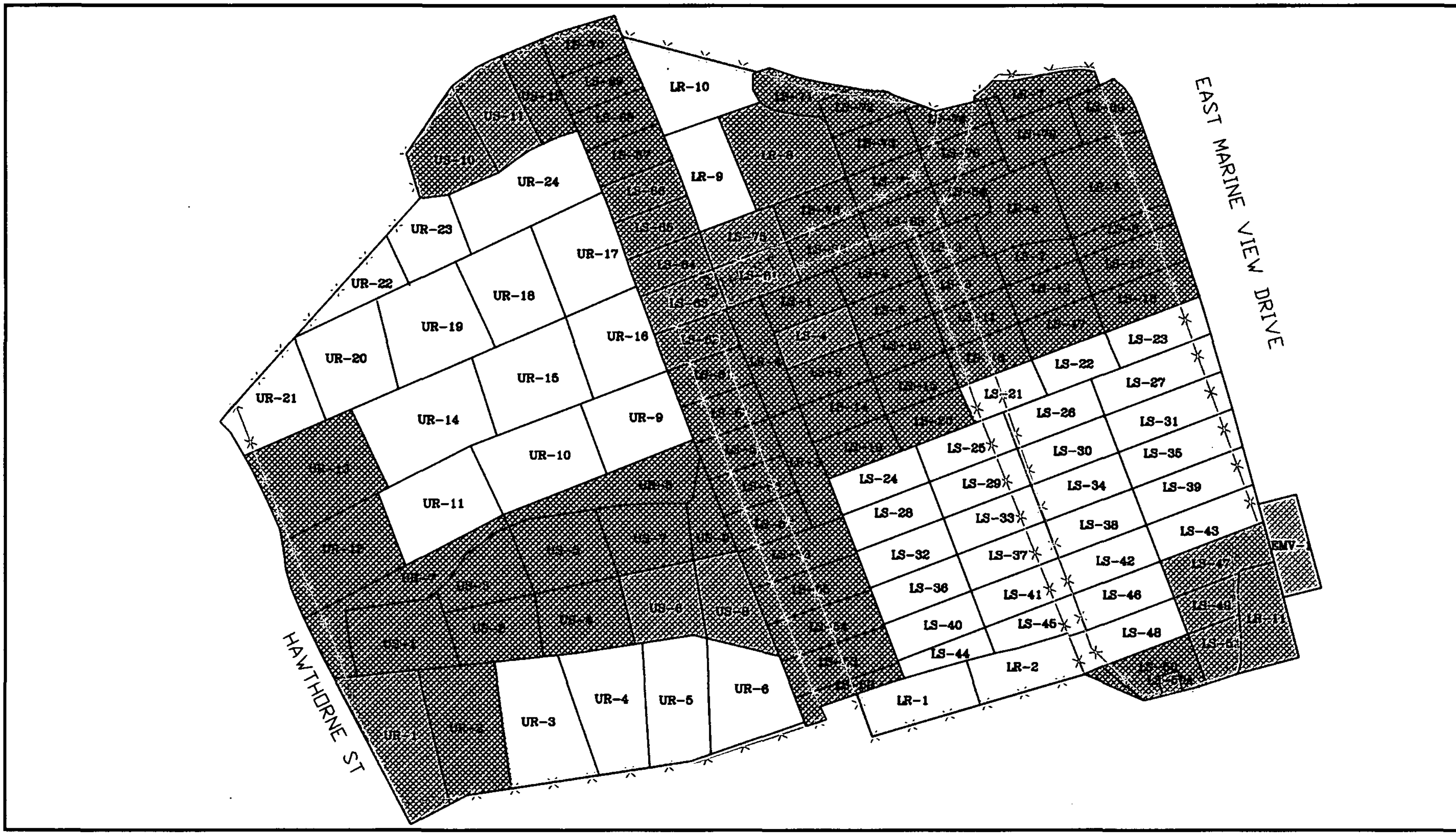
(2) Re-excavation occurred into a new adjacent decision unit, EMV-1. Therefore, the perimeter was removed.

Discrete samples analyzed if composite sample indicates an arsenic concentration between 105 and 150 ppm.

Table A.3
Everett Fenced Area Performance Monitoring - Phase 2 Sampling

Decision Unit	Sample Number	Sample Date	Composite or Discrete	Floor or Perimeter	Depth Interval	Arsenic Result (mg/Kg)	Pass/Fail (Fail: ave.>150 mg/Kg; max.>500 mg/Kg)
(3) Re-excavation stopped due to the property line or a street.							
(4) Re-excavation occurred in area of visual smelter debris which was believed to be the area with arsenic concentrations exceeding 3,000 mg/Kg. This area was the northeastern perimeter and became part of EMV-1 in Phase 1A sampling. The remaining perimeter was scraped and re-sampled with Ecology's consent using the field XRF to confirm that all soil containing arsenic exceeding 3,000 mg/Kg had been removed.							
(5) Analyzing discrete samples was not necessary to determine that the perimeter should be re-excavated and resampled.							

Discrete samples analyzed if composite sample indicates an arsenic concentration between 105 and 150 ppm.



12/7/04

K:Tac-Sect\Everett Soils\City of Everett Presentation\Everett Presentation Map 3

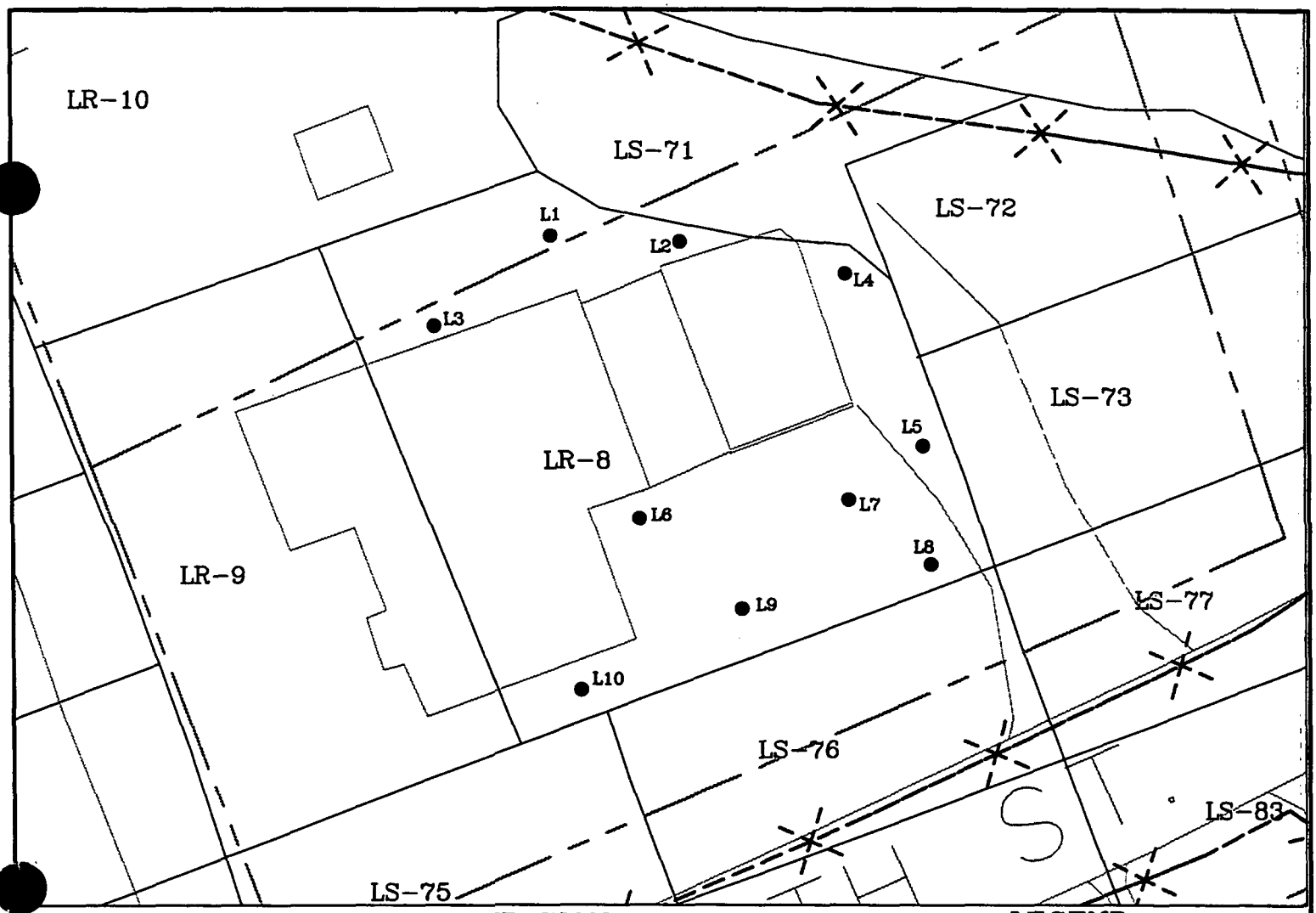
LEGEND

- Pass <20 PPM AS
- PASS <150 PPM AS
- PHASE 2 EXCAVATION OCCURRED IN 2004
- PHASE 2 SAMPLING NOT CONDUCTED DUE TO A PHYSICAL BARRIER SUCH AS A ROAD OR PROPERTY LINE

Asarco Consulting, Inc.

EVERETT SMELTER INTERIM ACTION
PHASE 2 SOIL REMOVAL STATUS

REMOVAL OF SOILS EXCEEDING 150 PPM AS



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	10	IAFA-P2-F-LR8-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

*THE TOTAL ARSENIC RESULT FOR LR-8 IS UNDER 20 PPM. THEREFORE, NO GEOFABRIC IS REQUIRED IN THIS AREA BEFORE BACKFILLING.

LR-08 (3527.80 SQUARE FEET)
PHASE 2 (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :	
DRAWN BY	OOPG
CHECKED BY	
APPROVED BY	
SCALE: AS NOTED	

ASARCO Consulting, Inc.
Ruston, Washington 98407

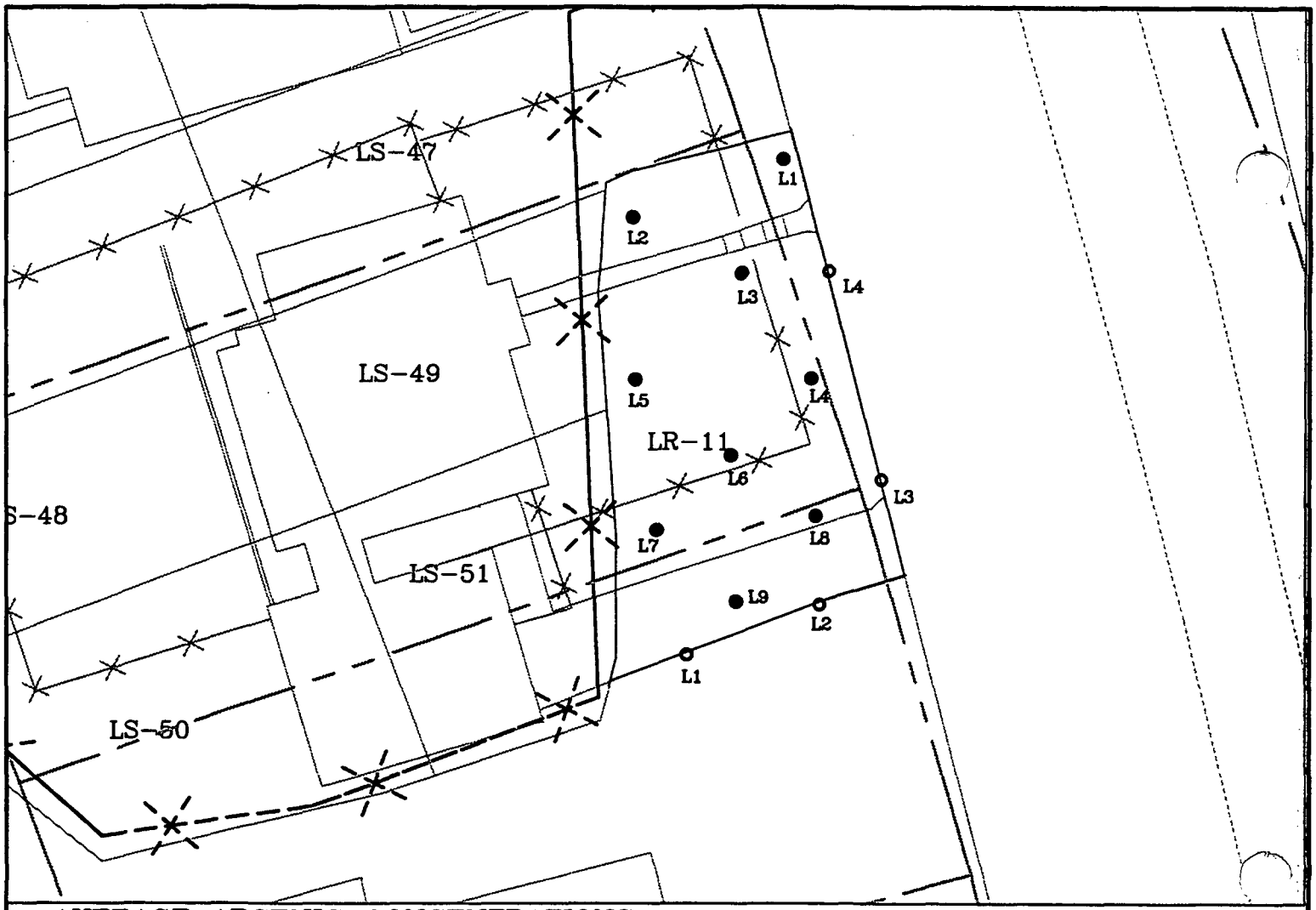
DRAWING FILE NUMBER
TAC LR08P2C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LR-08

REV △

NORTH

1st UPDATE:
TAC \OOPG\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 2



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE LABORATORY ID. NUMBER
FLOOR COMPOSITE	147	IAFA-P2-F-LR11-C-1
FLOOR DISCRETE L1	143	IAFA-P2-F-LR11-D-L1-1
FLOOR DISCRETE L2	93	IAFA-P2-F-LR11-D-L2-1
FLOOR DISCRETE L3	141	IAFA-P2-F-LR11-D-L3-1
FLOOR DISCRETE L4	162	IAFA-P2-F-LR11-D-L4-1
FLOOR DISCRETE L5	158	IAFA-P2-F-LR11-D-L5-1
FLOOR DISCRETE L6	135	IAFA-P2-F-LR11-D-L6-1
FLOOR DISCRETE L7	130	IAFA-P2-F-LR11-D-L7-1
FLOOR DISCRETE L8	91	IAFA-P2-F-LR11-D-L8-1
FLOOR DISCRETE L9	167	IAFA-P2-F-LR11-D-L9-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

SOILS ABOVE 150 PPM EXCAVATED FROM THIS DECISION UNIT WERE DISPOSED OF IN THE OCF TO EXPEDITE THE CONSTRUCTION OF A RETAINING POND

LR-11 (1993 SQUARE FEET)
PHASE 2 (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 20 FEET — 40 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

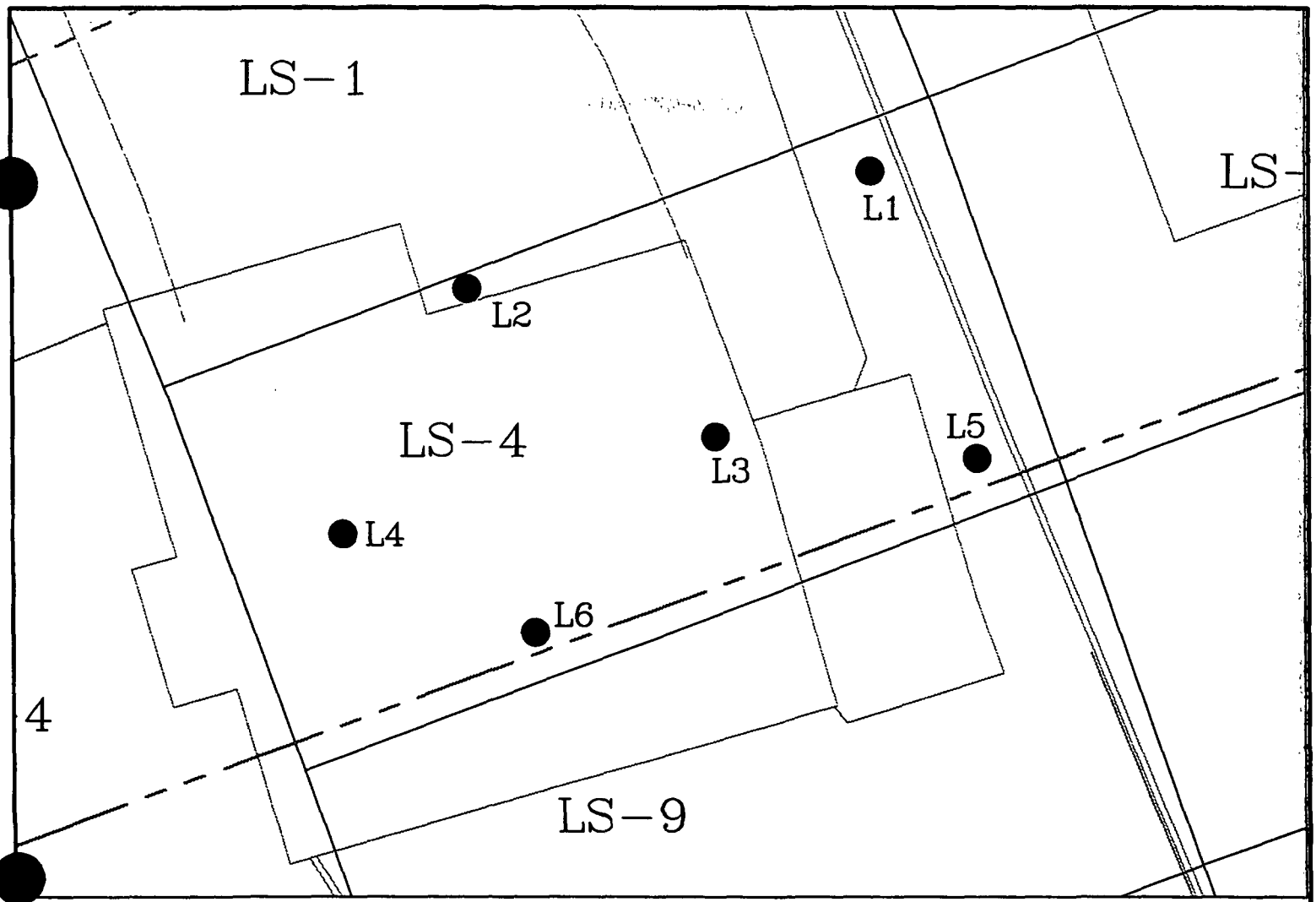
Project :
DRAWN BY: COPC
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LR11P2C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LR-11
REV

NORTH

Last UPDATE:
TAC \COPC\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 2



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	52	IAFA-P2-F-LS4-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-04 (1248.00 SQUARE FEET)
PHASE 2 (9 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY OOPC
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

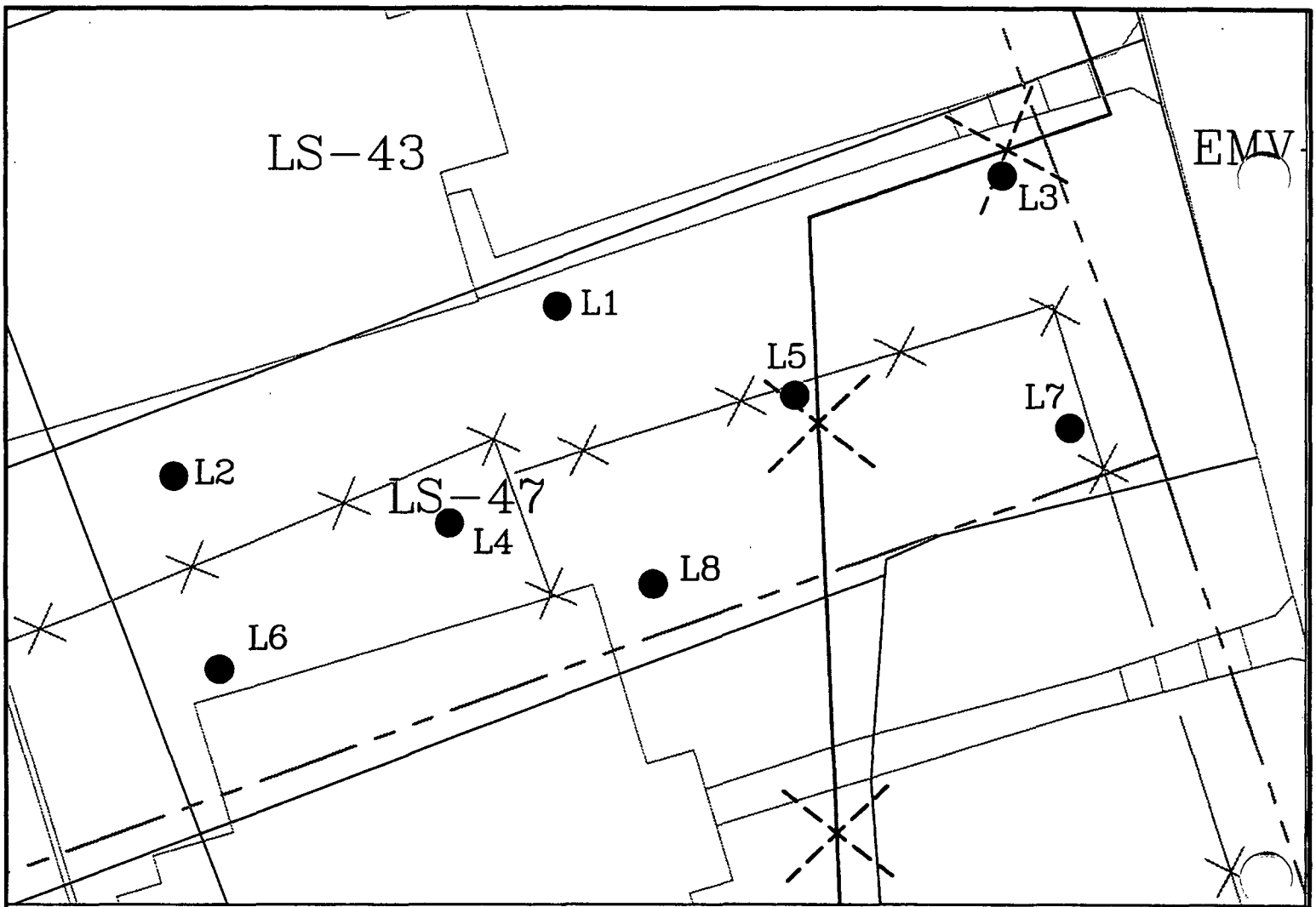
DRAWING FILE NUMBER
TAC LS04P2C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-04

REV △

NORTH

1st UPDATE:
TAC \OOPC\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 2



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	94	IAFA-P2-F-LS47-C-2

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-47 (1727.40 SQUARE FEET)
PHASE 2 (9 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY OOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

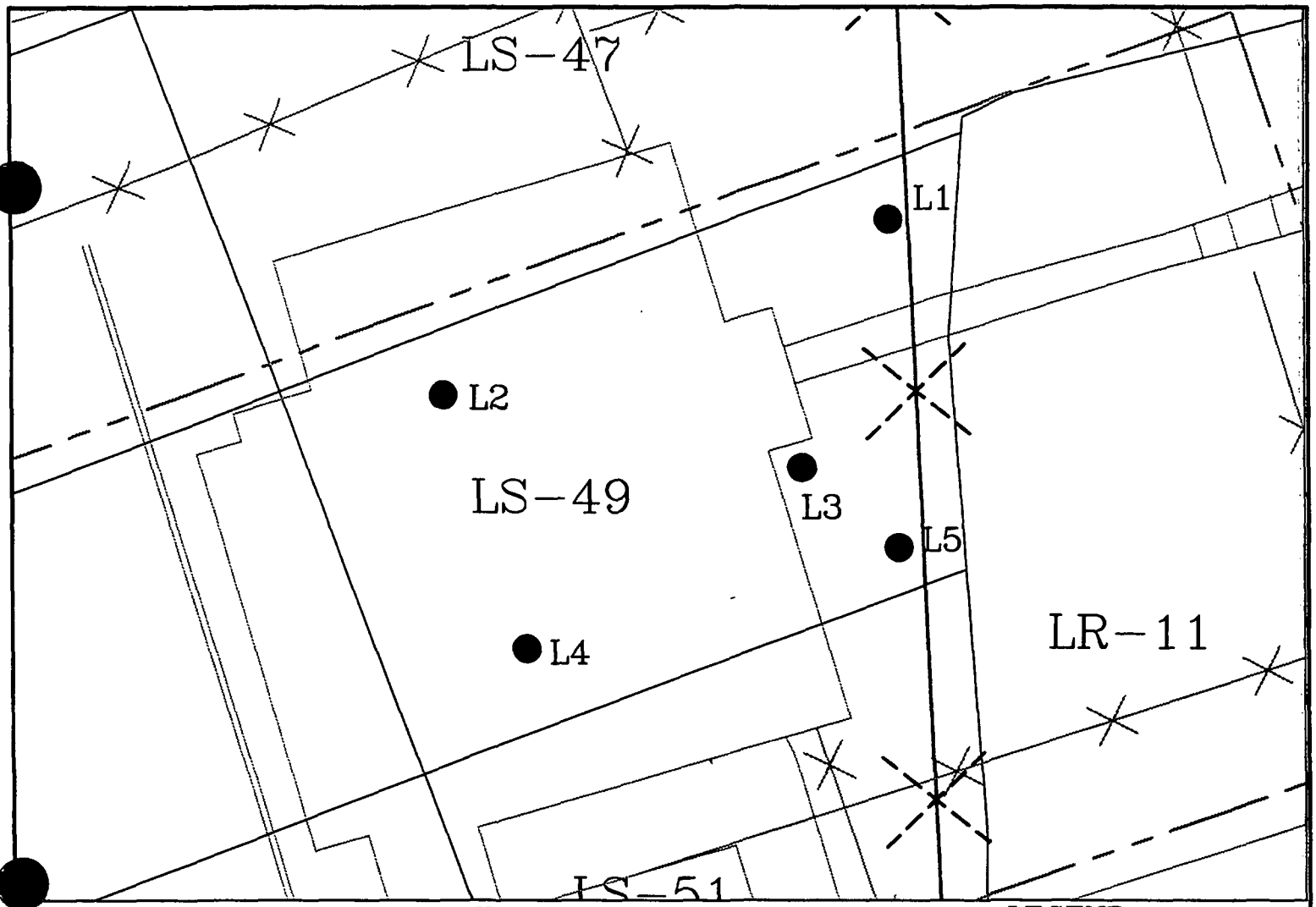
DRAWING FILE NUMBER
TAC LS47P2C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-47

REV △

NORTH

1st UPDATE:
TAC \OOPG\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 2



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	96	IAFA-P2-F-LS49-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

SOILS ABOVE 150 PPM EXCAVATED FROM THIS DECISION UNIT WERE DISPOSED OF IN THE OCF TO EXPEDITE THE CONSTRUCTION OF A RETAINING POND

LS-49 (988.80 SQUARE FEET)
PHASE 2 (10.5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY OOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS49C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-49

REV △

NORTH

1st UPDATE:
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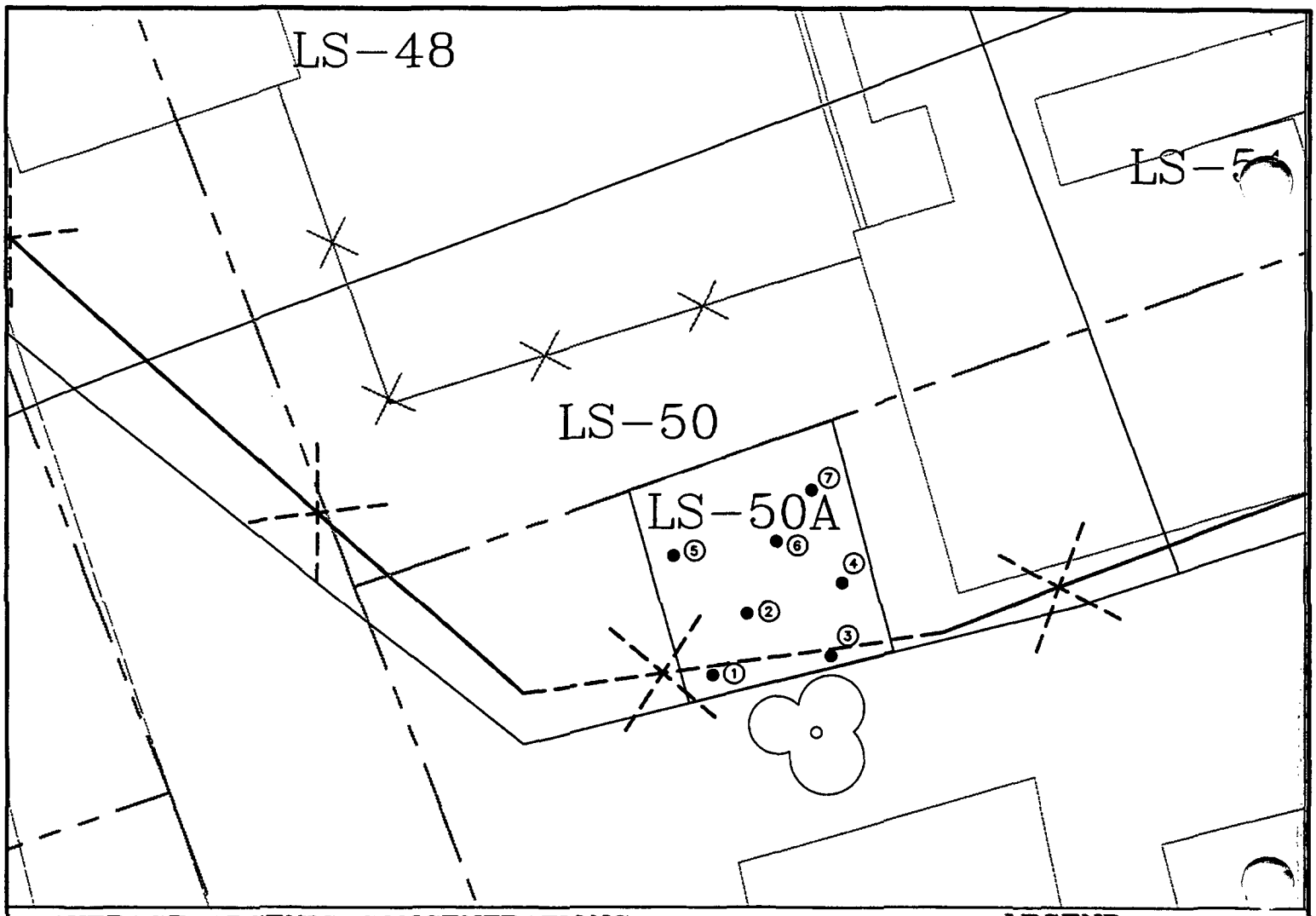

AVERAGE ARSENIC CONCENTRATIONS

FIELD XRF SAMPLE LOCATION	As CONCENTRATIONS (mg/kg)
1	85
2	76
3	110
4	92
5	135
6	120
7	130

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-50A (180.61 SQUARE FEET)
PHASE 2 (8 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :	
DRAWN BY	OOPG
CHECKED BY	
APPROVED BY	
SCALE: AS NOTED	

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS50AP2C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-50A

REV

NORTH

1st UPDATE:
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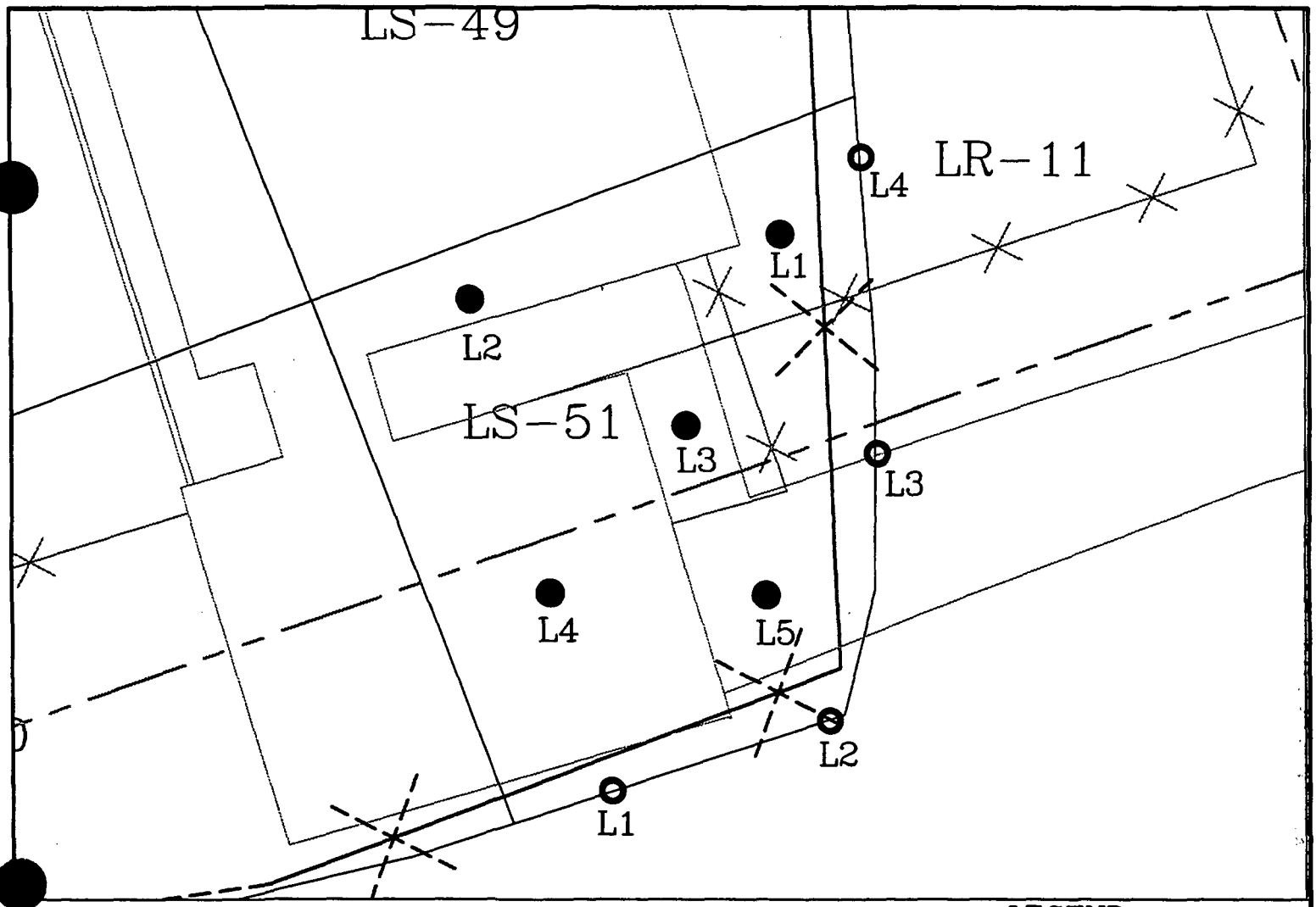


LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	84	IAFA-P2-F-LS84-C-1

SOILS ABOVE 150 PPM EXCAVATED FROM THIS DECISION UNIT WERE DISPOSED OF IN THE OCF TO EXPEDITE THE CONSTRUCTION OF A RETAINING POND

LS-51 (1014 SQUARE FEET)
PHASE 2 (12 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10 FEET 20 FEET

REVISIONS	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :		
DRAWN BY	OOPG	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

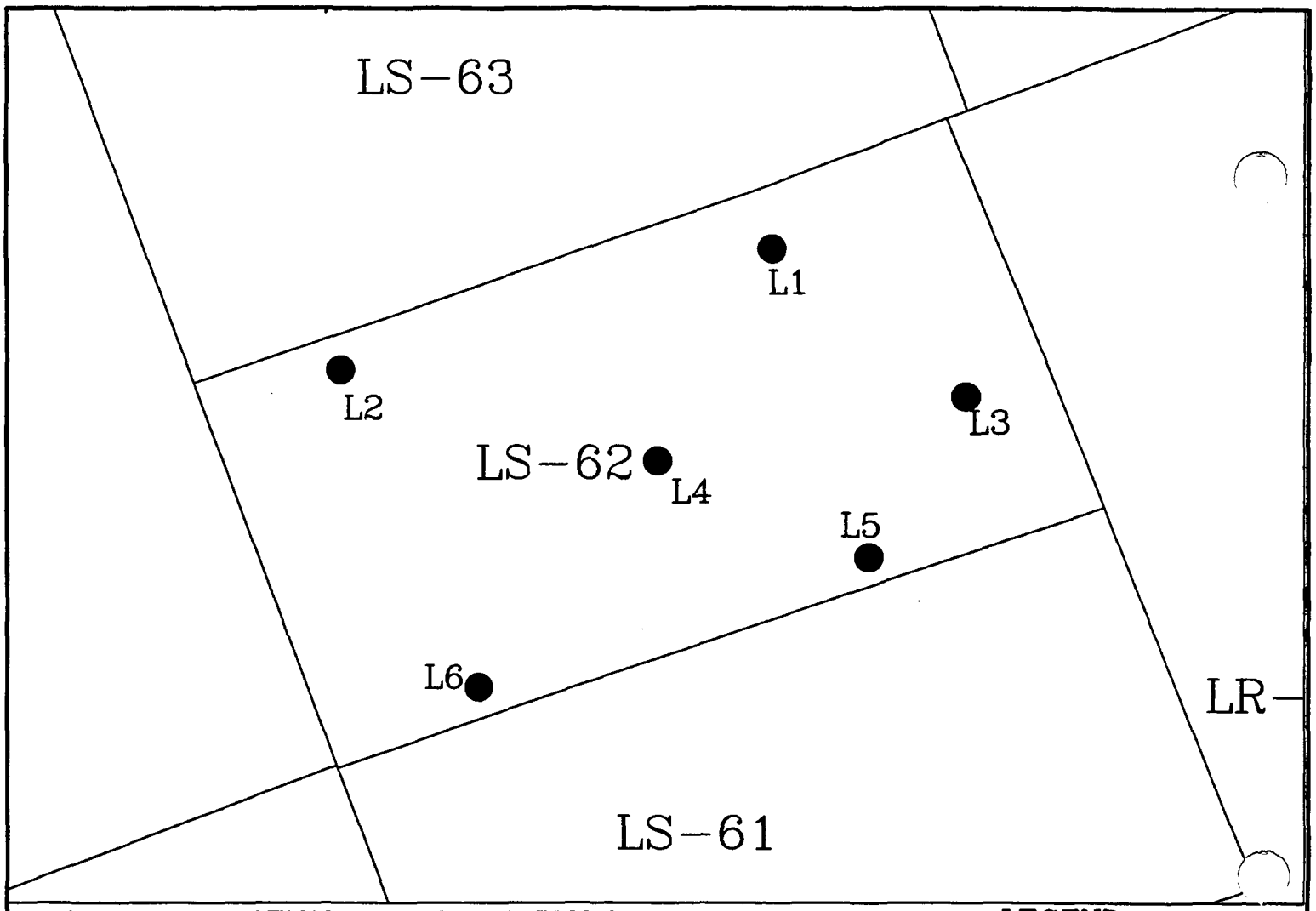
ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS51P2C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER: LS-51 REV △

NORTH

Tel. UPDATE:
TAC \OOPG\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 2



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	<10	IAFA-P2-F-LS62-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

*THE TOTAL ARSENIC RESULT FOR LS-62 IS UNDER 20 PPM. THEREFORE, NO GEOFABRIC IS REQUIRED IN THIS AREA BEFORE BACKFILLING.

LS-62 (1221.50 SQUARE FEET)
PHASE 2 (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :		
DRAWN BY	GOPG	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

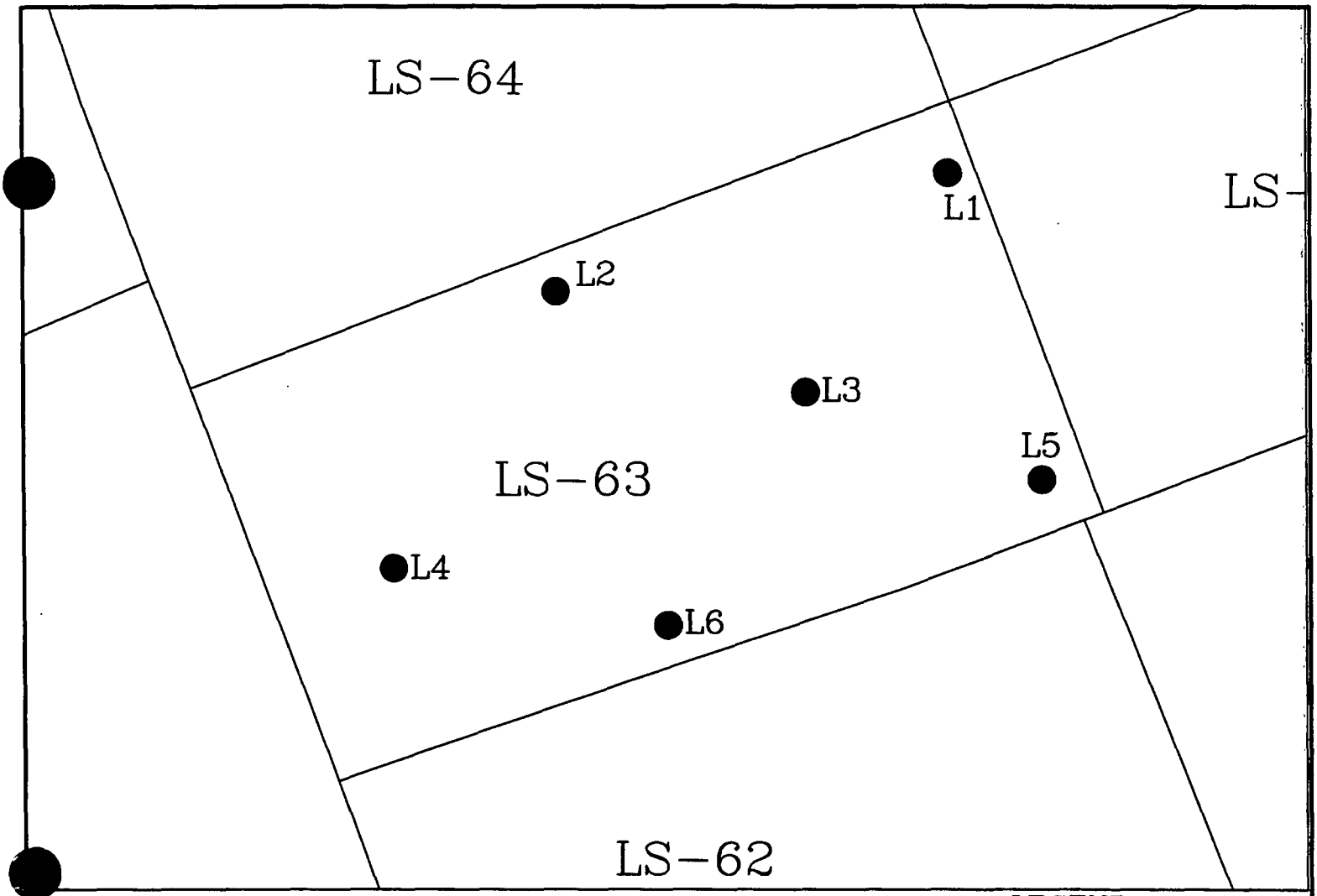
DRAWING FILE NUMBER
TAC LS62P2C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-62

REV △

NORTH

1st UPDATE:
TAC \GOPG\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 2



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	100	IAFA-P2-F-LS63-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-63 (1322.70 SQUARE FEET)
PHASE 2 (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

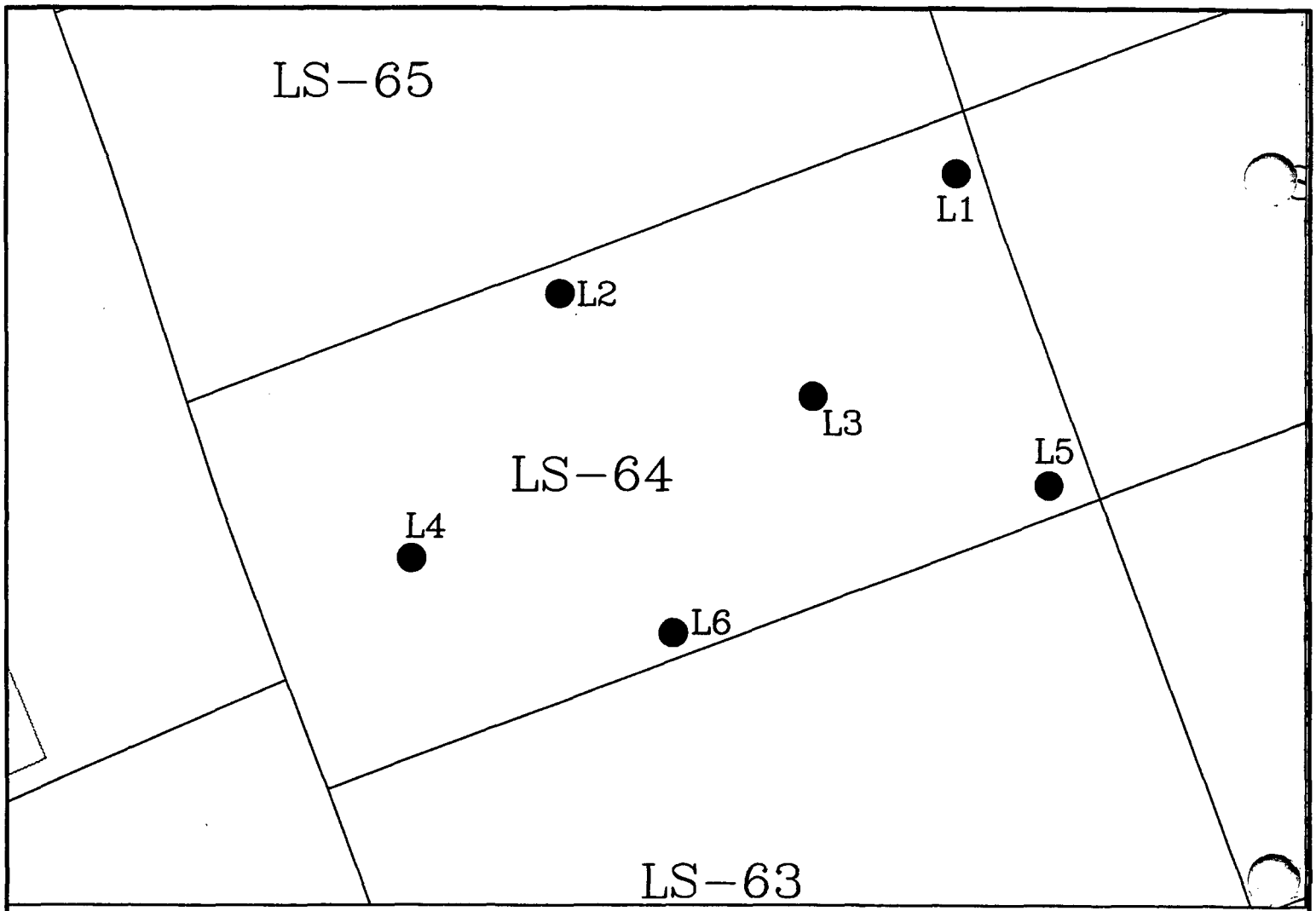
Project :
DRAWN BY: 00PC
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS63P2C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-63
REV

NORTH

1st UPDATE:
TAC \00PC\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 2



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	10	IAFA-P2-F-LS64-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

*THE TOTAL ARSENIC RESULT FOR LS-64 IS UNDER 20 PPM. THEREFORE, NO GEOFABRIC IS REQUIRED IN THIS AREA BEFORE BACKFILLING.

LS-64 (1243.00 SQUARE FEET)
PHASE 2 (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :		
DRAWN BY	OOPC	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

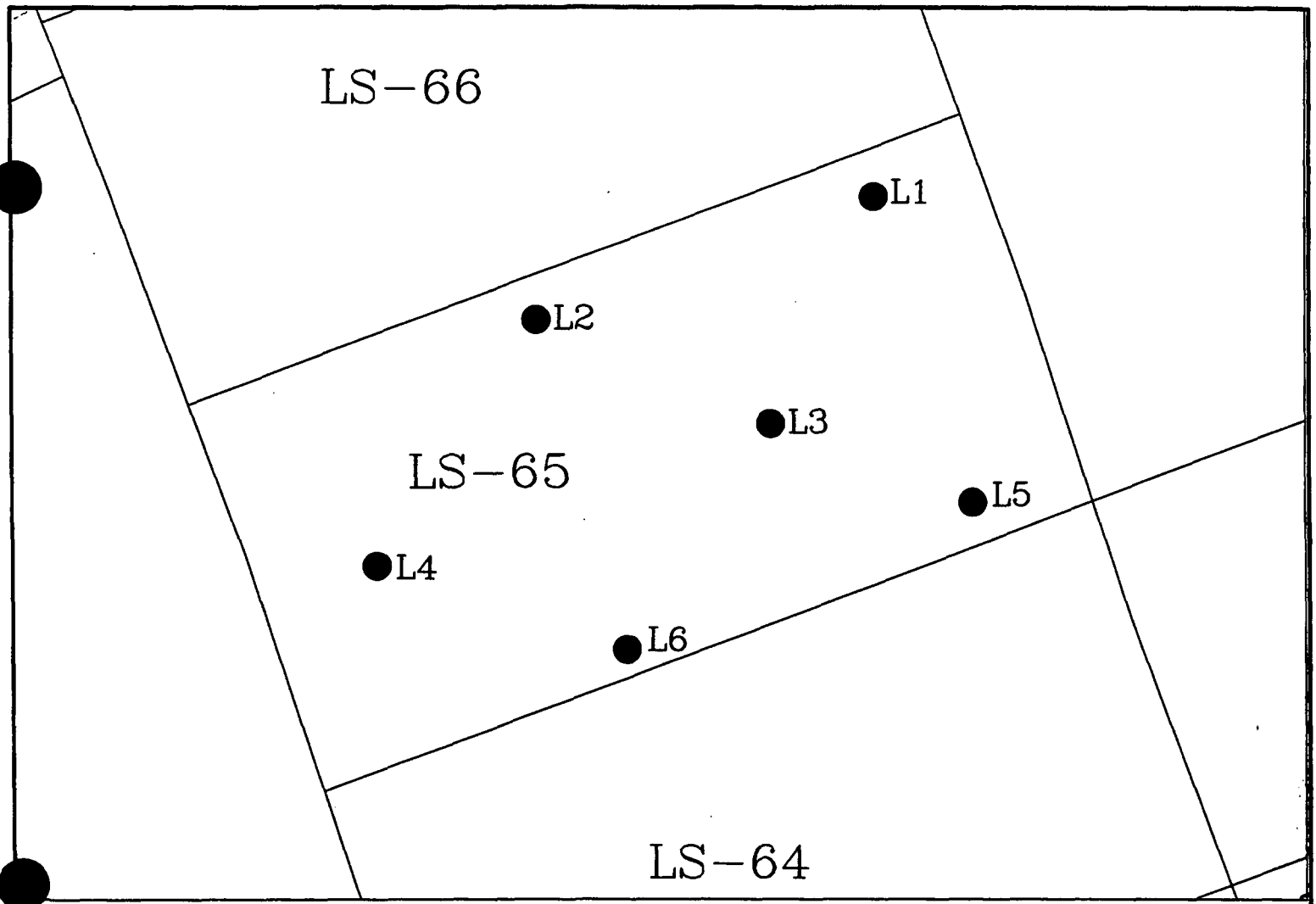
DRAWING FILE NUMBER
TAC LS64P2C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-64

REV

NORTH

Tot. UPDATE:
TAC \OOPC\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 2



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	<10	IAFA-P2-F-LS65-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

*THE TOTAL ARSENIC RESULT FOR LS-65 IS UNDER 20 PPM. THEREFORE, NO GEOFABRIC IS REQUIRED IN THIS AREA BEFORE BACKFILLING.

LS-65 (1241.30 SQUARE FEET)
PHASE 2 (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 10 FEET — 20 FEET

REVISIONS	BY	DATE
1st		
2nd		
3rd		
4th		

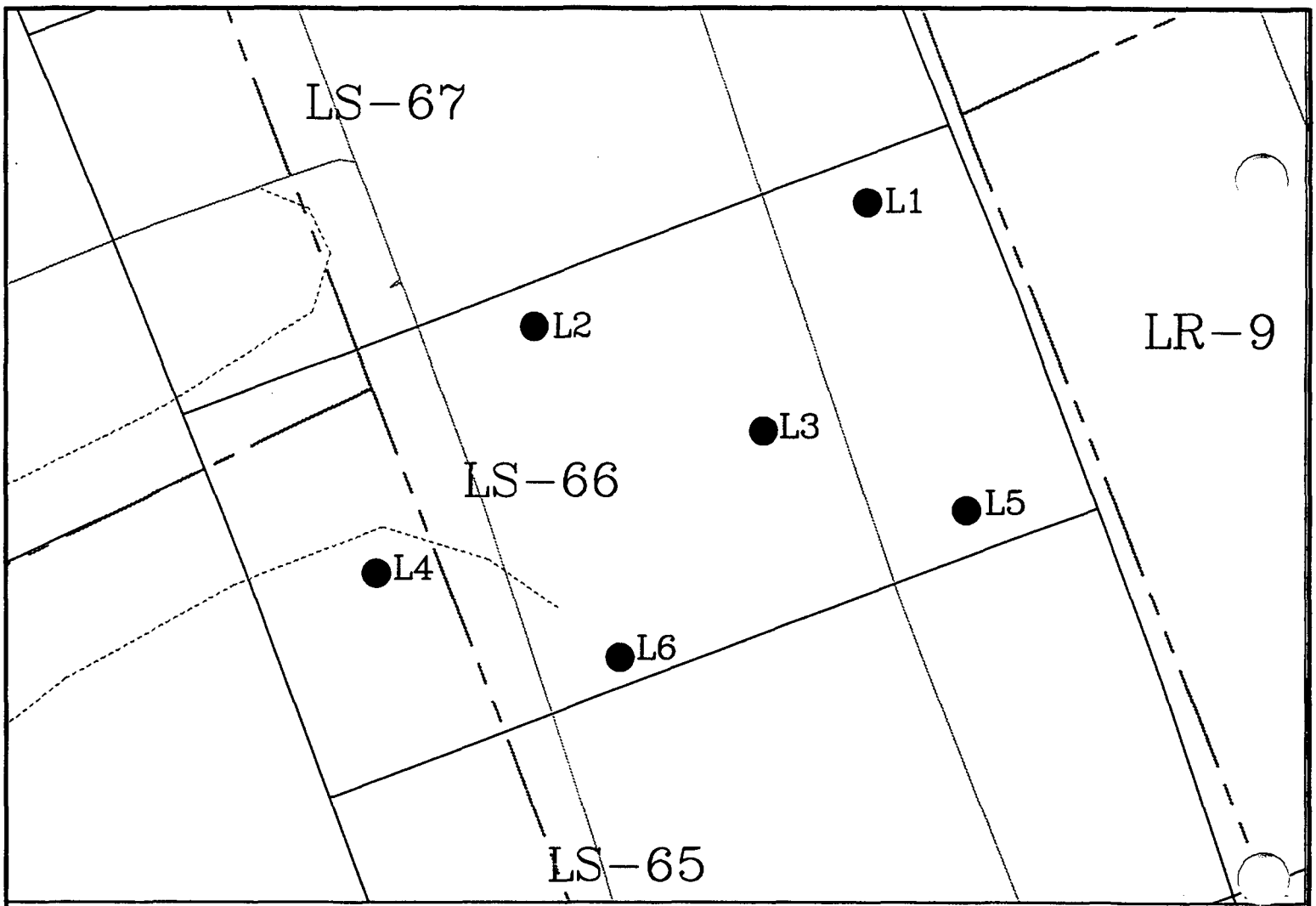
Project :
DRAWN BY: OOPC
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS65P2C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-65
REV

NORTH

1st UPDATE:
TAC \OOPC\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 2



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	<10	IAFA-P2-F-LS66-C-1

*THE TOTAL ARSENIC RESULT FOR LS-66 IS UNDER 20 PPM. THEREFORE, NO GEOFABRIC IS REQUIRED IN THIS AREA BEFORE BACKFILLING.

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-66 (1246.50 SQUARE FEET)
PHASE 2 (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY OOPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

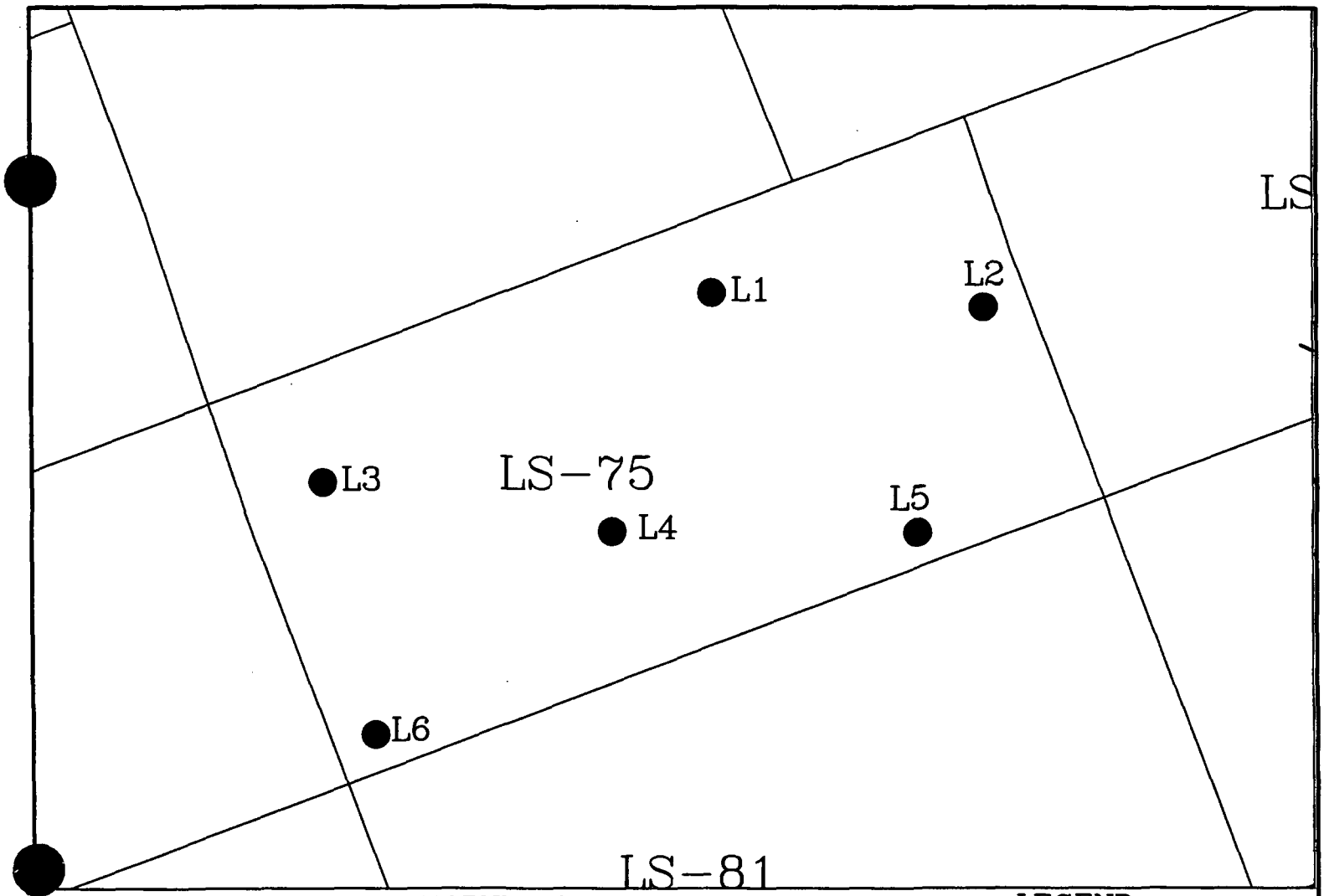
DRAWING FILE NUMBER
TAC LS66P2C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-66

REV △

NORTH

1st UPDATE:
TAC \OOPG\TAC\ I:\Everett Soils\Decision Unit Maps\\Phase 2



AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	21	IAFA-P2-F-LS75-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

LS-75 (1244.30 SQUARE FEET)
PHASE 2 (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 10 FEET 20 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :		
DRAWN BY	OOPG	
CHECKED BY		
APPROVED BY		
SCALE: AS NOTED		

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC LS75P2C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
LS-75

REV

NORTH

1st UPDATE:
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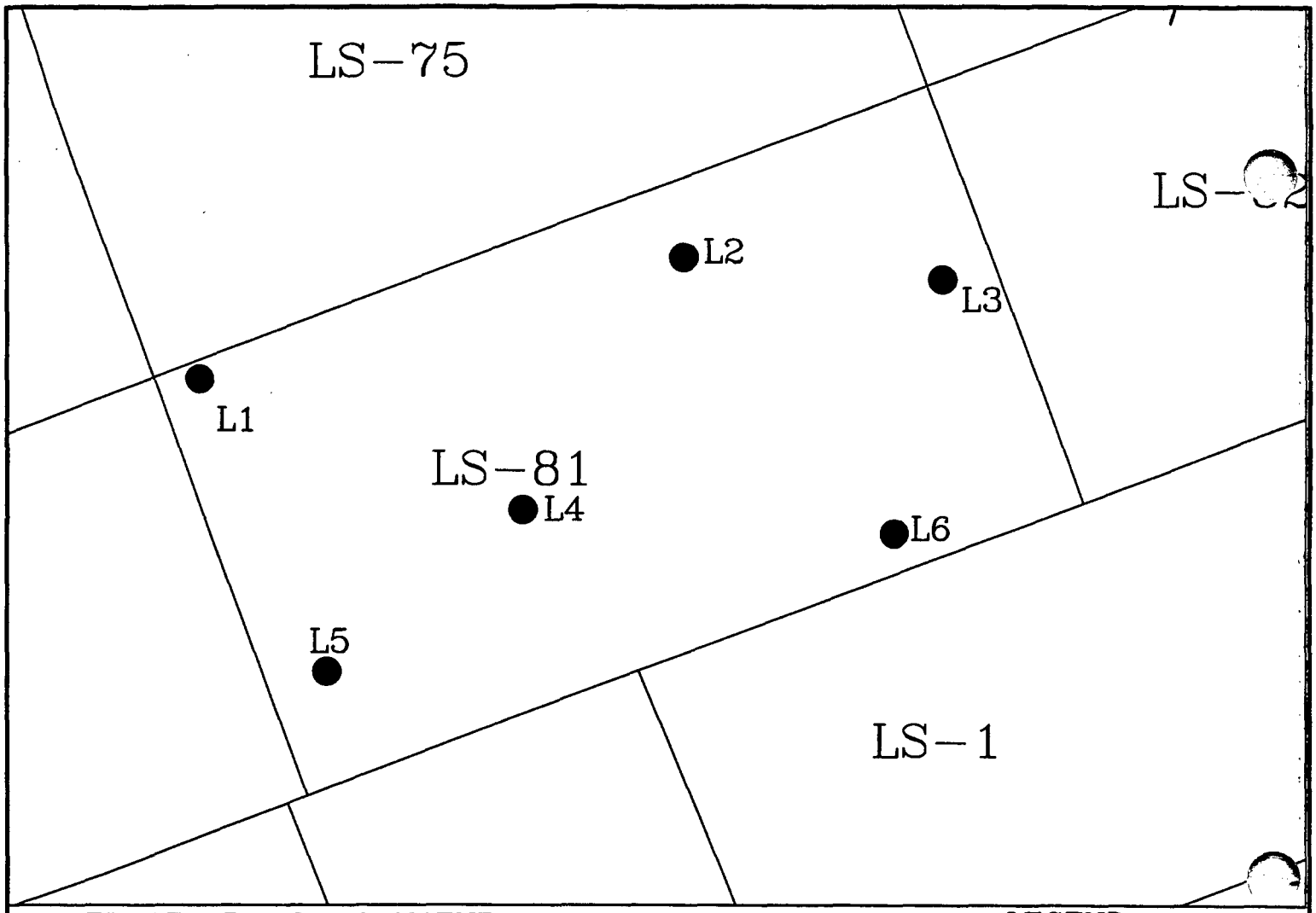

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	75	IAFA-P2-F-LS81-C-1

LEGEND

● FLOOR SAMPLE LOCATION
○ PERIMETER SAMPLE LOCATION

LS-81 (1343.40 SQUARE FEET)
PHASE 2 (6 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 10' FEET 20 FEET

REVISIONS NO.	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY CCPG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC LS81P2C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: LS-81
REV

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LAST UPDATE:
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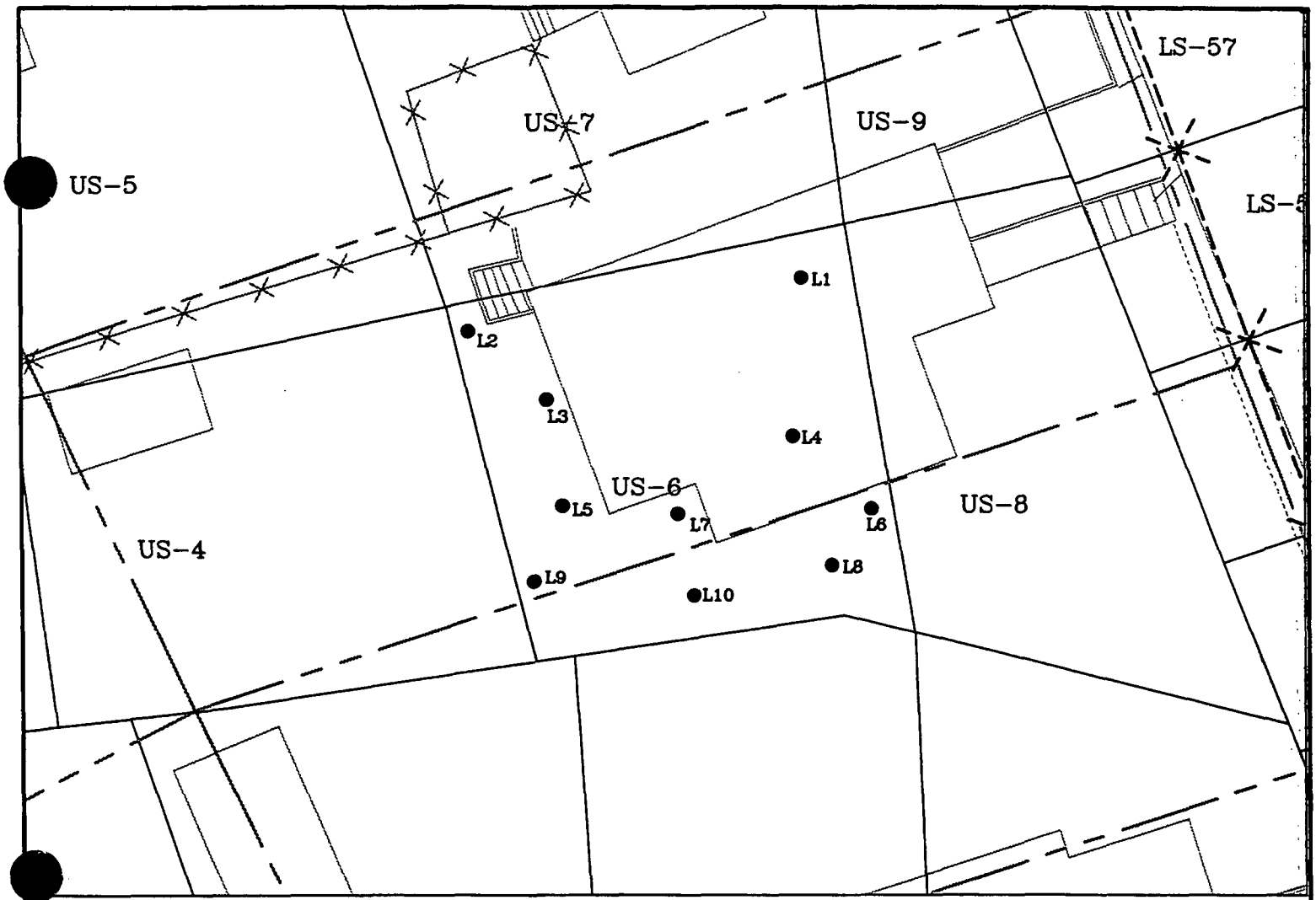

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	49	IAFA-P2-F-US6-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-06 (2216.40 SQUARE FEET)
PHASE 2 (5 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE: 0 — 20 FEET — 40 FEET

REVISIONS	NO	BY	DATE
	1st		
	2nd		
	3rd		
	4th		

Project :
DRAWN BY: DOPG
CHECKED BY:
APPROVED BY:
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER: TAC US06P2C4
AUTOCAD REL. 2000 DRAWING (DWG)
SHEET NUMBER: US-06
REV:

NORTH

LAST UPDATE:
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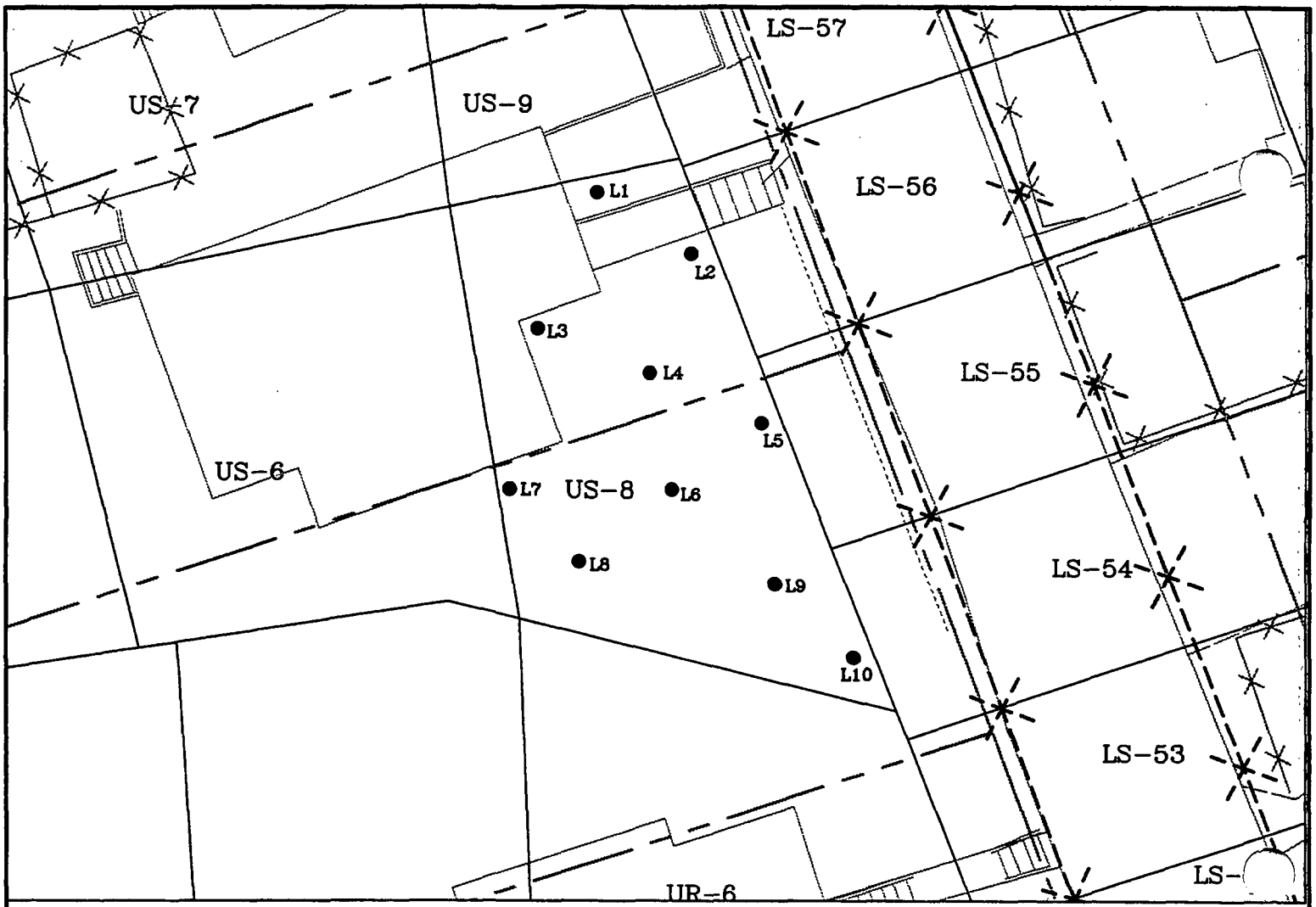

AVERAGE ARSENIC CONCENTRATIONS

LOCATION	As CONCENTRATIONS (mg/kg)	SAMPLE ID. NUMBER
FLOOR	67	IAFA-P2-F-US8-C-1

LEGEND

- ● FLOOR SAMPLE LOCATION
- ○ PERIMETER SAMPLE LOCATION

US-08 (2144.30 SQUARE FEET)
PHASE 2 (7 FOOT CUT)

EVERETT SMELTER INTERIM ACTION
DECISION UNIT RESULTS

ASARCO Consulting, Inc. -Tacoma-

DRAWING SCALE
0 20 FEET 40 FEET

REVISIONS NO	BY	DATE	
1st			
2nd			
3rd			
4th			

Project :
DRAWN BY 00PG
CHECKED BY
APPROVED BY
SCALE: AS NOTED

ASARCO Consulting, Inc.
Ruston, Washington 98407

DRAWING FILE NUMBER
TAC US08P2C4
AUTOCAD REL. 2000 DRAWING (DWG)

SHEET NUMBER
US-08

REV

NORTH

1st UPDATE:
TAC \00PG\TAC\ I:\Everett Soils\Decision Unit Maps\Phase 2

A.4 Everett Stockpile Testing

TABLE A.4
EVERETT STOCKPILE TESTING

STOCKPILE	SAMPLE #	DATE	TOTAL As (mg/Kg)	<30,000 mg/Kg*	CLASSIFICATION
A	IAFA-SP-A-PRE	6/29/04	25517	No	Source
	IAFA-SP-A-D-PRE	6/29/04	27625	No	Source
B	IAFA-SP-B-PRE	7/1/04	25343	No	Source
	IAFA-SP-B-D-PRE	7/1/04	30247	Yes	Sub-title C
C	IAFA-SP-C-PRE	7/2/04	58530	Yes	Sub-title C
	IAFA-SP-C-D-PRE	7/2/04	51814	Yes	Sub-title C
D	IAFA-SP-D-PRE	7/7/04	18192	No	Source
	IAFA-SP-D-D-PRE	7/7/04	19463	No	Source
E	IAFA-SP-E-PRE	7/8/04	25558	No	Source
	IAFA-SP-E-D-PRE	7/8/04	25540	No	Source
F	IAFA-SP-F-PRE	7/14/04	14316	No	Source
	IAFA-SP-F-D-PRE	7/14/04	13691	No	Source
G	IAFA-SP-G-PRE	7/19/04	12923	No	Source
	IAFA-SP-G-D-PRE	7/19/04	15440	No	Source
H	IAFA-SP-H-PRE	8/19/04	2881	No	Residential
	IAFA-SP-H-D-PRE	8/19/04	2821	No	Residential
I	IAFA-SP-I-PRE	8/20/04	21351	No	Source
	IAFA-SP-I-D-PRE	8/20/04	21358	No	Source
04	IAFA-SP-04-1	10/7/04	1549	No	Residential
	IAFA-SP-04-1-D	10/7/04	1530	No	Residential

Note: The second sample collected at each stockpile, "D", is a field duplicate.

* "No" indicates soil will meet the land disposal restriction and it can be transported to the Tacoma Smelter for disposal. "Yes" indicates that a TCLP test must be performed to determine if treatment is required to meet the land disposal restriction of 50 mg/L..

STOCKPILES OF SOIL EXCEEDING 30,000 mg/Kg ARSENIC

STOCKPILE	SAMPLE #	DATE	TOTAL As (mg/Kg)	TCLP As (mg/L)	PASS/FAIL**
B	IAFA-SP-B-D-PRE	7/1/04	30247	51.5	Fail
C	IAFA-SP-C-PRE	7/2/04	58530	NA	Fail
	IAFA-SP-C-D-PRE	7/2/04	51814	NA	Fail

**Pass indicates soil does not require treatment and it can be transported to the Tacoma Smelter OCF. Fail indicates that the soil does not meet the land disposal restriction of 50 mg/L and it must be treated prior to transporting to the Tacoma Smelter OCF or it must be managed at a commercial Subtitle C facility.

NA - Not analyzed because sample is assumed to exceed 50 mg/L TCLP arsenic.

K:\Tac-Sect\Everett Smelter\2004 Construction\Table A.4.xls

A.5 Certification Letter for Phase II from Department of Ecology

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

October 13, 2004

Mr. Bud Alkire
Everett Housing Authority
3107 Colby
Everett, WA 98206-1547

Dear Mr. Alkire:

RE: Everett Smelter Site – Certification of Removal of material with arsenic concentrations exceeding 3,000 mg/kg

Ecology has reviewed the performance monitoring data collected during removal activities conducted this summer in the Fenced Area of the Everett Smelter site. Ecology certifies that all material with arsenic concentrations exceeding 3,000 mg/kg has been removed from the Fenced Area in accordance with the *Final Design Report, Everett Smelter Site, Everett, Washington*, dated March 2004 and as required by Ecology Enforcement Order No. 02TCPNR-4059 and Agreed Judgment 03-2-08502-1. Ecology review is documented in a memorandum by me to the Everett Smelter File dated October 13, 2004. This memorandum and the performance monitoring data are in Ecology's files at Everett Smelter/SIT15.9.

This certification applies to removal of the material exceeding 3,000 mg/kg only. It does not certify that any other requirements of Ecology Enforcement Order 02TCPNR-4059 or Agreed Judgment 03-2-08502-1 have been met.

Should you have any questions, please contact me at 425-649-7200 or dsou461@ecy.wa.gov.

Sincerely,

David L. South

David L. South, P.E.
Senior Engineer
Everett Smelter Site Manager
Toxics Cleanup Program

DAVID L. SOUTH
STATE OF WASHINGTON
22471
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES 5/14/05

ASARCO
Consulting, Inc.

October 7, 2004

Dr. David South
Toxics Cleanup Program
Department of Ecology
3190 160th Avenue SE
Bellevue, WA 98008-5452

Via e-mail

RE: Everett Smelter – Data Transmittal EVT-07
Source Material Removal Verification
Enforcement Order No. 02TCPNR-4059

Dear Dave:

Asarco is submitting the attached data package as required by Ecology documenting the removal of the Source material (i.e., material with arsenic concentrations above 3,000 mg/kg) from the fenced area pursuant to the above referenced enforcement order. As you are aware, Asarco has previously submitted a number of data packages as the work has progressed. This information and the additional data included with this transmittal satisfy the requirements of the Compliance Monitoring Plan and additional field verification protocols approved by Ecology. Table 1 attached summarizes the information that has been submitted to date and the decision unit-specific data included with this transmittal.

There are two other information packages that you requested to determine if the Source material removal is complete:

1. Comparison of field and laboratory XRF data. This data provides the basis for determining the correlation between the two instruments and is needed when the field XRF data is used to make pass/fail decisions for Source material removal. This information was sent to you via email from Clint Stanovsky on October 6, 2004. The pass/fail decisions using the field/lab XRF correlation are based on your statistical evaluation, which you emailed to us on October 6, 2004.

2. Comparison of laboratory XRF and wet chemistry data. The Compliance Monitoring Plan specifies the periodic comparison of the laboratory XRF analysis with independent analysis by wet chemistry. The first submittal was submitted as part of EVT-04 on September 11, 2004; the laboratory data is included as part of the data validation report.

The second data package for the period August 7 through September 10, 2004 is included with this transmittal.

This submittal also has the following attachments associated with the data listed in Table 1:

Data Tabulation Tables:

1) Phase 1B Sampling Results
2) Confirmation Trench Sampling Results
3) Laboratory XRF results for Confirmation Trench field XRF readings over 2449 ppm As

Maps:

1) Confirmation Trench maps for all Source areas, including two Residential areas that were excavated with Source material (LR-8 & UR-8), with these exceptions:
   a) LS-16 and LS-17 - included in Transmittal EVT-06
   b) LS-47, LS-49, and LS-51 - Phase 2 sampling conducted and maps previously submitted
2) Phase 1A maps for LS-39 and US-05 (revised area)
3) Phase 1B maps for LS-18, LS-31 and LS-84
4) Phase 1B soil removal status map showing complete Confirmation Trench system and decision units excavated and sampled per Phase 1B
5) Phase 2 map for LS-50A (this was previously submitted as a Phase 1A map)

Data Validation Reports

1) Laboratory XRF confirmation results for field XRF readings exceeding 2449 ppm As
2) Confirmation Sample report of laboratory XRF and wet chemistry data - second submittal for the period August 7 through September 10, 2004
3) Performance Monitoring Sample report for the period September 22 - 27, 2004

If you have any questions regarding this submittal, please contact me.

Sincerely,

David K. Nation

David K. Nation, P.E.
Senior Manager of Projects and Analytical Services

cc: Tom Aldrich/Don Robbins w/o attachments
Bud Alkire/Darcy Walker, EHA

Table 1

Everett Smelter – Data Transmittal EVT-07
Source Material Removal Verification
Enforcement Order No. 02TCPNR-4059

Sampling Phase	Decision Units	Previous Transmittal(s):	Included with this Transmittal EVT-07
1A	All Source Areas except LS-47, LS-49 & LS-51; also includes Decision Units LR-8, UR-8 & EMV-1	EVT-01 (8/16/04), EVT-02 (8/23/04), EVT-03 (9/2/04), EVT-04 (9/11/04), EVT-05 (9/18/04) & EVT-06 (9/25/04)	LS-39 & revised US-5
1B	LS-16, LS-17, LS-18, LS-31 & LS-84	EVT-06 (9/25/04)	LS-18, LS-31 & LS-84
2	LS-47, LS-49, LS-51, LR-11 & LS-50A	EVT-01 (8/16/04) & EVT-06 (9/25/04)	Revised LS-50A
Confirmation Trench	All Source Areas except LS-16, LS-17, LS-18, LS-47, LS-49, & LS-51; also includes Decision Units LR-8 & UR-8	None	All Confirmation Trench samples

APPENDIX B

DATA VALIDATION AND CONFIRMATION REPORTS

Fenced Area Performance Monitoring Samples, April 14 – August 3, 2004, Revised September 20, 2004

Confirmation Samples, April 14 – August 6, 2004, September 6, 2004

Fenced Area Performance Monitoring Samples, August 4 – 11, 2004, August 16, 2004

Fenced Area Performance Monitoring Samples, August 12 – 18, 2004, Revised September 20, 2004

Fenced Area Performance Monitoring Samples, August 18 – 24, 2004, August 30, 2004

Fenced Area and Everett Residential Performance Monitoring Samples, August 26 –September 1, 2004, September 6, 2004

Fenced Area and Everett Residential Performance Monitoring Samples, August 31 –September 8, 2004, Revised September 20, 2004

Confirmation Samples August 7 – September 10, 2004, September 27, 2004

Fenced Area and Everett Residential Performance Monitoring Samples, September 8 – 15, 2004, September 20, 2004

Everett Data Validation Report Revisions, Memorandum September 20, 2004

Everett Data Validation Report Revisions, Memorandum September 23, 2004

Fenced Area and Everett Residential Performance Monitoring Samples, September 15 – 22, 2004, September 27, 2004

Fenced Area and Everett Residential Performance Monitoring Samples, September 22 – 27, 2004, October 4, 2004

Confirmation Samples September 11 –September 28, 2004, October 7, 2004

Fenced Area Performance Monitoring Samples, October 6 and 7, 2004, October 7, 2004

Everett Residential Performance Monitoring Samples, October 11 and 12, 2004, October 18, 2004

Fenced Area Performance Monitoring Samples, October 18 – 20, 2004, Revised November 1, 2004

Everett Data Validation Report Revisions, Memorandum October 25, 2004

Fenced Area Performance Monitoring Samples, October 26, 2004, November 1, 2004

Everett Data Validation Report Revisions, Memorandum November 1, 2004

Confirmation Samples, September 28 - November 30, 2004, December 14, 2004

Fenced Area Performance Monitoring Samples, November 15 and 30, 2004, December 14, 2004

2004 Everett Samples – Comprehensive Data Quality Summary, Memorandum December 14, 2004

REVISION

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA PERFORMANCE MONITORING SAMPLES
APRIL 14, 2004 THROUGH AUGUST 3, 2004

Prepared for:
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AUGUST 9, 2004

Revised September 20, 2004

TABLE OF CONTENTS

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 5

5. DETECTION LIMITS 6

6. CALIBRATION AND CALIBRATION VERIFICATIONS 6

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 7

9. DATA QUALITY OBJECTIVES 7

10. CONCLUSION 9

REFERENCES 10

LIST OF APPENDICES

APPENDIX 1: Validated Database

GLOSSARY OF TERMS

CCV .....Continuing Calibration Verification

CLP .....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA .....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS .....Laboratory Control Sample

PRDL .....Project Required Detection Limit

QC.....Quality Control

RL .....Reporting Limit

RUSTON.....ASARCO's Ruston Soils Laboratory

RPD.....Relative Percent Difference

SAP .....Sampling and Analyses Plan

SOW.....Statement of Work

Std Dev.....Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area from April 4, 2004 to August 3, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. Samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90 % of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.

- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses from these samples were not completed and therefore, not evaluated for this validation report. A comprehensive Confirmation and EDXRF sample comparison report will be submitted at the end of the 2004 work season.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

QC Exceedances that resulted in the qualification (flagging) of data:

- No results were flagged due to this validation.

The Performance Monitoring data collected from April 4, 2004 to August 3, 2004 were deemed acceptable for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One hundred percent** of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 148 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from April 4, 2004 through August 3, 2004. These samples were analyzed for arsenic and lead by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included 20 field duplicates. Due to the time allotted for the validation of this data, the analyses of the Confirmation samples were not completed, and therefore, the evaluation of these data were not covered by this report. A comprehensive Confirmation and EDXRF sample comparison report will be submitted at the end of the 2004 work season.

- Validation procedures used are generally consistent with:
  - X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  - X Compliance Monitoring Plan – (ASARCO 2004a)
  - X Sampling and Analyses Plan – (ASARCO 2004b)
  - ___ Other

- Overall level of validation:
  - ___ Contract Laboratory Program (CLP)
  - X Standard – see notes
  - ___ Visual

  Notes: Field and laboratory quality control (QC) samples were reviewed and the data were qualified (flagged) for QC exceedances. Raw instrument data were not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.
  - X Yes
  - ___ No

- Documentation of field procedures was provided as required.
  - X Yes
  - ___ No

- Data entry for deliverables was consistent and without errors.

  ___ Yes
  _X_ No - see notes

  Notes: The following data entry errors were noted (note that the following data entry errors were minor and did not affect the quality of the data):

  - Sample IAFAP2PLR11-D-B-L3-2 collection time was recorded as 15:20 by the laboratory instead of 15:30. This error was subsequently corrected by the laboratory.
  - Sample IAFAP2PLR11-D-E-L2-2 collection time was recorded as 16:25 on the chain of custody and 16:30 in the field book.
  - Sample IAFAP2PLR11-D-E-L3-2 collection time was recorded as 16:30 on the chain of custody and 16:35 in the field book.
  - Sample IAFAP2PLR11-D-E-L4-2 collection time was recorded as 16:35 on the chain of custody and 16:40 in the field book.
  - The field duplicate for site IAFAP2F-LS51-C-1 (collected 7/31/04) was not recorded in the field book.

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 10 or 1 per day, whichever was greater).

  _X_ Yes
  ___ No

- Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.

  _X_ Yes
  ___ No

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).

  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  - ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  - ___ SW-846 (EPA 1986) – Confirmation Samples
  - ___ Standard Methods for Chemical Analysis of Water and Wastes
  - _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  - ___ Other

- **Holding times met**
  - _X_ Yes
  - ___ No

- **Analyses were carried out as requested.**
  - _X_ Yes
  - ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and cleanup standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Standard (ppm)
Arsenic	EDXRF	10	10	20

- Reporting levels met IDLs.
  _X_ Yes
  ___ No

- Instrument detection limits (IDL) were provided by the laboratory.
  _X_ Yes
  ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**
  Initial instrument calibrations were performed (one per year).
  _X_ Yes - see notes
  ___ No
  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**
  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).
  _X_ Yes
  ___ No

  CCV standard percent recovery results were within the required control limits (75-125%).
  _X_ Yes
  ___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).
  _X_ Yes
  ___ No

- The laboratory duplicate relative percent differences (RPD) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.
  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.
  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).
  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).
  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report that will be submitted at the end of the 2004 work season.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	22	0	22	100%
LCS	17	0	17	100%
Total	39	0	39	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the following table
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	20	0	20	100%
Lab Dup	20	0	20	100%
Total	40	0	40	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).
  _X_ Yes – see the following table
  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Total (arsenic only)	148	0	148	100%

Data Qualifications

- Data was qualified for quality control exceedances.
  ___ Yes
  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Total (arsenic only)	148	0	148	100%

Corrective Actions

- Corrective actions were required for this sampling event.

  _X_ Yes – see notes

  ____ No

  Notes: One minor data entry error was reported to the laboratory and subsequently corrected. This error did not affect the quality of the data.

10. CONCLUSION

The Performance Monitoring data collected from April 14, 2004 through August 3, 2004 were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
April 14, 2004 - August 3, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IA17-MA-C-A	4/14/04 10:15	IA17-MA-C-A		RUSTON	04R-02067	EDXRF	48
IA16-MA-C-A	4/14/04 10:40	IA16-MA-C-A		RUSTON	04R-02068	EDXRF	19
IA15-MA-C-A	4/14/04 11:00	IA15-MA-C-A		RUSTON	04R-02069	EDXRF	35
IA26-MA-C-A	4/14/04 11:45	IA26-MA-C-A		RUSTON	04R-02070	EDXRF	39
IA26-MA-C-A	4/14/04 11:45	IA26-MA-C-A-D	Field Duplicate	RUSTON	04R-02071	EDXRF	34
IA25-MA-C-A	4/14/04 12:30	IA25-MA-C-A		RUSTON	04R-02072	EDXRF	242
EVT-WH-01-PRE	6/2/04 9:00	EVT-WH-01-PRE		RUSTON	04R-02260	EDXRF	< 10
EVT-WH-02-PRE	6/2/04 9:30	EVT-WH-02-PRE		RUSTON	04R-02261	EDXRF	38
EVT-WH-03-PRE	6/2/04 10:00	EVT-WH-03-PRE		RUSTON	04R-02262	EDXRF	< 10
EVT-WH-03-PRE	6/2/04 10:15	EVT-WH-03D-PRE	Field Duplicate	RUSTON	04R-02263	EDXRF	< 10
EVT-WH-04-PRE	6/2/04 10:30	EVT-WH-04-PRE		RUSTON	04R-02264	EDXRF	12
EVT-WH-05-PRE	6/2/04 11:00	EVT-WH-05-PRE		RUSTON	04R-02265	EDXRF	< 10
IAFA-SPA-PRE	6/29/04 11:00	IAFA-SPA-PRE		RUSTON	04R-03277	EDXRF	25517
IAFA-SPA-PRE	6/29/04 11:05	IAFA-SPA-D-PRE	Field Duplicate	RUSTON	04R-03278	EDXRF	27625
IAFA-SP-B-PRE	6/30/04 17:00	IAFA-SP-B-PRE		RUSTON	04R-03364	EDXRF	25343
IAFA-SP-B-PRE	6/30/04 17:05	IAFA-SP-B-D-PRE	Field Duplicate	RUSTON	04R-03365	EDXRF	30247
IAFA-SP-C-PRE	7/1/04 16:00	IAFA-SP-C-PRE		RUSTON	04R-03384	EDXRF	58530
IAFA-SP-C-PRE	7/1/04 16:05	IAFA-SP-C-D-PRE	Field Duplicate	RUSTON	04R-03385	EDXRF	51814
IAFA-SP-D-PRE	7/7/04 10:45	IAFA-SP-D-PRE		RUSTON	04R-03544	EDXRF	18192
IAFA-SP-D-PRE	7/7/04 10:50	IAFA-SP-D-D-PRE	Field Duplicate	RUSTON	04R-03545	EDXRF	19463
IAFA-SP-E-PRE	7/8/04 16:00	IAFA-SP-E-PRE		RUSTON	04R-03684	EDXRF	25558
IAFA-SP-E-PRE	7/8/04 16:05	IAFA-SP-E-D-PRE	Field Duplicate	RUSTON	04R-03685	EDXRF	25540
IAFA-SP-F-PRE	7/15/04 9:45	IAFA-SP-F-PRE		RUSTON	04R-03842	EDXRF	14316
IAFA-SP-F-PRE	7/15/04 9:50	IAFA-SP-F-D-PRE	Field Duplicate	RUSTON	04R-03843	EDXRF	13691
IAFA-SP-G-PRE	7/19/04 11:20	IAFA-SP-G-PRE		RUSTON	04R-03925	EDXRF	12923
IAFA-SP-G-PRE	7/19/04 11:25	IAFA-SP-G-D-PRE	Field Duplicate	RUSTON	04R-03926	EDXRF	15440
IAFA-P2-F-LR11-C-1	7/24/04 13:00	IAFA-P2-F-LR11-C-1		RUSTON	04R-04189	EDXRF	147
IAFA-P2-F-LR11-D-L1-1	7/24/04 13:05	IAFA-P2-F-LR11-D-L1-1		RUSTON	04R-04696	EDXRF	143
IAFA-P2-F-LR11-D-L2-1	7/24/04 13:10	IAFA-P2-F-LR11-D-L2-1		RUSTON	04R-04697	EDXRF	93
IAFA-P2-F-LR11-D-L3-1	7/24/04 13:15	IAFA-P2-F-LR11-D-L3-1		RUSTON	04R-04698	EDXRF	141
IAFA-P2-F-LR11-D-L4-1	7/24/04 13:20	IAFA-P2-F-LR11-D-L4-1		RUSTON	04R-04699	EDXRF	162
IAFA-P2-F-LR11-D-L5-1	7/24/04 13:25	IAFA-P2-F-LR11-D-L5-1		RUSTON	04R-04700	EDXRF	158
IAFA-P2-F-LR11-D-L6-1	7/24/04 13:30	IAFA-P2-F-LR11-D-L6-1		RUSTON	04R-04701	EDXRF	135
IAFA-P2-F-LR11-D-L7-1	7/24/04 13:35	IAFA-P2-F-LR11-D-L7-1		RUSTON	04R-04702	EDXRF	130
IAFA-P2-F-LR11-D-L8-1	7/24/04 13:40	IAFA-P2-F-LR11-D-L8-1		RUSTON	04R-04703	EDXRF	91
IAFA-P2-F-LR11-D-L9-1	7/24/04 13:45	IAFA-P2-F-LR11-D-L9-1		RUSTON	04R-04704	EDXRF	167
IAFA-P2-P-LR11-C-A-1	7/24/04 14:00	IAFA-P2-P-LR11-C-A-1		RUSTON	04R-04190	EDXRF	946
IAFA-P2-P-LR11-C-B-1	7/24/04 14:05	IAFA-P2-P-LR11-C-B-1		RUSTON	04R-04191	EDXRF	481
IAFA-P2-P-LR11-C-C-1	7/24/04 14:10	IAFA-P2-P-LR11-C-C-1		RUSTON	04R-04192	EDXRF	1292
IAFA-P2-P-LR11-C-D-1	7/24/04 14:15	IAFA-P2-P-LR11-C-D-1		RUSTON	04R-04193	EDXRF	285
IAFA-P2-P-LR11-C-E-1	7/24/04 14:20	IAFA-P2-P-LR11-C-E-1		RUSTON	04R-04194	EDXRF	292
IAFA-P2-P-LR11-C-D-1	7/24/04 14:25	IAFA-P2-P-LR11-C-D-1D	Field Duplicate	RUSTON	04R-04195	EDXRF	350
IAFA-P2-F-LS49-C-1	7/24/04 15:30	IAFA-P2-F-LS49-C-1		RUSTON	04R-04196	EDXRF	96
IAFA-P2-F-LS47-C-1	7/26/04 14:30	IAFA-P2-F-LS47-C-1		RUSTON	04R-04266	EDXRF	166
IAFA-P2-P-LS47-C-A-1	7/26/04 16:00	IAFA-P2-P-LS47-C-A-1		RUSTON	04R-04267	EDXRF	821
IAFA-P2-P-LS47-C-B-1	7/26/04 16:05	IAFA-P2-P-LS47-C-B-1		RUSTON	04R-04269	EDXRF	583
IAFA-P2-P-LS47-C-C-1	7/26/04 16:10	IAFA-P2-P-LS47-C-C-1		RUSTON	04R-04270	EDXRF	4768
IAFA-P2-P-LS47-C-D-1	7/26/04 16:15	IAFA-P2-P-LS47-C-D-1		RUSTON	04R-04271	EDXRF	813
IAFA-P2-P-LS47-C-E-1	7/26/04 16:20	IAFA-P2-P-LS47-C-E-1		RUSTON	04R-04272	EDXRF	295
IAFA-P2-P-LS47-C-A-1	7/26/04 16:25	IAFA-P2-P-LS47-C-A-1D	Field Duplicate	RUSTON	04R-04268	EDXRF	783
IAFA-P1A-F-LS43-C-1	7/27/04 10:05	IAFA-P1A-F-LS43-C-1		RUSTON	04R-04416	EDXRF	2052
IAFA-P1A-F-LS39-C-1	7/27/04 13:30	IAFA-P1A-F-LS39-C-1		RUSTON	04R-04417	EDXRF	2339
IAFA-P1A-F-LS39-C-1	7/27/04 13:35	IAFA-P1A-F-LS39-C-1D	Field Duplicate	RUSTON	04R-04418	EDXRF	2305
IAFA-P1A-F-LS35-C-1	7/28/04 10:30	IAFA-P1A-F-LS35-C-1		RUSTON	04R-04419	EDXRF	2045
IAFA-P1A-F-LS35-C-1	7/28/04 10:35	IAFA-P1A-F-LS35-C-1D	Field Duplicate	RUSTON	04R-04420	EDXRF	2128
IAFA-P1A-P-LS35-C-A-1	7/28/04 10:40	IAFA-P1A-P-LS35-C-A-1		RUSTON	04R-04421	EDXRF	1410
IAFA-P1A-P-LS35-C-B-1	7/28/04 10:45	IAFA-P1A-P-LS35-C-B-1		RUSTON	04R-04422	EDXRF	411
IAFA-P1A-P-LS35-C-C-1	7/28/04 10:50	IAFA-P1A-P-LS35-C-C-1		RUSTON	04R-04423	EDXRF	1677
IAFA-P1A-F-LS31-C-1	7/28/04 15:40	IAFA-P1A-F-LS31-C-1		RUSTON	04R-04430	EDXRF	1389

ASARCO's Former Arsenic Trioxide Processing Area
April 14, 2004 - August 3, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IA17-MA-C-A	4/14/04 10:15	IA17-MA-C-A		RUSTON	04R-02067	EDXRF	48
IAFA-P1A-P-LS51-C-A-1	7/29/04 7:30	IAFA-P1A-P-LS51-C-A-1		RUSTON	04R-04431	EDXRF	4363
IAFA-P1A-P-LS51-C-B-1	7/29/04 7:35	IAFA-P1A-P-LS51-C-B-1		RUSTON	04R-04432	EDXRF	357
IAFA-P1A-P-LS51-C-C-1	7/29/04 7:40	IAFA-P1A-P-LS51-C-C-1		RUSTON	04R-04433	EDXRF	168
IAFA-P1A-P-LS51-C-D-1	7/29/04 7:45	IAFA-P1A-P-LS51-C-D-1		RUSTON	04R-04434	EDXRF	73
IAFA-P1A-P-LS51-C-E-1	7/29/04 7:50	IAFA-P1A-P-LS51-C-E-1		RUSTON	04R-04435	EDXRF	20
IAFA-P1A-P-LS31-C-A-1	7/29/04 7:55	IAFA-P1A-P-LS31-C-A-1		RUSTON	04R-04436	EDXRF	341
IAFA-P1A-P-LS31-C-B-1	7/29/04 8:00	IAFA-P1A-P-LS31-C-B-1		RUSTON	04R-04437	EDXRF	84
IAFA-P1A-P-LS31-C-C-1	7/29/04 8:05	IAFA-P1A-P-LS31-C-C-1		RUSTON	04R-04438	EDXRF	973
IAFA-P1A-P-LS31-C-C-1	7/29/04 8:10	IAFAP1A-P-LS31-C-C-1D	Field Duplicate	RUSTON	04R-04439	EDXRF	776
IAFAP2PLS51-D-A-L1-1	7/29/04 12:30	IAFAP2PLS51-D-A-L1-1		RUSTON	04R-04512	EDXRF	2766
IAFAP2PLS51-D-A-L1-1	7/29/04 12:35	IAFAP2PLS51-D-A-L1-1D	Field Duplicate	RUSTON	04R-04513	EDXRF	2722
IAFAP2PLS51-D-A-L2-1	7/29/04 12:40	IAFAP2PLS51-D-A-L2-1		RUSTON	04R-04514	EDXRF	1345
IAFAP2PLS51-D-A-L3-1	7/29/04 12:45	IAFAP2PLS51-D-A-L3-1		RUSTON	04R-04515	EDXRF	739
IAFAP2PLS51-D-A-L4-1	7/29/04 12:50	IAFAP2PLS51-D-A-L4-1		RUSTON	04R-04516	EDXRF	2760
IAFAP2PLS51-D-B-L1-1	7/29/04 12:55	IAFAP2PLS51-D-B-L1-1		RUSTON	04R-04517	EDXRF	1204
IAFAP2PLS51-D-B-L2-1	7/29/04 13:00	IAFAP2PLS51-D-B-L2-1		RUSTON	04R-04518	EDXRF	875
IAFAP2PLS51-D-B-L3-1	7/29/04 13:05	IAFAP2PLS51-D-B-L3-1		RUSTON	04R-04519	EDXRF	74
IAFAP2PLS51-D-B-L4-1	7/29/04 13:10	IAFAP2PLS51-D-B-L4-1		RUSTON	04R-04520	EDXRF	304
IAFAP2PLS51-D-C-L1-1	7/29/04 13:15	IAFAP2PLS51-D-C-L1-1		RUSTON	04R-04521	EDXRF	176
IAFAP2PLS51-D-C-L2-1	7/29/04 13:20	IAFAP2PLS51-D-C-L2-1		RUSTON	04R-04522	EDXRF	26
IAFAP2PLS51-D-C-L3-1	7/29/04 13:25	IAFAP2PLS51-D-C-L3-1		RUSTON	04R-04523	EDXRF	20
IAFAP2PLS51-D-C-L4-1	7/29/04 13:30	IAFAP2PLS51-D-C-L4-1		RUSTON	04R-04524	EDXRF	156
IAFAP2PLS51-D-D-L1-1	7/29/04 13:35	IAFAP2PLS51-D-D-L1-1		RUSTON	04R-04525	EDXRF	57
IAFAP2PLS51-D-D-L2-1	7/29/04 13:40	IAFAP2PLS51-D-D-L2-1		RUSTON	04R-04526	EDXRF	36
IAFAP2PLS51-D-D-L3-1	7/29/04 13:45	IAFAP2PLS51-D-D-L3-1		RUSTON	04R-04527	EDXRF	75
IAFAP2PLS51-D-D-L4-1	7/29/04 13:50	IAFAP2PLS51-D-D-L4-1		RUSTON	04R-04528	EDXRF	138
IAFAP2PLS51-D-E-L1-1	7/29/04 13:55	IAFAP2PLS51-D-E-L1-1		RUSTON	04R-04529	EDXRF	125
IAFAP2PLS51-D-E-L2-1	7/29/04 14:00	IAFAP2PLS51-D-E-L2-1		RUSTON	04R-04530	EDXRF	84
IAFAP2PLS51-D-E-L3-1	7/29/04 14:05	IAFAP2PLS51-D-E-L3-1		RUSTON	04R-04531	EDXRF	< 10
IAFAP2PLS51-D-E-L4-1	7/29/04 14:10	IAFAP2PLS51-D-E-L4-1		RUSTON	04R-04532	EDXRF	64
IAFAP2PLS51-D-E-L4-1	7/29/04 14:15	IAFAP2PLS51-D-E-L4-1D	Field Duplicate	RUSTON	04R-04533	EDXRF	73
IAFAP2PLS51-D-F-L1-1	7/29/04 14:20	IAFAP2PLS51-D-F-L1-1		RUSTON	04R-04534	EDXRF	108
IAFAP2PLS51-D-F-L2-1	7/29/04 14:25	IAFAP2PLS51-D-F-L2-1		RUSTON	04R-04535	EDXRF	14
IAFAP2PLS51-D-F-L3-1	7/29/04 14:30	IAFAP2PLS51-D-F-L3-1		RUSTON	04R-04536	EDXRF	11
IAFAP2PLS51-D-F-L4-1	7/29/04 14:35	IAFAP2PLS51-D-F-L4-1		RUSTON	04R-04537	EDXRF	116
IAFAP2PLS51-D-G-L1-1	7/29/04 14:40	IAFAP2PLS51-D-G-L1-1		RUSTON	04R-04538	EDXRF	95
IAFAP2PLS51-D-G-L2-1	7/29/04 14:45	IAFAP2PLS51-D-G-L2-1		RUSTON	04R-04539	EDXRF	66
IAFAP2PLS51-D-G-L3-1	7/29/04 14:50	IAFAP2PLS51-D-G-L3-1		RUSTON	04R-04540	EDXRF	35
IAFAP2PLS51-D-G-L4-1	7/29/04 14:55	IAFAP2PLS51-D-G-L4-1		RUSTON	04R-04541	EDXRF	62
IAFAP2PLR11-D-A-L1-2	7/29/04 15:00	IAFAP2PLR11-D-A-L1-2		RUSTON	04R-04542	EDXRF	2162
IAFAP2PLR11-D-A-L2-2	7/29/04 15:05	IAFAP2PLR11-D-A-L2-2		RUSTON	04R-04543	EDXRF	1683
IAFAP2PLR11-D-A-L3-2	7/29/04 15:10	IAFAP2PLR11-D-A-L3-2		RUSTON	04R-04544	EDXRF	5047
IAFAP2PLR11-D-A-L4-2	7/29/04 15:15	IAFAP2PLR11-D-A-L4-2		RUSTON	04R-04545	EDXRF	2151
IAFAP2PLR11-D-B-L1-2	7/29/04 15:20	IAFAP2PLR11-D-B-L1-2		RUSTON	04R-04546	EDXRF	1129
IAFAP2PLR11-D-B-L3-2	7/29/04 15:30	IAFAP2PLR11-D-B-L3-2		RUSTON	04R-04548	EDXRF	763
IAFAP2PLR11-D-B-L2-2	7/29/04 15:25	IAFAP2PLR11-D-B-L2-2		RUSTON	04R-04547	EDXRF	704
IAFAP2PLR11-D-B-L4-2	7/29/04 15:35	IAFAP2PLR11-D-B-L4-2		RUSTON	04R-04549	EDXRF	425
IAFAP2PLR11-D-C-L1-2	7/29/04 15:40	IAFAP2PLR11-D-C-L1-2		RUSTON	04R-04550	EDXRF	243
IAFAP2PLR11-D-C-L2-2	7/29/04 15:45	IAFAP2PLR11-D-C-L2-2		RUSTON	04R-04551	EDXRF	90
IAFAP2PLR11-D-C-L3-2	7/29/04 15:50	IAFAP2PLR11-D-C-L3-2		RUSTON	04R-04552	EDXRF	190
IAFAP2PLR11-D-C-L4-2	7/29/04 15:55	IAFAP2PLR11-D-C-L4-2		RUSTON	04R-04553	EDXRF	158
IAFAP2PLR11-D-C-L4-2	7/29/04 16:00	IAFAP2PLR11-D-C-L4-2D	Field Duplicate	RUSTON	04R-04554	EDXRF	136
IAFAP2PLR11-D-D-L1-2	7/29/04 16:05	IAFAP2PLR11-D-D-L1-2		RUSTON	04R-04555	EDXRF	90
IAFAP2PLR11-D-D-L2-2	7/29/04 16:10	IAFAP2PLR11-D-D-L2-2		RUSTON	04R-04556	EDXRF	163
IAFAP2PLR11-D-D-L3-2	7/29/04 16:15	IAFAP2PLR11-D-D-L3-2		RUSTON	04R-04557	EDXRF	150
IAFAP2PLR11-D-D-L4-2	7/29/04 16:20	IAFAP2PLR11-D-D-L4-2		RUSTON	04R-04558	EDXRF	156
IAFAP2PLR11-D-E-L1-2	7/29/04 16:25	IAFAP2PLR11-D-E-L1-2		RUSTON	04R-04559	EDXRF	134
IAFAP2PLR11-D-E-L2-2	7/29/04 16:30	IAFAP2PLR11-D-E-L2-2		RUSTON	04R-04560	EDXRF	148

ASARCO's Former Arsenic Trioxide Processing Area
April 14, 2004 - August 3, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IA17-MA-C-A	4/14/04 10:15	IA17-MA-C-A		RUSTON	04R-02067	EDXRF	48
IAFAP2PLR11-D-E-L3-2	7/29/04 16:35	IAFAP2PLR11-D-E-L3-2		RUSTON	04R-04561	EDXRF	137
IAFAP2PLR11-D-E-L4-2	7/29/04 16:40	IAFAP2PLR11-D-E-L4-2		RUSTON	04R-04562	EDXRF	84
IAFA-P2-P-LS51-C-A-1	7/29/04 16:45	IAFA-P2-P-LS51-C-A-1		RUSTON	04R-04563	EDXRF	2171
IAFA-P2-P-LS51-C-B-1	7/29/04 16:50	IAFA-P2-P-LS51-C-B-1		RUSTON	04R-04564	EDXRF	684
IAFA-P2-P-LS51-C-C-1	7/29/04 16:55	IAFA-P2-P-LS51-C-C-1		RUSTON	04R-04565	EDXRF	89
IAFA-P2-P-LS51-C-D-1	7/29/04 17:00	IAFA-P2-P-LS51-C-D-1		RUSTON	04R-04566	EDXRF	74
IAFA-P2-P-LS51-C-E-1	7/29/04 17:05	IAFA-P2-P-LS51-C-E-1		RUSTON	04R-04567	EDXRF	73
IAFA-P2-P-LS51-C-F-1	7/29/04 17:10	IAFA-P2-P-LS51-C-F-1		RUSTON	04R-04568	EDXRF	61
IAFA-P2-P-LS51-C-G-1	7/29/04 17:15	IAFA-P2-P-LS51-C-G-1		RUSTON	04R-04569	EDXRF	69
IAFA-P2-P-LR11-C-A-1	7/29/04 17:20	IAFA-P2-P-LR11-C-A-2		RUSTON	04R-04570	EDXRF	2314
IAFA-P2-P-LR11-C-B-1	7/29/04 17:25	IAFA-P2-P-LR11-C-B-2		RUSTON	04R-04571	EDXRF	807
IAFA-P2-P-LR11-C-C-1	7/29/04 17:30	IAFA-P2-P-LR11-C-C-2		RUSTON	04R-04572	EDXRF	165
IAFA-P2-P-LR11-C-D-1	7/29/04 17:40	IAFA-P2-P-LR11-C-D-2		RUSTON	04R-04573	EDXRF	129
IAFA-P2-P-LR11-C-E-1	7/29/04 17:45	IAFA-P2-P-LR11-C-E-2		RUSTON	04R-04574	EDXRF	116
IAFA-P2-F-LS51-C-1	7/31/04 9:20	IAFA-P2-F-LS51-C-1		RUSTON	04R-04588	EDXRF	84
IAFA-P2-F-LS51-C-1	7/31/04 9:30	IAFA-P2-F-LS51-C-1D	Field Duplicate	RUSTON	04R-04589	EDXRF	85
IAFA-P1A-P-LS27-C-A-1	8/2/04 8:30	IAFA-P1A-P-LS27-C-A-1		RUSTON	04R-04590	EDXRF	197
IAFA-P1A-P-LS27-C-B-1	8/2/04 8:35	IAFA-P1A-P-LS27-C-B-1		RUSTON	04R-04591	EDXRF	85
IAFA-P1A-P-LS27-C-C-1	8/2/04 8:40	IAFA-P1A-P-LS27-C-C-1		RUSTON	04R-04592	EDXRF	608
IAFA-P1A-F-LS27-C-1	8/2/04 8:45	IAFA-P1A-F-LS27-C-1		RUSTON	04R-04593	EDXRF	1054
IAFA-P1A-F-LS27-C-1	8/2/04 8:50	IAFA-P1A-F-LS27-C-1D	Field Duplicate	RUSTON	04R-04594	EDXRF	1017
IAFA-P1A-P-LS23-C-A-1	8/2/04 10:45	IAFA-P1A-P-LS23-C-A-1		RUSTON	04R-04690	EDXRF	305
IAFA-P1A-P-LS23-C-B-1	8/2/04 10:50	IAFA-P1A-P-LS23-C-B-1		RUSTON	04R-04691	EDXRF	360
IAFA-P1A-P-LS23-C-C-1	8/2/04 10:55	IAFA-P1A-P-LS23-C-C-1		RUSTON	04R-04692	EDXRF	849
IAFA-P1A-P-LS23-C-D-1	8/2/04 11:00	IAFA-P1A-P-LS23-C-D-1		RUSTON	04R-04693	EDXRF	449
IAFA-P1A-F-LS23-C-1	8/2/04 11:05	IAFA-P1A-F-LS23-C-1		RUSTON	04R-04694	EDXRF	1416
IAFA-P2-P-LR11-C-A-3	8/3/04 15:30	IAFA-P2-P-LR11-C-A-3		RUSTON	04R-04707	EDXRF	111
IAFA-P2-P-LR11-C-A-3	8/3/04 15:35	IAFA-P2-P-LR11-C-A-3D	Field Duplicate	RUSTON	04R-04708	EDXRF	107
IAFA-P2-P-LR11-C-B-3	8/3/04 15:40	IAFA-P2-P-LR11-C-B-3		RUSTON	04R-04709	EDXRF	458
IAFA-P2-P-LR11-C-C-3	8/3/04 15:45	IAFA-P2-P-LR11-C-C-3		RUSTON	04R-04710	EDXRF	1466
IAFA-P2-P-LR11-C-D-3	8/3/04 15:50	IAFA-P2-P-LR11-C-D-3		RUSTON	04R-04711	EDXRF	555

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

CONFIRMATION SAMPLES
APRIL 14 THROUGH AUGUST 6, 2004

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September 6, 2004

TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. LABORATORY PROCEDURES 4

4. DETECTION LIMITS 4

5. METHOD BLANKS 4

6. MATRIX SPIKES 4

7. LABORATORY DUPLICATES 5

8. LABORATORY CONTROL SAMPLES (LCS) 5

9. DATA QUALITY OBJECTIVES 6

10. EDXRF/CONFIRMATION SAMPLE COMPARISON 7

11. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

APPENDIX 2: EDXRF/Confirmation Sample Comparison Summary

GLOSSARY OF TERMS

CLP.....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA.....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS.....Laboratory Control Sample

MS.....Matrix Spike

PRDL.....Project Required Detection Limit

QC.....Quality Control

RL.....Reporting Limit

RPD.....Relative Percent Difference

SAP.....Sampling and Analyses Plan

SOW .....Statement of Work

STL .....Severn Trent Laboratories, Inc.

SUMMARY

Splits of performance monitoring soil samples collected in the Fenced Area from April 14 through August 6, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project were analyzed by the Environmental Protection Agency (EPA) Method 6020 (EPA 1986) method at Severn Trent Laboratories, Inc. in Tacoma, Washington. Data from the split samples (referred to as Confirmation samples) were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). This data was also compared with Energy Dispersive X-ray Fluorescence (EDXRF) results from the original samples. Appendix 1 contains the validated data and the EDXRF/Confirmation sample comparison summary is located in Appendix 2.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using laboratory duplicate samples. The target precision for this project is acceptance of 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and matrix spike (MS) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the MS samples as valid and within the control limits established by the SAP.

  In addition to LCS and MS samples, one in fifty samples analyzed using the EDXRF method, are required to be analyzed by EPA wet chemistry methods. The results for these samples (Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the laboratory duplicate results were within control limits.

Accuracy

- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- MS – The MS sample used by the laboratory was not of the same matrix as the Confirmation samples, therefore, inter-parameter interferences could not be evaluated.
- Confirmation Samples – All Confirmation sample results were less than a 35 Relative Percent Difference (RPD) from the EDXRF results. Recovery rates determined that three out of four EDXRF results were greater than confirmation samples. The results of the Confirmations samples "confirmed" the use of the EDXRF results for the purposes they were intended.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Confirmation sample data for Performance Monitoring samples collected from April 14 through August 6, 2004 were **deemed acceptable** for the purposes (to compare with EDXRF results) of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification. These data **"confirmed" the use of the EDXRF results** for Performance Monitoring samples collected April 14 through August 6, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to splits (referred to as Confirmation samples) from samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from April 4 through August 6, 2004. These samples were analyzed for metals by the EPA Method 6020 at Severn Trent Laboratories, Inc. (STL) in Tacoma, Washington. The results from these samples were used to "confirm" the results obtained by the EDXRF method.

- Validation procedures used are generally consistent with:

  X EPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  X Compliance Monitoring Plan – (ASARCO 2004a)
  X Sampling and Analyses Plan – (ASARCO 2004b)
  ___ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  X Standard – see notes
  ___ Visual

  Notes: Laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  X Yes
  ___ No

- Data entry for deliverables was consistent and without errors.

  ___ Yes
  X No – see notes

  Notes:
  - Sample IAFAP2PLR11-D-A-L4-2 was recorded by the laboratory as IAFAP2PLR**R**11-D-A-L4-2.
  - Sample EVT-EMV-0804-D-102 was recorded by the laboratory as EVT-EM**T**-0804-D-102.

3. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  - ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  - _X_ SW-846 (EPA 1986) – Confirmation Samples
  - ___ Standard Methods for Chemical Analysis of Water and Wastes
  - ___ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  - ___ Other

- **Holding times met**
  - _X_ Yes
  - ___ No

- **Analyses were carried out as requested.**
  - _X_ Yes
  - ___ No

4. DETECTION LIMITS

- Reporting levels met IDLs.
  - _X_ Yes
  - ___ No
- Instrument detection limits (IDL) were provided by the laboratory.
  - _X_ Yes
  - ___ No
- Reporting levels were less than compliance standards.
  - _X_ Yes
  - ___ No

5. METHOD BLANKS

- Method blanks were analyzed at the required frequency.
  - _X_ Yes
  - ___ No
- Analytes were not detected in the method blanks.
  - _X_ Yes
  - ___ No

6. MATRIX SPIKES

- Matrix spike (MS) samples were analyzed at the required frequency.
  - ___ Yes
  - _X_ No – see notes on the following page

Matrix Spike Notes: A non-client sample was used for the matrix spike sample. This sample was not of the same matrix as the Confirmation samples and therefore, could not be used to evaluate inter-parameter interferences.

- Spikes were added at the proper concentrations.

  ___ Yes
  ___ No
  _X_ NA

- MS recovery results were within the required control limits (75-125%).

  ___ Yes
  ___ No
  _X_ NA

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).

  _X_ Yes
  ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.

  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.

  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).

  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).

  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The laboratory target accuracy for this project was met (greater than 90% of the MS and LCS sample results were within control limits).

  _X_ Yes – with qualifications - see the following table and notes

  ___ No

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
MS*	0	0	0	NA
LCS	1	0	1	100%
Total	1	0	1	100%

***Notes:** A MS of the proper matrix was not run for the Confirmation sample data. Therefore, accuracy was evaluated using LCS' only.

Precision

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).

  _X_ Yes – see the following table

  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Lab Dup	1	0	1	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).

  _X_ Yes – see the following table

  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	4	0	4	100%

Data Qualifications

- Data was qualified for quality control exceedances.
  ___ Yes
  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	4	0	4	100%

Corrective Actions

- Corrective actions were required for this sampling event.
  ___ Yes
  _X_ No

10. EDXRF/CONFIRMATION SAMPLE COMPARISON

Appendix 2 contains the comparison results for EDXRF and Confirmation sample data.

- Confirmation samples were analyzed at the proper frequency (1 per 50 samples analyzed by the EDXRF method)
  _X_ Yes
  ___ No

- EDXRF and Confirmation sample results were less than 35 RPD.
  _X_ Yes
  ___ No

- Recovery rates (EDXRF results divided by Confirmation results times 100) showed that one method's concentrations were consistently greater than the other method's concentrations.
  _X_ Yes – see notes
  ___ No

  Notes: Three out of four results had recovery rates greater than 100% (where EDXRF results were greater than Confirmation sample results). Recovery rates ranged from 88.8% to 114.6%.

- The correlation coefficient was near one.
  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A linear regression was not run do to the lack of data points. At least 10 data points are needed for reliable linear regression statistics.

- The y-intercept was near zero.

  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A linear regression was not run do to the lack of data points. At least 10 data points are needed for reliable linear regression statistics.

11. CONCLUSION

The Confirmation sample data for Performance Monitoring samples collected from April 14 through August 6, 2004 were **deemed acceptable** for the purposes (to compare with EDXRF results) of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification. These data **"confirmed" the use of the EDXRF results** for Performance Monitoring samples collected April 14 through August 6, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

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APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
Confirmation Sample Data
April 14 through August 6, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
EVT-EMV-0804-D-102	8/6/04	EVT-EMV-0804-D-102	Split	STL	123022-04	EPA 6020	635
IAFA-P2-P-LR11-C-D-1	7/29/04	IAFA-P2-P-LR11-C-D-2	Split	STL	123022-03	EPA 6020	126
IAFAP2PLR11-D-A-L4-2	7/29/04	IAFAP2PLR11-D-A-L4-2	Split	STL	123022-02	EPA 6020	2420
IAFA-SPA-PRE	6/29/04	IAFA-SPA-D-PRE	Split	STL	123022-01	EPA 6020	24100

APPENDIX 2

EDXRF/CONFIRMATION SAMPLE COMPARISON SUMMARY

EDXRF/CONFIRMATION SAMPLE COMPARISON SUMMARY

StationName IAFA-SPA-PRE
Sample Date 6/29/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTAL	IAFA-SPA-D-PRE	ppm	27625	V	24100	V	11	13.63 RPD	114.63%

StationName IAFAP2PLR11-D-A-L4-2
Sample Date 7/29/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTAL	IAFAP2PLR11-D-A-L4-2	ppm	2151	V	2420	V	11	11.77 RPD	88.88%

StationName IAFA-P2-P-LR11-C-D-1
Sample Date 7/29/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTAL	IAFA-P2-P-LR11-C-D-2	ppm	129	V	126	V	11	2.35 RPD	102.38%

StationName EVT-EMV-0804-D-102
Sample Date 8/6/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTAL	EVT-EMV-0804-D-102	ppm	681	V	635	V	11	6.99 RPD	107.24%

*EDXRF = Energy Dispersive X-Ray Fluorescence; V = Detected Value; U = Under Reporting Limit; PRDL = Project Required Reporting Limit; RPD = Relative Percent Difference.

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA PERFORMANCE MONITORING SAMPLES
AUGUST 4, 2004 THROUGH AUGUST 11, 2004

Prepared for:
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August 16, 2004

TABLE OF CONTENTS

APPENDIX 2: VALIDATED DATABASE ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 5

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 7

10. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Tables

Table 1. Data Validation Codes and Definitions

Table 2. Summary of Qualified Data

APPENDIX 2: Validated Database

GLOSSARY OF TERMS

CCV .....Continuing Calibration Verification

CLP .....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA .....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS .....Laboratory Control Sample

PRDL .....Project Required Detection Limit

QC.....Quality Control

RL .....Reporting Limit

RUSTON.....ASARCO's Ruston Soils Laboratory

RPD.....Relative Percent Difference

SAP .....Sampling and Analyses Plan

SOW.....Statement of Work

Std Dev.....Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area from August 4, 2004 to August 11, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. Samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the tables for data validation codes and qualified data. Appendix 2 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90 % of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was not met as **50%** (2 out of 4) of the field duplicate results were within control limits.

- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses from these samples were not completed and therefore, not evaluated for this validation report. A comprehensive Confirmation and EDXRF sample comparison report will be submitted at the end ofthe 2004 work season.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

QC Exceedances that resulted in the qualification (flagging) of data:

- Arsenic was out of control limits for a field duplicate collected 8/5/04, which resulted in two flags.
- Arsenic was out of control limits for a field duplicate sample collected 8/6/04, which resulted in five flags.

Although the Perfomance Monitoring data collected from August 4, 2004 through August 11, 2004 did not meet the precision goal for field duplicate samples, they were deemed acceptable for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **Seventy-four** (20 out of 27) of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 27 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from August 4, 2004 through August 11, 2004. These samples were analyzed for arsenic and lead by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included four field duplicates. Due to the time allotted for the validation of this data, the analyses of the Confirmation samples were not completed, and therefore, the evaluation of these data were not covered by this report. A comprehensive Confirmation and EDXRF sample comparison report will be submitted at the end of the 2004 work season.

- Validation procedures used are generally consistent with:
  - X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  - X Compliance Monitoring Plan – (ASARCO 2004a)
  - X Sampling and Analyses Plan – (ASARCO 2004b)
  - ___ Other

- Overall level of validation:
  - ___ Contract Laboratory Program (CLP)
  - X Standard – see notes
  - ___ Visual

  Notes: Field and laboratory quality control (QC) samples were reviewed and the data were qualified (flagged) for QC exceedances. Raw instrument data were not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.
  - X Yes
  - ___ No

- Documentation of field procedures was provided as required.
  - X Yes
  - ___ No

- Data entry for deliverables was consistent and without errors.
  _X_ Yes
  ___ No

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 10 or 1 per day, whichever was greater).
  _X_ Yes
  ___ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.
  ___ Yes
  _X_ No – see notes

  Notes: Results associated with field duplicate exceedances were flagged "J" to indicate a possible variance. Associated samples were collected from the same site and date as the field duplicate sample. Following is a table summarizing the field duplicate exceedances.

Sample/Duplicate Code	Sample Date	Analyte	Original Result (ppm)	Dup Result (ppm)	RL (ppm)	RPD	# of Flags
IAFA-P1A-F-LS8-C-1/1D	8/5/04	Arsenic	229	1114	10	131.8	2
EVT-EMV-0804-B-104/104D	8/6/04	Arsenic	180	321	10	56.3	5

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).
  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  - ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  - ___ SW-846 (EPA 1986) – Confirmation Samples
  - ___ Standard Methods for Chemical Analysis of Water and Wastes
  - _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  - ___ Other

- **Holding times met**
  - _X_ Yes
  - ___ No

- **Analyses were carried out as requested.**
  - _X_ Yes
  - ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and cleanup standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Standard (ppm)
Arsenic	EDXRF	10	10	20

- Reporting levels met IDLs.
  - _X_ Yes
  - ___ No

- Instrument detection limits (IDL) were provided by the laboratory.
  - _X_ Yes
  - ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**

  Initial instrument calibrations were performed (one per year).
  - _X_ Yes - see notes
  - ___ No

  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**

  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).

  _X_ Yes
  ___ No

  CCV standard percent recovery results were within the required control limits (75-125%).

  _X_ Yes
  ___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).

  _X_ Yes
  ___ No

- The laboratory duplicate relative percent differences (RPD) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.

  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.

  _X_ Yes
  ___ No

- LCS were analyzed at the proper frequency (one per day).

  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).

  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report that will be submitted at the end of the 2004 work season.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	5	0	5	100%
LCS	5	0	5	100%
Total	10	0	10	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  ___ Yes
  _X_ No – see the table at the end of this section

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the following table
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	4	2	2	50%
Lab Dup	5	0	5	100%
Total	9	2	7	77.8%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).

  _X_ Yes – see the following table

  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Total (arsenic only)	27	0	27	100%

Data Qualifications

- Data was qualified for quality control exceedances.

  ___ Yes

  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Total (arsenic only)	27	7	20	74.1%

Corrective Actions

- Corrective actions were required for this sampling event.

  ___ Yes

  _X_ No

10. CONCLUSION

Although the Performance Monitoring data collected from August 4 through August 11, 2004 did not meet the precision goal for field duplicate samples, they were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

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EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

TABLES

TABLE 1.

DATA VALIDATION CODES AND DEFINITIONS

CODE		DEFINITION
J	-	The associated numerical value is an estimated quantity because quality control criteria were not met.
UJ	-	The material was analyzed for, but was not detected above the associated value. Subscripts for the "UJ" qualifier:
R	-	Quality control indicates that the data are unusable (compound may or may not be present). Resampling and/or reanalysis is necessary for verification.
A	-	Anomalous data. No apparent explanation for discrepancy in data. (Not an EPA code.)

Table 2. Summary of Qualified Data
Asarco's Former Arsenic Trioxide Processing Area Project
August 4 through August 11, 2004

Site Code	Sample Code	Sample Date	Parameter	Result (ppm)	Flag	QC Type	Exceedance
EVT-EMV-0804-B-101	EVT-EMV-0804-B-101	8/6/2004	Arsenic (As)	298	J	Field Dup	56.3 RPD
EVT-EMV-0804-B-102	EVT-EMV-0804-B-102	8/6/2004	Arsenic (As)	136	J	Field Dup	56.3 RPD
EVT-EMV-0804-B-103	EVT-EMV-0804-B-103	8/6/2004	Arsenic (As)	3414	J	Field Dup	56.3 RPD
EVT-EMV-0804-B-104	EVT-EMV-0804-B-104	8/6/2004	Arsenic (As)	180	J	Field Dup	56.3 RPD
EVT-EMV-0804-B-104	EVT-EMV-0804-B-104D	8/6/2004	Arsenic (As)	321	J	Field Dup	56.3 RPD
IAFA-P1A-F-LS8-C-1	IAFA-P1A-F-LS8-C-1	8/5/2004	Arsenic (As)	229	J	Field Dup	131.8 RPD
IAFA-P1A-F-LS8-C-1	IAFA-P1A-F-LS8-C-1D	8/5/2004	Arsenic (As)	1114	J	Field Dup	131.8 RPD

APPENDIX 2

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
August 4, 2004 through August 11, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
EVT-EMV-0804-B-100	8/6/04	EVT-EMV-0804-B-100		Ruston	04R-04837	EDXRF	86
EVT-EMV-0804-B-101	8/6/04	EVT-EMV-0804-B-101		Ruston	04R-04840	EDXRF	298 J
EVT-EMV-0804-B-102	8/6/04	EVT-EMV-0804-B-102		Ruston	04R-04843	EDXRF	136 J
EVT-EMV-0804-B-103	8/6/04	EVT-EMV-0804-B-103		Ruston	04R-04847	EDXRF	3414 J
EVT-EMV-0804-B-104	8/6/04	EVT-EMV-0804-B-104		Ruston	04R-04849	EDXRF	180 J
EVT-EMV-0804-B-104	8/6/04	EVT-EMV-0804-B-104D	Field Duplicate	Ruston	04R-04850	EDXRF	321 J
EVT-EMV-0804-C-100	8/6/04	EVT-EMV-0804-C-100		Ruston	04R-04838	EDXRF	3279
EVT-EMV-0804-C-101	8/6/04	EVT-EMV-0804-C-101		Ruston	04R-04841	EDXRF	616
EVT-EMV-0804-C-102	8/6/04	EVT-EMV-0804-C-102		Ruston	04R-04844	EDXRF	117
EVT-EMV-0804-C-103	8/6/04	EVT-EMV-0804-C-103		Ruston	04R-04848	EDXRF	1000
EVT-EMV-0804-C-104	8/6/04	EVT-EMV-0804-C-104		Ruston	04R-04851	EDXRF	679
EVT-EMV-0804-D-100	8/6/04	EVT-EMV-0804-D-100		Ruston	04R-04839	EDXRF	916
EVT-EMV-0804-D-101	8/6/04	EVT-EMV-0804-D-101		Ruston	04R-04842	EDXRF	729
EVT-EMV-0804-D-102	8/6/04	EVT-EMV-0804-D-102		Ruston	04R-04845	EDXRF	681
EVT-EMV-0804-E-102	8/6/04	EVT-EMV-0804-E-102		Ruston	04R-04846	EDXRF	495
EVT-FA-TPL-A-200	8/9/04	EVT-FA-TPL-A-200		Ruston	04R-04884	EDXRF	6840
EVT-FA-TPL-B-200	8/9/04	EVT-FA-TPL-B-200		Ruston	04R-04885	EDXRF	6470
EVT-FA-TPL-B-200	8/9/04	EVT-FA-TPL-B-200D	Field Duplicate	Ruston	04R-04886	EDXRF	6948
EVT-FA-TPL-C-200	8/9/04	EVT-FA-TPL-C-200		Ruston	04R-04887	EDXRF	5218
IAFA-P1A-F-LS13-C-1	8/5/04	IAFA-P1A-F-LS13-C-1		Ruston	04R-04762	EDXRF	794
IAFA-P1A-F-LS18-C-1	8/5/04	IAFA-P1A-F-LS18-C-1		Ruston	04R-04761	EDXRF	1089
IAFA-P1A-F-LS8-C-1	8/5/04	IAFA-P1A-F-LS8-C-1		Ruston	04R-04763	EDXRF	229 J
IAFA-P1A-F-LS8-C-1	8/5/04	IAFA-P1A-F-LS8-C-1D	Field Duplicate	Ruston	04R-04764	EDXRF	1114 J
IAFA-P1A-P-LS13-C-A-1	8/4/04	IAFA-P1A-P-LS13-C-A-1		Ruston	04R-04759	EDXRF	123
IAFAP1A-P-LS18-C-A-1	8/11/04	IAFAP1A-P-LS18-C-A-1		Ruston	04R-05000	EDXRF	210
IAFAP1A-P-LS18-C-A-1	8/11/04	IAFAP1A-P-LS18-C-A-1D	Field Duplicate	Ruston	04R-05001	EDXRF	192
IAFA-P1A-P-LS8-C-A-1	8/4/04	IAFA-P1A-P-LS8-C-A-1		Ruston	04R-04760	EDXRF	147

REVISION

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA PERFORMANCE MONITORING SAMPLES
AUGUST 12 THROUGH AUGUST 18, 2004

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TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 4

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 7

10. CONCLUSION 9

REFERENCES 10

LIST OF APPENDICES

APPENDIX 1: Validated Database

GLOSSARY OF TERMS

CCV ..... Continuing Calibration Verification

CLP ..... Contract Laboratory Program

CRDL ..... Contract Required Detection Limit

Diff ..... Difference

EDXRF ..... Energy Dispersive X-Ray Fluorescence

EPA ..... Environmental Protection Agency

IDL ..... Instrument Detection Limit

LCS ..... Laboratory Control Sample

PRDL ..... Project Required Detection Limit

QC ..... Quality Control

RL ..... Reporting Limit

RUSTON ..... ASARCO's Ruston Soils Laboratory

RPD ..... Relative Percent Difference

SAP ..... Sampling and Analyses Plan

SOW ..... Statement of Work

Std Dev ..... Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area from August 12 through August 18, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. In addition to the Fenced Area samples, topsoil samples associated with this project were collected August 16, 2004. All samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.
- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the labortory duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses from these samples were not completed and therefore, not evaluated for this validation report. A comprehensive Confirmation and EDXRF sample comparison report will be submitted at the end of the 2004 work season.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Perfomance Monitoring data collected from August 12 through August 18, 2004 were **deemed acceptable** for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 25 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from August 12 through August 18, 2004. These samples were analyzed for metals by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included four field duplicates. Due to the time allotted for the validation of this data, the analyses of the Confirmation samples were not completed, and therefore, the evaluation of these data were not covered by this report. A comprehensive Confirmation and EDXRF sample comparison report will be submitted at the end of the 2004 work season.

- Validation procedures used are generally consistent with:
  - X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  - X Compliance Monitoring Plan – (ASARCO 2004a)
  - X Sampling and Analyses Plan – (ASARCO 2004b)
  - ___ Other

- Overall level of validation:
  - ___ Contract Laboratory Program (CLP)
  - X Standard – see notes
  - ___ Visual

  Notes: Field and laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.
  - X Yes
  - ___ No

- Documentation of field procedures was provided as required.
  - X Yes
  - ___ No

- Data entry for deliverables was consistent and without errors.
  _X_ Yes
  ___ No

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 10 or 1 per day, whichever was greater).
  _X_ Yes
  ___ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.
  _X_ Yes
  ___ No

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).
  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  ___ SW-846 (EPA 1986) – Confirmation Samples
  ___ Standard Methods for Chemical Analysis of Water and Wastes
  _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  ___ Other

- **Holding times met**
  _X_ Yes
  ___ No

- **Analyses were carried out as requested.**
  _X_ Yes
  ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and compliance standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Compliance Standard (ppm)
Arsenic	EDXRF	10	10	20
Antimony (topsoil only)	EDXRF	30	30	32
Chromium (topsoil only)	EDXRF	10	10	100
Copper (topsoil only)	EDXRF	10	10	2,960
Lead (topsoil only)	EDXRF	10	10	250
Nickel (topsoil only)	EDXRF	20	20	1,600
Silver (topsoil only)	EDXRF	20	20	400
Zinc (topsoil only)	EDXRF	10	10	24,000

- Reporting levels met IDLs.
  _X_ Yes
  ___ No

- Instrument detection limits (IDL) were provided by the laboratory.
  _X_ Yes
  ___ No

- Reporting levels were less than compliance standards.
  _X_ Yes
  ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**
  Initial instrument calibrations were performed (one per year).
  _X_ Yes - see notes
  ___ No
  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**

  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).

  _X_ Yes
  ___ No

  CCV standard percent recovery results were within the required control limits (75-125%).

  _X_ Yes
  ___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).

  ___ Yes
  _X_ No – see notes

  Notes: A laboratory duplicate was not reported for topsoil samples (IATS-I and IATS-1D) analyzed on 8/17/2004. Since the same standard (NIST 2711) was used for the CCV and LCS, the RPDs calculated from the results of these standards were used to evaluate the laboratory precision for the topsoil samples.

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.

  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.

  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).

  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).

  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).
  _X_ Yes – see the table at the end of this section
  ____ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ____ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report that will be submitted at the end of the 2004 work season.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	4	0	4	100%
LCS	4	0	4	100%
Total	8	0	8	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ____ No

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the table on the following page
  ____ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	4	0	4	100%
Lab Dup*	4	0	4	100%
Total	8	0	8	100%

*Since a laboratory duplicate was not analyzed for topsoil samples, the RPDs calculated from the associated CCV and LCS (both of these standards use NIST 2711) were used in lieu of the laboratory duplicate.

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).

  _X_ Yes – see the following table

  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	25	0	25	100%
Antimony	2	0	2	100%
Chromium	2	0	2	100%
Copper	2	0	2	100%
Lead	2	0	2	100%
Nickel	2	0	2	100%
Silver	2	0	2	100%
Zinc	2	0	2	100%
Total	39	0	39	100%

Data Qualifications

- Data was qualified for quality control exceedances.

  ___ Yes

  _X_ No - see the table on the following page

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	25	0	25	100%
Antimony	2	0	2	100%
Chromium	2	0	2	100%
Copper	2	0	2	100%
Lead	2	0	2	100%
Nickel	2	0	2	100%
Silver	2	0	2	100%
Zinc	2	0	2	100%
Total	39	0	39	100%

Corrective Actions

- Corrective actions were required for this sampling event.

  ___ Yes
  _X_ No

10. CONCLUSION

The Performance Monitoring data collected from August 12 through August 18, 2004 were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

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EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
August 12 through August 18, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Antimony (ppm)	Arsenic (ppm)	Chromium (ppm)	Copper (ppm)	Lead (ppm)	Nickel (ppm)	Silver (ppm)	Zinc (ppm)
IAFA-P1A-F-LS26-C-1	8/17/04	IAFA-P1A-F-LS26-C-1		Ruston	04R-05410	EDXRF		2795						
IAFA-P1A-F-LS30-C-1	8/17/04	IAFA-P1A-F-LS30-C-1		Ruston	04R-05409	EDXRF		1286						
IAFA-P1A-F-LS34-C-1	8/17/04	IAFA-P1A-F-LS34-C-1		Ruston	04R-05334	EDXRF		2420						
IAFA-P1A-F-LS38-C-1	8/17/04	IAFA-P1A-F-LS38-C-1		Ruston	04R-05333	EDXRF		2001						
IAFA-P1A-F-LS41-C-1	8/18/04	IAFA-P1A-F-LS41-C-1		Ruston	04R-05420	EDXRF		2633						
IAFA-P1A-F-LS42-C-1	8/17/04	IAFA-P1A-F-LS42-C-1		Ruston	04R-05331	EDXRF		2375						
IAFA-P1A-F-LS42-C-1	8/17/04	IAFA-P1A-F-LS42-C-1D	Field Duplicate	Ruston	04R-05332	EDXRF		2266						
IAFA-P1A-F-LS45-C-1	8/18/04	IAFA-P1A-F-LS45-C-1		Ruston	04R-05415	EDXRF		1344						
IAFA-P1A-F-LS45-C-1	8/18/04	IAFA-P1A-F-LS45-C-1D	Field Duplicate	Ruston	04R-05416	EDXRF		1770						
IAFA-P1A-F-LS46-C-1	8/12/04	IAFA-P1A-F-LS46-C-1		Ruston	04R-05159	EDXRF		2361						
IAFA-P1A-F-LS48-C-1	8/12/04	IAFA-P1A-F-LS48-C-1		Ruston	04R-05158	EDXRF		1815						
IAFA-P1A-P-LS45-C-A-1	8/18/04	IAFA-P1A-P-LS45-C-A-1		Ruston	04R-05417	EDXRF		1764						
IAFA-P1A-P-LS45-C-B-1	8/18/04	IAFA-P1A-P-LS45-C-B-1		Ruston	04R-05418	EDXRF		1408						
IAFA-P1A-P-LS45-C-C-1	8/18/04	IAFA-P1A-P-LS45-C-C-1		Ruston	04R-05419	EDXRF		1682						
IAFA-P1A-P-LS48-C-A-1	8/12/04	IAFA-P1A-P-LS48-C-A-1		Ruston	04R-05153	EDXRF		6996						
IAFA-P1A-P-LS48-C-A-2	8/17/04	IAFA-P1A-P-LS48-C-A-2		Ruston	04R-05411	EDXRF		719						
IAFA-P1A-P-LS48-C-B-1	8/12/04	IAFA-P1A-P-LS48-C-B-1		Ruston	04R-05154	EDXRF		13960						
IAFA-P1A-P-LS48-C-B-2	8/17/04	IAFA-P1A-P-LS48-C-B-2		Ruston	04R-05412	EDXRF		1538						
IAFA-P1A-P-LS48-C-C-1	8/12/04	IAFA-P1A-P-LS48-C-C-1		Ruston	04R-05155	EDXRF		12728						
IAFA-P1A-P-LS48-C-C-2	8/17/04	IAFA-P1A-P-LS48-C-C-2		Ruston	04R-05413	EDXRF		2379						
IAFAP1A-P-LS48-C-D-1	8/12/04	IAFAP1A-P-LS48-C-D-1		Ruston	04R-05156	EDXRF		1416						
IAFAP1A-P-LS48-C-D-1	8/12/04	IAFAP1A-P-LS48-C-D-1D	Field Duplicate	Ruston	04R-05157	EDXRF		1425						
IAFA-P1A-P-LS48-C-D-2	8/17/04	IAFA-P1A-P-LS48-C-D-2		Ruston	04R-05414	EDXRF		634						
IATS-1	8/16/04	IATS-1		Ruston	04R-05329	EDXRF	< 30	<10	97	47	44	49	< 20	99
IATS-1	8/16/04	IATS-1D	Field Duplicate	Ruston	04R-05330	EDXRF	< 30	<10	94	48	47	50	< 20	88

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA PERFORMANCE MONITORING SAMPLES
AUGUST 18 THROUGH AUGUST 24, 2004

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August 30, 2004

TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 4

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 7

10. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

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PRDL ..... Project Required Detection Limit

QC ..... Quality Control

RL ..... Reporting Limit

RUSTON ..... ASARCO's Ruston Soils Laboratory

RPD ..... Relative Percent Difference

SAP ..... Sampling and Analyses Plan

SOW ..... Statement of Work

Std Dev ..... Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area from August 18 through August 24, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. All samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.
- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the labortory duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses from these samples were not completed and therefore, not evaluated for this validation report. A comprehensive Confirmation and EDXRF sample comparison report will be submitted at the end of the 2004 work season.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Perfomance Monitoring data collected from August 18 through August 24, 2004 were **deemed acceptable** for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 19 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from August 18 through August 24, 2004. These samples were analyzed for metals by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included four field duplicates. Due to the time allotted for the validation of this data, the analyses of the Confirmation samples were not completed, and therefore, the evaluation of these data were not covered by this report. A comprehensive Confirmation and EDXRF sample comparison report will be submitted at the end of the 2004 work season.

- Validation procedures used are generally consistent with:
  - X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  - X Compliance Monitoring Plan – (ASARCO 2004a)
  - X Sampling and Analyses Plan – (ASARCO 2004b)
  - ___ Other

- Overall level of validation:
  - ___ Contract Laboratory Program (CLP)
  - X Standard – see notes
  - ___ Visual

  Notes: Field and laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.
  - X Yes
  - ___ No

- Documentation of field procedures was provided as required.
  - X Yes
  - ___ No

- Data entry for deliverables was consistent and without errors.
  _X_ Yes
  ___ No

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 10 or 1 per day, whichever was greater).
  _X_ Yes
  ___ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.
  _X_ Yes
  ___ No

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).
  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  ___ SW-846 (EPA 1986) – Confirmation Samples
  ___ Standard Methods for Chemical Analysis of Water and Wastes
  _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  ___ Other

- **Holding times met**
  _X_ Yes
  ___ No

- **Analyses were carried out as requested.**
  _X_ Yes
  ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and compliance standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Compliance Standard (ppm)
Arsenic	EDXRF	10	10	20

- Reporting levels met IDLs.
  _X_ Yes
  ___ No
- Instrument detection limits (IDL) were provided by the laboratory.
  _X_ Yes
  ___ No
- Reporting levels were less than compliance standards.
  _X_ Yes
  ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**
  Initial instrument calibrations were performed (one per year).
  _X_ Yes - see notes
  ___ No
  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**

  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).

  _X_ Yes
  ___ No

  CCV standard percent recovery results were within the required control limits (75-125%).

  _X_ Yes
  ___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).

  _X_ Yes
  ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.

  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.

  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).

  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).

  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report that will be submitted at the end of the 2004 work season.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	5	0	5	100%
LCS	5	0	5	100%
Total	10	0	10	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the table on the following page
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	4	0	4	100%
Lab Dup	5	0	5	100%
Total	9	0	9	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).

  _X_ Yes – see the following table

  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	19	0	19	100%

Data Qualifications

- Data was qualified for quality control exceedances.

  ___ Yes

  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	19	0	19	100%

Corrective Actions

- Corrective actions were required for this sampling event.

  ___ Yes

  _X_ No

10. CONCLUSION

The Performance Monitoring data collected from August 18 through August 24, 2004 were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
August 18, 2004 through August 24, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IAFA-P1A-F-LS11-C-1	8/24/04	IAFA-P1A-F-LS11-C-1		Ruston	04R-05693	EDXRF	3361
IAFA-P1A-F-LS11-C-2	8/24/04	IAFA-P1A-F-LS11-C-2		Ruston	04R-05722	EDXRF	2596
IAFA-P1A-F-LS12-C-1	8/20/04	IAFA-P1A-F-LS12-C-1		Ruston	04R-05618	EDXRF	2739
IAFA-P1A-F-LS16-C-1	8/24/04	IAFA-P1A-F-LS16-C-1		Ruston	04R-05691	EDXRF	2785
IAFA-P1A-F-LS16-C-1	8/24/04	IAFA-P1A-F-LS16-C-1D	Field Duplicate	Ruston	04R-05692	EDXRF	2784
IAFA-P1A-F-LS17-C-1	8/20/04	IAFA-P1A-F-LS17-C-1		Ruston	04R-05617	EDXRF	2457
IAFA-P1A-F-LS21-C-1	8/23/04	IAFA-P1A-F-LS21-C-1		Ruston	04R-05690	EDXRF	2021
IAFA-P1A-F-LS22-C-1	8/20/04	IAFA-P1A-F-LS22-C-1		Ruston	04R-05616	EDXRF	2546
IAFA-P1A-F-LS29-C-1	8/18/04	IAFA-P1A-F-LS29-C-1		Ruston	04R-05430	EDXRF	2449
IAFA-P1A-F-LS33-C-1	8/18/04	IAFA-P1A-F-LS33-C-1		Ruston	04R-05429	EDXRF	1817
IAFA-P1A-F-LS37-C-1	8/18/04	IAFA-P1A-F-LS37-C-1		Ruston	04R-05428	EDXRF	1486
IAFA-P1A-F-LS7-C-1	8/20/04	IAFA-P1A-F-LS7-C-1		Ruston	04R-05619	EDXRF	2808
IAFA-P1A-P-LS7-C-A-1	8/23/04	IAFA-P1A-P-LS7-C-A-1		Ruston	04R-05620	EDXRF	4031
IAFA-P1A-P-LS7-C-A-1	8/23/04	IAFA-P1A-P-LS7-C-A-1	Field Duplicate	Ruston	04R-05621	EDXRF	3951
IAFA-P1A-P-LS7-C-A-2	8/24/04	IAFA-P1A-P-LS7-C-A-2		Ruston	04R-05723	EDXRF	1955
IAFA-SP-H-PRE	8/19/04	IAFA-SP-H-PRE		Ruston	04R-05431	EDXRF	2881
IAFA-SP-H-PRE	8/19/04	IAFA-SP-H-D-PRE	Field Duplicate	Ruston	04R-05432	EDXRF	2821
IAFA-SP-I-PRE	8/20/04	IAFA-SP-I-PRE		Ruston	04R-05542	EDXRF	21351
IAFA-SP-I-PRE	8/20/04	IAFA-SP-I-D-PRE	Field Duplicate	Ruston	04R-05543	EDXRF	21358

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA AND EVERETT RESIDENTIAL
PERFORMANCE MONITORING SAMPLES
AUGUST 26 THROUGH SEPTEMBER 1, 2004

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TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 4

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 6

10. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

GLOSSARY OF TERMS

CCV .....Continuing Calibration Verification

CLP .....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA .....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS .....Laboratory Control Sample

PRDL .....Project Required Detection Limit

QC.....Quality Control

RL .....Reporting Limit

RUSTON .....ASARCO's Ruston Soils Laboratory

RPD.....Relative Percent Difference

SAP .....Sampling and Analyses Plan

SOW .....Statement of Work

Std Dev .....Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area and Everett's residential area from August 26 through September 1, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. All samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.
- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the labortory duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Performance Monitoring data collected from August 26 through September 1, 2004 were **deemed acceptable** for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 67 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from August 26 through September 1, 2004. These samples were analyzed for metals by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included 13 field duplicates. Due to the time allotted for the validation of this data, analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

- Validation procedures used are generally consistent with:

  X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  X Compliance Monitoring Plan – (ASARCO 2004a)
  X Sampling and Analyses Plan – (ASARCO 2004b)
  ___ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  X Standard – see notes
  ___ Visual

  Notes: Field and laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  X Yes
  ___ No

- Documentation of field procedures was provided as required.

  X Yes
  ___ No

- Data entry for deliverables was consistent and without errors.

  ___ Yes
  _X_ No – see note

  Notes: IAFA-P1A sites collected 8/30/04 were recorded as IAFA-PIA by the laboratory. This data entry error has been corrected.

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 10 or 1 per day, whichever was greater).

  _X_ Yes
  ___ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.

  _X_ Yes
  ___ No

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).

  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**

  ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  ___ SW-846 (EPA 1986) – Confirmation Samples
  ___ Standard Methods for Chemical Analysis of Water and Wastes
  _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  ___ Other

- **Holding times met**

  _X_ Yes
  ___ No

- **Analyses were carried out as requested.**
  _X_ Yes
  ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and compliance standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Compliance Standard (ppm)
Arsenic	EDXRF	10	10	20

- Reporting levels met IDLs.
  _X_ Yes
  ___ No
- Instrument detection limits (IDL) were provided by the laboratory.
  _X_ Yes
  ___ No
- Reporting levels were less than compliance standards.
  _X_ Yes
  ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**
  Initial instrument calibrations were performed (one per year).
  _X_ Yes - see notes
  ___ No
  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**
  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).
  _X_ Yes
  ___ No

CCV standard percent recovery results were within the required control limits (75-125%).
_X_ Yes
___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).
  _X_ Yes
  ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.
  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.
  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).
  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).
  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).
  _X_ Yes – see the table on the following page
  ___ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	6	0	6	100%
LCS	8	0	8	100%
Total	14	0	14	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the table on the following page
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	13	0	13	100%
Lab Dup	8	0	8	100%
Total	21	0	21	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).
  _X_ Yes – see the following table
  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	67	0	67	100%

Data Qualifications

- Data was qualified for quality control exceedances.
  ___ Yes
  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	67	0	67	100%

Corrective Actions

- Corrective actions were required for this sampling event.
  _X_ Yes - see notes
  ___ No

  Notes: Data entry errors were reported to the laboratory and corrected. See Section 2 for details.

10. CONCLUSION

The Performance Monitoring data collected from August 26 through September 1, 2004 were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
August 26, 2004 through September 1, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IA25-1-C-E-1	8/27/04	IA25-1-C-E-1		RUSTON	04R-05822	EDXRF	194
IA25-1-C-F-1	8/27/04	IA25-1-C-F-1		RUSTON	04R-05823	EDXRF	61
IA25-1-C-F-1	8/27/04	IA25-1-C-F-1D	Field Duplicate	RUSTON	04R-05824	EDXRF	69
IA25-1-C-G-2	8/30/04	IA25-1-C-G-2		RUSTON	04R-05916	EDXRF	14
IA25-1-C-H-2	8/30/04	IA25-1-C-H-2		RUSTON	04R-05917	EDXRF	18
IA25-1-C-H-2	8/30/04	IA25-1-C-H-2D	Field Duplicate	RUSTON	04R-05918	EDXRF	20
IA25-2-C-E-1	8/27/04	IA25-2-C-E-1		RUSTON	04R-05913	EDXRF	232
IA25-2-C-E-1	8/27/04	IA25-2-C-E-1D	Field Duplicate	RUSTON	04R-05914	EDXRF	252
IA25-2-C-F-1	8/27/04	IA25-2-C-F-1		RUSTON	04R-05915	EDXRF	236
IA25-2-C-G-2	8/30/04	IA25-2-C-G-2		RUSTON	04R-05919	EDXRF	12
IA25-2-C-H-2	8/30/04	IA25-2-C-H-2		RUSTON	04R-05920	EDXRF	27
IA25-2-C-H-1	8/30/04	IA25-2-C-H-2D	Field Duplicate	RUSTON	04R-05921	EDXRF	28
IA25-3-C-E-1	8/31/04	IA25-3-C-E-1		RUSTON	04R-06062	EDXRF	112
IA25-3-C-F-1	8/31/04	IA25-3-C-F-1		RUSTON	04R-06063	EDXRF	121
IA25-3-C-F-1	8/31/04	IA25-3-C-F-1D	Field Duplicate	RUSTON	04R-06064	EDXRF	132
IA25-4-C-E-1	8/31/04	IA25-4-C-E-1		RUSTON	04R-06065	EDXRF	10
IA25-4-C-F-1	8/31/04	IA25-4-C-F-1		RUSTON	04R-06066	EDXRF	16
IA25-7-C-E-1	8/30/04	IA25-7-C-E-1		RUSTON	04R-06022	EDXRF	93
IA25-7-C-E-1	8/30/04	IA25-7-C-E-1D	Field Duplicate	RUSTON	04R-06023	EDXRF	81
IA25-7-C-F-1	8/30/04	IA25-7-C-F-1		RUSTON	04R-06024	EDXRF	64
IA26-1-C-E-1	9/1/04	IA26-1-C-E-1		RUSTON	04R-06067	EDXRF	138
IA26-1-C-F-1	9/1/04	IA26-1-C-F-1		RUSTON	04R-06068	EDXRF	130
IA26-1-C-F-1	9/1/04	IA26-1-C-F-1D	Field Duplicate	RUSTON	04R-06069	EDXRF	127
IA26-2-C-E-1	9/1/04	IA26-2-C-E-1		RUSTON	04R-06070	EDXRF	191
IA26-2-C-E-1	9/1/04	IA26-2-C-E-1D	Field Duplicate	RUSTON	04R-06071	EDXRF	180
IA26-2-C-F-1	9/1/04	IA26-2-C-F-1		RUSTON	04R-06072	EDXRF	162
IA26-3-C-E-1	9/1/04	IA26-3-C-E-1		RUSTON	04R-06073	EDXRF	159
IA26-3-C-F-1	9/1/04	IA26-3-C-F-1		RUSTON	04R-06074	EDXRF	104
IA27-11-C-E-1	8/30/04	IA27-11-C-E-1		RUSTON	04R-06020	EDXRF	254
IA27-11-C-F-1	8/30/04	IA27-11-C-F-1		RUSTON	04R-06021	EDXRF	183
IA27-12-C-E-1	8/31/04	IA27-12-C-E-1		RUSTON	04R-06025	EDXRF	153
IA27-12-C-F-1	8/31/04	IA27-12-C-F-1		RUSTON	04R-06026	EDXRF	152
IA27-12-C-F-1	8/31/04	IA27-12-C-F-1D	Field Duplicate	RUSTON	04R-06027	EDXRF	155
IA27-13-C-E-1	8/31/04	IA27-13-C-E-1		RUSTON	04R-06028	EDXRF	54
IA27-13-C-E-1	8/31/04	IA27-13-C-E-1D	Field Duplicate	RUSTON	04R-06029	EDXRF	58
IA27-13-C-F-1	8/31/04	IA27-13-C-F-1		RUSTON	04R-06030	EDXRF	60
IAFA-P1A-F-LS10-C-1	8/26/04	IAFA-P1A-F-LS10-C-1		RUSTON	04R-05821	EDXRF	2168
IAFA-P1A-F-LS14-C-1	8/31/04	IAFA-P1A-F-LS14-C-1		RUSTON	04R-06060	EDXRF	832
IAFA-P1A-F-LS15-C-1	8/26/04	IAFA-P1A-F-LS15-C-1		RUSTON	04R-05820	EDXRF	1606
IAFA-P1A-F-LS19-C-1	8/31/04	IAFA-P1A-F-LS19-C-1		RUSTON	04R-06055	EDXRF	778
IAFA-P1A-F-LS20-C-1	8/26/04	IAFA-P1A-F-LS20-C-1		RUSTON	04R-05819	EDXRF	1145
IAFA-P1A-F-LS24-C-1	8/31/04	IAFA-P1A-F-LS24-C-1		RUSTON	04R-06047	EDXRF	1716
IAFA-P1A-F-LS25-C-1	8/26/04	IAFA-P1A-F-LS25-C-1		RUSTON	04R-05817	EDXRF	1675
IAFA-P1A-F-LS25-C-1	8/26/04	IAFA-P1A-F-LS25-C-1D	Field Duplicate	RUSTON	04R-05818	EDXRF	1745
IAFA-P1A-F-LS28-C-1	8/31/04	IAFA-P1A-F-LS28-C-1		RUSTON	04R-06046	EDXRF	939
IAFA-P1A-F-LS2-C-1	8/30/04	IAFA-P1A-F-LS2-C-1		RUSTON	04R-06036	EDXRF	1321
IAFA-P1A-F-LS32-C-1	8/31/04	IAFA-P1A-F-LS32-C-1		RUSTON	04R-06045	EDXRF	818
IAFA-P1A-F-LS36-C-1	8/31/04	IAFA-P1A-F-LS36-C-1		RUSTON	04R-06038	EDXRF	2634
IAFA-P1A-F-LS36-C-1	8/31/04	IAFA-P1A-F-LS36-C-1D	Field Duplicate	RUSTON	04R-06039	EDXRF	2674
IAFA-P1A-F-LS3-C-1	8/30/04	IAFA-P1A-F-LS3-C-1		RUSTON	04R-06033	EDXRF	991
IAFA-P1A-F-LS5-C-1	8/30/04	IAFA-P1A-F-LS5-C-1		RUSTON	04R-06037	EDXRF	1344
IAFA-P1A-F-LS6-C-1	8/30/04	IAFA-P1A-F-LS6-C-1		RUSTON	04R-06031	EDXRF	2851
IAFA-P1A-F-LS6-C-1	8/30/04	IAFA-P1A-F-LS6-C-1D	Field Duplicate	RUSTON	04R-06032	EDXRF	2865
IAFA-P1A-F-LS9-C-1	8/31/04	IAFA-P1A-F-LS9-C-1		RUSTON	04R-06061	EDXRF	659

ASARCO's Former Arsenic Trioxide Processing Area
August 26, 2004 through September 1, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IAFA-P1A-P-LS14-C-A-1	8/31/04	IAFA-P1A-P-LS14-C-A-1		RUSTON	04R-06056	EDXRF	563
IAFA-P1A-P-LS14-C-B-1	8/31/04	IAFA-P1A-P-LS14-C-B-1		RUSTON	04R-06057	EDXRF	1075
IAFA-P1A-P-LS14-C-C-1	8/31/04	IAFA-P1A-P-LS14-C-C-1		RUSTON	04R-06058	EDXRF	2115
IAFA-P1A-P-LS14-C-D-1	8/31/04	IAFA-P1A-P-LS14-C-D-1		RUSTON	04R-06059	EDXRF	321
IAFA-P1A-P-LS19-C-A-1	8/31/04	IAFA-P1A-P-LS19-C-A-1		RUSTON	04R-06052	EDXRF	2206
IAFA-P1A-P-LS19-C-B-1	8/31/04	IAFA-P1A-P-LS19-C-B-1		RUSTON	04R-06053	EDXRF	1549
IAFA-P1A-P-LS19-C-C-1	8/31/04	IAFA-P1A-P-LS19-C-C-1		RUSTON	04R-06054	EDXRF	592
IAFA-P1A-P-LS24-C-A-1	8/31/04	IAFA-P1A-P-LS24-C-A-1		RUSTON	04R-06048	EDXRF	1363
IAFA-P1A-P-LS24-C-B-1	8/31/04	IAFA-P1A-P-LS24-C-B-1		RUSTON	04R-06049	EDXRF	2448
IAFA-P1A-P-LS24-C-C-1	8/31/04	IAFA-P1A-P-LS24-C-C-1		RUSTON	04R-06050	EDXRF	4268
IAFA-P1A-P-LS24-C-D-1	8/31/04	IAFA-P1A-P-LS24-C-D-1		RUSTON	04R-06051	EDXRF	1476
IAFA-P1A-P-LS3-C-A-1	8/30/04	IAFA-P1A-P-LS3-C-A-1		RUSTON	04R-06034	EDXRF	2111
IAFA-P1A-P-LS6-C-A-1	8/30/04	IAFA-P1A-P-LS6-C-A-1		RUSTON	04R-06035	EDXRF	2400

REVISION

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA AND EVERETT RESIDENTIAL
PERFORMANCE MONITORING SAMPLES
AUGUST 31 THROUGH SEPTEMBER 8, 2004

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September 13, 2004

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TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 4

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 6

10. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

GLOSSARY OF TERMS

CCV .....Continuing Calibration Verification

CLP .....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA.....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS .....Laboratory Control Sample

PRDL .....Project Required Detection Limit

QC.....Quality Control

RL .....Reporting Limit

RUSTON .....ASARCO's Ruston Soils Laboratory

RPD.....Relative Percent Difference

SAP .....Sampling and Analyses Plan

SOW .....Statement of Work

Std Dev .....Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area and Everett's residential area from August 31 through September 8, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. All samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.
- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the labortory duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Performance Monitoring data collected from August 31 through September 8, 2004 were **deemed acceptable** for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 85 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from August 31 through September 8, 2004. These samples were analyzed for metals by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included 13 field duplicates. Due to the time allotted for the validation of this data, analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

- Validation procedures used are generally consistent with:

  X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  X Compliance Monitoring Plan – (ASARCO 2004a)
  X Sampling and Analyses Plan – (ASARCO 2004b)
  ___ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  X Standard – see notes
  ___ Visual

  Notes: Field and laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  X Yes
  ___ No

- Documentation of field procedures was provided as required.

  X Yes
  ___ No

- Data entry for deliverables was consistent and without errors.
  - _X_ Yes
  - ___ No

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 10 or 1 per day, whichever was greater).

  _X_ Yes
  ___ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.

  _X_ Yes
  ___ No

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).

  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  - ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  - ___ SW-846 (EPA 1986) – Confirmation Samples
  - ___ Standard Methods for Chemical Analysis of Water and Wastes
  - _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  - ___ Other

- **Holding times met**
  - _X_ Yes
  - ___ No

- **Analyses were carried out as requested.**
  _X_ Yes
  ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and compliance standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Compliance Standard (ppm)
Arsenic	EDXRF	10	10	20

- RLs met the IDLs.
  _X_ Yes
  ___ No
- IDLs were provided by the laboratory.
  _X_ Yes
  ___ No
- RLs were less than compliance standards.
  _X_ Yes
  ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**
  Initial instrument calibrations were performed (one per year).
  _X_ Yes - see notes
  ___ No
  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.
- **Calibration Verifications**
  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).
  _X_ Yes
  ___ No

CCV standard percent recovery results were within the required control limits (75-125%).
_X_ Yes
___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).
  _X_ Yes
  ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.
  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.
  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).
  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).
  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).
  _X_ Yes – see the table on the following page
  ___ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	10	0	10	100%
LCS	8	0	8	100%
Total	18	0	18	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the table on the following page
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	13	0	13	100%
Lab Dup	10	0	10	100%
Total	23	0	23	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).
  _X_ Yes – see the following table
  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	85	0	85	100%

Data Qualifications

- Data was qualified for quality control exceedances.

  ___ Yes

  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	85	0	85	100%

Corrective Actions

- Corrective actions were required for this sampling event.

  ___ Yes

  _X_ No

10. CONCLUSION

The Performance Monitoring data collected from August 31 through September 8, 2004 were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
August 31, 2004 through September 8, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IA25-3-D-B1-E1	8/31/04	IA25-3-D-B1-E1		RUSTON	04R-06076	EDXRF	20
IA25-3-D-B2-E1	8/31/04	IA25-3-D-B2-E1		RUSTON	04R-06077	EDXRF	193
IA25-3-D-B3-E1	8/31/04	IA25-3-D-B3-E1		RUSTON	04R-06078	EDXRF	287
IA25-3-D-B4-E1	8/31/04	IA25-3-D-B4-E1		RUSTON	04R-06079	EDXRF	10
IA25-3-D-B5-E1	8/31/04	IA25-3-D-B5-E1		RUSTON	04R-06080	EDXRF	103
IA25-3-D-B1-F1	8/31/04	IA25-3-D-B1-F1		RUSTON	04R-06081	EDXRF	14
IA25-3-D-B2-F1	8/31/04	IA25-3-D-B2-F1		RUSTON	04R-06082	EDXRF	578
IA25-3-D-B3-F1	8/31/04	IA25-3-D-B3-F1		RUSTON	04R-06083	EDXRF	275
IA25-3-D-B4-F1	8/31/04	IA25-3-D-B4-F1		RUSTON	04R-06084	EDXRF	<10
IA25-3-D-B5-F1	8/31/04	IA25-3-D-B5-F1		RUSTON	04R-06085	EDXRF	140
IA26-1-D-B1-E1	9/1/04	IA26-1-D-B1-E1		RUSTON	04R-06086	EDXRF	132
IA26-1-D-B2-E1	9/1/04	IA26-1-D-B2-E1		RUSTON	04R-06087	EDXRF	120
IA26-1-D-B3-E1	9/1/04	IA26-1-D-B3-E1		RUSTON	04R-06088	EDXRF	391
IA26-1-D-B4-E1	9/1/04	IA26-1-D-B4-E1		RUSTON	04R-06089	EDXRF	402
IA26-1-D-B5-E1	9/1/04	IA26-1-D-B5-E1		RUSTON	04R-06090	EDXRF	<10
IA26-1-D-B1-F1	9/1/04	IA26-1-D-B1-F1		RUSTON	04R-06091	EDXRF	10
IA26-1-D-B2-F1	9/1/04	IA26-1-D-B2-F1		RUSTON	04R-06092	EDXRF	51
IA26-1-D-B3-F1	9/1/04	IA26-1-D-B3-F1		RUSTON	04R-06093	EDXRF	371
IA26-1-D-B4-F1	9/1/04	IA26-1-D-B4-F1		RUSTON	04R-06094	EDXRF	690
IA26-1-D-B5-F1	9/1/04	IA26-1-D-B5-F1		RUSTON	04R-06095	EDXRF	<10
IA26-3-D-B1-F1	9/1/04	IA26-3-D-B1-F1		RUSTON	04R-06096	EDXRF	356
IA26-3-D-B2-F1	9/1/04	IA26-3-D-B2-F1		RUSTON	04R-06097	EDXRF	170
IA26-3-D-B3-F1	9/1/04	IA26-3-D-B3-F1		RUSTON	04R-06098	EDXRF	26
IA26-3-D-B4-F1	9/1/04	IA26-3-D-B4-F1		RUSTON	04R-06099	EDXRF	361
IA26-3-D-B5-F1	9/1/04	IA26-3-D-B5-F1		RUSTON	04R-06100	EDXRF	37
IAFAP1A-P-LS56-C-A-1	9/1/04	IAFAP1A-P-LS56-C-A-1		RUSTON	04R-06101	EDXRF	3774
IAFAP1A-P-LS56-C-A-1	9/1/04	IAFAP1A-P-LS56-C-A-1	Field Duplicate	RUSTON	04R-06102	EDXRF	3738
IAFA-P1A-P-LS56-C-B-1	9/1/04	IAFA-P1A-P-LS56-C-B-1		RUSTON	04R-06103	EDXRF	2397
IAFA-P1A-P-LS56-C-C-1	9/1/04	IAFA-P1A-P-LS56-C-C-1		RUSTON	04R-06104	EDXRF	5806
IA27-8-C-E-1	9/1/04	IA27-8-C-E-1		RUSTON	04R-06105	EDXRF	40
IA27-8-C-E-1	9/1/04	IA27-8-C-E-1D	Field Duplicate	RUSTON	04R-06106	EDXRF	26
IA27-8-C-F-1	9/1/04	IA27-8-C-F-1		RUSTON	04R-06107	EDXRF	21
IA27-12-C-G-2	9/2/04	IA27-12-C-G-2		RUSTON	04R-06108	EDXRF	37
IA27-12-C-H-2	9/2/04	IA27-12-C-H-2		RUSTON	04R-06109	EDXRF	37
IA27-12-C-H-2	9/2/04	IA27-12-C-H-2D	Field Duplicate	RUSTON	04R-06110	EDXRF	32
IA27-11-C-G-2	9/2/04	IA27-11-C-G-2		RUSTON	04R-06111	EDXRF	56
IA27-10-C-E-1	9/2/04	IA27-10-C-E-1		RUSTON	04R-06112	EDXRF	183
IA27-10-C-E-1	9/2/04	IA27-10-C-E-1D	Field Duplicate	RUSTON	04R-06113	EDXRF	158
IA27-10-C-F-1	9/2/04	IA27-10-C-F-1		RUSTON	04R-06114	EDXRF	27
IA27-9-C-E-1	9/2/04	IA27-9-C-E-1		RUSTON	04R-06115	EDXRF	124
IA27-9-C-E-1	9/2/04	IA27-9-C-E-1D	Field Duplicate	RUSTON	04R-06116	EDXRF	162
IA27-9-C-F-1	9/2/04	IA27-9-C-F-1		RUSTON	04R-06117	EDXRF	122
IA27-9-D-B1-E-1	9/2/04	IA27-9-D-B1-E-1		RUSTON	04R-06120	EDXRF	33
IA27-9-D-B2-E-1	9/2/04	IA27-9-D-B2-E-1		RUSTON	04R-06121	EDXRF	21
IA27-9-D-B3-E-1	9/2/04	IA27-9-D-B3-E-1		RUSTON	04R-06122	EDXRF	857
IA27-9-D-B4-E-1	9/2/04	IA27-9-D-B4-E-1		RUSTON	04R-06123	EDXRF	276
IA27-9-D-B5-E-1	9/2/04	IA27-9-D-B5-E-1		RUSTON	04R-06124	EDXRF	75
IA27-9-D-B1-F-1	9/2/04	IA27-9-D-B1-F-1		RUSTON	04R-06125	EDXRF	116
IA27-9-D-B2-F-1	9/2/04	IA27-9-D-B2-F-1		RUSTON	04R-06126	EDXRF	22
IA27-9-D-B3-F-1	9/2/04	IA27-9-D-B3-F-1		RUSTON	04R-06127	EDXRF	240
IA27-9-D-B4-F-1	9/2/04	IA27-9-D-B4-F-1		RUSTON	04R-06128	EDXRF	129
IA27-9-D-B5-F-1	9/2/04	IA27-9-D-B5-F-1		RUSTON	04R-06129	EDXRF	155
IA26-3-C-G-2	9/2/04	IA26-3-C-G-2		RUSTON	04R-06130	EDXRF	86
IA26-2-C-G-2	9/2/04	IA26-2-C-G-2		RUSTON	04R-06131	EDXRF	57

ASARCO's Former Arsenic Trioxide Processing Area
August 31, 2004 through September 8, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IA25-5-C-E-1	9/2/04	IA25-5-C-E-1		RUSTON	04R-06132	EDXRF	60
IA25-5-C-F-1	9/2/04	IA25-5-C-F-1		RUSTON	04R-06133	EDXRF	347
IA25-6-C-E-1	9/2/04	IA25-6-C-E-1		RUSTON	04R-06134	EDXRF	58
IA25-6-C-E-1	9/2/04	IA25-6-C-E-1D	Field Duplicate	RUSTON	04R-06135	EDXRF	56
IA25-6-C-F-1	9/2/04	IA25-6-C-F-1		RUSTON	04R-06136	EDXRF	152
IA26-5-C-E-1	9/2/04	IA26-5-C-E-1		RUSTON	04R-06137	EDXRF	44
IA26-5-C-F-1	9/2/04	IA26-5-C-F-1		RUSTON	04R-06138	EDXRF	46
IA26-5-C-F-1	9/2/04	IA26-5-C-F-1D	Field Duplicate	RUSTON	04R-06139	EDXRF	38
IA26-4-C-G-1	9/2/04	IA26-4-C-G-1		RUSTON	04R-06140	EDXRF	<10
IA26-4-C-G-1	9/2/04	IA26-4-C-G-1D	Field Duplicate	RUSTON	04R-06141	EDXRF	<10
IA27-7-C-G-1	9/3/04	IA27-7-C-G-1		RUSTON	04R-06142	EDXRF	141
IAFA-P1A-F-LS1-C-1	9/3/04	IAFA-P1A-F-LS1-C-1		RUSTON	04R-06143	EDXRF	4798
IAFA-P1A-F-LS1-C-1	9/3/04	IAFA-P1A-F-LS1-C-1D	Field Duplicate	RUSTON	04R-06144	EDXRF	3811
IAFA-P1A-F-LS4-C-1	9/3/04	IAFA-P1A-F-LS4-C-1		RUSTON	04R-06145	EDXRF	1416
IA27-7-D-B1-G-1	9/3/04	IA27-7-D-B1-G-1		RUSTON	04R-06146	EDXRF	206
IA27-7-D-B2-G-1	9/3/04	IA27-7-D-B2-G-1		RUSTON	04R-06147	EDXRF	657
IA27-7-D-B3-G-1	9/3/04	IA27-7-D-B3-G-1		RUSTON	04R-06148	EDXRF	171
IA27-7-D-B4-G-1	9/3/04	IA27-7-D-B4-G-1		RUSTON	04R-06149	EDXRF	174
IA27-7-D-B5-G-1	9/3/04	IA27-7-D-B5-G-1		RUSTON	04R-06150	EDXRF	<10
IA27-7-D-B6-G-1	9/3/04	IA27-7-D-B6-G-1		RUSTON	04R-06151	EDXRF	<10
IA25-6-C-G-2	9/7/04	IA25-6-C-G-2		RUSTON	04R-06177	EDXRF	<10
IA25-6-C-G-2	9/7/04	IA25-6-C-G-2D	Field Duplicate	RUSTON	04R-06178	EDXRF	<10
IA25-5-C-G-2	9/7/04	IA25-5-C-G-2		RUSTON	04R-06179	EDXRF	45
IA27-9-C-G-2	9/7/04	IA27-9-C-G-2		RUSTON	04R-06180	EDXRF	<10
IA27-9-C-G-2	9/7/04	IA27-9-C-G-2D	Field Duplicate	RUSTON	04R-06181	EDXRF	<10
IA27-7-C-H-2	9/7/04	IA27-7-C-H-2		RUSTON	04R-06182	EDXRF	14
IA27-6-C-G-1	9/8/04	IA27-6-C-G-1		RUSTON	04R-06183	EDXRF	24
IA27-6-C-G-1	9/8/04	IA27-6-C-G-1D	Field Duplicate	RUSTON	04R-06184	EDXRF	21
IAFA-P1A-F-US1-C-1	9/8/04	IAFA-P1A-F-US1-C-1		RUSTON	04R-06185	EDXRF	857
IAFA-P1A-F-US1-C-1	9/8/04	IAFA-P1A-F-US1-C-1D	Field Duplicate	RUSTON	04R-06186	EDXRF	841
IAFA-P1A-P-US1-C-A-1	9/8/04	IAFA-P1A-P-US1-C-A-1		RUSTON	04R-06187	EDXRF	671

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

CONFIRMATION SAMPLES
AUGUST 7 THROUGH SEPTEMBER 10, 2004

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September 27, 2004

TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. LABORATORY PROCEDURES 4

4. DETECTION LIMITS 4

5. METHOD BLANKS 4

6. MATRIX SPIKES 5

7. LABORATORY DUPLICATES 5

8. LABORATORY CONTROL SAMPLES (LCS) 5

9. DATA QUALITY OBJECTIVES 6

10. EDXRF/CONFIRMATION SAMPLE COMPARISON 7

11. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

APPENDIX 2: EDXRF/Confirmation Sample Comparison Summary

GLOSSARY OF TERMS

CLP.....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA.....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS .....Laboratory Control Sample

MS.....Matrix Spike

PRDL .....Project Required Detection Limit

QC.....Quality Control

RL .....Reporting Limit

RPD.....Relative Percent Difference

SAP .....Sampling and Analyses Plan

SOW .....Statement of Work

STL .....Severn Trent Laboratories, Inc.

SUMMARY

Splits of performance monitoring soil samples collected in the Fenced Area from August 7 through September 10, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project were analyzed by the Environmental Protection Agency (EPA) Method 6020 (EPA 1986) method at Severn Trent Laboratories, Inc. in Tacoma, Washington. Data from the split samples (referred to as Confirmation samples) were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). This data was also compared with Energy Dispersive X-ray Fluorescence (EDXRF) results from the original samples. Appendix 1 contains the validated data and the EDXRF/Confirmation sample comparison summary is located in Appendix 2.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using laboratory duplicate samples. The target precision for this project is acceptance of 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and matrix spike (MS) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the MS samples as valid and within the control limits established by the SAP.

  In addition to LCS and MS samples, one in fifty samples analyzed using the EDXRF method, are required to be analyzed by EPA wet chemistry methods. The results for these samples (Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the laboratory duplicate results were within control limits.

Accuracy

- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- MS – The accuracy target of 90% was met as **100%** of the MS results were within control limits.
- Confirmation Samples – All Confirmation sample results were less than a 35 Relative Percent Difference (RPD) from the EDXRF results. Recovery rates determined that three out of four EDXRF results were greater than confirmation samples. The results of the Confirmations samples "confirmed" the use of the EDXRF results for the purposes they were intended.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Confirmation sample data for Performance Monitoring samples collected from August 7 through September 10, 2004 were **deemed acceptable** for the purposes (to compare with EDXRF results) of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification. These data **"confirmed" the use of the EDXRF results** for Performance Monitoring samples collected August 7 through September 10, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to five splits (referred to as Confirmation samples) from samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from August 7 through September 10, 2004. These samples were analyzed for metals by the EPA Method 6020 at Severn Trent Laboratories, Inc. (STL) in Tacoma, Washington. The results from these samples were used to "confirm" the results obtained by the EDXRF method.

- Validation procedures used are generally consistent with:

  X EPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  X Compliance Monitoring Plan – (ASARCO 2004a)
  X Sampling and Analyses Plan – (ASARCO 2004b)
  ___ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  X Standard – see notes
  ___ Visual

  Notes: Laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  X Yes
  ___ No

- Data entry for deliverables was consistent and without errors.

  ___ Yes
  X No – see notes

  Notes:

  - Samples IAFA-P1A-F-LS16-C-1 and IAFA-P1A-P-LS-19-C-B-1 were recorded as IAFA-PIA-F-LS16-C-1 and IAFA-PIA-P-LS-19-C-B-1, respectively (recorded the character I instead of number 1).

3. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  - ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  - _X_ SW-846 (EPA 1986) – Confirmation Samples
  - ___ Standard Methods for Chemical Analysis of Water and Wastes
  - ___ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  - ___ Other

- **Holding times met**
  - _X_ Yes
  - ___ No

- **Analyses were carried out as requested.**
  - _X_ Yes
  - ___ No

4. DETECTION LIMITS

- Reporting levels met IDLs.
  - _X_ Yes
  - ___ No

- Instrument detection limits (IDL) were provided by the laboratory.
  - _X_ Yes
  - ___ No

- Reporting levels were less than compliance standards.
  - _X_ Yes
  - ___ No

5. METHOD BLANKS

- Method blanks were analyzed at the required frequency.
  - _X_ Yes
  - ___ No

- Analytes were not detected in the method blanks.
  - ___ Yes
  - _X_ No – see notes

  Notes: Arsenic was detected in the method blank at 0.0163 mg/L, which is much less than the project required detection limit (PRDL) of 10 mg/L. All associated sample results were greater than five times the blank value and therefore, were not qualified.

6. MATRIX SPIKES

- Matrix spike (MS) samples were analyzed at the required frequency.
  - _X_ Yes
  - ___ No

- Spikes were added at the proper concentrations.
  - _X_ Yes
  - ___ No
  - ___ NA

- MS recovery results were within the required control limits (75-125%).
  - _X_ Yes
  - ___ No
  - ___ NA

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).
  - _X_ Yes
  - ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.
  - _X_ Yes
  - ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.
  - _X_ Yes
  - ___ No

- LCS' were analyzed at the proper frequency (one per day).
  - _X_ Yes
  - ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).
  - _X_ Yes
  - ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The laboratory target accuracy for this project was met (greater than 90% of the MS and LCS sample results were within control limits).

  _X_ Yes – with qualifications - see the following table and notes

  ___ No

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
MS	1	0	1	100%
LCS	1	0	1	100%
Total	2	0	2	100%

Precision

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).

  _X_ Yes – see the following table

  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Lab Dup	1	0	1	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).

  _X_ Yes – see the following table

  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	5	0	5	100%

Data Qualifications

- Data was qualified for quality control exceedances.

  ___ Yes
  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	5	0	5	100%

Corrective Actions

- Corrective actions were required for this sampling event.

  ___ Yes
  _X_ No

10. EDXRF/CONFIRMATION SAMPLE COMPARISON

Appendix 2 contains the comparison results for EDXRF and Confirmation sample data.

- Confirmation samples were analyzed at the proper frequency (1 per 50 samples analyzed by the EDXRF method)

  _X_ Yes
  ___ No

- EDXRF and Confirmation sample results were less than 35 RPD.

  _X_ Yes
  ___ No

- Recovery rates (EDXRF results divided by Confirmation results times 100) showed that one method's concentrations were consistently greater than the other method's concentrations.

  _X_ Yes – see notes
  ___ No

  Notes: All results had recovery rates greater than 100% (where EDXRF results were greater than Confirmation sample results). Recovery rates ranged from 101.7% to 121.1%.

- The correlation coefficient was near one.

  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A linear regression was not run do to the lack of data points. At least 10 data points are needed for reliable linear regression statistics.

- The y-intercept was near zero.

  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A linear regression was not run do to the lack of data points. At least 10 data points are needed for reliable linear regression statistics.

11. CONCLUSION

The Confirmation sample data for Performance Monitoring samples collected from August 7 through September 10, 2004 were **deemed acceptable** for the purposes (to compare with EDXRF results) of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification. These data **"confirmed" the use of the EDXRF results** for Performance Monitoring samples collected August 7 through September 10, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

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Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
Confirmation Sample Data
September 11 through September 28, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IA14-1-C-G-2	9/28/04	IA14-1-C-G-2D	Split	STL	124045-06	EPA 6020	20.1
IA17-5-C-E-1	9/20/04	IA17-5-C-E-1	Split	STL	124045-03	EPA 6020	< 10
IA18-5-C-E-1	9/16/04	IA18-5-C-E-1	Split	STL	124045-01	EPA 6020	< 10
IAFA-P1A-F-LS50-C-2	9/21/04	IAFA-P1A-F-LS50-C-2	Split	STL	124045-04	EPA 6020	1760
IAFA-P1A-F-LS68-C-1	9/17/04	IAFA-P1A-F-LS68-C-1	Split	STL	124045-02	EPA 6020	277
IAFA-P2-P-UR1-C-B-1	9/22/04	IAFA-P2-P-UR1-C-B-1	Split	STL	124045-05	EPA 6020	171

* Severn Trent Laboratories, Inc., Tacoma, Washington

APPENDIX 2

EDXRF/CONFIRMATION SAMPLE COMPARISON SUMMARY

EDXRF/CONFIRMATION SAMPLE COMPARISON SUMMARY

StationName IAFA-P1A-F-LS16-C-1
Sample Date 8/24/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTAL	IAFA-P1A-F-LS16-C-1	ppm	2785	v	2570	v	10	8.030 RPD	108.37%

StationName IA25-3-D-B2-F1
Sample Date 8/31/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTAL	IA25-3-D-B2-F1	ppm	578	v	477	v	10	19.147 RPD	121.17%

StationName IAFA-P1A-P-LS19-C-B-1
Sample Date 8/31/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTAL	IAFA-P1A-P-LS19-C-B-1	ppm	1549	v	1470	v	10	5.234 RPD	105.37%

StationName IA27-9-C-G-2
Sample Date 9/7/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTAL	IA27-9-C-G-2D	ppm	10	v	9	v	10	1.000 DIFF	111.11%

*EDXRF = Energy Dispersive X-Ray Fluorescence; V = Detected Value; U = Under Reporting Limit; PRDL = Project Required Reporting Limit; RPD = Relative Percent Difference.

EDXRF/CONFIRMATION SAMPLE COMPARISON SUMMARY

StationName **IA27-9-C-G-2**
Sample Date 9/7/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTAL	IA27-9-C-G-2D	ppm	10	v	9	v	10	1.000 DIFF	111.11%

StationName **IA27-2-C-G-1**
Sample Date 9/10/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTAL	IA27-2-C-G-1	ppm	66	v	64.9	v	10	1.681 RPD	101.69%

*EDXRF = Energy Dispersive X-Ray Fluorescence; V = Detected Value; U = Under Reporting Limit; PRDL = Project Required Reporting Limit; RPD = Relative Percent Difference.

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA AND EVERETT RESIDENTIAL
PERFORMANCE MONITORING SAMPLES
SEPTEMBER 8 THROUGH SEPTEMBER 15, 2004

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TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 4

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 6

10. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

GLOSSARY OF TERMS

CCV .....Continuing Calibration Verification

CLP .....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA .....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS .....Laboratory Control Sample

PRDL .....Project Required Detection Limit

QC.....Quality Control

RL .....Reporting Limit

RUSTON .....ASARCO's Ruston Soils Laboratory

RPD.....Relative Percent Difference

SAP .....Sampling and Analyses Plan

SOW .....Statement of Work

Std Dev .....Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area and Everett's residential area from September 8 through 15, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. All samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.
- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the labortory duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Performance Monitoring data collected from September 8 through September 15, 2004 were **deemed acceptable** for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 89 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from September 8 through 15, 2004. These samples were analyzed for metals by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included 16 field duplicates. Due to the time allotted for the validation of this data, analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

- Validation procedures used are generally consistent with:

  X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  X Compliance Monitoring Plan – (ASARCO 2004a)
  X Sampling and Analyses Plan – (ASARCO 2004b)
  ___ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  X Standard – see notes
  ___ Visual

  Notes: Field and laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  X Yes
  ___ No

- Documentation of field procedures was provided as required.

  X Yes
  ___ No

- Data entry for deliverables was consistent and without errors.
  _X_ Yes
  ___ No

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 10 or 1 per day, whichever was greater).
  _X_ Yes
  ___ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.
  _X_ Yes
  ___ No

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).
  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  ___ SW-846 (EPA 1986) – Confirmation Samples
  ___ Standard Methods for Chemical Analysis of Water and Wastes
  _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  ___ Other

- **Holding times met**
  _X_ Yes
  ___ No

- **Analyses were carried out as requested.**
  _X_ Yes
  ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and compliance standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Compliance Standard (ppm)
Arsenic	EDXRF	10	10	20

- RLs met IDLs.
  _X_ Yes
  ___ No
- IDLs were provided by the laboratory.
  _X_ Yes
  ___ No
- RLs were less than compliance standards.
  _X_ Yes
  ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**
  Initial instrument calibrations were performed (one per year).
  _X_ Yes - see notes
  ___ No
  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**
  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).
  _X_ Yes
  ___ No

CCV standard percent recovery results were within the required control limits (75-125%).
_X_ Yes
___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).
  _X_ Yes
  ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.
  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.
  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).
  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).
  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).
  _X_ Yes – see the table on the following page
  ___ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	17	0	17	100%
LCS	10	0	10	100%
Total	27	0	27	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the table on the following page
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	16	0	16	100%
Lab Dup	17	0	17	100%
Total	33	0	33	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).
  _X_ Yes – see the following table
  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	89	0	89	100%

Data Qualifications

- Data was qualified for quality control exceedances.
  ___ Yes
  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	89	0	89	100%

Corrective Actions

- Corrective actions were required for this sampling event.
  ___ Yes
  _X_ No

10. CONCLUSION

The Performance Monitoring data collected from September 8 through 15, 2004 were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
September 8, 2004 through 15, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IA15-1-C-E-1	09/15/04	IA15-1-C-E-1		RUSTON	04R-06367	EDXRF	29
IA15-1-C-E-1	09/15/04	IA15-1-C-E-1D	Field Duplicate	RUSTON	04R-06368	EDXRF	23
IA15-1-C-F-1	09/15/04	IA15-1-C-F-1		RUSTON	04R-06369	EDXRF	16
IA15-3-C-E-1	09/13/04	IA15-3-C-E-1		RUSTON	04R-06291	EDXRF	19
IA15-3-C-F-1	09/13/04	IA15-3-C-F-1		RUSTON	04R-06292	EDXRF	18
IA15-4-C-E-1	09/14/04	IA15-4-C-E-1		RUSTON	04R-06298	EDXRF	< 10
IA15-4-C-E-1	09/14/04	IA15-4-C-E-1D	Field Duplicate	RUSTON	04R-06299	EDXRF	< 10
IA15-4-C-F-1	09/14/04	IA15-4-C-F-1		RUSTON	04R-06300	EDXRF	11
IA15-5-C-E-1	09/14/04	IA15-5-C-E-1		RUSTON	04R-06365	EDXRF	66
IA15-5-C-F-1	09/14/04	IA15-5-C-F-1		RUSTON	04R-06366	EDXRF	24
IA16-2-C-E-1	09/13/04	IA16-2-C-E-1		RUSTON	04R-06288	EDXRF	14
IA16-2-C-F-1	09/13/04	IA16-2-C-F-1		RUSTON	04R-06289	EDXRF	13
IA16-2-C-F-1	09/13/04	IA16-2-C-F-1D	Field Duplicate	RUSTON	04R-06290	EDXRF	18
IA16-3-C-E-1	09/14/04	IA16-3-C-E-1		RUSTON	04R-06295	EDXRF	167
IA16-3-C-F-1	09/14/04	IA16-3-C-F-1		RUSTON	04R-06296	EDXRF	85
IA16-3-C-F-1	09/14/04	IA16-3-C-F-1D	Field Duplicate	RUSTON	04R-06297	EDXRF	82
IA17-3-C-E-1	09/13/04	IA17-3-C-E-1		RUSTON	04R-06253	EDXRF	18
IA17-3-C-E-1	09/13/04	IA17-3-C-E-1D	Field Duplicate	RUSTON	04R-06254	EDXRF	11
IA17-3-C-F-1	09/13/04	IA17-3-C-F-1		RUSTON	04R-06255	EDXRF	14
IA27-10-C-G-2	09/13/04	IA27-10-C-G-2		RUSTON	04R-06293	EDXRF	30
IA27-10-C-G-2	09/13/04	IA27-10-C-G-2D	Field Duplicate	RUSTON	04R-06294	EDXRF	31
IA27-1-C-G-1	09/08/04	IA27-1-C-G-1		RUSTON	04R-06193	EDXRF	46
IA27-1-C-G-1	09/08/04	IA27-1-C-G-1D	Field Duplicate	RUSTON	04R-06194	EDXRF	41
IA27-2-C-G-1	09/10/04	IA27-2-C-G-1		RUSTON	04R-06235	EDXRF	66
IA27-2-C-G-1	09/10/04	IA27-2-C-G-1D	Field Duplicate	RUSTON	04R-06236	EDXRF	52
IA27-3-C-G-1	09/10/04	IA27-3-C-G-1		RUSTON	04R-06237	EDXRF	54
IA27-4-C-G-1	09/09/04	IA27-4-C-G-1		RUSTON	04R-06233	EDXRF	23
IA27-4-C-G-1	09/09/04	IA27-4-C-G-1D	Field Duplicate	RUSTON	04R-06234	EDXRF	20
IA27-5-C-G-1	09/08/04	IA27-5-C-G-1		RUSTON	04R-06191	EDXRF	< 10
IA8-2-C-G-1	09/09/04	IA8-2-C-G-1		RUSTON	04R-06229	EDXRF	63
IA8-2-C-G-1	09/09/04	IA8-2-C-G-1D	Field Duplicate	RUSTON	04R-06230	EDXRF	59
IA8-3-C-G-1	09/09/04	IA8-3-C-G-1		RUSTON	04R-06228	EDXRF	17
IA8-4-C-G-1	09/08/04	IA8-4-C-G-1		RUSTON	04R-06192	EDXRF	16
IA8-MA1-C-A	09/09/04	IA8-MA1-C-A		RUSTON	04R-06231	EDXRF	122
IA8-MA2-C-A	09/09/04	IA8-MA2-C-A		RUSTON	04R-06232	EDXRF	219
IAFA-P1A-F-EMV1-C-1	09/10/04	IAFA-P1A-F-EMV1-C-1		RUSTON	04R-06222	EDXRF	629
IAFA-P1A-F-LS78-C-1	09/14/04	IAFA-P1A-F-LS78-C-1		RUSTON	04R-06372	EDXRF	2264
IAFA-P1A-F-LS79-C-1	09/14/04	IAFA-P1A-F-LS79-C-1		RUSTON	04R-06370	EDXRF	1211
IAFA-P1A-F-LS79-C-1	09/14/04	IAFA-P1A-F-LS79-C-1D	Field Duplicate	RUSTON	04R-06371	EDXRF	1228
IAFA-P1A-F-US10-C-1	09/13/04	IAFA-P1A-F-US10-C-1		RUSTON	04R-06240	EDXRF	208
IAFA-P1A-F-US10-C-1	09/13/04	IAFA-P1A-F-US10-C-1D	Field Duplicate	RUSTON	04R-06241	EDXRF	201
IAFA-P1A-F-US11-C-1	09/13/04	IAFA-P1A-F-US11-C-1		RUSTON	04R-06244	EDXRF	952
IAFA-P1A-F-US12-C-1	09/13/04	IAFA-P1A-F-US12-C-1		RUSTON	04R-06311	EDXRF	261
IAFA-P1A-F-US2-C-1	09/09/04	IAFA-P1A-F-US2-C-1		RUSTON	04R-06195	EDXRF	611
IAFA-P1A-F-US2-C-1	09/09/04	IAFA-P1A-F-US2-C-1D	Field Duplicate	RUSTON	04R-06196	EDXRF	675
IAFA-P1A-F-US3-C-1	09/09/04	IAFA-P1A-F-US3-C-1		RUSTON	04R-06199	EDXRF	3621
IAFA-P1A-F-US3-C-2	09/10/04	IAFA-P1A-F-US3-C-2		RUSTON	04R-06215	EDXRF	1438
IAFA-P1A-F-US4-C-1	09/10/04	IAFA-P1A-F-US4-C-1		RUSTON	04R-06214	EDXRF	745
IAFA-P1A-F-US5-C-1	09/13/04	IAFA-P1A-F-US5-C-1		RUSTON	04R-06250	EDXRF	2875
IAFA-P1A-F-US6-C-1	09/10/04	IAFA-P1A-F-US6-C-1		RUSTON	04R-06212	EDXRF	804
IAFA-P1A-F-US6-C-1	09/10/04	IAFA-P1A-F-US6-C-1D	Field Duplicate	RUSTON	04R-06213	EDXRF	904
IAFA-P1A-F-US7-C-1	09/13/04	IAFA-P1A-F-US7-C-1		RUSTON	04R-06247	EDXRF	1565
IAFA-P1A-F-US8-C-1	09/13/04	IAFA-P1A-F-US8-C-1		RUSTON	04R-06306	EDXRF	1118
IAFA-P1A-F-US8-C-1	09/13/04	IAFA-P1A-F-US8-C-1D	Field Duplicate	RUSTON	04R-06307	EDXRF	1227
IAFA-P1A-F-US9-C-1	09/13/04	IAFA-P1A-F-US9-C-1		RUSTON	04R-06302	EDXRF	3338

ASARCO's Former Arsenic Trioxide Processing Area
September 8, 2004 through 15, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IAFA-P1A-P-EMV1-C-A-1	09/10/04	IAFAP1A-P-EMV1-C-A-1D	Field Duplicate	RUSTON	04R-06223	EDXRF	44
IAFA-P1A-P-EMV1-C-A-1	09/10/04	IAFA-P1A-P-EMV1-C-A-1		RUSTON	04R-06224	EDXRF	52
IAFA-P1A-P-EMV1-C-B-1	09/10/04	IAFA-P1A-P-EMV1-C-B-1		RUSTON	04R-06225	EDXRF	441
IAFA-P1A-P-EMV1-C-C-1	09/10/04	IAFA-P1A-P-EMV1-C-C-1		RUSTON	04R-06226	EDXRF	1166
IAFA-P1A-P-EMV1-C-D-1	09/10/04	IAFA-P1A-P-EMV1-C-D-1		RUSTON	04R-06227	EDXRF	742
IAFA-P1A-P-US10-C-A-1	09/13/04	IAFA-P1A-P-US10-C-A-1		RUSTON	04R-06242	EDXRF	900
IAFA-P1A-P-US10-C-B-1	09/13/04	IAFA-P1A-P-US10-C-B-1		RUSTON	04R-06243	EDXRF	1440
IAFA-P1A-P-US11-C-A-1	09/13/04	IAFA-P1A-US11-C-A-1		RUSTON	04R-06245	EDXRF	3750
IAFA-P1A-P-US11-C-B-1	09/13/04	IAFA-P1A-P-US11-C-B-1		RUSTON	04R-06246	EDXRF	2034
IAFA-P1A-P-US12-C-A-1	09/13/04	IAFA-P1A-P-US12-C-A-1		RUSTON	04R-06312	EDXRF	1169
IAFA-P1A-P-US12-C-B-1	09/13/04	IAFA-P1A-P-US12-C-B-1		RUSTON	04R-06313	EDXRF	3409
IAFA-P1A-P-US12-C-C-1	09/13/04	IAFA-P1A-P-US12-C-C-1		RUSTON	04R-06314	EDXRF	1824
IAFA-P1A-P-US2-C-A-1	09/09/04	IAFA-P1A-P-US2-C-A-1		RUSTON	04R-06197	EDXRF	728
IAFA-P1A-P-US2-C-B-1	09/09/04	IAFA-P1A-P-US2-C-B-1		RUSTON	04R-06198	EDXRF	1881
IAFA-P1A-P-US3-C-A-1	09/09/04	IAFA-P1A-P-US3-C-A-1		RUSTON	04R-06200	EDXRF	5271
IAFA-P1A-P-US3-C-A-2	09/10/04	IAFA-P1A-P-US3-C-A-2		RUSTON	04R-06219	EDXRF	939
IAFA-P1A-P-US3-C-B-1	09/09/04	IAFA-P1A-P-US3-C-B-1		RUSTON	04R-06201	EDXRF	1540
IAFA-P1A-P-US3-C-B-2	09/10/04	IAFA-P1A-P-US3-C-B-2		RUSTON	04R-06220	EDXRF	1666
IAFA-P1A-P-US3-C-C-2	09/10/04	IAFA-P1A-P-US3-C-C-2		RUSTON	04R-06221	EDXRF	1475
IAFA-P1A-P-US4-C-A-1	09/10/04	IAFA-P1A-P-US4-C-A-1		RUSTON	04R-06216	EDXRF	1305
IAFA-P1A-P-US5-C-A-1	09/13/04	IAFA-P1A-P-US5-C-A-1		RUSTON	04R-06251	EDXRF	1591
IAFA-P1A-P-US5-C-B-1	09/13/04	IAFA-P1A-P-US5-C-B-1		RUSTON	04R-06252	EDXRF	1074
IAFA-P1A-P-US6-C-A-1	09/10/04	IAFA-P1A-P-US6-C-A-1		RUSTON	04R-06217	EDXRF	1208
IAFA-P1A-P-US6-C-B-1	09/10/04	IAFA-P1A-P-US6-C-B-1		RUSTON	04R-06218	EDXRF	547
IAFA-P1A-P-US7-C-A-1	09/13/04	IAFA-P1A-P-US7-C-A-1		RUSTON	04R-06248	EDXRF	1238
IAFA-P1A-P-US7-C-B-1	09/13/04	IAFA-P1A-P-US7-C-B-1		RUSTON	04R-06249	EDXRF	1429
IAFA-P1A-P-US8-C-A-1	09/13/04	IAFA-P1A-P-US8-C-A-1		RUSTON	04R-06308	EDXRF	454
IAFA-P1A-P-US8-C-B-1	09/13/04	IAFA-P1A-P-US8-C-B-1		RUSTON	04R-06309	EDXRF	446
IAFA-P1A-P-US8-C-C-1	09/13/04	IAFA-P1A-P-US8-C-C-1		RUSTON	04R-06310	EDXRF	262
IAFA-P1A-P-US9-C-A-1	09/13/04	IAFA-P1A-P-US9-C-A-1		RUSTON	04R-06303	EDXRF	1084
IAFA-P1A-P-US9-C-B-1	09/13/04	IAFA-P1A-P-US9-C-B-1		RUSTON	04R-06304	EDXRF	499
IAFA-P1A-P-US9-C-C-1	09/13/04	IAFA-P1A-P-US9-C-C-1		RUSTON	04R-06305	EDXRF	2625
IA-SOD-2004	09/09/04	IA-SOD-2004		RUSTON	04R-06202	EDXRF	27
IA-SOD2-2004	09/14/04	IA-SOD2-2004		RUSTON	04R-06301	EDXRF	< 10

LLT Linda L. Tangen

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MEMORANDUM

DATE: September 20, 2004

TO: Tim Wilson, ASARCO Consulting Inc.

FROM: Linda L. Tangen

RE: Everett Data Validation Report Revisions

Attached are revisions for three Everett data validation reports (submitted 8/9/04, 8/23/04, and 9/13/04). The laboratory's arsenic detection limit was originally reported as 11 ppm instead of 10 ppm in the electronic data transfer files. This was due to a problem with the laboratory's data download program. The non-detect data was correctly stored in the laboratory's database as <10 ppm, but was downloaded for validation purposes as <11 ppm. The attached reports were revised to reflect the correct detection limit of 10 ppm.

LLTC Linda L. Tangen

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MEMORANDUM

DATE: September 23, 2004

TO: Tim Wilson, ASARCO Consulting Inc.

FROM: Linda L. Tangen

RE: Everett Data Validation Report Revisions

In reference to the 9/20/04 memo (To: Wilson; From: Tangen), this memo is to clarify that the Ruston laboratory's download program was not in error. Upon further investigation, it was found that the program used to convert the laboratory's EDD files into the validation program, used the wrong detection limit. The conversion program has since, been corrected.

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA AND EVERETT RESIDENTIAL
PERFORMANCE MONITORING SAMPLES
SEPTEMBER 15 THROUGH SEPTEMBER 22, 2004

Prepared for:
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Prepared by:
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September 27, 2004

TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 5

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 6

10. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

GLOSSARY OF TERMS

CCV .....Continuing Calibration Verification

CLP.....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA.....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS.....Laboratory Control Sample

PRDL.....Project Required Detection Limit

QC.....Quality Control

RL.....Reporting Limit

RUSTON .....ASARCO's Ruston Soils Laboratory

RPD.....Relative Percent Difference

SAP.....Sampling and Analyses Plan

SOW .....Statement of Work

Std Dev .....Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area and Everett's residential area from September 15 through 22, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. All samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.
- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the labortory duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Performance Monitoring data collected from September 15 through September 22, 2004 were **deemed acceptable** for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 202 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from September 15 through 22, 2004. These samples were analyzed for metals by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included 21 field duplicates. Due to the time allotted for the validation of this data, analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

- Validation procedures used are generally consistent with:

  _X_ USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  _X_ Compliance Monitoring Plan – (ASARCO 2004a)
  _X_ Sampling and Analyses Plan – (ASARCO 2004b)
  ___ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  _X_ Standard – see notes
  ___ Visual

  Notes: Field and laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  _X_ Yes
  ___ No

- Documentation of field procedures was provided as required.

  _X_ Yes
  ___ No

- Data entry for deliverables was consistent and without errors.

  ____ Yes
  _X_ No – see notes

  Notes: The following data entry errors were noted:

  - Sample IAFA-P1A-P-LS57-C-C-3D was recorded by the laboratory as IAFA-P1A-P-LS57-C-**A**-3D
  - Samples collected at site IAFA-P1A from 9/15/2004 through 9/16/2004 were recorded by the laboratory as IAFA-PIA (using the character I instead of the number 1).
  - All data entry errors have since been corrected by the laboratory.

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 10 or 1 per day, whichever was greater).

  _X_ Yes
  ____ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.

  _X_ Yes
  ____ No

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).

  ____ Yes
  ____ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  - ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  - ___ SW-846 (EPA 1986) – Confirmation Samples
  - ___ Standard Methods for Chemical Analysis of Water and Wastes
  - _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  - ___ Other

- **Holding times met**
  - _X_ Yes
  - ___ No

- **Analyses were carried out as requested.**
  - _X_ Yes
  - ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and compliance standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Compliance Standard (ppm)
Arsenic	EDXRF	10	10	20

- RLs met IDLs.
  - _X_ Yes
  - ___ No

- IDLs were provided by the laboratory.
  - _X_ Yes
  - ___ No

- RLs were less than compliance standards.
  - _X_ Yes
  - ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**

  Initial instrument calibrations were performed (one per year).
  - _X_ Yes - see notes
  - ___ No

  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**

  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).

  _X_ Yes
  ___ No

  CCV standard percent recovery results were within the required control limits (75-125%).

  _X_ Yes
  ___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).

  _X_ Yes
  ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.

  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.

  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).

  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).

  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).

  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).
  _X_ Yes – see the table on the following page
  ___ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	34	0	34	100%
LCS	12	0	12	100%
Total	46	0	46	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the table on the following page
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	21	0	21	100%
Lab Dup	33	0	33	100%
Total	54	0	54	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).
  _X_ Yes – see the table on the following page
  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	202	0	202	100%

Data Qualifications

- Data was qualified for quality control exceedances.
  ___ Yes
  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	202	0	202	100%

Corrective Actions

- Corrective actions were required for this sampling event.
  _X_ Yes – see notes
  ___ No

  Notes:

  Several data entry errors were brought to the attention of the laboratory and subsequently corrected (see Section 2).

10. CONCLUSION

The Performance Monitoring data collected from September 15 through 22, 2004 were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
September 15, 2004 through 18, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IA16-3-C-G-2	9/15/04	IA16-3-C-G-2		RUSTON	04R-06376	EDXRF	< 10
IA25-3-C-G-2	9/15/04	IA25-3-C-G-2		RUSTON	04R-06377	EDXRF	100
IA25-3-C-G-2	9/15/04	IA25-3-C-G-2D	Field Duplicate	RUSTON	04R-06378	EDXRF	109
IA26-1-C-G-2	9/15/04	IA26-1-C-G-2		RUSTON	04R-06379	EDXRF	44
IA18-4-C-G-1	9/16/04	IA18-4-C-G-1		RUSTON	04R-06380	EDXRF	38
IA18-4-C-G-1	9/16/04	IA18-4-C-G-1D	Field Duplicate	RUSTON	04R-06381	EDXRF	30
IA18-5-C-E-1	9/16/04	IA18-5-C-E-1		RUSTON	04R-06382	EDXRF	< 10
IA18-5-C-E-1	9/16/04	IA18-5-C-E-1D	Field Duplicate	RUSTON	04R-06383	EDXRF	13
IA18-5-C-F-1	9/16/04	IA18-5-C-F-1		RUSTON	04R-06384	EDXRF	12
IAFA-P1A-F-LR8-C-1	9/15/04	IAFA-P1A-F-LR8-C-1		RUSTON	04R-06385	EDXRF	351
IAFA-P1A-F-LR8-C-1	9/15/04	IAFA-P1A-F-LR8-C-1D	Field Duplicate	RUSTON	04R-06386	EDXRF	290
IAFA-P1A-F-LS71-C-1	9/15/04	IAFA-P1A-F-LS71-C-1		RUSTON	04R-06387	EDXRF	359
IAFA-P1A-F-LS72-C-1	9/15/04	IAFA-P1A-F-LS72-C-1		RUSTON	04R-06388	EDXRF	403
IAFA-P1A-F-LS84-C-1	9/15/04	IAFA-P1A-F-LS84-C-1		RUSTON	04R-06389	EDXRF	1579
IAFA-P1A-F-LS73-C-1	9/15/04	IAFA-P1A-F-LS73-C-1		RUSTON	04R-06390	EDXRF	1732
IAFA-P1A-F-LS74-C-1	9/15/04	IAFA-P1A-F-LS74-C-1		RUSTON	04R-06391	EDXRF	1801
IAFA-P1A-F-LS80-C-1	9/15/04	IAFA-P1A-F-LS80-C-1		RUSTON	04R-06392	EDXRF	2159
IAFA-P1A-P-LR8-C-A-1	9/16/04	IAFA-P1A-P-LR8-C-A-1		RUSTON	04R-06393	EDXRF	2382
IAFA-P1A-P-LR8-C-A-1	9/16/04	IAFA-P1A-P-LR8-C-A-1	Field Duplicate	RUSTON	04R-06394	EDXRF	2358
IAFA-P1A-P-LR8-C-B-1	9/16/04	IAFA-P1A-P-LR8-C-B-1		RUSTON	04R-06395	EDXRF	2023
IAFA-P1A-P-LR8-C-C-1	9/16/04	IAFA-P1A-P-LR8-C-C-1		RUSTON	04R-06396	EDXRF	2579
IAFA-P1A-P-LS79-C-A-1	9/16/04	IAFA-P1A-P-LS79-C-A-		RUSTON	04R-06397	EDXRF	1066
IAFA-P1A-P-LS79-C-B-1	9/16/04	IAFA-P1A-P-LS79-C-B-		RUSTON	04R-06398	EDXRF	506
IAFA-P1A-P-LS79-C-C-1	9/16/04	IAFA-P1A-P-LS79-C-C-		RUSTON	04R-06399	EDXRF	1207
IAFA-P1A-P-LS71-C-A-1	9/16/04	IAFA-P1A-P-LS71-C-A-		RUSTON	04R-06400	EDXRF	1466
IAFA-P1A-P-LS71-C-B-1	9/16/04	IAFA-P1A-P-LS71-C-B-		RUSTON	04R-06401	EDXRF	1806
IAFA-P1A-P-LS80-C-A-1	9/16/04	IAFA-P1A-P-LS80-C-A-		RUSTON	04R-06402	EDXRF	712
IAFA-P1A-P-LS80-C-B-1	9/16/04	IAFA-P1A-P-LS80-C-B-		RUSTON	04R-06403	EDXRF	1494
IAFA-P1A-P-LS84-C-A-1	9/16/04	IAFA-P1A-P-LS84-C-A-		RUSTON	04R-06404	EDXRF	1847
IAFA-P1A-P-LS84-C-B-1	9/16/04	IAFA-P1A-P-LS84-C-B-		RUSTON	04R-06405	EDXRF	1052
IAFA-P1A-P-LS84-C-C-1	9/16/04	IAFA-P1A-P-LS84-C-C-		RUSTON	04R-06406	EDXRF	864
IAFA-P1A-P-LS84-C-D-1	9/16/04	IAFA-P1A-P-LS84-C-D-		RUSTON	04R-06407	EDXRF	469
IAFA-P1A-P-LS74-C-A-1	9/16/04	IAFA-P1A-P-LS74-C-A-		RUSTON	04R-06408	EDXRF	1547
IAFA-P1A-P-LS72-C-A-1	9/16/04	IAFA-P1A-P-LS72-C-A-		RUSTON	04R-06409	EDXRF	2118
IA25-3-D-B1-G-2	9/15/04	IA25-3-D-B1-G-2		RUSTON	04R-06410	EDXRF	< 10
IA25-3-D-B2-G-2	9/15/04	IA25-3-D-B2-G-2		RUSTON	04R-06411	EDXRF	493
IA25-3-D-B3-G-2	9/15/04	IA25-3-D-B3-G-2		RUSTON	04R-06412	EDXRF	< 10
IA25-3-D-B4-G-2	9/15/04	IA25-3-D-B4-G-2		RUSTON	04R-06413	EDXRF	< 10
IA25-3-D-B5-G-2	9/15/04	IA25-3-D-B5-G-2		RUSTON	04R-06414	EDXRF	< 10
IA15-2-C-E-1	9/16/04	IA15-2-C-E-1		RUSTON	04R-06434	EDXRF	13
IA15-2-C-F-1	9/16/04	IA15-2-C-F-1		RUSTON	04R-06435	EDXRF	10
IA16-4-C-F-1	9/17/04	IA16-4-C-F-1		RUSTON	04R-06436	EDXRF	< 10
IA16-4-C-F-1	9/17/04	IA16-4-C-F-1D	Field Duplicate	RUSTON	04R-06437	EDXRF	< 10
IA16-4-C-G-1	9/17/04	IA16-4-C-G-1		RUSTON	04R-06438	EDXRF	< 10
IAFA-P1A-P-US11-C-A-2	9/16/04	IAFA-P1A-P-US11-C-A-		RUSTON	04R-06439	EDXRF	1887
IAFA-P1A-P-US11-C-B-2	9/16/04	IAFA-P1A-P-US11-C-B-		RUSTON	04R-06440	EDXRF	1287
IAFA-P1A-P-US12-C-A-2	9/16/04	IAFA-P1A-P-US12-C-A-		RUSTON	04R-06441	EDXRF	1505
IAFA-P1A-P-US12-C-B-2	9/16/04	IAFA-P1A-P-US12-C-B-		RUSTON	04R-06442	EDXRF	1374
IAFA-P1A-F-LS70-C-1	9/16/04	IAFA-P1A-F-LS70-C-1		RUSTON	04R-06443	EDXRF	744
IAFA-P1A-F-LS70-C-1	9/16/04	IAFA-P1A-F-LS70-C-1D	Field Duplicate	RUSTON	04R-06444	EDXRF	822
IAFA-P1A-P-LS70-C-A-1	9/16/04	IAFA-P1A-P-LS70-C-A-		RUSTON	04R-06445	EDXRF	1222
IAFA-P1A-P-LS70-C-B-1	9/16/04	IAFA-P1A-P-LS70-C-B-		RUSTON	04R-06446	EDXRF	1883
IAFA-P1A-P-LS70-C-C-1	9/16/04	IAFA-P1A-P-LS70-C-C-		RUSTON	04R-06447	EDXRF	1044
IAFA-P1A-F-LS69-C-1	9/16/04	IAFA-P1A-F-LS69-C-1		RUSTON	04R-06448	EDXRF	468
IAFA-P1A-P-LS69-C-A-1	9/16/04	IAFA-P1A-P-LS69-C-A-		RUSTON	04R-06449	EDXRF	1167
IAFA-P1A-P-LS69-C-B-1	9/16/04	IAFA-P1A-P-LS69-C-B-		RUSTON	04R-06450	EDXRF	1912
IAFA-P1A-P-LS69-C-C-1	9/16/04	IAFA-P1A-P-LS69-C-C-		RUSTON	04R-06451	EDXRF	478
IAFA-P1A-F-LS76-C-1	9/17/04	IAFA-P1A-F-LS76-C-1		RUSTON	04R-06452	EDXRF	713
IAFA-P1A-F-LS76-C-1	9/17/04	IAFA-P1A-F-LS76-C-1D	Field Duplicate	RUSTON	04R-06453	EDXRF	710
IAFA-P1A-F-LS82-C-1	9/17/04	IAFA-P1A-F-LS82-C-1		RUSTON	04R-06454	EDXRF	434
IAFA-P1A-F-US9-C-2	9/17/04	IAFA-P1A-F-US9-C-2		RUSTON	04R-06455	EDXRF	1913
IAFA-P1A-F-LS68-C-1	9/17/04	IAFA-P1A-F-LS68-C-1		RUSTON	04R-06456	EDXRF	313
IAFA-P1A-P-LS68-C-A-1	9/17/04	IAFA-P1A-P-LS68-C-A-		RUSTON	04R-06457	EDXRF	2510
IAFA-P1A-P-LS68-C-B-1	9/17/04	IAFA-P1A-P-LS68-C-B-		RUSTON	04R-06458	EDXRF	1182
IAFA-P1A-P-LS68-C-C-1	9/17/04	IAFA-P1A-P-LS68-C-C-		RUSTON	04R-06459	EDXRF	1364
IAFA-P1A-F-LS67-C-1	9/17/04	IAFA-P1A-F-LS67-C-1		RUSTON	04R-06460	EDXRF	361
IAFA-P1A-P-LS67-C-A-1	9/17/04	IAFA-P1A-P-LS67-C-A-		RUSTON	04R-06461	EDXRF	2422
IAFA-P1A-P-LS67-C-B-1	9/17/04	IAFA-P1A-P-LS67-C-B-		RUSTON	04R-06462	EDXRF	2881
IAFA-P1A-P-LS67-C-C-1	9/17/04	IAFA-P1A-P-LS67-C-C-		RUSTON	04R-06463	EDXRF	1049
IAFA-P1A-F-LS66-C-1	9/17/04	IAFA-P1A-F-LS66-C-1		RUSTON	04R-06464	EDXRF	1244

ASARCO's Former Arsenic Trioxide Processing Area
September 15, 2004 through 18, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IAFA-P1A-P-LS66-C-A-1	9/17/04	IAFA-P1A-P-LS66-C-A-		RUSTON	04R-06465	EDXRF	2517
IAFA-P1A-P-LS66-C-B-1	9/17/04	IAFA-P1A-P-LS66-C-B-		RUSTON	04R-06466	EDXRF	1877
IAFA-P1A-P-LS66-C-C-1	9/17/04	IAFA-P1A-P-LS66-C-C-		RUSTON	04R-06467	EDXRF	446
IAFA-P1A-F-LS65-C-1	9/17/04	IAFA-P1A-F-LS65-C-1		RUSTON	04R-06529	EDXRF	471
IAFA-P1A-P-LS65-C-A-1	9/17/04	IAFA-P1A-P-LS65-C-A-		RUSTON	04R-06530	EDXRF	771
IAFA-P1A-P-LS65-C-B-1	9/17/04	IAFA-P1A-P-LS65-C-B-		RUSTON	04R-06531	EDXRF	273
IAFA-P1A-P-LS65-C-C-1	9/17/04	IAFA-P1A-P-LS65-C-C-		RUSTON	04R-06532	EDXRF	495
IAFA-P1A-F-LS64-C-1	9/17/04	IAFA-P1A-F-LS64-C-1		RUSTON	04R-06533	EDXRF	446
IAFA-P1A-P-LS64-C-A-1	9/17/04	IAFA-P1A-P-LS64-C-A-		RUSTON	04R-06534	EDXRF	759
IAFA-P1A-P-LS64-C-B-1	9/17/04	IAFA-P1A-P-LS64-C-B-		RUSTON	04R-06535	EDXRF	1384
IAFA-P1A-F-LS63-C-1	9/17/04	IAFA-P1A-F-LS63-C-1		RUSTON	04R-06536	EDXRF	670
IAFA-P1A-F-LS63-C-1	9/17/04	IAFA-P1A-F-LS63-C-1D	Field Duplicate	RUSTON	04R-06537	EDXRF	541
IAFA-P1A-P-LS63-C-A-1	9/17/04	IAFA-P1A-P-LS63-C-A-		RUSTON	04R-06538	EDXRF	1286
IAFA-P1A-P-LS63-C-B-1	9/17/04	IAFA-P1A-P-LS63-C-B-		RUSTON	04R-06539	EDXRF	628
IAFA-P1A-F-LS62-C-1	9/17/04	IAFA-P1A-F-LS62-C-1		RUSTON	04R-06540	EDXRF	677
IAFA-P1A-P-LS62-C-A-1	9/17/04	IAFA-P1A-P-LS62-C-A-		RUSTON	04R-06541	EDXRF	2527
IAFA-P1A-P-LS62-C-B-1	9/17/04	IAFA-P1A-P-LS62-C-B-		RUSTON	04R-06542	EDXRF	711
IAFA-P1A-P-LS62-C-C-1	9/17/04	IAFA-P1A-P-LS62-C-C-		RUSTON	04R-06543	EDXRF	140
IAFA-P1A-F-LS1-C-2	9/17/04	IAFA-P1A-F-LS1-C-2		RUSTON	04R-06544	EDXRF	827
IAFA-P1A-P-LS1-C-A-1	9/17/04	IAFA-P1A-P-LS1-C-A-1		RUSTON	04R-06545	EDXRF	178
IAFA-P1A-P-LS1-C-B-1	9/17/04	IAFA-P1A-P-LS1-C-B-1		RUSTON	04R-06546	EDXRF	795
IAFA-P1A-P-LS1-C-C-1	9/17/04	IAFA-P1A-P-LS1-C-C-1		RUSTON	04R-06547	EDXRF	754
IAFA-P1A-P-LS1-C-D-1	9/17/04	IAFA-P1A-P-LS1-C-D-1		RUSTON	04R-06548	EDXRF	1011
IAFA-P1A-P-LS4-C-A-1	9/18/04	IAFA-P1A-P-LS4-C-A-1		RUSTON	04R-06549	EDXRF	432
IAFA-P1A-P-LS4-C-A-1	9/18/04	IAFA-P1A-P-LS4-C-A-1	Field Duplicate	RUSTON	04R-06550	EDXRF	404
IAFA-P1A-P-LS4-C-B-1	9/18/04	IAFA-P1A-P-LS4-C-B-1		RUSTON	04R-06551	EDXRF	513
IAFA-P1A-P-LS4-C-C-1	9/18/04	IAFA-P1A-P-LS4-C-C-1		RUSTON	04R-06552	EDXRF	1351
IAFA-P1A-P-LS4-C-D-1	9/18/04	IAFA-P1A-P-LS4-C-D-1		RUSTON	04R-06553	EDXRF	693
IAFA-P1A-P-LS9-C-A-1	9/18/04	IAFA-P1A-P-LS9-C-A-1		RUSTON	04R-06554	EDXRF	968
IAFA-P1A-P-LS9-C-B-1	9/18/04	IAFA-P1A-P-LS9-C-B-1		RUSTON	04R-06555	EDXRF	1354
IAFA-P1A-P-LS9-C-C-1	9/18/04	IAFA-P1A-P-LS9-C-C-1		RUSTON	04R-06556	EDXRF	2212
IAFA-P1A-P-LS9-C-D-1	9/18/04	IAFA-P1A-P-LS9-C-D-1		RUSTON	04R-06557	EDXRF	348
IA18-6-C-F-1	9/17/04	IA18-6-C-F-1		RUSTON	04R-06558	EDXRF	< 10
IA18-6-C-G-1	9/17/04	IA18-6-C-G-1		RUSTON	04R-06559	EDXRF	18
IA17-5-C-E-1	9/20/04	IA17-5-C-E-1		RUSTON	04R-06560	EDXRF	< 10
IA17-5-C-E-1	9/20/04	IA17-5-C-E-1D	Field Duplicate	RUSTON	04R-06561	EDXRF	< 10
IA17-5-C-F-1	9/20/04	IA17-5-C-F-1		RUSTON	04R-06562	EDXRF	< 10
IAFA-P1A-F-LS61-C-1	9/18/04	IAFA-P1A-F-LS61-C-1		RUSTON	04R-06563	EDXRF	489
IAFA-P1A-P-LS61-C-A-1	9/18/04	IAFA-P1A-P-LS61-C-A-		RUSTON	04R-06564	EDXRF	569
IAFA-P1A-P-LS61-C-B-1	9/18/04	IAFA-P1A-P-LS61-C-B-		RUSTON	04R-06565	EDXRF	171
IAFA-P1A-P-LS61-C-C-1	9/18/04	IAFA-P1A-P-LS61-C-C-		RUSTON	04R-06566	EDXRF	54
IAFA-P1A-F-LS60-C-1	9/18/04	IAFA-P1A-F-LS60-C-1		RUSTON	04R-06567	EDXRF	454
IAFA-P1A-P-LS60-C-A-1	9/18/04	IAFA-P1A-P-LS60-C-A-		RUSTON	04R-06568	EDXRF	597
IAFA-P1A-P-LS60-C-B-1	9/18/04	IAFA-P1A-P-LS60-C-B-		RUSTON	04R-06569	EDXRF	380
IAFA-P1A-P-LS60-C-C-1	9/18/04	IAFA-P1A-P-LS60-C-C-		RUSTON	04R-06570	EDXRF	79
IAFA-P1A-F-LS59-C-1	9/18/04	IAFA-P1A-F-LS59-C-1		RUSTON	04R-06571	EDXRF	1544
IAFA-P1A-F-LS59-C-1	9/18/04	IAFA-P1A-F-LS59-C-1D	Field Duplicate	RUSTON	04R-06572	EDXRF	1555
IAFA-P1A-P-LS59-C-A-1	9/18/04	IAFA-P1A-P-LS59-C-A-		RUSTON	04R-06573	EDXRF	1400
IAFA-P1A-P-LS59-C-B-1	9/18/04	IAFA-P1A-P-LS59-C-B-		RUSTON	04R-06574	EDXRF	823
IAFA-P1A-F-LS58-C-1	9/18/04	IAFA-P1A-F-LS58-C-1		RUSTON	04R-06575	EDXRF	2627
IAFA-P1A-P-LS58-C-A-1	9/18/04	IAFA-P1A-P-LS58-C-A-		RUSTON	04R-06576	EDXRF	2426
IAFA-P1A-P-LS58-C-B-1	9/18/04	IAFA-P1A-P-LS58-C-B-		RUSTON	04R-06577	EDXRF	1266
IAFA-P1A-F-UR8-C-1	9/20/04	IAFA-P1A-F-UR8-C-1		RUSTON	04R-06578	EDXRF	1754
IAFA-P1A-F-UR8-C-1	9/20/04	IAFA-P1A-F-UR8-C-1D	Field Duplicate	RUSTON	04R-06579	EDXRF	1833
IAFA-P1A-F-LS77-C-1	9/20/04	IAFA-P1A-F-LS77-C-1		RUSTON	04R-06580	EDXRF	1689
IAFA-P1A-F-LS83-C-1	9/20/04	IAFA-P1A-F-LS83-C-1		RUSTON	04R-06581	EDXRF	1681
IAFA-P1A-F-LS75-C-1	9/20/04	IAFA-P1A-F-LS75-C-1		RUSTON	04R-06582	EDXRF	501
IAFA-P1A-P-LS75-C-A-1	9/20/04	IAFA-P1A-P-LS75-C-A-		RUSTON	04R-06583	EDXRF	194
IAFA-P1A-P-LS75-C-B-1	9/20/04	IAFA-P1A-P-LS75-C-B-		RUSTON	04R-06584	EDXRF	67
IAFA-P1A-P-LS75-C-C-1	9/20/04	IAFA-P1A-P-LS75-C-C-		RUSTON	04R-06585	EDXRF	134
IAFA-P1A-F-LS81-C-1	9/20/04	IAFA-P1A-F-LS81-C-1		RUSTON	04R-06586	EDXRF	567
IAFA-P1A-P-LS81-C-A-1	9/20/04	IAFA-P1A-P-LS81-C-A-		RUSTON	04R-06587	EDXRF	1694
IAFA-P1A-P-LS81-C-B-1	9/20/04	IAFA-P1A-P-LS81-C-B-		RUSTON	04R-06588	EDXRF	3123
IAFA-P1A-F-LS57-C-1	9/20/04	IAFA-P1A-F-LS57-C-1		RUSTON	04R-06589	EDXRF	3083
IAFA-P1A-P-LS57-C-A-1	9/20/04	IAFA-P1A-P-LS57-C-A-		RUSTON	04R-06590	EDXRF	2121
IAFA-P1A-P-LS57-C-B-1	9/20/04	IAFA-P1A-P-LS57-C-B-		RUSTON	04R-06591	EDXRF	1557
IAFA-P1A-P-LS57-C-C-1	9/20/04	IAFA-P1A-P-LS57-C-C-		RUSTON	04R-06592	EDXRF	3483
IAFA-P1A-F-LS56-C-1	9/20/04	IAFA-P1A-F-LS56-C-1		RUSTON	04R-06593	EDXRF	2145
IAFA-P1A-F-LS50-C-1	9/20/04	IAFA-P1A-F-LS50-C-1		RUSTON	04R-06594	EDXRF	3593
IA16-1-C-E-1	9/21/04	IA16-1-C-E-1		RUSTON	04R-06669	EDXRF	197

ASARCO's Former Arsenic Trioxide Processing Area
September 15, 2004 through 18, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IA16-1-C-E-1	9/21/04	IA16-1-C-E-1D	Field Duplicate	RUSTON	04R-06670	EDXRF	204
IA16-1-C-F-1	9/21/04	IA16-1-C-F-1		RUSTON	04R-06671	EDXRF	162
IAFA-P1A-F-LS55-C-1	9/20/04	IAFA-P1A-F-LS55-C-1		RUSTON	04R-06672	EDXRF	1519
IAFA-P1A-F-LS55-C-1	9/20/04	IAFA-P1A-F-LS55-C-1D	Field Duplicate	RUSTON	04R-06673	EDXRF	1836
IAFA-P1A-F-LS54-C-1	9/20/04	IAFA-P1A-F-LS54-C-1		RUSTON	04R-06674	EDXRF	1880
IAFA-P1A-F-LS53-C-1	9/20/04	IAFA-P1A-F-LS53-C-1		RUSTON	04R-06675	EDXRF	914
IAFA-P1A-P-LS53-C-A-1	9/20/04	IAFA-P1A-P-LS53-C-A-		RUSTON	04R-06676	EDXRF	508
IAFA-P1A-P-LS53-C-B-1	9/20/04	IAFA-P1A-P-LS53-C-B-		RUSTON	04R-06677	EDXRF	300
IAFA-P1A-P-LS53-C-C-1	9/20/04	IAFA-P1A-P-LS53-C-C-		RUSTON	04R-06678	EDXRF	854
IAFA-P1A-P-LS53-C-D-1	9/20/04	IAFA-P1A-P-LS53-C-D-		RUSTON	04R-06679	EDXRF	145
IAFA-P1A-F-LS40-C-1	9/20/04	IAFA-P1A-F-LS40-C-1		RUSTON	04R-06680	EDXRF	2320
IAFA-P1A-F-LS44-C-1	9/20/04	IAFA-P1A-F-LS44-C-1		RUSTON	04R-06681	EDXRF	564
IAFA-P1A-P-LS44-C-A-1	9/20/04	IAFA-P1A-P-LS44-C-A-		RUSTON	04R-06682	EDXRF	1463
IAFA-P1A-P-LS44-C-B-1	9/20/04	IAFA-P1A-P-LS44-C-B-		RUSTON	04R-06683	EDXRF	2450
IAFA-P1A-P-LS44-C-C-1	9/20/04	IAFA-P1A-P-LS44-C-C-		RUSTON	04R-06684	EDXRF	1751
IAFA-P1A-F-LS52-C-1	9/20/04	IAFA-P1A-F-LS52-C-1		RUSTON	04R-06685	EDXRF	660
IAFA-P1A-P-LS52-C-A-1	9/20/04	IAFA-P1A-P-LS52-C-A-		RUSTON	04R-06686	EDXRF	941
IAFA-P1A-P-LS52-C-B-1	9/20/04	IAFA-P1A-P-LS52-C-B-		RUSTON	04R-06687	EDXRF	1180
IAFA-P1A-P-LS52-C-C-1	9/20/04	IAFA-P1A-P-LS52-C-C-		RUSTON	04R-06688	EDXRF	591
IAFA-P1A-F-LS50-C-2	9/21/04	IAFA-P1A-F-LS50-C-2		RUSTON	04R-06689	EDXRF	2044
IAFA-P1A-F-LS50-C-2	9/21/04	IAFA-P1A-F-LS50-C-2D	Field Duplicate	RUSTON	04R-06690	EDXRF	2215
IAFA-P1A-P-LS50-C-A-1	9/21/04	IAFA-P1A-P-LS50-C-A-		RUSTON	04R-06691	EDXRF	1780
IAFA-P1A-P-LS50-C-B-1	9/21/04	IAFA-P1A-P-LS50-C-B-		RUSTON	04R-06692	EDXRF	765
IAFA-P1A-P-LS50-C-C-1	9/21/04	IAFA-P1A-P-LS50-C-C-		RUSTON	04R-06693	EDXRF	190
IAFA-P1A-P-LS50-C-D-1	9/21/04	IAFA-P1A-P-LS50-C-D-		RUSTON	04R-06694	EDXRF	917
IAFA-P1A-F-LS57-C-2	9/21/04	IAFA-P1A-F-LS57-C-2		RUSTON	04R-06695	EDXRF	2045
IAFA-P1A-P-LS57-C-A-2	9/21/04	IAFA-P1A-P-LS57-C-A-		RUSTON	04R-06696	EDXRF	2469
IAFA-P1A-P-LS57-C-B-2	9/21/04	IAFA-P1A-P-LS57-C-B-		RUSTON	04R-06697	EDXRF	2135
IAFA-P1A-P-LS57-C-C-2	9/21/04	IAFA-P1A-P-LS57-C-C-		RUSTON	04R-06698	EDXRF	3235
IAFA-P1A-P-LS56-C-A-2	9/21/04	IAFA-P1A-P-LS56-C-A-		RUSTON	04R-06699	EDXRF	3053
IAFA-P1A-P-LS56-C-B-2	9/21/04	IAFA-P1A-P-LS56-C-B-		RUSTON	04R-06700	EDXRF	3018
IAFA-P1A-P-LS56-C-C-2	9/21/04	IAFA-P1A-P-LS56-C-C-		RUSTON	04R-06701	EDXRF	2595
IAFA-P1A-P-LS24-C-A-2	9/21/04	IAFA-P1A-P-LS24-C-A-		RUSTON	04R-06702	EDXRF	1742
IAFA-P1A-P-LS24-C-B-2	9/21/04	IAFA-P1A-P-LS24-C-B-		RUSTON	04R-06703	EDXRF	2243
IAFA-P1A-P-LS24-C-C-2	9/21/04	IAFA-P1A-P-LS24-C-C-		RUSTON	04R-06704	EDXRF	1632
IAFA-P1A-P-LS24-C-D-2	9/21/04	IAFA-P1A-P-LS24-C-D-		RUSTON	04R-06705	EDXRF	2535
IAFA-P1A-P-LS81-C-A-2	9/21/04	IAFA-P1A-P-LS81-C-A-		RUSTON	04R-06706	EDXRF	2025
IAFA-P1A-P-LS81-C-B-2	9/21/04	IAFA-P1A-P-LS81-C-B-		RUSTON	04R-06707	EDXRF	423
IAFA-P1A-P-LS81-C-B-2	9/21/04	IAFA-P1A-P-LS81-C-B-	Field Duplicate	RUSTON	04R-06708	EDXRF	411
IAFA-P2-F-LS47-C-2	9/21/04	IAFA-P2-F-LS47-C-2		RUSTON	04R-06709	EDXRF	94
IAFA-P1B-F-LS18-C-1	9/21/04	IAFA-P1B-F-LS18-C-1		RUSTON	04R-06771	EDXRF	956
IAFA-P1B-F-LS17-C-1	9/21/04	IAFA-P1B-F-LS17-C-1		RUSTON	04R-06772	EDXRF	1067
IAFA-P1B-F-LS16-C-1	9/21/04	IAFA-P1B-F-LS16-C-1		RUSTON	04R-06773	EDXRF	1145
IAFA-P1A-P-LS57-C-A-3	9/22/04	IAFA-P1A-P-LS57-C-A-		RUSTON	04R-06774	EDXRF	1947
IAFA-P1A-P-LS57-C-B-3	9/22/04	IAFA-P1A-P-LS57-C-B-		RUSTON	04R-06775	EDXRF	721
IAFA-P1A-P-LS57-C-C-3	9/22/04	IAFA-P1A-P-LS57-C-C-		RUSTON	04R-06776	EDXRF	145
IAFA-P1A-P-LS57-C-C-3	9/22/04	IAFA-P1A-P-LS57-C-C-	Field Duplicate	RUSTON	04R-06777	EDXRF	146
IAFA-P1A-P-LS56-C-A-3	9/22/04	IAFA-P1A-P-LS56-C-A-		RUSTON	04R-06778	EDXRF	1435
IAFA-P1A-P-LS56-C-B-3	9/22/04	IAFA-P1A-P-LS56-C-B-		RUSTON	04R-06779	EDXRF	353
IAFA-P1A-P-LS56-C-C-3	9/22/04	IAFA-P1A-P-LS56-C-C-		RUSTON	04R-06780	EDXRF	295
IA17-4-C-E-1	9/21/04	IA17-4-C-E-1		RUSTON	04R-06781	EDXRF	< 10
IA17-4-C-F-1	9/21/04	IA17-4-C-F-1		RUSTON	04R-06782	EDXRF	< 10
IA17-4-C-F-1	9/21/04	IA17-4-C-F-1D	Field Duplicate	RUSTON	04R-06783	EDXRF	< 10
IA17-2-C-E-1	9/21/04	IA17-2-C-E-1		RUSTON	04R-06784	EDXRF	< 10
IA17-2-C-F-1	9/21/04	IA17-2-C-F-1		RUSTON	04R-06785	EDXRF	45
IA17-1-C-E-1	9/21/04	IA17-1-C-E-1		RUSTON	04R-06786	EDXRF	13
IA17-1-C-F-1	9/21/04	IA17-1-C-F-1		RUSTON	04R-06787	EDXRF	15
IA17-1-C-F-1	9/21/04	IA17-1-C-F-1D	Field Duplicate	RUSTON	04R-06788	EDXRF	14
IA18-1-C-E-1	9/22/04	IA18-1-C-E-1		RUSTON	04R-06789	EDXRF	97
IA18-1-C-E-1	9/22/04	IA18-1-C-E-1D	Field Duplicate	RUSTON	04R-06790	EDXRF	101
IA18-1-C-F-1	9/22/04	IA18-1-C-F-1		RUSTON	04R-06791	EDXRF	74
IA18-3-C-G-1	9/22/04	IA18-3-C-G-1		RUSTON	04R-06792	EDXRF	24

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA AND EVERETT RESIDENTIAL
PERFORMANCE MONITORING SAMPLES
SEPTEMBER 22 THROUGH SEPTEMBER 27, 2004

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TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 4

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 6

10. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

GLOSSARY OF TERMS

CCV .....Continuing Calibration Verification

CLP .....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA .....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS .....Laboratory Control Sample

PRDL .....Project Required Detection Limit

QC.....Quality Control

RL .....Reporting Limit

RUSTON .....ASARCO's Ruston Soils Laboratory

RPD.....Relative Percent Difference

SAP .....Sampling and Analyses Plan

SOW .....Statement of Work

Std Dev .....Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area and Everett's residential area from September 22 through 27, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. All samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.
- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the labortory duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Performance Monitoring data collected from September 22 through September 27, 2004 were **deemed acceptable** for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 39 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from September 22 through 27, 2004. These samples were analyzed for metals by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included 10 field duplicates. Due to the time allotted for the validation of this data, analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

- Validation procedures used are generally consistent with:

  X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  X Compliance Monitoring Plan – (ASARCO 2004a)
  X Sampling and Analyses Plan – (ASARCO 2004b)
  ___ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  X Standard – see notes
  ___ Visual

  Notes: Field and laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  X Yes
  ___ No

- Documentation of field procedures was provided as required.

  X Yes
  ___ No

- Data entry for deliverables was consistent and without errors.
  _X_ Yes
  ___ No

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 10 or 1 per day, whichever was greater).
  _X_ Yes
  ___ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.
  _X_ Yes
  ___ No

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).
  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  ___ SW-846 (EPA 1986) – Confirmation Samples
  ___ Standard Methods for Chemical Analysis of Water and Wastes
  _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  ___ Other

- **Holding times met**
  _X_ Yes
  ___ No

- **Analyses were carried out as requested.**
  _X_ Yes
  ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and compliance standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Compliance Standard (ppm)
Arsenic	EDXRF	10	10	20

- RLs met IDLs.
  _X_ Yes
  ___ No
- IDLs were provided by the laboratory.
  _X_ Yes
  ___ No
- RLs were less than compliance standards.
  _X_ Yes
  ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**
  Initial instrument calibrations were performed (one per year).
  _X_ Yes - see notes
  ___ No
  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**
  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).
  _X_ Yes
  ___ No

CCV standard percent recovery results were within the required control limits (75-125%).

_X_ Yes
___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).

  _X_ Yes
  ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.

  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.

  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).

  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).

  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).

  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).

  _X_ Yes – see the table on the following page

____ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	7	0	7	100%
LCS	7	0	7	100%
Total	14	0	14	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ____ No

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the following table
  ____ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	10	0	10	100%
Lab Dup	5	0	5	100%
Total	15	0	15	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).
  _X_ Yes – see the following table
  ____ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness

Arsenic	39	0	39	100%

Data Qualifications

- Data was qualified for quality control exceedances.
  ___ Yes
  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	39	0	39	100%

Corrective Actions

- Corrective actions were required for this sampling event.
  ___ Yes
  _X_ No

10. CONCLUSION

The Performance Monitoring data collected from September 22 through 27, 2004 were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

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EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
September 22, 2004 through 27, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IA14-1-C-E-1	9/24/04	IA14-1-C-E-1		RUSTON	04R-06885	EDXRF	347
IA14-1-C-F-1	9/24/04	IA14-1-C-F-1		RUSTON	04R-06886	EDXRF	87
IA14-1-C-F-1	9/24/04	IA14-1-C-F-1D	Field Duplicate	RUSTON	04R-06887	EDXRF	73
IA14-MA-C-A	9/23/04	IA14-MA-C-A		RUSTON	04R-06876	EDXRF	37
IA14-MA-C-A	9/23/04	IA14-MA-C-AD	Field Duplicate	RUSTON	04R-06877	EDXRF	35
IA16-1-C-G-2	9/22/04	IA16-1-C-G-2		RUSTON	04R-06802	EDXRF	16
IA18-1-C-E-1	9/22/04	IA18-1-C-E-1		RUSTON	04R-06789	EDXRF	97
IA18-1-C-E-1	9/22/04	IA18-1-C-E-1D	Field Duplicate	RUSTON	04R-06790	EDXRF	101
IA18-1-C-F-1	9/22/04	IA18-1-C-F-1		RUSTON	04R-06791	EDXRF	74
IA18-2-C-G-1	9/22/04	IA18-2-C-G-1		RUSTON	04R-06800	EDXRF	97
IA18-2-C-G-1	9/22/04	IA18-2-C-G-1D	Field Duplicate	RUSTON	04R-06801	EDXRF	91
IA18-3-C-G-1	9/22/04	IA18-3-C-G-1		RUSTON	04R-06792	EDXRF	24
IA8-1-C-E-1	9/24/04	IA8-1-C-E-1		RUSTON	04R-06879	EDXRF	59
IA8-1-C-E-1	9/24/04	IA8-1-C-E-1D	Field Duplicate	RUSTON	04R-06880	EDXRF	50
IA8-1-C-F-1	9/24/04	IA8-1-C-F-1		RUSTON	04R-06881	EDXRF	48
IA9-MA-C-A	9/23/04	IA9-MA-C-A		RUSTON	04R-06878	EDXRF	196
IAFA-P1A-P-LS39-C-A-1	9/24/04	IAFA-P1A-P-LS39-C-A-1		RUSTON	04R-06888	EDXRF	167
IAFA-P1A-P-LS39-C-A-1	9/24/04	IAFAP1A-P-LS39-C-A-1D	Field Duplicate	RUSTON	04R-06889	EDXRF	175
IAFA-P1AP-LS39-C-B-1	9/24/04	IAFA-P1AP-LS39-C-B-1		RUSTON	04R-06890	EDXRF	1131
IAFA-P1A-P-LS56-C-A-3	9/22/04	IAFA-P1A-P-LS56-C-A-3		RUSTON	04R-06778	EDXRF	1435
IAFA-P1A-P-LS56-C-B-3	9/22/04	IAFA-P1A-P-LS56-C-B-3		RUSTON	04R-06779	EDXRF	353
IAFA-P1A-P-LS56-C-C-3	9/22/04	IAFA-P1A-P-LS56-C-C-3		RUSTON	04R-06780	EDXRF	295
IAFA-P1A-P-LS57-C-A-3	9/22/04	IAFA-P1A-P-LS57-C-A-3		RUSTON	04R-06774	EDXRF	1947
IAFA-P1A-P-LS57-C-B-3	9/22/04	IAFA-P1A-P-LS57-C-B-3		RUSTON	04R-06775	EDXRF	721
IAFA-P1A-P-LS57-C-C-3	9/22/04	IAFA-P1A-P-LS57-C-C-3		RUSTON	04R-06776	EDXRF	145
IAFA-P1A-P-LS57-C-C-3	9/22/04	IAFA-P1A-P-LS57-C-C-3D	Field Duplicate	RUSTON	04R-06777	EDXRF	146
IAFA-P1A-P-UR8-C-A-1	9/23/04	IAFA-P1A-P-UR8-C-A-1		RUSTON	04R-06882	EDXRF	1166
IAFA-P1A-P-UR8-C-B-1	9/23/04	IAFA-P1A-P-UR8-C-B-1		RUSTON	04R-06883	EDXRF	667
IAFA-P1A-P-UR8-C-C-1	9/23/04	IAFA-P1A-P-UR8-C-C-1		RUSTON	04R-06884	EDXRF	1761
IAFA-P1B-P-LS39-C-A-1	9/24/04	IAFA-P1B-P-LS39-C-A-1		RUSTON	04R-06891	EDXRF	568
IAFA-P1B-P-LS39-C-B-1	9/24/04	IAFA-P1B-P-LS39-C-B-1		RUSTON	04R-06892	EDXRF	908
IAFA-P1B-P-LS39-C-C-1	9/24/04	IAFA-P1B-P-LS39-C-C-1		RUSTON	04R-06893	EDXRF	904
IAFA-P2-F-UR1-C-1	9/22/04	IAFA-P2-F-UR1-C-1		RUSTON	04R-06803	EDXRF	43
IAFA-P2-P-UR1-C-A-1	9/22/04	IAFA-P2-P-UR1-C-A-1		RUSTON	04R-06804	EDXRF	1291
IAFA-P2-P-UR1-C-B-1	9/22/04	IAFA-P2-P-UR1-C-B-1		RUSTON	04R-06805	EDXRF	148
IAFA-P2-P-UR1-C-C-1	9/22/04	IAFA-P2-P-UR1-C-C-1		RUSTON	04R-06806	EDXRF	62
IAFA-P2-P-UR1-C-C-1	9/22/04	IAFA-P2-P-UR1-C-C-1D	Field Duplicate	RUSTON	04R-06807	EDXRF	64
IAFA-P2-P-UR7-C-A-1	9/23/04	IAFA-P2-P-UR7-C-A-1		RUSTON	04R-06808	EDXRF	761
IAFA-P2-P-UR7-C-B-1	9/23/04	IAFA-P2-P-UR7-C-B-1		RUSTON	04R-06809	EDXRF	1227
IAFA-P2-P-UR7-C-C-1	9/23/04	IAFA-P2-P-UR7-C-C-1		RUSTON	04R-06810	EDXRF	123
IAFA-P2-P-UR7-C-C-1	9/23/04	IAFA-P2-P-UR7-C-C-1D	Field Duplicate	RUSTON	04R-06811	EDXRF	115

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

CONFIRMATION SAMPLES
SEPTEMBER 11 THROUGH 28, 2004

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October 7, 2004

TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. LABORATORY PROCEDURES 4

4. DETECTION LIMITS 4

5. METHOD BLANKS 4

6. MATRIX SPIKES 5

7. LABORATORY DUPLICATES 5

8. LABORATORY CONTROL SAMPLES (LCS) 5

9. DATA QUALITY OBJECTIVES 6

10. EDXRF/CONFIRMATION SAMPLE COMPARISON 7

11. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

APPENDIX 2: EDXRF/Confirmation Sample Comparison Summary

GLOSSARY OF TERMS

CLP ..... Contract Laboratory Program

CRDL ..... Contract Required Detection Limit

Diff ..... Difference

EDXRF ..... Energy Dispersive X-Ray Fluorescence

EPA ..... Environmental Protection Agency

LCS ..... Laboratory Control Sample

MDL ..... Method Detection Limit

MS ..... Matrix Spike

PRDL ..... Project Required Detection Limit

QC ..... Quality Control

RL ..... Reporting Limit

RPD ..... Relative Percent Difference

SAP ..... Sampling and Analyses Plan

SOW ..... Statement of Work

STL ..... Severn Trent Laboratories, Inc.

SUMMARY

Splits of performance monitoring soil samples collected in the Fenced Area and the Everett Residential Area from September 11 through 28, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project were analyzed by the Environmental Protection Agency (EPA) Method 6020 (EPA 1986) method at Severn Trent Laboratories, Inc. in Tacoma, Washington. Data from the split samples (referred to as Confirmation samples) were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). This data was also compared with Energy Dispersive X-ray Fluorescence (EDXRF) results from the original samples. Appendix 1 contains the validated data and the EDXRF/Confirmation sample comparison summary is located in Appendix 2.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using laboratory duplicate samples. The target precision for this project is acceptance of 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and matrix spike (MS) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the MS samples as valid and within the control limits established by the SAP.

  In addition to LCS and MS samples, one in fifty samples analyzed using the EDXRF method, are required to be analyzed by EPA wet chemistry methods. The results for these samples (Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the laboratory duplicate results were within control limits.

Accuracy

- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- MS – The accuracy target of 90% was met as **100%** of the MS results were within control limits.
- Confirmation Samples – All Confirmation sample results were less than a 35 Relative Percent Difference (RPD) from the EDXRF results. Recovery rates could not determine a systematic method bias. The results of the Confirmations samples "confirmed" the use of the EDXRF results for the purposes they were intended.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Confirmation sample data for Performance Monitoring samples collected from September 11 through 28, 2004 were **deemed acceptable** for the purposes (to compare with EDXRF results) of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification. These data **"confirmed" the use of the EDXRF results** for Performance Monitoring samples collected September 11 through 28, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to six splits (referred to as Confirmation samples) from samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from September 11 through 28, 2004. These samples were analyzed for metals by the EPA Method 6020 at Severn Trent Laboratories, Inc. (STL) in Tacoma, Washington. The results from these samples were used to "confirm" the results obtained by the EDXRF method.

- Validation procedures used are generally consistent with:

  X EPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  X Compliance Monitoring Plan – (ASARCO 2004a)
  X Sampling and Analyses Plan – (ASARCO 2004b)
  __ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  X Standard – see notes
  ___ Visual

  Notes: Laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  X Yes
  ___ No

- Data entry for deliverables was consistent and without errors.

  ___ Yes
  X No – see notes

  Notes:

  - Samples IAFA-P2-**P**-UR1-C-B-1 was recorded as IAFA-P2-UR1-C-B-1 on the chain of custody and thus incorrectly reported by STL.

3. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  - ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  - _X_ SW-846 (EPA 1986) – Confirmation Samples
  - ___ Standard Methods for Chemical Analysis of Water and Wastes
  - ___ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  - ___ Other

- **Holding times met**
  - _X_ Yes
  - ___ No

- **Analyses were carried out as requested.**
  - _X_ Yes
  - ___ No

4. DETECTION LIMITS

- Method detection limits (MDL) were provided by the laboratory.
  - _X_ Yes
  - ___ No

- Reporting levels were greater than the MDLs.
  - _X_ Yes
  - ___ No

- Reporting levels were less than compliance standards.
  - _X_ Yes – see notes
  - ___ No

  Notes: Arsenic reporting levels used by STL were less than the EDXRF reporting level for arsenic (10 ppm). Therefore, for the purpose of this report (to compare EDXRF results to the Confirmation sample results), all STL arsenic results that were less than 10 ppm were changed to "<10 ppm" in this report.

5. METHOD BLANKS

- Method blanks were analyzed at the required frequency.
  - _X_ Yes
  - ___ No

- Analytes were not detected in the method blanks.
  - _X_ Yes
  - ___ No – see notes

6. MATRIX SPIKES

- Matrix spike (MS) samples were analyzed at the required frequency.
  - _X_ Yes
  - ___ No

- Spikes were added at the proper concentrations.
  - _X_ Yes
  - ___ No
  - ___ NA

- MS recovery results were within the required control limits (75-125%).
  - _X_ Yes
  - ___ No
  - ___ NA

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).
  - _X_ Yes
  - ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.
  - _X_ Yes
  - ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.
  - _X_ Yes
  - ___ No

- LCS' were analyzed at the proper frequency (one per day).
  - _X_ Yes
  - ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).
  - _X_ Yes
  - ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The laboratory target accuracy for this project was met (greater than 90% of the MS and LCS sample results were within control limits).

  _X_ Yes – see the following table
  ___ No

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
MS	1	0	1	100%
LCS	1	0	1	100%
Total	2	0	2	100%

Precision

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).

  _X_ Yes – see the following table
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Lab Dup	1	0	1	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).

  _X_ Yes – see the following table
  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	6	0	6	100%

Data Qualifications

- Data was qualified for quality control exceedances.
  ___ Yes
  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	6	0	6	100%

Corrective Actions

- Corrective actions were required for this sampling event.
  ___ Yes
  _X_ No

10. EDXRF/CONFIRMATION SAMPLE COMPARISON

Appendix 2 contains the comparison results for EDXRF and Confirmation sample data.

- Confirmation samples were analyzed at the proper frequency (1 per 50 samples analyzed by the EDXRF method)
  _X_ Yes
  ___ No

- EDXRF and Confirmation sample results were less than 35 RPD.
  _X_ Yes
  ___ No

- Recovery rates (EDXRF results divided by Confirmation results times 100) showed that one method's concentrations were consistently greater than the other method's concentrations.
  _X_ Yes – see notes
  ___ No

  Notes: Recovery rates ranged from 54.7% to 116.1%. The number of EDXRF results greater than Confirmation results was equal to the number of EDXRF results less than Confirmation results. Therefore, a bias could not be determined by the data.

- The correlation coefficient was near one.
  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A linear regression was not run do to the lack of data points. At least 10 data points are needed for reliable linear regression statistics.

- The y-intercept was near zero.

  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A linear regression was not run do to the lack of data points. At least 10 data points are needed for reliable linear regression statistics.

11. CONCLUSION

The Confirmation sample data for Performance Monitoring samples collected from September 11 through September 28, 2004 were **deemed acceptable** for the purposes (to compare with EDXRF results) of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification. These data **"confirmed" the use of the EDXRF results** for Performance Monitoring samples collected September 11 through September 28, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
Confirmation Sample Data
September 11 through September 28, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IA14-1-C-G-2	9/28/04	IA14-1-C-G-2D	Split	STL	124045-06	EPA 6020	20.1
IA17-5-C-E-1	9/20/04	IA17-5-C-E-1	Split	STL	124045-03	EPA 6020	< 10
IA18-5-C-E-1	9/16/04	IA18-5-C-E-1	Split	STL	124045-01	EPA 6020	< 10
IAFA-P1A-F-LS50-C-2	9/21/04	IAFA-P1A-F-LS50-C-2	Split	STL	124045-04	EPA 6020	1760
IAFA-P1A-F-LS68-C-1	9/17/04	IAFA-P1A-F-LS68-C-1	Split	STL	124045-02	EPA 6020	277
IAFA-P2-P-UR1-C-B-1	9/22/04	IAFA-P2-P-UR1-C-B-1	Split	STL	124045-05	EPA 6020	171

* Severn Trent Laboratories, Inc., Tacoma, Washington

APPENDIX 2

EDXRF/CONFIRMATION SAMPLE COMPARISON SUMMARY

EDXRF/CONFIRMATION SAMPLE COMPARISON SUMMARY

September 11-28, 2004

StationName IA18-5-C-E-1
Sample Date 9/16/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*		Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTA	IA18-5-C-E-1	ppm	10	U	10	U	10	0.000	DIFF	100.00%

StationName IAFA-P1A-F-LS68-C-1
Sample Date 9/17/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*		Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTA	IAFA-P1A-F-LS68-C-1	ppm	313	V	277	V	10	12.203	RPD	113.00%

StationName IA17-5-C-E-1
Sample Date 9/20/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*		Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTA	IA17-5-C-E-1	ppm	10	U	10	U	10	0.000	DIFF	100.00%

StationName IAFA-P1A-F-LS50-C-2
Sample Date 9/21/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*		Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTA	IAFA-P1A-F-LS50-C-2	ppm	2044	V	1760	V	10	14.932	RPD	116.14%

*EDXRF = Energy Dispersive X-Ray Fluorescence; V = Detected Value; U = Under Reporting Limit; PRDL = Project Required Reporting Limit; RPD = Relative Percent Difference.

EDXRF/CONFIRMATION SAMPLE COMPARISON SUMMARY

September 11-28, 2004

StationName **IAFA-P2-P-UR1-C-B-1**

Sample Date 9/22/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTA	IAFA-P2-P-UR1-C-B-1	ppm	148	V	171	V	10	14.420 RPD	86.55%

StationName **IA14-1-C-G-2**

Sample Date 9/27/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTA	IA14-1-C-G-2D	ppm	11	V	20.1	V	10	9.100 DIFF	54.73%

*EDXRF = Energy Dispersive X-Ray Fluorescence; V = Detected Value; U = Under Reporting Limit; PRDL = Project Required Reporting Limit; RPD = Reletive Percent Difference

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA
PERFORMANCE MONITORING SAMPLES
OCTOBER 6 AND 7, 2004

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TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 4

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 6

10. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

GLOSSARY OF TERMS

CCV .....Continuing Calibration Verification

CLP .....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA.....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS .....Laboratory Control Sample

PRDL .....Project Required Detection Limit

QC.....Quality Control

RL .....Reporting Limit

RUSTON .....ASARCO's Ruston Soils Laboratory

RPD.....Relative Percent Difference

SAP .....Sampling and Analyses Plan

SOW .....Statement of Work

Std Dev .....Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area from October 6 and 7, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. All samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.
- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the labortory duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Performance Monitoring data collected from October 6 and 7, 2004 were **deemed acceptable** for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 10 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from October 6 and 7, 2004. These samples were analyzed for metals by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included one field duplicate. Due to the time allotted for the validation of this data, analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

- Validation procedures used are generally consistent with:

  X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  X Compliance Monitoring Plan – (ASARCO 2004a)
  X Sampling and Analyses Plan – (ASARCO 2004b)
  ___ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  X Standard – see notes
  ___ Visual

  Notes: Field and laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  X Yes
  ___ No

- Documentation of field procedures was provided as required.

  X Yes
  ___ No

- Data entry for deliverables was consistent and without errors.
  _X_ Yes
  ___ No

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 10 or 1 per day, whichever was greater).

  _X_ Yes
  ___ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.

  _X_ Yes
  ___ No

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).

  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**

  ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  ___ SW-846 (EPA 1986) – Confirmation Samples
  ___ Standard Methods for Chemical Analysis of Water and Wastes
  _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  ___ Other

- **Holding times met**

  _X_ Yes
  ___ No

- **Analyses were carried out as requested.**
  _X_ Yes
  ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and compliance standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Compliance Standard (ppm)
Arsenic	EDXRF	10	10	20

- RLs met IDLs.
  _X_ Yes
  ___ No
- IDLs were provided by the laboratory.
  _X_ Yes
  ___ No
- RLs were less than compliance standards.
  _X_ Yes
  ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**
  Initial instrument calibrations were performed (one per year).
  _X_ Yes - see notes
  ___ No
  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**
  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).
  _X_ Yes
  ___ No

CCV standard percent recovery results were within the required control limits (75-125%).

_X_ Yes
___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).

  _X_ Yes
  ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.

  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.

  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).

  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).

  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).

  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).

  _X_ Yes – see the table on the following page
  ___ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	2	0	2	100%
LCS	2	0	2	100%
Total	4	0	4	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the following table
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	1	0	1	100%
Lab Dup	2	0	2	100%
Total	3	0	3	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).
  _X_ Yes – see the following table
  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	10	0	10	100%

Data Qualifications

- Data was qualified for quality control exceedances.

  ___ Yes

  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	10	0	10	100%

Corrective Actions

- Corrective actions were required for this sampling event.

  ___ Yes

  _X_ No

10. CONCLUSION

The Performance Monitoring data collected from October 6 and 7, 2004 were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
October 6, 2004 through 7, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
LS26-P1B-3W-A-2	10/6/04	LS26-P1B-3W-A-2		Ruston	04R-07322	EDXRF	1672
LS29-P1B-3W-A-2	10/6/04	LS29-P1B-3W-A-2		Ruston	04R-07323	EDXRF	2437
LS31-P1B-1F-2	10/6/04	LS31-P1B-1F-2		Ruston	04R-07324	EDXRF	3390
LS31-P1B-1F-2	10/6/04	LS31-P1B-1F-2D	Field Duplicate	Ruston	04R-07325	EDXRF	3125
LS42-P1B-3W-B-2	10/6/04	LS42-P1B-3W-B-2		Ruston	04R-07326	EDXRF	1639
LS57-P1B-1W-A-2	10/6/04	LS57-P1B-1W-A-2		Ruston	04R-07327	EDXRF	1968
LS57-P1B-3W-A-2	10/6/04	LS57-P1B-3W-A-2		Ruston	04R-07328	EDXRF	1575
LS78-P1B-1W-C-2	10/6/04	LS78-P1B-1W-C-2		Ruston	04R-07329	EDXRF	2750
LS84-P1B-1W-A-2	10/6/04	LS84-P1B-1W-A-2		Ruston	04R-07330	EDXRF	3217
LS84-P1B-1W-B-2	10/6/04	LS84-P1B-1W-B-2		Ruston	04R-07331	EDXRF	2351

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

EVERETT RESIDENTIAL
PERFORMANCE MONITORING SAMPLES
OCTOBER 11 AND 12, 2004

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TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 5

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 7

10. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Tables

Table 1. Data Validation Codes and Definitions

Table 2. Summary of Qualified Data

APPENDIX 2: Validated Database

GLOSSARY OF TERMS

CCV .....Continuing Calibration Verification

CLP .....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA .....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS .....Laboratory Control Sample

PRDL .....Project Required Detection Limit

QC.....Quality Control

RL .....Reporting Limit

RUSTON.....ASARCO's Ruston Soils Laboratory

RPD.....Relative Percent Difference

SAP .....Sampling and Analyses Plan

SOW.....Statement of Work

Std Dev.....Standard Deviation

SUMMARY

Performance monitoring soil samples were collected from the Everett Residential site on October 11 and 12, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. Samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the tables for data validation codes and qualified data. Appendix 2 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90 % of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was not met as only **66.7%** (2 out of 3) of the field duplicate results were within control limits. It should be noted that percentage variance is greatly influenced by the number of sample data.
- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the laboratory duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses for Confirmation samples from this sampling event were not completed and therefore, not evaluated for this validation report. Separate Confirmation sample comparison reports will be submitted intermittently throughout the 2004 work season.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

QC Exceedances that resulted in the qualification (flagging) of data:

- Arsenic was out of control limits for a field duplicate collected 10/12/04, which resulted in two flags.

Although the Perfomance Monitoring data collected on October 11 and 12, 2004 did not meet the precision goal for field duplicate samples, they were deemed acceptable for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **Eighty percent** (8 out of 10) of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 10 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project on October 11 and 12, 2004. These samples were analyzed for arsenic by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included three field duplicates. Due to the time allotted for the validation of this data, analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. Separate Confirmation sample comparison reports will be submitted intermittently throughout the 2004 Work Season.

- Validation procedures used are generally consistent with:
  - X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  - X Compliance Monitoring Plan – (ASARCO 2004a)
  - X Sampling and Analyses Plan – (ASARCO 2004b)
  - ___ Other

- Overall level of validation:
  - ___ Contract Laboratory Program (CLP)
  - X Standard – see notes
  - ___ Visual

  Notes: Field and laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data were not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.
  - X Yes
  - ___ No

- Documentation of field procedures was provided as required.
  - X Yes
  - ___ No

- Data entry for deliverables was consistent and without errors.
  _X_ Yes
  ___ No

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 10 or 1 per day, whichever was greater).
  _X_ Yes
  ___ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.
  ___ Yes
  _X_ No – see notes

  Notes: Results associated with field duplicate exceedances were flagged "J" to indicate a possible variance. Associated samples were collected from the same site and date as the field duplicate sample. Following is a table summarizing the field duplicate exceedances.

Sample/Duplicate Code	Sample Date	Analyte	Original Result (ppm)	Dup Result (ppm)	RL (ppm)	Diff	# of Flags
1A3-7-C-G-1/1D	10/12/04	Arsenic	85	<10	10	75	2

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).
  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  - ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  - ___ SW-846 (EPA 1986) – Confirmation Samples
  - ___ Standard Methods for Chemical Analysis of Water and Wastes
  - _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  - ___ Other

- **Holding times met**
  - _X_ Yes
  - ___ No

- **Analyses were carried out as requested.**
  - _X_ Yes
  - ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and compliance standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Compliance Standard (ppm)
Arsenic	EDXRF	10	10	20

- Instrument detection limits (IDL) were provided by the laboratory.
  - _X_ Yes
  - ___ No

- Reporting levels met IDLs.
  - _X_ Yes
  - ___ No

- Reporting levels met project standard levels.
  - _X_ Yes
  - ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**

  Initial instrument calibrations were performed (one per year).
  - _X_ Yes - see notes
  - ___ No

  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**

  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).

  _X_ Yes
  ___ No

  CCV standard percent recovery results were within the required control limits (75-125%).

  _X_ Yes
  ___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).

  _X_ Yes
  ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.

  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.

  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).

  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).

  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	3	0	3	100%
LCS	2	0	2	100%
Total	5	0	5	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  ___ Yes
  _X_ No – see the table at the end of this section

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the following table
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	3	1	2	66.7%
Lab Dup	3	0	5	100%
Total	6	1	5	83.3%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).

  _X_ Yes – see the following table
  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Total (arsenic only)	10	0	10	100%

Data Qualifications

- Data was qualified for quality control exceedances.

  _X_ Yes - see the following table
  ___ No

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Total (arsenic only)	10	2	8	80%

Corrective Actions

- Corrective actions were required for this sampling event.

  ___ Yes
  _X_ No

10. CONCLUSION

Although the Performance Monitoring data collected on October 11 and 12, 2004 did not meet the precision goal for field duplicate samples, they were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

TABLES

TABLE 1.

DATA VALIDATION CODES AND DEFINITIONS

CODE		DEFINITION
J	-	The associated numerical value is an estimated quantity because quality control criteria were not met.
UJ	-	The material was analyzed for, but was not detected above the associated value. Subscripts for the "UJ" qualifier:
R	-	Quality control indicates that the data are unusable (compound may or may not be present). Resampling and/or reanalysis is necessary for verification.
A	-	Anomalous data. No apparent explanation for discrepancy in data. (Not an EPA code.)

Table 2. Summary of Qualified Data
Asarco's Former Arsenic Trioxide Processing Area Project
October 11 and 12, 2004

Site Code	Sample Code	Sample Date	Parameter	Result (ppm)	Flag	QC Type	Exceedance
1A3-7-C-G-1	1A3-7-C-G-1	10/12/04	Arsenic (As)	85	J	Field Dup	Diff > PDLG
1A3-7-C-G-1	1A3-7-C-G-1D	10/12/04	Arsenic (As)	<10	J	Field Dup	Diff > PDLG

APPENDIX 2

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
October 11 and 12, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)*
IA3-1-C-G-1	10/11/04	IA3-1-C-G-1		RUSTON	04R-07521	EDXRF	78
IA3-2-C-G-1	10/12/04	IA3-2-C-G-1		RUSTON	04R-07524	EDXRF	< 10
IA3-3-C-G-1	10/11/04	IA3-3-C-G-1		RUSTON	04R-07520	EDXRF	18
IA3-4-C-G-1	10/11/04	IA3-4-C-G-1		RUSTON	04R-07479	EDXRF	< 10
IA3-4-C-G-1	10/11/04	IA3-4-C-G-1D	Field Duplicate	RUSTON	04R-07480	EDXRF	< 10
IA3-5-C-G-1	10/11/04	IA3-5-C-G-1		RUSTON	04R-07481	EDXRF	17
IA3-6-C-G-1	10/11/04	IA3-6-C-G-1		RUSTON	04R-07518	EDXRF	17
IA3-6-C-G-1	10/11/04	IA3-6-C-G-1D	Field Duplicate	RUSTON	04R-07519	EDXRF	19
IA3-7-C-G-1	10/12/04	IA3-7-C-G-1		RUSTON	04R-07522	EDXRF	85 J
IA3-7-C-G-1	10/12/04	IA3-7-C-G-1D	Field Duplicate	RUSTON	04R-07523	EDXRF	< 10 J

* J = Result is estimated due to a quality control exceedance.

REVISION

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA
PERFORMANCE MONITORING SAMPLES
OCTOBER 18 THROUGH 20, 2004

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October 25, 2004
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TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 4

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 6

10. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

GLOSSARY OF TERMS

CCV .....Continuing Calibration Verification

CLP .....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA.....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS .....Laboratory Control Sample

PRDL .....Project Required Detection Limit

QC.....Quality Control

RL .....Reporting Limit

RUSTON .....ASARCO's Ruston Soils Laboratory

RPD.....Relative Percent Difference

SAP .....Sampling and Analyses Plan

SOW .....Statement of Work

Std Dev .....Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area from October 18 through 20, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. All samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.
- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the labortory duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Performance Monitoring data collected from October 18 through 20, 2004 were **deemed acceptable** for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 13 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from October 18 through 20, 2004. These samples were analyzed for metals by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included five field duplicates. Due to the time allotted for the validation of this data, analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

- Validation procedures used are generally consistent with:

  X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  X Compliance Monitoring Plan – (ASARCO 2004a)
  X Sampling and Analyses Plan – (ASARCO 2004b)
  ___ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  X Standard – see notes
  ___ Visual

  Notes: Field and laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  X Yes
  ___ No

- Documentation of field procedures was provided as required.

  X Yes
  ___ No

- Data entry for deliverables was consistent and without errors.
  _X_ Yes
  ___ No

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 20 or 1 per day, whichever was greater).
  _X_ Yes
  ___ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.
  _X_ Yes
  ___ No

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).
  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  ___ SW-846 (EPA 1986) – Confirmation Samples
  ___ Standard Methods for Chemical Analysis of Water and Wastes
  _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  ___ Other

- **Holding times met**
  _X_ Yes
  ___ No

- **Analyses were carried out as requested.**
  _X_ Yes
  ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and compliance standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Compliance Standard (ppm)
Arsenic	EDXRF	10	10	20

- RLs met IDLs.
  _X_ Yes
  ___ No
- IDLs were provided by the laboratory.
  _X_ Yes
  ___ No
- RLs were less than compliance standards.
  _X_ Yes
  ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**
  Initial instrument calibrations were performed (one per year).
  _X_ Yes - see notes
  ___ No
  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**
  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).
  _X_ Yes
  ___ No

CCV standard percent recovery results were within the required control limits (75-125%).

_X_ Yes
___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).

  _X_ Yes
  ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.

  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.

  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).

  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).

  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).

  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).

  _X_ Yes – see the table on the following page
  ___ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	2	0	2	100%
LCS	2	0	2	100%
Total	4	0	4	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the following table
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	5	0	5	100%
Lab Dup	2	0	2	100%
Total	7	0	7	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).
  _X_ Yes – see the following table
  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	13	0	13	100%

Data Qualifications

- Data was qualified for quality control exceedances.
  ___ Yes
  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	13	0	13	100%

Corrective Actions

- Corrective actions were required for this sampling event.
  ___ Yes
  _X_ No

10. CONCLUSION

The Performance Monitoring data collected from October 18 through 20, 2004 were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
October 18, 2004 through 20, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IAFA-P2-F-LS62-C-1	10/20/04	IAFA-P2-F-LS62-C-1		RUSTON	04R-07920	EDXRF	< 10
IAFA-P2-F-LS63-C-1	10/20/04	IAFA-P2-F-LS63-C-1		RUSTON	04R-07918	EDXRF	100
IAFA-P2-F-LS63-C-1	10/20/04	IAFA-P2-F-LS63-C-1D	Field Duplicate	RUSTON	04R-07919	EDXRF	88
IAFA-P2-F-LS64-C-1	10/19/04	IAFA-P2-F-LS64-C-1		RUSTON	04R-07845	EDXRF	10
IAFA-P2-F-LS64-C-1	10/19/04	IAFA-P2-F-LS64-C-1D	Field Duplicate	RUSTON	04R-07846	EDXRF	10
IAFA-P2-F-LS65-C-1	10/19/04	IAFA-P2-F-LS65-C-1		RUSTON	04R-07844	EDXRF	< 10
IAFA-P2-F-LS75-C-1	10/20/04	IAFA-P2-F-LS75-C-1		RUSTON	04R-07921	EDXRF	21
IAFA-P2-F-LS75-C-1	10/20/04	IAFA-P2-F-LS75-C-1D	Field Duplicate	RUSTON	04R-07922	EDXRF	26
IAFA-P2-F-LS81-C-1	10/20/04	IAFA-P2-F-LS81-C-1		RUSTON	04R-07923	EDXRF	75
IAFA-P2-F-US10-C-1	10/18/04	IAFA-P2-F-US10-C-1		RUSTON	04R-07840	EDXRF	< 10
IAFA-P2-F-US10-C-1	10/18/04	IAFA-P2-F-US10-C-1D	Field Duplicate	RUSTON	04R-07841	EDXRF	< 10
IAFA-P2-F-US11-C-1	10/19/04	IAFA-P2-F-US11-C-1		RUSTON	04R-07842	EDXRF	34
IAFA-P2-F-US11-C-1	10/19/04	IAFA-P2-F-US11-C-1D	Field Duplicate	RUSTON	04R-07843	EDXRF	36

LLT Linda L. Tangen

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MEMORANDUM

DATE: October 25, 2004

TO: Tim Willson

FROM: Linda Tangen

RE: Everett Data Validation Reports

Please note that in the data validation report for Everett's October 18 through 20, 2004 sampling event, a revision was made to the field duplicate frequency (Section 3). In prior reports, this frequency was stated as one duplicate per ten samples collected. This is the field duplicate frequency for water samples, not soil samples. Therefore, this section has been edited to reflect the correct frequency of one field duplicate per 20 soil samples collected. This change did not affect the data quality conclusions to any of the previous reports.

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA
PERFORMANCE MONITORING SAMPLES
OCTOBER 26, 2004

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November 1, 2004

TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 4

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 6

10. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

GLOSSARY OF TERMS

CCV .....Continuing Calibration Verification

CLP .....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA.....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS .....Laboratory Control Sample

PRDL .....Project Required Detection Limit

QC.....Quality Control

RL .....Reporting Limit

RUSTON .....ASARCO's Ruston Soils Laboratory

RPD.....Relative Percent Difference

SAP .....Sampling and Analyses Plan

SOW .....Statement of Work

Std Dev .....Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area on October 26, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. All samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.
- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the labortory duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Performance Monitoring data collected on October 26, 2004 were **deemed acceptable** for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to 16 Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project on October 26, 2004. These samples were analyzed for metals by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included six field duplicates. Due to the time allotted for the validation of this data, analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

- Validation procedures used are generally consistent with:

  X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  X Compliance Monitoring Plan – (ASARCO 2004a)
  X Sampling and Analyses Plan – (ASARCO 2004b)
  ___ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  X Standard – see notes
  ___ Visual

  Notes: Field and laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  X Yes
  ___ No

- Documentation of field procedures was provided as required.

  X Yes
  ___ No

- Data entry for deliverables was consistent and without errors.
  X Yes
  ___ No

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 20 or 1 per day, whichever was greater).
  X Yes
  ___ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.
  X Yes
  ___ No

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).
  ___ Yes
  ___ No
  X NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  ___ SW-846 (EPA 1986) – Confirmation Samples
  ___ Standard Methods for Chemical Analysis of Water and Wastes
  X EDXRF Standard Operating Procedures (Hydrometrics 1995)
  ___ Other

- **Holding times met**
  X Yes
  ___ No

- **Analyses were carried out as requested.**
  _X_ Yes
  ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and compliance standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Compliance Standard (ppm)
Arsenic	EDXRF	10	10	20

- RLs met IDLs.
  _X_ Yes
  ___ No
- IDLs were provided by the laboratory.
  _X_ Yes
  ___ No
- RLs were less than compliance standards.
  _X_ Yes
  ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**
  Initial instrument calibrations were performed (one per year).
  _X_ Yes - see notes
  ___ No
  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**
  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).
  _X_ Yes
  ___ No

CCV standard percent recovery results were within the required control limits (75-125%).

_X_ Yes
___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).

  _X_ Yes
  ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.

  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.

  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).

  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).

  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).

  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).

  _X_ Yes – see the table on the following page
  ___ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	2	0	2	100%
LCS	2	0	2	100%
Total	4	0	4	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the following table
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	6	0	6	100%
Lab Dup	2	0	2	100%
Total	8	0	8	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).
  _X_ Yes – see the following table
  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	16	0	16	100%

Data Qualifications

- Data was qualified for quality control exceedances.
  ___ Yes
  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	16	0	16	100%

Corrective Actions

- Corrective actions were required for this sampling event.
  ___ Yes
  _X_ No

10. CONCLUSION

The Performance Monitoring data collected from October 26, 2004 were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
October 26, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IAFA-P2-F-LR8-C-1	10/26/04	IAFA-P2-F-LR8-C-1		RUSTON	04R-08085	EDXRF	10
IAFA-P2-F-LR8-C-1	10/26/04	IAFA-P2-F-LR8-C-1D	Field Duplicate	RUSTON	04R-08086	EDXRF	11
IAFA-P2-F-LS1-C-1	10/26/04	IAFA-P2-F-LS1-C-1		RUSTON	04R-08087	EDXRF	234
IAFA-P2-F-LS4-C-1	10/26/04	IAFA-P2-F-LS4-C-1		RUSTON	04R-08088	EDXRF	52
IAFA-P2-F-LS4-C-1	10/26/04	IAFA-P2-F-LS4-C-1D	Field Duplicate	RUSTON	04R-08089	EDXRF	49
IAFA-P2-F-LS66-C-1	10/26/04	IAFA-P2-F-LS66-C-1		RUSTON	04R-08090	EDXRF	< 10
IAFA-P2-F-LS67-C-1	10/26/04	IAFA-P2-F-LS67-C-1		RUSTON	04R-08091	EDXRF	193
IAFA-P2-F-LS67-C-1	10/26/04	IAFA-P2-F-LS67-C-1D	Field Duplicate	RUSTON	04R-08092	EDXRF	193
IAFA-P2-F-US1-C-1	10/26/04	IAFA-P2-F-US1-C-1		RUSTON	04R-08093	EDXRF	279
IAFA-P2-F-US5-C-1	10/26/04	IAFA-P2-F-US5-C-1		RUSTON	04R-08094	EDXRF	416
IAFA-P2-F-US5-C-1	10/26/04	IAFA-P2-F-US5-C-1D	Field Duplicate	RUSTON	04R-08095	EDXRF	405
IAFA-P2-F-US6-C-1	10/26/04	IAFA-P2-F-US6-C-1		RUSTON	04R-08096	EDXRF	49
IAFA-P2-F-US7-C-1	10/26/04	IAFA-P2-F-US7-C-1		RUSTON	04R-08097	EDXRF	251
IAFA-P2-F-US7-C-1	10/26/04	IAFA-P2-F-US7-C-1D	Field Duplicate	RUSTON	04R-08098	EDXRF	264
IAFA-P2-F-US8-C-1	10/26/04	IAFA-P2-F-US8-C-1		RUSTON	04R-08099	EDXRF	67
IAFA-P2-F-US8-C-1	10/26/04	IAFA-P2-F-US8-C-1D	Field Duplicate	RUSTON	04R-08100	EDXRF	66

LLT Linda L. Tangen

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MEMORANDUM

DATE: November 1, 2004

TO: Tim Willson

FROM: Linda Tangen

RE: Everett Data Validation Reports

Attached to this memorandum is a revision of the Everett Data Validation report for the October 18 through 20, 2004 sampling event (Tangen, 10/25/04). The Tables in Section 9 have been revised to reflect the correct number of field duplicate and non-QC samples collected.

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

CONFIRMATION SAMPLES
SEPTEMBER 28 THROUGH NOVEMBER 30, 2004

Prepared for:
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December 14, 2004

TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. LABORATORY PROCEDURES 4

4. DETECTION LIMITS 4

5. METHOD BLANKS 4

6. MATRIX SPIKES 5

7. LABORATORY DUPLICATES 5

8. LABORATORY CONTROL SAMPLES (LCS) 5

9. DATA QUALITY OBJECTIVES 6

10. EDXRF/CONFIRMATION SAMPLE COMPARISON 7

11. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

APPENDIX 2: EDXRF/Confirmation Sample Comparison Summary

GLOSSARY OF TERMS

CLP ..... Contract Laboratory Program

CRDL ..... Contract Required Detection Limit

Diff ..... Difference

EDXRF ..... Energy Dispersive X-Ray Fluorescence

EPA ..... Environmental Protection Agency

LCS ..... Laboratory Control Sample

MDL ..... Method Detection Limit

MS ..... Matrix Spike

PRDL ..... Project Required Detection Limit

QC ..... Quality Control

RL ..... Reporting Limit

RPD ..... Relative Percent Difference

SAP ..... Sampling and Analyses Plan

SOW ..... Statement of Work

STL ..... Severn Trent Laboratories, Inc.

SUMMARY

Splits of performance monitoring soil samples collected in the Fenced Area and the Everett Residential Area from September 28 through November 30, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project were analyzed by the Environmental Protection Agency (EPA) Method 6020 (EPA 1986) method at Severn Trent Laboratories, Inc. in Tacoma, Washington. Data from the split samples (referred to as Confirmation samples) were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). This data was also compared with Energy Dispersive X-ray Fluorescence (EDXRF) results from the original samples. Appendix 1 contains the validated data and the EDXRF/Confirmation sample comparison summary is located in Appendix 2.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using laboratory duplicate samples. The target precision for this project is acceptance of 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and matrix spike (MS) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the MS samples as valid and within the control limits established by the SAP.

  In addition to LCS and MS samples, one in fifty samples analyzed using the EDXRF method, are required to be analyzed by EPA wet chemistry methods. The results for these samples (Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the laboratory duplicate results were within control limits.

Accuracy

- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- MS – The accuracy target of 90% was met as **100%** of the MS results were within control limits.
- Confirmation Samples – All Confirmation sample results were less than a 35 Relative Percent Difference (RPD) from the EDXRF results. Due to the limited number of EDXRF/Confirmation sample comparisons, a systematic bias was not determined. The results of the Confirmations samples "confirmed" the use of the EDXRF results for the purposes they were intended.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Confirmation sample data for Performance Monitoring samples collected from September 28 through November 30, 2004 were **deemed acceptable** for the purposes (to compare with EDXRF results) of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification. These data **"confirmed" the use of the EDXRF results** for Performance Monitoring samples collected September 28 through November 30, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to two splits (referred to as Confirmation samples) from samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project from September 28 through November, 2004. These samples were analyzed for metals by the EPA Method 6020 at Severn Trent Laboratories, Inc. (STL) in Tacoma, Washington. The results from these samples were used to "confirm" the results obtained by the EDXRF method.

- Validation procedures used are generally consistent with:

  X EPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  X Compliance Monitoring Plan – (ASARCO 2004a)
  X Sampling and Analyses Plan – (ASARCO 2004b)
  ___ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  X Standard – see notes
  ___ Visual

  Notes: Laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  X Yes
  ___ No

- Data entry for deliverables was consistent and without errors.

  ___ Yes
  X No – see notes

  Notes:
  - Sample IAFA-P2-F-LS81-C-1 was recorded as incorrectly recorded as IAFA-P2-F-L581-C-1 by STL.

3. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  - ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  - _X_ SW-846 (EPA 1986) – Confirmation Samples
  - ___ Standard Methods for Chemical Analysis of Water and Wastes
  - ___ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  - ___ Other

- **Holding times met**
  - _X_ Yes
  - ___ No

- **Analyses were carried out as requested.**
  - _X_ Yes
  - ___ No

4. DETECTION LIMITS

- Method detection limits (MDL) were provided by the laboratory.
  - _X_ Yes
  - ___ No
- Reporting levels were greater than the MDLs.
  - _X_ Yes
  - ___ No
- Reporting levels were less than compliance standards.
  - _X_ Yes
  - ___ No

5. METHOD BLANKS

- Method blanks were analyzed at the required frequency.
  - _X_ Yes
  - ___ No
- Analytes were not detected in the method blanks.
  - _X_ Yes
  - ___ No

6. MATRIX SPIKES

- Matrix spike (MS) samples were analyzed at the required frequency.
  - _X_ Yes
  - ___ No

- Spikes were added at the proper concentrations.
  - _X_ Yes
  - ___ No
  - ___ NA

- MS recovery results were within the required control limits (75-125%).
  - _X_ Yes
  - ___ No
  - ___ NA

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).
  - _X_ Yes
  - ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.
  - _X_ Yes
  - ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.
  - _X_ Yes
  - ___ No

- LCS were analyzed at the proper frequency (one per day).
  - _X_ Yes
  - ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).
  - _X_ Yes
  - ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The laboratory target accuracy for this project was met (greater than 90% of the MS and LCS sample results were within control limits).

  _X_ Yes – see the following table
  ___ No

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
MS	2	0	2	100%
LCS	2	0	2	100%
Total	4	0	4	100%

Precision

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).

  _X_ Yes – see the following table
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Lab Dup	2	0	2	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).

  _X_ Yes – see the following table
  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	2	0	2	100%

Data Qualifications

- Data was qualified for quality control exceedances.
  ___ Yes
  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	2	0	2	100%

Corrective Actions

- Corrective actions were required for this sampling event.
  ___ Yes
  _X_ No

10. EDXRF/CONFIRMATION SAMPLE COMPARISON

Appendix 2 contains the comparison results for EDXRF and Confirmation sample data.

- Confirmation samples were analyzed at the proper frequency (1 per 50 samples analyzed by the EDXRF method)
  _X_ Yes
  ___ No

- EDXRF and Confirmation sample results were less than 35 RPD.
  _X_ Yes
  ___ No

- Recovery rates (EDXRF results divided by Confirmation results times 100) showed that one method's concentrations were consistently greater than the other method's concentrations.
  _X_ Yes – see notes
  ___ No

  Notes: Recovery rates were 117.2% and 118.9%, where the EDXRF results were greater than the Confirmation results for both samples. Although both recovery rates showed a somewhat high EDXRF bias, due to the minimal number of comparisons (2), a systematic bias was not determined.

- The correlation coefficient was near one.
  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A linear regression was not run do to the lack of data points. At least 10 data points are needed for reliable linear regression statistics.

- The y-intercept was near zero.

  ____ Yes
  ____ No
  _X_ NA – see notes

  Notes: A linear regression was not run do to the lack of data points. At least 10 data points are needed for reliable linear regression statistics.

11. CONCLUSION

The Confirmation sample data for Performance Monitoring samples collected from September 28 through November 30, 2004 were **deemed acceptable** for the purposes (to compare with EDXRF results) of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification. These data **"confirmed" the use of the EDXRF results** for Performance Monitoring samples collected September 28 through November 30, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
Confirmation Sample Data
September 28 through November 30, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
IAFA-P2-F-LS81-C-1	10/20/04	IAFA-P2-F-LS81-C-1	Split	STL	124370-1	EPA 6020	63.1
IAFA-P2-F-US8-C-1	10/26/04	IAFA-P2-F-US8-C-1D	Split	STL	124673-1	EPA 6020	56.3

* Severn Trent Laboratories, Inc., Tacoma, Washington

APPENDIX 2

EDXRF/CONFIRMATION SAMPLE COMPARISON SUMMARY

EDXRF/CONFIRMATION SAMPLE COMPARISON SUMMARY

September 28 - November 30, 2004

StationName IAFA-P2-F-LS81-C-1

Sample Date 10/20/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTAL	IAFA-P2-F-LS81-C-1	ppm	75	v	63.1	v	10	17.234 RPD	118.86%

StationName IAFA-P2-F-US8-C-1

Sample Date 10/26/2004

Parameter		Sample ID	Units	EDXRF* Result		Confirmation* Result		PRDL*	Difference or RPD*	Recovery % (EDXRF /Confirmation)
Arsenic (As)	TOTAL	IAFA-P2-F-US8-C-1D	ppm	66	v	56.3	v	10	15.863 RPD	117.23%

*EDXRF = Energy Dispersive X-Ray Fluorescence; V = Detected Value; U = Under Reporting Limit; PRDL = Project Required Reporting Limit; RPD = Relative Percent Difference.

DATA VALIDATION REPORT
INORGANIC ANALYSES FOR SOIL SAMPLES
ASARCO'S
FORMER ARSENIC TRIOXIDE PROCESSING AREA
COMPLIANCE MONITORING
EVERETT, WASHINGTON

FENCED AREA
PERFORMANCE MONITORING SAMPLES
NOVEMBER 15 AND 30, 2004

Prepared for:
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December 14, 2004

TABLE OF CONTENTS

LIST OF APPENDICES ii

GLOSSARY OF TERMS iii

1. INTRODUCTION 3

2. DELIVERABLES 3

3. FIELD QUALITY CONTROL SAMPLES 4

4. LABORATORY PROCEDURES 4

5. DETECTION LIMITS 5

6. CALIBRATION AND CALIBRATION VERIFICATIONS 5

7. LABORATORY DUPLICATES 6

8. LABORATORY CONTROL SAMPLES (LCS) 6

9. DATA QUALITY OBJECTIVES 6

10. CONCLUSION 8

REFERENCES 9

LIST OF APPENDICES

APPENDIX 1: Validated Database

GLOSSARY OF TERMS

CCV .....Continuing Calibration Verification

CLP .....Contract Laboratory Program

CRDL.....Contract Required Detection Limit

Diff.....Difference

EDXRF .....Energy Dispersive X-Ray Fluorescence

EPA .....Environmental Protection Agency

IDL.....Instrument Detection Limit

LCS .....Laboratory Control Sample

PRDL .....Project Required Detection Limit

QC.....Quality Control

RL .....Reporting Limit

RUSTON .....ASARCO's Ruston Soils Laboratory

RPD.....Relative Percent Difference

SAP .....Sampling and Analyses Plan

SOW .....Statement of Work

Std Dev .....Standard Deviation

SUMMARY

Performance monitoring soil samples were collected in the Fenced Area on November 15 and 30, 2004 for ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. All samples were analyzed by the Energy Dispersive X-ray Fluorescence (EDXRF) method at Asarco's Ruston Soils laboratory in Ruston, Washington. Data from this sampling event were reviewed in accordance with the project's Compliance Monitoring Plan (ASARCO 2004a) and the Sampling and Analysis Plan (SAP) (ASARCO 2004b). Appendix 1 contains the validated data.

Data Quality Objectives for this Project

- **Precision** is a measure of the reproducibility of replicate measurements and is evaluated using field and laboratory duplicate samples. The target precision for this project is acceptance of 90% of the field duplicate and 90% of laboratory duplicate measurements as valid and within the control limits established by the SAP.

- **Accuracy** is the agreement between a measured value and a "true" value and is assessed by the review of sample collection and handling procedures; and by laboratory control samples (LCS) and continuing calibration verification (CCV) samples. The target accuracy for this project is the acceptance of 90% of the LCS and 90% of the CCV samples as valid and within the control limits established by the SAP.

  In addition to LCS and CCV samples, one in fifty samples are required to be analyzed by Environmental Protection Agency (EPA) wet chemistry methods. The results for these samples (which are referred to as Confirmation samples) are used to evaluate the accuracy of the EDXRF results.

- **Completeness** is a measure of the amount of valid data obtained from a measurement system, compared to the amount of data that was expected to be obtained under normal conditions. Completeness is quantified using the number of valid measurements, divided by the number of analyses, expressed as a percentage. The completeness target for this project is 95%.

Precision, Accuracy and Completeness Evaluation for this sampling event:

Precision

- Field Duplicate Samples - The precision target of 90% was met as **100%** of the field duplicate results were within control limits.
- Laboratory Duplicate Samples - The precision target of 90% was met as **100%** of the labortory duplicate results were within control limits.

Accuracy

- Sample collection and handling procedures were followed.
- LCS – The accuracy target of 90% was met as **100%** of the LCS results were within control limits.
- CCV – The accuracy target of 90% was met as **100%** of the CCV sample results were within control limits.
- Confirmation Samples – Analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

Completeness

- The completeness target was met as **100%** of the analyzed results were deemed valid.

The Performance Monitoring data collected on November 15 and 30, 2004 were **deemed acceptable** for the purposes of the ASARCO's Former Arsenic Trioxide Processing Area Remediation Project. **One-hundred percent** of the results can be used without qualification.

DATA VALIDATION REPORT

1. INTRODUCTION

- This validation applies to six Performance Monitoring soil samples collected for the ASARCO's Former Arsenic Trioxide Processing Area Remediation project on November 15 and 30, 2004. These samples were analyzed for metals by the Energy Dispersive X-Ray Fluorescence (EDXRF) method at ASARCO's Ruston Laboratory (RUSTON) in Ruston, Washington. The total number of samples analyzed by EDXRF included two field duplicates. Due to the time allotted for the validation of this data, analyses for this sampling event's Confirmation samples were not completed and therefore, not evaluated for this validation report. A separate Confirmation and EDXRF sample comparison report will be submitted.

- Validation procedures used are generally consistent with:

  X USEPA Contract Laboratory Program (CLP) National Functional Guidelines for Inorganic Data Review (EPA 2002)
  X Compliance Monitoring Plan – (ASARCO 2004a)
  X Sampling and Analyses Plan – (ASARCO 2004b)
  ___ Other

- Overall level of validation:

  ___ Contract Laboratory Program (CLP)
  X Standard – see notes
  ___ Visual

  Notes: Field and laboratory quality control (QC) samples are reviewed and the data are qualified (flagged) for QC exceedances. Raw instrument data is not reviewed.

2. DELIVERABLES

- All laboratory document deliverables were present as specified in the CLP-Statement of Work (EPA 2001) and/or the project contract.

  X Yes
  ___ No

- Documentation of field procedures was provided as required.

  X Yes
  ___ No

- Data entry for deliverables was consistent and without errors.
  _X_ Yes
  ___ No

3. FIELD QUALITY CONTROL SAMPLES

- **Field duplicates**

  Field duplicates have been collected at the proper frequency (1 in 20 or 1 per day, whichever was greater).
  _X_ Yes
  ___ No

  Field duplicate relative percent differences (RPDs) were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than five times the Project Required Reporting Limit (PRDL), the difference (Diff) between the sample and the duplicate results must be within ± 2 times the reporting level for soil matrix. A PRDL was not established for Performance Monitoring samples, therefore, the reporting limit (RL) was used instead of the PRDL.
  _X_ Yes
  ___ No

- **Rinsate Blanks**

  Rinsate blanks have been collected at the proper frequency (1 per sampling event).
  ___ Yes
  ___ No
  _X_ NA – see notes

  Notes: A rinsate blank has not been submitted for this sampling event because the entire event has not been completed.

4. LABORATORY PROCEDURES

- **Laboratory procedures followed**
  ___ CLP-SOW (CLP-Statement of Work) (EPA 2001)
  ___ SW-846 (EPA 1986) – Confirmation Samples
  ___ Standard Methods for Chemical Analysis of Water and Wastes
  _X_ EDXRF Standard Operating Procedures (Hydrometrics 1995)
  ___ Other

- **Holding times met**
  _X_ Yes
  ___ No

- **Analyses were carried out as requested.**
  _X_ Yes
  ___ No

5. DETECTION LIMITS

The following table lists the RL by analytical method and compares it to the instrument detection limit (IDL) and compliance standards.

Analyte	Analysis Method	RL (ppm)	IDL (ppm)	Compliance Standard (ppm)
Arsenic	EDXRF	10	10	20

- RLs met IDLs.
  _X_ Yes
  ___ No
- IDLs were provided by the laboratory.
  _X_ Yes
  ___ No
- RLs were less than compliance standards.
  _X_ Yes
  ___ No

6. CALIBRATION AND CALIBRATION VERIFICATIONS

- **Instrument Calibrations**
  Initial instrument calibrations were performed (one per year).
  _X_ Yes - see notes
  ___ No
  Notes: The EDXRF was calibrated using the Fundamental Parameters method. This method uses "well-characterized" standards and complicated algorithms to calibrate the instrument.

- **Calibration Verifications**
  The continuing calibration verification (CCV) standards were analyzed at the required frequency (one CCV per run).
  _X_ Yes
  ___ No

CCV standard percent recovery results were within the required control limits (75-125%).

_X_ Yes
___ No

7. LABORATORY DUPLICATES

- Laboratory duplicate samples were analyzed at the proper frequency (one per run).

  _X_ Yes
  ___ No

- The RPDs were within the required control limits (RPD of 35% or less for soil matrix). If the sample or duplicate result was less than 5 times the reporting level, the RPD criterion was not used. In these cases, the difference between the sample and the duplicate results must be within ±2 times the reporting level for soil matrix.

  _X_ Yes
  ___ No

8. LABORATORY CONTROL SAMPLES (LCS)

- The reference material used was of the correct matrix and concentration.

  _X_ Yes
  ___ No

- LCS' were analyzed at the proper frequency (one per day).

  _X_ Yes
  ___ No

- LCS recoveries were within the required percent recovery control limits (75%-125%).

  _X_ Yes
  ___ No

9. DATA QUALITY OBJECTIVES

Accuracy

- The field target accuracy for this project was met (sample collection and handling procedures were followed).

  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target accuracy for this project was met (greater than 90% of the CCV and LCS sample results were within control limits).

  _X_ Yes – see the table on the following page
  ___ No

Please Note: *Another measure of the accuracy of the EDXRF analyses is the comparison with the Confirmation sample splits analyzed by wet chemistry. These comparisons will be discussed in a separate report.*

Accuracy Summary

QC Type	# Of Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
CCV	2	0	2	100%
LCS	2	0	2	100%
Total	4	0	4	100%

Precision

- The field target precision for this project was met (greater than 90% of the field duplicate sample results were within control limits).
  _X_ Yes – see the table at the end of this section
  ___ No

- The laboratory target precision for this project was met (greater than 90% of the laboratory duplicate sample results were within control limits).
  _X_ Yes – see the following table
  ___ No

Precision Summary

QC Type	# Analyzed	# Out of Control Limits	# Within Control Limits	% Within Control Limits
Field Dup	2	0	2	100%
Lab Dup	2	0	2	100%
Total	4	0	4	100%

Completeness

- The target completeness for this project was met (greater than 95% of sample analyses were deemed valid).
  _X_ Yes – see the following table
  ___ No

Completeness Summary

Analyte	# Analyzed	# Rejected	# Valid (Not Rejected)	% Completeness
Arsenic	6	0	6	100%

Data Qualifications

- Data was qualified for quality control exceedances.

  ___ Yes

  _X_ No - see the following table

Data Qualification Summary

Analyte	# Analyzed	# Qualified (Flagged)	# Not Qualified	% Not Qualified
Arsenic	6	0	6	100%

Corrective Actions

- Corrective actions were required for this sampling event.

  ___ Yes

  _X_ No

10. CONCLUSION

The Performance Monitoring data collected from November 15 and 30, 2004 were deemed acceptable for Asarco's Arsenic Trioxide Processing Area remediation project.

DATA VALIDATION REPORT

Prepared by: Linda L. Tangen
Reviewed by: Tim Wilson

REFERENCES

Asarco Consulting Inc., 2004a. Compliance Monitoring Plan. March. Revision 2.

Asarco Consulting Inc., 2004b. Sampling and Analysis Plan. March. Revision 2.

EPA 1986. EPA 530/SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, 3rd Edition, Update IVa and IVb. U.S. Environmental Protection Agency. November.

EPA 2001. USEPA Contract Laboratory Program Statement of Work for Inorganics Analysis. U.S. Environmental Protection Agency. Document Number ILM05.2. December.

EPA 2002. USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. U.S. Environmental Protection Agency. OWSER 9240.1-35, EPA 540-R-01-008. July.

APPENDIX 1

VALIDATED DATABASE

ASARCO's Former Arsenic Trioxide Processing Area
November 15 and 30, 2004

Site Code	Sample Date/Time	Sample ID	Remarks	Lab	Lab ID	Analytical Method	Arsenic (ppm)
EVT-WH-01-PST	11/30/04	EVT-WH-01-PST		Ruston	04R-09187	EDXRF	19
EVT-WH-01-PST	11/30/04	EVT-WH-01-PST-D	Field Duplicate	Ruston	04R-09188	EDXRF	14
EVT-WH-02-PST	11/30/04	EVT-WH-02-PST		Ruston	04R-09186	EDXRF	17
EVT-WH-04-PST	11/30/04	EVT-WH-04-PST		Ruston	04R-09189	EDXRF	22
EVT-WH-05-PST	11/15/04	EVT-WH-05-PST		Ruston	04R-08913	EDXRF	34
EVT-WH-05-PST	11/15/04	EVT-WH-05-PST-D	Field Duplicate	Ruston	04R-08914	EDXRF	23

LLT Linda L. Tangen

6900 Cherry Blossom Lane NE • Albuquerque, NM 8711 • (505) 821-8618 • ltangen@comcast.net

MEMORANDUM

DATE: December 14, 2004

TO: Tim Wilson

FROM: Linda Tangen

RE: 2004 Everett Samples – Comprehensive Data Quality Summary

A total of 775 samples were analyzed during the 2004 work season for the Former Arsenic Trioxide Processing Area Compliance Monitoring project in Everett, Washington. Included with these samples were 122 field duplicate and 17 Confirmation samples.

All frequency compliances were met for field duplicates, Confirmation samples, and lab quality control samples. However, an equipment rinsate blank was not submitted during the work season (one rinsate blank per work season event is required by the project work plan). Since only one rinsate blank was required, the omission of this quality control sample has minimal impact on the quality of the data.

Of the total field duplicate results, 96.7% (118 out of 122) were within control limits. All (100%) laboratory quality control (QC) sample results were within control limits.

Confirmation and EDXRF sample comparisons were within duplicate control limits 100% of the time. EDXRF results were greater than Confirmation sample results 82.4% (14 out of 17). No bias correlation could be attributed to sample concentrations. Regression statistics for all EDXRF vs. Confirmation sample data points showed a slope of 1.15, y-intercept of –58.3 mg/kg, and a correlation coefficient (R-value) of 0.997.

However, the data point set (sample IAFA-SPA-D-Pre) with the highest concentration (approximately 24,000 mg/kg) was greater by more than one order of magnitude from the next closest data point set (approximately 2,400 mg/kg). Therefore, to return a more accurate description of the 2004 work season's data, the regression analysis was rerun without using sample IAFA-SPA-D-PRE. Without the data point set for this sample, the slope was 1.02, the y-intercept was 14.86 mg/kg, and the R-value was 0.9922.

The overall evaluation of the 2004 work season's data was that 100% of the data were accepted as valid and can be used for the purposes they were intended, and 98.9% (780 out of 189) of the results can be used without qualification.

APPENDIX C

MATERIAL TRANSPORTATION DOCUMENTS

BARGE

C.1 Coast Guard Permit
C.2 Shippers Statements
C.3 Manifests
C.4 JTC's Ready Weights

SUBTITLE C

C.5 Manifests

BARGE

C.1 Coast Guard Permit

T. Wilson

U.S. Department of Homeland Security
United States Coast Guard

Commandant
United States Coast Guard

2100 Second Street, S.W.
Washington, DC 20593-0001
Staff Symbol: G-MSO-3
Phone: (202) 267-1577
Fax (202) 267-4570

SP 2-04
July 19, 2004

ASARCO Incorporated
5219 N. Shirley St., Suite 100
Tacoma, WA 98407
Fax (253) 752-7663
Attention: Dave Nation

Subj: COAST GUARD SPECIAL PERMIT 2-04

Dear Mr. Nation:

In response to an application email from Bauer, Moynihan & Johnson LLP dated July 12, 2004, Coast Guard Special Permit 2-04 is issued authorizing the transport of a contaminated soil containing reportable quantities of arsenic, cadmium and lead. The special permit contains the provisions to be followed which are in addition to any applicable requirements found in Title 46 Code of Federal Regulations Part 148. It is understood that transport of the contaminated soil will involve a total of two barges per week for up to ten weeks between Everett Smelter Site, Snohomish County, Washington, and Tacoma, Washington.

The special permit will expire on October 31, 2004.

Sincerely,

R. J. HENNESSY
Commander, U.S. Coast Guard
Chief, Hazardous Materials Standards Division
By direction of the Commandant

Encl.: (1) SP 2-04

Copy to: MSO Puget Sound

U.S. Department of Homeland Security
United States Coast Guard

Commandant
United States Coast Guard

2100 Second Street, S.W.
Washington, DC 20593-0001
Staff Symbol: G-MSO-3
Phone: (202) 267-1577
Fax: (202) 267-4570

SP 2-04

COAST GUARD SPECIAL PERMIT 2-04

This Special Permit is issued pursuant to 46 CFR 148.01-9 of the U.S. Coast Guard (USCG) Carriage of Solid Hazardous Materials in Bulk Regulations to authorize bulk shipments of a Contaminated Soil containing Hazardous Substances (arsenic, cadmium and lead) under the conditions described below. This permit does not relieve any shipper or carrier from compliance with any applicable requirement of 46 CFR 148 except as specifically provided for herein.

1. **BASIS** – Bauer, Moynihan & Johnson LLP application email of July 12, 2004.

2. **COMMODITY** - Contaminated soil from the Everett Smelter site, Snohomish County Washington, containing reportable quantities of arsenic, cadmium and lead.

3. **PROPER SHIPPING NAME AND UN NUMBER** - ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (CONTAINS ARSENIC, CADMIUM AND LEAD), UN 3077.

4. **REGULATION WAIVED OR AFFECTED** - 46 CFR 148.01-7

5. **AUTHORIZED HOLDER** - ASARCO Incorporated, 5219 N. Shirley St., Suite 100, Tacoma, WA 98407.

6. **MODE OF TRANSPORTATION** – Unmanned barge.

7. **HAZARD CLASSIFICATION** - Class 9.

8. **PROPERTIES** - The contaminated soil will consist of organic soil material concrete, bricks and smelter debris. The materials will be derived from clearing and grubbing of vegetation and organic debris, demolition of man-made structures such as fences, buildings, concrete/brick footings, foundations, walls, roads and landscaping

9. **SPECIAL TRANSPORTATION REQUIREMENTS** -

   a. The shipments must be made to or from a designated waterfront facility that meets the requirements of 33 CFR 126.05(a) or a midstream anchorage acceptable to the cognizant Coast Guard Captain of the Port.

   b. The cognizant Coast Guard Captain of the Port must be informed at least 24 hours in advance of both loading and unloading operations.

c. The loading and unloading operations must be supervised by a person familiar with the safety precautions and emergency procedures associated with handling the material covered by this permit.

d. The loading and unloading operators must be trained in the appropriate safety precautions and emergency procedures for handling the material covered by this permit.

e. Precautions must be taken to minimize personnel exposure to dust, including maintenance of OSHA Permissible Exposure Limits (PELs). Persons working in contact with the material covered by this permit must wear protective clothing and gloves. If clothing becomes contaminated, it must be cleaned before reuse. When necessary, and in accordance with OSHA regulations (29 CFR 1910.134), dust respirators must be worn.

f. During loading and unloading operations, smoking, eating and drinking shall be prohibited in cargo compartments and on the deck of the barge, and in the vicinity of cargo handling operations.

g. During loading and unloading operations, precautions must be taken to minimize dispersal of this material to the environment. Tarpaulins or plastic sheeting may be used over decks and water to collect any release of material. The material must be sufficiently moist during loading and unloading to prevent the generation of dust.

h. During transport operations, tarpaulins, plastic sheeting , or other suitable covering must be used to minimize dispersal of this material into the environment.

j. Each bill of lading, shipping order or other shipping paper issued in connection with a shipment under the terms herein, must bear the notation **"USCG Special Permit 2-04."**

k. Whenever the material covered by this permit is being transported by barge, a copy of this permit and the shipper's MSDS must be on board the tug or towing vessel. When the barge is moored, a copy of this permit and the shipper's MSDS must be left on the barge in a suitable location.

l. After the cargo is discharged, the cargo compartments of the barge must be thoroughly cleaned before a different cargo is loaded. Disposal of cargo residues and contaminated items must be in accordance with applicable EPA and State laws and regulations.

10. **REPORTING REQUIREMENTS** - Any incident or casualty occurring while shipping under the terms of this special permit shall be reported in accordance with 49 CFR 171.15 with a copy to the Commandant (G-MSO-3), U.S. Coast Guard, 2100 2nd Street, SW, Washington, DC 20593-0001, at the earliest practical moment. Any release of arsenic,

cadmium or lead in excess of its reportable quantity (RQ) must be reported as required by the EPA regulations in 40 CFR Part 302. In addition, a record of experience under the terms of this special permit including any casualties or difficulties encountered must be sent to the Commandant (G-MSO-3) with any request for renewal.

11. **EXPIRATION DATE** – October 31, 2004.

Authorized by:

R. J. HENNESSY
Commander, U.S. Coast Guard
Chief, Hazardous Materials Standards Division
By direction of the Commandant

July 19, 2004
DATE

BARGE

C.2 Shippers Statements

ASARCO

Shippers Statement

RQ Hazardous Waste Solid, n.o.s
(contains arsenic and lead), class 9, NA 3077
PG III

This is to certify that the above-named hazardous material is properly named, prepared, and otherwise in proper condition for bulk shipment by vessel in accordance with the applicable regulations of the U.S. Department of Transportation and Coast Guard.

David K. Nation
Senior Manager Projects & Analytical
Asarco Consulting, Inc.

ASARCO INFORMATION CENTER, EVERETT SMELTER SITE
ASARCO Incorporated 545 Hawthorne Street Everett, WA 98201 (206) 259-0822 FAX: (206) 259-6248

BARGE

C.3 Manifests

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. W A D 9 8 8 5 1 2 6 3 8 — Manifest Document No. 0 4 0 2 3

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address ASARCO Inc.
5219 N Shirley Street
Ruston, WA 98407
Attn: Dave Nation

4. Generator's Phone (253) 752-1470

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Sound Freight Lines, Inc.

6. US EPA ID Number: W A K 0 0 0 0 2 3 9 0 3

C. State Transporter's ID

D. Transporter's Phone 253-565-3694

7. Transporter 2 Company Name: Manke Tug & Barge Company

8. US EPA ID Number: W A H 0 0 0 0 2 3 8 9 5

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address ASARCO Inc.
Tacoma Smelter OCF
Ruston Way and N 51st Street
Tacoma, WA 98407

10. US EPA ID Number: W A D 0 1 0 1 8 7 8 9 6

G. State Facility's ID

H. Facility's Phone (253) 752-1470

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	RQ Hazardous Waste Solid, n.o.s. (contains arsenic and lead), Class 9, NA 3077 PG III	X	1	Barge		T	D004 D008
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
For Emergency Procedures, consult DOT ERG 171
24 Hour Emergency Phone: (253) 890-3631

K. Handling Codes for Wastes Listed Above
Barge shipments under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information
Refer to EPA's Action Memorandum dated June 7, 2004 for details regarding the designation of the Tacoma Smelter Site as the disposal facility for Everett Smelter Site soil.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR**, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: Timothy J. Wilson — Signature: Timothy J. Wilson — Month Day Year: 10 8 1 4 0 4

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DANIEL L. WASHBURN — Signature: [signature] — Month Day Year: 10 8 1 4 0 4

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: Joel M Manke — Signature: Joel M Manke — Month Day Year: 10 8 1 4 04

FACILITY

19. Discrepancy Indication Space
CONTINUATION of PREVIOUS SHIPMENT - THIS MANIFEST COVERS SHIPMENTS #1 & 2 FROM ANARCY JOAN, DELIVERED 8/11 & 8/14/04

Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: DK NATION — Signature: DK Nation — Month Day Year: 10 8 1 6 04

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 Manifest Document No. 04044

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc. 5219 N. Shirley St. Ruston, WA 98407

4. Generator's Phone (253) 752-1470

5. Transporter 1 Company Name: Sound Freight Lines Inc
6. US EPA ID Number: WAH000023903

7. Transporter 2 Company Name: Manke Tug & Barge Co.
8. US EPA ID Number: WAH000023895

9. Designated Facility Name and Site Address
Asarco Inc - Tacoma Smelter OCF
Ruston Way + N. 51st St.
Tacoma WA 98407
10. US EPA ID Number: WAD010187896

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone: 253-565-5694
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone: 253-752-1470

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.	X	RQ Hazardous Waste Solid, N.O.S. (Contains arsenic + Lead) class 9, NA 3077 PG III	1	Barge		T	D004 D008
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
For emergency procedures consult DOT ERG-171
24-hr emergency phone: 253-820-3631

K. Handling Codes for Wastes Listed Above
Barge Shipment under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information
Refer to EPA's Action Memorandum, dated June 7, 2004 for details regarding designation of the Tacoma Smelter Site as the disposal facility for Everett Smelter Site soil.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Timothy J. Wilson
Signature: Timothy J. Wilson
Month Day Year: 08 21 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DANIEL L WASHBURN
Signature: Daniel L Washburn
Month Day Year: 08 21 04

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Stephen T. Ebbert
Signature: Stephen T. Ebbert
Month Day Year: 08 21 04

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: DAVID K NATION
Signature: D.K. Nation
Month Day Year: 08 23 04

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EPA Form 8700-22 (Rev. 9-88) Previous editions are obsolete.

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ORIGINAL-RETURN TO GENERATOR

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 Manifest Document No. 04025

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Incorporated
5219 N. Shirley St
Ruston, WA 98404

4. Generator's Phone (253-752-1470) Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Sound Freight Lines, Inc.

6. US EPA ID Number: WAH000023903

C. State Transporter's ID

D. Transporter's Phone: 253-565-5690

7. Transporter 2 Company Name: Manke Tug & Barge Co.

8. US EPA ID Number: WAH000023895

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
Asarco Inc - Tacoma Smelter OCF
Ruston Way + N. 51st St
Tacoma, WA 98407

10. US EPA ID Number: WAD010187896

G. State Facility's ID

H. Facility's Phone: 253-752-1470

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.	X RQ Hazardous Waste Solid, N.O.S. (contains Arsenic + lead), Class 9, NA 3077 PG III		1	Barge		T	D004 D008
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
For emergency procedures, consult DOT ERG #171
24-hr emergency phone: 253-820-3631

K. Handling Codes for Wastes Listed Above
Barge shipment under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information
Refer to EPA's Action Memorandum dated June 7, 2004 for details regarding designation of the Tacoma Smelter Site as the disposal facility for Everett Smelter Site soil.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Timothy J. Wilson | Signature: Timothy J. Wilson | Month Day Year: 10 18 2004

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Joel M. Manke | Signature: Joel M. Manke | Month Day Year: 10 18 2004

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: DK NATION | Signature: DK Nation | Month Day Year: 10 18 2004

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. W.A.D.9.8.8.5.1.2.6.3.8 Manifest Document No. 0.4.0.2.6

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc
5219 N Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 Attn: Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Sound Freight Lines, Inc.
6. US EPA ID Number: W.A.H.0.0.0.0.2.3.9.0.3

C. State Transporter's ID

D. Transporter's Phone (253) 565-5794

7. Transporter 2 Company Name: Manke Tug & Barge Co.
8. US EPA ID Number: W.A.H.0.0.0.0.2.3.8.9.5

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address Asarco Inc
Tacoma Smelter OCF
Ruston Way and N 51st Street
Tacoma, WA 98407
10. US EPA ID Number: W.A.D.0.1.0.1.8.7.8.9.6

G. State Facility's ID

H. Facility's Phone (253) 752-1470

GENERATOR

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	RQ Hazardous Waste, solid, n.o.s. (contains arsenic and lead), class 9, NA 3077 PG III	X	1	Barge		T	D004 D008
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
For Emergency Procedures, consult DOT ERG #171
24 Hour Emergency Phone: (253) 820-3631

K. Handling Codes for Wastes Listed Above
Barge Shipment under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information
Refer to EPA's Action Memorandum dated June 7, 2004 for details regarding the designation of the Tacoma Smelter site as the disposal facility for Everett Smelter site soil.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
Timothy J. Wilson	Timothy J. Wilson	08 28 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
DANIEL L. WASHBURN	D L Washburn	

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Joel M. Manke	Joel M Manke	08 28 04

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
DK NATION	DK Nation	08 30 04

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. W.A.D.9.8.8.5.1.2.6.3.8 Manifest Document No. 0.4.0.2.7

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

Generator's Name and Mailing Address ASARCO Inc.
5219 N Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 Attn: Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Sound Freight Lines, Inc.

6. US EPA ID Number: W.A.H.0.0.0.0.2.3.9.0.3

C. State Transporter's ID

D. Transporter's Phone (253) 565-5671

7. Transporter 2 Company Name: Manke Tug & Barge Co.

8. US EPA ID Number: W.A.H.0.0.0.0.2.3.8.9.5

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address ASARCO Inc.
Tacoma Smelter OCF
Ruston Way & N 51st Street
Tacoma, WA 98407

10. US EPA ID Number: W.A.D.0.1.0.1.8.7.8.9.6

G. State Facility's ID

H. Facility's Phone (253) 752-1470

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	15. Waste No.
a.	X	RQ Hazardous Waste, solid, n.o.s. (contains arsenic and lead), Class 9, NA 3077 PG III	1	Barge		T	D004 D008
b.							
c.							
d.							

GENERATOR

I. Additional Descriptions for Materials Listed Above
For Emergency Procedures, consult DOT ERG: 171
24 Hour Emergency Phone: (253) 820-5651

K. Handling Codes for Wastes Listed Above
Barge shipment under USCG special permit 04

15. Special Handling Instructions and Additional Information
Refer to EPA's Action Memorandum dated June 7, 2004 for details regarding the designation of the Tacoma Smelter site as the disposal facility for Everett Smelter Site soil.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
Timothy J. Wilson	Timothy J. Wilson	10 8 3 1 1 0 4

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
DANIEL L WASHBURN	R L Washburn	10 8 3 1 0 4

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Joel M. Manke	Joel M Manke	10 8 3 1 1 0 4

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
DK NATION	DK Nation	10 9 0 1 1 0 4

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. W.A.D.9.8.8.5.1.2.6.3.8 Manifest Document No. 0.4.0.2.8

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address ASARCO Inc.
5219 N Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 Attn: Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Sound Freight Lines, Inc.

6. US EPA ID Number: W.A.H.0.0.0.0.2.3.9.0.3

C. State Transporter's ID

D. Transporter's Phone (253) 565-5621

7. Transporter 2 Company Name: Manke Tug & Barge Co.

8. US EPA ID Number: W.A.H.0.0.0.0.2.3.8.9.5

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address ASARCO Inc.
Tacoma Smelter OCF
Ruston Way & N 51st Street
Tacoma, WA 98407

10. US EPA ID Number: W.A.D.0.1.0.1.8.7.8.9.1.0

G. State Facility's ID

H. Facility's Phone (253) 752-1470

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	X	RQ Hazardous Waste, solid, n.o.s. (contains arsenic and lead), Class 9, NA 3077 PG III	1	Barge		T	D004 D008
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
For Emergency Procedures, consult DOT ERG 171
24 Hour Emergency Phone: (253) 820-3631

K. Handling Codes for Wastes Listed Above
Barge shipment under USCG special permit 2-04

15. Special Handling Instructions and Additional Information
Refer to EPA's Action Memorandum dated June 7, 2004 for details regarding the designation of the Tacoma Smelter Site as the disposal facility for Everett Smelter Site Soil.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR**, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: TIMOTHY J. WILSON | Signature: Timothy J. Wilson | Month Day Year: 10 9 0 2 0 4

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DANIEL L. WASHBURN | Signature: Daniel L. Washburn | Month Day Year: 10 9 0 2 0 4

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: JOEL M. MANKE | Signature: Joel M Manke | Month Day Year: 10 9 0 2 0 4

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: DK NATION | Signature: DK Nation | Month Day Year: 10 9 0 3 0 4

~~NON~~-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

~~NON~~-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. WAD 988 512 638	Manifest Document No. 04029	2. Page 1 of 1
3. Generator's Name and Mailing Address ASARCO Inc. 5219 N. Shirley Street Ruston, WA 98407			
4. Generator's Phone (253) 752-1470 Attn: Dave Nation			
5. Transporter 1 Company Name: Sound Freight Lines, Inc.	6. US EPA ID Number: WAH 000023903	A. State Transporter's ID	
		B. Transporter 1 Phone (253) 565-5694	
7. Transporter 2 Company Name: Manke Tug & Barge Co.	8. US EPA ID Number: WAH 000023895	C. State Transporter's ID	
		D. Transporter 2 Phone	
9. Designated Facility Name and Site Address ASARCO Inc. - Tacoma Smelter Sitewide Cap Ruston Way & N 51st Street Tacoma, WA 98407	10. US EPA ID Number: WAD 010 187 896	E. State Facility's ID	
		F. Facility's Phone (253) 752-1470	

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. RQ Environmentally Hazardous Substance Solid, n.o.s. (contains arsenic and lead), Class 9, UN 3077 PG III	1	Barge		T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
For Emergency Procedures, consult DOT ERG: 171

24 Hour Emergency Phone: (253) 820-3631

H. Handling Codes for Wastes Listed Above
Barge shipment under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information
Refer to EPA's Action Memorandum dated June 7, 2004 for details regarding the designation of the Tacoma Smelter Site as the disposal facility for Everett Smelter Site soil.

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
TIMOTHY J. WILSON	Timothy J Wilson	09 07 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
DANIEL L WASHBURN	Daniel L Washburn	09 07 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
Joel M. Manke	Joel M. Manke	9 7 04

FACILITY

19. Discrepancy Indication Space
THIS MANIFEST IS A HAZARDOUS WASTE MANIFEST

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
DK NATION	DK Nation	09 08 04

NON-HAZARDOUS WASTE

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. W.A.D.9.8.8.5.1.2.6.3.8 Manifest Document No. 0.4.0.3.0

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address Asarco Inc.
5219 N Shirley Street
Ruston, WA 98407
Attn: Dave Nation

4. Generator's Phone (253) 752-1470

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Sound Freight Lines, Inc.

6. US EPA ID Number: W.A.H.0.0.0.0.2.3.9.0.3

C. State Transporter's ID

D. Transporter's Phone (253) 565-5694

7. Transporter 2 Company Name: Manke Tug & Barge Co.

8. US EPA ID Number: W.A.H.0.0.0.0.2.3.8.9.5

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address ASARCO Inc.
Tacoma Smelter OCF
Ruston Way & N 51st Street
Tacoma, WA 98407

10. US EPA ID Number: W.A.D.0.1.0.1.8.7.8.9.6

G. State Facility's ID

H. Facility's Phone (253) 759-1470

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	RQ Hazardous Waste solid, nos. (contains arsenic and lead), Class 9, NA 3077 PG III	X	1	Barge		T	D004 D008
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
For Emergency Procedures, consult DOT ERG 171
24 Hour Emergency Phone: (253) 820-3631

K. Handling Codes for Wastes Listed Above
Barge Shipment under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information
Refer to EPA's Action Memorandum dated June, 7 2004 for details regarding the designation of the Tacoma Smelter site as the disposal facility for Everett Smelter site soil.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR**, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name	Signature	Month Day Year
TIMOTHY T. WILSON	Timothy T. Wilson	09 08 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
DANIEL L WASHBURN	Daniel L Washburn	09 08 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
ADRIAN ANDERSON	Adrian Anderson	09 09 04

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
DK NATION	DK Nation	09 09 04

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Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. W A D 9 8 8 5 1 2 6 3 8 — Manifest Document No. 0 4 0 3 1

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

Generator's Name and Mailing Address: Asarco Inc, 5219 N. Shirley St, Ruston, WA 98407

4. Generator's Phone (253) 752-1470 Attn: Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Sound Freight Lines Inc. — 6. US EPA ID Number: W A H 0 0 0 0 2 3 9 0 3

C. State Transporter's ID

D. Transporter's Phone: 253-565-5694

7. Transporter 2 Company Name: Manke Tug & Barge Co. — 8. US EPA ID Number: W A H 0 0 0 0 2 3 8 9 5

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address: Tacoma Smelter OCF, Ruston Way & N. 51st Street, Tacoma WA 98407 — 10. US EPA ID Number: W A D 0 1 0 1 8 7 8 9 6

G. State Facility's ID

H. Facility's Phone: 253-752-1470

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	RQ Hazardous Waste Solid, n.o.s. (contains arsenic and lead), class 9 NA 3077 PG III	X		Barge		T	D004 D008
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above: For Emergency Procedures Consult DOT ERG #171. 24 hour Emergency Phone (253) 820-3631

K. Handling Codes for Wastes Listed Above: Barge Shipment under USCG special permit 2-04

15. Special Handling Instructions and Additional Information: Refer to EPA's Action Memo dated June 7, 2004 for details regarding the designation of the Tacoma Smelter Site as the disposal facility for Everett Smelter Site Soil

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR**, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR — Printed/Typed Name: TIMOTHY J. WILSON — Signature: Timothy J. Wilson — Month Day Year: 09 11 04

TRANSPORTER — 17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: DANIEL L. WASHBURN — Signature: Daniel L. Washburn — Month Day Year: 09 11 04

18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name: Adrian Anderson — Signature: Adrian Anderson — Month Day Year: 09 11 04

FACILITY — 19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: DK NATION — Signature: DK Nation — Month Day Year: 09 13 04

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: W.A.D.9.8.8.5.1.2.6.3.8 — Manifest Document No.: 0.4.0.3.2

2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Asarco Inc, 5219 N. Shirley St., Ruston, WA 98407

4. Generator's Phone (253) 752-1470 Attn: Dave Nation

A. State Manifest Document Number:

B. State Generator's ID:

5. Transporter 1 Company Name: Sound Freight Lines Inc — 6. US EPA ID Number: WAH000023903

C. State Transporter's ID:

D. Transporter's Phone: 253-565-5694

7. Transporter 2 Company Name: Manke Tug & Barge Co. — 8. US EPA ID Number: WAH000023895

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address: Tacoma Smelter OCF, Ruston Way & 51st Street, Tacoma, WA 98407 — 10. US EPA ID Number: WAD010187896

G. State Facility's ID:

H. Facility's Phone: 253-752-1470

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	X	RQ Hazardous Waste Solid, n.o.s. (contains arsenic & lead) class 9 NA 3077 PG III		Barge		T	D004 D008
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above: For Emergency Procedures consult DOT ERG 171. 24 hour Emergency phone 253-820-3631

K. Handling Codes for Wastes Listed Above: Barge Shipment under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information: Refer to EPA's Action Memo dated June 7, 2004 for details reguarding the designation of the Tacoma Smelter Site as the disposal facility for Everett Smelter Site soil.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: TIMOTHY J. WILSON — Signature: Timothy J. Wilson — Month Day Year: 09 14 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DANIEL L WASHBURN — Signature: D L Washburn — Month Day Year: 09 14 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: MARK WILLIAMSON — Signature: Mark Williamson — Month Day Year: 09 14 04

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: DK NATION — Signature: DK Nation — Month Day Year: 09 15 04

GENERATOR — TRANSPORTER — FACILITY

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ORIGINAL-RETURN TO GENERATOR

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 Manifest Document No. 04033

2. Page 1 of

Information in the shaded areas is not required by Federal law.

Generator's Name and Mailing Address: Asarco Inc, 5219 N. Shirley St., Ruston WA 98407

4. Generator's Phone (253) 752-1470 Attn: DAVE NATION

5. Transporter 1 Company Name: Sound Freight Lines INC

6. US EPA ID Number: WAH000023903

7. Transporter 2 Company Name: Manke Tug & Barge Co.

8. US EPA ID Number: WAH000023895

9. Designated Facility Name and Site Address: Tacoma Smelter QCF, Ruston Way & 51st Street, Tacoma, WA 98407

10. US EPA ID Number: WAD010187896

A. State Manifest Document Number

B. State Generator's ID

C. State Transporter's ID

D. Transporter's Phone 253-565-8695

E. State Transporter's ID

F. Transporter's Phone

G. State Facility's ID

H. Facility's Phone 253-752-1470

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	X	RQ Hazardous Waste Solid, n.o.s. (contains arsenic & lead) Class 9 NA 3077 PG III		Barge		T	D004 D008
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above: For Emergency Procedures Consult DOT ERG 171. 24 hour Emergency phone 253-820-3651.

K. Handling Codes for Wastes Listed Above: Barge shipment under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information: Refer to EPA's Action Memo dated June 7, 2004 for details regarding the designation of the Tacoma Smelter Site as the disposal facility for Everett Smelter Site Soil.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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GENERATOR — Printed/Typed Name: Timothy J. Wilson — Signature: [signature] — Month Day Year: 09 18 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: Daniel L Washburn — Signature: [signature] — Month Day Year: 09 18 04

18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name: Joel Manke — Signature: Joel Manke — Month Day Year: 09 18 04

FACILITY

19. Discrepancy Indication Space

Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: DK NATION — Signature: DK Nation — Month Day Year: 09 20 04

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD988512638 — Manifest Document No.: 04034
2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Asarco Inc, 5219 N. Shirley St, Ruston, WA 98407
4. Generator's Phone (253) 752-1470 Attn: Dave Nation

A. State Manifest Document Number:
B. State Generator's ID:
C. State Transporter's ID:
D. Transporter's Phone: 253-565-5694
E. State Transporter's ID:
F. Transporter's Phone:
G. State Facility's ID:
H. Facility's Phone: 253-752-1470

5. Transporter 1 Company Name: Sound Frieght Lines Inc
6. US EPA ID Number: WAH000023903
7. Transporter 2 Company Name: Manke Tug & Barge Co
8. US EPA ID Number: WAH000023895
9. Designated Facility Name and Site Address: Tacoma Smelter OCF, Ruston Way & N. 51st St., Tacoma, WA 98407
10. US EPA ID Number: WAD010187896

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	X	RQ Hazardous Waste Solid, n.o.s. (contains arsenic & lead), Class 9, NA3077 PG III		Barge		T	D004 D008
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above: For Emergency Procedure Consult DOT ERG 171. 24 hour Emergency Phone: 253-820-3651

K. Handling Codes for Wastes Listed Above: Barge Shipment under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information: Refer to EPA's Action Memo dated June 7, 2004 for details regarding the designation of the Tacoma Smelter Site as the disposal facility for Everett Smelter Site Soil.

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR**, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: TIMOTHY J. WILSON — Signature: [signature] — Month Day Year: 09 22 04

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DANIEL L WASHBURN — Signature: [signature] — Month Day Year: 09 22 04

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: MARK T WILLIAMSON — Signature: [signature] — Month Day Year: 09 22 04

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: DK NATION — Signature: [signature] — Month Day Year: 09 23 04

GENERATOR / TRANSPORTER / FACILITY

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ORIGINAL - RETURN TO GENERATOR

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 Manifest Document No. 04035

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc
5219 N. Shirley St
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 Attn: Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Sound Freight Lines Inc
6. US EPA ID Number: WAH000023903

C. State Transporter's ID

D. Transporter's Phone: 253-565-5594

7. Transporter 2 Company Name: Manke Tug & Barge Co.
8. US EPA ID Number: WAH000023855

E. State Transporter's ID

F. Transporter's Phone:

9. Designated Facility Name and Site Address
Tacoma Smelter OCF
Ruston Way & N. 51st St.
Tacoma WA 98407
10. US EPA ID Number: WAD010187896

G. State Facility's ID

H. Facility's Phone: 253-752-1470

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	RQ Hazardous Waste Solid, n.o.s. (contains arsenic & lead), class 9 PG III	X		Barge		T	D004 D008
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
For Emergency Procedures consult DOT ERG: 171
24 Hour Emergency Phone: 253-920-3651

K. Handling Codes for Wastes Listed Above
Barge shipment under USCG special permit 2-04

15. Special Handling Instructions and Additional Information
Refer to EPA's Action Memo dated June 7, 2004 for details regarding the designation of the Tacoma Smelter Site as the disposal facility for Everett Smelter Site Soil.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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GENERATOR

Printed/Typed Name: TIMOTHY J. WILSON | Signature: Timothy J. Wilson | Month Day Year: 09 13 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DANIEL L WASHBURN | Signature: Daniel L Washburn | Month Day Year: 09 13 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: ADRIAN Anderson | Signature: [illegible] | Month Day Year: 09 13 04

FACILITY

19. Discrepancy Indication Space

Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: DK NATION | Signature: DK Nation | Month Day Year: 09 13 04

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD 988 512 638

Manifest Document No.: 04036

2. Page 1 of 1

3. Generator's Name and Mailing Address: Asarco Inc.
5219 N Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 Attn: Dave Nation

5. Transporter 1 Company Name: Sound Freight Lines, Inc.

6. US EPA ID Number: WAH000023903

A. State Transporter's ID

B. Transporter 1 Phone: (253) 565-5694

7. Transporter 2 Company Name: Munke Tug & Barge Co.

8. US EPA ID Number: WAH000023855

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: ASARCO Inc - Tacoma Smelter Sitewide Cap
Ruston Way and N 51st Street
Tacoma, WA 98407

10. US EPA ID Number: WAD 010 187 896

E. State Facility's ID

F. Facility's Phone: (253) 752-1470

GENERATOR

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. RQ Environmentally Hazardous Substance Solid, n.o.s. (contains arsenic & lead), Class 9, UN 3077 PG III	1	Barge		T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
For emergency procedures, consult DOT ERG: 171

24 Hour Emergency Phone: (253) 820-3631

H. Handling Codes for Wastes Listed Above
Barge shipment under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information
Refer to EPA's Action Memorandum dated June 7, 2004 for details regarding the designation of the Tacoma Smelter Site as the disposal facility for Everett Smelter Site soil.

NON-HAZARDOUS WASTE

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: TIMOTHY J. WILSON — Signature: Timothy J. Wilson — Date: Month 10 Day 01 Year 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: D L WASHBURN — Signature: D L Washburn — Date: Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: Robert Shrewsbury Jr — Signature: Robert Shrewsbury Jr — Date: Month 10 Day 2 Year 04

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: DK NATION — Signature: DK Nation — Date: Month 10 Day 04 Year 04

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD 988 512 638

Manifest Document No.: 04037

2. Page 1 of 1

3. Generator's Name and Mailing Address: ASARCO Inc.
5219 N Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 Attn: Dave Nation

5. Transporter 1 Company Name: Sound Freight Lines, Inc.

6. US EPA ID Number: WAH 000023903

A. State Transporter's ID

B. Transporter 1 Phone: (253) 565-5694

7. Transporter 2 Company Name: Manke Tug & Barge Co.

8. US EPA ID Number: WAH 000023895

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: ASARCO Inc. – Tacoma Smelter Sitewide Cap
Ruston Way and N 51st Street
Tacoma, WA 98407

10. US EPA ID Number: WAD 010 187 896

E. State Facility's ID

F. Facility's Phone: (253) 752-1470

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. RQ Environmentally Hazardous Substance Solid, n.o.s. (contains arsenic and lead), Class 9, UN3077 PG III	1	Barge		T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
For Emergency Procedures, consult DOT ERG: 171

24 Hour Emergency Phone: (253) 820-3631

H. Handling Codes for Wastes Listed Above
Barge Shipment under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information
Refer to EPA's Action Memorandum dated June 7, 2004 for details regarding the designation of the Tacoma Smelter site as the disposal facility for Everett Smelter Site soil.

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

GENERATOR

Printed/Typed Name: TIMOTHY J. WILSON
Signature: Timothy J. Wilson
Date: Month 10 Day 06 Year 04

17. Transporter 1 Acknowledgement of Receipt of Materials

TRANSPORTER

Printed/Typed Name: DANIEL L WASHBURN
Signature: D L Washburn
Date: Month 10 Day 06 Year 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: DONALD E TOWNSEND
Signature: [illegible]
Date: Month 10 Day 6 Year 04

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: DK NATION
Signature: DK Nation
Date: Month 10 Day 07 Year 04

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD 988 512 638

Manifest Document No.: 04038

2. Page 1 of 1

3. Generator's Name and Mailing Address: Asarco Inc.
5219 N Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 Attn: Dave Nation

5. Transporter 1 Company Name: Sound Freight Lines, Inc

6. US EPA ID Number: WAH 0000 23903

A. State Transporter's ID

B. Transporter 1 Phone: 253-565-5694

7. Transporter 2 Company Name: Manke Tug & Barge Co.

8. US EPA ID Number: WAH 0000 23895

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: ASARCO Inc.- Tacoma Smelter Site Wide Cap
Ruston Way and N 51st Street
Tacoma, WA 98407

10. US EPA ID Number: WAD 010 187 896

E. State Facility's ID

F. Facility's Phone: 253-752-1470

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. RQ Environmentally Hazardous Substance Solid, n.o.s. (contains arsenic and lead), Class 9, UN 3077 PG III	1	Barge		T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above
For Emergency procedures, consult DOT ERG: 171

24 Hour Emergency Phone: (253) 820-3631

H. Handling Codes for Wastes Listed Above
Barge shipment under USCG Special Permit 2-04.

15. Special Handling Instructions and Additional Information
Refer to EPA's Action Memorandum dated June 7, 2004 for details regarding the designation of the Tacoma Smelter Site as the disposal facility for Everett Smelter Site soil.

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: TIMOTHY J. WILSON
Signature: Timothy J. Wilson
Date: Month 10 Day 11 Year 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DANIEL L WASHBURN
Signature: Daniel L Washburn
Date: Month 10 Day 11 Year 04

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: JAMES B. COZINA
Signature: James B. Cozina
Date: Month 10 Day 11 Year 04

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.
Printed/Typed Name: DK NATION
Signature: DK Nation
Date: Month 10 Day 12 Year 04

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD 988 512 638

Manifest Document No.: 39 040~~39~~

2. Page 1 of 1

3. Generator's Name and Mailing Address
ASARCO INCORPORATED
5219 N SHIRLEY ST, SUITE 100
RUSTON, WA 98407

4. Generator's Phone (253) 752-1470

5. Transporter 1 Company Name: Sound Freight Lines Inc

6. US EPA ID Number: WAH000023903

A. State Transporter's ID

B. Transporter 1 Phone: 253-565-5684

7. Transporter 2 Company Name: Manke Tug & Barge Co

8. US EPA ID Number: WAH000023895

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
ASARCO INC-Tacoma Smelter Sitewide Cap
RUSTON WAY AND N 51ST STREET
TACOMA, WA 98407

10. US EPA ID Number: 01WAD 010187896

E. State Facility's ID

F. Facility's Phone: 253-752-1470

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. RQ Environmentally Hazardous Substance Solid, n.o.s. (contains arsenic and lead), Class 9, UN 3077 PGIII	1	~~DT~~ Barge		T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

For emergency procedures, consult DOT ERG: 171
24-hour emergency phone: 253-820-3631

H. Handling Codes for Wastes Listed Above

Barge shipment under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information

Refer to EPA's Action Memo dated 6/7/2004 for details regarding the designation of the Tacoma Smelter site as the disposal facility for Everett Smelter Site soil.

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: TIMOTHY J. WILSON — Signature: Timothy J. Wilson — Date: Month 10 Day 14 Year 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DANIEL L WASHBURN — Signature: Daniel L Washburn — Date: Month 10 Day 14 Year 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: RH SHREWSBURY II — Signature: [illegible] — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: DK NATION — Signature: DK Nation — Date: Month 10 Day 15 Year 04

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD 988 512 638

Manifest Document No.: 04040

2. Page 1 of 1

3. Generator's Name and Mailing Address
ASARCO INCORPORATED
5219 N SHIRLEY ST, SUITE 100
RUSTON, WA 98407

4. Generator's Phone (253) 752-1470

5. Transporter 1 Company Name: Sound Freight Lines Inc.

6. US EPA ID Number: WAH 000023903

A. State Transporter's ID

B. Transporter 1 Phone: 253-565-5694

7. Transporter 2 Company Name: Manke Tug & Barge Co.

8. US EPA ID Number: WAH 000023895

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
ASARCO INC-Tacoma Smelter Sitewide Cap
RUSTON WAY AND N 51ST STREET
TACOMA, WA 98407

10. US EPA ID Number: 01WAD 010187896

E. State Facility's ID

F. Facility's Phone: 253-752-1470

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. RQ Environmentally Hazardous Substance Solid, n.o.s. (contains arsenic and lead), Class 9, UN 3077 PGIII	1	~~DT~~ Barge		T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

For emergency procedures, consult DOT ERG: 171
24-hour emergency phone: 253-820-3631

H. Handling Codes for Wastes Listed Above

Barge Shipment under USCG Special Permit 2-04

15. Special Handling Instructions and Additional Information

Refer to EPA's Action Memo dated 6/7/2004 for details regarding the designation of the Tacoma Smelter site as the disposal facility for Everett Smelter Site soil.

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date (Month Day Year)
DAVID K NATION	D K Nation	10 17 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
DANIEL L WASHBURN	D L Washburn	10 17 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
David Noreen	D Noreen	10 17 04

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date (Month Day Year)
DK NATION	DK Nation	10 18 04

GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD 988 512 638

Manifest Document No. 04041

2. Page 1 of 1

3. Generator's Name and Mailing Address
ASARCO INCORPORATED
5219 N SHIRLEY ST, SUITE 100
RUSTON, WA 98407

4. Generator's Phone (253) 752-1470

5. Transporter 1 Company Name: SOUND FREIGHT LINES INC.
6. US EPA ID Number: WAH000023903

A. State Transporter's ID
B. Transporter 1 Phone: 253-565-5694

7. Transporter 2 Company Name: MANKE TUG & BARGE CO
8. US EPA ID Number: WAH000023895

C. State Transporter's ID
D. Transporter 2 Phone

9. Designated Facility Name and Site Address
ASARCO INC-Tacoma Smelter Sitewide Cap
RUSTON WAY AND N 51ST STREET
TACOMA, WA 98407

10. US EPA ID Number: 01WAD 010187896

E. State Facility's ID
F. Facility's Phone: 253-752-1470

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
RQ Environmentally Hazardous Substance Solid, n.o.s. (contains arsenic and lead), Class 9, UN 3077 PGIII	1	~~DT~~ BARGE		T
b. DK Nation				
c.				
d.				

GENERATOR

G. Additional Descriptions for Materials Listed Above

For emergency procedures, consult DOT ERG: 171
24-hour emergency phone: 253-820-3631.

H. Handling Codes for Wastes Listed Above

BARGE SHIPMENT UNDER USCG SPECIAL PERMIT 2-04

15. Special Handling Instructions and Additional Information

Refer to EPA's Action Memo dated 6/7/2004 for details regarding the designation of the Tacoma Smelter site as the disposal facility for Everett Smelter Site soil.

NON-HAZARDOUS WASTE

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: DAVID K. NATION
Signature: David K. Nation
Date: Month 10 Day 21 Year 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: DANIEL L WASHBURN
Signature: Daniel L Washburn
Date: Month 10 Day 21 Year 04

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Joel M. Manke
Signature: Joel M Manke
Date: Month 10 Day 21 Year 04

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: DK NATION
Signature: DK Nation
Date: Month 10 Day 22 Year 04

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD 988 512 638

Manifest Document No.: 04042

2. Page 1 of 1

3. Generator's Name and Mailing Address
ASARCO INCORPORATED
5219 N SHIRLEY ST, SUITE 100
RUSTON, WA 98407

4. Generator's Phone (253) 752-1470

5. Transporter 1 Company Name: Sound Freight Lines Inc.
6. US EPA ID Number: WAH000023903

A. State Transporter's ID
B. Transporter 1 Phone: 253-565-5644

7. Transporter 2 Company Name: Manke Tug & Barge Co
8. US EPA ID Number: WAH000023895

C. State Transporter's ID
D. Transporter 2 Phone

9. Designated Facility Name and Site Address
ASARCO INC-Tacoma Smelter Sitewide Cap
RUSTON WAY AND N 51ST STREET
TACOMA, WA 98407

10. US EPA ID Number: 01WAD 010187896

E. State Facility's ID

F. Facility's Phone: 253-752-1470

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. RQ Environmentally Hazardous Substance Solid, n.o.s. (contains arsenic and lead), Class 9, UN 3077 PGIII	1	Barge ~~DT~~		T
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

For emergency procedures, consult DOT ERG: 171
24-hour emergency phone: 253-820-3631

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

Refer to EPA's Action Memo dated 6/7/2004 for details regarding the designation of the Tacoma Smelter site as the disposal facility for Everett Smelter Site soil.

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Timothy J. Wilson | Signature: Timothy J. Wilson | Date (Month Day Year): 10 25 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: DANIEL L WASHBURN | Signature: D L Washburn | Date (Month Day Year): 10 25 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: ADRIAN ANDERSON | Signature: [illegible] | Date (Month Day Year): 10 26 04

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: DK NATION | Signature: DK Nation | Date (Month Day Year): 10 26 04

NON-HAZARDOUS WASTE

BARGE

C.4 JTC's Ready Weights

Everett Soil Tracking Summary			Final Quantity Tally	Rev. 6	3-Nov-04				
Source Material Removal									
Barge	Material Shipped	Manifest	Date Shipped/Received	Barge No.	Shipment No.	Beginning Tons	Ending Tons	Total Tons Delivered	Cummulative Tons Delivered
Marcy Joan	Source	04023	8/10/04 / 8/11/04	1	1	2194	1026	1168	1168
Marcy Joan	Source	04023	8/14/04 / 8/16/04	2	2	4345	368	3977	5145
Marcy Joan	Source	04024	8/21/04 / 8/23/04	3	3	4153	521	3632	8777
Marcy Joan	Source	04025	8/26/04 / 8/27/04	4	4	3632	368	3264	12041
Hazhauler	Source	04026	8/28/04 / 8/30/04	1	5	2292	808	1484	13525
Marcy Joan	Source	04027	8/31/04 / 9/1/04	5	6	3585	237	3348	16873
Hazhauler	Source	04028	9/2/04 / 9/3/04	2	7	3990	1240	2750	19623
Marcy Joan	Source	04029	9/7/04 / 9/8/04	6	8	3351	249	3102	22725
Hazhauler	Source	04030	9/8/04 / 9/9/04	3	9	3077	1147	1930	24655
Marcy Joan	Source	04031	9/11/04 / 9/13/04	7	10	4464	259	4205	28860
Hazhauler	Source	04032	9/14/04 / 9/15/04	4	11	3658	1187	2471	31331
Marcy Joan	Source	04033	9/18/04 / 9/20/04	8	12	4668	521	4147	35478
Hazhauler	Source	04034	9/22/04 / 9/23/04	5	13	4043	1100	2943	38421
Marcy Joan	Residential	04035	9/29/04 / 9/30/04	9	14	4632	2171	2461	40882
Marcy Joan	Residential	04035	9/29/04 / 10/1/04	9	14	696	259	437	41319
Marcy Joan	Source	04035	9/29/04 / 10/1/04	9	14	2171	696	1475	42794
Hazhauler	Residential	04036	10/2/04 / 10/4/04	6	15	4684	1145	3539	46333
Marcy Joan	Residential	04037	10/6/04 / 10/7/04	10	16	5396	281	5115	51448
Hazhauler	Residential	04038	10/11/04 / 10/12/04	7	17	4860	1130	3730	55178
Marcy Joan	Residential	04039	10/14/04 / 10/15/04	11	18	5677	281	5396	60574
Hazhauler	Residential	04040	10/17/04 / 10/18/04	8	19	4148	1240	2908	63482
Marcy Joan	Residential	04041	10/21/04 / 10/22/04	12	20	5936	194	5742	69224
Hazhauler	Residential	04042	10/25/04 / 10/26/04	9	21	4095	1100	2995	72219
Total Delivered Short Tons								72219	72219
Total Source Material Tons								39896	
Total Residential Material Tons								32323	
Check Balance								72219	

SALTWATER DISPLACEMENT, FOSS 245,246-SHORT TONS

FREEBOARD	DRAFT	TONS
14.0	1.0	350
13.9	1.1	383
13.8	1.2	416
13.7	1.3	449
13.6	1.4	482
13.5	1.5	515
13.4	1.6	548
13.3	1.7	581
13.2	1.8	614
13.1	1.9	647
13.0	2.0	680
12.9	2.1	714
12.8	2.2	748
12.7	2.3	782
12.6	2.4	816
12.5	2.5	850
12.4	2.6	884
12.3	2.7	918
12.2	2.8	952
12.1	2.9	986
12.0	3.0	1020
11.9	3.1	1058
11.8	3.2	1096
11.7	3.3	1134
11.6	3.4	1172
11.5	3.5	1210
11.4	3.6	1248
11.3	3.7	1286
11.2	3.8	1324
11.1	3.9	1362
11.0	4.0	1400
10.9	4.1	1439
10.8	4.2	1477
10.7	4.3	1516
10.6	4.4	1554
10.5	4.5	1593
10.4	4.6	1631
10.3	4.7	1670

FREEBOARD	DRAFT	TONS
10.2	4.8	1708
10.1	4.9	1747
10.0	5.0	1785
9.9	5.1	1824
9.8	5.2	1862
9.7	5.3	1901
9.6	5.4	1939
9.5	5.5	1978
9.4	5.6	2016
9.3	5.7	2055
9.2	5.8	2093
9.1	5.9	2132
9.0	6.0	2170
8.9	6.1	2209
8.8	6.2	2248
8.7	6.3	2287
8.6	6.4	2326
8.5	6.5	2365
8.4	6.6	2404
8.3	6.7	2443
8.2	6.8	2482
8.1	6.9	2521
8.0	7.0	2560
7.9	7.1	2600
7.8	7.2	2640
7.7	7.3	2680
7.6	7.4	2720
7.5	7.5	2760
7.4	7.6	2800
7.3	7.7	2840
7.2	7.8	2880
7.1	7.9	2920
7.0	8.0	2960
6.9	8.1	3000
6.8	8.2	3040
6.7	8.3	3080
6.6	8.4	3120
6.5	8.5	3160

FOSS 245,246

FREEBOARD	DRAFT	TONS
6.4	8.6	3200
6.3	8.7	3240
6.2	8.8	3280
6.1	8.9	3320
6.0	9.0	3360
5.9	9.1	3402
5.8	9.2	3444
5.7	9.3	3486
5.6	9.4	3528
5.5	9.5	3570
5.4	9.6	3612
5.3	9.7	3654
5.2	9.8	3696
5.1	9.9	3738
5.0	10.0	3780
4.9	10.1	3822
4.8	10.2	3864
4.7	10.3	3906
4.6	10.4	3948
4.5	10.5	3990
4.4	10.6	4032
4.3	10.7	4074
4.2	10.8	4116
4.1	10.9	4158
4.0	11.0	4200
3.9	11.1	4244
3.8	11.2	4288
3.7	11.3	4332
3.6	11.4	4376
3.5	11.5	4420
3.4	11.6	4464
3.3	11.7	4508 } 44
3.2	11.8	4552 } 44
3.1	11.9	4596 } 44
3.0	12.00	4640
	12.1	4684

Prepared from drawing 7703-3, 8-3-77, Robert A Smith Naval Architect-Marine Engineer.

THOMAS R. ANDERSON
STATE OF WASHINGTON
REGISTERED
PROFESSIONAL ENGINEER

Barge MARCI JOAN MANKE LUMBER

46 CFR 170.170 Calculations

Length = 272
Beam = 70
Depth = 18
VCG = 10.8

cargo length 251 feet

Light Ship Weight 1550 LTons

draft (feet)	displ. (LTons)	freeboard (feet)	tan(t)	hull area (sq. feet)	cargo height (feet)	cargo area (sq. feet)	total area (sq. feet)	"H" (feet)	GM(req) (feet)
4	1762.03	14	0.20	3808	187.71	47316.44	50924.44	109.86	89.20
5	2229.39	13	0.19	3536	154.49	38775.74	42311.74	92.74	50.87
6	2704.85	12	0.17	3264	129.16	32420.16	35684.16	79.58	33.89
7	3183.80	11	0.16	2992	109.15	27397.65	30389.65	69.08	22.52
8	3671.78	10	0.14	2720	93.32	23423.32	26143.32	60.66	16.23
9	4166.63	9	0.13	2448	80.81	20282.06	22730.06	53.90	12.27
10	4668.69	8	0.11	2176	70.25	17632.75	19808.75	48.13	9.59
11	5172.97	7	0.10	1904	61.56	15377.06	17281.06	43.53	7.89
12	5685.56	6	0.09	1632	55.19	13852.69	15484.69	39.60	6.74
13	6203.81	5	0.07	1360	49.29	12371.79	13731.79	36.15	6.01
14	6729.13	4	0.06	1088	44.20	11094.2	12182.20	33.10	5.63
15	7258.24	3	0.04	816	39.41	9895.675	10711.68	30.21	5.58
16	7794.14	2	0.03	544	34.26	8599.26	9143.26	27.13	5.98

draft (feet)	KM (feet)	KG (feet)	Cargo Wt. (LTons)	Total Moment (LTons-ft)	Lt. Ship Moment (LTons-ft)	Cargo Moment (LTons-ft)	KG Cargo (feet)	KG abv. Deck (feet)	Cargo Height (feet)
4	108.16	22.96	212.03	40457.14	16740	23717.14	111.86	93.86	187.71
5	87.40	36.93	679.3	81839.34	16740	64699.34	95.24	77.24	154.49
6	74.31	47.17	1132.85	111842.63	16740	[illegible]	[illegible]	64.58	129.16
7	[illegible]	56.50	1635.8	155313.65	16740	138573.65	72.58	54.58	109.15
8	58.15	64.93	2121.78	153936.05	16740	137196.05	64.66	46.66	93.32
9	52.97	70.70	2618.63	169583.02	16740	152843.02	58.40	40.40	80.81
10	48.66	75.07	3116.69	182313.90	16740	165573.90	53.12	35.12	70.25
11	45.47	77.88	3608.97	194375.41	16740	177635.41	49.03	31.03	62.06
12	42.86	79.19	4084.56	205293.46	16740	188553.46	45.59	27.59	55.19
13	40.70	79.69	4553.81	215202.02	16740	198462.02	42.65	24.65	49.29
14	38.98	79.35	5018.12	224390.30	16740	207650.30	40.10	22.10	44.20
15	37.58	77.97	5468.14	232023.59	16740	215283.59	37.71	19.71	39.43
16	36.37	76.29	5914.14	238098.03	16740	219358.03	35.13	17.13	34.26

draft = waterline
displ. = from a GHS hydrostatics run at zero trim (see app. B)
freeboard = Depth - draft
tan(t) = (.5 x freeboard) / (.5 x Beam)
hull area = freeboard x Length
cargo height = entered, see notes below
cargo area = cargo length x cargo height
total area = hull area + cargo area
H = (.5 x draft) + (.5 x cargo height) + freeboard

GM(req) = (P x [total area] x H) / (displ. x tan(t))
P = .005 + [(Length / 14200) x (Length / 14200)]
P = 0.005367
KM = from a GHS hydrostatics run at zero trim (see app.
KG = KM - GM(req)
Cargo Wt = displ. - Light Ship Weight
Total Moment = displ. x KG
Lt. Ship Moment = Light Ship Weight x VCG(ass)
Cargo Moment = Total Moment - Lt. Ship Moment
KG Cargo = Cargo Moment / Cargo Wt.
KG abv. Deck = Kg Cargo - Depth
Cargo Height = 2 x Kg abv. Deck

Comp bans
2240 prev
Show bon

LT X .01122 ST

4135
117
82270
4135
4135
463120

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY JOAN #1 Shipment No. 1

Date Received 8/11/04 Manifest Date 04023-8/14/04

Beginning of Off-load

Draft	Barge	Draft
7'-8"	Bow End	7'-11"
7'-5"	Stern End	7'-6"

Average Draft 7'-8"

Displacement in Long Tons from Chart 1959

Displacement in Short Tons (Long Tons X 1.12) 2194

End of Off-load

Draft	Barge	Draft
4'-0"	Bow End	4'-0"
7'-0"	Stern End	7'-0"

Average Draft 5'-6"

Displacement in Long Tons from Chart 916

Displacement in Short Tons (Long Tons X 1.12) 1026

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 1168

JTC, Inc.

Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY JOAN #2 Shipment No. 2

Date Received 8/16/04 Manifest Date 8/14/04-04023

Beginning of Off-load

Draft	Barge	Draft
11'-0"	Bow End	11'-1"
11'-11"	Stern End	12'-0"

Average Draft 11'-6"

Displacement in Long Tons from Chart 3,879

Displacement in Short Tons (Long Tons X 1.12) 4,345

End of Off-load

Draft	Barge	Draft
4'-1"	Bow End	3'-11"
4'-6"	Stern End	4'-6"

Average Draft 4'-3"

Displacement in Long Tons from Chart 329

Displacement in Short Tons (Long Tons X 1.12) 368

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 3,977

Gary Gray
JTC, Inc.

DK Nation
Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY #3 Shipment No. 3

Date Received 8/21/04 Manifest Date 8/23/04-040284

Beginning of Off-load

Draft	Barge	Draft
11'-6"	Bow End	10'-0"
12'-2"	Stern End	10'-11"

Average Draft 11'-2"

Displacement in Long Tons from Chart 3708

Displacement in Short Tons (Long Tons X 1.12) 4153

End of Off-load

Draft	Barge	Draft
4'-6"	Bow End	4'-7"
4'-6"	Stern End	4-7"

Average Draft 4'-6.5"

Displacement in Long Tons from Chart 465

Displacement in Short Tons (Long Tons X 1.12) 521

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 3632

JTC, Inc.

Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY #4 Shipment No. 4

Date Received 8/~~26~~ ~~30~~ 27/04 Manifest Date 08/~~28~~ 26/04 - 040~~26~~ 25

Beginning of Off-load

Draft	Barge	Draft
10'-1"	Bow End	10'-2"
10'-4"	Stern End	10'-5"

Average Draft 10'-3"

Displacement in Long Tons from Chart 3243

Displacement in Short Tons (Long Tons X 1.12) 3632

End of Off-load

Draft	Barge	Draft
4'-0"	Bow End	3'-10"
4'-8"	Stern End	4'-6"

Average Draft 4'-3"

Displacement in Long Tons from Chart 329

Displacement in Short Tons (Long Tons X 1.12) 368

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 3264

[signature]
JTC, Inc.

[signature]
Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge HAZHAULER #1 Shipment No. 5

Date Received 8/30/04 Manifest Date 8/28/04 - 04026

Beginning of Off-load

Draft	Barge	Draft
5'-5"	Bow End	5'-10"
6'-10"	Stern End	7'-2"

Average Draft 6'-3.75" = 6.3125'

Displacement in Long Tons from Chart – SHORT TONS

Displacement in Short Tons (Long Tons X 1.12) ~~1906~~ 2292

End of Off-load

Draft	Barge	Draft
2'-2"	Bow End	2'-3"
2'-6"	Stern End	2'-7"

Average Draft 2'-4.5" = 2.375'

Displacement in Long Tons from Chart SHORT TONS

Displacement in Short Tons (Long Tons X 1.12) 808

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 1484

Amy Gay
JTC, Inc.

DK Nelson
Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY #5 Shipment No. 6

Date Received 9/1/04 Manifest Date 8/31/04 - 04027

Beginning of Off-load

Draft	Barge	Draft
10'-2"	Bow End	10'-0"
10'-4"	Stern End	10'-2"

Average Draft 10'-2"

Displacement in Long Tons from Chart 3201

Displacement in Short Tons (Long Tons X 1.12) 3585

End of Off-load

Draft	Barge	Draft
3'-9"	Bow End	3'-9"
~~3~~4'-3"	Stern End	4'-3"

Average Draft 4'-0"

Displacement in Long Tons from Chart 212

Displacement in Short Tons (Long Tons X 1.12) 237

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 3348

Guy Jay
JTC, Inc.

DK Nation
Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge AAZ HAULER #2 Shipment No. #7

Date Received 9/3/04 Manifest Date 9/2/04 - 04028

Beginning of Off-load

Draft	Barge	Draft
10'-6"	Bow End	10'-1"
10'-11"	Stern End	10'-6"

Average Draft 10'-6" = 10.5'

Displacement in Long Tons from Chart - SHORT TONS

Displacement in Short Tons (Long Tons X 1.12) 3990

End of Off-load

Draft	Barge	Draft
3'-2"	Bow End	3'-4"
3'-9"	Stern End	4'-1"

Average Draft 3'-7" = 3.58'

Displacement in Long Tons from Chart - SHORT TONS

Displacement in Short Tons (Long Tons X 1.12) 1240

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 2750

ITC, Inc.

Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY #6 Shipment No. 8

Date Received 9/8/04 Manifest Date 9/7/04-04029

Beginning of Off-load

Draft	Barge	Draft
9'-6"	Bow End	8'-11"
10'-6"	Stern End	10'-1"

Average Draft 9'-9"

Displacement in Long Tons from Chart 2992

Displacement in Short Tons (Long Tons X 1.12) 3351

End of Off-load

Draft	Barge	Draft
3'-11"	Bow End	3'-10"
4'-2"	Stern End	4'-2"

Average Draft 4'-0.25"

Displacement in Long Tons from Chart 222

Displacement in Short Tons (Long Tons X 1.12) 249

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 3102

Gary B Gray
JTC, Inc.

DK Nation
Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge HAZHAULER #3 Shipment No. 9

Date Received 9/9/04 Manifest Date 9/8/04 - 04030

Beginning of Off-load

Draft	Barge	Draft
7'-4"	Bow End	7'-9"
8'-10"	Stern End	9'-3"

Average Draft 8'-3 1/2" 8.29 '

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 3077

End of Off-load

Draft	Barge	Draft
3'-1"	Bow End	3'-3"
3'-5"	Stern End	3'-7"

Average Draft 3'-4" 3.333'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 1147

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 1930

[signature]
JTC, Inc.

DK Nation
Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY #7 Shipment No. 10

Date Received 9/13/04 Manifest Date 9/11/04-04031

Beginning of Off-load

Draft	Barge	Draft
11'-9"	Bow End	11'-1"
12'-4"	Stern End	11'-8"

Average Draft 11'-8.5"

Displacement in Long Tons from Chart 3986

Displacement in Short Tons (Long Tons X 1.12) ~~39~~ 4464

End of Off-load

Draft	Barge	Draft
3'-11"	Bow End	3'-10"
4'-3"	Stern End	4'-2"

Average Draft 4'-0.5"

Displacement in Long Tons from Chart 232

Displacement in Short Tons (Long Tons X 1.12) 259

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 4205

JTC, Inc.

Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge HAZHAULER 4 Shipment No. 11

Date Received 9/15/04 Manifest Date 9/14/04 - 04032

Beginning of Off-load

Draft	Barge	Draft
~~4'~~ 8'-9	Bow End	9'-9"
9'-8"	Stern End	10'-8"

Average Draft 9'-8.5" = 9.71'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 3658

End of Off-load

Draft	Barge	Draft
~~3'-0~~ 2'-11"	Bow End	3'-~~4~~"1"
3'-~~7~~"6"	Stern End	3'-~~10~~"7"

NOTE- REVISED NBRS AFTER DECON.

Average Draft 3'-~~8~~ 3.25" = 3.~~44~~ 27'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) ~~1107~~ 1123

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = ~~2471~~ 2535

JTC, Inc.

Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY #8 Shipment No. 12

Date Received 9/20/04 Manifest Date 9/18/04 - 04033

Beginning of Off-load

Draft	Barge	Draft
11'-5"	Bow End	11'-9"
12'-5"	Stern End	12'-8"

Average Draft 12'-0.75"

Displacement in Long Tons from Chart 4168

Displacement in Short Tons (Long Tons X 1.12) 4668

End of Off-load

Draft	Barge	Draft
~~2'-8~~ 5'-7"	Bow End	5'-8"
3'-5"	Stern End	3-6"

Average Draft 4'-6.5"

Displacement in Long Tons from Chart 465

Displacement in Short Tons (Long Tons X 1.12) 521

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 4147

JTC, Inc. Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MAZHAULER #5 Shipment No. 13

Date Received 9/23/04 Manifest Date 9/22/04 -04034

Beginning of Off-load

Draft	Barge	Draft
10'-9"	Bow End	11'-0"
10'-3"	Stern End	10'-6"

Average Draft 10'-7.5" = 10.625'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 4043

End of Off-load

Draft	Barge	Draft
3'-1"	Bow End	3'-1"
3'-4"	Stern End	3'-4"

Average Draft 3'-2.5" = 3.21'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 1100

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 2943

Larry Gay
JTC, Inc.

DK Nation
Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY #9 Shipment No. 14

Date Received ~~9/30/04~~ 9/30/04 10/1/04 Manifest Date ~~9/30~~ 9/29/04 - 04035

RESIDENTIAL

Beginning of Off-load

Draft	Barge	Draft
11'-5"	Bow End	11'-8"
12'-4"	Stern End	12'-7"

Average Draft 12'-0"

Displacement in Long Tons from Chart 4136

Displacement in Short Tons (Long Tons X 1.12) 4632

End of Off-load

Draft	Barge	Draft
10'-3"	Bow End	9'-9"
5'-7"	Stern End	5'-0"

Average Draft ~~7'-5~~ 7'-7.5"

Displacement in Long Tons from Chart 1939

Displacement in Short Tons (Long Tons X 1.12) 2171

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 2461

Larry Gay
JTC, Inc.

D K Nelson
Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY #9 Shipment No. 14

Date Received 9/30-10/1/04 Manifest Date 9/29/04 - 04035

RESIDENTIAL

Beginning of Off-load

Draft	Barge	Draft
2'-9"	Bow End	2'-6"
7'-3"	Stern End	7'-0"

Average Draft 4'-10.5"

Displacement in Long Tons from Chart 621

Displacement in Short Tons (Long Tons X 1.12) 696

End of Off-load

Draft	Barge	Draft
3'-10"	Bow End	3'-10"
4'-3"	Stern End	4'-3"

Average Draft 4'-0.5"

Displacement in Long Tons from Chart 231

Displacement in Short Tons (Long Tons X 1.12) 259

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 437

JTC, Inc.

Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY #9 Shipment No. 14

Date Received 9/30-10/1/04 Manifest Date 9/29/04-04035

HAZARDOUS - SOURCE

Beginning of Off-load

Draft	Barge	Draft
10'-3"	Bow End	9'-9"
5'-7"	Stern End	5'-0"

Average Draft 7'-7.5"

Displacement in Long Tons from Chart 1939

Displacement in Short Tons (Long Tons X 1.12) 2171

End of Off-load

Draft	Barge	Draft
2'-9"	Bow End	2'-6"
7'-3"	Stern End	7'-0"

Average Draft 4'-10.5"

Displacement in Long Tons from Chart 621

Displacement in Short Tons (Long Tons X 1.12) 696

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 1475

JTC, Inc.

Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge HAZHAULER #6 Shipment No. 15

Date Received 10/4/04 Manifest Date 10/2/04 - 04036

Beginning of Off-load

Draft	Barge	Draft
11'-9	Bow End	12'-7
11'-7"	Stern End	12'-6

Average Draft 12'-1.25" = 12.10'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 4684

End of Off-load

Draft	Barge	Draft
3'-1"	Bow End	3'-3"
3'-5"	Stern End	3'-7"

Average Draft 3'-4" = 3.33'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 1145

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 3539

Larry Jay
JTC, Inc.

DK Nation
Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY # 10 Shipment No. 16

Date Received 10/7/04 Manifest Date 10/6/04 -04037

Beginning of Off-load

Draft	Barge	Draft
13'-5"	Bow End	13'-2"
13'-5"	Stern End	13-3"

Average Draft 13'-3.75"

Displacement in Long Tons from Chart 4818

Displacement in Short Tons (Long Tons X 1.12) 5396

End of Off-load

Draft	Barge	Draft
4'-0	Bow End	3'-11"
4'-3"	Stern End	4'-2"

Average Draft 4'-1"

Displacement in Long Tons from Chart 251

Displacement in Short Tons (Long Tons X 1.12) 281

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 5115

JTC, Inc.

Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge HAZHAULER #7 Shipment No. 17

Date Received 10/12/04 Manifest Date 10/11/04 - 04038

Beginning of Off-load

Draft	Barge	Draft
13'-5"	Bow End	12'-0"
13'-0"	Stern End	11'-10"

Average Draft 12'-6" = 12.5'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 4860 *

* ASSUMES 44 T/0.1 FT DRAFT OVER 12.1' - SEE DISPLACEMENT SHEET

End of Off-load

Draft	Barge	Draft
2'-11"	Bow End	3'-2"
3'-5"	Stern End	3'-8"

Average Draft 3'-3.5" = 3.29'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 1130

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 3730

JTC, Inc. Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY #11 Shipment No. 18

Date Received _____ Manifest Date _____

Beginning of Off-load

Draft	Barge	Draft
12'-8"	Bow End	13'-3"
14'-4"	Stern End	14'-11"

Average Draft ~~12'~~ 13'-9.5"

Displacement in Long Tons from Chart 5069

Displacement in Short Tons (Long Tons X 1.12) 5677

End of Off-load

Draft	Barge	Draft
~~13~~ 4'-1"	Bow End	3'-11"
4'-3"	Stern End	4'-1"

Average Draft 4'-1"

Displacement in Long Tons from Chart 251

Displacement in Short Tons (Long Tons X 1.12) 281

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 5396

JTC, Inc.

Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge WAZ HAULER #8 Shipment No. 19

Date Received 10/18/04 Manifest Date 10/17/04

Beginning of Off-load

Draft	Barge	Draft
11'-9"	Bow End	11'-3"
10'-6"	Stern End	10'-0"

Average Draft 10'-10.5" = 10.875'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 4148

End of Off-load

Draft	Barge	Draft
3'-3"	Bow End	3'-4"
3'-10"	Stern End	3'-11"

Average Draft 3'-7" = 3.58'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 1240

Quantity Delivered – Short Tons 2908

Beginning Displacement – Ending Displacement = ~~2898~~

JTC, Inc. Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge MARCY #12 Shipment No. 20

Date Received 10/22/04 Manifest Date 10/21/04

Beginning of Off-load

Draft	Barge	Draft
14'-2"	Bow End	13'-11"
14'-6"	Stern End	14'-4"

Average Draft ~~2~~ ~~13~~ 14'-2.75"

Displacement in Long Tons from Chart 5300

Displacement in Short Tons (Long Tons X 1.12) 5936

End of Off-load

Draft	Barge	Draft
3'-11"	Bow End	3'-8"
4'-2"	Stern End	~~4~~ 3'-11"

Average Draft 3'-11"

39T/1.0 IN
<4.0 DRAFT

Displacement in Long Tons from Chart 173

Displacement in Short Tons (Long Tons X 1.12) 194

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 5742

JTC, Inc.

Asarco Consulting, Inc.

Everett Smelter Remediation Project
Barge Readings Sheet

Barge HAZHAULER #9 Shipment No. 21

Date Received 10/26/04 Manifest Date 10/25/04 – 04042

Beginning of Off-load

Draft	Barge	Draft
11'-0	Bow End	10'-4"
11'-2"	Stern End	10'-6"

Average Draft ~~3'-9"~~ 10'-9" = 10.75'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 4,095

End of Off-load

Draft	Barge	Draft
3'-1"	Bow End	3'-4"
3'-1"	Stern End	3'-4"

Average Draft 3'-2.5" = 3.21'

Displacement in Long Tons from Chart —

Displacement in Short Tons (Long Tons X 1.12) 1100

Quantity Delivered – Short Tons

Beginning Displacement – Ending Displacement = 2995

STC, Inc.

Asarco Consulting, Inc.

SUBTITLE C

C.5 Manifests

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039.

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 | Manifest Document No. 04001 | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone (800) 406-1113
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone (800) 374-1315

5. Transporter 1 Company Name: Steve Forler Trucking
6. US EPA ID Number: WAR 000 001 263

7. Transporter 2 Company Name
8. US EPA ID Number

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.		RQ, Poisonous Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN2811, PGII	1	DT	60980 60,000	P	D004
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
WSID# 36751
For Emergency Procedures Consult DOT ERG: 154
24 Hour Emergency Phone: 253-752-1470

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR**, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
Timothy J. Wilson	Timothy J. Wilson	07 12 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Tyler McMonigle	[signature]	07 12 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

GENERATOR / TRANSPORTER / FACILITY

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 Manifest Document No. 04002 2. Page 1 of

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Steve Forler Trucking
6. US EPA ID Number: WAR 000 001 263

C. State Transporter's ID
D. Transporter's Phone: (800) 406-1183

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

G. State Facility's ID
H. Facility's Phone: (800) 274-1516

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Toxic Solid Organic N.O.S ~~RQ, Poisonous Solids, n.o.s.~~ (Arsenic trioxide), Class 6.1, UN2811, PGII		1	DT	55,980 6,000.00	P	D004
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
WSID #16781
For Emergency Procedures Consult DOT ERG: 154
24 Hour Emergency Phone: 253-752-1470

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Timothy J. Wilson | Signature: Timothy J. Wilson | Month Day Year: 07 15 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Tyler McMondale | Signature: Tyler McMondale | Month Day Year: 07 15 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Month Day Year

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 Manifest Document No. 04003

2. Page 1 of

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Steve Forler Trucking

6. US EPA ID Number: WAR 000 001 263

C. State Transporter's ID

D. Transporter's Phone: (800) 705-1133

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

G. State Facility's ID

H. Facility's Phone: (800) 221-1516

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Toxic Solid Organic, nos ~~RQ, Poisonous Solids, n.o.s.~~ (Arsenic trioxide), Class 6.1, UN2811, PGII		1	DT	53,720 ~~600.00~~	P	D004
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
WSID # 10581
For Emergency Procedures Consult DOT ERG: 154
24 Hour Emergency Phone: 253-752-1470

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
Timothy J. Wilson	Timothy J. Wilson	07 15 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
[illegible]	[illegible]	07 15 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638

Manifest Document No. 04004

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name
Steve Forler Trucking

6. US EPA ID Number
WAR 000 001 263

C. State Transporter's ID
D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number
IDD 073 114 654

G. State Facility's ID
H. Facility's Phone

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a. RQ, Poisonous Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN2811, PGII		1	DT	60,460 60,000	P	
b.						
c.						
d.						

GENERATOR

J. Additional Descriptions for Materials Listed Above
0510 0.1650
For Emergency Procedures Consult DOT ERG 154
24 Hour Emergency Phone: 253-752-1470

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Timothy J. Wilson
Signature: Timothy J. Wilson
Month Day Year: 07 19 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: GARY BYERLY
Signature: Gary Byerly
Month Day Year: 07 19 04

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Month Day Year

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 Manifest Document No. 04005

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Steve Forler Trucking

6. US EPA ID Number: WAR 000 001 263

C. State Transporter's ID

D. Transporter's Phone (800) 406-1183

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

G. State Facility's ID

H. Facility's Phone (800) 421-1514

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.		RQ, Poisonous Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN2811, PGII	1	DT	55,440 ~~60,000~~	P	D004
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
WSID# 16781
For Emergency Procedures Consult DOT ERG 154
24 Hour Emergency Phone: 253-752-1470

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
Timothy J. Wilson	Timothy J. Wilson	07 19 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Brian P. Banks	[signature]	07 19 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

GENERATOR

TRANSPORTER

FACILITY

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638

Manifest Document No. 04006

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Abatco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Steve Forler Trucking

6. US EPA ID Number: WAR 000 001 263

C. State Transporter's ID

D. Transporter's Phone (800) 406-1163

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 634

G. State Facility's ID

H. Facility's Phone 800-592-4616

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.	Toxic inorganic RQ, Poisonous Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN2811, PGIII		1	DT	64,440 ~~10000~~	P	D004
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
WSID# 1691
For Pharmaco / Hopkins Court DOT LR# 454
CH (858) Emerson Phone: 253-658-3461

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Timothy J. Wilson | Signature: Timothy J. Wilson | Month Day Year: 07 20 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Tyler McMonigle | Signature: T. McMonigle | Month Day Year: 07 20 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Month Day Year

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 | Manifest Document No. 04007 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: Asarco Inc. 5219 N. Shirley Street Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

5. Transporter 1 Company Name: Steve Forler Trucking | 6. US EPA ID Number: WAR 000 001 263

7. Transporter 2 Company Name | 8. US EPA ID Number

9. Designated Facility Name and Site Address: US ECOLOGY IDAHO, INC. 20400 Lemley Road Grand View, ID 83624 | 10. US EPA ID Number: IDD 073 114 654

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone (800) 406-0183
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone (800) 772-1336

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, ~~Poisonous~~ Toxic inorganic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN2811, PGII		1	DT	60,320 60,000	P	D004
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above: WSID 916731 For Emergency Procedures Consult DOT ERG 154 24 Hour Emergency Phone: 253-752-1470 800-3[illegible]

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Timothy J. Wilson | Signature: Timothy J. Wilson | Month Day Year: 07 20 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: [illegible] | Signature: [illegible] | Month Day Year: 7 20 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Month Day Year

GENERATOR / TRANSPORTER / FACILITY

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD988512638
Manifest Document No.: 04008

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Steve Forler Trucking

6. US EPA ID Number: WAR 000 001 262

C. State Transporter's ID

D. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 033 114 654

G. State Facility's ID

H. Facility's Phone: (800) 274-1514

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.		RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII	1	DT	61,900 ~~60,000~~	P	D004
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
[illegible]
For Emergency Procedures Consult DOT ERG 154
24 Hour Emergency Phone: [illegible]

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
Timothy J. Wilson	Timothy J. Wilson	07 21 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
GARY BYERLEY	Gary Byerley	07 21 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

GENERATOR

TRANSPORTER

FACILITY

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 Manifest Document No. 040029

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Steve Forler Trucking

6. US EPA ID Number: WAR 000 001 263

C. State Transporter's ID

D. Transporter's Phone: (800) 366-1131

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

G. State Facility's ID

H. Facility's Phone: (208) 834-2116

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII		1	DT	58,680 ~~60,000~~	P	D004
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
WSID 7 1631
For Emergency Response Call ERG 154
24 Hour Emergency Phone 208-630-9881

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Timothy J. Wilson | Signature: Timothy J. Wilson | Month Day Year: 07 21 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: [illegible] | Signature: [illegible] | Month Day Year: 07 21 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name | Signature | Month Day Year

GENERATOR

TRANSPORTER

FACILITY

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 Manifest Document No. 04010

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nelson

5. Transporter 1 Company Name: Steve Forler Trucking
6. US EPA ID Number: WAR 000 001 253

7. Transporter 2 Company Name
8. US EPA ID Number

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)

	HM	11. US DOT Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.		RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII	1	DT	64,780 ~~67,000~~	P	D004
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
WSID 9[illegible]
Kay Environmental Services, Caldwell, Canyon County, ID, USA
24[illegible] Blue Lagoon Drive, Phone 253-[illegible]

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Timothy J. Wilson | Signature: Timothy J. Wilson | Month Day Year: 07 22 04

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tyler McMonigle | Signature: [signature] | Month Day Year: 07 22 04

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

GENERATOR

TRANSPORTER

FACILITY

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD988512638
Manifest Document No.: 04011

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Steve Forler Trucking

6. US EPA ID Number: WAR 000 001 263

C. State Transporter's ID

D. Transporter's Phone (800) 486-1162

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

G. State Facility's ID

H. Facility's Phone (800) 224-9406

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.		RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII	1	DT	60,100 60,000	P	D004 [illegible]
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
WSID # 16781
For Emergency Procedures Consult DOT ERG 154
24 Hour Emergency Phone: 253-820-4631

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month	Day	Year
Timothy J. Wilson	Timothy J. Wilson	07	22	04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[illegible]	07	22	04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR

TRANSPORTER

FACILITY

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD988512638
Manifest Document No.: 04012

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

A. State Manifest Document Number

B. State Generator's ID

5. Transporter 1 Company Name: Steve Forler Trucking

6. US EPA ID Number: WAR 000 001 363

C. State Transporter's ID

D. Transporter's Phone: [illegible]

7. Transporter 2 Company Name

8. US EPA ID Number

E. State Transporter's ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

G. State Facility's ID

H. Facility's Phone: 800 [illegible]

GENERATOR

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII	1	DT	64,660 60,000	P	D004 [illegible]
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
WSID# 16[illegible]
For Emergency Procedures Consult DOT ERG 154
24 Hour Emergency Phone 253-870-3631

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
Timothy J. Wilson	Timothy J. Wilson	07 23 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
GARY BYERLEY	Gary Byerley	07 23 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD988512638
Manifest Document No.: 04013
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

5. Transporter 1 Company Name: Steve Forler Trucking
6. US EPA ID Number: WAR 000 001 263

7. Transporter 2 Company Name:
8. US EPA ID Number:

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

A. State Manifest Document Number:
B. State Generator's ID:
C. State Transporter's ID:
D. Transporter's Phone: (800) 406-1193
E. State Transporter's ID:
F. Transporter's Phone:
G. State Facility's ID:
H. Facility's Phone: (800) 373-2516

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	Waste No.
a.		RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII	1	DT	54,800 ~~60,000~~	P	D003/U701
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
WSID# 16701
For Emergency Procedures Consult DOT ERG 154
24 Hour Emergency Phone: 253-620-8631

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Lower Level Stockpile

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
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Printed/Typed Name	Signature	Month Day Year
Timothy J. Wilson	Timothy J. Wilson	07 23 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Brian P. Banks	[signature]	07 23 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512639 Manifest Document No. 04014

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

5. Transporter 1 Company Name: Steve Forler Trucking
6. US EPA ID Number: WAR 000 001 263

7. Transporter 2 Company Name
8. US EPA ID Number

9. Designated Facility Name and Site Address
UB ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624
10. US EPA ID Number: IDD 073 114 654

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII		1	DT	~~64,660~~ 63,080	P	
b.					61,600		
c.							
d.							

J. Additional Descriptions for Materials Listed Above
WAD981676161
1. Arsenic trioxide, Reportable Quantity, DOT Ref. 172
2. Waste Transporter Phone: 425-673-3601

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Lower level Stockpile

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GENERATOR

Printed/Typed Name: Timothy J. Wilson
Signature: Timothy J. Wilson
Month Day Year: 07 24 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Tyler McMoniale
Signature: Tyler McMoniale
Month Day Year: 07 24 04

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Month Day Year

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD988512638
Manifest Document No.: 04015
2. Page 1 of 1
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3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407
ATTN: Dave Nation

4. Generator's Phone (253) 752-1470

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone (800) 406-1133
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone (800) 254-1516

5. Transporter 1 Company Name: Steve Forler Trucking
6. US EPA ID Number: WAR 000 001 263
7. Transporter 2 Company Name
8. US EPA ID Number

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624
10. US EPA ID Number: IDD 073 114 654

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII		1	DT	~~60,000~~ 60,000 ~~60,000~~	P	D004 / [illegible]
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
WAID# 16781
For Emergency Procedures Consult DOT ERG: 154
24 Hour Emergency Phone: 253-820-3631

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Lower level Stockpile

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
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Printed/Typed Name	Signature	Month	Day	Year
Timothy J. Wilson	Timothy J. Wilson	07	24	04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[illegible]	07	24	04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR / TRANSPORTER / FACILITY

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 Manifest Document No. 040116

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nelson

5. Transporter 1 Company Name: Steve Fedler Trucking
6. US EPA ID Number: WAR 000 001 263

7. Transporter 2 Company Name
8. US EPA ID Number

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624
10. US EPA ID Number: IDD 073 114 634

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII		1	DT	61,080 (~~60,000~~)	P	D004
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
WSID #8671
For Emergency Procedures Call: CHEMTREC 800-424-9300
24 Hour Emergency Phone: 251-320-3690

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Low Level Stockpile

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: Douglas M. Solon | Signature: Douglas M. Solon | Month 0 7 Day 2 6 Year 0 4

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Brian P. Sparks | Signature | Month 0 7 Day 2 6 Year 0 4

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD988512638
Manifest Document No.: 24017
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: Steve Forler Trucking
6. US EPA ID Number: WAR 000 001 263

C. State Transporter's ID
D. Transporter's Phone: (800) 403-0163

7. Transporter 2 Company Name
8. US EPA ID Number

E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

G. State Facility's ID
H. Facility's Phone: (800) 224-3516

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII		1	DT	~~60,000~~	P	DTM
b.					70,240		
c.							
d.							

J. Additional Descriptions for Materials Listed Above
WSID# 16731
For Emergency Procedures Consult DOT ERG: 154
24 Hour Emergency Phone: 253-820-3631

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Low Level Stockpile

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
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Printed/Typed Name: Douglas M. Solon
Signature: Douglas M. Solon
Month Day Year: 07 26 04

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: GARY E BYERLEY
Signature: Gary E Byerley
Month Day Year: 07 26 04

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Month Day Year

GENERATOR
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FACILITY

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. WAD988512638 Manifest Document No. 04018

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

5. Transporter 1 Company Name: Steve Forler Trucking
6. US EPA ID Number: WAR 000 001 263

7. Transporter 2 Company Name
8. US EPA ID Number

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624
10. US EPA ID Number: IDD 073 114 654

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone (800) 574-1516

	11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII		1	DT	59,400 ~~60,000~~	P	D004
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
USID# 16240
Emergency Procedures Permit DOT ERG 154
24 Hour Emergency Phone: 773 231-5630

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Low Level Stockpile

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Timothy J. Wilson
Signature: Timothy J. Wilson
Month Day Year: 07 27 04

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Mike Mcmanigal
Signature: Mike Mcmanigal
Month Day Year: 07 27 04

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name
Signature
Month Day Year

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD988512638
Manifest Document No.: 04019
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

5. Transporter 1 Company Name: Steve Forler Trucking
6. US EPA ID Number: WAR 000 001 263

7. Transporter 2 Company Name:
8. US EPA ID Number:

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone (800) 106-1133
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone (800) 274-1516

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII		1	DT	55,920 60,000	P	D004
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
WSID# 16731
For Emergency Procedures Consult DOT ERG: 154
24 Hour Emergency Phone: 253-820-3630

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
— Low Level Stockpile

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name	Signature	Month Day Year
Timothy J. Wilson	Timothy J. Wilson	07 27 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
[illegible]	[illegible]	7 27 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

GENERATOR / TRANSPORTER / FACILITY

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD988512638
Manifest Document No.: 04030

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

5. Transporter 1 Company Name: Steve Forler Trucking
6. US EPA ID Number: WAR 000 001 263

7. Transporter 2 Company Name:
8. US EPA ID Number:

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

A. State Manifest Document Number:
B. State Generator's ID:
C. State Transporter's ID:
D. Transporter's Phone: (800) 406-[illegible]
E. State Transporter's ID:
F. Transporter's Phone:
G. State Facility's ID:
H. Facility's Phone: (800) [illegible]

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.		RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII	1	DT	33,490 53,920 60,000	P	D[illegible]
b.							
c.							
d.							

J. Additional Descriptions for Materials Listed Above
WSID: [illegible]
For Emergency Procedure Consult DOT Ref. [illegible]
24 Hour Emergency Phone: [illegible]

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Low Level Stockpile

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.
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Printed/Typed Name	Signature	Month Day Year
Timothy J. Wilson	Timothy J. Wilson	07 28 04

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
GARY E BYERLEY	Gary E Byerley	07 28 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year

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UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: WAD988512638
Manifest Document No.: 04021

2. Page 1 of 1

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Asarco Inc.
5219 N. Shirley Street
Ruston, WA 98407

4. Generator's Phone (253) 752-1470 ATTN: Dave Nation

5. Transporter 1 Company Name: Steve Forler Trucking
6. US EPA ID Number: WAR 000 001 263

7. Transporter 2 Company Name:
8. US EPA ID Number:

9. Designated Facility Name and Site Address
US ECOLOGY IDAHO, INC.
20400 Lemley Road
Grand View, ID 83624

10. US EPA ID Number: IDD 073 114 654

A. State Manifest Document Number:
B. State Generator's ID:
C. State Transporter's ID:
D. Transporter's Phone: (800) 405-0012
E. State Transporter's ID:
F. Transporter's Phone:
G. State Facility's ID:
H. Facility's Phone: (800) 274-1516

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RQ, Toxic Solids, n.o.s. (Arsenic trioxide), Class 6.1, UN3288, PGII		1	DT	33,440 60000	P	D004
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above
WSID # 16781
For Emergency Procedures Consult DOT ERG: 153
24 Hour Emergency Phone: 352-820-3631

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Low Level Stockpile

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR**, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Timothy J. Wilson
Signature: [signature]
Month Day Year: 07 28 04

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: [signature]
Signature: [signature]
Month Day Year: 07 28 04

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name:
Signature:
Month Day Year:

GENERATOR / TRANSPORTER / FACIL

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APPENDIX D

AIR MONITORING

Table D.1 **Preliminary Summary of Peripheral Air Monitoring Data**
Table D.2 **Preliminary Summary of Personal Air Monitoring Data**

Table D.1 Preliminary Summary of Peripheral Air Monitoring Data

Table D.1
Everett Smelter Site
Preliminary Summary of Peripheral Air Monitoring Data
July 2004

			Comparison with Trigger Levels(1)				
			Arsenic		Lead		
Sample Date	Sample Number	Location	sample (ug/m^3)	>/=.0.2 ug/m3 (yes / no)	sample (ug/m^3)	>/=.0.5 ug/m3 (yes / no)	comment
1-Jul	070104-123	SW of lower F/A	0.168	no	0.0227	no	
	070104-250	SE of lower F/A	0.177	no	0.0218	no	
	070104-333	N of Stockpile D	0.118	no	0.0215	no	
2-Jul	070204-123	SW of lower F/A	0.0429	no	0.026	no	
	070204-250	SE of lower F/A	0.109	no	0.0413	no	
	070204-333	N of stockpile D	0.349	yes	0.0418	no	
6-Jul	070604-123	SE of lower F/A	0.58	yes	0.043	no	
	070604-250	SW of lower F/A	0.175	no	0.0213	no	
	070604-719	N of stockpile D	0.123	no	0.0208	no	
7-Jul	070704-123	SW of lower F/A	0.0904	no	0.0125	no	
	070704-250	SE of lower F/A	0.0755	no	0.0154	no	
	070704-333	N of stockpile D	0.111	no	0.0235	no	
8-Jul	070804-123	SE of lower F/A	0.037	no	0.0152	no	
	070804-250	S of middle F/A	0.136	no	0.0316	no	
	70804-719	N of stockpile D	0.0833	no	0.0274	no	
9-Jul	070904-123	SW of lower F/A	0.106	no	0.0222	no	backhoe ex at 534 driveway for waterline cut.
	070904-250	SE of lower F/A	0.122	no	0.0307	no	
	070904-719	N of stockpile D	0.0755	no	0.0222	no	
12-Jul	071204-123	SW of lower F/A	0.0411	no	0.0141	no	
	071204-250	SE of lower F/A	0.0238	no	0.0112	no	
	071204-285	N of stockpile D	0.0119	no	0.011	no	
13-Jul							no monitoring -- work outside fenced area
14-Jul							no monitoring -- work outside fenced area
15-Jul	071504-123	SW of lower F/A	0.0391	no	ND	no	
	071504-250	SE of lower F/A	0.0369	no	0.0114	no	Pb result < PQL (.0209)
	071504-333	N of stockpile D	0.0787	no	0.0182	no	Pb result < PQL (.0209)
16-Jul	071604-A	SW of lower F/A	0.0679	no	ND	no	
	071604-123	SE of lower F/A	0.0474	no	ND	no	
	071604-250	N of stockpile D	0.0145	no	0.024	no	Pb result < PQL (.0209)
19-Jul	071904-123	SW of lower F/A	0.0354	no	0.0168	no	Pb result < PQL (.0233)
	071904-250	N of stockpile D	0.168	no	0.0201	no	Pb result < PQL (.0233)
	071904-333	SE of lower F/A	0.0354	no	0.0173	no	Pb result < PQL (.0233)
20-Jul							no monitoring -- wharf shutdown, no excavation
21-Jul	072104-123	SW of lower F/A	0.0924	no	0.0247	no	initial excavation of pond area
	072104-250	SE of lower F/A	0.259	yes	0.0207	no	excavation within 4 ft of fenceline monitor
	072104-333	N of stockpile D	0.0314	no	0.0192	no	Pb result < PQL (.0207)
22-Jul	072204-A	N of stockpile D	0.03	no	0.0084	no	Pb result < PQL (.0166)
	072204-123	SW of lower F/A	0.0863	no	0.0159	no	Pb result < PQL (.0166)
	072204-250	SE of lower F/A	0.0469	no	0.0136	no	Pb result < PQL (.0166)
23-Jul	072304-A	N of stockpile D	0.0267	no	0.0239	no	
	072304-123	SW of lower F/A	0.134	no	0.0406	no	
	072304-250	SE of lower F/A	0.156	no	0.0286	no	
24-Jul	072404-123	SW of lower F/A	0.0421	no	0.0126	no	
	072404-250	SE of lower F/A	0.337	yes	0.0442	no	ex of sedimentation pond area
	072404-719	N of stockpile D	0.535	yes	0.0418	no	Pb result < PQL (.0238)

Table D.1
Everett Smelter Site
Preliminary Summary of Peripheral Air Monitoring Data
July 2004

			Comparison with Trigger Levels(1)				
			Arsenic		Lead		
Sample Date	Sample Number	Location	sample (ug/m^3)	>/=.0.2 ug/m3 (yes / no)	sample (ug/m^3)	>/=.0.5 ug/m3 (yes / no)	comment
26-Jul	072604-123	SW of lower F/A	0.108	no	0.0284	no	
	072604-250	SE of lower F/A	0.0633	no	0.027	no	
	072604-719	N of stockpile D	0.821	yes	0.0566	no	loadout 2 trucks from Stockpile D
27-Jul	072704-123	SW of lower F/A	0.141	no	0.0225	no	
	072704-250	SE of lower F/A	0.136	no	0.0267	no	
	072704-719	N of stockpile D	0.268	yes	0.0225	no	loadout 2 trucks from Stockpile D
28-Jul	072804-719	SW of lower F/A	0.0482	no	0.0115	no	
	072804-123	SE of lower F/A	0.0705	no	0.0154	no	ex along S. property line and EMV Dr.
	072804-A	N of stockpile D	0.0113	no	nd	no	loadout 2 trucks from Stockpile D
29-Jul	072904-333	SW of lower F/A	0.0743	no	0.0115	no	Pb result < PQL (.0238)
	072904-250	SE of lower F/A	0.0928	no	0.0163	no	Pb result < PQL (.0238)
	072904-A	N of stockpile D	0.0342	no	ND	no	high concentration stockpile removed, asphalt washed
30-Jul	073004-123	SW of lower F/A	0.0146	no	0.0105	no	Pb result < PQL (.0189), As result < PQL(.0189)
	073004-250	SE of lower F/A	0.0459	no	0.016	no	Pb result < PQL (.0192)
	073004-719	N of stockpile D	2.47	yes	0.028	no	area used for sod stockpile from lower F/A

Source: STL Preliminary Summary Reports

Notes:

(1) The trigger levels are based on a 5 x 10^(-5) risk for a 10 year exposure scenario. The exposure calculations are based on a 10-hour day, 350 days per year exposure for 10 years. These numbers represent a trigger level for the review of dust control practices, and should not be interpreted as allowable emission standards. Consult the Everett Smelter Site Health and Safety Plan, Attachment B-5, for more information.

Table D.1
Everett Smelter Site
Preliminary Summary of Peripheral Air Monitoring Data
August 2004

			Comparison with Trigger Levels(1)					
			Arsenic		Lead			
Sample Date	Sample Number	Location	sample (ug/m^3)	>/=.0.2 ug/m3 (yes / no)	sample (ug/m^3)	>/=.0.5 ug/m3 (yes / no)	"J" Flag	Comment
2-Aug	080204-123	SW of lower F/A	0.0116	no	0.0144	no	As	
	080204-250	SE of lower F/A	0.216	yes	0.0634	no		
	080204-719	N of stockpile area A	0.0198	no	0.031	no	As	
3-Aug	080304-A	SW of lower F/A	0.0484	no	0.0502	no		
	080304-333	SE of lower F/A	0.135	no	0.0696	no		
	080304-719	N of stockpile area A	0.0806	no	0.026	no		
4-Aug	080404-123	SW of lower F/A	0.0749	no	0.0116	no	Pb	
	080404-250	SE of lower F/A	0.141	no	0.0177	no	Pb	
	080404-333	N of stockpile area A	0.0323	no	0.0116	no	Pb	
5-Aug	080504-250	SW of lower F/A	0.138	no	0.0163	no	Pb	
	080504-333	SE of lower F/A	0.0949	no	0.0192	no	Pb	
	080504-719	N of stockpile area A	0.0282	no	0.0143	no	Pb	
11-Aug	081104-123	SW of lower F/A	0.0806	no	0.015	no	Pb	
	081104-333	SE of lower F/A	0.0663	no	0.011	no	Pb	
	081104-719	N of stockpile area A	0.0175	no	nd	no	As	
12-Sep	081204-123	SW of lower F/A	0.0603	no	0.014	no	Pb	
	081204-250	SE of lower F/A	0.0745	no	0.0184	no	Pb	
	081204-333	N of stockpile area A	0.0136	no	nd	no	As	
17-Aug	081704-A	SW of lower F/A	0.0174	no	0.0266	no		
	081704-250	SE of lower F/A	0.134	no	0.0186	no	Pb	
	081704-719	N of stockpile area A	0.0167	no	nd	no	As	
18-Aug	081804-A	SW of lower F/A	0.0386	no	0.0143	no	Pb	
	081804-250	SE of lower F/A	0.0739	no	0.0183	no	Pb	
	081804-719	N of stockpile area A	nd	no	0.0306	no		
19-Aug	081904-123	SE of lower F/A	0.0556	no	0.0187	no		
	081904-250	SW of lower F/A	0.0157	no	0.0108	no	As, Pb	
	081904-719	N of stockpile area A	0.0386	no	0.0126	no	Pb	
20-Aug	082004-250	SW of lower F/A	0.0125	no	nd	no	As	
	082004-333	SE of lower F/A	0.037	no	0.0116	no	Pb	
	082004-719	N of stockpile area A	0.012	no	0.0112	no	As, Pb	
23-Aug	082304-123	SW of lower F/A	0.0129	no	0.0545	no	As	
	082304-250	SE of lower F/A	0.0265	no	0.0945	no		
	082304-333	N of stockpile area A	0.0265	no	0.027	no		
24-Aug	082404-A	SW of lower F/A	0.0203	no	0.0226	no	As	
	082404-500	SE of lower F/A	0.0204	no	0.0139	no	Pb	
	082404-719	N of stockpile area A	0.0202	no	0.0113	no	Pb	
26-Aug	082604-A	N of stockpile area A	nd	no	0.00952	no	Pb	
	082604-123	S of middle F/A	nd	no	nd	no		
	082604-250	SW of lower F/A	nd	no	nd	no		
	082604-500	SE of 558 E.M.V. Dr.	0.0351	no	0.0322	no		Asarco Houses remediation
	082604-719	W of 558 E.M.V. Dr.	nd	no	1.26	yes		Asarco Houses remediation
27-Aug	082704-A	S of middle F/A	0.026	no	0.0141	no	Pb	
	082704-123	SW of lower F/A	0.016	no	0.0115	no	As, Pb	
	082704-250	N of stockpile area A	0.0151	no	0.0127	no	As, Pb	
	082704-333	SE of 558 E.M.V. Dr.	nd	no	0.0182	no	Pb	Asarco Houses remediation
	082704-500	SW of 558 E.M.V. Dr.	0.022	no	0.0199	no	Pb	Asarco Houses remediation

Table D.1
Everett Smelter Site
Preliminary Summary of Peripheral Air Monitoring Data
August 2004

			Comparison with Trigger Levels(1)					
			Arsenic		Lead			
Sample Date	Sample Number	Location	sample ($\mu g/m^3$)	>/=.0.2 μg/m3 (yes / no)	sample ($\mu g/m^3$)	>/=.0.5 μg/m3 (yes / no)	"J" Flag	Comment
28-Aug	082804-123	S of middle F/A	nd	no	nd	no		
	082804-250	SW of lower F/A	nd	no	nd	no		
	082804-719	N of stockpile area A	0.0405	no	0.0681	no		
30-Aug	083004-A	SW of 558 E.M.V. Dr.	nd	no	0.0114	no	Pb	Asarco Houses remediation
	083004-123	S of middle F/A	0.0819	no	0.0165	no		
	083004-250	SE of lower F/A	nd	no	0.0116	no	Pb	
	083004-500	N of stockpile area A	nd	no	0.0102	no	Pb	
	083004-719	SE of 558 E.M.V. Dr.	0.016	no	0.0193	no	As	Asarco Houses remediation
31-Aug	083104-A	S of middle F/A	0.0815	no	0.0226	no		
	083104-250	SW of lower F/A	0.0328	no	0.0119	no	Pb	
	083104-333	N of stockpile area A	0.0118	no	nd	no	As	
	083104-500	NW of 566 E M.V.Dr.	0.0141	no	0.0146	no	As, Pb	Asarco Houses remediation
	083104-719	S of 566 E. M.V.Dr.	0.0638	no	0.0188	no		Asarco Houses remediation

Source: STL Preliminary Summary Reports

Notes:

(1) The trigger levels are based on a 5 x 10^(-5) risk for a 10 year exposure scenario. The exposure calculations are based on a 10-hour day, 350 days per year exposure for 10 years. These numbers represent a trigger level for the review of dust control practices, and should not be interpreted as allowable emission standards. Consult the Everett Smelter Site Health and Safety Plan, Attachment B-5, for more information.

(2) "J" Flag indicates that the noted analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

Table D.1
Everett Smelter Site
Preliminary Summary of Peripheral Air Monitoring Data
September 2004

			Comparison with Trigger Levels(1)					
			Arsenic		Lead			
Sample Date	Sample Number	Location	sample (ug/m^3)	>/=.0.2 ug/m3 (yes / no)	sample (ug/m^3)	>/=.0.5 ug/m3 (yes / no)	"J" Flag	Comment
1-Sep	090104-A	S of middle FA	0.0178	no	0.0114	no	Pb	
	090104-250	SW of lower FA	nd	no	nd	no		
	090104-500	Behind Res. Stockpile	0.00908	no	0.0174	no	As	Residential Remediation
	090104-719	S of Res. Loadout area	0.0431	no	0.0214	no		Residential Remediation
2-Sep	090204-250	S of middle FA	0.0193	no	0.0539	no		
	090204-500	W of Res. Remediation	0.00928	no	0.0396	no	As	Residential Remediation
	090204-719	S of Res. Loadout area	0.0268	no	0.0154	no	Pb	Residential Remediation
3-Sep	090304-A	S of middle FA	0.361	yes	0.045	no	As	
	090304-250	W Fenceline, near US	ND	no	ND	no		
	090304-333	NW of Stockpile Area D	0.0169	no	0.0226	no	As, Pb	
7-Sep	090704-A	N of EMV Dr. dig	ND	no	ND	no		
	090704-250	S of Res. Loadout area	0.0496	no	0.0268	no		Residential Remediation
	090704-719	SE of EMV Dr. dig	0.017	no	0.0165	no	As, Pb	
8-Sep	090804-123		0.0691	no	0.0255	no		
	090804-250	560 EMV Dr - alley near	0.0259	no	0.0116	no	Pb	
	090804-333	W of Upper Fenced Area	0.0172	no	ND	no		
	090804-500	N of Stockpile Area D	0.107	no	0.0416	no		
	090804-719	S of middle Fenced area	0.0561	no	ND	no	As	
9-Sep	090904-A	S of middle Fenced area	0.05	no	0.0142	no	Pb	
	090904-123	W of upper Fenced Area	0.0138	no	0.00899	no	As, Pb	
	090904-250	SW of Pilchuck Houses	0.0149	no	0.00833	no	As, Pb	Residential Remediation
	090904-500	N of Stockpile Area D	0.0347	no	0.0158	no	Pb	
	090904-719	E of Pilchuck SP loadout	0.0475	no	0.0119	no	Pb	Residential Remediation
10-Sep	091004-A	S of middle Fenced area	0.0168	no	0.0125	no	As, Pb	
	091004-123	SW of lower Fenced area	0.0153	no	0.0119	no	As, Pb	
	091004-250	N of Stockpile area D	0.188	no	0.0319	no		
	091004-333	E of Pilchuck Houses	0.0568	no	0.0269	no		Residential Remediation
	091004-719	SW of Pilchuck Houses	0.0281	no	0.0315	no		Residential Remediation
11-Sep	091104-250	S of middle Fenced Area	0.0215	no	0.011	no	Pb	
	091104-333	N of Stockpile Area D	0.058	no	0.0511	no		
	091104-719	SW of Middle FA	0.0131	no	0.0127	no	As, Pb	
13-Sep	091304-A	S of middle Fenced Area	0.107	no	0.0187	no	Pb	
	091304-250	N end of Pilchuck	ND	no	0.0121	no	Pb	
	091304-500	SW of Pilchuck (Res)	ND	no	0.00991	no	Pb	Residential Remediation
	091304-719	E of Pilchuck Stockpile	ND	no	ND	no		Residential Remediation
14-Sep	091404-A	S of Middle Fenced Area	0.0106	no	0.012	no	As, Pb	
	091404-250	N of Middle Fenced Area	0.0722	no	0.0203	no		
	091404-500	450 Pilchuck Excavation	0.0156	no	0.0143	no	As, Pb	Residential Remediation
	091404-719	E of Pilchuck Stockpile	0.0305	no	0.0148	no	Pb	Residential Remediation
15-Sep	091504-A	S of middle Fenced Area	ND	no	0.00942	no	Pb	
	091504-250	N of middle Fenced Area	ND	no	0.0103	no	Pb	
	091504-500	SW of Pilchuck (Res)	0.0162	no	0.0182	no	As	Residential Remediation
	091504-719	E of Pilchuck loadout area	ND	no	0.0151	no	Pb	Residential Remediation
16-Sep	091604-719	SE of lower FA	0.0173	no	ND	no	As	
17-Sep	091704-A	530 Pilchuck Path	ND	no	ND	no		
	091704-250	N Fence Line	ND	no	ND	no		
	091704-500	SW of Pilchuck DUs	ND	no	ND	no		
	091704-719	E of Pilchuck loadout area	0.00878	no	0.00923	no	As, Pb	Residential Remediation
18-Sep	091804-250	S of middle Fenced Area	ND	no	0.01	no	Pb	
	091804-500	N Fenceline	ND	no	ND	no		
	091804-719	SW of lower Fenced Area	ND	no	ND	no		

Table D.1
Everett Smelter Site
Preliminary Summary of Peripheral Air Monitoring Data
September 2004

			Comparison with Trigger Levels(1)								
			Arsenic		Lead						
Sample	Sample		sample	>/=.0.2 ug/m3	sample	>/=.0.5 ug/m3					
Date	Number	Location	(ug/m^3)	(yes / no)	(ug/m^3)	(yes / no)	"J" Flag	Comment			
20-Sep	092004-A	S of middle Fenced Area	0.0208	no	0.0127	no	Pb				
	092004-250	N of middle FA - fenceline	ND	no	0.0103	no	Pb				
	092004-500	2901 Butler - Res Loadout	0.0241	no	0.0172	no		Residential Remediation			
	092004-719	E of Pilchuck SP Loadout	0.0316	no	0.0181	no		Residential Remediation			
21-Sep	092104-A	S of middle Fenced Area	0.0187	no	0.0142	no	Pb				
	092104-250	N of middle Fenced Area	0.0133	no	0.0119	no	As, Pb				
	092104-500	2901 Butler - Res Loadout	0.0222	no	0.0123	no	Pb	Residential Remediation			
	092104-719	E of Pilchuck SP Loadout	ND	no	0.00919	no	Pb	Residential Remediation			
22-Sep	092204-123	2901 Butler - Res Loadout	ND	no	0.0117	no	Pb	Residential Remediation			
	092204-250	NW of Pilchuck DUs and SP	ND	no	0.0137	no	Pb				
	092204-500	SW corner, upper FA	0.0241	no	0.0143	no	Pb				
	092204-719	Res SP area/Loadout of UR	0.0254	no	0.0233	no					
23-Sep	092304-123	SW of Upper Fenced Area	ND	no	ND	no					
	092304-250	NW of Upper Fenced Area	ND	no	ND	no					
	092304-500	SW of Front Yard DUs	ND	no	ND	no		Residential Remediation			
24-Sep	092404-123	SW of Residential DUs	ND	no	ND	no		Residential Remediation			
	092404-250	SW of Upper Fenced Area	ND	no	ND	no					
	092404-500	Loadout of UR D.U.s	ND	no	ND	no					
	092404-719	N of Res D.U.s @ 536 Pilchuck	ND	no	ND	no		Residential Remediation			
27-Sep	092704-123	SW of Upper Fenced Area	ND	no	0.0111	no	Pb				
	092704-250	530 Pilchuck Path	ND	no	0.0216	no	Pb				
	092704-500	N of Res D.U.s @ 536 Pilchuck	0.00925	no	0.0241	no	As	Residential Remediation			
28-Sep	092804-123	W of Upper Fenced Area	ND	no	0.0112	no	Pb				
	092804-250	S of Middle Fenced Area	ND	no	0.0122	no	Pb				
	092804-500	N of Res D.U.s @ 536 Pilchuck	0.0209	no	0.0234	no	As	Residential Remediation			
30-Sep	093004-A	S of Middle Fenced Area	ND	no	0.0196	no	Pb				
	093004-250		ND	no	0.0115	no	Pb				
	093004-333	W of Upper Fenced Area	ND	no	0.0157	no	Pb				
	093004-500		ND	no	0.0129	no	Pb				
	093004-719	E of Lower Fenced Area	0.0382	no	0.0314	no					

Source: STL Preliminary Summary Reports

Notes:

(1) The trigger levels are based on a 5 x 10^(-5) risk for a 10 year exposure scenario. The exposure calculations are based on a 10-hour day, 350 days per year exposure for 10 years. These numbers represent a trigger level for the review of dust control practices, and should not be interpreted as allowable emission standards. Consult the Everett Smelter Site Health and Safety Plan, Attachment B-5, for more information.

Table D.1
Everett Smelter Site
Preliminary Summary of Peripheral Air Monitoring Data
October 2004

			Comparison with Trigger Levels(1)					
			Arsenic		Lead			
Sample Date	Sample Number	Location	sample (ug/m^3)	>/=.0.2 ug/m3 (yes / no)	sample (ug/m^3)	>/=.0.5 ug/m3 (yes / no)	"J" Flag	Comment
4-Oct	100404-123	West of Upper FA	ND	no	ND	no		Trenching of US DUs
	100404-250	South of Middle FA	ND	no	0.0113	no	Pb	
	100404-500	East of Lower FA	ND	no	ND	no		Truck loadout and trenching
5-Oct	100504-123	West of Upper FA	ND	no	0.0116	no	Pb	Excavation & Stockpiling US DUs - Low Bat
	100504-250	South of Middle FA	ND	no	0.0121	no	Pb	Excavation, Loadout & Stockpiling
	100504-500	East of Lower FA	0.0141	no	0.0115	no	As, Pb	
6-Oct	100604-A	West of Upper FA	ND	no	ND	no		Loadout Residential Stockpiles @ Middle FA
	100604-333	South of Middle FA	ND	no	ND	no		Loadout Residential Stockpiles @ Middle FA
	100604-719	East of Lower FA	0.0641	no	0.0129	no	Pb	Loadout Residential Stockpiles @ Middle FA
7-Oct	100704-123	West of Upper FA	ND	no	0.0141	no	Pb	
	100704-250	South of Middle FA	ND	no	ND	no		
	100704-500	East of Lower FA - gate	0.184	no	0.0275	no		LS-31 Excavation
8-Oct	100804-123	South of Middle FA	ND	no	0.0154	no	Pb	Loadout from stockpiles in middle FA
	100804-250	West of Upper FA	ND	no	0.0233	no	Pb	Residential yard remediation @ 522 Hawthorne
	100804-500	East of Lower FA - gate	ND	no	0.0237	no		Loadout from stockpiles in middle FA
9-Oct	100904-250	East of Lower FA	ND	no	0.0275	no		Loadout of middle fenced area
	100904-719	South of Middle FA	ND	no	0.0167	no	Pb	Loadout of middle fenced area
11-Oct	101104-123	South of Middle FA	0.0169	no	0.011	no	Pb	Residential remediation @ 522 Hawthorne
	101104-719	East of Lower FA	0.0306	no	0.0176	no		
12-Oct	101204-250	522 Hawthorne backyard	ND	no	0.0117	no	Pb	Residental remediation @ 522 Hawthorne
	101204-500	South of Middle FA	ND	no	0.0108	no	Pb	Loadout Residential Material @ middle FA
	101204-719	East of Lower FA - gate	0.0385	no	0.0147	no	Pb	Loadout Residential Material @ middle FA
13-Oct	101304-250	530 Pilchuck	ND	no	ND	no		
	101304-500	+/- 440 Pilchuck	0.0221	no	0.0124	no	Pb	
	101304-719	510 East Marine View	0.0261	no	0.0133	no	Pb	
14-Oct	101404-250	South of Middle FA	ND	no	ND	no		
	101404-500	North of Middle FA	0.0139	no	0.0108	no	As, Pb	
	101404-719	East of Lower FA	0.0227	no	ND	no		
15-Oct	101504-250	South of Middle FA	ND	no	ND	no		Loadout Residential Material NE Fenced Area
	101504-500	North of Lower FA	ND	no	ND	no		
	101504-719	East of Lower FA - gate	0.0554	no	0.0214	no	Pb	
18-Oct	101804-250	530 East Marine View	ND	no	0.00966	no	Pb	
	101804-500	North Fenceline	ND	no	0.0104	no	Pb	
	101804-719	510 East Marine View	0.0396	no	0.014	no	Pb	
19-Oct	101904-333	530 Pilchuck	ND	no	0.0136	no	Pb	
	101904-500	North of Lower FA	ND	no	0.0139	no	Pb	
	101904-719	East of Lower FA	0.0127	no	0.016	no	As, Pb	

Source: STL Preliminary Summary Reports

Notes:

(1) The trigger levels are based on a 5 x 10^(-5) risk for a 10 year exposure scenario. The exposure calculations are based on a 10-hour day, 350 days per year exposure for 10 years. These numbers represent a trigger level for the review of dust control practices, and should not be interpreted as allowable emission standards. Consult the Everett Smelter Site Health and Safety Plan, Attachment B-5, for more information.

(2) "J" Flag indicates that the noted analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

Table D.2 Preliminary Summary of Personal Air Monitoring Data

Table D.2
Everett Smelter Site
Preliminary Summary of Personal Air Monitoring Data
July 2004

Sample Date	Sample Number	Job Description	Sample Elapsed Time (min)	Arsenic[1] Sample (ug/m^3)	Arsenic[1] Adjusted PEL (ug/m^3)	Arsenic[1] Sample>PEL (yes/no)	Lead[2] Sample (ug/m^3)	Lead[2] Adjusted PEL (ug/m^3)	Lead[2] Sample>PEL (yes/no)	comment
30-Jun	063004-285P	Labor	616	ND	7.79	no	ND	38.96	no	hose, filter reversed
	063004-333P	Operator	616	0.425	7.79	no	ND	38.96	no	hose, filter dropped, reversed
1-Jul	070104-285P	Labor	558	3.8	8.60	no	0.298	43.01	no	hose
	070104-719P	Operator	590	2.74	8.14	no	0.225	40.68	no	excavator
2-Jul	070204-285P	Labor	360	8.75	13.33	no	0.653	66.67	no	hose, quit early - holiday
	070204-719P	Operator	217	16.7	22.12	no	1.14	110.60	no	excavator, quit early - holiday
6-Jul	070604-333P	Labor	600	7.29	8.00	no	1.48	40.00	no	hose
	070604-285P	Operator	608	1.81	7.89	no	0.181	39.47	no	excavator
7-Jul	070704-719P	Labor	n/a	n/a	n/a	n/a	n/a	n/a	n/a	hose, filter lost
	070704-285P	Operator	583	3.05	8.23	no	0.212	41.17	no	excavator
8-Jul	070804-285P	Labor	546	6.84	8.79	no	0.54	43.96	no	hose
	070804-333P	Operator	538	2.4	8.92	no	0.174	44.61	no	excavator
9-Jul	no personal samples		n/a	n/a			n/a			most work conducted outside of fenced area
12-Jul	071204-719PL	Labor	569	3.49	8.44	no	0.263	42.18	no	
	071204-333PO	Operator	n/a	n/a			n/a			pump flow fault at 114 minutes. Sample not analyzed
13-Jul										no monitoring -- work outside fenced area
14-Jul										no monitoring -- work outside fenced area
16-Jul	071604-333PO	Operator	385	2.67	12.47	no	0.151	62.34	no	loader at wharf ~ 45 trucks
19-Jul	no personal samples									
20-Jul	no personal samples									
21-Jul	no personal samples									
22-Jul	072204-333PO	Operator	546	0.0873	8.79	no	0.0546	43.96	no	loader at wharf -- ~98 trucks
23-Jul	072304-333PO	Operator	624	0.516	7.69	no	0.0547	38.46	no	loader at wharf -- ~85 trucks

Source: STL Preliminary Summary Reports

Notes
(1) Arsenic PEL = 10 ug/m3, 8-hr TWA
(2) Lead PEL = 50 ug/m3, 8-hr TWA

Table D.2
Everett Smelter Site
Preliminary Summary of Personal Air Monitoring Data
August 2004

			Sample	Arsenic[1]			Lead[2]			
Sample Date	Sample Number	Job Description	Elapsed Time (min)	Sample (ug/m^3)	Adjusted PEL (ug/m^3)	Sample>PEL (yes/no)	Sample (ug/m^3)	Adjusted PEL (ug/m^3)	Sample>PEL (yes/no)	comment
13-Aug	081304-123PL	Crusher/Labor	579	13	8.29	yes	0.644	41.45	no	non-respirable particles in filter cartridge.
14-Aug	081404-123PL	Crusher/Labor	539	13.2	8.91	yes	0.749	44.53	no	non-respirable particles in filter cartridge.
	081404-333PL	Conveyor/Hopper Labor	624	4.38	7.69	no	0.277	38.46	no	

Source: STL Preliminary Summary Reports

Notes
(1) Arsenic PEL = 10 ug/m3, 8-hr TWA
(2) Lead PEL = 50 ug/m3, 8-hr TWA

Table D.2
Everett Smelter Site
Preliminary Summary of Personal Air Monitoring Data
September 2004

Sample Date	Sample Number	Job Description	Sample Elapsed Time (min)	Arsenic[1] Sample (ug/m^3)	Arsenic[1] Adjusted PEL (ug/m^3)	Arsenic[1] Sample>PEL (yes/no)	Lead[2] Sample (ug/m^3)	Lead[2] Adjusted PEL (ug/m^3)	Lead[2] Sample>PEL (yes/no)	comment
1-Sep	090104-123PL	Residential Operator/Laborer	556	0.112	8.63	no	0.165	43.17	no	
	090401-333PO	Residential Operator/Laborer	590	0.172	8.14	no	0.705	40.68	no	
2-Sep	090204-123PL	Residential Operator/Laborer	635	0.179	7.56	no	0.261	37.80	no	
	009204-333PO	Residential Operator/Laborer	638	0.100	7.52	no	0.208	37.62	no	
7-Sep	090704-123PL	Residential Operator/Laborer	643	0.068	7.47	no	0.137	37.33	no	
	090704-333PO	Residential Operator/Laborer	615	0.174	7.80	no	0.329	39.02	no	

Source: STL Preliminary Summary Reports

Notes
(1) Arsenic PEL = 10 ug/m3, 8-hr TWA
(2) Lead PEL = 50 ug/m3, 8-hr TWA

APPENDIX E

EVERETT 2004 CONSTRUCTION PHOTO LOG

PHOTO INDEX
2004 EVERETT CONSTRUCTION

Filename	Size	Image Properties	Description
100_0009	80 KB	640x480x24b jpeg	Phase II excavation along East Marine View
100_0011	87 KB	640x480x24b jpeg	Phase III B excavation in LS-47.
100_0014	109 KB	640x480x24b jpeg	Phase III B excavation in LS-47.
100_0015	102 KB	640x480x24b jpeg	Phase II excavation along East Marine View
100_0020	48 KB	640x480x24b jpeg	Temporary stockpile for soils to be loaded onto the barges
100_0022	37 KB	360x480x24b jpeg	Spud barge mobilization - Everett
100_0023	60 KB	640x480x24b jpeg	Spud barge mobilization - Everett
100_0025	66 KB	640x480x24b jpeg	Unloading soil to be loaded onto the barges
100_0027	76 KB	640x480x24b jpeg	Stockpile management for soils to be loaded onto the barges
100_0032	86 KB	640x480x24b jpeg	East Marine View excavation
100_0096	77 KB	640x480x24b jpeg	Barge loading conveyor containment
100_0098	52 KB	640x480x24b jpeg	Barge - Marcy Joan, 1st shipment of source soil to Tacoma
100_0102	74 KB	640x480x24b jpeg	Barge - Marcy Joan, 1st shipment of source soil to Tacoma
100_0152	45 KB	640x480x24b jpeg	Barge - Marcy Joan, 1st shipment of source soil to Tacoma
100_0332	120 KB	640x480x24b jpeg	Brick in LS-84, LS-78 and LS-74 before excavation.
100_0347	88 KB	640x480x24b jpeg	Phase III B excavation in Lower Source Area.
100_0353	71 KB	640x480x24b jpeg	Haul road through Upper Source Area.
100_0354	84 KB	640x480x24b jpeg	Phase III B excavation on Pilchuck Path.
100_0357	39 KB	360x480x24b jpeg	Phase III B excavation
100_0361	42 KB	360x480x24b jpeg	Phase III B excavation and retention pond.
Hpim0069	1,481 KB	1600x1200x24b jpeg	Arsenic trioxide excavation.
Hpim0070	1,444 KB	1600x1200x24b jpeg	Arsenic trioxide excavation.
Hpim0071	1,459 KB	1600x1200x24b jpeg	Arsenic trioxide excavation.
Hpim0072	1,461 KB	1600x1200x24b jpeg	Arsenic trioxide excavation.
Hpim0073	1,451 KB	1600x1200x24b jpeg	Arsenic trioxide excavation.
Hpim0074	1,435 KB	1600x1200x24b jpeg	Arsenic trioxide excavation.
Hpim0113	263 KB	640x480x24b jpeg	Taylor's property line before excavation.
Hpim0114	271 KB	640x480x24b jpeg	Taylor's property line before excavation.
Hpim0115	277 KB	640x480x24b jpeg	Cut and cap on main water line - East Marine View Dr.
Hpim0116	245 KB	640x480x24b jpeg	East Marine View excavation.

PHOTO INDEX
2004 EVERETT CONSTRUCTION

Filename	Size	Image Properties	Description
Hpim0117	235 KB	640x480x24b jpeg	East Marine View excavation.
Hpim0118	249 KB	640x480x24b jpeg	Taylor's property line after excavation.
Hpim0119	221 KB	640x480x24b jpeg	Taylor's property line after excavation.
Hpim0120	253 KB	640x480x24b jpeg	Cut and cap water line - East Marine View Dr.
Hpim0121	252 KB	640x480x24b jpeg	Taylor's property line after excavation.
Hpim0126	210 KB	640x480x24b jpeg	East Marine View excavation.
Hpim0129	180 KB	640x480x24b jpeg	East Marine View excavation.
Hpim0136	213 KB	640x480x24b jpeg	East Marine View excavation.
Hpim0137	228 KB	640x480x24b jpeg	East Marine View excavation.
Hpim0149	223 KB	640x480x24b jpeg	Brick debris in LS-84, LS-78 and LS-74 after excavation.
P8020008	325 KB	1280x960x24b jpeg	Spud Barge loading Marcy Joan - Everett
P8020014	327 KB	1280x960x24b jpeg	Spud Barge loading Marcy Joan - Everett
P8230010	122 KB	1280x960x24b jpeg	Barge unloading at Tacoma
P8230011	96 KB	1280x960x24b jpeg	Barge unloading at Tacoma
Trench01	1,215 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling - US-10, 11 & 12 Looking East
Trench02	879 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling - US-10, 11 & 12 looking West
Trench03	1,158 KB	2304x1728x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-70 Looking Northwest
Trench04	1,119 KB	2304x1728x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-68 looking North
Trench05	1,096 KB	2304x1728x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-63 Looking North
Trench06	1,155 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-59 looking North
Trench07	1,665 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-53 looking South
Trench08	1,344 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-24 looking South
Trench09	1,056 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-19 looking North
Trench10	1,036 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-20 looking North
Trench11	1,210 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-15 looking South
Trench12	1,247 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-21 looking East
Trench13	1,164 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-6 looking North
Trench14	1,186 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-17 looking North
Trench15	1,577 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-36 looking South
Trench16	1,513 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-23 looking South

PHOTO INDEX
2004 EVERETT CONSTRUCTION

Filename	Size	Image Properties	Description
Trench17	1,309 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-13 looking North
Trench18	1,551 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-84 looking North
Trench19	1,260 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-77 looking North
Trench20	1,554 KB	2304x1728x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-81 looking West
Trench21	1,588 KB	1728x2304x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-75 looking West
Trench22	1,240 KB	2304x1728x24b jpeg	Phase 1B Confirmation Trench Sampling: LS-79 & 80
Trench23	938 KB	2304x1728x24b jpeg	Phase 1B Confirmation Sampling: 3' overdig LS-31
Trench24	1,367 KB	2304x1728x24b jpeg	Phase 1B Confirmation Sampling: 3' overdig LS-31
Trench25	875 KB	2304x1728x24b jpeg	Phase 1B Confirmation Sampling: 1-2' overdig LS-84
Trench26	1,377 KB	2304x1728x24b jpeg	Phase 1B Confirmation Sampling: 1-2' overdig LS-84

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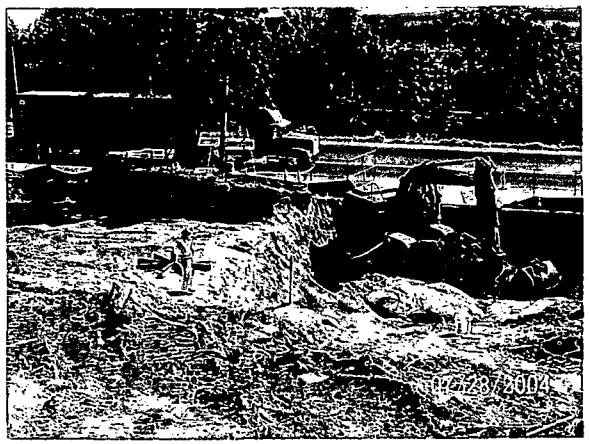

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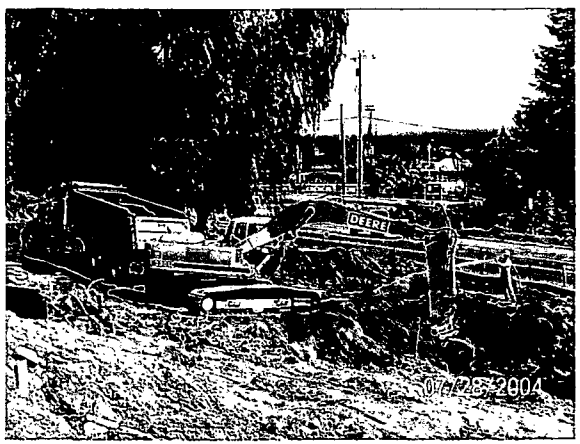

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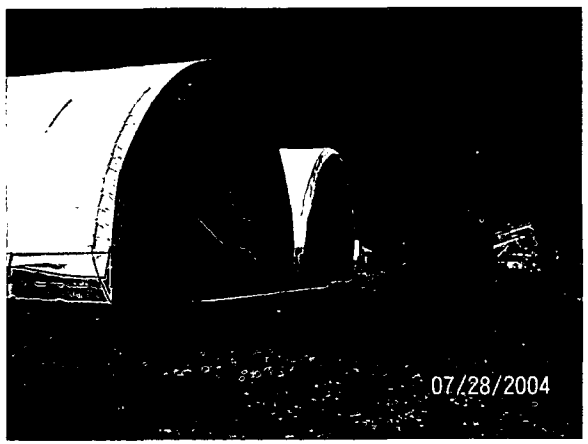

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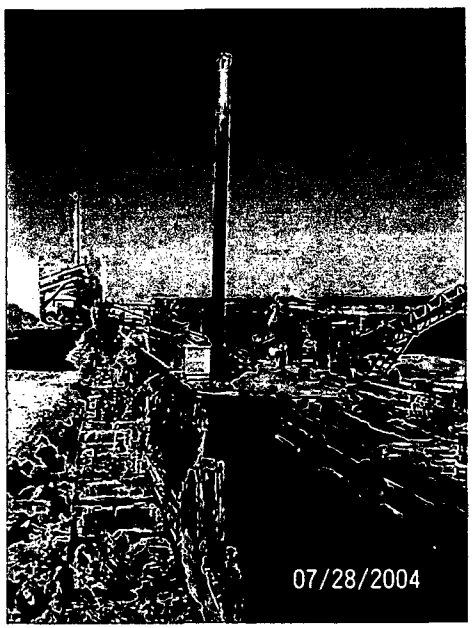

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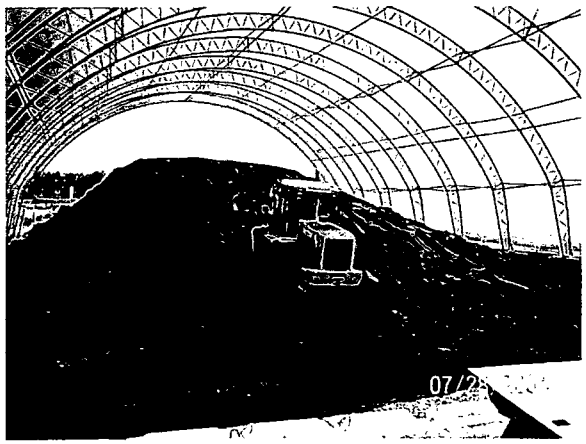

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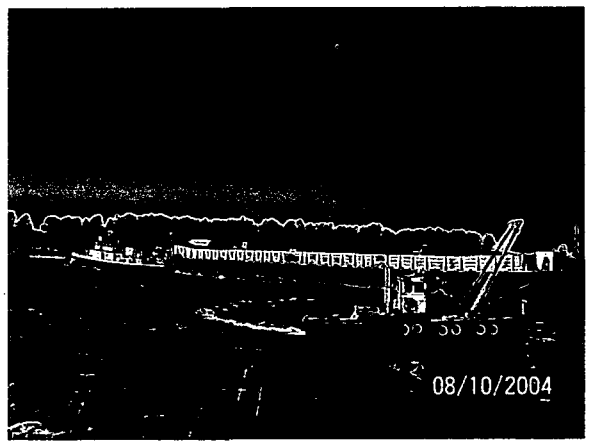

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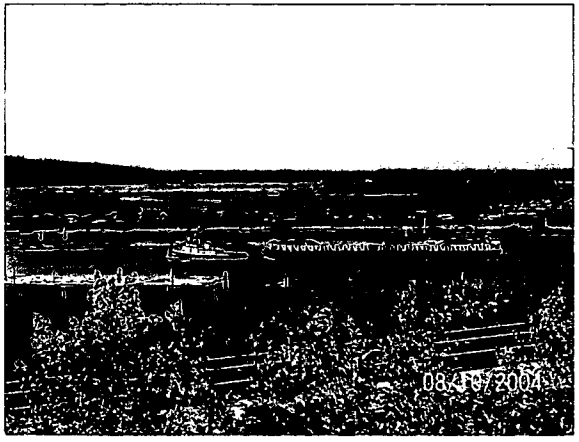

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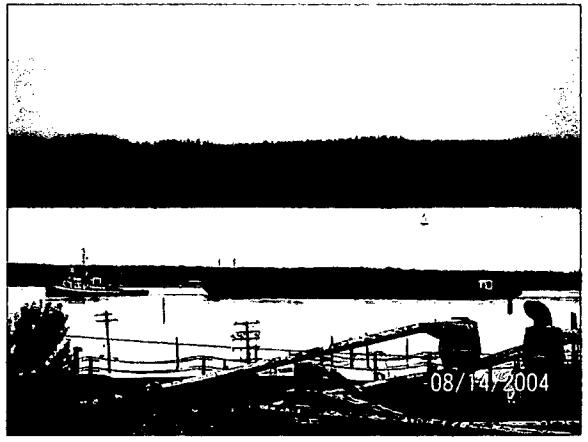

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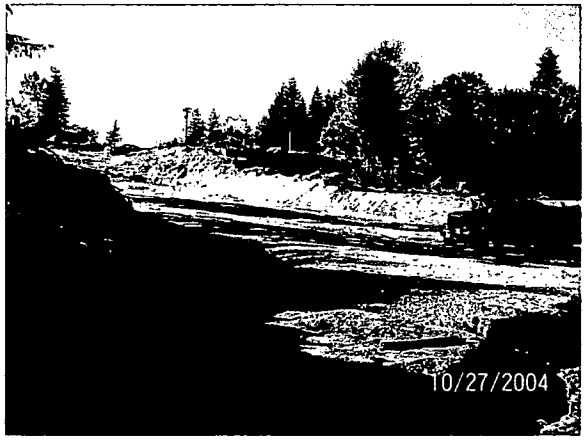

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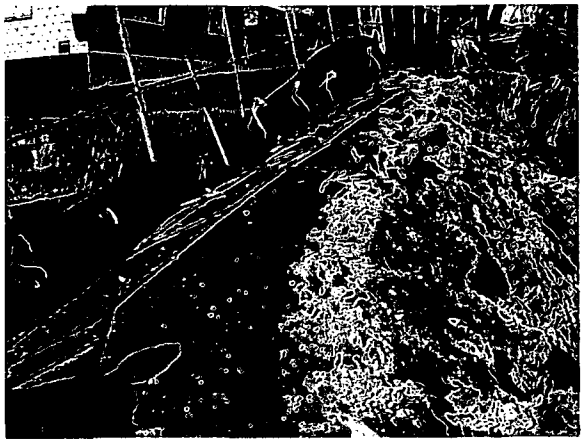

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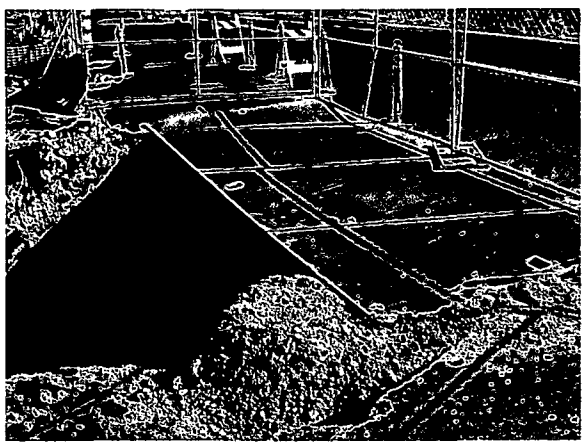

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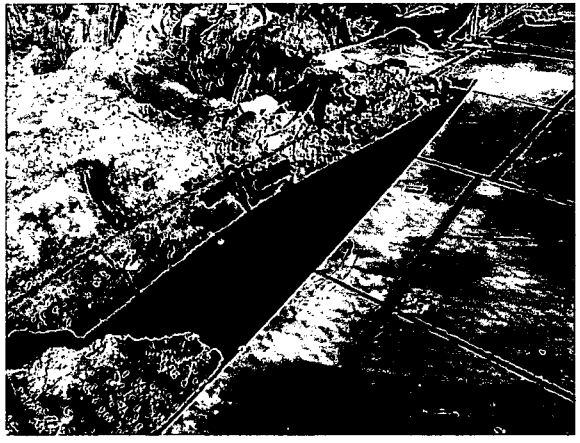

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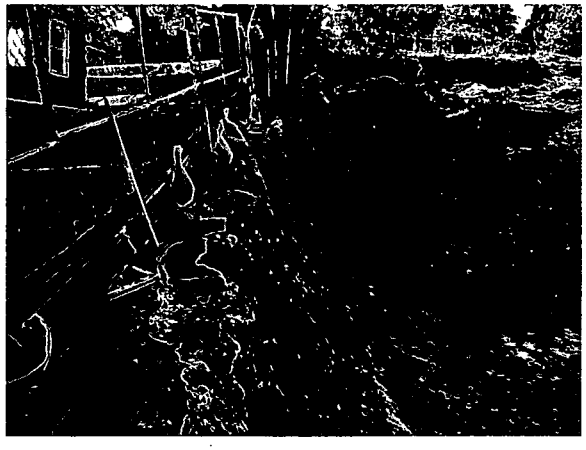

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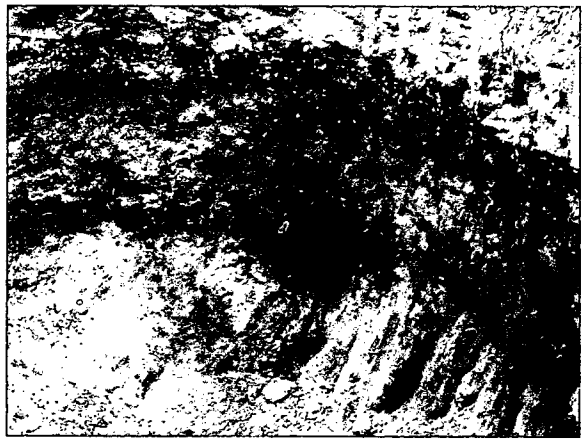

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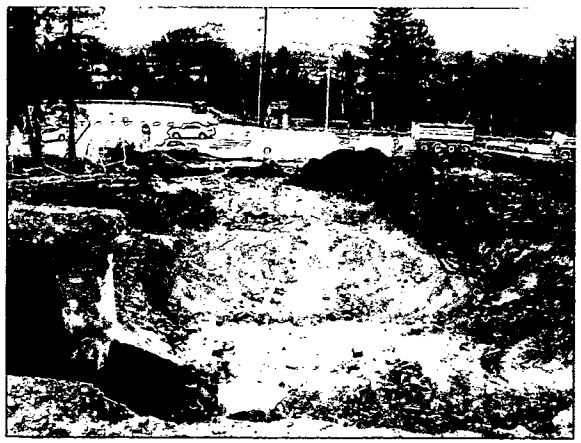

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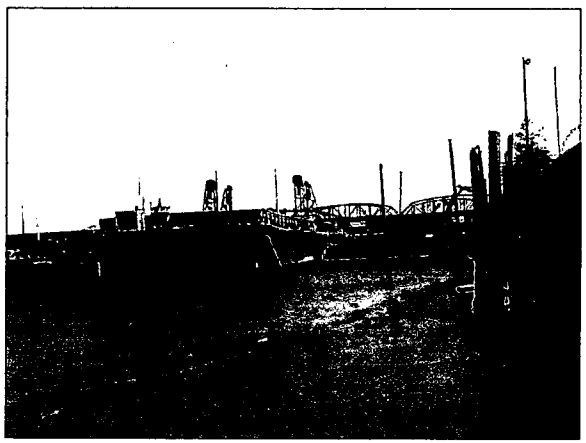

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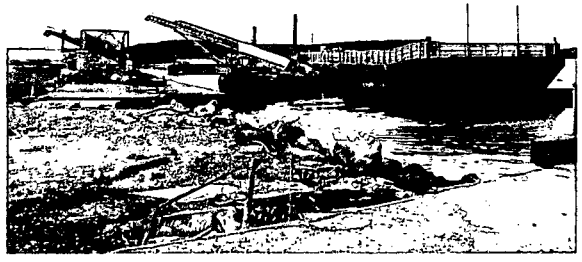

P8230010

P8230011

Trench01

Trench02

Trench03

Trench04

Trench05

Trench06

Trench07

Trench08

Trench09

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Trench14

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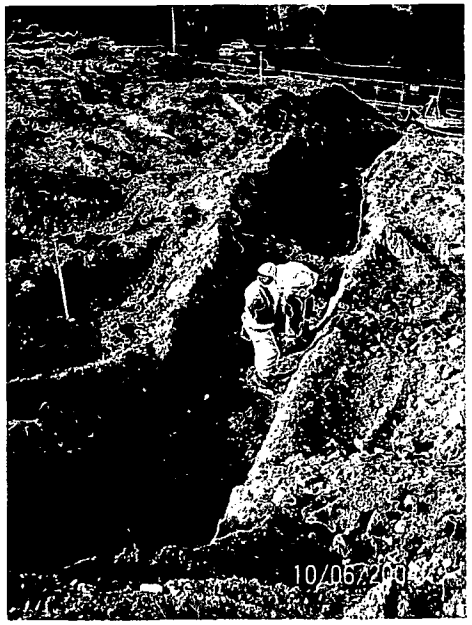
Trench16

Trench17



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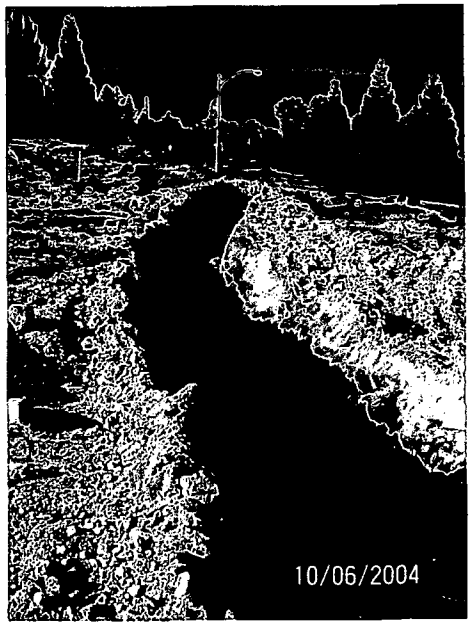

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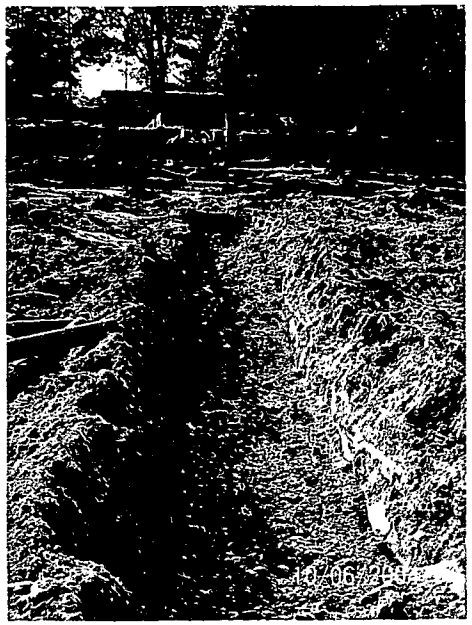

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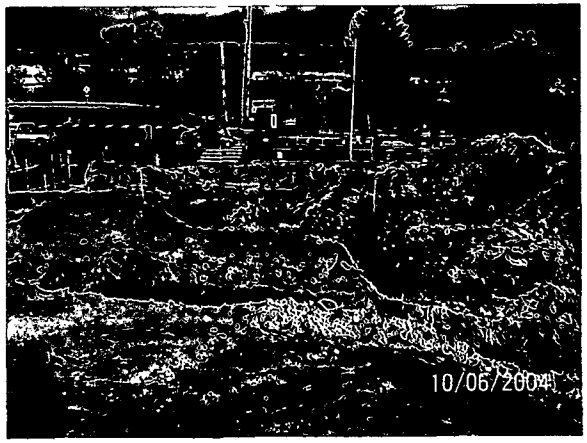

Trench22

Trench23

Trench24

Trench25

Trench26

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File #:	1.9.7
Site Name:	Everett Smelter (State Site)

APPENDIX F

WELL ABANDONMENT

Nation, Dave

From: South, David [DSOU461@ECY.WA.GOV]
Sent: Tuesday, June 29, 2004 2:09 PM
To: 'Nation, Dave'
Subject: RE: Abandonment of Wells on EMVD in Everett

Dave,

You will need to ensure you backfill the annular space with bentonite as well. Water could leak down the granular backfill, the prevention of which is part of the abandonment procedure.

You might consider pulling the casing with the backhoe; tremie the bentonite down as the casing is pulled. I believe this is how most shallow wells are abandoned.

If you have more questions, I may need to get with water resources.

See you Thursday morning.

DLS

-----Original Message-----
From: Nation, Dave [mailto:DNation@ASARCO.com]
Sent: Friday, June 18, 2004 10:20 AM
To: South, David; Wilson, Tim
Cc: Clint Stanovsky Comcast (E-mail); Darcy Walker (E-mail); Dennis Uecker (E-mail)
Subject: Abandonment of Wells on EMVD in Everett

Hi Dave; as we discussed today, there are groundwater monitoring wells in the vicinity of East Marine View Drive that will be removed with the excavation of Source material in the roadway proper. These are shallow wells and, if required by the excavation, will be entirely removed as part of the excavation instead of abandoned and then excavated. If the wells cannot be entirely excavated the remaining well casing will be filled with bentonite at the limit of excavation prior to backfill. We will proceed in this manner as we schedule the work. If you have any questions please contact me. Thanks Dave

*

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HYDROMETRICS INC.

Consulting Scientists and Engineers
2727 Airport Rd. Helena Mt, 59601

GEOTECHNICAL WELL LOG DIAGRAM

Hole Name: EV-10

Date Hole Started: 02/22/96 Date Hole Finished: 02/22/96

Project: ASEV01 Everett Smelter Site
County: Snohomish State: WA
Legal Description: East Marine View Drive
Descriptive Location: 142' S, 3' E of EV-3

Recorded By: Jim Swortz
Drilling Company: Hydrometrics
Driller: J.Neiderkorn
Drilling Method: Hollow Stem Augers
Drilling Fluids Used: None

WELL COMPLETION	Y/N	DESCRIPTION	INTERVAL
Well Installed?	Y	2"SCH 40 PVC, flush thread Casing	-0.5 - 11.0
Surface Casing Used?	Y	Flush mount steel protective casing	0.0 - 1.2
Screen/Perforations?	Y	0.010 slotted screen	4.5 - 10.0
Sand Pack?	Y	silica sand	3.5 - 10.0
Annular Seal?	Y	bentonite chips	1.5 - 3.5
Surface Seal?	Y	cement pad	0.0 - 1.5
DEVELOPMENT/SAMPLING			
Well Developed?	N		
Water Samples Taken?	N		
Boring Samples Taken?	N		

Purpose of Hole: Monitoring Well
Target Aquifer: Shallow fill/till
Hole Diameter (in): 7"OD
Total Depth Drilled (ft): 11.00

Static Water Level Below MP: Dry Hole
Date: 02/22/96
MP Description: Top of PVC casing
MP Height Above or Below Ground (ft): 0.00

Surface Casing Height (ft): 0.00
Riser Height (ft): -0.50
Ground Surface Elevation (ft): 0.00
MP Elevation (ft): 0.00

Remarks: All sample numbers preceeded by EVT-9602

DEPTH	SAMPLE NUMBER	SAMPLE TYPE	BLOW COUNT	RECOVERY	DRILLING AND GEOTECHNICAL NOTES	GEOLOGICAL DESCRIPTION (■ = Screened Interval)
	238	grab		0.00	0.0 - 0.5'	0.0 - 0.5' Sand & Gravel - brown/gray, medium to coarse Sand, 50% Gravel, semi-rounded; trace Silt; moist. [road base fill].
						0.5 - 11.0'
	239	ss	10,9,9	1.50	2.0 - 2.8' Two samples collected from split spoon obtained from 2.0 to 3.5.	Silty Sand - dark to light brown, trace gravel, 1/2 inch black layer; moist.
	240	ss		0.00	2.8 - 3.5'	Fine Sand & Silt - brown/orange, trace gravel, moist.
5	241	ss	5,13,16,	1.00	5.0 - 5.5' Sample 242 is a duplicate to sample 241.	Sandy Silt - light brown, mottled orange, trace gravel, moist.
10	243	ss	10,40,50/6"	0.50	10.0 - 10.5'	Silty Sand - gray brown, trace gravel, moist, dense from 10.5 to 11.0 feet, cobble at 11.0 feet.
	244	ss		0.50	10.5 - 11.0' Sample 243 collected from 10.0 to 10.5'. sample 244 collected from 10.5 to 11.0'.	

GRAPHICS

G098869 03/20/96 10:03:16

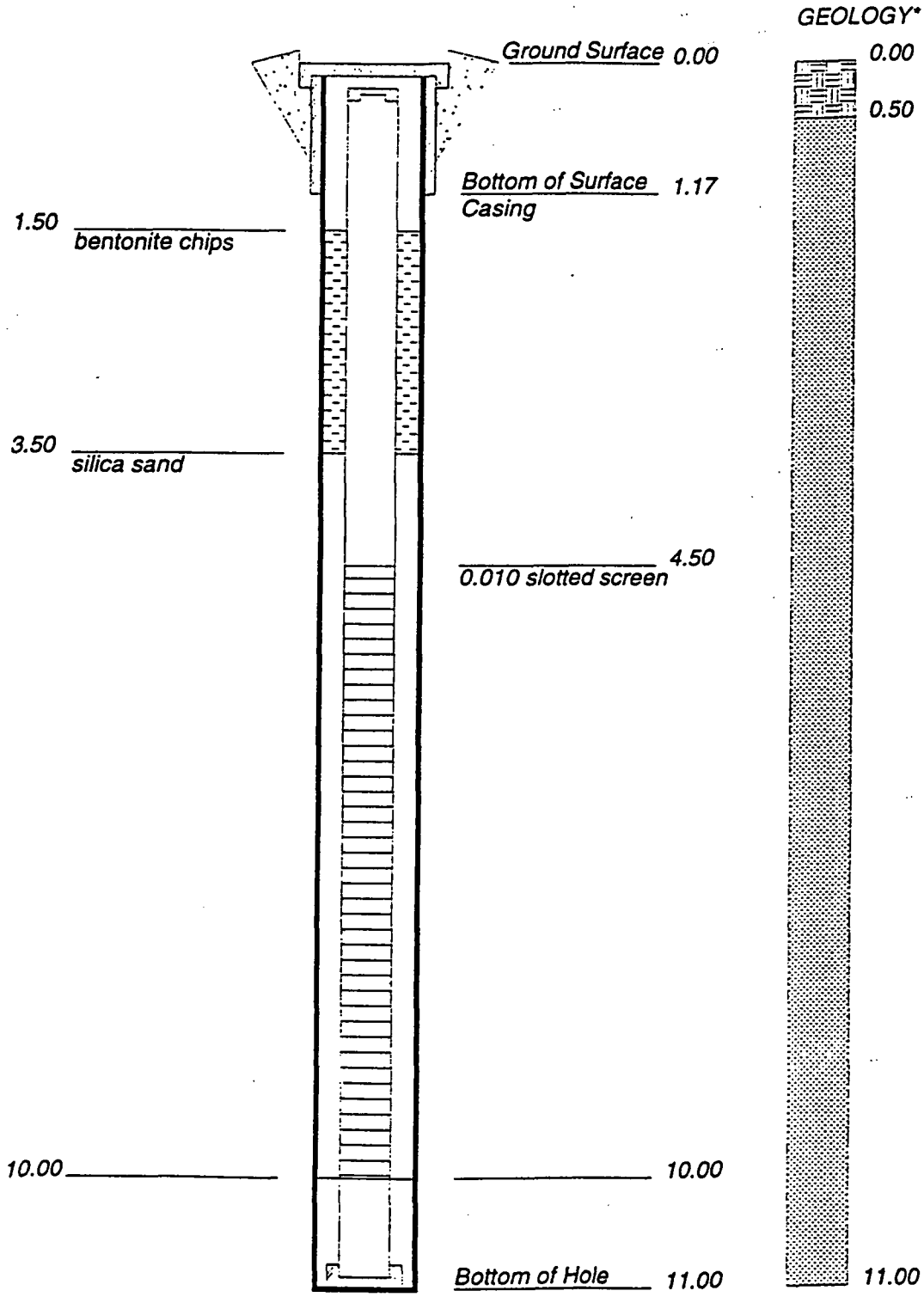
HYDROMETRICS INC.

Consulting Scientists and Engineers
2727 Airport Rd. Helena Mt, 59601

WELL COMPLETION DIAGRAM

Hole Name: EV-10

Date Hole Started: 02/22/96 Date Hole Finished: 02/22/96



*Detailed geologic descriptions are provided on Standard Well Log.

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