ASARCO

May 26, 1999

VIA HAND DELIVERY

Mr. James T. Graber
Industrial Waste Specialist
Metro Wastewater Reclamation District
6450 York Street
Denver, Colorado 80229-7499

Dear Mr. Graber:

Enclosed for your review is the Asarco Globe Plant's Initial Compliance Report (ICR). The ICR contains flow monitoring data, including discharge logs, from monitoring points 001 and 002 for the period of March 28 – May 12, 1999, sampling results for both monitoring points January 1 – May 12, 1999 and waste disposal activities for the first quarter of 1999.

Based on my inquiry of the people responsible for these areas or gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate and complete. If you should require additional information or have any questions regarding this submittal, please contact Nikki Mathis at 303-296-5111.

Sincerely,

Margaret W. Staub
Unit Manager

enc.

cc: (w/ enc.)
R. Litle
R. Marcus
C. Dungey
P. Dowell/D. Lux
N. Mathis

\\GLBNT1\NETUSERS\NMathis\POTW\ICRCVLTR.doc
FILE NO: 4.6.5.4

ASARCO Incorporated, 495 East 51st Avenue, Denver, Colorado 80216-2098
Phone (303) 296-5900 • Fax. (303) 296-0508

INITIAL COMPLIANCE REPORT

Reporting period from: January 1, 1999 to May 12, 1999

Date prepared: May 26, 1999

Prepared by: Patricia Dowell and Nicole Mathis

A. FACILITY INFORMATION

Name: ASARCO Globe Plant

Location: 495 E. 51st Avenue
Denver, Colorado 80216

Phone: (303) 296-5900 Fax: (303)296-0508 Emergency: (303) 208-4209

B. FLOW MONITORING

Discharge log is attached.

Monitoring Point 001 [ ] No discharge
(3/28/99 – 5/12/99)

Average daily flow volume (gallons per day)	41,567	[X] Measured	[ ]Estimated
Maximum daily flow volume (gallons per day)	60,592	[X] Measured	[ ]Estimated

Monitoring Point 002 [ ] No discharge
(3/28/99 – 5/12/99)

Average daily flow volume (gallons per day)	993	[ ] Measured	[X]Estimated
Maximum daily flow volume (gallons per day)	1,635	[ ] Measured	[X]Estimated

C. SAMPLING RESULTS

Attach copies of the analytical results of all samplings of the regulated wastestreams performed by the permittee during the reporting period. Attach copies of the analytical results of all split samplings of the regulated wastestream performed by the permittee or other agency during the reporting period. Results transmitted to the permittee by any other agency, including the Metro District, do

not have to be submitted, but must be kept on file for at least 3 years and be available for inspection.

Analytical results submitted with this PCR must contain the following information:

1. Concentrations and measurements of all parameters for which there are self-monitoring requirements.

2. The date, time and location of all sampling activities. Include the start-stop dates and times for composite samples.

3. The method of sampling (grab, time composite, flow composite, or continuous measurement) and name of the person collecting the sample.

4. The name of the laboratory (or person) that performed the analyses.

5. The date the analyses were performed.

6. The analytical techniques/methods used for the analyses.

D. WASTE DISPOSAL

(Waste disposal activities are for first quarter 1999 only.)

[ ] No waste disposal activity occurred during the reporting period

[x] Summary provided below

Waste Name	Volume	Ship Date	Disposal Company
Used Oil	346 gal.	01/07/99	Mesa Oil
SAA materials/BH Dust	4 drums	01/28/99	Safety-Kleen
Fluorescent Lights, Etc.	8 boxes	02/17/99	Recyclights
WWTP Sludge/BH Dust	20 c.y.	03/02/99	Safety-Kleen
Process Debris	20 c.y.	03/02/99	Safety-Kleen

E. CERTIFICATION OF COMPLIANCE WITH STANDARDS

The permit standards are being met on a consistent basis, thus no additional O&M or pretreatment is necessary.

Nicole R. Mathis 5/26/99

Signature of Qualified Professional Date

Nicole R. Mathis Environmental Engineer

Name (please print or type) Title (please print or type)

F. ACCURACY AND COMPLETENESS CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that there are no significant and/or regulated industrial process operations being conducted at this facility which discharge water to the POTW and which are not covered by this report. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Margaret W. Staub 5/26/99

Signature of Authorized Representative Date

Margaret W. Staub Unit Manager

Name (please print or type) Title (please print or type)

ASARCO Globe Plant
Discharge Log for Monitoring Point 001

Date	Meter Reading (MGAL)	Volume (GPD)
03/28/99	0.140025	0
03/29/99	0.140025	0
03/30/99	0.182007	41982
03/31/99	0.215419	33412
04/01/99	0.256316	40897
04/02/99	0.278096	21780
04/03/99	0.278096	0
04/04/99	0.278096	0
04/05/99	0.278096	0
04/06/99	0.297002	18906
04/07/99	0.297002	0
04/08/99	0.297002	0
04/09/99	0.297002	0
04/10/99	0.297002	0
04/11/99	0.297002	0
04/12/99	0.297002	0
04/13/99	0.335227	38225
04/14/99	0.370342	35115
04/15/99	0.370342	0
04/16/99	0.370342	0
04/17/99	0.370342	0
04/18/99	0.370342	0
04/19/99	0.370342	0
04/20/99	0.405450	35108
04/21/99	0.452323	46873
04/22/99	0.497729	45406
04/23/99	0.544015	46286
04/24/99	0.544015	0
04/25/99	0.544015	0
04/26/99	0.544015	0
04/27/99	0.544015	0
04/28/99	0.596814	52799
04/29/99	0.643278	46464
04/30/99	0.679790	36512
05/01/99	0.722456	42666
05/02/99	0.760655	38199
05/03/99	0.760655	0
05/04/99	0.803078	42423
05/05/99	0.863954	60876
05/06/99	0.915930	51976
05/07/99	0.934293	18363
05/08/99	0.994885	60592
05/09/99	0.994885	0
05/10/99	0.994885	0
05/11/99	1.047132	52247
05/12/99	1.096064	48932

Maximum Daily Flow Volume = **60592 gpd**
Average Daily Flow Volume = **41567 gpd**
(Based on days of discharge 3/28/99 - 5/12/99)

Process Waste Batch Discharge Log
and
Intent to Discharge Notification Log

Process Wastewater Source	Volume (gal)	Proposed Date of Discharge	Start Time	Estimated Duration of Discharge and End Time	Prior Testing Results?	Self-Monitoring Required?	Date, Time and Individual Notified at Metro	Individual Notifying Metro and Additional Comments
Cadmium Sulfide Batch 1	420	9/3/98 (@ MP002)	N/A	N/A	Yes; (See file 4.6.4.3.4)		N/A	N/A; Lot # B-2-98
Cadmium Sulfide Batch 2	380	10/20/98 (@ MP002)	N/A	N/A	Yes; (See file 4.6.4.3.4)		N/A	N/A; Lot # B-3-98
Cadmium Sulfide Batch 3	400	12/1/98 (@ MP002)	N/A	N/A	Yes; (See file 4.6.4.3.4)		N/A	N/A; Lot # B-4-98
Cadmium Sulfide Batch 4	200	1/14/99 (@ MP002)	N/A	N/A	Yes; (See file 4.6.4.3.4)		N/A	N/A; Lot # B-5-98
Cadmium Sulfide Batch 5	235	1/28/99 (@ MP002)	N/A	N/A	Yes; (See file 4.6.4.3.4)		N/A	N/A; Lot # B-6-99
Cadmium Sulfide (Batches 1-5)	1635	4/12/99 (@ MP001)	9:15	9 hours ;18:15	Yes	Yes; results previously forwarded. (See file 4.6.4.3.4)	4/1/99; 12:30; T. Graber	N. Mathis; Initially notified Metro that discharge would be on 4/5/99.
Antimony Shot Antimony Pickling	250 100	4/12/99 (@ MP001)	9:15	9 hours; 18:15	No	Yes; self-mon. req. @ 001 for Sb during discharge. Results due w/ 5/99 ICR.	4/1/99; 12:30; T. Graber	N. Mathis; Total discharge on 4/12/99 is expected to be ~ 45, 000 gal.

Electrolytic Antimony Refining	200	4/12/99 (@ MP001)	9:15	9 hours; 18:15	No	Yes; self-mon. req. @ 001 for Sb during discharge. Results due w/ 5/99 ICR.	4/8/99; 13:45; T. Graber	N. Mathis; Sample will be analyzed for all permitted parameters to also satisfy monthly monitoring rqmnts.
Electrolytic Antimony Refining	150	4/13/99 (@ MP001)	8:30	10 + hours; 18:30	No	No	4/12/99; 7:42; T. Graber	N. Mathis; Total discharge on 4/12/99 is expected to be ~ 50, 000 gal.
Antimony Pickling	300	4/20/99 (@ MP001)	8:30	12 hours; 8:30	No	No	4/19/99;13:45; T. Pfeifer	R. Flynn; Total discharge on 4/20/99 is expected to be ~45,000 gal.
Cadmium Sulfide Batch 6	350	4/28/99 (@ MP002)	9:30	10-30 minutes; 10:00	Yes	Yes; self-mon. req by ICR to be submitted w/ 5/99 ICR.	4/26/99; 4:17; T. Pfeifer	N. Mathis; Lot # B-7-99
Antimony Pickling Electrolytic Antimony	100 200	4/29/99 (@ MP001)	8:30	12 hours; 20:30	No	Yes; self-mon. req. @ 001 for Sb during discharge. Results due w/ 5/99 ICR.	4/28/99;9:12; T. Graber	N. Mathis; Initial notification was made to T. Pfeifer on 4/26 for discharge on 4/27.
Antimony Pickling Electrolytic Antimony	350 50	5/10/99 (@ MP001)	9:00	12 hours; 21:00	No	Yes; self-mon. req. @ 001 for Sb during discharge. Results due w/ 5/99 ICR.	5/6/99;1:05; T. Graber (via fax)	N. Mathis; Total discharge on 5/10/99 is expected to be ~ 45, 000 gal.; Sample will be analyzed for all permitted parameters to also satisfy monthly monitoring rqmnts.

Antimony Pickling Electrolytic Antimony	200 100	5/18/99 (@ MP001)	9:00	12 hours; 21:00	No	No	5/17/99; 8:45; T. Pfeifer	N. Mathis; Total discharge on 5/18/99 is expected to be ~ 60, 000 gal.
Antimony Shot Electrolytic Antimony	350 50	5/20/99 (@ MP001)	9:00	12 hours; 21:00	No	Yes; self-mon. req. @ 001 for Sb during discharge. Results due w/ 7/99 PCR	5/19/99; 8:30; T. Graber	N. Mathis; Total discharge on 5/20/99 is expected to be ~ 60, 000 gal.
Antimony Shot Antimony Pickling	200 200	5/25/99 (@ MP001)	9:00	12 hours; 21:00	No	Yes; self-mon. req. @ 001 for Sb during discharge. Results due w/ 7/99 PCR	5/24/99; 10:20; T. Graber	N. Mathis; Total discharge on 5/25/99 is expected to be ~ 60, 000 gal.

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 4220 Flow Meter.

Sampling Period:	1/14/1999 8:47 to 1/15/1999 8:47	
Total Flow for 24 hour period:	10,600 gal	
Maximum Flow:	1.1	gal/sec
Average Flow:	0.12	gal/sec
Number of Samples Collected:	21	
Total Volume Collected:	2.1	liters

Total Metals Composite Analysis:

Arsenic (As):	0.007	(ppm)
Cadmium (Cd):	0.03	(ppm)
Copper (Cu):	0.02	(ppm)
Lead (Pb):	0.03	(ppm)
Nickel (Ni):	0.02	(ppm)
Selenium (Se):	0.080	(ppm)
Zinc (Zn):	0.01	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 1/15/1999 8:50

Analysis Date/Time: 1/15/1999 8:55

pH Grab Analysis:

pH 7.5 (units)

Sampled By: John Vigil

Analyzed By: John Vigil

ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLAN
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.

PROJECT NAME: January Sewer Comp

SAMPLERS: (Signature) John P Vigil

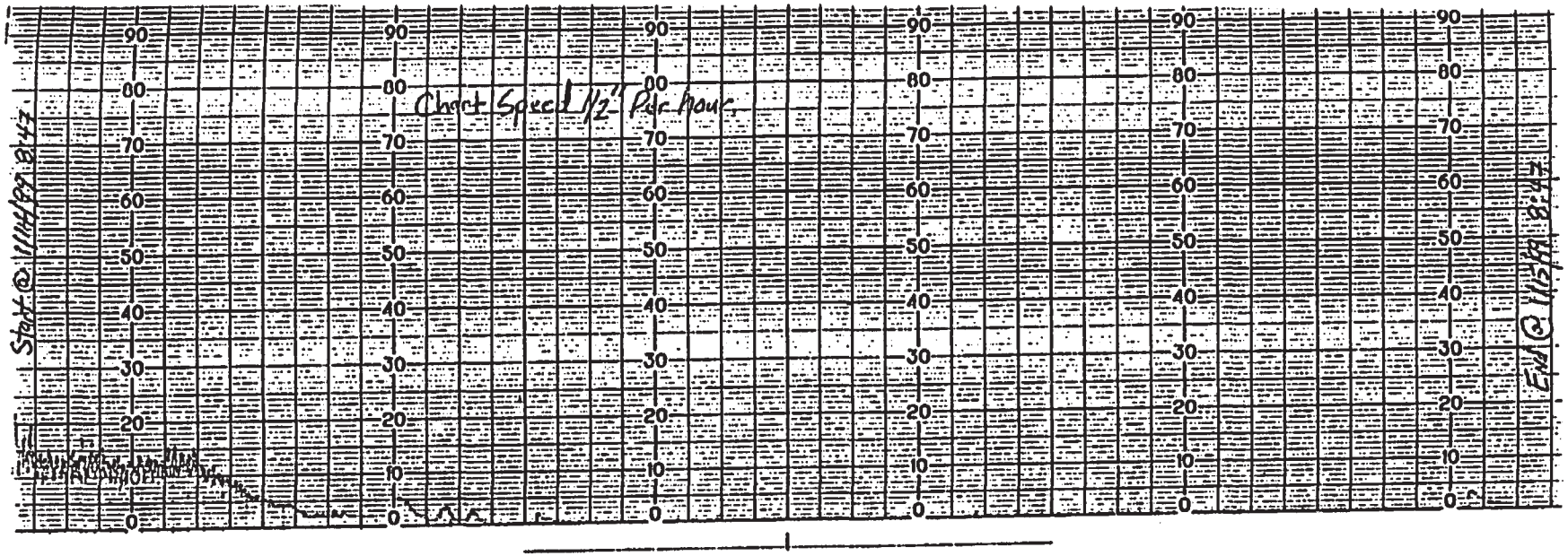
STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter w/HNO3 Total As, Cd, Cu, Pb, Ni, Se	250 ml w/ unpres.					REMARKS
001	1-14-99 8:47 1-15-99 8:47		X		Sewer Manhole	1	X						
001	1-15-99	8:50		X	" "	1		X					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P Vigil	1-15-99 9:00				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG- 000736


Start @ 1/14/89 8:47
Chart Speed 1/2" Per hour.
End @ 1/15/89 8:47
90
80
70
60
50
40
30
20
10
0

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-002-99	Well Number	001
Category	SEWER	Location	
Description	PH GRAB	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	01/14/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	7.50	EPA150.1	01/15/1999	JV

Lab ID Number	208-004-99	Well Number	001
Category	SEWER	Location	
Description	JANUARY SEWER COMP.	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	01/14/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.007	3114 B 4.d	02/05/1999	JV
Cd	SAMPLE	0.03	3111 B	02/05/1999	JV
Cu	SAMPLE	0.02	3111 B	02/05/1999	JV
Ni	SAMPLE	0.02	3111 B	02/05/1999	JV
Pb	SAMPLE	0.03	3111 B	02/05/1999	JV
Se	SAMPLE	0.080	3114 B	02/05/1999	JV
Zn	SAMPLE	0.01	3111 B	02/05/1999	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number 200-011-99
Category QAQC
Description JANUARY SEWER COMP.
QAQC Type DUPLICATE
QAQC for LabID 208-004-99

Well Number 001
Location
Parameter TOTAL
Date Sampled 01/14/1999

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.007	0.007	0.0	3114 B 4.d	02/05/1999	JV
Cd	DUPLICATE	0.03	0.03	0.0	3111 B	02/05/1999	JV
Cu	DUPLICATE	0.02	0.02	0.0	3111 B	02/05/1999	JV
Ni	DUPLICATE	0.01	0.02	66.6	3111 B	02/05/1999	JV
Pb	DUPLICATE	0.03	0.03	0.0	3111 B	02/05/1999	JV
Se	DUPLICATE	0.081	0.080	1.2	3114 B	02/05/1999	JV
Zn	DUPLICATE	0.01	0.01	0.0	3111 B	02/05/1999	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-012-99	Well Number	001
Category	QAQC	Location	
Description	JANUARY SEWER COMP.	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	01/14/1999
QAQC for LabID	208-004-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.015	0.007	0.008	100.0	3114 B 4.d	02/05/1999	JV
Cd	SPIKE	0.46	0.03	0.400	107.5	3111 B	02/05/1999	JV
Cu	SPIKE	0.40	0.02	0.400	95.0	3111 B	02/05/1999	JV
Ni	SPIKE	0.38	0.02	0.400	90.0	3111 B	02/05/1999	JV
Pb	SPIKE	0.41	0.03	0.400	95.0	3111 B	02/05/1999	JV
Se	SPIKE	0.089	0.080	0.008	112.5	3114 B	02/05/1999	JV
Zn	SPIKE	0.40	0.01	0.400	97.5	3111 B	02/05/1999	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-013-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	02/05/1999
QAQC for LabID	208-004-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.0002	3114 B 4.d	02/05/1999	JV
Cd	BLANK	<0.01	3111 B	02/05/1999	JV
Cu	BLANK	<0.01	3111 B	02/05/1999	JV
Ni	BLANK	<0.01	3111 B	02/05/1999	JV
Pb	BLANK	0.01	3111 B	02/05/1999	JV
Se	BLANK	<0.0002	3114 B	02/05/1999	JV
Zn	BLANK	<0.01	3111 B	02/05/1999	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-014-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-004-99

Well Number
Location
Parameter TOTAL
Date Sampled 02/05/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	02/05/1999	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	02/05/1999	JV
Cu	STANDARD	1.00	1.0000	100.0	3111 B	02/05/1999	JV
Ni	STANDARD	1.00	1.0000	100.0	3111 B	02/05/1999	JV
Pb	STANDARD	1.01	1.0000	101.0	3111 B	02/05/1999	JV
Se	STANDARD	0.0020	0.0020	100.0	3114 B	02/05/1999	JV
Zn	STANDARD	1.00	1.0000	100.0	3111 B	02/05/1999	JV

Lab ID Number 200-015-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-004-99

Well Number
Location
Parameter TOTAL
Date Sampled 02/05/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0018	0.0020	90.0	3114 B 4.d	02/05/1999	JV
Cd	STANDARD	0.99	1.0000	99.0	3111 B	02/05/1999	JV
Cu	STANDARD	1.02	1.0000	102.0	3111 B	02/05/1999	JV
Ni	STANDARD	1.00	1.0000	100.0	3111 B	02/05/1999	JV
Pb	STANDARD	1.02	1.0000	102.0	3111 B	02/05/1999	JV
Se	STANDARD	0.0024	0.0020	120.0	3114 B	02/05/1999	JV
Zn	STANDARD	0.98	1.0000	98.0	3111 B	02/05/1999	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-016-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-004-99

Well Number
Location
Parameter TOTAL
Date Sampled 02/05/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	02/05/1999	JV
Cd	STANDARD	4.99	5.0000	99.8	3111 B	02/05/1999	JV
Cu	STANDARD	4.98	5.0000	99.6	3111 B	02/05/1999	JV
Ni	STANDARD	5.01	5.0000	100.2	3111 B	02/05/1999	JV
Pb	STANDARD	5.03	5.0000	100.6	3111 B	02/05/1999	JV
Se	STANDARD	0.0050	0.0050	100.0	3114 B	02/05/1999	JV
Zn	STANDARD	5.02	5.0000	100.4	3111 B	02/05/1999	JV

Lab ID Number 200-017-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-004-99

Well Number
Location
Parameter TOTAL
Date Sampled 02/05/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0057	0.0050	114.0	3114 B 4.d	02/05/1999	JV
Cd	STANDARD	5.02	5.0000	100.4	3111 B	02/05/1999	JV
Cu	STANDARD	5.03	5.0000	100.6	3111 B	02/05/1999	JV
Ni	STANDARD	5.01	5.0000	100.2	3111 B	02/05/1999	JV
Pb	STANDARD	5.05	5.0000	101.0	3111 B	02/05/1999	JV
Se	STANDARD	0.0051	0.0050	102.0	3114 B	02/05/1999	JV
Zn	STANDARD	4.97	5.0000	99.4	3111 B	02/05/1999	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-018-99	Well Number	
Category	QAQC	Location	
Description	REF. 9976	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	02/05/1999
QAQC for LabID	208-004-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.186	0.1810	102.7	3114 B 4.d	02/05/1999	JV
Cd	STANDARD	0.109	0.1130	96.4	3111 B	02/05/1999	JV
Cu	STANDARD	0.426	0.4250	100.2	3111 B	02/05/1999	JV
Ni	STANDARD	0.520	0.5310	97.9	3111 B	02/05/1999	JV
Pb	STANDARD	0.734	0.7190	102.0	3111 B	02/05/1999	JV
Se	STANDARD	0.233	0.1880	123.9	3114 B	02/05/1999	JV
Zn	STANDARD	0.535	0.5440	98.3	3111 B	02/05/1999	JV

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 4220 Flow Meter.

Sampling Period:	2/17/1999 8:11 to 2/18/1999 8:11	
Total Flow for 24 hour period:	18,220 gal	
Maximum Flow:	1.0	gal/sec
Average Flow:	0.21	gal/sec
Number of Samples Collected:	36	
Total Volume Collected:	3.6	liters

Total Metals Composite Analysis:

Antimony (Sb):	0.69	(ppm)
Arsenic (As):	0.012	(ppm)
Cadmium (Cd):	0.05	(ppm)
Copper (Cu):	0.08	(ppm)
Lead (Pb):	0.02	(ppm)
Nickel (Ni):	<0.01	(ppm)
Selenium (Se):	0.074	(ppm)
Zinc (Zn):	0.10	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 2/18/1999 8:17

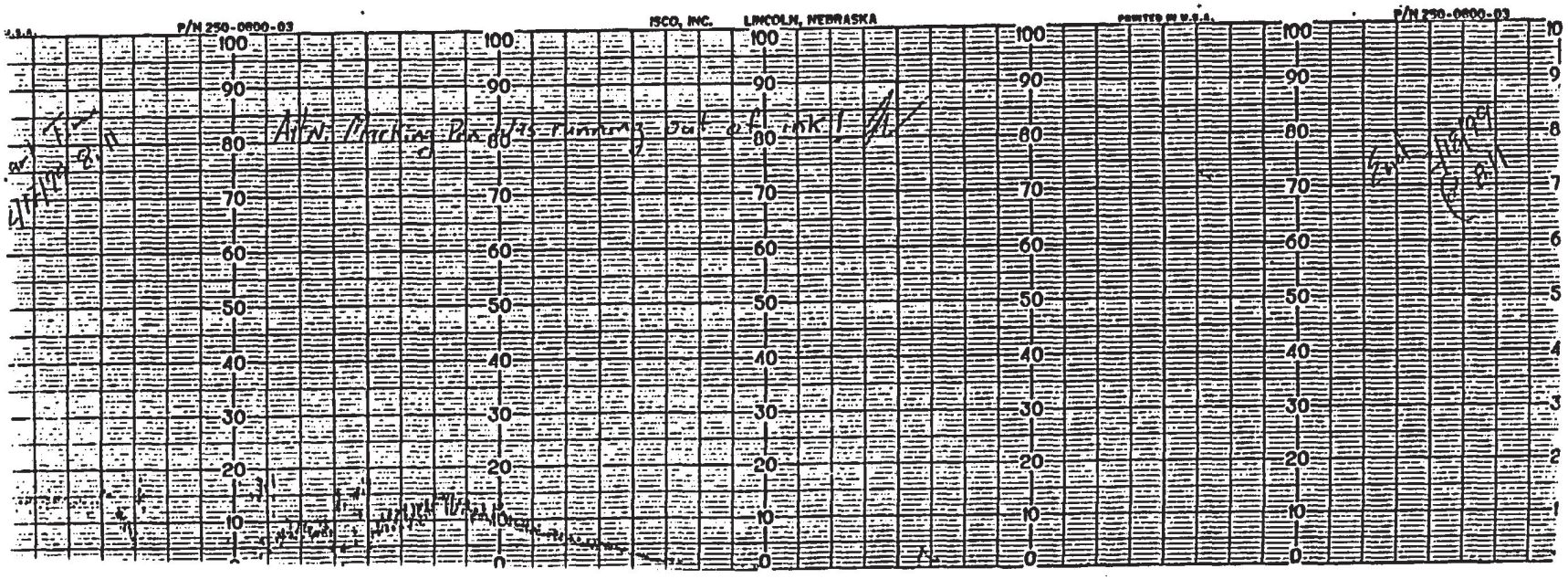
Analysis Date/Time: 2/18/1999 8:22

pH Grab Analysis:

pH 7.2 (units)

Sampled By: John Vigil

Analyzed By: John Vigil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ISCO, INC. LINCOLN, NEBRASKA
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ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.

PROJECT NAME: February Sewer Comp

SAMPLERS: (Signature) John P. Vigil

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter unfilt/HNO3	250 ml uf/unpres.					REMARKS
001	2/17/99 2/18/99	8:11 8:11	X		Sewer Manhole	1	X						
001	2/18/99	8:17		X	" "	1		X					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P Vigil	2/18/99 8:30				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000742

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-006-99	Well Number	001
Category	SEWER	Location	
Description	FEB. PH	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	02/17/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	7.20	EPA150.1	02/18/1999	JV

Lab ID Number	208-009-99	Well Number	001
Category	SEWER	Location	
Description	FEB SEWER COMP.	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	02/17/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.012	3114 B 4.d	04/30/1999	DL
Cd	SAMPLE	0.05	3111 B	04/30/1999	DL
Cu	SAMPLE	0.08	3111 B	04/30/1999	DL
Ni	SAMPLE	<0.01	3111 B	04/30/1999	DL
Pb	SAMPLE	0.02	3111 B	04/30/1999	DL
Sb	SAMPLE	0.69	3111 B	04/30/1999	DL
Se	SAMPLE	0.074	3114 B	04/30/1999	DL
Zn	SAMPLE	0.10	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-027-99	Well Number	001
Category	QAQC	Location	
Description	FEB. SEWER COMP.	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	02/17/1999
QAQC for LabID	208-009-99		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.013	0.012	8.0	3114 B 4.d	04/30/1999	PD
Cd	DUPLICATE	0.05	0.05	0.0	3111 B	04/30/1999	PD
Cu	DUPLICATE	0.08	0.08	0.0	3111 B	04/30/1999	PD
Ni	DUPLICATE	<0.01	<0.01	0.0	3111 B	04/30/1999	PD
Pb	DUPLICATE	0.02	0.02	0.0	3111 B	04/30/1999	PD
Sb	DUPLICATE	0.65	0.69	5.9	3111 B	04/30/1999	PD
Se	DUPLICATE	0.081	0.074	9.0	3114 B	04/30/1999	PD
Zn	DUPLICATE	0.09	0.10	10.5	3111 B	04/30/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-028-99	Well Number	001
Category	QAQC	Location	
Description	FEB. SEWER COMP.	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	02/17/1999
QAQC for LabID	208-009-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.016	0.012	0.004	100.0	3114 B 4.d	04/30/1999	DL
Cd	SPIKE	0.49	0.05	0.400	110.0	3111 B	04/30/1999	DL
Cu	SPIKE	0.48	0.08	0.400	100.0	3111 B	04/30/1999	DL
Ni	SPIKE	0.37	<0.01	0.400	92.5	3111 B	04/30/1999	DL
Pb	SPIKE	0.43	0.02	0.400	102.5	3111 B	04/30/1999	DL
Sb	SPIKE	1.12	0.69	0.400	107.5	3111 B	04/30/1999	DL
Se	SPIKE	0.083	0.074	0.008	112.5	3114 B	04/30/1999	DL
Zn	SPIKE	0.49	0.10	0.400	97.5	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-021-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	04/30/1999
QAQC for LabID	208-009-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.0005	3114 B 4.d	04/30/1999	DL
Cd	BLANK	<0.01	3111 B	04/30/1999	DL
Cu	BLANK	<0.01	3111 B	04/30/1999	DL
Ni	BLANK	<0.01	3111 B	04/30/1999	DL
Pb	BLANK	0.01	3111 B	04/30/1999	DL
Sb	BLANK	<0.02	3111 B	04/30/1999	DL
Se	BLANK	<0.0005	3114 B	04/30/1999	DL
Zn	BLANK	<0.01	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-022-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-009-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Ni	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Pb	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Sb	STANDARD	1.05	1.0000	105.0	3111 B	04/30/1999	DL
Se	STANDARD	0.0020	0.0020	100.0	3114 B	04/30/1999	DL
Zn	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL

Lab ID Number 200-023-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-009-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0021	0.0020	105.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	1.01	1.0000	101.0	3111 B	04/30/1999	DL
Ni	STANDARD	0.98	1.0000	98.0	3111 B	04/30/1999	DL
Pb	STANDARD	1.03	1.0000	103.0	3111 B	04/30/1999	DL
Sb	STANDARD	0.97	1.0000	97.0	3111 B	04/30/1999	DL
Se	STANDARD	0.0020	0.0020	100.0	3114 B	04/30/1999	DL
Zn	STANDARD	0.99	1.0000	99.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-024-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-009-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	5.00	5.0000	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	4.98	5.0000	99.6	3111 B	04/30/1999	DL
Ni	STANDARD	5.00	5.0000	100.0	3111 B	04/30/1999	DL
Pb	STANDARD	5.01	5.0000	100.2	3111 B	04/30/1999	DL
Sb	STANDARD	5.06	5.0000	101.2	3111 B	04/30/1999	DL
Se	STANDARD	0.005	0.0050	100.0	3114 B	04/30/1999	DL
Zn	STANDARD	5.02	5.0000	100.4	3111 B	04/30/1999	DL

Lab ID Number 200-025-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-009-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analys
As	STANDARD	0.0051	0.0050	102.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	5.03	5.0000	100.6	3111 B	04/30/1999	DL
Cu	STANDARD	5.01	5.0000	100.2	3111 B	04/30/1999	DL
Ni	STANDARD	5.03	5.0000	100.6	3111 B	04/30/1999	DL
Pb	STANDARD	5.01	5.0000	100.2	3111 B	04/30/1999	DL
Sb	STANDARD	4.99	5.0000	99.8	3111 B	04/30/1999	DL
Se	STANDARD	0.0048	0.0050	96.0	3114 B	04/30/1999	DL
Zn	STANDARD	5.05	5.0000	101.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-026-99	Well Number	
Category	QAQC	Location	
Description	REFERENCE	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	04/30/1999
QAQC for LabID	208-009-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.135	0.1330	101.5	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	0.092	0.0920	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	0.107	0.1130	94.6	3111 B	04/30/1999	DL
Ni	STANDARD	0.397	0.3890	102.0	3111 B	04/30/1999	DL
Pb	STANDARD	0.185	0.1890	97.8	3111 B	04/30/1999	DL
Sb	STANDARD	0.110	0.0990	111.1	3111 B	04/30/1999	DL
Se	STANDARD	0.132	0.1220	108.1	3114 B	04/30/1999	DL
Zn	STANDARD	0.630	0.6110	103.1	3111 B	04/30/1999	DL

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 4220 Flow Meter.

Sampling Period:	3/17/1999 7:45 to 3/18/1999 7:45	
Total Flow for 24 hour period:	43730	gal
Maximum Flow:	1.1	gal/sec
Average Flow:	0.51	gal/sec
Number of Samples Collected:	87	
Total Volume Collected:	8.7	liters

Total Metals Composite Analysis:

Antimony (Sb):	0.12	(ppm)
Arsenic (As):	0.023	(ppm)
Cadmium (Cd):	0.04	(ppm)
Copper (Cu):	0.05	(ppm)
Lead (Pb):	0.03	(ppm)
Nickel (Ni):	<0.01	(ppm)
Selenium (Se):	0.063	(ppm)
Zinc (Zn):	0.08	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 3/18/1999 7:50

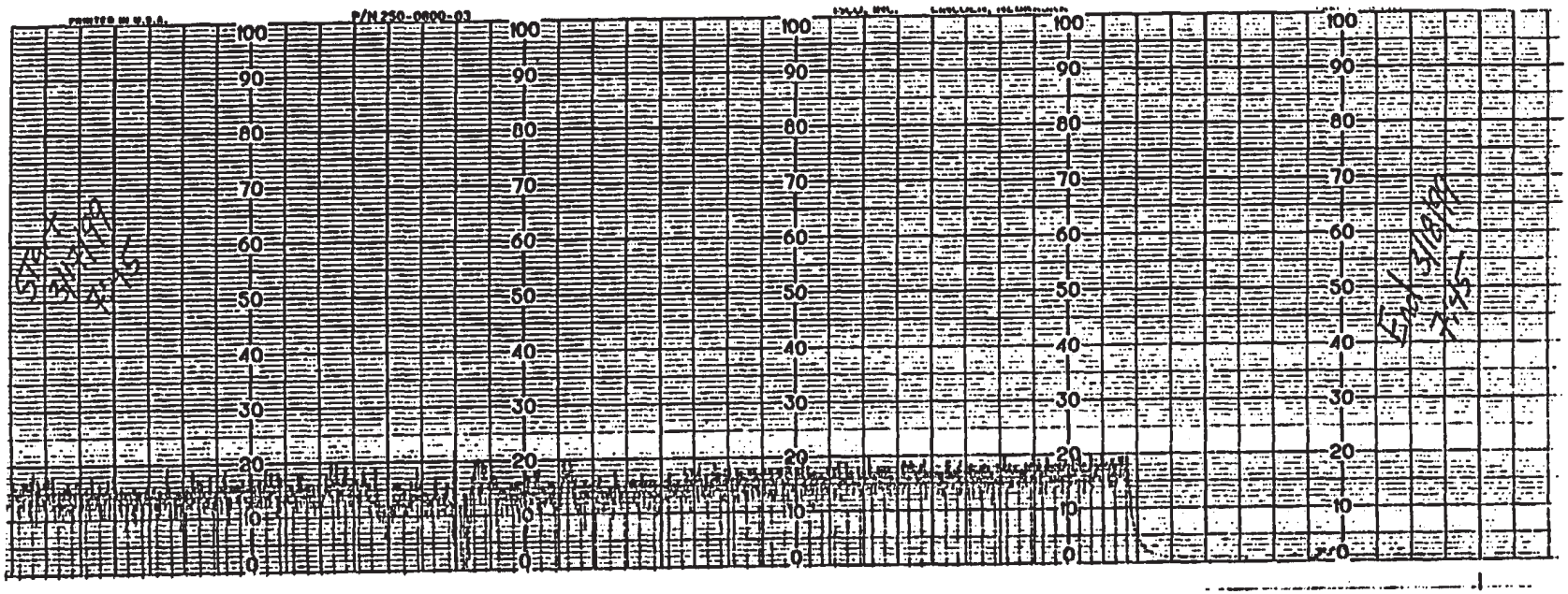
Analysis Date/Time: 3/18/1999 7:55

pH Grab Analysis:

pH 8.6 (units)

Sampled By: John Vigil

Analyzed By: John Vigil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ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.

PROJECT NAME: March Sewer Comp

SAMPLERS: (Signature) John P Vigil

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter HF/HNO3	250 ml HF/vapors					REMARKS
001	3-17-99 3-18-99	7:45 7:45	X		Sewer Manhole	1	X						
001	3-18-99	7:50		X	" "	1		X					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P Vigil	3/18/99 8:05				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples:
☐ Accepted ☐ Declined _____ Signature

AG-000773

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-007-99	Well Number	001
Category	SEWER	Location	
Description	MARCH PH	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	03/17/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	8.60	EPA150.1	03/18/1999	JV

Lab ID Number	208-010-99	Well Number	001
Category	SEWER	Location	
Description	MARCH SEWER COMP.	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	03/17/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.023	3114 B 4.d	04/30/1999	DL
Cd	SAMPLE	0.04	3111 B	04/30/1999	DL
Cu	SAMPLE	0.05	3111 B	04/30/1999	DL
Ni	SAMPLE	<0.01	3111 B	04/30/1999	DL
Pb	SAMPLE	0.03	3111 B	04/30/1999	DL
Sb	SAMPLE	0.12	3111 B	04/30/1999	DL
Se	SAMPLE	0.063	3114 B	04/30/1999	DL
Zn	SAMPLE	0.08	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-029-99	Well Number	001
Category	QAQC	Location	
Description	MARCH SEWER COMP.	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	03/17/1999
QAQC for LabID	208-010-99		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.022	0.023	4.4	3114 B 4.d	04/30/1999	DL
Cd	DUPLICATE	0.04	0.04	0.0	3111 B	04/30/1999	DL
Cu	DUPLICATE	0.04	0.05	22.2	3111 B	04/30/1999	DL
Ni	DUPLICATE	<0.01	<0.01	0.0	3111 B	04/30/1999	DL
Pb	DUPLICATE	0.03	0.03	0.0	3111 B	04/30/1999	DL
Sb	DUPLICATE	0.15	0.12	22.2	3111 B	04/30/1999	DL
Se	DUPLICATE	0.069	0.063	9.0	3114 B	04/30/1999	DL
Zn	DUPLICATE	0.08	0.08	0.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-030-99	Well Number	001
Category	QAQC	Location	
Description	MARCH SEWER COMP.	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	03/17/1999
QAQC for LabID	208-010-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.027	0.023	0.004	100.0	3114 B 4.d	04/30/1999	PD
Cd	SPIKE	0.48	0.04	0.400	110.0	3111 B	04/30/1999	PD
Cu	SPIKE	0.45	0.05	0.400	100.0	3111 B	04/30/1999	DL
Ni	SPIKE	0.38	<0.01	0.400	95.0	3111 B	04/30/1999	DL
Pb	SPIKE	0.45	0.03	0.400	105.0	3111 B	04/30/1999	DL
Sb	SPIKE	0.50	0.12	0.400	95.0	3111 B	04/30/1999	DL
Se	SPIKE	0.072	0.063	0.008	112.5	3114 B	04/30/1999	DL
Zn	SPIKE	0.48	0.08	0.400	100.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-021-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	04/30/1999
QAQC for LabID	208-010-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.0005	3114 B 4.d	04/30/1999	DL
Cd	BLANK	<0.01	3111 B	04/30/1999	DL
Cu	BLANK	<0.01	3111 B	04/30/1999	DL
Ni	BLANK	<0.01	3111 B	04/30/1999	DL
Pb	BLANK	0.01	3111 B	04/30/1999	DL
Sb	BLANK	<0.02	3111 B	04/30/1999	DL
Se	BLANK	<0.0005	3114 B	04/30/1999	DL
Zn	BLANK	<0.01	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-022-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-010-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Ni	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Pb	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Sb	STANDARD	1.05	1.0000	105.0	3111 B	04/30/1999	DL
Se	STANDARD	0.0020	0.0020	100.0	3114 B	04/30/1999	DL
Zn	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL

Lab ID Number 200-023-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-010-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0021	0.0020	105.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	1.01	1.0000	101.0	3111 B	04/30/1999	DL
Ni	STANDARD	0.98	1.0000	98.0	3111 B	04/30/1999	DL
Pb	STANDARD	1.03	1.0000	103.0	3111 B	04/30/1999	DL
Sb	STANDARD	0.97	1.0000	97.0	3111 B	04/30/1999	DL
Se	STANDARD	0.0020	0.0020	100.0	3114 B	04/30/1999	DL
Zn	STANDARD	0.99	1.0000	99.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-024-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-010-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	5.00	5.0000	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	4.98	5.0000	99.6	3111 B	04/30/1999	DL
Ni	STANDARD	5.00	5.0000	100.0	3111 B	04/30/1999	DL
Pb	STANDARD	5.01	5.0000	100.2	3111 B	04/30/1999	DL
Sb	STANDARD	5.06	5.0000	101.2	3111 B	04/30/1999	DL
Se	STANDARD	0.005	0.0050	100.0	3114 B	04/30/1999	DL
Zn	STANDARD	5.02	5.0000	100.4	3111 B	04/30/1999	DL

Lab ID Number 200-025-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-010-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analys
As	STANDARD	0.0051	0.0050	102.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	5.03	5.0000	100.6	3111 B	04/30/1999	DL
Cu	STANDARD	5.01	5.0000	100.2	3111 B	04/30/1999	DL
Ni	STANDARD	5.03	5.0000	100.6	3111 B	04/30/1999	DL
Pb	STANDARD	5.01	5.0000	100.2	3111 B	04/30/1999	DL
Sb	STANDARD	4.99	5.0000	99.8	3111 B	04/30/1999	DL
Se	STANDARD	0.0048	0.0050	96.0	3114 B	04/30/1999	DL
Zn	STANDARD	5.05	5.0000	101.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-026-99	Well Number	
Category	QAQC	Location	
Description	REFERENCE	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	04/30/1999
QAQC for LabID	208-010-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.135	0.1330	101.5	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	0.092	0.0920	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	0.107	0.1130	94.6	3111 B	04/30/1999	DL
Ni	STANDARD	0.397	0.3890	102.0	3111 B	04/30/1999	DL
Pb	STANDARD	0.185	0.1890	97.8	3111 B	04/30/1999	DL
Sb	STANDARD	0.110	0.0990	111.1	3111 B	04/30/1999	DL
Se	STANDARD	0.132	0.1220	108.1	3114 B	04/30/1999	DL
Zn	STANDARD	0.630	0.6110	103.1	3111 B	04/30/1999	DL

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 4220 Flow Meter.

Sampling Period:	4/12/1999 9:06 to 4/13/1999 9:06	
Total Flow for 24 hour period:	38,225	gal
Maximum Flow:	1.24	gal/sec
Average Flow:	0.44	gal/sec
Number of Samples Collected:	38	
Total Volume Collected:	3.8	liters

Total Metals Composite Analysis:

Antimony (Sb):	1.35	(ppm)
Arsenic (As):	0.009	(ppm)
Cadmium (Cd):	0.06	(ppm)
Copper (Cu):	0.16	(ppm)
Lead (Pb):	0.03	(ppm)
Nickel (Ni):	<0.01	(ppm)
Selenium (Se):	0.064	(ppm)
Zinc (Zn):	0.14	(ppm)

Sampled By: John Vigil & Patricia Dowell

Analyzed By: Dennis Lux & Patricia Dowell

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 4/12/1999 11:50

Analysis Date/Time: 4/12/1999 12:00

pH Grab Analysis:

pH 10.1 (units)

Sampled By: John Vigil & Patricia Dowell

Analyzed By: John Vigil & Patricia Dowell

MODEL 4220 ID 2484333174
HW REV: B0 SW REV: 02.16
LEVEL UNITS OF MEASURE: FT
FLOW RATE UNITS OF MEASURE: GPM
TOTALIZED VOLUME UNITS OF MEASURE: MGAL
RAINFALL UNITS OF MEASURE: NOT MEASURED
pH UNITS OF MEASURE: NOT MEASURED
DISSOLVED OXYGEN UNITS OF MEASURE:
NOT MEASURED
TEMPERATURE UNITS OF MEASURE:
NOT MEASURED
VSI 600 CONNECTED: NO
FLOW CONVERSION TYPE: EQUATION
EQUATION LEVEL UNITS: FT
EQUATION FLOW RATE UNITS: GPM
EQUATION: Q= 8.00
H+1.00
+ 0.00
H+0.00
MAXIMUM HEAD: 10.00 FT
FLOW RATE AT MAXIMUM HEAD
80.00 GPM
SAMPLER PACING: VOLUME
PACING VOLUME: 0.000020 MGAL
SAMPLER ENABLE MODE: ENABLE
PLOTTER SPEED: 1/2"/HR
INPUT FOR PLOTTER LINE A: FLOW RATE
PLOTTER LINE A FULL SCALE: 80.00 GPM
INPUT FOR PLOTTER LINE B: OFF
INPUT FOR PLOTTER LINE C: OFF
REPORT GENERATOR A: ON
REPORT A DURATION: 24 HOURS
REPORT GENERATOR B: OFF

SITE 1 USER EQUATION

12APR99 12:00 000.298524 MGAL
B:00 11:53 B:00 12:06
B:00 12:20 B:00 12:33
B:00 12:47 B:00 13:01 B:00 13:14
B:00 13:29
0.00 — GPM 80.0
B:00 13:41 B:00 13:55 B:00 14:09
B:00 14:22 B:00 14:36
B:00 14:49 B:00 15:03 B:00 15:17
B:00 15:30
12APR99 16:00 000.316147 MGAL
B:00 15:44 B:00 15:58 B:00 16:11
B:00 16:25 B:00 16:39
B:00 16:53 B:00 17:07
B:00 17:20 B:00 17:34
SITE 1 USER EQUATION
B:00 17:48 B:00 18:02 B:00 18:16
B:00 18:30
B:00 18:44 B:00 18:58 B:00 19:13
B:00 19:27
12APR99 20:00 000.333312 MGAL
B:00 19:41 B:00 19:55 B:00 20:10
B:00 20:24

0.00 — GPM 80.0
FLOW

13APR99 00:00 000.335227 MGAL

SITE 1 USER EQUATION

13APR99 04:00 000.335227 MGAL

ASARCO INCORPORATED
Environmental Laboratory

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: Monthly Sewer Sample (April) Sb H_2O

SAMPLERS: (Signature) John P Vigil, Patricia M. Dowell

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter UNFILT. HNO3	250 ml unfilt/express					REMARKS
001	4-12-99 4-13-99	9:06 9:06	X			1	X						First Sampling at new monitoring point
001	4-12-99	11:50		X				X					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P Vigil Patricia M Dowell	JV 4-13-99 9:25 ~~4-13-99 9:25~~	JV			
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000775

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-008-99	Well Number	001
Category	SEWER	Location	
Description	APRIL SEWER COMP. & SB	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	04/12/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	10.10	EPA150.1	04/12/1999	PD

Lab ID Number	208-011-99	Well Number	001
Category	SEWER	Location	
Description	APRIL SEWER COMP. & SB	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	04/12/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.009	3114 B 4.d	04/30/1999	DL
Cd	SAMPLE	0.06	3111 B	04/30/1999	DL
Cu	SAMPLE	0.16	3111 B	04/30/1999	DL
Ni	SAMPLE	<0.01	3111 B	04/30/1999	DL
Pb	SAMPLE	0.03	3111 B	04/30/1999	DL
Sb	SAMPLE	1.35	3111 B	04/30/1999	DL
Se	SAMPLE	0.064	3114 B	04/30/1999	DL
Zn	SAMPLE	0.14	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number 200-031-99
Category QAQC
Description APRIL SEWER COMP. & SB
QAQC Type DUPLICATE
QAQC for LabID 208-011-99

Well Number 001
Location
Parameter TOTAL
Date Sampled 04/12/1999

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.008	0.009	11.7	3114 B 4.d	04/30/1999	DL
Cd	DUPLICATE	0.06	0.06	0.0	3111 B	04/30/1999	DL
Cu	DUPLICATE	0.17	0.16	6.0	3111 B	04/30/1999	DL
Ni	DUPLICATE	<0.01	<0.01	0.0	3111 B	04/30/1999	DL
Pb	DUPLICATE	0.03	0.03	0.0	3111 B	04/30/1999	DL
Sb	DUPLICATE	1.47	1.35	8.5	3111 B	04/30/1999	DL
Se	DUPLICATE	0.060	0.064	6.4	3114 B	04/30/1999	DL
Zn	DUPLICATE	0.14	0.14	0.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-032-99	Well Number	001
Category	QAQC	Location	
Description	APRIL SEWER COMP. & SB	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	04/12/1999
QAQC for LabID	208-011-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.013	0.009	0.004	100.0	3114 B 4.d	04/30/1999	DL
Cd	SPIKE	0.50	0.06	0.400	110.0	3111 B	04/30/1999	DL
Cu	SPIKE	0.57	0.16	0.400	102.5	3111 B	04/30/1999	DL
Ni	SPIKE	0.38	<0.01	0.400	95.0	3111 B	04/30/1999	DL
Pb	SPIKE	0.44	0.03	0.400	102.5	3111 B	04/30/1999	DL
Sb	SPIKE	1.75	1.35	0.400	100.0	3111 B	04/30/1999	DL
Se	SPIKE	0.073	0.064	0.008	112.5	3114 B	04/30/1999	DL
Zn	SPIKE	0.52	0.14	0.400	95.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-021-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	04/30/1999
QAQC for LabID	208-011-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.0005	3114 B 4.d	04/30/1999	DL
Cd	BLANK	<0.01	3111 B	04/30/1999	DL
Cu	BLANK	<0.01	3111 B	04/30/1999	DL
Ni	BLANK	<0.01	3111 B	04/30/1999	DL
Pb	BLANK	0.01	3111 B	04/30/1999	DL
Sb	BLANK	<0.02	3111 B	04/30/1999	DL
Se	BLANK	<0.0005	3114 B	04/30/1999	DL
Zn	BLANK	<0.01	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-022-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-011-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Ni	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Pb	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Sb	STANDARD	1.05	1.0000	105.0	3111 B	04/30/1999	DL
Se	STANDARD	0.0020	0.0020	100.0	3114 B	04/30/1999	DL
Zn	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL

Lab ID Number 200-023-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-011-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0021	0.0020	105.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	1.01	1.0000	101.0	3111 B	04/30/1999	DL
Ni	STANDARD	0.98	1.0000	98.0	3111 B	04/30/1999	DL
Pb	STANDARD	1.03	1.0000	103.0	3111 B	04/30/1999	DL
Sb	STANDARD	0.97	1.0000	97.0	3111 B	04/30/1999	DL
Se	STANDARD	0.0020	0.0020	100.0	3114 B	04/30/1999	DL
Zn	STANDARD	0.99	1.0000	99.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-024-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-011-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	5.00	5.0000	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	4.98	5.0000	99.6	3111 B	04/30/1999	DL
Ni	STANDARD	5.00	5.0000	100.0	3111 B	04/30/1999	DL
Pb	STANDARD	5.01	5.0000	100.2	3111 B	04/30/1999	DL
Sb	STANDARD	5.06	5.0000	101.2	3111 B	04/30/1999	DL
Se	STANDARD	0.005	0.0050	100.0	3114 B	04/30/1999	DL
Zn	STANDARD	5.02	5.0000	100.4	3111 B	04/30/1999	DL

Lab ID Number 200-025-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-011-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0051	0.0050	102.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	5.03	5.0000	100.6	3111 B	04/30/1999	DL
Cu	STANDARD	5.01	5.0000	100.2	3111 B	04/30/1999	DL
Ni	STANDARD	5.03	5.0000	100.6	3111 B	04/30/1999	DL
Pb	STANDARD	5.01	5.0000	100.2	3111 B	04/30/1999	DL
Sb	STANDARD	4.99	5.0000	99.8	3111 B	04/30/1999	DL
Se	STANDARD	0.0048	0.0050	96.0	3114 B	04/30/1999	DL
Zn	STANDARD	5.05	5.0000	101.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-026-99
Category QAQC
Description REFERENCE
QAQC Type STANDARD
QAQC for LabID 208-011-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.135	0.1330	101.5	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	0.092	0.0920	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	0.107	0.1130	94.6	3111 B	04/30/1999	DL
Ni	STANDARD	0.397	0.3890	102.0	3111 B	04/30/1999	DL
Pb	STANDARD	0.185	0.1890	97.8	3111 B	04/30/1999	DL
Sb	STANDARD	0.110	0.0990	111.1	3111 B	04/30/1999	DL
Se	STANDARD	0.132	0.1220	108.1	3114 B	04/30/1999	DL
Zn	STANDARD	0.630	0.6110	103.1	3111 B	04/30/1999	DL

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 4220 Flow Meter.

Sampling Period:	4/29/1999 8:03 to 4/30/1999 8:03	
Total Flow for 24 hour period:	36,512	gal
Maximum Flow:	1.25	gal/sec
Average Flow:	0.44	gal/sec
Number of Samples Collected:	36	
Total Volume Collected:	3.6	liters

Total Metals Composite Analysis:

Antimony (Sb):	3.05	(ppm)
Arsenic (As):	0.033	(ppm)
Cadmium (Cd):	0.03	(ppm)
Copper (Cu):	0.07	(ppm)
Lead (Pb):	0.07	(ppm)
Nickel (Ni):	0.01	(ppm)
Selenium (Se):	0.077	(ppm)
Zinc (Zn):	0.08	(ppm)

Sampled By: John Vigil & Patricia Dowell

Analyzed By: Dennis Lux & Patricia Dowell

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 4/29/1999 11:15

Analysis Date/Time: 4/29/1999 11:20

pH Grab Analysis:

pH 9.8 (units)

Sampled By: Patricia Dowell

Analyzed By: Patricia Dowell

ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.	PROJECT NAME Sb Water-process

SAMPLERS: (Signature) Patricia Dowell

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 Liter Unfilt HNO3	250 ml/unfilt/unpreserved					REMARKS
001	4-29-99 4-30-99	8:03 8:03	X			1	X						
002	4-29-99	11:15		X		1		X					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Patricia Dowell	4/30/99 8:30				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000776

29APR99 04:00 000.643278 MGAL

0.00 — GPM 80.0
FLOW

29APR99 08:00 000.643278 MGAL

SITE 1 USER EQUATION

B:00 10:53 B:00 11:07
B:00 11:21 B:00 11:34
29APR99 12:00 000.649140 MGAL
B:00 11:48 B:00 12:02 B:00 12:15
B:00 12:29
B:00 12:42 B:00 12:56 B:00 13:10
B:00 13:23 B:00 13:37
0.00 — GPM 80.0
B:00 13:51 B:00 14:04 B:00 14:18
B:00 14:31
B:00 14:44 B:00 14:58 B:00 15:12
B:00 15:25 B:00 15:39
29APPP99 16:00 000.666817 MGAL
B:00 15:52 B:00 16:06
B:00 16:20 B:00 16:33
B:00 16:47 B:00 17:01 B:00 17:15
B:00 17:29
SITE 1 USER EQUATION
B:00 17:43 B:00 17:56 B:00 18:10
B:00 18:24 B:00 18:38
B:00 18:52

29APR99 20:00 000.679790 MGAL

0.00 — GPM 80.0
FLOW

SITE 1 USER EQUATION

30APR99 04:00 000.679790

0.00 — GPM
FLOW

30APR99 08:00 000.679790

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-014-99	Well Number	001
Category	SEWER	Location	
Description	SB PROCESS SEWER COMP	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	04/29/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.033	3114 B 4.d	05/13/1999	DL
Cd	SAMPLE	0.03	3111 B	05/13/1999	DL
Cu	SAMPLE	0.07	3111 B	05/13/1999	DL
Ni	SAMPLE	0.01	3111 B	05/13/1999	DL
Pb	SAMPLE	0.07	3111 B	05/13/1999	DL
Sb	SAMPLE	3.05	3111 B	05/13/1999	DL
Se	SAMPLE	0.077	3114 B	05/13/1999	DL
Zn	SAMPLE	0.08	3111 B	05/13/1999	DL

Lab ID Number	208-016-99	Well Number	001
Category	SEWER	Location	
Description	SB PROCESS SEWER COMP	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	04/29/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	9.80	EPA150.1	04/29/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-043-99	Well Number	001
Category	QAQC	Location	
Description	SB PROCESS SEWER COMP	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	04/29/1999
QAQC for LabID	208-014-99		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.033	0.033	0.0	3114 B 4.d	05/13/1999	DL
Cd	DUPLICATE	0.03	0.03	0.0	3111 B	05/13/1999	DL
Cu	DUPLICATE	0.08	0.07	13.3	3111 B	05/13/1999	DL
Ni	DUPLICATE	0.01	0.01	0.0	3111 B	05/13/1999	DL
Pb	DUPLICATE	0.08	0.07	13.3	3111 B	05/13/1999	DL
Sb	DUPLICATE	3.02	3.05	0.9	3111 B	05/13/1999	DL
Se	DUPLICATE	0.084	0.077	8.6	3114 B	05/13/1999	DL
Zn	DUPLICATE	0.10	0.08	22.2	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-044-99	Well Number	001
Category	QAQC	Location	
Description	SB PROCESS SEWER COMP	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	04/29/1999
QAQC for LabID	208-014-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.053	0.033	0.020	100.0	3114 B 4.d	05/13/1999	DL
Cd	SPIKE	0.40	0.03	0.400	92.5	3111 B	05/13/1999	DL
Cu	SPIKE	0.47	0.07	0.400	100.0	3111 B	05/13/1999	DL
Ni	SPIKE	0.38	0.01	0.400	92.5	3111 B	05/13/1999	DL
Pb	SPIKE	0.48	0.07	0.400	102.5	3111 B	05/13/1999	DL
Sb	SPIKE	3.45	3.05	0.400	100.0	3111 B	05/13/1999	DL
Se	SPIKE	0.101	0.077	0.020	120.0	3114 B	05/13/1999	DL
Zn	SPIKE	0.45	0.08	0.400	92.5	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-035-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	05/13/1999
QAQC for LabID	208-014-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<.0005	3114 B 4.d	05/13/1999	DL
Cd	BLANK	<0.01	3111 B	05/13/1999	DL
Cu	BLANK	0.03	3111 B	05/13/1999	DL
Ni	BLANK	<0.01	3111 B	05/13/1999	DL
Pb	BLANK	0.04	3111 B	05/13/1999	DL
Sb	BLANK	<0.02	3111 B	05/13/1999	DL
Se	BLANK	<0.0005	3114 B	05/13/1999	DL
Zn	BLANK	<0.01	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-050-99	Well Number	
Category	QAQC	Location	
Description	ICV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/13/1999
QAQC for LabID	208-014-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Cu	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Ni	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Pb	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Sb	STANDARD	1.02	1.0000	102.0	3111 B	05/13/1999	DL
Se	STANDARD	0.0020	0.0020	100.0	3114 B	05/13/1999	DL
Zn	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-037-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-014-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	0.99	1.0000	99.0	3111 B	05/13/1999	DL
Cu	STANDARD	1.03	1.0000	103.0	3111 B	05/13/1999	DL
Ni	STANDARD	0.96	1.0000	96.0	3111 B	05/13/1999	DL
Pb	STANDARD	0.97	1.0000	97.0	3111 B	05/13/1999	DL
Sb	STANDARD	0.97	1.0000	97.0	3111 B	05/13/1999	DL
Se	STANDARD	0.0018	0.0020	90.0	3114 B	05/13/1999	DL
Zn	STANDARD	1.01	1.0000	101.0	3111 B	05/13/1999	DL

Lab ID Number 200-038-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-014-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	5.00	5.0000	100.0	3111 B	05/13/1999	DL
Cu	STANDARD	5.00	5.0000	100.0	3111 B	05/13/1999	DL
Ni	STANDARD	5.01	5.0000	100.2	3111 B	05/13/1999	DL
Pb	STANDARD	5.02	5.0000	100.4	3111 B	05/13/1999	DL
Sb	STANDARD	5.05	5.0000	101.0	3111 B	05/13/1999	DL
Se	STANDARD	0.0050	0.0050	100.0	3114 B	05/13/1999	DL
Zn	STANDARD	5.00	5.0000	100.0	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-039-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-014-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0046	0.0050	92.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	5.03	5.0000	100.6	3111 B	05/13/1999	DL
Cu	STANDARD	5.02	5.0000	100.4	3111 B	05/13/1999	DL
Ni	STANDARD	4.96	5.0000	99.2	3111 B	05/13/1999	DL
Pb	STANDARD	4.96	5.0000	99.2	3111 B	05/13/1999	DL
Sb	STANDARD	5.01	5.0000	100.2	3111 B	05/13/1999	DL
Se	STANDARD	0.0047	0.0050	94.0	3114 B	05/13/1999	DL
Zn	STANDARD	5.02	5.0000	100.4	3111 B	05/13/1999	DL

Lab ID Number 200-040-99
Category QAQC
Description REFERENCE
QAQC Type STANDARD
QAQC for LabID 208-014-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.138	0.1330	103.7	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	0.083	0.0920	90.2	3111 B	05/13/1999	DL
Cu	STANDARD	0.116	0.1130	102.6	3111 B	05/13/1999	DL
Ni	STANDARD	0.385	0.3890	98.9	3111 B	05/13/1999	DL
Pb	STANDARD	0.199	0.1890	105.2	3111 B	05/13/1999	DL
Sb	STANDARD	0.107	0.0990	108.0	3111 B	05/13/1999	DL
Se	STANDARD	0.124	0.1220	101.6	3114 B	05/13/1999	DL
Zn	STANDARD	0.598	0.6110	97.8	3111 B	05/13/1999	DL

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 4220 Flow Meter.

Sampling Period:	5/10/1999 7:52 to 5/11/1999 7:52	
Total Flow for 24 hour period:	52.247	gal
Maximum Flow:	1.27	gal/sec
Average Flow:	0.60	gal/sec
Number of Samples Collected:	37	
Total Volume Collected:	3.7	liters

Total Metals Composite Analysis:

Antimony (Sb):	1.10	(ppm)
Arsenic (As):	0.035	(ppm)
Cadmium (Cd):	0.02	(ppm)
Copper (Cu):	0.06	(ppm)
Lead (Pb):	0.08	(ppm)
Nickel (Ni):	<0.01	(ppm)
Selenium (Se):	0.131	(ppm)
Zinc (Zn):	<0.01	(ppm)

Sampled By: Patricia Dowell

Analyzed By: Dennis Lux & Patricia Dowell

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 5/10/1999 10:15

Analysis Date/Time: 5/10/1999 10:20

pH Grab Analysis:

pH 10.0 (units)

Sampled By: Patricia Dowell

Analyzed By: Patricia Dowell

0.00 — GPM 80.0

FLOW

10MAY99 08:00 000.994885 MGAL

SITE 1 USER EQUATION

8:00 10:14
8:00 10:27

8:00 10:41 8:00 10:54 8:00 11:08
8:00 11:21 8:00 11:35

10MAY99 12:00 001.003685 MGAL

8:00 11:49 8:00 12:02 8:00 12:16
8:00 12:29

8:00 12:43 8:00 12:56 8:00 13:10
8:00 13:23 8:00 13:36

0.00 — GPM 80.0

8:00 13:48 8:00 14:01 8:00 14:15
8:00 14:28

8:00 14:42 8:00 14:55 8:00 15:09
8:00 15:22 8:00 15:35

10MAY99 16:00 001.021711 MGAL

8:00 15:49 8:00 16:02 8:00 16:15
8:00 16:28

8:00 16:42 8:00 16:55 8:00 17:08
8:00 17:22 8:00 17:35

SITE 1 USER EQUATION

8:00 17:49 8:00 18:02 8:00 18:16
8:00 18:29

8:00 18:43 8:00 18:56 8:00 19:10
8:00 19:23 8:00 19:37

10MAY99 20:00 001.039529 MGAL

8:00 19:51 8:00 20:05 8:00 20:18
8:00 20:32

8:00 20:46 8:00 21:00 8:00 21:14
8:00 21:28

0.00 — GPM 80.0

8:00 21:42

FLOW

11MAY99 00:00 001.047132 MGAL

SITE 1 USER EQUATION

11MAY99 04:00 001.047132 MGAL

0.00 — GPM 80.0
FLOW

11MAY99 08:00 001.047132 MGAL

10MAY99 00:00 000.994885 MGAL

REPORT A SITE 1 4220 Flow Meter
INTERVAL: 09MAY99 00:00 TO 10MAY99 00:00
TOTAL VOLUME 000.994885 MGAL
INTERVAL VOLUME 000.000000 MGAL
FLOW RATE:

Ave	0.000 GPM	
Max	0.000 GPM	09MAY99 00:01
Min	0.000 GPM	09MAY99 00:01

SAMPLE HISTORY

HISTORY starting 09MAY99 00:00

SITE 1 USER EQUATION

10MAY99 04:00 000.994885 MGAL

ASARCO INCORPORATED
Environmental Laboratory

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: Monthly Sewer Sample (May) Sb H_2O Discharge

SAMPLERS: *(Signature)*

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter unfiltered HNO3	250ml unfilt/unpreserved					REMARKS
001	5-10-99 5-11-99	7:50 7:50	X			1	X						
001	5-10-99	10:15		X		1		X					

Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
Patricia Dowell	5/11/99 8:15				
Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date/Time	Received for Laboratory by: *(Signature)*	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000777

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-012-99	Well Number	001
Category	SEWER	Location	
Description	MAY SEWER COMP. & SB	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	05/10/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	10.00	EPA150.1	05/10/1999	FD

Lab ID Number	208-013-99	Well Number	001
Category	SEWER	Location	
Description	MAY SEWER COMP	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	05/10/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.035	3114 B 4.d	05/13/1999	DL
Cd	SAMPLE	0.02	3111 B	05/13/1999	DL
Cu	SAMPLE	0.06	3111 B	05/13/1999	DL
Ni	SAMPLE	<0.01	3111 B	05/13/1999	DL
Pb	SAMPLE	0.08	3111 B	05/13/1999	DL
Sb	SAMPLE	1.10	3111 B	05/13/1999	DL
Se	SAMPLE	0.131	3114 B	05/13/1999	DL
Zn	SAMPLE	<0.01	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-041-99	Well Number	001
Category	QAQC	Location	
Description	MAY SEWER COMP. & SB	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	05/10/1999
QAQC for LabID	208-013-99		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.034	0.035	2.8	3114 B 4.d	05/13/1999	DL
Cd	DUPLICATE	0.02	0.02	0.0	3111 B	05/13/1999	DL
Cu	DUPLICATE	0.07	0.06	15.3	3111 B	05/13/1999	DL
Ni	DUPLICATE	<0.01	<0.01	0.0	3111 B	05/13/1999	DL
Pb	DUPLICATE	0.08	0.08	0.0	3111 B	05/13/1999	DL
Sb	DUPLICATE	1.15	1.10	4.4	3111 B	05/13/1999	DL
Se	DUPLICATE	0.124	0.131	5.4	3114 B	05/13/1999	DL
Zn	DUPLICATE	<0.01	<0.01	0.0	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-042-99	Well Number	001
Category	QAQC	Location	
Description	MAY SEWER COMP. & SB	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	05/10/1999
QAQC for LabID	208-013-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.056	0.035	0.020	105.0	3114 B 4.d	05/13/1999	DL
Cd	SPIKE	0.38	0.02	0.400	90.0	3111 B	05/13/1999	DL
Cu	SPIKE	0.47	0.06	0.400	102.5	3111 B	05/13/1999	DL
Ni	SPIKE	0.38	<0.01	0.400	95.0	3111 B	05/13/1999	DL
Pb	SPIKE	0.48	0.08	0.400	100.0	3111 B	05/13/1999	DL
Sb	SPIKE	1.52	1.10	0.400	105.0	3111 B	05/13/1999	DL
Se	SPIKE	0.151	0.131	0.020	100.0	3114 B	05/13/1999	DL
Zn	SPIKE	0.38	<0.01	0.400	95.0	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-035-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	05/13/1999
QAQC for LabID	208-013-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<.0005	3114 B 4.d	05/13/1999	DL
Cd	BLANK	<0.01	3111 B	05/13/1999	DL
Cu	BLANK	0.03	3111 B	05/13/1999	DL
Ni	BLANK	<0.01	3111 B	05/13/1999	DL
Pb	BLANK	0.04	3111 B	05/13/1999	DL
Sb	BLANK	<0.02	3111 B	05/13/1999	DL
Se	BLANK	<0.0005	3114 B	05/13/1999	DL
Zn	BLANK	<0.01	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-050-99	Well Number	
Category	QAQC	Location	
Description	ICV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/13/1999
QAQC for LabID	208-013-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Cu	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Ni	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Pb	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Sb	STANDARD	1.02	1.0000	102.0	3111 B	05/13/1999	DL
Se	STANDARD	0.0020	0.0020	100.0	3114 B	05/13/1999	DL
Zn	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-037-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-013-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	0.99	1.0000	99.0	3111 B	05/13/1999	DL
Cu	STANDARD	1.03	1.0000	103.0	3111 B	05/13/1999	DL
Ni	STANDARD	0.96	1.0000	96.0	3111 B	05/13/1999	DL
Pb	STANDARD	0.97	1.0000	97.0	3111 B	05/13/1999	DL
Sb	STANDARD	0.97	1.0000	97.0	3111 B	05/13/1999	DL
Se	STANDARD	0.0018	0.0020	90.0	3114 B	05/13/1999	DL
Zn	STANDARD	1.01	1.0000	101.0	3111 B	05/13/1999	DL

Lab ID Number 200-038-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-013-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	5.00	5.0000	100.0	3111 B	05/13/1999	DL
Cu	STANDARD	5.00	5.0000	100.0	3111 B	05/13/1999	DL
Ni	STANDARD	5.01	5.0000	100.2	3111 B	05/13/1999	DL
Pb	STANDARD	5.02	5.0000	100.4	3111 B	05/13/1999	DL
Sb	STANDARD	5.05	5.0000	101.0	3111 B	05/13/1999	DL
Se	STANDARD	0.0050	0.0050	100.0	3114 B	05/13/1999	DL
Zn	STANDARD	5.00	5.0000	100.0	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-039-99	Well Number	
Category	QAQC	Location	
Description	CCV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/13/1999
QAQC for LabID	208-013-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0046	0.0050	92.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	5.03	5.0000	100.6	3111 B	05/13/1999	DL
Cu	STANDARD	5.02	5.0000	100.4	3111 B	05/13/1999	DL
Ni	STANDARD	4.96	5.0000	99.2	3111 B	05/13/1999	DL
Pb	STANDARD	4.96	5.0000	99.2	3111 B	05/13/1999	DL
Sb	STANDARD	5.01	5.0000	100.2	3111 B	05/13/1999	DL
Se	STANDARD	0.0047	0.0050	94.0	3114 B	05/13/1999	DL
Zn	STANDARD	5.02	5.0000	100.4	3111 B	05/13/1999	DL

Lab ID Number	200-040-99	Well Number	
Category	QAQC	Location	
Description	REFERENCE	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/13/1999
QAQC for LabID	208-013-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analys
As	STANDARD	0.138	0.1330	103.7	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	0.083	0.0920	90.2	3111 B	05/13/1999	DL
Cu	STANDARD	0.116	0.1130	102.6	3111 B	05/13/1999	DL
Ni	STANDARD	0.385	0.3890	98.9	3111 B	05/13/1999	DL
Pb	STANDARD	0.199	0.1890	105.2	3111 B	05/13/1999	DL
Sb	STANDARD	0.107	0.0990	108.0	3111 B	05/13/1999	DL
Se	STANDARD	0.124	0.1220	101.6	3114 B	05/13/1999	DL
Zn	STANDARD	0.598	0.6110	97.8	3111 B	05/13/1999	DL

ASARCO INCORPORATED
Environmental Laboratory

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

CHAIN OF CUSTODY RECORD

PROJ. NO.: Batch #6

PROJECT NAME: Cadmium Sulfide Waste Water

SAMPLERS: (Signature) Patricia Dowell

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter HF / HNO3 Total Used						REMARKS
002	4/27/92	12:43		X	Tank outside S side HP	1	X						Took sample from valve on bottom of tank.

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Patricia Dowell	4/27/92 12:45				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000774

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-015-99	Well Number	002
Category	SEWER	Location	
Description	CDS GRAB @ TANK VALVE	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	04/27/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	<0.001	3114 B 4.d	05/13/1999	DL
Cd	SAMPLE	0.07	3111 B	05/13/1999	DL
Cu	SAMPLE	0.08	3111 B	05/13/1999	DL
Ni	SAMPLE	0.03	3111 B	05/13/1999	DL
Pb	SAMPLE	0.04	3111 B	05/13/1999	DL
Sb	SAMPLE	0.95	3111 B	05/13/1999	DL
Se	SAMPLE	<0.001	3114 B	05/13/1999	DL
Zn	SAMPLE	<0.01	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-045-99	Well Number	002
Category	QAQC	Location	
Description	CDS GRAB @ TANK VALVE	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	04/27/1999
QAQC for LabID	208-015-99		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	<0.001	<0.001	0.0	3114 B 4.d	05/13/1999	DL
Cd	DUPLICATE	0.08	0.07	13.3	3111 B	05/13/1999	DL
Cu	DUPLICATE	0.09	0.08	11.7	3111 B	05/13/1999	DL
Ni	DUPLICATE	0.02	0.03	40.0	3111 B	05/13/1999	DL
Pb	DUPLICATE	0.03	0.04	28.5	3111 B	05/13/1999	DL
Sb	DUPLICATE	0.98	0.95	3.1	3111 B	05/13/1999	DL
Se	DUPLICATE	<0.001	<0.001	0.0	3114 B	05/13/1999	DL
Zn	DUPLICATE	<0.001	<0.01	163.6	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-046-99	Well Number	002
Category	QAQC	Location	
Description	CDS GRAB @ TANK VALVE	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	04/27/1999
QAQC for LabID	208-015-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.018	<0.001	0.020	90.0	3114 B 4.d	05/13/1999	DL
Cd	SPIKE	0.53	0.07	0.400	115.0	3111 B	05/13/1999	DL
Cu	SPIKE	0.49	0.08	0.400	102.5	3111 B	05/13/1999	DL
Ni	SPIKE	0.40	0.03	0.400	92.5	3111 B	05/13/1999	DL
Pb	SPIKE	0.42	0.04	0.400	95.0	3111 B	05/13/1999	DL
Sb	SPIKE	1.32	0.95	0.400	92.5	3111 B	05/13/1999	DL
Se	SPIKE	0.025	<0.001	0.020	125.0	3114 B	05/13/1999	DL
Zn	SPIKE	0.39	<0.01	0.400	97.5	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-035-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	05/13/1999
QAQC for LabID	208-015-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<.0005	3114 B 4.d	05/13/1999	DL
Cd	BLANK	<0.01	3111 B	05/13/1999	DL
Cu	BLANK	0.03	3111 B	05/13/1999	DL
Ni	BLANK	<0.01	3111 B	05/13/1999	DL
Pb	BLANK	0.04	3111 B	05/13/1999	DL
Sb	BLANK	<0.02	3111 B	05/13/1999	DL
Se	BLANK	<0.0005	3114 B	05/13/1999	DL
Zn	BLANK	<0.01	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-050-99	Well Number	
Category	QAQC	Location	
Description	ICV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/13/1999
QAQC for LabID	208-015-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Cu	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Ni	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Pb	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Sb	STANDARD	1.02	1.0000	102.0	3111 B	05/13/1999	DL
Se	STANDARD	0.0020	0.0020	100.0	3114 B	05/13/1999	DL
Zn	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-037-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-015-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	0.99	1.0000	99.0	3111 B	05/13/1999	DL
Cu	STANDARD	1.03	1.0000	103.0	3111 B	05/13/1999	DL
Ni	STANDARD	0.96	1.0000	96.0	3111 B	05/13/1999	DL
Pb	STANDARD	0.97	1.0000	97.0	3111 B	05/13/1999	DL
Sb	STANDARD	0.97	1.0000	97.0	3111 B	05/13/1999	DL
Se	STANDARD	0.0018	0.0020	90.0	3114 B	05/13/1999	DL
Zn	STANDARD	1.01	1.0000	101.0	3111 B	05/13/1999	DL

Lab ID Number 200-038-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-015-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	5.00	5.0000	100.0	3111 B	05/13/1999	DL
Cu	STANDARD	5.00	5.0000	100.0	3111 B	05/13/1999	DL
Ni	STANDARD	5.01	5.0000	100.2	3111 B	05/13/1999	DL
Pb	STANDARD	5.02	5.0000	100.4	3111 B	05/13/1999	DL
Sb	STANDARD	5.05	5.0000	101.0	3111 B	05/13/1999	DL
Se	STANDARD	0.0050	0.0050	100.0	3114 B	05/13/1999	DL
Zn	STANDARD	5.00	5.0000	100.0	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-039-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-015-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0046	0.0050	92.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	5.03	5.0000	100.6	3111 B	05/13/1999	DL
Cu	STANDARD	5.02	5.0000	100.4	3111 B	05/13/1999	DL
Ni	STANDARD	4.96	5.0000	99.2	3111 B	05/13/1999	DL
Pb	STANDARD	4.96	5.0000	99.2	3111 B	05/13/1999	DL
Sb	STANDARD	5.01	5.0000	100.2	3111 B	05/13/1999	DL
Se	STANDARD	0.0047	0.0050	94.0	3114 B	05/13/1999	DL
Zn	STANDARD	5.02	5.0000	100.4	3111 B	05/13/1999	DL

Lab ID Number 200-040-99
Category QAQC
Description REFERENCE
QAQC Type STANDARD
QAQC for LabID 208-015-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.138	0.1330	103.7	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	0.083	0.0920	90.2	3111 B	05/13/1999	DL
Cu	STANDARD	0.116	0.1130	102.6	3111 B	05/13/1999	DL
Ni	STANDARD	0.385	0.3890	98.9	3111 B	05/13/1999	DL
Pb	STANDARD	0.199	0.1890	105.2	3111 B	05/13/1999	DL
Sb	STANDARD	0.107	0.0990	108.0	3111 B	05/13/1999	DL
Se	STANDARD	0.124	0.1220	101.6	3114 B	05/13/1999	DL
Zn	STANDARD	0.598	0.6110	97.8	3111 B	05/13/1999	DL

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM -
SPLIT SAMPLES

SAMPLERS: Cliff Mills

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE TYPE*	MONITORING POINT	SAMPLE PRESERVATIVE	METRO ANALYSES
385605	ASARCO #600	3/31/99-4/1/99	1006 1019	FC24	001	HNO_3	As, Se, Sb, Zn, Pb, Ni, [illegible], Be

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	4-5-99 0850	C.E. Mills	C.E. Mills	4-5-99/0908	[illegible]
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

WHITE - METRO DISTRICT'S COPY

YELLOW - INDUSTRY'S COPY

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-008-99	Well Number	385605
Category	SEWER	Location	
Description	METRO SPLIT	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	03/31/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.009	3114 B 4.d	04/30/1999	DL
Cd	SAMPLE	0.04	3111 B	04/30/1999	DL
Cu	SAMPLE	0.06	3111 B	04/30/1999	DL
Ni	SAMPLE	0.01	3111 B	04/30/1999	DL
Pb	SAMPLE	0.02	3111 B	04/30/1999	DL
Sb	SAMPLE	0.45	3111 B	04/30/1999	DL
Se	SAMPLE	0.068	3114 B	04/30/1999	DL
Zn	SAMPLE	0.08	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-034-99	Well Number	385605
Category	QAQC	Location	
Description	METRO SPLIT	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	03/31/1999
QAQC for LabID	209-008-99		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.009	0.009	0.0	3114 B 4.d	04/30/1999	DL
Cd	DUPLICATE	0.04	0.04	0.0	3111 B	04/30/1999	DL
Cu	DUPLICATE	0.06	0.06	0.0	3111 B	04/30/1999	DL
Ni	DUPLICATE	0.01	0.01	0.0	3111 B	04/30/1999	DL
Pb	DUPLICATE	0.02	0.02	0.0	3111 B	04/30/1999	DL
Sb	DUPLICATE	0.53	0.45	16.3	3111 B	04/30/1999	DL
Se	DUPLICATE	0.062	0.068	9.2	3114 B	04/30/1999	DL
Zn	DUPLICATE	0.08	0.08	0.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-034-99	Well Number	385605
Category	QAQC	Location	
Description	METRO SPLIT	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	03/31/1999
QAQC for LabID	209-008-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.013	0.009	0.004	100.0	3114 B 4.d	04/30/1999	DL
Cd	SPIKE	0.50	0.04	0.400	115.0	3111 B	04/30/1999	DL
Cu	SPIKE	0.46	0.06	0.400	100.0	3111 B	04/30/1999	DL
Ni	SPIKE	0.38	0.01	0.400	92.5	3111 B	04/30/1999	DL
Pb	SPIKE	0.41	0.02	0.400	97.5	3111 B	04/30/1999	DL
Sb	SPIKE	0.83	0.45	0.400	95.0	3111 B	04/30/1999	DL
Se	SPIKE	0.075	0.068	0.008	87.5	3114 B	04/30/1999	DL
Zn	SPIKE	0.46	0.08	0.400	95.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-021-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	04/30/1999
QAQC for LabID	209-008-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.0005	3114 B 4.d	04/30/1999	DL
Cd	BLANK	<0.01	3111 B	04/30/1999	DL
Cu	BLANK	<0.01	3111 B	04/30/1999	DL
Ni	BLANK	<0.01	3111 B	04/30/1999	DL
Pb	BLANK	0.01	3111 B	04/30/1999	DL
Sb	BLANK	<0.02	3111 B	04/30/1999	DL
Se	BLANK	<0.0005	3114 B	04/30/1999	DL
Zn	BLANK	<0.01	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-022-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 209-008-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Ni	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Pb	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Sb	STANDARD	1.05	1.0000	105.0	3111 B	04/30/1999	DL
Se	STANDARD	0.0020	0.0020	100.0	3114 B	04/30/1999	DL
Zn	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL

Lab ID Number 200-023-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 209-008-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0021	0.0020	105.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	1.01	1.0000	101.0	3111 B	04/30/1999	DL
Ni	STANDARD	0.98	1.0000	98.0	3111 B	04/30/1999	DL
Pb	STANDARD	1.03	1.0000	103.0	3111 B	04/30/1999	DL
Sb	STANDARD	0.97	1.0000	97.0	3111 B	04/30/1999	DL
Se	STANDARD	0.0020	0.0020	100.0	3114 B	04/30/1999	DL
Zn	STANDARD	0.99	1.0000	99.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-024-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 209-008-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	5.00	5.0000	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	4.98	5.0000	99.6	3111 B	04/30/1999	DL
Ni	STANDARD	5.00	5.0000	100.0	3111 B	04/30/1999	DL
Pb	STANDARD	5.01	5.0000	100.2	3111 B	04/30/1999	DL
Sb	STANDARD	5.06	5.0000	101.2	3111 B	04/30/1999	DL
Se	STANDARD	0.005	0.0050	100.0	3114 B	04/30/1999	DL
Zn	STANDARD	5.02	5.0000	100.4	3111 B	04/30/1999	DL

Lab ID Number 200-025-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 209-008-99

Well Number
Location
Parameter TOTAL
Date Sampled 04/30/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0051	0.0050	102.0	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	5.03	5.0000	100.6	3111 B	04/30/1999	DL
Cu	STANDARD	5.01	5.0000	100.2	3111 B	04/30/1999	DL
Ni	STANDARD	5.03	5.0000	100.6	3111 B	04/30/1999	DL
Pb	STANDARD	5.01	5.0000	100.2	3111 B	04/30/1999	DL
Sb	STANDARD	4.99	5.0000	99.8	3111 B	04/30/1999	DL
Se	STANDARD	0.0048	0.0050	96.0	3114 B	04/30/1999	DL
Zn	STANDARD	5.05	5.0000	101.0	3111 B	04/30/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-026-99	Well Number	
Category	QAQC	Location	
Description	REFERENCE	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	04/30/1999
QAQC for LabID	209-008-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.135	0.1330	101.5	3114 B 4.d	04/30/1999	DL
Cd	STANDARD	0.092	0.0920	100.0	3111 B	04/30/1999	DL
Cu	STANDARD	0.107	0.1130	94.6	3111 B	04/30/1999	DL
Ni	STANDARD	0.397	0.3890	102.0	3111 B	04/30/1999	DL
Pb	STANDARD	0.185	0.1890	97.8	3111 B	04/30/1999	DL
Sb	STANDARD	0.110	0.0990	111.1	3111 B	04/30/1999	DL
Se	STANDARD	0.132	0.1220	108.1	3114 B	04/30/1999	DL
Zn	STANDARD	0.630	0.6110	103.1	3111 B	04/30/1999	DL

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM -
SPLIT SAMPLES

SAMPLERS: Jeff Mills

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE TYPE*	MONITORING POINT	SAMPLE PRESERVATIVE	METRO ANALYSES
387417	ASARCO #600	4-21-22-99	9:45 8:45	FC24	001	HNO_3	As, Se, Sb, Zn, C Pb, Ni, Cu, Be, C

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	4-22-99/1215	[signature]	[signature]	4-22-99 12:39	[signature]
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

WHITE - METRO DISTRICT'S COPY YELLOW - INDUSTRY'S COPY

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-009-99	Well Number	387419
Category	SEWER	Location	
Description	METRO SPLIT	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	04/21/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.023	3114 B 4.d	05/13/1999	DL
Cd	SAMPLE	0.05	3111 B	05/13/1999	DL
Cu	SAMPLE	0.09	3111 B	05/13/1999	DL
Ni	SAMPLE	0.03	3111 B	05/13/1999	DL
Pb	SAMPLE	0.04	3111 B	05/13/1999	DL
Sb	SAMPLE	2.02	3111 B	05/13/1999	DL
Se	SAMPLE	0.065	3114 B	05/13/1999	DL
Zn	SAMPLE	0.30	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-051-99	Well Number	387419
Category	QAQC	Location	
Description	METRO SPLIT	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	04/21/1999
QAQC for LabID	209-009-99		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.026	0.023	12.2	3114 B 4.d	05/13/1999	DL
Cd	DUPLICATE	0.05	0.05	0.0	3111 B	05/13/1999	DL
Cu	DUPLICATE	0.09	0.09	0.0	3111 B	05/13/1999	DL
Ni	DUPLICATE	0.02	0.03	40.0	3111 B	05/13/1999	DL
Pb	DUPLICATE	0.05	0.04	22.2	3111 B	05/13/1999	DL
Sb	DUPLICATE	2.05	2.02	1.4	3111 B	05/13/1999	DL
Se	DUPLICATE	0.059	0.065	9.6	3114 B	05/13/1999	DL
Zn	DUPLICATE	0.30	0.30	0.0	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-052-99	Well Number	387419
Category	QAQC	Location	
Description	METRO SPLIT	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	05/13/1999
QAQC for LabID	209-009-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.046	0.023	0.020	115.0	3114 B 4.d	05/13/1999	DL
Cd	SPIKE	0.43	0.05	0.400	95.0	3111 B	05/13/1999	DL
Cu	SPIKE	0.49	0.09	0.400	100.0	3111 B	05/13/1999	DL
Ni	SPIKE	0.40	0.03	0.400	92.5	3111 B	05/13/1999	DL
Pb	SPIKE	0.45	0.04	0.400	102.5	3111 B	05/13/1999	DL
Sb	SPIKE	2.48	2.02	0.400	115.0	3111 B	05/13/1999	DL
Se	SPIKE	0.083	0.065	0.020	90.0	3114 B	05/13/1999	DL
Zn	SPIKE	0.71	0.30	0.400	102.5	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-035-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	05/13/1999
QAQC for LabID	209-009-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<.0005	3114 B 4.d	05/13/1999	DL
Cd	BLANK	<0.01	3111 B	05/13/1999	DL
Cu	BLANK	0.03	3111 B	05/13/1999	DL
Ni	BLANK	<0.01	3111 B	05/13/1999	DL
Pb	BLANK	0.04	3111 B	05/13/1999	DL
Sb	BLANK	<0.02	3111 B	05/13/1999	DL
Se	BLANK	<0.0005	3114 B	05/13/1999	DL
Zn	BLANK	<0.01	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-050-99	Well Number	
Category	QAQC	Location	
Description	ICV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/13/1999
QAQC for LabID	209-009-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Cu	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Ni	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Pb	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL
Sb	STANDARD	1.02	1.0000	102.0	3111 B	05/13/1999	DL
Se	STANDARD	0.0020	0.0020	100.0	3114 B	05/13/1999	DL
Zn	STANDARD	1.00	1.0000	100.0	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-037-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 209-009-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	0.99	1.0000	99.0	3111 B	05/13/1999	DL
Cu	STANDARD	1.03	1.0000	103.0	3111 B	05/13/1999	DL
Ni	STANDARD	0.96	1.0000	96.0	3111 B	05/13/1999	DL
Pb	STANDARD	0.97	1.0000	97.0	3111 B	05/13/1999	DL
Sb	STANDARD	0.97	1.0000	97.0	3111 B	05/13/1999	DL
Se	STANDARD	0.0018	0.0020	90.0	3114 B	05/13/1999	DL
Zn	STANDARD	1.01	1.0000	101.0	3111 B	05/13/1999	DL

Lab ID Number 200-038-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 209-009-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	5.00	5.0000	100.0	3111 B	05/13/1999	DL
Cu	STANDARD	5.00	5.0000	100.0	3111 B	05/13/1999	DL
Ni	STANDARD	5.01	5.0000	100.2	3111 B	05/13/1999	DL
Pb	STANDARD	5.02	5.0000	100.4	3111 B	05/13/1999	DL
Sb	STANDARD	5.05	5.0000	101.0	3111 B	05/13/1999	DL
Se	STANDARD	0.0050	0.0050	100.0	3114 B	05/13/1999	DL
Zn	STANDARD	5.00	5.0000	100.0	3111 B	05/13/1999	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-039-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 209-009-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0046	0.0050	92.0	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	5.03	5.0000	100.6	3111 B	05/13/1999	DL
Cu	STANDARD	5.02	5.0000	100.4	3111 B	05/13/1999	DL
Ni	STANDARD	4.96	5.0000	99.2	3111 B	05/13/1999	DL
Pb	STANDARD	4.96	5.0000	99.2	3111 B	05/13/1999	DL
Sb	STANDARD	5.01	5.0000	100.2	3111 B	05/13/1999	DL
Se	STANDARD	0.0047	0.0050	94.0	3114 B	05/13/1999	DL
Zn	STANDARD	5.02	5.0000	100.4	3111 B	05/13/1999	DL

Lab ID Number 200-040-99
Category QAQC
Description REFERENCE
QAQC Type STANDARD
QAQC for LabID 209-009-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.138	0.1330	103.7	3114 B 4.d	05/13/1999	DL
Cd	STANDARD	0.083	0.0920	90.2	3111 B	05/13/1999	DL
Cu	STANDARD	0.116	0.1130	102.6	3111 B	05/13/1999	DL
Ni	STANDARD	0.385	0.3890	98.9	3111 B	05/13/1999	DL
Pb	STANDARD	0.199	0.1890	105.2	3111 B	05/13/1999	DL
Sb	STANDARD	0.107	0.0990	108.0	3111 B	05/13/1999	DL
Se	STANDARD	0.124	0.1220	101.6	3114 B	05/13/1999	DL
Zn	STANDARD	0.598	0.6110	97.8	3111 B	05/13/1999	DL

ASARCO

July 16, 1999

Mr. James T. Graber
Industrial Waste Specialist
Metro Wastewater Reclamation District
6450 York Street
Denver, Colorado 80229-7499

Dear Mr. Graber:

Enclosed for your review is the Asarco Globe Plant's Periodic Compliance Report (PCR) for the period of April – June, 1999. The PCR contains flow monitoring data, including discharge logs, sampling results and waste disposal activities.

During the period there were several monitoring events at 001 and 002. Of these events, all but four were included in the Initial Compliance Report submitted May 26, 1999 or an earlier submittal. Thus, only the monitoring events performed by Metro on May 17-18 and performed by Asarco on May 20-21, May 25-26 and June 8-9 at 001 are included in this report.

Based on my inquiry of the people responsible for these areas or gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate and complete. If you should require additional information or have any questions regarding this submittal, please contact Nikki Mathis at 303-296-5111.

Sincerely,

Margaret W. Staub
Unit Manager

enc.

cc: (w/ enc.)
R. Litle
R. Marcus
C. Dungey
P. Dowell/D. Lux
N. Mathis

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FILE NO: 4.6.5.2

ASARCO Incorporated, 495 East 51st Avenue, Denver, Colorado 80216-2098
Phone (303) 296-5900 • Fax. (303) 296-0508

PERIODIC COMPLIANCE REPORT

Reporting period: Second Quarter 1999

Date prepared: July 16, 1999

Prepared by: Patricia Dowell and Nicole Mathis

A. FACILITY INFORMATION

Name: ASARCO Globe Plant

Location: 495 E. 51st Avenue
Denver, Colorado 80216

Phone: (303) 296-5900 Fax: (303)296-0508 Emergency: (303) 208-4209

B. FLOW MONITORING

(Discharge log is attached.)

Monitoring Point 001 [ ] No discharge

(4/1/99 – 6/30/99)

Average daily flow volume 27,655 [X] Measured [ ]Estimated
(gallons per day – includes zero discharge days)

Maximum daily flow volume 66,404 [X] Measured [ ]Estimated
(gallons per day)

(Process waste batch discharge log is attached.)

Monitoring Point 002 [ ] No discharge

(4/1/99 – 6/30/99)

Average daily flow volume 993 [ ] Measured [X]Estimated
(gallons per day – does not include zero discharge days)

Maximum daily flow volume 1,635 [ ] Measured [X]Estimated
(gallons per day)

C. SAMPLING RESULTS

(Results are attached.)

Attach copies of the analytical results of all samplings of the regulated wastestreams performed by the permittee during the reporting period. Attach copies of the analytical results of all split samplings of the regulated wastestream performed by the permittee or other agency during the reporting period. Results transmitted to the permittee by any other agency, including the Metro District, do

not have to be submitted, but must be kept on file for at least 3 years and be available for inspection.

Analytical results submitted with this PCR must contain the following information:

1. Concentrations and measurements of all parameters for which there are self-monitoring requirements.

2. The date, time and location of all sampling activities. Include the start-stop dates and times for composite samples.

3. The method of sampling (grab, time composite, flow composite, or continuous measurement) and name of the person collecting the sample.

4. The name of the laboratory (or person) that performed the analyses.

5. The date the analyses were performed.

6. The analytical techniques/methods used for the analyses.

D. WASTE DISPOSAL

(Waste disposal activities are the remainder of activities from first quarter 1999 not reported in the May 26, 1999 Initial Compliance Report and all activities from second quarter 1999.)

[ ] No waste disposal activity occurred during the reporting period

[x] Summary provided below

Waste Name	Volume	Ship Date	Disposal Company
Non-Haz WWTP Sludge	22 c.y.	01/15/99	Asarco (to FNP)
Non-Haz WWTP Sludge	22 c.y.	04/12/99	Asarco (to FNP)
Process Debris	40 c.y.	05/27/99	Safety-Kleen
Used Oil	277 gal.	06/10/99	Mesa Oil
Non-Haz WWTP Sludge	22 c.y.	06/16/99	Asarco (to FNP)

F. ACCURACY AND COMPLETENESS CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that there are no significant and/or

regulated industrial process operations being conducted at this facility which discharge water to the POTW and which are not covered by this report. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Authorized Representative

7/16/99
Date

Margaret W. Staub
Name (please print or type)

Unit Manager
Title (please print or type)

ASARCO Globe Plant
Discharge Log for Monitoring Point 001
Second Quarter 1999

Date	Volume (GPD)
04/01/99	21,780
04/02/99	0
04/03/99	0
04/04/99	0
04/05/99	18,906
04/06/99	0
04/07/99	0
04/08/99	0
04/09/99	0
04/10/99	0
04/11/99	0
04/12/99	38,225
04/13/99	35,115
04/14/99	0
04/15/99	0
04/16/99	0
04/17/99	0
04/18/99	0
04/19/99	35,108
04/20/99	46,873
04/21/99	45,406
04/22/99	46,286
04/23/99	0
04/24/99	0
04/25/99	0
04/26/99	0
04/27/99	52,799
04/28/99	46,464
04/29/99	36,512
04/30/99	42,666
05/01/99	38,199
05/02/99	0
05/03/99	42,423
05/04/99	60,876
05/05/99	51,976
05/06/99	18,363
05/07/99	60,592
05/08/99	0
05/09/99	0
05/10/99	52,247
05/11/99	48,932
05/12/99	47,018
05/13/99	50,993

ASARCO Globe Plant
Discharge Log for Monitoring Point 001
Second Quarter 1999

Date	Volume (GPD)
05/14/99	48,394
05/15/99	0
05/16/99	0
05/17/99	62,820
05/18/99	61,300
05/19/99	66,404
05/20/99	61,963
05/21/99	49,427
05/22/99	236
05/23/99	185
05/24/99	50,510
05/25/99	51,467
05/26/99	225
05/27/99	42,061
05/28/99	40,192
05/29/99	259
05/30/99	271
05/31/99	174
06/01/99	54,416
06/02/99	49,257
06/03/99	47,712
06/04/99	28,289
06/05/99	162
06/06/99	199
06/07/99	61,602
06/08/99	51,794
06/09/99	59,021
06/10/99	59,890
06/11/99	6,137
06/12/99	88
06/13/99	266
06/14/99	53,691
06/15/99	60,878
06/16/99	55,620
06/17/99	53,318
06/18/99	57,650
06/19/99	206
06/20/99	173
06/21/99	55,950
06/22/99	57,187
06/23/99	26,811
06/24/99	42,132
06/25/99	35,672

ASARCO Globe Plant
Discharge Log for Monitoring Point 001
Second Quarter 1999

Date	Volume (GPD)
06/26/99	63
06/27/99	24
06/28/99	44,745
06/29/99	32,366
06/30/99	47,620

Maximum Daily Flow Volume =	66,404 gpd
Average Daily Flow Volume =	27,655 gpd

SECOND QUARTER 1999

Process Waste Batch Discharge Log
and
Intent to Discharge Notification Log

Process Wastewater Source	Volume (gal)	Date of Discharge	Start Time	Estimated Duration of Discharge and End Time	Prior Testing Results?	Self-Monitoring Required?	Date, Time and Individual Notified at Metro	Individual Notifying Metro and Additional Comments
Cadmium Sulfide (Batches 1-5)	1635	4/12/99 (@ MP001)	9:15	9 hours ;18:15	Yes	Yes; results previously forwarded. (See file 4.6.4.3.4)	4/1/99; 12:30; T. Graber	N. Mathis; Initially notified Metro that discharge would be on 4/5/99.
Antimony Shot Antimony Pickling	250 100	4/12/99 (@ MP001)	9:15	9 hours; 18:15	No	Yes; self-mon. req. @ 001 for Sb during discharge. Results due w/ 5/99 ICR.	4/1/99; 12:30; T. Graber	N. Mathis; Total discharge on 4/12/99 is expected to be ~ 45, 000 gal.
Electrolytic Antimony Refining	200	4/12/99 (@ MP001)	9:15	9 hours; 18:15	No	Yes; self-mon. req. @ 001 for Sb during discharge. Results due w/ 5/99 ICR.	4/8/99; 13:45; T. Graber	N. Mathis; Sample will be analyzed for all permitted parameters to also satisfy monthly monitoring rqmnts.
Electrolytic Antimony Refining	150	4/13/99 (@ MP001)	8:30	10 + hours; 18:30	No	No	4/12/99; 7:42; T. Graber	N. Mathis; Total discharge on 4/12/99 is expected to be ~ 50, 000 gal.

Antimony Pickling	300	4/20/99 (@ MP001)	8:30	12 hours; 8:30	No	No	4/19/99;13:45; T. Pfeifer	R. Flynn; Total discharge on 4/20/99 is expected to be ~45,000 gal.
Cadmium Sulfide Batch 6	350	4/28/99 (@ MP002)	9:30	10-30 minutes; 10:00	Yes	Yes; self-mon. req by ICR to be submitted w/ 5/99 ICR.	4/26/99; 16:17; T. Pfeifer	N. Mathis; Lot # B-7-99
Antimony Pickling Electrolytic Antimony	100 200	4/29/99 (@ MP001)	8:30	12 hours; 20:30	No	Yes; self-mon. req. @ 001 for Sb during discharge. Results due w/ 5/99 ICR.	4/28/99;9:12; T. Graber	N. Mathis; Initial notification was made to T. Pfeifer on 4/26 for discharge on 4/27.
Antimony Pickling Electrolytic Antimony	350 50	5/10/99 (@ MP001)	9:00	12 hours; 21:00	No	Yes; self-mon. req. @ 001 for Sb during discharge. Results due w/ 5/99 ICR.	5/6/99;13:05; T. Graber (via fax)	N. Mathis; Total discharge on 5/10/99 is expected to be ~ 45, 000 gal.; Sample will be analyzed for all permitted parameters to also satisfy monthly monitoring rqmnts.
Antimony Pickling Electrolytic Antimony	200 100	5/18/99 (@ MP001)	9:00	12 hours; 21:00	No	No	5/17/99; 8:45; T. Pfeifer	N. Mathis; Total discharge on 5/18/99 is expected to be ~ 60, 000 gal.
Antimony Shot Electrolytic Antimony	350 50	5/20/99 (@ MP001)	9:00	12 hours; 21:00	No	Yes; self-mon. req. @ 001 for Sb during discharge. Results due w/ 7/99 PCR	5/19/99; 8:30; T. Graber	N. Mathis; Total discharge on 5/20/99 is expected to be ~ 60, 000 gal.

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM - SPLIT SAMPLES

SAMPLERS: Cliff Mills, Lance Weinholz

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE TYPE*	MONITORING POINT	SAMPLE PRESERVATIVE	METRO ANALYSES
387878	ASARCO #600	5-17-18-99	0850 800	FC24	001	HNO_3	As, Se, Sb, Zn, Cd, Pb, Ni, Cr, Be, Cu.

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	0944 / 5/21/99	[illegible] Mills	[illegible] Mills	[illegible] / 1002	[illegible] ASARCO
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

WHITE - METRO DISTRICT'S COPY YELLOW - INDUSTRY'S COPY

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-010-99	Well Number	389878
Category	SEWER	Location	
Description	METRO SPLIT	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	05/17/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.061	3114 B 4.d	05/28/1999	PD
Cd	SAMPLE	0.04	3111 B	05/28/1999	PD
Cu	SAMPLE	0.12	3111 B	05/28/1999	PD
Ni	SAMPLE	0.02	3111 B	05/28/1999	PD
Pb	SAMPLE	0.05	3111 B	05/28/1999	PD
Sb	SAMPLE	<0.01	3111 B	05/28/1999	PD
Se	SAMPLE	0.170	3114 B	05/28/1999	PD
Zn	SAMPLE	0.05	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-059-99	Well Number	389878
Category	QAQC	Location	
Description	METRO SPLIT	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	05/17/1999
QAQC for LabID	209-010-99		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.062	0.061	1.6	3114 B 4.d	05/28/1999	PD
Cd	DUPLICATE	0.03	0.04	28.5	3111 B	05/28/1999	PD
Cu	DUPLICATE	0.12	0.12	0.0	3111 B	05/28/1999	PD
Ni	DUPLICATE	0.02	0.02	0.0	3111 B	05/28/1999	PD
Pb	DUPLICATE	0.05	0.05	0.0	3111 B	05/28/1999	PD
Sb	DUPLICATE	<0.01	<0.01	0.0	3111 B	05/28/1999	PD
Se	DUPLICATE	0.162	0.170	4.8	3114 B	05/28/1999	PD
Zn	DUPLICATE	0.04	0.05	22.2	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-069-99	Well Number	389878
Category	QAQC	Location	
Description	METRO SPLIT	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	05/17/1999
QAQC for LabID	209-010-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.084	0.061	0.020	115.0	3114 B 4.d	05/28/1999	PD
Cd	SPIKE	0.46	0.04	0.400	105.0	3111 B	05/28/1999	PD
Cu	SPIKE	0.54	0.12	0.400	105.0	3111 B	05/28/1999	PD
Ni	SPIKE	0.40	0.02	0.400	95.0	3111 B	05/28/1999	PD
Pb	SPIKE	0.48	0.05	0.400	107.5	3111 B	05/28/1999	PD
Sb	SPIKE	0.39	<0.01	0.400	97.5	3111 B	05/28/1999	PD
Se	SPIKE	0.189	0.170	0.020	95.0	3114 B	05/28/1999	PD
Zn	SPIKE	0.42	0.05	0.400	92.5	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-061-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	05/28/1999
QAQC for LabID	209-010-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.0005	3114 B 4.d	05/28/1999	PD
Cd	BLANK	<0.01	3111 B	05/28/1999	PD
Cu	BLANK	<0.01	3111 B	05/28/1999	PD
Ni	BLANK	<0.01	3111 B	05/28/1999	PD
Pb	BLANK	<0.01	3111 B	05/28/1999	PD
Sb	BLANK	<0.02	3111 B	05/28/1999	PD
Se	BLANK	<0.0005	3114 B	05/28/1999	PD
Zn	BLANK	<0.01	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-062-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 209-010-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/28/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Cu	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Ni	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Pb	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Sb	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Se	STANDARD	0.0020	0.0020	100.0	3114 B	05/28/1999	PD
Zn	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD

Lab ID Number 200-063-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 209-010-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/28/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Cu	STANDARD	1.03	1.0000	103.0	3111 B	05/28/1999	PD
Ni	STANDARD	1.01	1.0000	101.0	3111 B	05/28/1999	PD
Pb	STANDARD	1.01	1.0000	101.0	3111 B	05/28/1999	PD
Sb	STANDARD	1.05	1.0000	105.0	3111 B	05/28/1999	PD
Se	STANDARD	0.0020	0.0020	100.0	3114 B	05/28/1999	PD
Zn	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-064-99	Well Number	
Category	QAQC	Location	
Description	ICV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/28/1999
QAQC for LabID	209-010-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Cu	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Ni	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Pb	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Sb	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Se	STANDARD	0.0050	0.0050	100.0	3114 B	05/28/1999	PD
Zn	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD

Lab ID Number	200-065-99	Well Number	
Category	QAQC	Location	
Description	CCV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/28/1999
QAQC for LabID	209-010-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0051	0.0050	102.0	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	5.05	5.0000	101.0	3111 B	05/28/1999	PD
Cu	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Ni	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Pb	STANDARD	5.01	5.0000	100.2	3111 B	05/28/1999	PD
Sb	STANDARD	5.09	5.0000	101.8	3111 B	05/28/1999	PD
Se	STANDARD	0.0050	0.0050	100.0	3114 B	05/28/1999	PD
Zn	STANDARD	4.97	5.0000	99.4	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-066-99	Well Number	
Category	QAQC	Location	
Description	REFERENCE	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/28/1999
QAQC for LabID	209-010-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.124	0.1330	93.2	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	0.099	0.0920	107.6	3111 B	05/28/1999	PD
Cu	STANDARD	0.133	0.1130	117.6	3111 B	05/28/1999	PD
Ni	STANDARD	0.394	0.3890	101.2	3111 B	05/28/1999	PD
Pb	STANDARD	0.183	0.1890	96.8	3111 B	05/28/1999	PD
Sb	STANDARD	0.092	0.0990	92.9	3111 B	05/28/1999	PD
Se	STANDARD	0.132	0.1220	108.1	3114 B	05/28/1999	PD
Zn	STANDARD	0.603	0.6110	98.6	3111 B	05/28/1999	PD

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 4220 Flow Meter.

Sampling Period:	5/20/1999 7:55 to 5/21/1999 7:55	
Total Flow for 24 hour period:	61,960	gal
Maximum Flow:	1.30	gal/sec
Average Flow:	0.71	gal/sec
Number of Samples Collected:	62	
Total Volume Collected:	6.2	liters

Total Metals Composite Analysis:

Antimony (Sb):	1.30	(ppm)
Arsenic (As):	0.133	(ppm)
Cadmium (Cd):	0.04	(ppm)
Copper (Cu):	0.10	(ppm)
Lead (Pb):	0.10	(ppm)
Nickel (Ni):	0.01	(ppm)
Selenium (Se):	0.159	(ppm)
Zinc (Zn):	0.02	(ppm)

Sampled By: Patricia Dowell

Analyzed By: Patricia Dowell

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 5/20/1999 12:15

Analysis Date/Time: 5/20/1999 12:20

pH Grab Analysis:

pH 9.6 (units)

Sampled By: Patricia Dowell

Analyzed By: Patricia Dowell

ASARCO INCORPORATED
Environmental Laboratory

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: Sb Process H_2O Discharge May 001

SAMPLERS: (Signature) Patricia Dowell

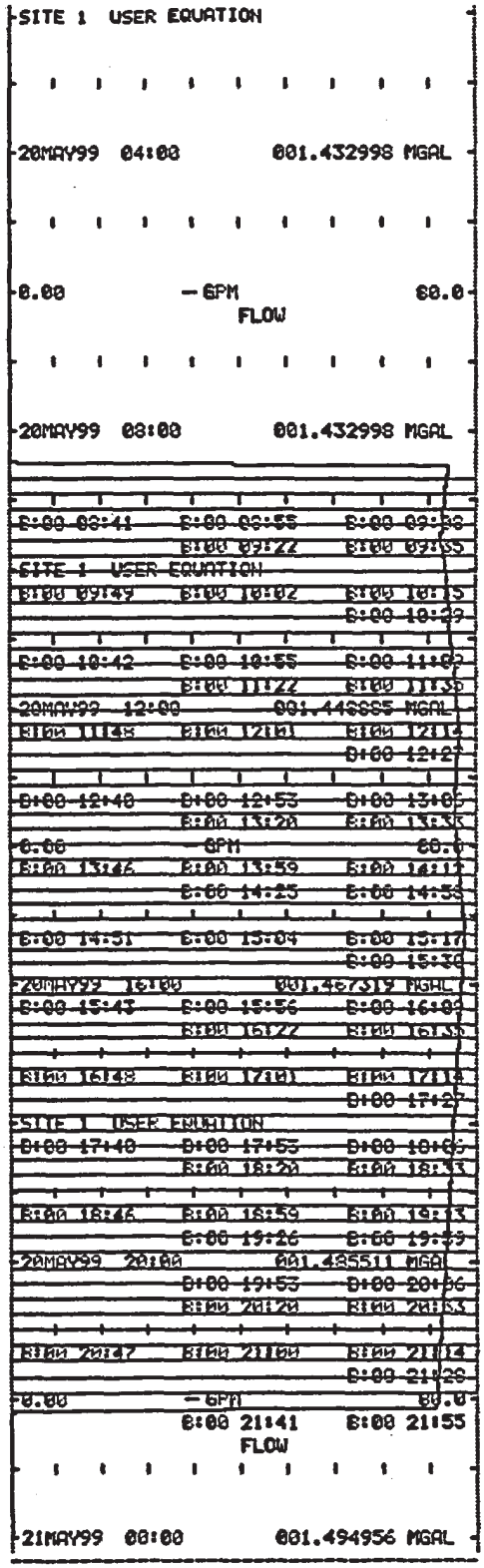
STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter unfiltered / HNO_3	250 ml unfiltered / unpreserved					REMARKS
001	5/20/99 5/21/99	7:55 7:55	X		001	1	X						
001	5/20/99	12:15		X	001	1		X					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Patricia Dowell	5/20/99 8:15				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000782



REPORT A SITE 1 4220 Flow Meter
INTERVAL: 20MAY99 00:00 TO 21MAY99 00:00

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-017-99	Well Number	001
Category	SEWER	Location	
Description	SB PROCESS 5-20-99	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	05/20/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
	SAMPLE		3111 B	05/20/1999	PD
Ph	SAMPLE	9.60	EPA150.1	05/20/1999	PD

Lab ID Number	208-021-99	Well Number	001
Category	SEWER	Location	
Description	SB PROCESS 5-20-99	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	05/20/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.133	3114 B 4.d	05/28/1999	PD
Cd	SAMPLE	0.04	3111 B	05/28/1999	PD
Cu	SAMPLE	0.10	3111 B	05/28/1999	PD
Ni	SAMPLE	0.01	3111 B	05/28/1999	PD
Pb	SAMPLE	0.10	3111 B	05/28/1999	PD
Sb	SAMPLE	1.30	3111 B	05/28/1999	PD
Se	SAMPLE	0.159	3114 B	05/28/1999	PD
Zn	SAMPLE	0.02	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number 200-067-99
Category QAQC
Description SB PROCESS 5-20-99
QAQC Type DUPLICATE
QAQC for LabID 208-021-99

Well Number 001
Location
Parameter TOTAL
Date Sampled 05/20/1999

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.129	0.133	3.0	3114 B 4.d	05/28/1999	PD
Cd	DUPLICATE	0.04	0.04	0.0	3111 B	05/28/1999	PD
Cu	DUPLICATE	0.10	0.10	0.0	3111 B	05/28/1999	PD
Ni	DUPLICATE	0.01	0.01	0.0	3111 B	05/28/1999	PD
Pb	DUPLICATE	0.14	0.10	33.3	3111 B	05/28/1999	PD
Sb	DUPLICATE	1.34	1.30	3.0	3111 B	05/28/1999	PD
Se	DUPLICATE	0.146	0.159	8.5	3114 B	05/28/1999	PD
Zn	DUPLICATE	0.03	0.02	40.0	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-068-99	Well Number	001
Category	QAQC	Location	
Description	SB PROCESS 5-20-99	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	05/20/1999
QAQC for LabID	208-021-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.154	0.133	0.020	105.0	3114 B 4.d	05/28/1999	PD
Cd	SPIKE	0.45	0.04	0.400	102.5	3111 B	05/28/1999	PD
Cu	SPIKE	0.52	0.10	0.400	105.0	3111 B	05/28/1999	PD
Ni	SPIKE	0.40	0.01	0.400	97.5	3111 B	05/28/1999	PD
Pb	SPIKE	0.50	0.10	0.400	100.0	3111 B	05/28/1999	PD
Sb	SPIKE	1.66	1.30	0.400	90.0	3111 B	05/28/1999	PD
Se	SPIKE	0.177	0.159	0.020	90.0	3114 B	05/28/1999	PD
Zn	SPIKE	0.39	0.02	0.400	92.5	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-061-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	05/28/1999
QAQC for LabID	208-021-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.0005	3114 B 4.d	05/28/1999	PD
Cd	BLANK	<0.01	3111 B	05/28/1999	PD
Cu	BLANK	<0.01	3111 B	05/28/1999	PD
Ni	BLANK	<0.01	3111 B	05/28/1999	PD
Pb	BLANK	<0.01	3111 B	05/28/1999	PD
Sb	BLANK	<0.02	3111 B	05/28/1999	PD
Se	BLANK	<0.0005	3114 B	05/28/1999	PD
Zn	BLANK	<0.01	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-062-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-021-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/28/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Cu	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Ni	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Pb	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Sb	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Se	STANDARD	0.0020	0.0020	100.0	3114 B	05/28/1999	PD
Zn	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD

Lab ID Number 200-063-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-021-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/28/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Cu	STANDARD	1.03	1.0000	103.0	3111 B	05/28/1999	PD
Ni	STANDARD	1.01	1.0000	101.0	3111 B	05/28/1999	PD
Pb	STANDARD	1.01	1.0000	101.0	3111 B	05/28/1999	PD
Sb	STANDARD	1.05	1.0000	105.0	3111 B	05/28/1999	PD
Se	STANDARD	0.0020	0.0020	100.0	3114 B	05/28/1999	PD
Zn	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-064-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-021-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/28/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Cu	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Ni	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Pb	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Sb	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Se	STANDARD	0.0050	0.0050	100.0	3114 B	05/28/1999	PD
Zn	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD

Lab ID Number 200-065-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-021-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/28/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0051	0.0050	102.0	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	5.05	5.0000	101.0	3111 B	05/28/1999	PD
Cu	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Ni	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Pb	STANDARD	5.01	5.0000	100.2	3111 B	05/28/1999	PD
Sb	STANDARD	5.09	5.0000	101.8	3111 B	05/28/1999	PD
Se	STANDARD	0.0050	0.0050	100.0	3114 B	05/28/1999	PD
Zn	STANDARD	4.97	5.0000	99.4	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-066-99	Well Number	
Category	QAQC	Location	
Description	REFERENCE	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/28/1999
QAQC for LabID	208-021-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.124	0.1330	93.2	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	0.099	0.0920	107.6	3111 B	05/28/1999	PD
Cu	STANDARD	0.133	0.1130	117.6	3111 B	05/28/1999	PD
Ni	STANDARD	0.394	0.3890	101.2	3111 B	05/28/1999	PD
Pb	STANDARD	0.183	0.1890	96.8	3111 B	05/28/1999	PD
Sb	STANDARD	0.092	0.0990	92.9	3111 B	05/28/1999	PD
Se	STANDARD	0.132	0.1220	108.1	3114 B	05/28/1999	PD
Zn	STANDARD	0.603	0.6110	98.6	3111 B	05/28/1999	PD

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 4220 Flow Meter.

Sampling Period:	5/25/99 7:59 to 5/26/99 7:59	
Total Flow for 24 hour period:	51,450	gal
Maximum Flow:	1.27	gal/sec
Average Flow:	0.60	gal/sec
Number of Samples Collected:	52	
Total Volume Collected:	5.2	liters

Total Metals Composite Analysis:

Antimony (Sb):	1.11	(ppm)
Arsenic (As):	0.091	(ppm)
Cadmium (Cd):	0.03	(ppm)
Copper (Cu):	0.13	(ppm)
Lead (Pb):	0.07	(ppm)
Nickel (Ni):	0.01	(ppm)
Selenium (Se):	0.141	(ppm)
Zinc (Zn):	0.01	(ppm)

Sampled By: Patricia Dowell

Analyzed By: Patricia Dowell

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 5/25/1999 1:10

Analysis Date/Time: 5/25/1999 1:15

pH Grab Analysis:

pH 9.5 (units)

Sampled By: Patricia Dowell

Analyzed By: Patricia Dowell

ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.

PROJECT NAME: Air shot discharge 001

SAMPLERS: (Signature) Patricia Dowell

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter unfiltered/HNO3	250ml unfilt/unpreserved					REMARKS
001	5/25/99 5/26/99	7:59	X		001								
001	5/25/99	1:10		X	001								

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Patricia Dowell	5/26/99 7:59				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000793

25MAY99 00:00 001.595527 MGAL

SITE 1 USER EQUATION

B:00 10:56 B:00 11:10
B:00 11:23 B:00 11:36
25MAY99 12:00 001.601087 MGAL
B:00 11:50 B:00 12:03 B:00 12:16
B:00 12:29
B:00 12:42 B:00 12:56 B:00 13:09
B:00 13:22 B:00 13:35
0.00 — GPM 80.0
B:00 13:49 B:00 14:02 B:00 14:16
B:00 14:29
B:00 14:42 B:00 14:56 B:00 15:09
B:00 15:22 B:00 15:36
25MAY99 16:00 001.619191 MGAL
B:00 15:48 B:00 16:01 B:00 16:14
B:00 16:28
B:00 16:41 B:00 16:54 B:00 17:07
B:00 17:20 B:00 17:33
SITE 1 USER EQUATION
B:00 17:47 B:00 18:00 B:00 18:13
B:00 18:26
B:00 18:40 B:00 18:53 B:00 19:06
B:00 19:20 B:00 19:33
25MAY99 20:00 001.637201 MGAL
B:00 19:47 B:00 20:00 B:00 20:14
B:00 20:27
B:00 20:41 B:00 20:55 B:00 21:08
B:00 21:22 B:00 21:36
0.00 — GPM 80.0
B:00 21:49 B:00 22:03
FLOW

26MAY99 00:00 001.646781 MGAL

REPORT A SITE 1 4220 Flow Meter
INTERVAL: 25MAY99 00:00 TO 26MAY99 00:00
TOTAL VOLUME 001.646781 MGAL
INTERVAL VOLUME 000.051467 MGAL
FLOW RATE:

Ave	35.74 GPM	
Max	76.66 GPM	25MAY99 16:11
Min	0.000 GPM	25MAY99.00:33

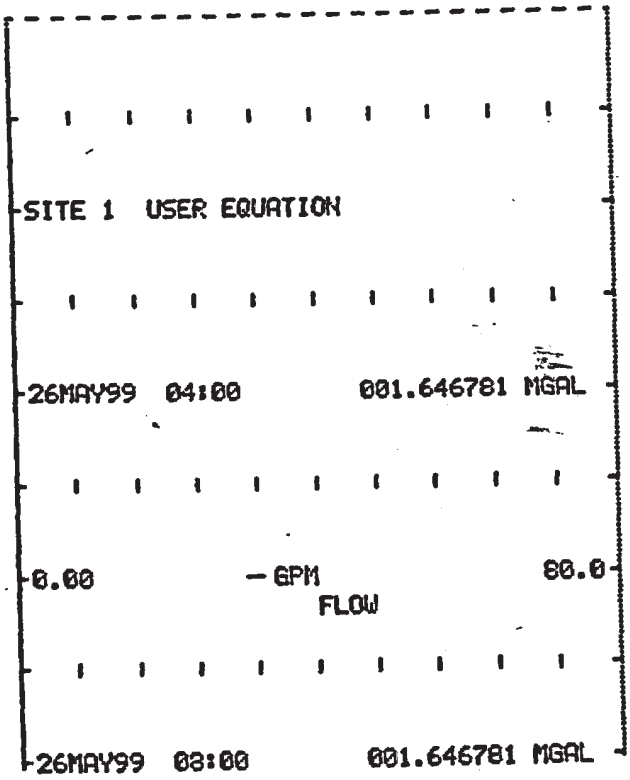
25MAY99 00:00 001.595314 MGF

REPORT A SITE 1 4220 Flow Meter
INTERVAL: 24MAY99 00:00 TO 25MAY99 0C
TOTAL VOLUME 001.595314 MGAL
INTERVAL VOLUME 000.050509 MGAL
FLOW RATE:

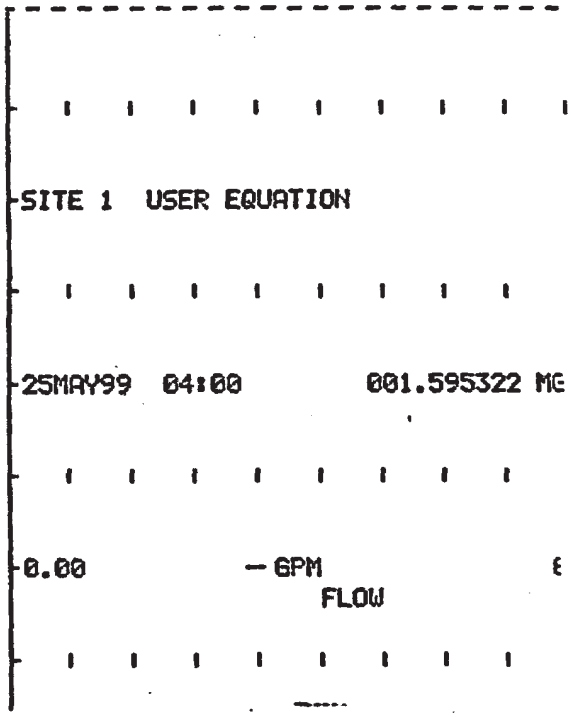
Ave	35.06 GPM	
Max	77.77 GPM	24MAY99 1:
Min	0.000 GPM	24MAY99 0C

SAMPLE HISTORY

HISTORY starting 25MAY99 00:00



HISTORY starting 24MAY99 00:00



ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-019-99	Well Number	001
Category	SEWER	Location	
Description	SB PROCESS 5-25-99	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	05/25/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	9.50	EPA150.1	05/25/1999	PD

Lab ID Number	208-020-99	Well Number	001
Category	SEWER	Location	
Description	SB PROCESS 5-25-99	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	05/25/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.091	3114 B 4.d	05/28/1999	PD
Cd	SAMPLE	0.03	3111 B	05/28/1999	PD
Cu	SAMPLE	0.13	3111 B	05/28/1999	PD
Ni	SAMPLE	0.01	3111 B	05/28/1999	PD
Pb	SAMPLE	0.07	3111 B	05/28/1999	PD
Sb	SAMPLE	1.11	3111 B	05/28/1999	PD
Se	SAMPLE	0.141	3114 B	05/28/1999	PD
Zn	SAMPLE	0.01	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-057-99	Well Number	001
Category	QAQC	Location	
Description	SB PROCESS 5-25-99	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	05/25/1999
QAQC for LabID	208-020-99		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.084	0.091	8.0	3114 B 4.d	05/28/1999	PD
Cd	DUPLICATE	0.03	0.03	0.0	3111 B	05/28/1999	PD
Cu	DUPLICATE	0.12	0.13	8.0	3111 B	05/28/1999	PD
Ni	DUPLICATE	0.01	0.01	0.0	3111 B	05/28/1999	PD
Pb	DUPLICATE	0.07	0.07	0.0	3111 B	05/28/1999	PD
Sb	DUPLICATE	1.08	1.11	2.7	3111 B	05/28/1999	PD
Se	DUPLICATE	0.154	0.141	8.8	3114 B	05/28/1999	PD
Zn	DUPLICATE	0.01	0.01	0.0	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-058-99	Well Number	001
Category	QAQC	Location	
Description	SB PROCESS 5-25-99	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	05/25/1999
QAQC for LabID	208-020-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.113	0.091	0.020	110.0	3114 B 4.d	05/28/1999	PD
Cd	SPIKE	0.45	0.03	0.400	105.0	3111 B	05/28/1999	PD
Cu	SPIKE	0.56	0.13	0.400	107.5	3111 B	05/28/1999	PD
Ni	SPIKE	0.40	0.01	0.400	97.5	3111 B	05/28/1999	PD
Pb	SPIKE	0.54	0.07	0.400	117.5	3111 B	05/28/1999	PD
Sb	SPIKE	1.55	1.11	0.400	110.0	3111 B	05/28/1999	PD
Se	SPIKE	0.163	0.141	0.020	110.0	3114 B	05/28/1999	PD
Zn	SPIKE	0.42	0.01	0.400	102.5	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-061-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	05/28/1999
QAQC for LabID	208-020-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.0005	3114 B 4.d	05/28/1999	PD
Cd	BLANK	<0.01	3111 B	05/28/1999	PD
Cu	BLANK	<0.01	3111 B	05/28/1999	PD
Ni	BLANK	<0.01	3111 B	05/28/1999	PD
Pb	BLANK	<0.01	3111 B	05/28/1999	PD
Sb	BLANK	<0.02	3111 B	05/28/1999	PD
Se	BLANK	<0.0005	3114 B	05/28/1999	PD
Zn	BLANK	<0.01	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-062-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-020-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/28/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Cu	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Ni	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Pb	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Sb	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Se	STANDARD	0.0020	0.0020	100.0	3114 B	05/28/1999	PD
Zn	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD

Lab ID Number 200-063-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-020-99

Well Number
Location
Parameter TOTAL
Date Sampled 05/28/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD
Cu	STANDARD	1.03	1.0000	103.0	3111 B	05/28/1999	PD
Ni	STANDARD	1.01	1.0000	101.0	3111 B	05/28/1999	PD
Pb	STANDARD	1.01	1.0000	101.0	3111 B	05/28/1999	PD
Sb	STANDARD	1.05	1.0000	105.0	3111 B	05/28/1999	PD
Se	STANDARD	0.0020	0.0020	100.0	3114 B	05/28/1999	PD
Zn	STANDARD	1.00	1.0000	100.0	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-064-99	Well Number	
Category	QAQC	Location	
Description	ICV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/28/1999
QAQC for LabID	208-020-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Cu	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Ni	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Pb	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Sb	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Se	STANDARD	0.0050	0.0050	100.0	3114 B	05/28/1999	PD
Zn	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD

Lab ID Number	200-065-99	Well Number	
Category	QAQC	Location	
Description	CCV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/28/1999
QAQC for LabID	208-020-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0051	0.0050	102.0	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	5.05	5.0000	101.0	3111 B	05/28/1999	PD
Cu	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Ni	STANDARD	5.00	5.0000	100.0	3111 B	05/28/1999	PD
Pb	STANDARD	5.01	5.0000	100.2	3111 B	05/28/1999	PD
Sb	STANDARD	5.09	5.0000	101.8	3111 B	05/28/1999	PD
Se	STANDARD	0.0050	0.0050	100.0	3114 B	05/28/1999	PD
Zn	STANDARD	4.97	5.0000	99.4	3111 B	05/28/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-066-99	Well Number	
Category	QAQC	Location	
Description	REFERENCE	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	05/28/1999
QAQC for LabID	208-020-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.124	0.1330	93.2	3114 B 4.d	05/28/1999	PD
Cd	STANDARD	0.099	0.0920	107.6	3111 B	05/28/1999	PD
Cu	STANDARD	0.133	0.1130	117.6	3111 B	05/28/1999	PD
Ni	STANDARD	0.394	0.3890	101.2	3111 B	05/28/1999	PD
Pb	STANDARD	0.183	0.1890	96.8	3111 B	05/28/1999	PD
Sb	STANDARD	0.092	0.0990	92.9	3111 B	05/28/1999	PD
Se	STANDARD	0.132	0.1220	108.1	3114 B	05/28/1999	PD
Zn	STANDARD	0.603	0.6110	98.6	3111 B	05/28/1999	PD

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 4220 Flow Meter.

Sampling Period:	6/8/1999 7:59 to 6/9/1999 7:59	
Total Flow for 24 hour period:	51,813	gal
Maximum Flow:	1.31	gal/sec
Average Flow:	0.60	gal/sec
Number of Samples Collected:	52	
Total Volume Collected:	5.2	liters

Total Metals Composite Analysis:

Antimony (Sb):	0.19	(ppm)
Arsenic (As):	0.0278	(ppm)
Cadmium (Cd):	0.02	(ppm)
Copper (Cu):	0.04	(ppm)
Lead (Pb):	0.02	(ppm)
Nickel (Ni):	0.01	(ppm)
Selenium (Se):	0.154	(ppm)
Zinc (Zn):	0.03	(ppm)

Sampled By: Patricia Dowell

Analyzed By: Patricia Dowell

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 6/8/1999 1:35

Analysis Date/Time: 6/8/1999 1:40

pH Grab Analysis:

pH 10.0 (units)

Sampled By: Patricia Dowell

Analyzed By: Patricia Dowell

ASARCO INCORPORATED
Environmental Laboratory

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: June & SB Process

SAMPLERS: (Signature) Patricia Dowell

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter unfilt / HNO3 preserved	250 mls unfilt / unpreserved						REMARKS
001	6/8/99 6/9/99	7:59 7:59	X		001	1	X							
001	6/8/99	1:35		X		1		X						

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Patricia Dowell	6/8/99 1:35 6/9/99 7:59				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000805

HISTORY starting 08JUN99 00:00

SITE 1 USER EQUATION

09JUN99 04:00 002.023430 MGAL

0.00 — GPM 80.0
FLOW

09JUN99 08:00 002.023430 MGAL

REPORT A SITE 1 4220 Flow Meter
INTERVAL: 08JUN99 00:00 TO 09JUN99 00:00
TOTAL VOLUME 002.023389 MGAL
INTERVAL VOLUME 000.051789 MGAL
FLOW RATE:
Ave 35.96 GPM
Max 78.01 GPM 08JUN99 15:08

SITE 1 USER EQUATION

08JUN99 08:00 001.971617 MGAL

08JUN99 12:00 001.977510 MGAL
B:00 11:48 B:00 12:01 B:00 12:14
B:00 12:27
B:00 12:41 B:00 12:54 B:00 13:07
B:00 13:20 B:00 13:34
0.00 — GPM 80.0
B:00 13:46 B:00 13:59 B:00 14:12
B:00 14:26 B:00 14:39
B:00 14:52 B:00 15:05 B:00 15:17
B:00 15:30
08JUN99 16:00 001.993564 MGAL
B:00 15:43 B:00 15:56 B:00 16:09
B:00 16:22 B:00 16:35
B:00 16:48 B:00 17:02 B:00 17:15
B:00 17:28
SITE 1 USER EQUATION
B:00 17:41 B:00 17:54 B:00 18:08
B:00 18:21 B:00 18:34
B:00 18:47 B:00 19:01 B:00 19:14
B:00 19:27
08JUN99 20:00 002.014019 MGAL
B:00 19:41 B:00 19:54 B:00 20:08
B:00 20:21 B:00 20:35
B:00 20:48 B:00 21:02 B:00 21:16
B:00 21:29
0.00 — GPM 80.0
B:00 21:43 B:00 21:57
FLOW
09JUN99 00:00 002.023389 MGAL

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-022-99	Well Number	001
Category	SEWER	Location	
Description	JUNE & SB PROCESS	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	06/08/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	10.00	EPA150.1	06/08/1999	PD

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-024-99	Well Number	001
Category	SEWER	Location	
Description	JUNE COMP. & SB	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	06/08/1999

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.0278	3114 B 4.d	07/12/1999	PD
Cd	SAMPLE	0.02	3111 B	07/12/1999	PD
Cu	SAMPLE	0.04	3111 B	07/12/1999	PD
Ni	SAMPLE	0.01	3111 B	07/12/1999	PD
Pb	SAMPLE	0.02	3111 B	07/12/1999	PD
Sb	SAMPLE	0.19	3111 B	07/12/1999	PD
Se	SAMPLE	0.154	3114 B	07/12/1999	PD
Zn	SAMPLE	0.03	3111 B	07/12/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-081-99	Well Number	001
Category	QAQC	Location	
Description	JUNE COMP & SB H2O	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	06/08/1999
QAQC for LabID	208-024-99		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.0280	0.0278	0.7	3114 B 4.d	07/12/1999	PD
Cd	DUPLICATE	0.02	0.02	0.0	3111 B	07/12/1999	PD
Cu	DUPLICATE	0.03	0.04	28.5	3111 B	07/12/1999	PD
Ni	DUPLICATE	<0.01	0.01	0.0	3111 B	07/12/1999	PD
Pb	DUPLICATE	0.02	0.02	0.0	3111 B	07/12/1999	PD
Sb	DUPLICATE	0.19	0.19	0.0	3111 B	07/12/1999	PD
Se	DUPLICATE	0.145	0.154	6.0	3114 B	07/12/1999	PD
Zn	DUPLICATE	0.03	0.03	0.0	3111 B	07/12/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-082-99	Well Number	001
Category	QAQC	Location	
Description	JUNE COMP. & SB PROCESS	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	06/08/1999
QAQC for LabID	208-024-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.0320	0.0278	0.005	84.0	3114 B 4.d	07/12/1999	PD
Cd	SPIKE	0.41	0.02	0.400	97.5	3111 B	07/12/1999	PD
Cu	SPIKE	0.45	0.04	0.400	102.5	3111 B	07/12/1999	PD
Ni	SPIKE	0.41	0.01	0.400	100.0	3111 B	07/12/1999	PD
Pb	SPIKE	0.38	0.02	0.400	90.0	3111 B	07/12/1999	PD
Sb	SPIKE	0.59	0.19	0.400	100.0	3111 B	07/12/1999	PD
Se	SPIKE	0.175	0.154	0.020	105.0	3114 B	07/12/1999	PD
Zn	SPIKE	0.45	0.03	0.400	105.0	3111 B	07/12/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-075-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	07/12/1999
QAQC for LabID	208-024-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.0005	3114 B 4.d	07/12/1999	PD
Cd	BLANK	<0.01	3111 B	07/12/1999	PD
Cu	BLANK	<0.01	3111 B	07/12/1999	PD
Ni	BLANK	<0.01	3111 B	07/12/1999	PD
Pb	BLANK	0.01	3111 B	07/12/1999	PD
Sb	BLANK	<0.02	3111 B	07/12/1999	PD
Se	BLANK	<0.0005	3114 B	07/12/1999	PD
Zn	BLANK	<0.01	3111 B	07/12/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-076-99	Well Number	
Category	QAQC	Location	
Description	ICV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	07/12/1999
QAQC for LabID	208-024-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	07/12/1999	PD
Cd	STANDARD	1.00	1.0000	100.0	3111 B	07/12/1999	PD
Cu	STANDARD	1.00	1.0000	100.0	3111 B	07/12/1999	PD
Ni	STANDARD	1.00	1.0000	100.0	3111 B	07/12/1999	PD
Pb	STANDARD	1.00	1.0000	100.0	3111 B	07/12/1999	PD
Sb	STANDARD	1.00	1.0000	100.0	3111 B	07/12/1999	PD
Se	STANDARD	0.0020	0.0020	100.0	3114 B	07/12/1999	PD
Zn	STANDARD	1.00	1.0000	100.0	3111 B	07/12/1999	PD

Lab ID Number	200-077-99	Well Number	
Category	QAQC	Location	
Description	CCV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	07/12/1999
QAQC for LabID	208-024-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	07/12/1999	PD
Cd	STANDARD	1.02	1.0000	102.0	3111 B	07/12/1999	PD
Cu	STANDARD	1.02	1.0000	102.0	3111 B	07/12/1999	PD
Ni	STANDARD	0.98	1.0000	98.0	3111 B	07/12/1999	PD
Pb	STANDARD	1.00	1.0000	100.0	3111 B	07/12/1999	PD
Sb	STANDARD	0.99	1.0000	99.0	3111 B	07/12/1999	PD
Se	STANDARD	0.0019	0.0020	95.0	3114 B	07/12/1999	PD
Zn	STANDARD	1.05	1.0000	105.0	3111 B	07/12/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-078-99	Well Number	
Category	QAQC	Location	
Description	ICV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	07/12/1999
QAQC for LabID	208-024-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	07/12/1999	PD
Cd	STANDARD	5.00	5.0000	100.0	3111 B	07/12/1999	PD
Cu	STANDARD	5.00	5.0000	100.0	3111 B	07/12/1999	PD
Ni	STANDARD	5.00	5.0000	100.0	3111 B	07/12/1999	PD
Pb	STANDARD	5.00	5.0000	100.0	3111 B	07/12/1999	PD
Sb	STANDARD	5.00	5.0000	100.0	3111 B	07/12/1999	PD
Se	STANDARD	0.0050	0.0050	100.0	3114 B	07/12/1999	PD
Zn	STANDARD	5.00	5.0000	100.0	3111 B	07/12/1999	PD

Lab ID Number	200-079-99	Well Number	
Category	QAQC	Location	
Description	CCV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	07/12/1999
QAQC for LabID	208-024-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0047	0.0050	94.0	3114 B 4.d	07/12/1999	PD
Cd	STANDARD	5.01	5.0000	100.2	3111 B	07/12/1999	PD
Cu	STANDARD	5.00	5.0000	100.0	3111 B	07/12/1999	PD
Ni	STANDARD	5.02	5.0000	100.4	3111 B	07/12/1999	PD
Pb	STANDARD	5.02	5.0000	100.4	3111 B	07/12/1999	PD
Sb	STANDARD	5.08	5.0000	101.6	3111 B	07/12/1999	PD
Se	STANDARD	0.0048	0.0050	96.0	3114 B	07/12/1999	PD
Zn	STANDARD	4.98	5.0000	99.6	3111 B	07/12/1999	PD

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-080-99	Well Number	
Category	QAQC	Location	
Description	REFERENCE	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	07/12/1999
QAQC for LabID	208-024-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.124	0.1330	93.2	3114 B 4.d	07/12/1999	PD
Cd	STANDARD	0.092	0.0920	100.0	3111 B	07/12/1999	PD
Cu	STANDARD	0.114	0.1130	100.8	3111 B	07/12/1999	PD
Ni	STANDARD	0.321	0.3890	82.5	3111 B	07/12/1999	PD
Pb	STANDARD	0.184	0.1890	97.3	3111 B	07/12/1999	PD
Sb	STANDARD	0.094	0.0990	94.9	3111 B	07/12/1999	PD
Se	STANDARD	0.128	0.1220	104.9	3114 B	07/12/1999	PD
Zn	STANDARD	0.615	0.6110	100.6	3111 B	07/12/1999	PD

4.6.52

ASARCO

GLOBE PLANT

January 22, 1999

Mr. James T. Graber
Industrial Waste Specialist
Metro Wastewater Reclamation District
6450 York Street
Denver, Colorado 80229-7499

Dear Mr. Graber:

Enclosed for your review is the Asarco Globe Plant's Periodic Compliance Report (PCR) for the period of July - December, 1998. The PCR contains flow monitoring data, sampling results and waste disposal activities.

During the period there were eleven monitoring events at 001, including Asarco's required monthly monitoring, additional monitoring associated with the completion of the Terrace Drain and Metro's sampling. The final of the three initial Terrace Drain batches sampled November 16–17, 1998 doubles as the monthly monitoring for November.

Based on my inquiry of the people responsible for these areas or gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate and complete. If you should require additional information or have any questions regarding this submittal, please contact Nikki Mathis at 303-296-5111.

Sincerely,

Margaret W. Staub
Unit Manager

enc.

cc: (w/ enc.)
R. Litle
R. Marcus
C. Dungey
J. Vigil/D. Lux
N. Mathis

F:\USERS\NIKKI\POTW\PCRCVLTR.DOC
FILE NO: 4.6.5.2

ASARCO Incorporated, 495 East 51st Avenue, Denver, Colorado 80216-2098
Phone (303) 296-5900 • FAX (303) 296-0508

PERIODIC COMPLIANCE REPORT

NOTE: Periodic compliance reports (PCRs) are due on or before the last day of the month following the end of the reporting period and must be submitted to the address(es) listed in the "Reporting Requirements for Permittee" section of your wastewater discharge permit. Not all of the sections listed below apply to all permittees. Some permittees may also need to submit information in addition to the items appearing on this checklist. Consult your wastewater discharge permit for your specific reporting requirements.

Reporting period from: July 1, 1998 to December 31, 1998

Date prepared: January 22, 1999

Prepared by: John Vigil and Nicole Mathis

A. FACILITY INFORMATION

Name: ASARCO Globe Plant

Location: 495 E. 51st Avenue
Denver, Colorado 80216

Phone: (303) 296-5900 Fax: (303)296-0508 Emergency: (303) 208-4209

B. FLOW MONITORING

(Flow monitoring information may be required for more than one Monitoring Point. Attach additional sheets as necessary. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point 001 [ ] No discharge

Average daily flow volume (gallons per day)	21,731	[ ] Measured	[X]Estimated
Maximum daily flow volume (gallons per day)	88,764	[ ] Measured	[X]Estimated
Process water discharge (gallons per day)	1,307	[ ] Measured	[X]Estimated
Groundwater discharge (gallons per day -- Terrace Drain)	18,361	[ ] Measured	[X]Estimated

Note: Daily flow volumes are used, in part, to determine self-monitoring and reporting frequencies. Reported values, especially estimates, must be as accurate as possible.

C. SAMPLING RESULTS

Attach copies of the analytical results of all samplings of the regulated wastestreams performed by the permittee during the reporting period. Attach copies of the analytical results of all split samplings of the regulated wastestream performed by the permittee or other agency during the reporting period. Results transmitted to the permittee by any other agency, including the Metro District, do not have to be submitted, but must be kept on file for at least 3 years and be available for inspection.

Analytical results submitted with this PCR must contain the following information:

1. Concentrations and measurements of all parameters for which there are self-monitoring requirements.

2. The date, time and location of all sampling activities. Include the start-stop dates and times for composite samples.

(Note: To avoid self-monitoring reporting errors or violations, the analytical results included in this PCR should also contain the information listed below for all samples. At a minimum, this information must be kept on file for at least 3 years and be available for inspection.)

3. The method of sampling (grab, time composite, flow composite, or continuous measurement) and name of the person collecting the sample.

4. The name of the laboratory (or person) that performed the analyses.

5. The date the analyses were performed.

6. The analytical techniques/methods used for the analyses.

D. WASTE DISPOSAL

(Attach copies of disposal records for wastes hauled off-site during the reporting period, or provide a summary of waste disposal activities in the space provided below, or indicate "no activity" if no wastes were disposed of during the reporting period.)

[ ] No waste disposal activity occurred during the reporting period

[x] Summary provided below

Waste Name	Volume	Ship Date	Disposal Company
WWTP Sludge/BH Dust	40 c.y.	09/04/98	Safety-Kleen
Process Debris	20 c.y.	09/04/98	Safety-Kleen

D. WASTE DISPOSAL (cont.)

Waste Name	Volume	Ship Date	Disposal Company
PCB Ballast	31 kg	10/26/98	Safety-Kleen
WWTP Sludge/BH Dust	40 c.y.	12/02/98	Safety-Kleen
Process Debris	20 c.y.	12/02/98	Safety-Kleen
Process Debris	20 c.y.	12/03/98	Safety-Kleen
Process Debris	20 c.y.	12/07/98	Safety-Kleen
Process Debris	20 c.y	12/10/98	Safety-Kleen
Process Debris	20 c.y	12/11/98	Safety-Kleen
Process Debris	20 c.y	12/18/98	Safety-Kleen
Used Oil (Recycling)	620 gal	09/09/98	Mesa
Used Grease (Recycling)	1 drum	09/17/98	Mesa

E. ACCURACY AND COMPLETENESS CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that, there has not been any change(s) in the Research and Development activities at this facility that have significantly changed the process wastewater discharged to the POTW, or that notification of changed discharges was submitted to the Metro District as required per Section F.4 of the permit. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Authorized Representative

1/22/99
Date

Margaret W. Staub
Name (please print or type)

Unit Manager
Title (please print or type)

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	7/23/98 8:10 to 7/24/98 8:10	
Total Flow for 24 hour period:	11,170	gal
Maximum Flow:	1.00	gal/sec
Average Flow:	0.13	gal/sec
Number of Tanks Discharged:	2	
Number of Samples Collected:	19	
Total Volume Collected:	1.9	liters

Total Metals Composite Analysis:

Arsenic (As):	0.037	(ppm)
Cadmium (Cd):	0.03	(ppm)
Copper (Cu):	0.01	(ppm)
Lead (Pb):	0.12	(ppm)
Nickel (Ni):	<0.01	(ppm)
Selenium (Se):	0.103	(ppm)
Zinc (Zn):	0.05	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 7/24/98 8:15

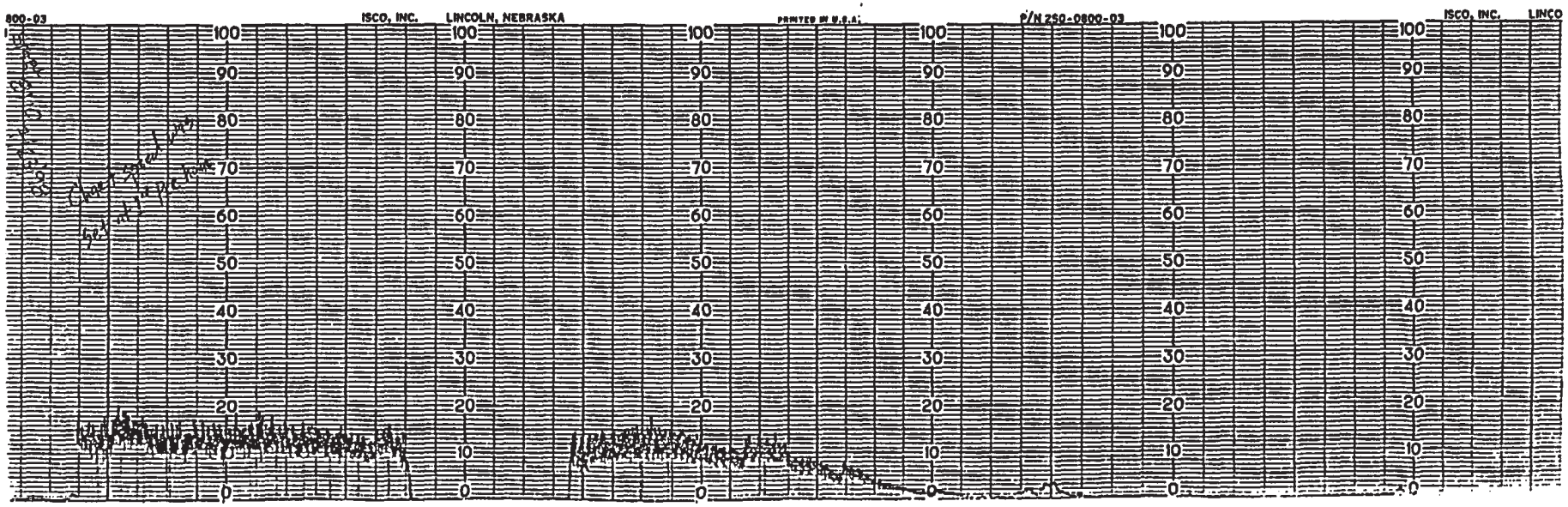
Analysis Date/Time: 7/24/98 8:20

pH Grab Analysis:

pH 7.2 (units)

Sampled By: John Vigil

Analyzed By: John Vigil


800-03
ISCO, INC. LINCOLN, NEBRASKA
PRINTED IN U.S.A.
P/N 250-0800-03
ISCO, INC. LINCO
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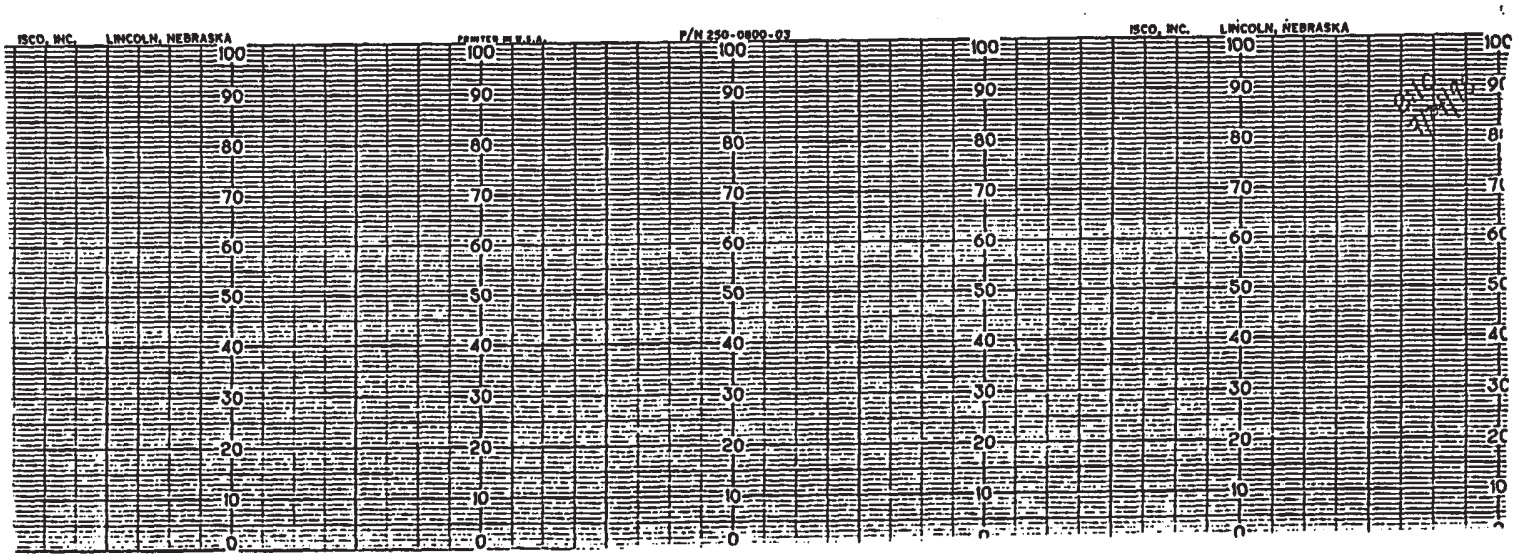
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P/N 250-0800-03
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ASARCO INCORPORATED
Environmental Laboratory

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: 001 Sewer comp July

SAMPLERS: (Signature) John P Vigil

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter UF / HNO3	250 ml / UF / unpres					REMARKS
001	7-23-98 7-24-98	8:10 8:10	24 hr		001 Sewer Manhole	1	X						
↓	7-24-98	~~8:20~~ 8:15 JV		X	↓ ↓ ↓	1		X					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P Vigil	7/24/98 8:30				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AC-000052

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-006-98	Well Number	001
Category	SEWER	Location	
Description	PH GRAB	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	07/24/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	7.20	EPA150.1	07/24/1998	JV

Lab ID Number	208-007-98	Well Number	001
Category	SEWER	Location	
Description	JULY COMP	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	07/24/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.037	3114 B 4.d	08/10/1998	JV
Cd	SAMPLE	0.03	3111 B	08/10/1998	JV
Cu	SAMPLE	0.01	3111 B	08/10/1998	JV
Ni	SAMPLE	<0.01	3111 B	08/10/1998	JV
Pb	SAMPLE	0.12	3111 B	08/10/1998	JV
Se	SAMPLE	0.103	3114 B	08/10/1998	JV
Zn	SAMPLE	0.05	3111 B	08/10/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-059-98	Well Number	001
Category	QAQC	Location	
Description	JULY COMP	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	07/24/1998
QAQC for LabID	208-007-98		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.032	0.037	14.4	3114 B 4.d	08/10/1998	JV
Cd	DUPLICATE	0.03	0.03	0.0	3111 B	08/10/1998	JV
Cu	DUPLICATE	0.02	0.01	66.6	3111 B	08/10/1998	JV
Ni	DUPLICATE	<0.01	<0.01	0.0	3111 B	08/10/1998	JV
Pb	DUPLICATE	0.16	0.12	28.5	3111 B	08/10/1998	JV
Se	DUPLICATE	0.106	0.103	2.8	3114 B	08/10/1998	JV
Zn	DUPLICATE	0.05	0.05	0.0	3111 B	08/10/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-060-98	Well Number	001
Category	QAQC	Location	
Description	JULY COMP	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	07/24/1998
QAQC for LabID	208-007-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.045	0.037	0.008	100.0	3114 B 4.d	08/10/1998	JV
Cd	SPIKE	0.45	0.03	0.400	105.0	3111 B	08/10/1998	JV
Cu	SPIKE	0.40	0.01	0.400	97.5	3111 B	08/10/1998	JV
Ni	SPIKE	0.36	<0.01	0.400	90.0	3111 B	08/10/1998	JV
Pb	SPIKE	0.53	0.12	0.400	102.5	3111 B	08/10/1998	JV
Se	SPIKE	0.125	0.103	0.020	110.0	3114 B	08/10/1998	JV
Zn	SPIKE	0.39	0.05	0.400	85.0	3111 B	08/10/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-061-98	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	08/10/1998
QAQC for LabID	208-007-98		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.001	3114 B 4.d	08/10/1998	JV
Cd	BLANK	<0.01	3111 B	08/10/1998	JV
Cu	BLANK	<0.01	3111 B	08/10/1998	JV
Ni	BLANK	<0.01	3111 B	08/10/1998	JV
Pb	BLANK	0.01	3111 B	08/10/1998	JV
Se	BLANK	<0.001	3114 B	08/10/1998	JV
Zn	BLANK	<0.01	3111 B	08/10/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-062-98
Category QAQC
Description ICV 1PPM
QAQC Type STANDARD
QAQC for LabID 208-007-98

Well Number
Location
Parameter TOTAL
Date Sampled 08/10/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.002	0.0020	100.0	3114 B 4.d	08/10/1998	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	08/10/1998	JV
Cu	STANDARD	1.00	1.0000	100.0	3111 B	08/10/1998	JV
Ni	STANDARD	1.02	1.0000	102.0	3111 B	08/10/1998	JV
Pb	STANDARD	1.01	1.0000	101.0	3111 B	08/10/1998	JV
Se	STANDARD	0.002	0.0020	100.0	3114 B	08/10/1998	JV
Zn	STANDARD	1.00	1.0000	100.0	3111 B	08/10/1998	JV

Lab ID Number 200-063-98
Category QAQC
Description CCV 1PPM
QAQC Type STANDARD
QAQC for LabID 208-007-98

Well Number
Location
Parameter TOTAL
Date Sampled 08/10/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0017	0.0020	85.0	3114 B 4.d	08/10/1998	JV
Cd	STANDARD	1.02	1.0000	102.0	3111 B	08/10/1998	JV
Cu	STANDARD	1.01	1.0000	101.0	3111 B	08/10/1998	JV
Ni	STANDARD	1.03	1.0000	103.0	3111 B	08/10/1998	JV
Pb	STANDARD	1.03	1.0000	103.0	3111 B	08/10/1998	JV
Se	STANDARD	0.0019	0.0020	95.0	3114 B	08/10/1998	JV
Zn	STANDARD	1.00	1.0000	100.0	3111 B	08/10/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-064-98
Category QAQC
Description ICV 5PPM
QAQC Type STANDARD
QAQC for LabID 208-007-98

Well Number
Location
Parameter TOTAL
Date Sampled 08/10/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.005	0.0050	100.0	3114 B 4.d	08/10/1998	JV
Cd	STANDARD	4.99	5.0000	99.8	3111 B	08/10/1998	JV
Cu	STANDARD	4.99	5.0000	99.8	3111 B	08/10/1998	JV
Ni	STANDARD	5.01	5.0000	100.2	3111 B	08/10/1998	JV
Pb	STANDARD	5.03	5.0000	100.6	3111 B	08/10/1998	JV
Se	STANDARD	0.005	0.0050	100.0	3114 B	08/10/1998	JV
Zn	STANDARD	5.02	5.0000	100.4	3111 B	08/10/1998	JV

Lab ID Number 200-065-98
Category QAQC
Description CCV 5PPM
QAQC Type STANDARD
QAQC for LabID 208-007-98

Well Number
Location
Parameter TOTAL
Date Sampled 08/10/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0053	0.0050	106.0	3114 B 4.d	08/10/1998	JV
Cd	STANDARD	4.95	5.0000	99.0	3111 B	08/10/1998	JV
Cu	STANDARD	4.96	5.0000	99.2	3111 B	08/10/1998	JV
Ni	STANDARD	5.03	5.0000	100.6	3111 B	08/10/1998	JV
Pb	STANDARD	5.08	5.0000	101.6	3111 B	08/10/1998	JV
Se	STANDARD	0.0055	0.0050	110.0	3114 B	08/10/1998	JV
Zn	STANDARD	5.06	5.0000	101.2	3111 B	08/10/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-066-98	Well Number	
Category	QAQC	Location	
Description	ERA 9976	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	08/10/1998
QAQC for LabID	208-007-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.195	0.1810	107.7	3114 B 4.d	08/10/1998	JV
Cd	STANDARD	.120	0.1130	106.1	3111 B	08/10/1998	JV
Cu	STANDARD	.428	0.4250	100.7	3111 B	08/10/1998	JV
Ni	STANDARD	.518	0.5310	97.5	3111 B	08/10/1998	JV
Pb	STANDARD	.724	0.7190	100.6	3111 B	08/10/1998	JV
Se	STANDARD	0.201	0.1880	106.9	3114 B	08/10/1998	JV
Zn	STANDARD	.535	0.5440	98.3	3111 B	08/10/1998	JV

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 4230 Flow Meter.

Sampling Period:	8/28/98 8:44 to 8/29/98 8:44	
Total Flow for 24 hour period:	30,350	gal
Maximum Flow:	0.70	gal/sec
Average Flow:	0.35	gal/sec
Number of Tanks Discharged:	4 (Plus one additional partial tank)	
Number of Samples Collected:	12	
Total Volume Collected:	1.2	liters

Total Metals Composite Analysis:

Arsenic (As):	0.037	(ppm)
Cadmium (Cd):	0.02	(ppm)
Copper (Cu):	0.07	(ppm)
Lead (Pb):	0.05	(ppm)
Nickel (Ni):	0.01	(ppm)
Selenium (Se):	0.121	(ppm)
Zinc (Zn):	0.05	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 8/29/98 8:50

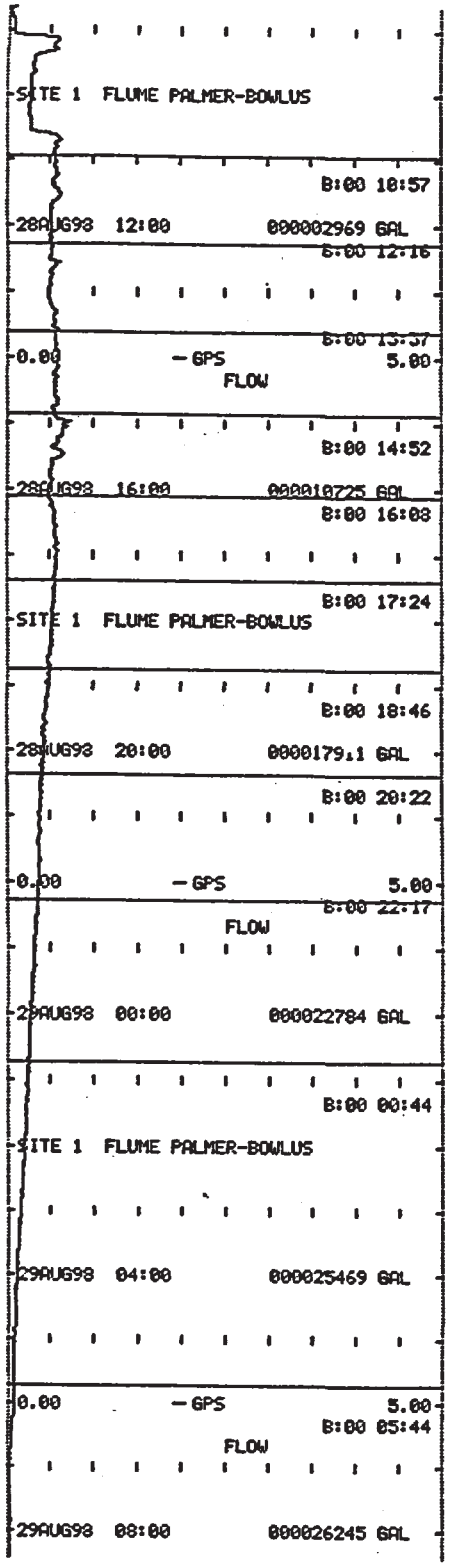
Analysis Date/Time: 8/29/98 8:55

pH Grab Analysis:

pH 7.4 (units)

Sampled By: John Vigil

Analyzed By: John Vigil



Failed to reset total flow until 85 pulses had been Registered. Total flow as shown on Asareds Sanitary Sewer Monitoring data sheet takes this into Consideration. Total flow was determined as follows -

Reading of disp

85 pulses X 50gl = 4,250 + 26,100 = 30,350
Total

MODEL 4230 ID 2634061447
HW REV: B0 SW REV: 02.16
LEVEL UNITS OF MEASURE: FT
FLOW RATE UNITS OF MEASURE: GPS
TOTALIZED VOLUME UNITS OF MEASURE: GAL
RAINFALL UNITS OF MEASURE: NOT MEASURED
pH UNITS OF MEASURE: NOT MEASURED
DISSOLVED OXYGEN UNITS OF MEASURE:
NOT MEASURED
TEMPERATURE UNITS OF MEASURE:
NOT MEASURED
YSI 600 CONNECTED: NO
FLOW CONVERSION TYPE: WEIR/FLUME
TYPE OF DEVICE: FLUME
TYPE OF FLUME: PALMER-BOWLUS
PALMER-BOWLUS SIZE: 8"
MAXIMUM HEAD: 0.5000 FT
FLOW RATE AT MAXIMUM HEAD
5.194 GPS
SAMPLER PACING: VOLUME
PACING VOLUME: 50.00 GAL
SAMPLER ENABLE MODE: ENABLE
PLOTTER SPEED: 1/2"/HR
INPUT FOR PLOTTER LINE A: FLOW RATE
PLOTTER LINE A FULL SCALE: 5.000 GPS
INPUT FOR PLOTTER LINE B: OFF
INPUT FOR PLOTTER LINE C: OFF
REPORT GENERATOR A: OFF
REPORT GENERATOR B: OFF

ASARCO INCORPORATED
Environmental Laboratory

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: Aug 001 Sewer Comp

SAMPLERS: (Signature) John P Virgil

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter UF	250 ml HNO3	UF	UNPRES.				REMARKS
001	8-28-98 / 8-29-98	8:44	24 hr		Sewer Manhole	1	X							
001	8-29-98	8:50		X	" "	1		X						

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P Virgil	8/29/98 9:00				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG- 000958

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-008-98	Well Number	001
Category	SEWER	Location	
Description	PH GRAB	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	08/29/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	7.40	EPA150.1	08/29/1998	JV

Lab ID Number	208-010-98	Well Number	001
Category	SEWER	Location	
Description	AUGUST COMP	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	08/29/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.037	3114 B 4.d	09/11/1998	JV
Cd	SAMPLE	0.02	3111 B	09/11/1998	JV
Cu	SAMPLE	0.07	3111 B	09/11/1998	JV
Ni	SAMPLE	0.01	3111 B	09/11/1998	JV
Pb	SAMPLE	0.05	3111 B	09/11/1998	JV
Se	SAMPLE	0.121	3114 B	09/11/1998	JV
Zn	SAMPLE	0.05	3111 B	09/11/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

ab ID Number	200-073-98	Well Number	001
ategory	QAQC	Location	
escription	AUGUST COMP	Parameter	TOTAL
AQC Type	DUPLICATE	Date Sampled	08/29/1998
AQC for LabID	208-010-98		

nalyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
s	DUPLICATE	0.035	0.037	5.5	3114 B 4.d	09/11/1998	JV
d	DUPLICATE	0.02	0.02	0.0	3111 B	09/11/1998	JV
u	DUPLICATE	0.07	0.07	0.0	3111 B	09/11/1998	JV
i	DUPLICATE	0.01	0.01	0.0	3111 B	09/11/1998	JV
b	DUPLICATE	0.05	0.05	0.0	3111 B	09/11/1998	JV
e	DUPLICATE	0.115	0.121	5.0	3114 B	09/11/1998	JV
n	DUPLICATE	0.05	0.05	0.0	3111 B	09/11/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-074-98	Well Number	001
Category	QAQC	Location	
Description	AUGUST COMP	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	08/29/1998
QAQC for LabID	208-010-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.056	0.037	0.020	95.0	3114 B 4.d	09/11/1998	JV
Cd	SPIKE	0.42	0.02	0.400	100.0	3111 B	09/11/1998	JV
Cu	SPIKE	0.48	0.07	0.400	102.5	3111 B	09/11/1998	JV
Ni	SPIKE	0.35	0.01	0.400	85.0	3111 B	09/11/1998	JV
Pb	SPIKE	0.48	0.05	0.400	107.5	3111 B	09/11/1998	JV
Se	SPIKE	0.144	0.121	0.020	115.0	3114 B	09/11/1998	JV
Zn	SPIKE	0.46	0.05	0.400	102.5	3111 B	09/11/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-067-98	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	09/11/1998
QAQC for LabID	208-010-98		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	0.0003	3114 B 4.d	09/11/1998	JV
Cd	BLANK	<0.01	3111 B	09/11/1998	JV
Cu	BLANK	0.03	3111 B	09/11/1998	JV
Ni	BLANK	<0.01	3111 B	09/11/1998	JV
Pb	BLANK	<0.01	3111 B	09/11/1998	JV
Se	BLANK	0.0002	3114 B	09/11/1998	JV
Zn	BLANK	<0.01	3111 B	09/11/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-068-98	Well Number	
Category	QAQC	Location	
Description	ICV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	09/11/1998
QAQC for LabID	208-010-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	09/11/1998	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	09/11/1998	JV
Cu	STANDARD	1.01	1.0000	101.0	3111 B	09/11/1998	JV
Ni	STANDARD	1.00	1.0000	100.0	3111 B	09/11/1998	JV
Pb	STANDARD	1.00	1.0000	100.0	3111 B	09/11/1998	JV
Se	STANDARD	0.0020	0.0020	100.0	3114 B	09/11/1998	JV
Zn	STANDARD	1.00	1.0000	100.0	3111 B	09/11/1998	JV

Lab ID Number	200-069-98	Well Number	
Category	QAQC	Location	
Description	CCV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	09/11/1998
QAQC for LabID	208-010-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0022	0.0020	110.0	3114 B 4.d	09/11/1998	JV
Cd	STANDARD	1.02	1.0000	102.0	3111 B	09/11/1998	JV
Cu	STANDARD	1.02	1.0000	102.0	3111 B	09/11/1998	JV
Ni	STANDARD	1.01	1.0000	101.0	3111 B	09/11/1998	JV
Pb	STANDARD	0.97	1.0000	97.0	3111 B	09/11/1998	JV
Se	STANDARD	0.0026	0.0020	130.0	3114 B	09/11/1998	JV
Zn	STANDARD	1.01	1.0000	101.0	3111 B	09/11/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-070-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-010-98

Well Number
Location
Parameter TOTAL
Date Sampled 09/11/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0100	0.0100	100.0	3114 B 4.d	09/11/1998	JV
Cd	STANDARD	4.98	5.0000	99.6	3111 B	09/11/1998	JV
Cu	STANDARD	5.02	5.0000	100.4	3111 B	09/11/1998	JV
Ni	STANDARD	5.01	5.0000	100.2	3111 B	09/11/1998	JV
Pb	STANDARD	5.00	5.0000	100.0	3111 B	09/11/1998	JV
Se	STANDARD	0.0100	0.0100	100.0	3114 B	09/11/1998	JV
Zn	STANDARD	4.99	5.0000	99.8	3111 B	09/11/1998	JV

Lab ID Number 200-071-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-010-98

Well Number
Location
Parameter TOTAL
Date Sampled 09/11/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0102	0.0100	102.0	3114 B 4.d	09/11/1998	JV
Cd	STANDARD	4.96	5.0000	99.2	3111 B	09/11/1998	JV
Cu	STANDARD	5.07	5.0000	101.4	3111 B	09/11/1998	JV
Ni	STANDARD	5.05	5.0000	101.0	3111 B	09/11/1998	JV
Pb	STANDARD	5.04	5.0000	100.8	3111 B	09/11/1998	JV
Se	STANDARD	0.0109	0.0100	109.0	3114 B	09/11/1998	JV
Zn	STANDARD	4.96	5.0000	99.2	3111 B	09/11/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-072-98	Well Number	
Category	QAQC	Location	
Description	ERA 9976	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	09/11/1998
QAQC for LabID	208-010-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.155	0.1810	85.6	3114 B 4.d	09/11/1998	JV
Cd	STANDARD	0.121	0.1130	107.0	3111 B	09/11/1998	JV
Cu	STANDARD	0.437	0.4250	102.8	3111 B	09/11/1998	JV
Ni	STANDARD	0.535	0.5310	100.7	3111 B	09/11/1998	JV
Pb	STANDARD	0.750	0.7190	104.3	3111 B	09/11/1998	JV
Se	STANDARD	0.193	0.1880	102.6	3114 B	09/11/1998	JV
Zn	STANDARD	0.535	0.5440	98.3	3111 B	09/11/1998	JV

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 4230 Flow Meter.

Sampling Period:	9/1/98 7:59 to 9/2/98 7:59	
Total Flow for 24 hour period:	23,550	gal
Maximum Flow:	0.80	gal/sec
Average Flow:	0.27	gal/sec
Number of Tanks Discharged:	4	
Number of Samples Collected:	23	
Total Volume Collected:	2.3	liters

Total Metals Composite Analysis:

Arsenic (As):	0.019	(ppm)
Cadmium (Cd):	0.02	(ppm)
Copper (Cu):	0.05	(ppm)
Lead (Pb):	0.04	(ppm)
Nickel (Ni):	0.01	(ppm)
Selenium (Se):	0.085	(ppm)
Zinc (Zn):	0.01	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 9/2/98 8:05

Analysis Date/Time: 9/2/98 8:10

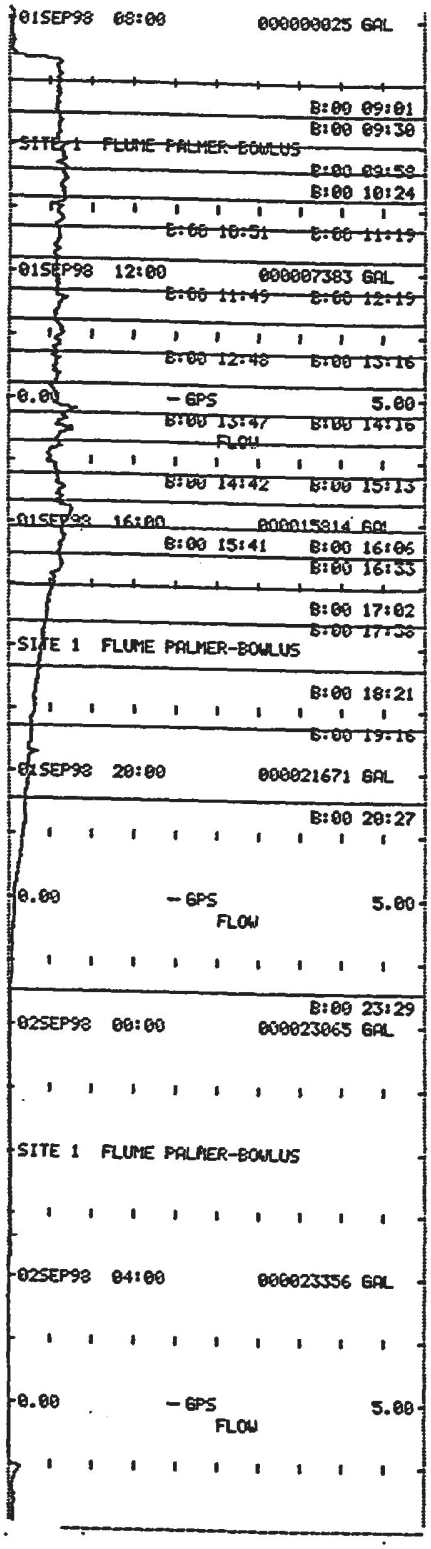
pH Grab Analysis:

pH 7.3 (units)

Sampled By: John Vigil

Analyzed By: John Vigil

MODEL 4230 ID 2634061447
HW REV: B0 SW REV: 02.16
LEVEL UNITS OF MEASURE: FT
FLOW RATE UNITS OF MEASURE: GPS
TOTALIZED VOLUME UNITS OF MEASURE: GAL
RAINFALL UNITS OF MEASURE: NOT MEASURED
pH UNITS OF MEASURE: NOT MEASURED
DISSOLVED OXYGEN UNITS OF MEASURE:
NOT MEASURED
TEMPERATURE UNITS OF MEASURE:
NOT MEASURED
YSI 600 CONNECTED: NO
FLOW CONVERSION TYPE: WEIR/FLUME
TYPE OF DEVICE: FLUME
TYPE OF FLUME: PALMER-BOWLUS
PALMER-BOWLUS SIZE: 8"
MAXIMUM HEAD: 0.5000 FT
FLOW RATE AT MAXIMUM HEAD
5.194 GPS
SAMPLER PACING: VOLUME
PACING VOLUME: 20.00 GAL
SAMPLER ENABLE MODE: ENABLE
PLOTTER SPEED: 1/2"/HR
INPUT FOR PLOTTER LINE A: FLOW RATE
PLOTTER LINE A FULL SCALE: 5.000 GPS
INPUT FOR PLOTTER LINE B: OFF
INPUT FOR PLOTTER LINE C: OFF
REPORT GENERATOR A: OFF
REPORT GENERATOR B: OFF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8:00 09:01
8:00 09:30
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8:00 09:58
8:00 10:24
8:00 10:51
8:00 11:19
01SEP98 12:00 000007383 GAL
8:00 11:49
8:00 12:19
8:00 12:48
8:00 13:16
0.00
GPS
5.00
8:00 13:47
8:00 14:16
FLOW
8:00 14:42
8:00 15:13
01SEP98 16:00 000015814 GAL
8:00 15:41
8:00 16:06
8:00 16:33
8:00 17:02
8:00 17:38
SITE 1 FLUME PALMER-BOWLUS
8:00 18:21
8:00 19:16
01SEP98 20:00 000021671 GAL
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0.00
GPS
5.00
FLOW
8:00 23:29
02SEP98 00:00 000023065 GAL
SITE 1 FLUME PALMER-BOWLUS
02SEP98 04:00 000023356 GAL
0.00
GPS
5.00
FLOW

ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.

PROJECT NAME: Sept. 001 Sewer Comp. Sample

SAMPLERS: (Signature) John P Vigil

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter w/ HNO3	250 ml with H2SO4	unpres.				REMARKS
001	9-1-98 9-2-98	7:59 7:59	X		Sewer Manhole	1	X						
001	9-2-98	~~8:10~~		X	" "	1		X					
		8:05	JV										

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P Vigil	9/2/98 8:30				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG- 000961

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-009-98	Well Number	001
Category	SEWER	Location	
Description	001 PH GRAB	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	09/02/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	7.30	EPA150.1	09/02/1998	JV

Lab ID Number	208-011-98	Well Number	001
Category	SEWER	Location	
Description	SEPTEMBER COMP	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	09/02/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.019	3114 B 4.d	09/11/1998	JV
Cd	SAMPLE	0.02	3111 B	09/11/1998	JV
Cu	SAMPLE	0.05	3111 B	09/11/1998	JV
Ni	SAMPLE	0.01	3111 B	09/11/1998	JV
Pb	SAMPLE	0.04	3111 B	09/11/1998	JV
Se	SAMPLE	0.085	3114 B	09/11/1998	JV
Zn	SAMPLE	0.01	3111 B	09/11/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-075-98	Well Number	001
Category	QAQC	Location	
Description	SEPTEMBER COMP	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	09/02/1998
QAQC for LabID	208-011-98		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.018	0.019	5.4	3114 B 4.d	09/11/1998	JV
Cd	DUPLICATE	0.02	0.02	0.0	3111 B	09/11/1998	JV
Cu	DUPLICATE	0.05	0.05	0.0	3111 B	09/11/1998	JV
Ni	DUPLICATE	0.01	0.01	0.0	3111 B	09/11/1998	JV
Pb	DUPLICATE	0.05	0.04	22.2	3111 B	09/11/1998	JV
Se	DUPLICATE	0.087	0.085	2.3	3114 B	09/11/1998	JV
Zn	DUPLICATE	0.01	0.01	0.0	3111 B	09/11/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-076-98	Well Number	001
Category	QAQC	Location	
Description	SEPTEMBER COMP	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	09/02/1998
QAQC for LabID	208-011-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.036	0.019	0.020	85.0	3114 B 4.d	09/11/1998	JV
Cd	SPIKE	0.42	0.02	0.400	100.0	3111 B	09/11/1998	JV
Cu	SPIKE	0.46	0.05	0.400	102.5	3111 B	09/11/1998	JV
Ni	SPIKE	0.35	0.01	0.400	85.0	3111 B	09/11/1998	JV
Pb	SPIKE	0.47	0.04	0.400	107.5	3111 B	09/11/1998	JV
Se	SPIKE	0.110	0.085	0.020	125.0	3114 B	09/11/1998	JV
Zn	SPIKE	0.43	0.01	0.400	105.0	3111 B	09/11/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-067-98	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	09/11/1998
QAQC for LabID	208-011-98		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	0.0003	3114 B 4.d	09/11/1998	JV
Cd	BLANK	<0.01	3111 B	09/11/1998	JV
Cu	BLANK	0.03	3111 B	09/11/1998	JV
Ni	BLANK	<0.01	3111 B	09/11/1998	JV
Pb	BLANK	<0.01	3111 B	09/11/1998	JV
Se	BLANK	0.0002	3114 B	09/11/1998	JV
Zn	BLANK	<0.01	3111 B	09/11/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-068-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-011-98

Well Number
Location
Parameter TOTAL
Date Sampled 09/11/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	09/11/1998	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	09/11/1998	JV
Cu	STANDARD	1.01	1.0000	101.0	3111 B	09/11/1998	JV
Ni	STANDARD	1.00	1.0000	100.0	3111 B	09/11/1998	JV
Pb	STANDARD	1.00	1.0000	100.0	3111 B	09/11/1998	JV
Se	STANDARD	0.0020	0.0020	100.0	3114 B	09/11/1998	JV
Zn	STANDARD	1.00	1.0000	100.0	3111 B	09/11/1998	JV

Lab ID Number 200-069-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-011-98

Well Number
Location
Parameter TOTAL
Date Sampled 09/11/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0022	0.0020	110.0	3114 B 4.d	09/11/1998	JV
Cd	STANDARD	1.02	1.0000	102.0	3111 B	09/11/1998	JV
Cu	STANDARD	1.02	1.0000	102.0	3111 B	09/11/1998	JV
Ni	STANDARD	1.01	1.0000	101.0	3111 B	09/11/1998	JV
Pb	STANDARD	0.97	1.0000	97.0	3111 B	09/11/1998	JV
Se	STANDARD	0.0026	0.0020	130.0	3114 B	09/11/1998	JV
Zn	STANDARD	1.01	1.0000	101.0	3111 B	09/11/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-070-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-011-98

Well Number
Location
Parameter TOTAL
Date Sampled 09/11/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0100	0.0100	100.0	3114 B 4.d	09/11/1998	JV
Cd	STANDARD	4.98	5.0000	99.6	3111 B	09/11/1998	JV
Cu	STANDARD	5.02	5.0000	100.4	3111 B	09/11/1998	JV
Ni	STANDARD	5.01	5.0000	100.2	3111 B	09/11/1998	JV
Pb	STANDARD	5.00	5.0000	100.0	3111 B	09/11/1998	JV
Se	STANDARD	0.0100	0.0100	100.0	3114 B	09/11/1998	JV
Zn	STANDARD	4.99	5.0000	99.8	3111 B	09/11/1998	JV

Lab ID Number 200-071-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-011-98

Well Number
Location
Parameter TOTAL
Date Sampled 09/11/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0102	0.0100	102.0	3114 B 4.d	09/11/1998	JV
Cd	STANDARD	4.96	5.0000	99.2	3111 B	09/11/1998	JV
Cu	STANDARD	5.07	5.0000	101.4	3111 B	09/11/1998	JV
Ni	STANDARD	5.05	5.0000	101.0	3111 B	09/11/1998	JV
Pb	STANDARD	5.04	5.0000	100.8	3111 B	09/11/1998	JV
Se	STANDARD	0.0109	0.0100	109.0	3114 B	09/11/1998	JV
Zn	STANDARD	4.96	5.0000	99.2	3111 B	09/11/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

ab ID Number 200-072-98
ategory QAQC
escription ERA 9976
AQC Type STANDARD
AQC for LabID 208-011-98

Well Number
Location
Parameter TOTAL
Date Sampled 09/11/1998

nalyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
s	STANDARD	0.155	0.1810	85.6	3114 B 4.d	09/11/1998	JV
d	STANDARD	0.121	0.1130	107.0	3111 B	09/11/1998	JV
u	STANDARD	0.437	0.4250	102.8	3111 B	09/11/1998	JV
i	STANDARD	0.535	0.5310	100.7	3111 B	09/11/1998	JV
b	STANDARD	0.750	0.7190	104.3	3111 B	09/11/1998	JV
e	STANDARD	0.193	0.1880	102.6	3114 B	09/11/1998	JV
Zn	STANDARD	0.535	0.5440	98.3	3111 B	09/11/1998	JV

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	10/13/98 8:07 to 10/14/98 8:07	
Total Flow for 24 hour period:	3020	gal
Maximum Flow:	.35	gal/sec
Average Flow:	0.035	gal/sec
Number of Tanks Discharged:	0	
Number of Samples Collected:	6	
Total Volume Collected:	.6	liters

Total Metals Composite Analysis:

Arsenic (As):	0.011	(ppm)
Cadmium (Cd):	0.02	(ppm)
Copper (Cu):	0.03	(ppm)
Lead (Pb):	0.12	(ppm)
Nickel (Ni):	0.05	(ppm)
Selenium (Se):	0.002	(ppm)
Zinc (Zn):	0.07	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 10/14/98 8:10

Analysis Date/Time: 10/14/98 8:15

pH Grab Analysis:

pH 7.5 (units)

Sampled By: John Vigil

Analyzed By: John Vigil

START @ 8:07 10/13/92
@ 8:07 10/14/92
Chart Speed 1/4" = 1 hour

ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.

PROJECT NAME: Oct 001 Sewer Comp

SAMPLERS: (Signature) John P Vigil

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	600ml UF/HNO3 Total As, Cd, Cu, Fe, Ni, Pb	250ml UF/unpres					REMARKS
001	10-13-98 / 10-14-98	8:07	X		Sewer Manhole	1	X						Oct 001 Comp
001	10-14-98	8:10		X	" "	1		X					Pb Grab

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P Vigil	10/14/98 8:20				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000964

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-012-98	Well Number	001
Category	SEWER	Location	
Description	001 PH GRAB	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	10/14/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	7.50	EPA150.1	10/14/1998	JV

Lab ID Number	208-013-98	Well Number	001
Category	SEWER	Location	
Description	OCT SEWER COMP	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	10/14/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.011	3114 B 4.d	10/23/1998	JV
Cd	SAMPLE	0.02	3111 B	10/23/1998	JV
Cu	SAMPLE	0.03	3111 B	10/23/1998	JV
Ni	SAMPLE	0.05	3111 B	10/23/1998	JV
Pb	SAMPLE	0.12	3111 B	10/23/1998	JV
Se	SAMPLE	0.002	3114 B	10/23/1998	JV
Zn	SAMPLE	0.07	3111 B	10/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number 200-087-98
Category QAQC
Description OCT SEWER COMP
QAQC Type DUPLICATE
QAQC for LabID 208-013-98

Well Number 001
Location
Parameter TOTAL
Date Sampled 10/14/1998

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.012	0.011	8.6	3114 B 4.d	10/23/1998	JV
Cd	DUPLICATE	0.02	0.02	0.0	3111 B	10/23/1998	JV
Cu	DUPLICATE	0.03	0.03	0.0	3111 B	10/23/1998	JV
Ni	DUPLICATE	0.05	0.05	0.0	3111 B	10/23/1998	JV
Pb	DUPLICATE	0.13	0.12	8.0	3111 B	10/23/1998	JV
Se	DUPLICATE	0.002	0.002	0.0	3114 B	10/23/1998	JV
Zn	DUPLICATE	0.08	0.07	13.3	3111 B	10/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-088-98	Well Number	001
Category	QAQC	Location	
Description	OCT SEWER COMP	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	10/14/1998
QAQC for LabID	208-013-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.019	0.011	0.008	100.0	3114 B 4.d	10/23/1998	JV
Cd	SPIKE	0.40	0.02	0.400	95.0	3111 B	10/23/1998	JV
Cu	SPIKE	0.47	0.03	0.400	110.0	3111 B	10/23/1998	JV
Ni	SPIKE	0.46	0.05	0.400	102.5	3111 B	10/23/1998	JV
Pb	SPIKE	0.56	0.12	0.400	110.0	3111 B	10/23/1998	JV
Se	SPIKE	0.010	0.002	0.008	100.0	3114 B	10/23/1998	JV
Zn	SPIKE	0.46	0.07	0.400	97.5	3111 B	10/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-089-98	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	10/23/1998
QAQC for LabID	208-013-98		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.001	3114 B 4.d	10/23/1998	JV
Cd	BLANK	0.01	3111 B	10/23/1998	JV
Cu	BLANK	0.02	3111 B	10/23/1998	JV
Ni	BLANK	<0.01	3111 B	10/23/1998	JV
Pb	BLANK	0.01	3111 B	10/23/1998	JV
Se	BLANK	<0.001	3114 B	10/23/1998	JV
Zn	BLANK	<0.01	3111 B	10/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-090-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-013-98

Well Number
Location
Parameter TOTAL
Date Sampled 10/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	10/23/1998	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	10/23/1998	JV
Cu	STANDARD	1.02	1.0000	102.0	3111 B	10/23/1998	JV
Ni	STANDARD	1.00	1.0000	100.0	3111 B	10/23/1998	JV
Pb	STANDARD	1.01	1.0000	101.0	3111 B	10/23/1998	JV
Se	STANDARD	0.0020	0.0020	100.0	3114 B	10/23/1998	JV
Zn	STANDARD	1.01	1.0000	101.0	3111 B	10/23/1998	JV

Lab ID Number 200-091-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-013-98

Well Number
Location
Parameter TOTAL
Date Sampled 10/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0018	0.0020	90.0	3114 B 4.d	10/23/1998	JV
Cd	STANDARD	1.01	1.0000	101.0	3111 B	10/23/1998	JV
Cu	STANDARD	1.01	1.0000	101.0	3111 B	10/23/1998	JV
Ni	STANDARD	1.00	1.0000	100.0	3111 B	10/23/1998	JV
Pb	STANDARD	1.02	1.0000	102.0	3111 B	10/23/1998	JV
Se	STANDARD	0.0027	0.0020	135.0	3114 B	10/23/1998	JV
Zn	STANDARD	0.98	1.0000	98.0	3111 B	10/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-092-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-013-98

Well Number
Location
Parameter TOTAL
Date Sampled 10/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	10/23/1998	JV
Cd	STANDARD	4.96	5.0000	99.2	3111 B	10/23/1998	JV
Cu	STANDARD	5.03	5.0000	100.6	3111 B	10/23/1998	JV
Ni	STANDARD	5.05	5.0000	101.0	3111 B	10/23/1998	JV
Pb	STANDARD	5.01	5.0000	100.2	3111 B	10/23/1998	JV
Se	STANDARD	0.0050	0.0050	100.0	3114 B	10/23/1998	JV
Zn	STANDARD	4.97	5.0000	99.4	3111 B	10/23/1998	JV

Lab ID Number 200-093-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-013-98

Well Number
Location
Parameter TOTAL
Date Sampled 10/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0052	0.0050	104.0	3114 B 4.d	10/23/1998	JV
Cd	STANDARD	4.91	5.0000	98.2	3111 B	10/23/1998	JV
Cu	STANDARD	5.06	5.0000	101.2	3111 B	10/23/1998	JV
Ni	STANDARD	5.03	5.0000	100.6	3111 B	10/23/1998	JV
Pb	STANDARD	5.05	5.0000	101.0	3111 B	10/23/1998	JV
Se	STANDARD	0.0065	0.0050	130.0	3114 B	10/23/1998	JV
Zn	STANDARD	4.92	5.0000	98.4	3111 B	10/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-094-98	Well Number	
Category	QAQC	Location	
Description	ERA 9976	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	10/23/1998
QAQC for LabID	208-013-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.174	0.1810	96.1	3114 B 4.d	10/23/1998	JV
Cd	STANDARD	0.119	0.1130	105.3	3111 B	10/23/1998	JV
Cu	STANDARD	0.440	0.4250	103.5	3111 B	10/23/1998	JV
Ni	STANDARD	0.560	0.5310	105.4	3111 B	10/23/1998	JV
Pb	STANDARD	0.760	0.7190	105.7	3111 B	10/23/1998	JV
Se	STANDARD	0.222	0.1880	118.0	3114 B	10/23/1998	JV
Zn	STANDARD	0.538	0.5440	98.8	3111 B	10/23/1998	JV

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	11/9/98 8:12 to 11/10/98 8:12	
Total Flow for 24 hour period:	11670	gal
Maximum Flow:	0.8	gal/sec
Average Flow:	0.14	gal/sec
Number of Tanks Discharged:	4	
Number of Samples Collected:	23	
Total Volume Collected:	2.3	liters

Total Metals Composite Analysis:

Arsenic (As):	0.034	(ppm)
Cadmium (Cd):	0.03	(ppm)
Copper (Cu):	0.05	(ppm)
Lead (Pb):	0.06	(ppm)
Nickel (Ni):	<0.01	(ppm)
Selenium (Se):	0.097	(ppm)
Zinc (Zn):	<0.01	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 11/10/98 8:15

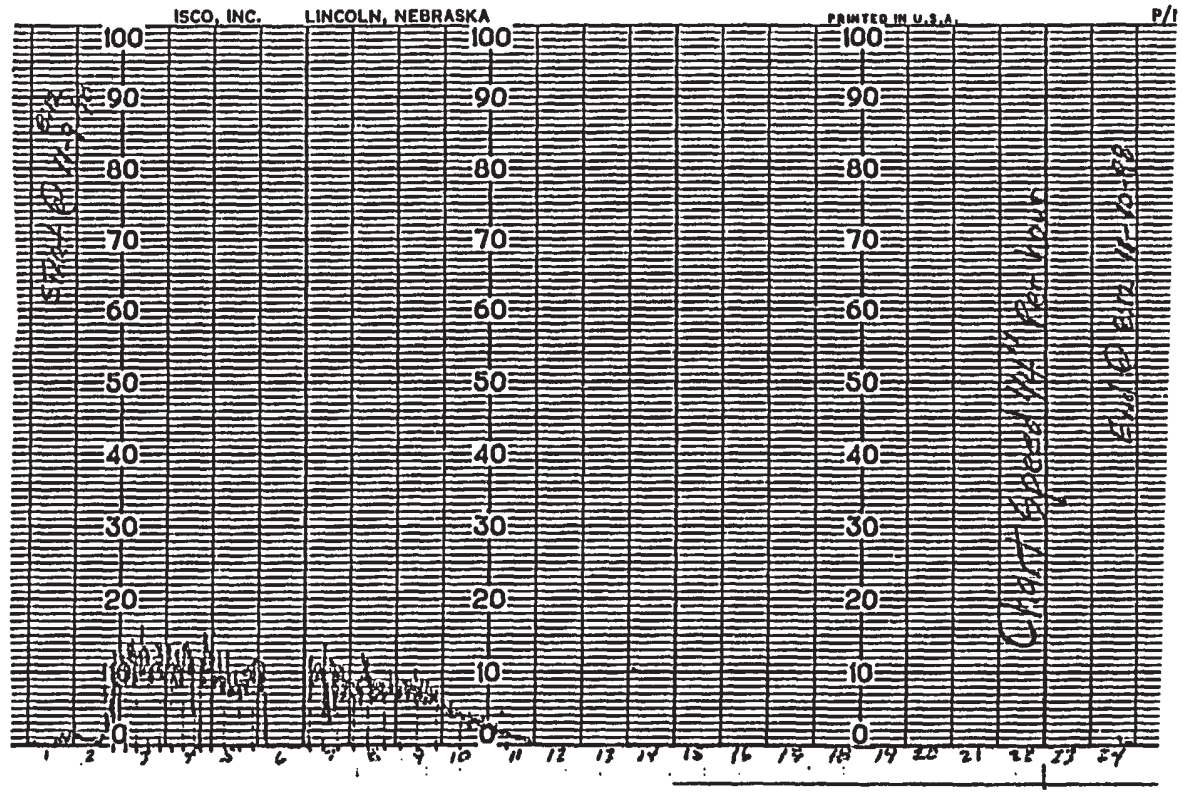
Analysis Date/Time: 11/10/98 8:20

pH Grab Analysis:

pH 7.4 (units)

Sampled By: John Vigil

Analyzed By: John Vigil


ISCO, INC. LINCOLN, NEBRASKA
PRINTED IN U.S.A.
100
90
80
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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Chart Speed 1/4" Per Hour

ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO. #1

PROJECT NAME: Terrace Drain Completion North

SAMPLERS: (Signature) John P Vigil

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter UF/HNO3 Total As, Cd, Cu, Pb, Ni, Zn, Se	250 ml UF/unpres					REMARKS
001	11-9-98 / 11-10-98	8:12 / 8:12	X		Sewer Manhole	1	X						TD Completion North #1
001	11-10-98	8:15		X	" "	1		X					Pb Grab

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P Vigil	11-10-98 8:20				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000728

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-020-98	Well Number	001
Category	SEWER	Location	
Description	TD NORTH #1 PH	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	11/10/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	7.40	EPA150.1	11/10/1998	JV

Lab ID Number	208-023-98	Well Number	001
Category	SEWER	Location	
Description	TD NORTH #1 SEWER COMP	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	11/10/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.034	3114 B 4.d	11/23/1998	JV
Cd	SAMPLE	0.03	3111 B	11/23/1998	JV
Cu	SAMPLE	0.05	3111 B	11/23/1998	JV
Ni	SAMPLE	<0.01	3111 B	11/23/1998	JV
Pb	SAMPLE	0.06	3111 B	11/23/1998	JV
Se	SAMPLE	0.097	3114 B	11/23/1998	JV
Zn	SAMPLE	<0.01	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-097-98	Well Number	001
Category	QAQC	Location	
Description	TD NORTH #1 SEWER COMP	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	11/10/1998
QAQC for LabID	208-023-98		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.034	0.034	0.0	3114 B 4.d	11/23/1998	JV
Cd	DUPLICATE	0.03	0.03	0.0	3111 B	11/23/1998	JV
Cu	DUPLICATE	0.03	0.05	50.0	3111 B	11/23/1998	JV
Ni	DUPLICATE	<0.01	<0.01	0.0	3111 B	11/23/1998	JV
Pb	DUPLICATE	0.05	0.06	18.1	3111 B	11/23/1998	JV
Se	DUPLICATE	0.100	0.097	3.0	3114 B	11/23/1998	JV
Zn	DUPLICATE	<0.01	<0.01	0.0	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-098-98	Well Number	001
Category	QAQC	Location	
Description	TD NORTH #1 SEWER COMP	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	11/10/1998
QAQC for LabID	208-023-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.044	0.034	0.008	125.0	3114 B 4.d	11/23/1998	JV
Cd	SPIKE	0.46	0.03	0.400	107.5	3111 B	11/23/1998	JV
Cu	SPIKE	0.45	0.05	0.400	100.0	3111 B	11/23/1998	JV
Ni	SPIKE	0.37	<0.01	0.400	92.5	3111 B	11/23/1998	JV
Pb	SPIKE	0.46	0.06	0.400	100.0	3111 B	11/23/1998	JV
Se	SPIKE	0.106	0.097	0.008	112.5	3114 B	11/23/1998	JV
Zn	SPIKE	0.37	<0.01	0.400	92.5	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-105-98	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	11/23/1998
QAQC for LabID	208-023-98		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.001	3114 B 4.d	11/23/1998	JV
Cd	BLANK	<0.01	3111 B	11/23/1998	JV
Cu	BLANK	0.01	3111 B	11/23/1998	JV
Ni	BLANK	<0.01	3111 B	11/23/1998	JV
Pb	BLANK	0.02	3111 B	11/23/1998	JV
Se	BLANK	<0.001	3114 B	11/23/1998	JV
Zn	BLANK	<0.01	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-106-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-023-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	11/23/1998	JV
Cu	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Ni	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Pb	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Se	STANDARD	0.0020	0.0020	100.0	3114 B	11/23/1998	JV
Zn	STANDARD	1.00	1.0000	100.0	3111 B	11/23/1998	JV

Lab ID Number 200-107-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-023-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0022	0.0020	110.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Cu	STANDARD	1.02	1.0000	102.0	3111 B	11/23/1998	JV
Ni	STANDARD	1.02	1.0000	102.0	3111 B	11/23/1998	JV
Pb	STANDARD	1.05	1.0000	105.0	3111 B	11/23/1998	JV
Se	STANDARD	0.0022	0.0020	110.0	3114 B	11/23/1998	JV
Zn	STANDARD	0.99	1.0000	99.0	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-108-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-023-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	4.96	5.0000	99.2	3111 B	11/23/1998	JV
Cu	STANDARD	5.00	5.0000	100.0	3111 B	11/23/1998	JV
Ni	STANDARD	5.05	5.0000	101.0	3111 B	11/23/1998	JV
Pb	STANDARD	5.04	5.0000	100.8	3111 B	11/23/1998	JV
Se	STANDARD	0.0050	0.0050	100.0	3114 B	11/23/1998	JV
Zn	STANDARD	4.90	5.0000	98.0	3111 B	11/23/1998	JV

Lab ID Number 200-109-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-023-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	5.03	5.0000	100.6	3111 B	11/23/1998	JV
Cu	STANDARD	5.06	5.0000	101.2	3111 B	11/23/1998	JV
Ni	STANDARD	5.09	5.0000	101.8	3111 B	11/23/1998	JV
Pb	STANDARD	5.08	5.0000	101.6	3111 B	11/23/1998	JV
Se	STANDARD	0.0056	0.0050	112.0	3114 B	11/23/1998	JV
Zn	STANDARD	4.98	5.0000	99.6	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-110-98
Category QAQC
Description REF #9976
QAQC Type STANDARD
QAQC for LabID 208-023-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.182	0.1810	100.5	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	0.124	0.1130	109.7	3111 B	11/23/1998	JV
Cu	STANDARD	0.435	0.4250	102.3	3111 B	11/23/1998	JV
Ni	STANDARD	0.550	0.5310	103.5	3111 B	11/23/1998	JV
Pb	STANDARD	0.734	0.7190	102.0	3111 B	11/23/1998	JV
Se	STANDARD	0.207	0.1880	110.1	3114 B	11/23/1998	JV
Zn	STANDARD	0.531	0.5440	97.6	3111 B	11/23/1998	JV

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	11/12/98 8:00 to 11/13/98 8:00	
Total Flow for 24 hour period:	12950	gal
Maximum Flow:	0.8	gal/sec
Average Flow:	0.15	gal/sec
Number of Tanks Discharged:	4	
Number of Samples Collected:	25	
Total Volume Collected:	2.5	liters

Total Metals Composite Analysis:

Arsenic (As):	0.025	(ppm)
Cadmium (Cd):	0.02	(ppm)
Copper (Cu):	0.06	(ppm)
Lead (Pb):	0.04	(ppm)
Nickel (Ni):	<0.01	(ppm)
Selenium (Se):	0.083	(ppm)
Zinc (Zn):	0.01	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 11/13/98 8:05

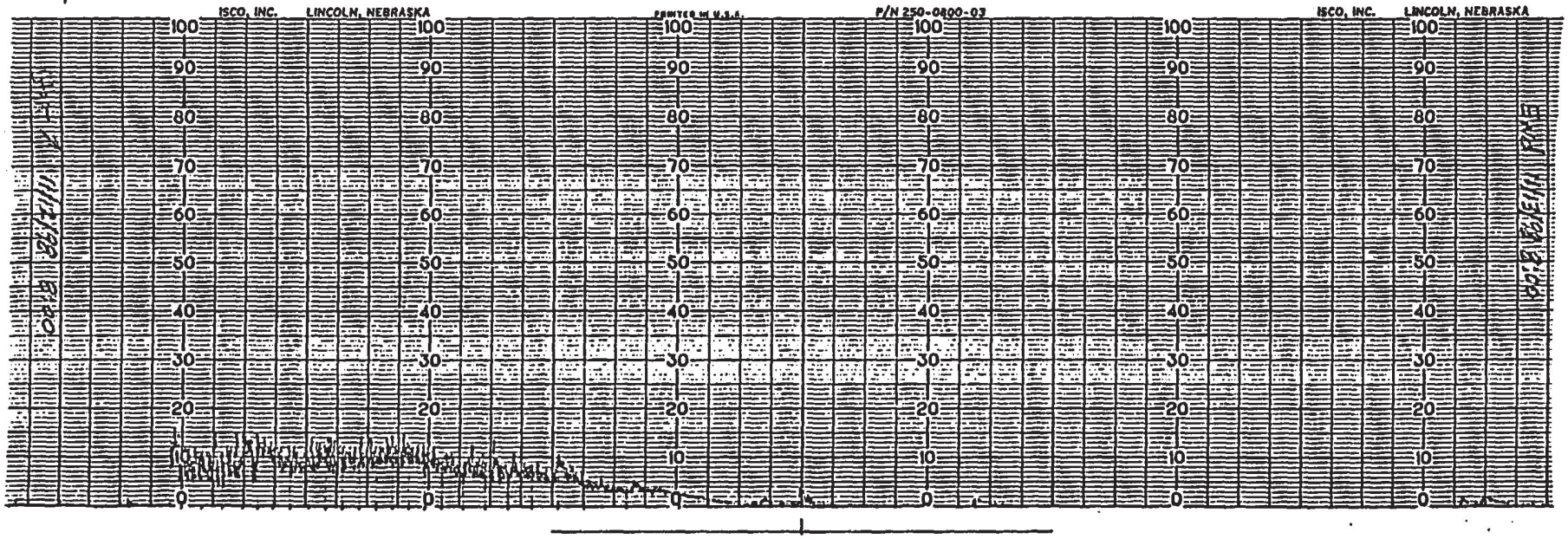
Analysis Date/Time: 11/13/98 8:10

pH Grab Analysis:

pH 7.35 (units)

Sampled By: John Vigil

Analyzed By: John Vigil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ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO. #2

PROJECT NAME: Terrace Drain Completion North

SAMPLERS: (Signature) John P Vigil

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter UF/HNO3 Total As Cd Cu Pb Ni Zn	250 ml UF/unpres					REMARKS
001	11-12-98 11-13-98	8:00 - 8:00	X		Sewer Manhole	1	X						TD Completion North #2
001	11-13-98	8:05		X	" "	1		X					Ph Grab

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P Vigil	11-13-98 8:15				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-021-98	Well Number	001
Category	SEWER	Location	
Description	TD NORTH #2 PH	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	11/13/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	7.35	EPA150.1	11/13/1998	JV

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-024-98	Well Number	001
Category	SEWER	Location	
Description	TD NORTH #2 SEWER COMP	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	11/13/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.025	3114 B 4.d	11/23/1998	JV
Cd	SAMPLE	0.02	3111 B	11/23/1998	JV
Cu	SAMPLE	0.06	3111 B	11/23/1998	JV
Ni	SAMPLE	<0.01	3111 B	11/23/1998	JV
Pb	SAMPLE	0.04	3111 B	11/23/1998	JV
Se	SAMPLE	0.083	3114 B	11/23/1998	JV
Zn	SAMPLE	0.01	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

ab ID Number 200-099-98
ategory QAQC
escription TD NORTH #2 SEWER COMP
AQC Type DUPLICATE
AQC for LabID 208-024-98

Well Number 001
Location
Parameter TOTAL
Date Sampled 11/13/1998

nalyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
s	DUPLICATE	0.025	0.025	0.0	3114 B 4.d	11/23/1998	JV
d	DUPLICATE	0.02	0.02	0.0	3111 B	11/23/1998	JV
u	DUPLICATE	0.05	0.06	18.1	3111 B	11/23/1998	JV
i	DUPLICATE	<0.01	<0.01	0.0	3111 B	11/23/1998	JV
b	DUPLICATE	0.03	0.04	28.5	3111 B	11/23/1998	JV
e	DUPLICATE	0.081	0.083	2.4	3114 B	11/23/1998	JV
n	DUPLICATE	0.01	0.01	0.0	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-100-98	Well Number	001
Category	QAQC	Location	
Description	TD NORTH #2 SEWER COMP	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	11/13/1998
QAQC for LabID	208-024-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.050	0.025	0.020	125.0	3114 B 4.d	11/23/1998	JV
Cd	SPIKE	0.44	0.02	0.400	105.0	3111 B	11/23/1998	JV
Cu	SPIKE	0.46	0.06	0.400	100.0	3111 B	11/23/1998	JV
Ni	SPIKE	0.39	<0.01	0.400	97.5	3111 B	11/23/1998	JV
Pb	SPIKE	0.45	0.04	0.400	102.5	3111 B	11/23/1998	JV
Se	SPIKE	0.092	0.083	0.008	112.5	3114 B	11/23/1998	JV
Zn	SPIKE	0.42	0.01	0.400	102.5	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number 200-105-98
Category QAQC
Description METHOD BLANK
QAQC Type BLANK
QAQC for LabID 208-024-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.001	3114 B 4.d	11/23/1998	JV
Cd	BLANK	<0.01	3111 B	11/23/1998	JV
Cu	BLANK	0.01	3111 B	11/23/1998	JV
Ni	BLANK	<0.01	3111 B	11/23/1998	JV
Pb	BLANK	0.02	3111 B	11/23/1998	JV
Se	BLANK	<0.001	3114 B	11/23/1998	JV
Zn	BLANK	<0.01	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-106-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-024-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	11/23/1998	JV
Cu	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Ni	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Pb	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Se	STANDARD	0.0020	0.0020	100.0	3114 B	11/23/1998	JV
Zn	STANDARD	1.00	1.0000	100.0	3111 B	11/23/1998	JV

Lab ID Number 200-107-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-024-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0022	0.0020	110.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Cu	STANDARD	1.02	1.0000	102.0	3111 B	11/23/1998	JV
Ni	STANDARD	1.02	1.0000	102.0	3111 B	11/23/1998	JV
Pb	STANDARD	1.05	1.0000	105.0	3111 B	11/23/1998	JV
Se	STANDARD	0.0022	0.0020	110.0	3114 B	11/23/1998	JV
Zn	STANDARD	0.99	1.0000	99.0	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-108-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-024-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	4.96	5.0000	99.2	3111 B	11/23/1998	JV
Cu	STANDARD	5.00	5.0000	100.0	3111 B	11/23/1998	JV
Ni	STANDARD	5.05	5.0000	101.0	3111 B	11/23/1998	JV
Pb	STANDARD	5.04	5.0000	100.8	3111 B	11/23/1998	JV
Se	STANDARD	0.0050	0.0050	100.0	3114 B	11/23/1998	JV
Zn	STANDARD	4.90	5.0000	98.0	3111 B	11/23/1998	JV

Lab ID Number 200-109-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-024-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	5.03	5.0000	100.6	3111 B	11/23/1998	JV
Cu	STANDARD	5.06	5.0000	101.2	3111 B	11/23/1998	JV
Ni	STANDARD	5.09	5.0000	101.8	3111 B	11/23/1998	JV
Pb	STANDARD	5.08	5.0000	101.6	3111 B	11/23/1998	JV
Se	STANDARD	0.0056	0.0050	112.0	3114 B	11/23/1998	JV
Zn	STANDARD	4.98	5.0000	99.6	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-110-98
Category QAQC
Description REF #9976
QAQC Type STANDARD
QAQC for LabID 208-024-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.182	0.1810	100.5	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	0.124	0.1130	109.7	3111 B	11/23/1998	JV
Cu	STANDARD	0.435	0.4250	102.3	3111 B	11/23/1998	JV
Ni	STANDARD	0.550	0.5310	103.5	3111 B	11/23/1998	JV
Pb	STANDARD	0.734	0.7190	102.0	3111 B	11/23/1998	JV
Se	STANDARD	0.207	0.1880	110.1	3114 B	11/23/1998	JV
Zn	STANDARD	0.531	0.5440	97.6	3111 B	11/23/1998	JV

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	11/16/98 7:52 to 11/17/98 7:52	
Total Flow for 24 hour period:	25050	gal
Maximum Flow:	0.95	gal/sec
Average Flow:	0.29	gal/sec
Number of Tanks Discharged:	5	
Number of Samples Collected:	50	
Total Volume Collected:	5.0	liters

Total Metals Composite Analysis:

Arsenic (As):	0.014	(ppm)
Cadmium (Cd):	<0.01	(ppm)
Copper (Cu):	0.02	(ppm)
Lead (Pb):	0.06	(ppm)
Nickel (Ni):	<0.01	(ppm)
Selenium (Se):	0.097	(ppm)
Zinc (Zn):	0.01	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 11/17/98 7:55

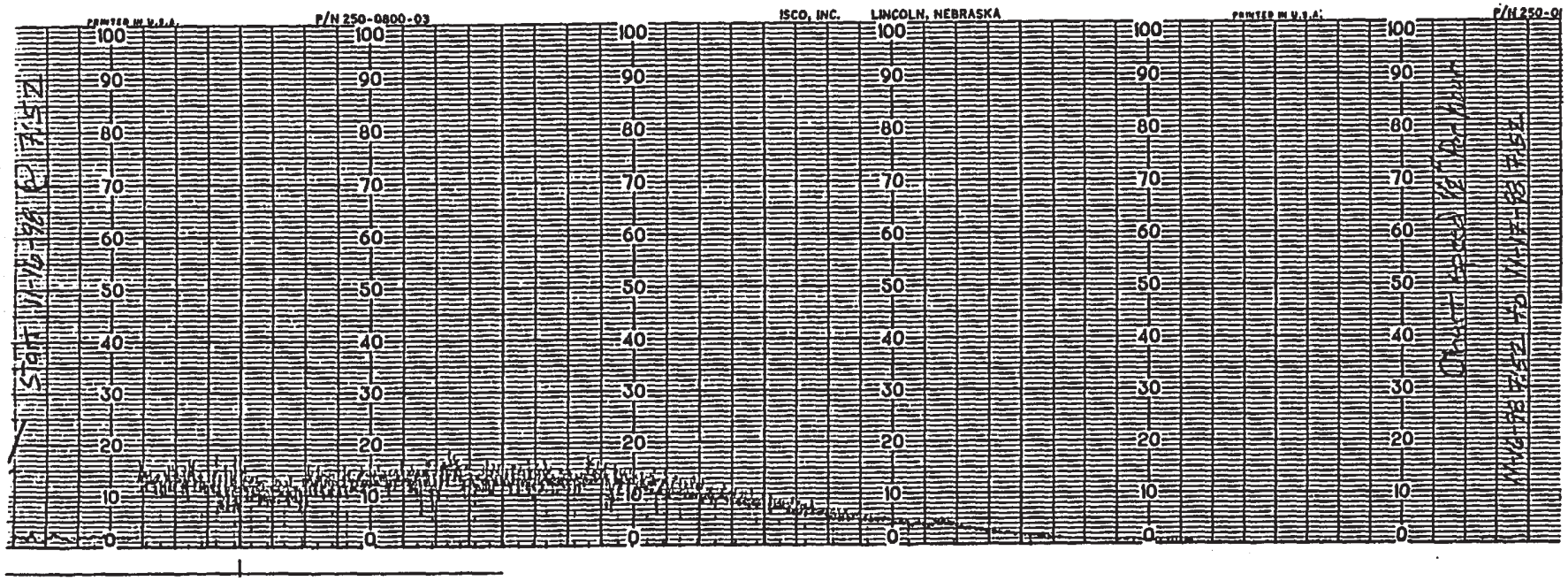
Analysis Date/Time: 11/17/98 8:05

pH Grab Analysis:

pH 7.6 (units)

Sampled By: John Vigil

Analyzed By: John Vigil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ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
485 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.: #3/NOV COMP

PROJECT NAME: Terrace Drain Completion North / NOV 001

SAMPLERS: (Signature) John P Vigil

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter uf/HNO3 Total As, Cd, Cu, Pb, Ni, Se	250 ml uf/unpres.					REMARKS
001	11-16-98 / 11-17-98	7:52 – 7:52	X		Sewer Manhole	1							TD Completion North #3 3 November oc
001	11-17-98	7:55		X	" "	1							Pb Grab

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P Vigil	11-17-98 8:10				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG 007241

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-022-98	Well Number	001
Category	SEWER	Location	
Description	TD NORTH #3/NOV SEWER	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	11/17/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	7.60	EPA150.1	11/17/1998	JV

ASARCO Incorporated
Quality Assurance Report Form

ab ID Number	208-025-98	Well Number	001
ategory	SEWER	Location	
escription	TD NORTH #3/NOV SEWER	Parameter	TOTAL
AQC Type	SAMPLE	Date Sampled	11/17/1998

nalyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
s	SAMPLE	0.014	3114 B 4.d	11/23/1998	JV
d	SAMPLE	<0.01	3111 B	11/23/1998	JV
u	SAMPLE	0.02	3111 B	11/23/1998	JV
i	SAMPLE	<0.01	3111 B	11/23/1998	JV
b	SAMPLE	0.06	3111 B	11/23/1998	JV
e	SAMPLE	0.097	3114 B	11/23/1998	JV
n	SAMPLE	0.01	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number 200-101-98
Category QAQC
Description TD NORTH #3/NOV SEWER
QAQC Type DUPLICATE
QAQC for LabID 208-025-98

Well Number 001
Location
Parameter TOTAL
Date Sampled 11/17/1998

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.014	0.014	0.0	3114 B 4.d	11/23/1998	JV
Cd	DUPLICATE	<0.01	<0.01	0.0	3111 B	11/23/1998	JV
Cu	DUPLICATE	0.02	0.02	0.0	3111 B	11/23/1998	JV
Ni	DUPLICATE	<0.01	<0.01	0.0	3111 B	11/23/1998	JV
Pb	DUPLICATE	0.06	0.06	0.0	3111 B	11/23/1998	JV
Se	DUPLICATE	0.097	0.097	0.0	3114 B	11/23/1998	JV
Zn	DUPLICATE	0.02	0.01	66.6	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-102-98	Well Number	001
Category	QAQC	Location	
Description	TD NORTH #3/NOV SEWER	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	11/17/1998
QAQC for LabID	208-025-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.022	0.014	0.008	100.0	3114 B 4.d	11/23/1998	JV
Cd	SPIKE	0.44	<0.01	0.400	110.0	3111 B	11/23/1998	JV
Cu	SPIKE	0.43	0.02	0.400	102.5	3111 B	11/23/1998	JV
Ni	SPIKE	0.38	<0.01	0.400	95.0	3111 B	11/23/1998	JV
Pb	SPIKE	0.45	0.06	0.400	97.5	3111 B	11/23/1998	JV
Se	SPIKE	0.104	0.097	0.008	87.5	3114 B	11/23/1998	JV
Zn	SPIKE	0.39	0.01	0.400	95.0	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-105-98	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	11/23/1998
QAQC for LabID	208-025-98		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.001	3114 B 4.d	11/23/1998	JV
Cd	BLANK	<0.01	3111 B	11/23/1998	JV
Cu	BLANK	0.01	3111 B	11/23/1998	JV
Ni	BLANK	<0.01	3111 B	11/23/1998	JV
Pb	BLANK	0.02	3111 B	11/23/1998	JV
Se	BLANK	<0.001	3114 B	11/23/1998	JV
Zn	BLANK	<0.01	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-106-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-025-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	11/23/1998	JV
Cu	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Ni	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Pb	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Se	STANDARD	0.0020	0.0020	100.0	3114 B	11/23/1998	JV
Zn	STANDARD	1.00	1.0000	100.0	3111 B	11/23/1998	JV

Lab ID Number 200-107-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-025-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0022	0.0020	110.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Cu	STANDARD	1.02	1.0000	102.0	3111 B	11/23/1998	JV
Ni	STANDARD	1.02	1.0000	102.0	3111 B	11/23/1998	JV
Pb	STANDARD	1.05	1.0000	105.0	3111 B	11/23/1998	JV
Se	STANDARD	0.0022	0.0020	110.0	3114 B	11/23/1998	JV
Zn	STANDARD	0.99	1.0000	99.0	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-108-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-025-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	4.96	5.0000	99.2	3111 B	11/23/1998	JV
Cu	STANDARD	5.00	5.0000	100.0	3111 B	11/23/1998	JV
Ni	STANDARD	5.05	5.0000	101.0	3111 B	11/23/1998	JV
Pb	STANDARD	5.04	5.0000	100.8	3111 B	11/23/1998	JV
Se	STANDARD	0.0050	0.0050	100.0	3114 B	11/23/1998	JV
Zn	STANDARD	4.90	5.0000	98.0	3111 B	11/23/1998	JV

Lab ID Number 200-109-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-025-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	5.03	5.0000	100.6	3111 B	11/23/1998	JV
Cu	STANDARD	5.06	5.0000	101.2	3111 B	11/23/1998	JV
Ni	STANDARD	5.09	5.0000	101.8	3111 B	11/23/1998	JV
Pb	STANDARD	5.08	5.0000	101.6	3111 B	11/23/1998	JV
Se	STANDARD	0.0056	0.0050	112.0	3114 B	11/23/1998	JV
Zn	STANDARD	4.98	5.0000	99.6	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-110-98
Category QAQC
Description REF #9976
QAQC Type STANDARD
QAQC for LabID 208-025-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.182	0.1810	100.5	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	0.124	0.1130	109.7	3111 B	11/23/1998	JV
Cu	STANDARD	0.435	0.4250	102.3	3111 B	11/23/1998	JV
Ni	STANDARD	0.550	0.5310	103.5	3111 B	11/23/1998	JV
Pb	STANDARD	0.734	0.7190	102.0	3111 B	11/23/1998	JV
Se	STANDARD	0.207	0.1880	110.1	3114 B	11/23/1998	JV
Zn	STANDARD	0.531	0.5440	97.6	3111 B	11/23/1998	JV

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	12/14/98 8:33 to 12/15/98 8:33	
Total Flow for 24 hour period:	9040	gal
Maximum Flow:	0.90	gal/sec
Average Flow:	0.104	gal/sec
Number of Tanks Discharged:	2	
Number of Samples Collected:	18	
Total Volume Collected:	1.8	liters

Total Metals Composite Analysis:

Arsenic (As):	0.060	(ppm)
Cadmium (Cd):	0.03	(ppm)
Copper (Cu):	0.04	(ppm)
Lead (Pb):	0.07	(ppm)
Nickel (Ni):	0.01	(ppm)
Selenium (Se):	0.108	(ppm)
Zinc (Zn):	0.07	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 12/15/98 8:40

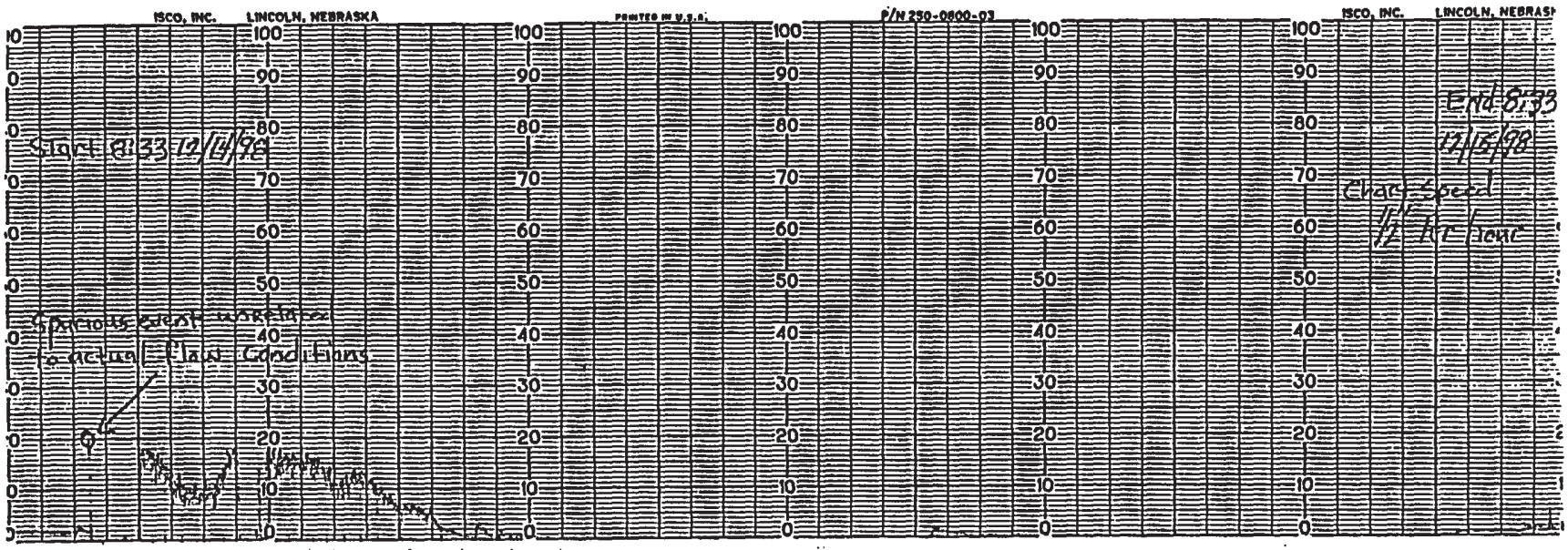
Analysis Date/Time: 12/15/98 8:45

pH Grab Analysis:

pH 7.7 (units)

Sampled By: John Vigil

Analyzed By: John Vigil


ISCO, INC. LINCOLN, NEBRASKA
PRINTED IN U.S.A.
P/N 250-0800-03
ISCO, INC. LINCOLN, NEBRASK
Start 8:33 12/14/98
End 8:33
12/15/98
Chart Speed
1/2" Per Hour
Spurious event unrelated
to actual flow conditions

ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.

PROJECT NAME: December Sewer Comp.

SAMPLERS: (Signature) John P Vigil

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter UF/HNO3 Total As, Cd, Cu, Pb, Ni, Zn	250 ml unfilt/unpres.					REMARKS
C01	12-14-98 12-15-98	8:33 8:33	X		Sewer Manhole	1	X						
C01	12-15-98	8:40		X	" "	1		X					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P Vigil	12/15/98 8:50				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000733

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-001-99	Well Number	001
Category	SEWER	Location	
Description	DEC. SEWER COMP.	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	12/15/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.060	3114 B 4.d	01/13/1999	JV
Cd	SAMPLE	0.03	3111 B	01/13/1999	JV
Cu	SAMPLE	0.04	3111 B	01/13/1999	JV
Ni	SAMPLE	0.01	3111 B	01/13/1999	JV
Pb	SAMPLE	0.07	3111 B	01/13/1999	JV
Se	SAMPLE	0.108	3114 B	01/13/1999	JV
Zn	SAMPLE	0.07	3111 B	01/13/1999	JV

Lab ID Number	208-027-98	Well Number	001
Category	SEWER	Location	
Description	DECEMBER PH	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	12/15/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	7.70	EPA150.1	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-001-99	Well Number	001
Category	QAQC	Location	
Description	DEC. SEWER COMP.	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	12/15/1998
QAQC for LabID	208-001-99		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.062	0.060	3.2	3114 B 4.d	01/13/1999	JV
Cd	DUPLICATE	0.03	0.03	0.0	3111 B	01/13/1999	JV
Cu	DUPLICATE	0.04	0.04	0.0	3111 B	01/13/1999	JV
Ni	DUPLICATE	0.01	0.01	0.0	3111 B	01/13/1999	JV
Pb	DUPLICATE	0.07	0.07	0.0	3111 B	01/13/1999	JV
Se	DUPLICATE	0.106	0.108	1.8	3114 B	01/13/1999	JV
Zn	DUPLICATE	0.06	0.07	15.3	3111 B	01/13/1999	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-002-99	Well Number	001
Category	QAQC	Location	
Description	DEC. SEWER COMP.	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	12/15/1998
QAQC for LabID	208-001-99		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.069	0.060	0.008	112.5	3114 B 4.d	01/13/1999	JV
Cd	SPIKE	0.39	0.03	0.400	90.0	3111 B	01/13/1999	JV
Cu	SPIKE	0.45	0.04	0.400	102.5	3111 B	01/13/1999	JV
Ni	SPIKE	0.38	0.01	0.400	92.5	3111 B	01/13/1999	JV
Pb	SPIKE	0.46	0.07	0.400	97.5	3111 B	01/13/1999	JV
Se	SPIKE	0.117	0.108	0.008	112.5	3114 B	01/13/1999	JV
Zn	SPIKE	0.44	0.07	0.400	92.5	3111 B	01/13/1999	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-003-99	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	01/13/1999
QAQC for LabID	208-001-99		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.0002	3114 B 4.d	01/13/1999	JV
Cd	BLANK	0.01	3111 B	01/13/1999	JV
Cu	BLANK	<0.01	3111 B	01/13/1999	JV
Ni	BLANK	<0.01	3111 B	01/13/1999	JV
Pb	BLANK	0.02	3111 B	01/13/1999	JV
Se	BLANK	<0.0002	3114 B	01/13/1999	JV
Zn	BLANK	0.01	3111 B	01/13/1999	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-004-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-001-99

Well Number
Location
Parameter TOTAL
Date Sampled 01/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.002	0.0020	100.0	3114 B 4.d	01/13/1999	JV
Cd	STANDARD	0.99	1.0000	99.0	3111 B	01/13/1999	JV
Cu	STANDARD	1.00	1.0000	100.0	3111 B	01/13/1999	JV
Ni	STANDARD	1.00	1.0000	100.0	3111 B	01/13/1999	JV
Pb	STANDARD	1.01	1.0000	101.0	3111 B	01/13/1999	JV
Se	STANDARD	0.002	0.0020	100.0	3114 B	01/13/1999	JV
Zn	STANDARD	0.98	1.0000	98.0	3111 B	01/13/1999	JV

Lab ID Number 200-005-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-001-99

Well Number
Location
Parameter TOTAL
Date Sampled 01/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0019	0.0020	95.0	3114 B 4.d	01/13/1999	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	01/13/1999	JV
Cu	STANDARD	1.01	1.0000	101.0	3111 B	01/13/1999	JV
Ni	STANDARD	0.98	1.0000	98.0	3111 B	01/13/1999	JV
Pb	STANDARD	1.02	1.0000	102.0	3111 B	01/13/1999	JV
Se	STANDARD	0.0019	0.0020	95.0	3114 B	01/13/1999	JV
Zn	STANDARD	0.98	1.0000	98.0	3111 B	01/13/1999	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-006-99
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-001-99

Well Number
Location
Parameter TOTAL
Date Sampled 01/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.005	0.0050	100.0	3114 B 4.d	01/13/1999	JV
Cd	STANDARD	5.03	5.0000	100.6	3111 B	01/13/1999	JV
Cu	STANDARD	5.01	5.0000	100.2	3111 B	01/13/1999	JV
Ni	STANDARD	4.99	5.0000	99.8	3111 B	01/13/1999	JV
Pb	STANDARD	5.04	5.0000	100.8	3111 B	01/13/1999	JV
Se	STANDARD	0.005	0.0050	100.0	3114 B	01/13/1999	JV
Zn	STANDARD	5.02	5.0000	100.4	3111 B	01/13/1999	JV

Lab ID Number 200-007-99
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-001-99

Well Number
Location
Parameter TOTAL
Date Sampled 01/13/1999

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	01/13/1999	JV
Cd	STANDARD	5.02	5.0000	100.4	3111 B	01/13/1999	JV
Cu	STANDARD	5.03	5.0000	100.6	3111 B	01/13/1999	JV
Ni	STANDARD	5.05	5.0000	101.0	3111 B	01/13/1999	JV
Pb	STANDARD	5.08	5.0000	101.6	3111 B	01/13/1999	JV
Se	STANDARD	0.0047	0.0050	94.0	3114 B	01/13/1999	JV
Zn	STANDARD	5.03	5.0000	100.6	3111 B	01/13/1999	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-008-99	Well Number	
Category	QAQC	Location	
Description	REF. 9976	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	01/13/1999
QAQC for LabID	208-001-99		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.199	0.1810	109.9	3114 B 4.d	01/13/1999	JV
Cd	STANDARD	0.116	0.1130	102.6	3111 B	01/13/1999	JV
Cu	STANDARD	0.440	0.4250	103.5	3111 B	01/13/1999	JV
Ni	STANDARD	0.542	0.5310	102.0	3111 B	01/13/1999	JV
Pb	STANDARD	0.740	0.7190	102.9	3111 B	01/13/1999	JV
Se	STANDARD	0.217	0.1880	115.4	3114 B	01/13/1999	JV
Zn	STANDARD	0.540	0.5440	99.2	3111 B	01/13/1999	JV

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM -
SPLIT SAMPLES

SAMPLERS: [illegible]

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE TYPE*	MONITORING POINT	SAMPLE PRESERVATIVE	METRO ANALYSES
314784	ASARCO # 004	11-17-18-98	0310 0332	F24	001	HNO3	As, Se, Sb, Zn, Cd, Pb, Ni, [illegible], Be, Cu

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	11/17/98/0340	E. E. Mills	E. E. Mills	11/17/98/1017	[illegible]
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

WHITE - METRO DISTRICT'S COPY

YELLOW - INDUSTRY'S COPY

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-005-98	Well Number	001
Category	SEWER	Location	
Description	SPLIT CONTROL#374984	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	11/18/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.022	3114 B 4.d	11/23/1998	JV
Cd	SAMPLE	<0.01	3111 B	11/23/1998	JV
Cu	SAMPLE	0.02	3111 B	11/23/1998	JV
Ni	SAMPLE	<0.01	3111 B	11/23/1998	JV
Pb	SAMPLE	0.05	3111 B	11/23/1998	JV
Se	SAMPLE	0.082	3114 B	11/23/1998	JV
Zn	SAMPLE	0.01	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-103-98	Well Number	001
Category	QAQC	Location	
Description	METRO SPLIT CTRL.#374984	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	11/18/1998
QAQC for LabID	209-005-98		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.022	0.022	0.0	3114 B 4.d	11/23/1998	JV
Cd	DUPLICATE	<0.01	<0.01	0.0	3111 B	11/23/1998	JV
Cu	DUPLICATE	0.03	0.02	40.0	3111 B	11/23/1998	JV
Ni	DUPLICATE	<0.01	<0.01	0.0	3111 B	11/23/1998	JV
Pb	DUPLICATE	0.05	0.05	0.0	3111 B	11/23/1998	JV
Se	DUPLICATE	0.085	0.082	3.5	3114 B	11/23/1998	JV
Zn	DUPLICATE	0.01	0.01	0.0	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-104-98	Well Number	001
Category	QAQC	Location	
Description	SPLIT CONTROL#374984	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	11/18/1998
QAQC for LabID	209-005-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.030	0.022	0.008	100.0	3114 B 4.d	11/23/1998	JV
Cd	SPIKE	0.42	<0.01	0.400	105.0	3111 B	11/23/1998	JV
Cu	SPIKE	0.43	0.02	0.400	102.5	3111 B	11/23/1998	JV
Ni	SPIKE	0.37	<0.01	0.400	92.5	3111 B	11/23/1998	JV
Pb	SPIKE	0.44	0.05	0.400	97.5	3111 B	11/23/1998	JV
Se	SPIKE	0.091	0.082	0.008	112.5	3114 B	11/23/1998	JV
Zn	SPIKE	0.39	0.01	0.400	95.0	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-105-98	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	11/23/1998
QAQC for LabID	209-005-98		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.001	3114 B 4.d	11/23/1998	JV
Cd	BLANK	<0.01	3111 B	11/23/1998	JV
Cu	BLANK	0.01	3111 B	11/23/1998	JV
Ni	BLANK	<0.01	3111 B	11/23/1998	JV
Pb	BLANK	0.02	3111 B	11/23/1998	JV
Se	BLANK	<0.001	3114 B	11/23/1998	JV
Zn	BLANK	<0.01	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-106-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 209-005-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	11/23/1998	JV
Cu	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Ni	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Pb	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Se	STANDARD	0.0020	0.0020	100.0	3114 B	11/23/1998	JV
Zn	STANDARD	1.00	1.0000	100.0	3111 B	11/23/1998	JV

Lab ID Number 200-107-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 209-005-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0022	0.0020	110.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	1.01	1.0000	101.0	3111 B	11/23/1998	JV
Cu	STANDARD	1.02	1.0000	102.0	3111 B	11/23/1998	JV
Ni	STANDARD	1.02	1.0000	102.0	3111 B	11/23/1998	JV
Pb	STANDARD	1.05	1.0000	105.0	3111 B	11/23/1998	JV
Se	STANDARD	0.0022	0.0020	110.0	3114 B	11/23/1998	JV
Zn	STANDARD	0.99	1.0000	99.0	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-108-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 209-005-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	4.96	5.0000	99.2	3111 B	11/23/1998	JV
Cu	STANDARD	5.00	5.0000	100.0	3111 B	11/23/1998	JV
Ni	STANDARD	5.05	5.0000	101.0	3111 B	11/23/1998	JV
Pb	STANDARD	5.04	5.0000	100.8	3111 B	11/23/1998	JV
Se	STANDARD	0.0050	0.0050	100.0	3114 B	11/23/1998	JV
Zn	STANDARD	4.90	5.0000	98.0	3111 B	11/23/1998	JV

Lab ID Number 200-109-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 209-005-98

Well Number
Location
Parameter TOTAL
Date Sampled 11/23/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	5.03	5.0000	100.6	3111 B	11/23/1998	JV
Cu	STANDARD	5.06	5.0000	101.2	3111 B	11/23/1998	JV
Ni	STANDARD	5.09	5.0000	101.8	3111 B	11/23/1998	JV
Pb	STANDARD	5.08	5.0000	101.6	3111 B	11/23/1998	JV
Se	STANDARD	0.0056	0.0050	112.0	3114 B	11/23/1998	JV
Zn	STANDARD	4.98	5.0000	99.6	3111 B	11/23/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-110-98	Well Number	
Category	QAQC	Location	
Description	REF #9976	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	11/23/1998
QAQC for LabID	209-005-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.182	0.1810	100.5	3114 B 4.d	11/23/1998	JV
Cd	STANDARD	0.124	0.1130	109.7	3111 B	11/23/1998	JV
Cu	STANDARD	0.435	0.4250	102.3	3111 B	11/23/1998	JV
Ni	STANDARD	0.550	0.5310	103.5	3111 B	11/23/1998	JV
Pb	STANDARD	0.734	0.7190	102.0	3111 B	11/23/1998	JV
Se	STANDARD	0.207	0.1880	110.1	3114 B	11/23/1998	JV
Zn	STANDARD	0.531	0.5440	97.6	3111 B	11/23/1998	JV

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM -
SPLIT SAMPLES

SAMPLERS: Cliff Mills

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE TYPE*	MONITORING POINT	SAMPLE PRESERVATIVE	METRO ANALYSES
375132	ASARCO #600	11-18-17-98	0935 1000	FC24	001	HNO_3	As, Se, Sb, Zn, Cd, Pb, Ni, Cr, Cu.

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Ken Wells	11-20-98/0915	C. E. Mills	C. E. Mills	11/20/98/1016	John P Vig
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

WHITE - METRO DISTRICT'S COPY YELLOW - INDUSTRY'S COPY

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-006-98	Well Number	001
Category	SEWER	Location	
Description	SPLIT CONTROL#375132	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	11/19/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.024	3114 B 4.d	12/15/1998	JV
Cd	SAMPLE	0.02	3111 B	12/15/1998	JV
Cu	SAMPLE	0.02	3111 B	12/15/1998	JV
Ni	SAMPLE	<0.01	3111 B	12/15/1998	JV
Pb	SAMPLE	0.03	3111 B	12/15/1998	JV
Se	SAMPLE	0.086	3114 B	12/15/1998	JV
Zn	SAMPLE	<0.01	3111 B	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number 200-113-98
Category QAQC
Description SPLIT CONTROL# 375132
QAQC Type DUPLICATE
QAQC for LabID 209-006-98

Well Number 001
Location
Parameter TOTAL
Date Sampled 11/19/1998

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.023	0.024	4.2	3114 B 4.d	12/15/1998	JV
Cd	DUPLICATE	0.02	0.02	0.0	3111 B	12/15/1998	JV
Cu	DUPLICATE	0.02	0.02	0.0	3111 B	12/15/1998	JV
Ni	DUPLICATE	<0.01	<0.01	0.0	3111 B	12/15/1998	JV
Pb	DUPLICATE	0.04	0.03	28.5	3111 B	12/15/1998	JV
Se	DUPLICATE	0.086	0.086	0.0	3114 B	12/15/1998	JV
Zn	DUPLICATE	<0.01	<0.01	0.0	3111 B	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-114-98	Well Number	001
Category	QAQC	Location	
Description	SPLIT CONTROL# 375132	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	11/19/1998
QAQC for LabID	209-006-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.033	0.024	0.008	112.5	3114 B 4.d	12/15/1998	JV
Cd	SPIKE	0.44	0.02	0.400	105.0	3111 B	12/15/1998	JV
Cu	SPIKE	0.43	0.02	0.400	102.5	3111 B	12/15/1998	JV
Ni	SPIKE	0.39	<0.01	0.400	97.5	3111 B	12/15/1998	JV
Pb	SPIKE	0.43	0.03	0.400	100.0	3111 B	12/15/1998	JV
Se	SPIKE	0.094	0.086	0.008	100.0	3114 B	12/15/1998	JV
Zn	SPIKE	0.40	<0.01	0.400	100.0	3111 B	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-117-98	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	12/15/1998
QAQC for LabID	209-006-98		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.0002	3114 B 4.d	12/15/1998	JV
Cd	BLANK	<0.01	3111 B	12/15/1998	JV
Cu	BLANK	0.01	3111 B	12/15/1998	JV
Ni	BLANK	<0.01	3111 B	12/15/1998	JV
Pb	BLANK	0.01	3111 B	12/15/1998	JV
Se	BLANK	<0.0002	3114 B	12/15/1998	JV
Zn	BLANK	<0.01	3111 B	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-118-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 209-006-98

Well Number
Location
Parameter TOTAL
Date Sampled 12/15/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	12/15/1998	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	12/15/1998	JV
Cu	STANDARD	1.01	1.0000	101.0	3111 B	12/15/1998	JV
Ni	STANDARD	1.01	1.0000	101.0	3111 B	12/15/1998	JV
Pb	STANDARD	1.01	1.0000	101.0	3111 B	12/15/1998	JV
Se	STANDARD	0.0020	0.0020	100.0	3114 B	12/15/1998	JV
Zn	STANDARD	1.01	1.0000	101.0	3111 B	12/15/1998	JV

Lab ID Number 200-119-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 209-006-98

Well Number
Location
Parameter TOTAL
Date Sampled 12/15/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0022	0.0020	110.0	3114 B 4.d	12/15/1998	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	12/15/1998	JV
Cu	STANDARD	0.99	1.0000	99.0	3111 B	12/15/1998	JV
Ni	STANDARD	1.02	1.0000	102.0	3111 B	12/15/1998	JV
Pb	STANDARD	1.03	1.0000	103.0	3111 B	12/15/1998	JV
Se	STANDARD	0.0023	0.0020	115.0	3114 B	12/15/1998	JV
Zn	STANDARD	0.98	1.0000	98.0	3111 B	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-120-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 209-006-98

Well Number
Location
Parameter TOTAL
Date Sampled 12/15/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	12/15/1998	JV
Cd	STANDARD	4.97	5.0000	99.4	3111 B	12/15/1998	JV
Cu	STANDARD	4.99	5.0000	99.8	3111 B	12/15/1998	JV
Ni	STANDARD	5.02	5.0000	100.4	3111 B	12/15/1998	JV
Pb	STANDARD	4.97	5.0000	99.4	3111 B	12/15/1998	JV
Se	STANDARD	0.0050	0.0050	100.0	3114 B	12/15/1998	JV
Zn	STANDARD	5.01	5.0000	100.2	3111 B	12/15/1998	JV

Lab ID Number 200-121-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 209-006-98

Well Number
Location
Parameter TOTAL
Date Sampled 12/15/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0054	0.0050	108.0	3114 B 4.d	12/15/1998	JV
Cd	STANDARD	4.95	5.0000	99.0	3111 B	12/15/1998	JV
Cu	STANDARD	5.02	5.0000	100.4	3111 B	12/15/1998	JV
Ni	STANDARD	5.08	5.0000	101.6	3111 B	12/15/1998	JV
Pb	STANDARD	4.91	5.0000	98.2	3111 B	12/15/1998	JV
Se	STANDARD	0.0056	0.0050	112.0	3114 B	12/15/1998	JV
Zn	STANDARD	5.03	5.0000	100.6	3111 B	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-122-98
Category QAQC
Description REF #9976
QAQC Type STANDARD
QAQC for LabID 209-006-98

Well Number
Location
Parameter TOTAL
Date Sampled 12/15/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.188	0.1810	103.8	3114 B 4.d	12/15/1998	JV
Cd	STANDARD	0.119	0.1130	105.3	3111 B	12/15/1998	JV
Cu	STANDARD	0.431	0.4250	101.4	3111 B	12/15/1998	JV
Ni	STANDARD	0.538	0.5310	101.3	3111 B	12/15/1998	JV
Pb	STANDARD	0.728	0.7190	101.2	3111 B	12/15/1998	JV
Se	STANDARD	0.207	0.1880	110.1	3114 B	12/15/1998	JV
Zn	STANDARD	0.539	0.5440	99.0	3111 B	12/15/1998	JV

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM -
SPLIT SAMPLES

SAMPLERS: Cliff Mills

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE TYPE*	MONITORING POINT	SAMPLE PRESERVATIVE	METRO ANALYSES
375220	AJARW #600	11-19-2098	1004 1000	FC24	001	HNO3	As, Se, Sb, Zn, Cd, Pb, Ni, Cr, Be, Cu.

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	11/23/98 7:24	[signature]	[signature]	11/23 0746	[signature]
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

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ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-007-98	Well Number	001
Category	SEWER	Location	
Description	SPLIT CONTROL# 375220	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	11/20/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.011	3114 B 4.d	12/15/1998	JV
Cd	SAMPLE	0.02	3111 B	12/15/1998	JV
Cu	SAMPLE	0.06	3111 B	12/15/1998	JV
Ni	SAMPLE	<0.01	3111 B	12/15/1998	JV
Pb	SAMPLE	0.04	3111 B	12/15/1998	JV
Se	SAMPLE	0.091	3114 B	12/15/1998	JV
Zn	SAMPLE	0.06	3111 B	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-115-98	Well Number	001
Category	QAQC	Location	
Description	SPLIT CONTROL# 375220	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	11/20/1998
QAQC for LabID	209-007-98		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.011	0.011	0.0	3114 B 4.d	12/15/1998	JV
Cd	DUPLICATE	0.02	0.02	0.0	3111 B	12/15/1998	JV
Cu	DUPLICATE	0.06	0.06	0.0	3111 B	12/15/1998	JV
Ni	DUPLICATE	<0.01	<0.01	0.0	3111 B	12/15/1998	JV
Pb	DUPLICATE	0.04	0.04	0.0	3111 B	12/15/1998	JV
Se	DUPLICATE	0.092	0.091	1.0	3114 B	12/15/1998	JV
Zn	DUPLICATE	0.05	0.06	18.1	3111 B	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-116-98	Well Number	001
Category	QAQC	Location	
Description	SPLIT CONTROL# 375220	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	11/20/1998
QAQC for LabID	209-007-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.020	0.011	0.008	112.5	3114 B 4.d	12/15/1998	JV
Cd	SPIKE	0.45	0.02	0.400	107.5	3111 B	12/15/1998	JV
Cu	SPIKE	0.48	0.06	0.400	105.0	3111 B	12/15/1998	JV
Ni	SPIKE	0.38	<0.01	0.400	95.0	3111 B	12/15/1998	JV
Pb	SPIKE	0.42	0.04	0.400	95.0	3111 B	12/15/1998	JV
Se	SPIKE	0.099	0.091	0.008	100.0	3114 B	12/15/1998	JV
Zn	SPIKE	0.46	0.06	0.400	100.0	3111 B	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-117-98	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	12/15/1998
QAQC for LabID	209-007-98		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.0002	3114 B 4.d	12/15/1998	JV
Cd	BLANK	<0.01	3111 B	12/15/1998	JV
Cu	BLANK	0.01	3111 B	12/15/1998	JV
Ni	BLANK	<0.01	3111 B	12/15/1998	JV
Pb	BLANK	0.01	3111 B	12/15/1998	JV
Se	BLANK	<0.0002	3114 B	12/15/1998	JV
Zn	BLANK	<0.01	3111 B	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-118-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 209-007-98

Well Number
Location
Parameter TOTAL
Date Sampled 12/15/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0020	0.0020	100.0	3114 B 4.d	12/15/1998	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	12/15/1998	JV
Cu	STANDARD	1.01	1.0000	101.0	3111 B	12/15/1998	JV
Ni	STANDARD	1.01	1.0000	101.0	3111 B	12/15/1998	JV
Pb	STANDARD	1.01	1.0000	101.0	3111 B	12/15/1998	JV
Se	STANDARD	0.0020	0.0020	100.0	3114 B	12/15/1998	JV
Zn	STANDARD	1.01	1.0000	101.0	3111 B	12/15/1998	JV

Lab ID Number 200-119-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 209-007-98

Well Number
Location
Parameter TOTAL
Date Sampled 12/15/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0022	0.0020	110.0	3114 B 4.d	12/15/1998	JV
Cd	STANDARD	1.00	1.0000	100.0	3111 B	12/15/1998	JV
Cu	STANDARD	0.99	1.0000	99.0	3111 B	12/15/1998	JV
Ni	STANDARD	1.02	1.0000	102.0	3111 B	12/15/1998	JV
Pb	STANDARD	1.03	1.0000	103.0	3111 B	12/15/1998	JV
Se	STANDARD	0.0023	0.0020	115.0	3114 B	12/15/1998	JV
Zn	STANDARD	0.98	1.0000	98.0	3111 B	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-120-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 209-007-98

Well Number
Location
Parameter TOTAL
Date Sampled 12/15/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0050	0.0050	100.0	3114 B 4.d	12/15/1998	JV
Cd	STANDARD	4.97	5.0000	99.4	3111 B	12/15/1998	JV
Cu	STANDARD	4.99	5.0000	99.8	3111 B	12/15/1998	JV
Ni	STANDARD	5.02	5.0000	100.4	3111 B	12/15/1998	JV
Pb	STANDARD	4.97	5.0000	99.4	3111 B	12/15/1998	JV
Se	STANDARD	0.0050	0.0050	100.0	3114 B	12/15/1998	JV
Zn	STANDARD	5.01	5.0000	100.2	3111 B	12/15/1998	JV

Lab ID Number 200-121-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 209-007-98

Well Number
Location
Parameter TOTAL
Date Sampled 12/15/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0054	0.0050	108.0	3114 B 4.d	12/15/1998	JV
Cd	STANDARD	4.95	5.0000	99.0	3111 B	12/15/1998	JV
Cu	STANDARD	5.02	5.0000	100.4	3111 B	12/15/1998	JV
Ni	STANDARD	5.08	5.0000	101.6	3111 B	12/15/1998	JV
Pb	STANDARD	4.91	5.0000	98.2	3111 B	12/15/1998	JV
Se	STANDARD	0.0056	0.0050	112.0	3114 B	12/15/1998	JV
Zn	STANDARD	5.03	5.0000	100.6	3111 B	12/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-122-98	Well Number	
Category	QAQC	Location	
Description	REF #9976	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	12/15/1998
QAQC for LabID	209-007-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.188	0.1810	103.8	3114 B 4.d	12/15/1998	JV
Cd	STANDARD	0.119	0.1130	105.3	3111 B	12/15/1998	JV
Cu	STANDARD	0.431	0.4250	101.4	3111 B	12/15/1998	JV
Ni	STANDARD	0.538	0.5310	101.3	3111 B	12/15/1998	JV
Pb	STANDARD	0.728	0.7190	101.2	3111 B	12/15/1998	JV
Se	STANDARD	0.207	0.1880	110.1	3114 B	12/15/1998	JV
Zn	STANDARD	0.539	0.5440	99.0	3111 B	12/15/1998	JV

ASARCO

GLOBE PLANT

January 22, 1999

Mr. James T. Graber
Industrial Waste Specialist
Metro Wastewater Reclamation District
6450 York Street
Denver, Colorado 80229-7499

Dear Mr. Graber:

Enclosed for your review is the Asarco Globe Plant's Periodic Compliance Report (PCR) for the period of July - December, 1998. The PCR contains flow monitoring data, sampling results and waste disposal activities.

During the period there were eleven monitoring events at 001, including Asarco's required monthly monitoring, additional monitoring associated with the completion of the Terrace Drain and Metro's sampling. The final of the three initial Terrace Drain batches sampled November 16–17, 1998 doubles as the monthly monitoring for November.

Based on my inquiry of the people responsible for these areas or gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate and complete. If you should require additional information or have any questions regarding this submittal, please contact Nikki Mathis at 303-296-5111.

Sincerely,

Margaret W. Staub
Unit Manager

enc.

cc: (w/ enc.)
R. Litle
R. Marcus
C. Dungey
J. Vigil/D. Lux
N. Mathis

F:\USERS\NIKKI\POTW\PCRCVLTR.DOC
FILE NO: 4.6.5.2

ASARCO Incorporated, 495 East 51st Avenue, Denver, Colorado 80216-2098
Phone (303) 296-5900 • FAX (303) 296-0508

PERIODIC COMPLIANCE REPORT

NOTE: Periodic compliance reports (PCRs) are due on or before the last day of the month following the end of the reporting period and must be submitted to the address(es) listed in the "Reporting Requirements for Permittee" section of your wastewater discharge permit. Not all of the sections listed below apply to all permittees. Some permittees may also need to submit information in addition to the items appearing on this checklist. Consult your wastewater discharge permit for your specific reporting requirements.

Reporting period from: July 1, 1998 to December 31, 1998

Date prepared: January 22, 1999

Prepared by: John Vigil and Nicole Mathis

A. FACILITY INFORMATION

Name: ASARCO Globe Plant

Location: 495 E. 51st Avenue
Denver, Colorado 80216

Phone: (303) 296-5900 Fax: (303)296-0508 Emergency: (303) 208-4209

B. FLOW MONITORING

(Flow monitoring information may be required for more than one Monitoring Point. Attach additional sheets as necessary. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point 001 [ ] No discharge

Average daily flow volume (gallons per day)	21,731	[ ] Measured	[X]Estimated
Maximum daily flow volume (gallons per day)	88,764	[ ] Measured	[X]Estimated
Process water discharge (gallons per day)	1,307	[ ] Measured	[X]Estimated
Groundwater discharge (gallons per day -- Terrace Drain)	18,361	[ ] Measured	[X]Estimated

Note: Daily flow volumes are used, in part, to determine self-monitoring and reporting frequencies. Reported values, especially estimates, must be as accurate as possible.

C. SAMPLING RESULTS

Attach copies of the analytical results of all samplings of the regulated wastestreams performed by the permittee during the reporting period. Attach copies of the analytical results of all split samplings of the regulated wastestream performed by the permittee or other agency during the reporting period. Results transmitted to the permittee by any other agency, including the Metro District, do not have to be submitted, but must be kept on file for at least 3 years and be available for inspection.

Analytical results submitted with this PCR must contain the following information:

1. Concentrations and measurements of all parameters for which there are self-monitoring requirements.

2. The date, time and location of all sampling activities. Include the start-stop dates and times for composite samples.

(Note: To avoid self-monitoring reporting errors or violations, the analytical results included in this PCR should also contain the information listed below for all samples. At a minimum, this information must be kept on file for at least 3 years and be available for inspection.)

3. The method of sampling (grab, time composite, flow composite, or continuous measurement) and name of the person collecting the sample.

4. The name of the laboratory (or person) that performed the analyses.

5. The date the analyses were performed.

6. The analytical techniques/methods used for the analyses.

D. WASTE DISPOSAL

(Attach copies of disposal records for wastes hauled off-site during the reporting period, or provide a summary of waste disposal activities in the space provided below, or indicate "no activity" if no wastes were disposed of during the reporting period.)

[ ] No waste disposal activity occurred during the reporting period

[x] Summary provided below

Waste Name	Volume	Ship Date	Disposal Company
WWTP Sludge/BH Dust	40 c.y.	09/04/98	Safety-Kleen
Process Debris	20 c.y.	09/04/98	Safety-Kleen

D. WASTE DISPOSAL (cont.)

Waste Name	Volume	Ship Date	Disposal Company
PCB Ballast	31 kg	10/26/98	Safety-Kleen
WWTP Sludge/BH Dust	40 c.y.	12/02/98	Safety-Kleen
Process Debris	20 c.y.	12/02/98	Safety-Kleen
Process Debris	20 c.y.	12/03/98	Safety-Kleen
Process Debris	20 c.y.	12/07/98	Safety-Kleen
Process Debris	20 c.y	12/10/98	Safety-Kleen
Process Debris	20 c.y	12/11/98	Safety-Kleen
Process Debris	20 c.y	12/18/98	Safety-Kleen
Used Oil (Recycling)	620 gal	09/09/98	Mesa
Used Grease (Recycling)	1 drum	09/17/98	Mesa

E. ACCURACY AND COMPLETENESS CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that, there has not been any change(s) in the Research and Development activities at this facility that have significantly changed the process wastewater discharged to the POTW, or that notification of changed discharges was submitted to the Metro District as required per Section F.4 of the permit. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Authorized Representative — 1/22/99 Date

Margaret W. Staub
Name (please print or type)

Unit Manager
Title (please print or type)

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	7/23/98 8:10 to 7/24/98 8:10	
Total Flow for 24 hour period:	11,170	gal
Maximum Flow:	1.00	gal/sec
Average Flow:	0.13	gal/sec
Number of Tanks Discharged:	2	
Number of Samples Collected:	19	
Total Volume Collected:	1.9	liters

Total Metals Composite Analysis:

Arsenic (As):	0.037	(ppm)
Cadmium (Cd):	0.03	(ppm)
Copper (Cu):	0.01	(ppm)
Lead (Pb):	0.12	(ppm)
Nickel (Ni):	<0.01	(ppm)
Selenium (Se):	0.103	(ppm)
Zinc (Zn):	0.05	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 7/24/98 8:15

Analysis Date/Time: 7/24/98 8:20

pH Grab Analysis:

pH 7.2 (units)

Sampled By: John Vigil

Analyzed By: John Vigil

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	7/23/98 8:10 to 7/24/98 8:10	
Total Flow for 24 hour period:	11,170	gal
Maximum Flow:	1.00	gal/sec
Average Flow:	0.13	gal/sec
Number of Tanks Discharged:	2	
Number of Samples Collected:	19 ~~Sampler missed taking 3 samples do to low flow!~~ due	
Total Volume Collected:	1.9	liters

Note to file

maybe put in your file notes rather than here

Total Metals Composite Analysis: ~~Astrik~~ due

Arsenic (As):	0.037	(ppm)
Cadmium (Cd):	0.03	(ppm)
Copper (Cu):	0.01	(ppm)
Lead (Pb):	0.12	(ppm)
Nickel (Ni):	<0.01	(ppm)
Selenium (Se):	0.103	(ppm)
Zinc (Zn):	0.05	(ppm)

Sampled By: John Vigil

Analyzed By: John Vigil

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 [illegible] of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 7/24/98 8:15

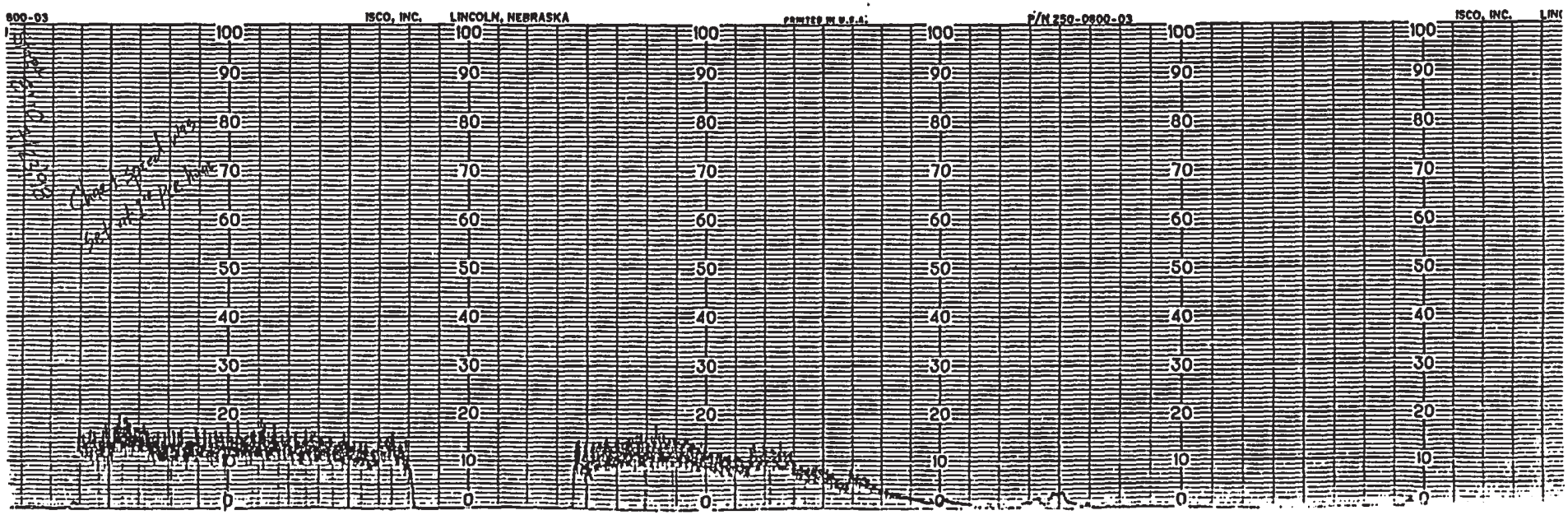
Analysis Date/Time: 7/24/98 8:20

pH Grab Analysis:

pH 7.2 (units)

Sampled By: John Vigil

Analyzed By: John Vigil


800-03
ISCO, INC.
LINCOLN, NEBRASKA
P/N 250-0800-03
ISCO, INC.
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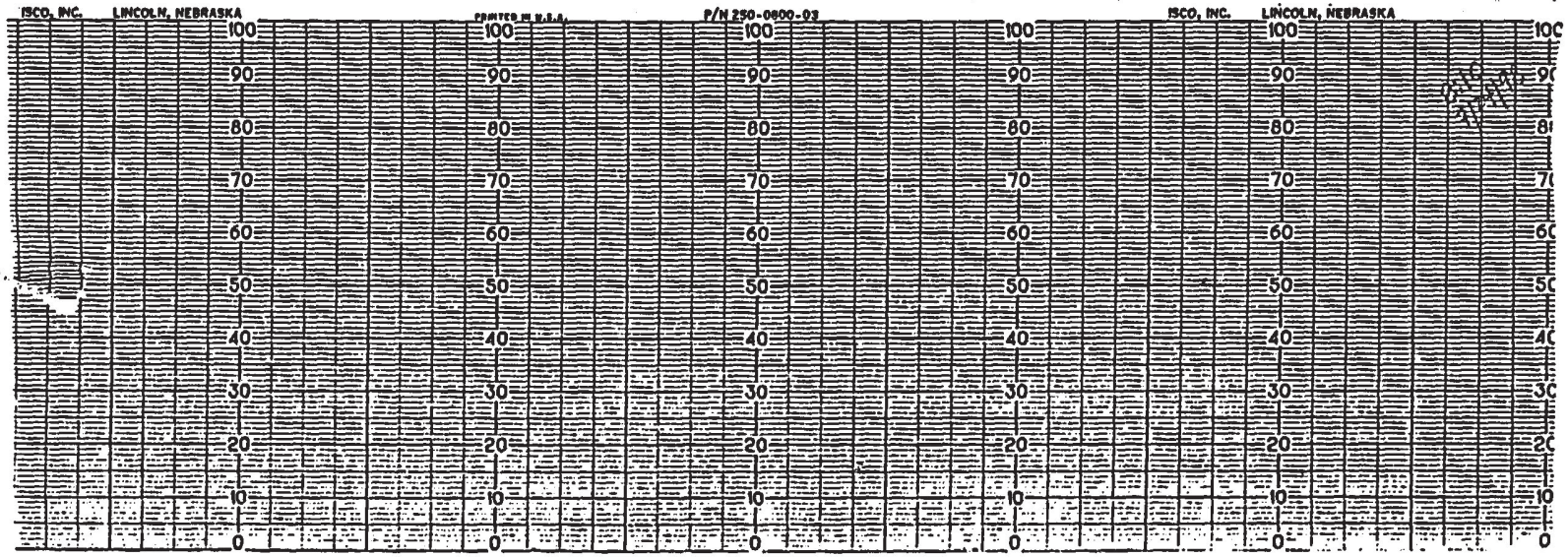
ISCO, INC. LINCOLN, NEBRASKA PRINTED IN U.S.A. P/N 250-0600-03 ISCO, INC. LINCOLN, NEBRASKA



ASARCO

GLOBE PLANT

July 30, 1998

VIA HAND DELIVERY

Mr. James T. Graber
Industrial Waste Specialist
Metro Wastewater Reclamation District
6450 York Street
Denver, Colorado 80229-7499

Dear Mr. Graber:

Enclosed for your review is the Asarco Globe Plant's Periodic Compliance Report (PCR) for the period of January - June, 1998. The PCR contains flow monitoring data, sampling results and waste disposal activities.

During the period there were several monitoring events for which results were previously submitted to Metro Wastewater Reclamation District (Metro), and thus, will not be submitted with this PCR. These include the monitoring events performed by Asarco on March 10-11 (1st Terrace Drain event upon completion of southern leg and quarterly event) and March 26-27 (cadmium baghouse water) which were submitted May 5 and another event on April 24 (1st three Terrace Drain tanks) for which metals and pH results were submitted April 30 and organics results May14.

Based on my inquiry of the people responsible for these areas or gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate and complete. If you should require additional information or have any questions regarding this submittal, please contact me at 296-5111.

Sincerely,

Nicole R. Mathis

Nicole R. Mathis
Environmental Engineer

enc.

cc: (w/ enc.)
R. Litle
R. Marcus
C. Dungey
J. Vigil/D. Lux
(w/o enc.)
M. Staub

F:\USERS\NIKKI\POTW\PCRCVLTR.DOC
FILE NO: 4.6.5.2

ASARCO Incorporated, 495 East 51st Avenue, Denver, Colorado 80216-2098
Phone (303) 296-5900 • FAX (303) 296-0508

PERIODIC COMPLIANCE REPORT

NOTE: Periodic compliance reports (PCRs) are due on or before the last day of the month following the end of the reporting period and must be submitted to the address(es) listed in the "Reporting Requirements for Permittee" section of your wastewater discharge permit. Not all of the sections listed below apply to all permittees. Some permittees may also need to submit information in addition to the items appearing on this checklist. Consult your wastewater discharge permit for your specific reporting requirements.

Reporting period from: January 1, 1998 to June 30, 1998

Date prepared: July 27, 1998

Prepared by: John Vigil and Nicole Mathis

A. FACILITY INFORMATION

Name: ASARCO Globe Plant

Location: 495 E. 51st Avenue
Denver, Colorado 80216

Phone: (303) 296-5900 Fax: (303)296-0508 Emergency: _____

B. FLOW MONITORING

(Flow monitoring information may be required for more than one Monitoring Point. Attach additional sheets as necessary. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point	001	[ ] No discharge	
Average daily flow volume (gallons per day)	15,924	[ ] Measured	[X]Estimated
Maximum daily flow volume (gallons per day)	65,300	[ ] Measured	[X]Estimated
Process water discharge (gallons per day)	817	[ ] Measured	[X]Estimated
Groundwater discharge (gallons per day – Terrace Drain)	12,907	[ ] Measured	[X]Estimated

Note: Daily flow volumes are used, in part, to determine self-monitoring and reporting frequencies. Reported values, especially estimates, must be as accurate as possible.

C. SAMPLING RESULTS

Attach copies of the analytical results of all samplings of the regulated wastestreams performed by the permittee during the reporting period. Attach copies of the analytical results of all split samplings of the regulated wastestream performed by the permittee or other agency during the reporting period. Results transmitted to the permittee by any other agency, including the Metro District, do not have to be submitted, but must be kept on file for at least 3 years and be available for inspection.

Analytical results submitted with this PCR must contain the following information:

1. Concentrations and measurements of all parameters for which there are self-monitoring requirements.

2. The date, time and location of all sampling activities. Include the start-stop dates and times for composite samples.

(Note: To avoid self-monitoring reporting errors or violations, the analytical results included in this PCR should also contain the information listed below for all samples. At a minimum, this information must be kept on file for at least 3 years and be available for inspection.)

3. The method of sampling (grab, time composite, flow composite, or continuous measurement) and name of the person collecting the sample.

4. The name of the laboratory (or person) that performed the analyses.

5. The date the analyses were performed.

6. The analytical techniques/methods used for the analyses.

D. WASTE DISPOSAL

(Attach copies of disposal records for wastes hauled off-site during the reporting period, or provide a summary of waste disposal activities in the space provided below, or indicate "no activity" if no wastes were disposed of during the reporting period.)

[ ] No waste disposal activity occurred during the reporting period

[x] Summary provided below

Waste Name	Volume	Ship Date	Disposal Company
Fluorescent Bulbs	60 pounds	02/24/98	Recyclights
Burn./Crushables	20 c.y.	03/12/98	Laidlaw

D. WASTE DISPOSAL (cont.)

Waste Name	Volume	Ship Date	Disposal Company
Burn./Crushables	20 c.y.	06/10/98	Laidlaw
WWTP Sludge	40 c.y.	06/10/98	Laidlaw

E. ACCURACY AND COMPLETENESS CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that, there has not been any change(s) in the Research and Development activities at this facility that have significantly changed the process wastewater discharged to the POTW, or that notification of changed discharges was submitted to the Metro District as required per Section F.4 of the permit. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Nicole R. Mathis

Signature of Authorized Representative

7/29/98

Date

Nicole R. Mathis

Name (please print or type)

Environmental Engineer

Title (please print or type)

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	6/10/98 10:15 to 6/11/98 10:15	
Total Flow for 24 hour period:	55840	gal
Maximum Flow:	1.95	gal/sec
Average Flow:	0.65	gal/sec
Number of Tanks Discharged:	4 (Plus two additional partial tanks.)	
Number of Samples Collected:	112	
Total Volume Collected:	11.2	liters

Total Metals Composite Analysis:

Arsenic (As):	0.007	(ppm)
Cadmium (Cd):	0.02	(ppm)
Copper (Cu):	0.01	(ppm)
Lead (Pb):	0.12	(ppm)
Nickel (Ni):	<0.02	(ppm)
Selenium (Se):	0.116	(ppm)
Zinc (Zn):	0.02	(ppm)

Sampled By: John Vigil

Analyzed By: Dennis Lux

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 6/11/98 10:20

Analysis Date/Time: 6/11/98 10:25

pH Grab Analysis:

pH 9.2 (units)

Sampled By: John Vigil

Analyzed By: John Vigil

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM -
SPLIT SAMPLES

SAMPLERS: [illegible]

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE TYPE*	MONITORING POINT	SAMPLE PRESERVATIVE	METRO ANALYSES
357784	ASARCO #600	6-2-98	855 700	FC24	001	HNO_3	As, Se, Sb, Zn, Pb, Ni, Cr, Be

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	6-4-98/1730	[illegible]	[illegible]	6-4-98/12:41	[illegible]
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

WHITE - METRO DISTRICT'S COPY

YELLOW - INDUSTRY'S COPY

ASARCO INCORPORATED
Environmental Laboratory

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: Quarterly Sewer Monitoring

SAMPLERS: (Signature) John P. Vigil

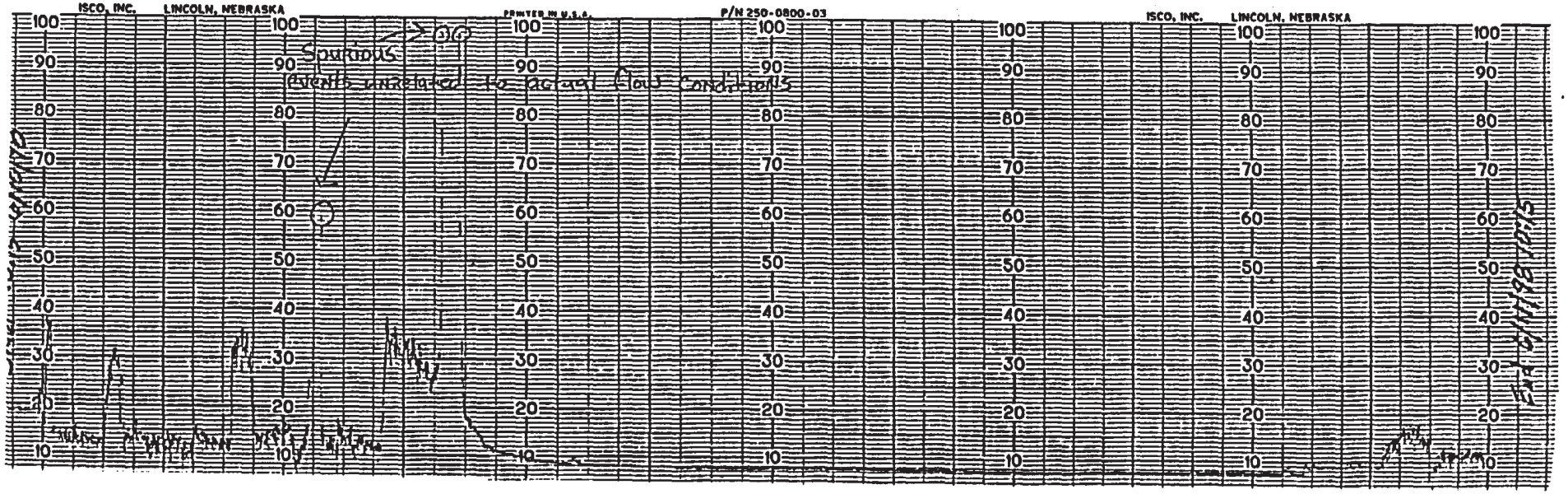
STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 liter UE/HNO3	250 ml UE/UNPRES					REMARKS
001	6/10/98 – 6/11/98	10:15 10:15	X		001	1	X						Comp. Sample
001	6/11/98	10:20		X		1		X					PH grab

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
John P. Vigil	6/11/98 10:50	DC Lux			
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000923


ISCO, INC. LINCOLN, NEBRASKA
PRINTED IN U.S.A.
P/N 250-0800-03
ISCO, INC. LINCOLN, NEBRASKA
Spurious events unrelated to actual flow conditions

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-004-98	Well Number	
Category	SEWER	Location	
Description	001 COMP	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	06/10/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.007	3114 B 4.d	06/26/1998	DL
Cd	SAMPLE	0.02	3111 B	06/26/1998	DL
Cu	SAMPLE	0.01	3111 B	06/26/1998	DL
Ni	SAMPLE	<0.02	3111 B	06/26/1998	DL
Pb	SAMPLE	0.12	3111 B	06/26/1998	DL
Se	SAMPLE	0.116	3114 B	06/26/1998	DL
Zn	SAMPLE	0.02	3111 B	06/26/1998	DL

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-003-98	Well Number	
Category	SEWER	Location	
Description	001 PH GRAB	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	06/11/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	9.20	EPA150.1	06/11/1998	JV

Lab ID Number	209-004-98	Metro ID ~~Well~~ Number	359984
Category	SEWER	Location	
Description	001 COMP / SPLIT	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	06/02/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.004	3114 B 4.d	06/26/1998	DL
Cd	SAMPLE	0.03	3111 B	06/26/1998	DL
Cu	SAMPLE	0.04	3111 B	06/26/1998	DL
Ni	SAMPLE	<0.02	3111 B	06/26/1998	DL
Pb	SAMPLE	0.13	3111 B	06/26/1998	DL
Se	SAMPLE	0.076	3114 B	06/26/1998	DL
Zn	SAMPLE	0.06	3111 B	06/26/1998	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number 200-051-98
Category QAQC
Description 001 COMP / SPLIT
QAQC Type DUPLICATE
QAQC for LabID 209-004-98

Mem ID
~~Well~~ Number 359984
Location
Parameter TOTAL
Date Sampled 06/02/1998

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.004	0.004	0.0	3114 B 4.d	06/26/1998	DL
Cd	DUPLICATE	0.03	0.03	0.0	3111 B	06/26/1998	DL
Cu	DUPLICATE	0.03	0.04	28.5	3111 B	06/26/1998	DL
Ni	DUPLICATE	<0.02	<0.02	0.0	3111 B	06/26/1998	DL
Pb	DUPLICATE	0.13	0.13	0.0	3111 B	06/26/1998	DL
Se	DUPLICATE	0.084	0.076	10.0	3114 B	06/26/1998	DL
Zn	DUPLICATE	0.05	0.06	18.1	3111 B	06/26/1998	DL

Lab ID Number 200-052-98
Category QAQC
Description 001 COMP
QAQC Type DUPLICATE
QAQC for LabID 208-004-98

Well Number
Location
Parameter TOTAL
Date Sampled 06/10/1998

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.010	0.007	35.2	3114 B 4.d	06/26/1998	DL
Cd	DUPLICATE	0.03	0.02	40.0	3111 B	06/26/1998	DL
Cu	DUPLICATE	0.02	0.01	66.6	3111 B	06/26/1998	DL
Ni	DUPLICATE	<0.02	<0.02	0.0	3111 B	06/26/1998	DL
Pb	DUPLICATE	0.15	0.12	22.2	3111 B	06/26/1998	DL
Se	DUPLICATE	0.094	0.116	20.9	3114 B	06/26/1998	DL
Zn	DUPLICATE	0.02	0.02	0.0	3111 B	06/26/1998	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-055-98	Well Number	359984
Category	QAQC	Location	
Description	001 COMP / SPLIT	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	06/02/1998
QAQC for LabID	209-004-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.011	0.004	0.010	70.0	3114 B 4.d	06/26/1998	DL
Cd	SPIKE	0.47	0.03	0.400	110.0	3111 B	06/26/1998	DL
Cu	SPIKE	0.49	0.04	0.400	112.5	3111 B	06/26/1998	DL
Ni	SPIKE	0.35	<0.02	0.400	87.5	3111 B	06/26/1998	DL
Pb	SPIKE	0.55	0.13	0.400	105.0	3111 B	06/26/1998	DL
Se	SPIKE	0.116	0.076	0.040	100.0	3114 B	06/26/1998	DL
Zn	SPIKE	0.42	0.06	0.400	90.0	3111 B	06/26/1998	DL

Lab ID Number	200-056-98	Well Number	
Category	QAQC	Location	
Description	001 COMP	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	06/10/1998
QAQC for LabID	208-004-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.016	0.007	0.010	90.0	3114 B 4.d	06/26/1998	DL
Cd	SPIKE	0.45	0.02	0.400	107.5	3111 B	06/26/1998	DL
Cu	SPIKE	0.46	0.01	0.400	112.5	3111 B	06/26/1998	DL
Ni	SPIKE	0.34	<0.02	0.400	85.0	3111 B	06/26/1998	DL
Pb	SPIKE	0.53	0.12	0.400	102.5	3111 B	06/26/1998	DL
Se	SPIKE	0.150	0.116	0.040	85.0	3114 B	06/26/1998	DL
Zn	SPIKE	0.40	0.02	0.400	95.0	3111 B	06/26/1998	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-046-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-004-98
209-004-98

Well Number
Location
Parameter TOTAL
Date Sampled 06/10/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.002	0.0020	100.0	3114 B 4.d	06/26/1998	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	06/26/1998	DL
Cu	STANDARD	1.02	1.0000	102.0	3111 B	06/26/1998	DL
Ni	STANDARD	1.00	1.0000	100.0	3111 B	06/26/1998	DL
Pb	STANDARD	1.02	1.0000	102.0	3111 B	06/26/1998	DL
Se	STANDARD	0.002	0.0020	100.0	3114 B	06/26/1998	DL
Zn	STANDARD	1.00	1.0000	100.0	3111 B	06/26/1998	DL

Lab ID Number 200-047-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-004-98
209-004-98

Well Number
Location
Parameter TOTAL
Date Sampled 06/10/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0019	0.0020	95.0	3114 B 4.d	06/26/1998	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	06/26/1998	DL
Cu	STANDARD	1.03	1.0000	103.0	3111 B	06/26/1998	DL
Ni	STANDARD	0.98	1.0000	98.0	3111 B	06/26/1998	DL
Pb	STANDARD	1.00	1.0000	100.0	3111 B	06/26/1998	DL
Se	STANDARD	0.0021	0.0020	105.0	3114 B	06/26/1998	DL
Zn	STANDARD	0.99	1.0000	99.0	3111 B	06/26/1998	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-048-98
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-004-98
209-004-98

Well Number
Location
Parameter TOTAL
Date Sampled 06/10/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.005	0.0050	100.0	3114 B 4.d	06/26/1998	DL
Cd	STANDARD	5.01	5.0000	100.2	3111 B	06/26/1998	DL
Cu	STANDARD	4.99	5.0000	99.8	3111 B	06/26/1998	DL
Ni	STANDARD	5.00	5.0000	100.0	3111 B	06/26/1998	DL
Pb	STANDARD	5.02	5.0000	100.4	3111 B	06/26/1998	DL
Se	STANDARD	0.005	0.0050	100.0	3114 B	06/26/1998	DL
Zn	STANDARD	5.00	5.0000	100.0	3111 B	06/26/1998	DL

Lab ID Number 200-049-98
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 208-004-98
209-004-98

Well Number
Location
Parameter TOTAL
Date Sampled 06/10/1998

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0051	0.0050	102.0	3114 B 4.d	06/26/1998	DL
Cd	STANDARD	4.99	5.0000	99.8	3111 B	06/26/1998	DL
Cu	STANDARD	5.03	5.0000	100.6	3111 B	06/26/1998	DL
Ni	STANDARD	5.00	5.0000	100.0	3111 B	06/26/1998	DL
Pb	STANDARD	5.00	5.0000	100.0	3111 B	06/26/1998	DL
Se	STANDARD	0.0045	0.0050	90.0	3114 B	06/26/1998	DL
Zn	STANDARD	4.98	5.0000	99.6	3111 B	06/26/1998	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-050-98	Well Number	
Category	QAQC	Location	
Description	ERA 9973 (SE) 9976	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	06/10/1998
QAQC for LabID	208-004-98 209-004-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.050	0.0530	94.3	3114 B 4.d	06/26/1998	DL
Cd	STANDARD	0.054	0.0510	105.8	3111 B	06/26/1998	DL
Cu	STANDARD	0.380	0.3530	107.6	3111 B	06/26/1998	DL
Ni	STANDARD	0.217	0.2180	99.5	3111 B	06/26/1998	DL
Pb	STANDARD	0.311	0.3060	101.6	3111 B	06/26/1998	DL
Se	STANDARD	0.166	0.2030	81.7	3114 B	06/26/1998	DL
Zn	STANDARD	0.342	0.3290	103.9	3111 B	06/26/1998	DL

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-045-98	Well Number	
Category	QAQC	Location	
Description	001 COMP	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	06/10/1998
QAQC for LabID	208-004-98 209-004-98		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.001	3114 B 4.d	06/26/1998	DL
Cd	BLANK	0.01	3111 B	06/26/1998	DL
Cu	BLANK	0.01	3111 B	06/26/1998	DL
Ni	BLANK	<0.01	3111 B	06/26/1998	DL
Pb	BLANK	0.05	3111 B	06/26/1998	DL
Se	BLANK	<0.001	3114 B	06/26/1998	DL
Zn	BLANK	0.01	3111 B	06/26/1998	DL

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM - SPLIT SAMPLES

SAMPLERS: Don Lapp, Lance Wenholz

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE TYPE*	MONITORING POINT	SAMPLE PRESERVATIVE	METRO ANALYSES
357044	ASARCO #600	4-27-28-98	10:20 10:31	FC24	001	HNO_3	Ag, Mo, As, Se, Ni, Sb, Zn, Cd, Pb, Cr, Ba, Cu

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	4-30-98 0950	[signature]	[signature]	4-30-98 ..15	[signature]
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

WHITE - METRO DISTRICT'S COPY YELLOW - INDUSTRY'S COPY

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-003-98	Metro ID ~~Well~~ Number	357044
Category	SEWER	Location	
Description	001 COMP / SPLIT	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	04/27/1998

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.005	3114 B 4.d	05/15/1998	DL
Cd	SAMPLE	0.14	3111 B	05/15/1998	JV
Cu	SAMPLE	0.04	3111 B	05/15/1998	JV
Ni	SAMPLE	0.01	3111 B	05/15/1998	JV
Pb	SAMPLE	0.02	3111 B	05/15/1998	JV
Se	SAMPLE	0.085	3114 B	05/15/1998	DL
Zn	SAMPLE	0.43	3111 B	05/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-039-98	Metro ID ~~Heli~~ Number	357044
Category	QAQC	Location	
Description	001 COMP / SPLIT	Parameter	TOTAL
QAQC Type	DUPLICATE	Date Sampled	04/27/1998
QAQC for LabID	209-003-98		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.005	0.005	0.0	3114 B 4.d	05/15/1998	DL
Cd	DUPLICATE	0.13	0.14	7.4	3111 B	05/15/1998	JV
Cu	DUPLICATE	0.04	0.04	0.0	3111 B	05/15/1998	JV
Ni	DUPLICATE	<0.01	0.01	0.0	3111 B	05/15/1998	JV
Pb	DUPLICATE	0.01	0.02	66.6	3111 B	05/15/1998	JV
Se	DUPLICATE	0.105	0.085	21.0	3114 B	05/15/1998	DL
Zn	DUPLICATE	0.40	0.43	7.2	3111 B	05/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-043-98	MetroID ~~Well~~ Number	357044
Category	QAQC	Location	
Description	001 COMP / SPLIT	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	04/27/1998
QAQC for LabID	209-003-98		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.012	0.005	0.008	87.5	3114 B 4.d	05/15/1998	DL
Cd	SPIKE	0.54	0.14	0.400	100.0	3111 B	05/15/1998	JV
Cu	SPIKE	0.43	0.04	0.400	97.5	3111 B	05/15/1998	JV
Ni	SPIKE	0.37	0.01	0.400	90.0	3111 B	05/15/1998	JV
Pb	SPIKE	0.41	0.02	0.400	97.5	3111 B	05/15/1998	JV
Se	SPIKE	0.123	0.085	0.400	9.5	3114 B	05/15/1998	DL
Zn	SPIKE	0.78	0.43	0.400	87.5	3111 B	05/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-031-98	Metro ID ~~Well~~ Number	357044
Category	QAQC	Location	
Description	001 COMP / SPLIT	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	04/27/1998
QAQC for LabID	209-003-98		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.001	3114 B 4.d	05/15/1998	DL
Cd	BLANK	0.01	3111 B	05/15/1998	JV
Cu	BLANK	0.01	3111 B	05/15/1998	JV
Ni	BLANK	<0.01	3111 B	05/15/1998	JV
Pb	BLANK	0.03	3111 B	05/15/1998	JV
Se	BLANK	<0.001	3114 B	05/15/1998	DL
Zn	BLANK	0.00	3111 B	05/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-032-98	Metro ID ~~Well~~ Number	357044
Category	QAQC	Location	
Description	ICV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	04/27/1998
QAQC for LabID	209-003-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.002	0.0020	100.0	3114 B 4.d	05/15/1998	DL
Cd	STANDARD	1.02	1.0000	102.0	3111 B	05/15/1998	JV
Cu	STANDARD	1.00	1.0000	100.0	3111 B	05/15/1998	JV
Ni	STANDARD	0.99	1.0000	99.0	3111 B	05/15/1998	JV
Pb	STANDARD	1.03	1.0000	103.0	3111 B	05/15/1998	JV
Se	STANDARD	0.002	0.0020	100.0	3114 B	05/15/1998	DL
Zn	STANDARD	1.00	1.0000	100.0	3111 B	05/15/1998	JV

Lab ID Number	200-033-98	Metro ID ~~Well~~ Number	357044
Category	QAQC	Location	
Description	CCV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	04/27/1998
QAQC for LabID	209-003-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0021	0.0020	105.0	3114 B 4.d	05/15/1998	DL
Cd	STANDARD	0.98	1.0000	98.0	3111 B	05/15/1998	JV
Cu	STANDARD	1.00	1.0000	100.0	3111 B	05/15/1998	JV
Ni	STANDARD	1.02	1.0000	102.0	3111 B	05/15/1998	JV
Pb	STANDARD	1.06	1.0000	106.0	3111 B	05/15/1998	JV
Se	STANDARD	0.0018	0.0020	90.0	3114 B	05/15/1998	DL
Zn	STANDARD	1.02	1.0000	102.0	3111 B	05/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-034-98	Metro ID ~~Well~~ Number	357044
Category	QAQC	Location	
Description	ICV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	04/27/1998
QAQC for LabID	209-003-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.005	0.0050	100.0	3114 B 4.d	05/15/1998	DL
Cd	STANDARD	5.02	5.0000	100.4	3111 B	05/15/1998	JV
Cu	STANDARD	5.04	5.0000	100.8	3111 B	05/15/1998	JV
Ni	STANDARD	4.96	5.0000	99.2	3111 B	05/15/1998	JV
Pb	STANDARD	5.01	5.0000	100.2	3111 B	05/15/1998	JV
Se	STANDARD	0.005	0.0050	100.0	3114 B	05/15/1998	DL
Zn	STANDARD	4.89	5.0000	97.8	3111 B	05/15/1998	JV

Lab ID Number	200-035-98	Metro ID ~~Well~~ Number	357044
Category	QAQC	Location	
Description	CCV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	04/27/1998
QAQC for LabID	209-003-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0051	0.0050	102.0	3114 B 4.d	05/15/1998	DL
As	STANDARD	0.0051	0.0000	***.*	3114 B 4.d	05/15/1998	JV
Cd	STANDARD	4.98	5.0000	99.6	3111 B	05/15/1998	JV
Cd	STANDARD	4.98	0.0000	***.*	3111 B	05/15/1998	JV
Cu	STANDARD	5.16	5.0000	103.2	3111 B	05/15/1998	JV
Ni	STANDARD	4.94	5.0000	98.8	3111 B	05/15/1998	JV
Pb	STANDARD	5.03	5.0000	100.6	3111 B	05/15/1998	JV
Se	STANDARD	0.0050	0.0050	100.0	3114 B	05/15/1998	DL
Zn	STANDARD	4.72	5.0000	94.4	3111 B	05/15/1998	JV

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-036-98	~~Well~~ Metro ID Number	357044
Category	QAQC	Location	
Description	ERA 9973	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	04/27/1998
QAQC for LabID	209-003-98		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	.054	0.0530	101.8	3114 B 4.d	05/15/1998	DL
Cd	STANDARD	.055	0.0510	107.8	3111 B	05/15/1998	JV
Cu	STANDARD	.330	0.3530	93.4	3111 B	05/15/1998	JV
Ni	STANDARD	.220	0.2180	100.9	3111 B	05/15/1998	JV
Pb	STANDARD	.300	0.3080	97.4	3111 B	05/15/1998	JV
Se	STANDARD	.212	0.2030	104.4	3114 B	05/15/1998	DL
Zn	STANDARD	.308	0.3290	93.6	3111 B	05/15/1998	JV

+LS.2

ASARCO

GLOBE PLANT

January 19, 1998

Mr. James T. Graber
Industrial Waste Specialist
Metro Wastewater Reclamation District
6450 York Street
Denver, Colorado 80229-7499

Dear Mr. Graber:

Enclosed for your review is the Asarco Globe Plant's Periodic Compliance Report (PCR) for the period of July - December, 1997. The PCR contains flow monitoring data, sampling results and waste disposal activities. The volume attributed to groundwater discharge under Section B: Flow Monitoring is zero since construction of the Terrace Drain has not yet begun and Asarco has ceased pumping groundwater from underneath the Old Laboratory.

As a courtesy to Metro Wastewater Reclamation District (Metro) and in addition to the verbal communication throughout the six month period covered by the PCR, the last few PCR submittals have included a summary of new or experimental processes at Asarco. Since this addition has been helpful in keeping Metro informed of the many process changes that occur, Asarco will continue to provide the information in this manner. During the July - December, 1997 period the Globe Plant continued to experiment with the "wet" processes of lead sulfide and bismuth/tellurium recycling. Globe is also preparing to experiment with another "wet" process of electrolytic copper in the near future.

Based on my inquiry of the people responsible for these areas or gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. If you should require additional information, please contact me at 296-5111.

Sincerely,

Nicole R. Mathis

Nicole R. Mathis
Environmental Engineer

enc.

cc: (w/ enc.)
R. Litle
R. Marcus
C. Dungey
(w/o enc.)
M. Staub

F:\USERS\NIKKI\POTW\PCRCVLTR.DOC
FILE NO: 4.6.5.2

ASARCO Incorporated, 495 East 51st Avenue, Denver, Colorado 80216-2098
Phone (303) 296-5900 FAX (303) 296-0508

PERIODIC COMPLIANCE REPORT

NOTE: Periodic compliance reports (PCRs) are due on or before the last day of the month following the end of the reporting period and must be submitted to the address(es) listed in the "Reporting Requirements for Permittee" section of your wastewater discharge permit. Not all of the sections listed below apply to all permittees. Some permittees may also need to submit information in addition to the items appearing on this checklist. Consult your wastewater discharge permit for your specific reporting requirements.

Reporting period from: July 31, 1997 to December 31, 1997

Date prepared: January 16, 1998

Prepared by: Nicole Mathis

A. FACILITY INFORMATION

Name: ASARCO Globe Plant

Location: 495 E. 51st Avenue
Denver, Colorado 80216

Phone: (303) 296-5900 Fax: (303)296-0508 Emergency: _____

B. FLOW MONITORING

(Flow monitoring information may be required for more than one Monitoring Point. Attach additional sheets as necessary. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point	001	[ ] No discharge	
Average daily flow volume (gallons per day)	3,345 gals	[ ] Measured	[X]Estimated
Maximum daily flow volume (gallons per day)	17,590 gals	[X] Measured	[ ]Estimated
Process water discharge (gallons per day)	1,145 gals	[X] Measured	[ ]Estimated
Groundwater discharge (gallons per day -- Terrace Drain)	0	[X] Measured	[ ]Estimated

Note: Daily flow volumes are used, in part, to determine self-monitoring and reporting frequencies. Reported values, especially estimates, must be as accurate as possible.

C. SAMPLING RESULTS

Attach copies of the analytical results of all samplings of the regulated wastestreams performed by the permittee during the reporting period. Attach copies of the analytical results of all split samplings of the regulated wastestream performed by the permittee or other agency during the reporting period. Results transmitted to the permittee by any other agency, including the Metro District, do not have to be submitted, but must be kept on file for at least 3 years and be available for inspection.

Analytical results submitted with this PCR must contain the following information:

1. Concentrations and measurements of all parameters for which there are self-monitoring requirements.

2. The date, time and location of all sampling activities. Include the start-stop dates and times for composite samples.

(Note: To avoid self-monitoring reporting errors or violations, the analytical results included in this PCR should also contain the information listed below for all samples. At a minimum, this information must be kept on file for at least 3 years and be available for inspection.)

3. The method of sampling (grab, time composite, flow composite, or continuous measurement) and name of the person collecting the sample.

4. The name of the laboratory (or person) that performed the analyses.

5. The date the analyses were performed.

6. The analytical techniques/methods used for the analyses.

D. WASTE DISPOSAL

(Attach copies of disposal records for wastes hauled off-site during the reporting period, or provide a summary of waste disposal activities in the space provided below, or indicate "no activity" if no wastes were disposed of during the reporting period.)

[ ] No waste disposal activity occurred during the reporting period

[x] Summary provided below

Waste Name	Volume	Ship Date	Disposal Company
"Burnables/Crushables"	2 c.y.	09/17/97	Laidlaw
PCB Mineral Oil	1 drum	10/15/97	Laidlaw

D. WASTE DISPOSAL (cont.)

Waste Name	Volume	Ship Date	Disposal Company
"Burnables/Crushables"	2 c.y.	12/12/97	Laidlaw
WWTP Sludge	18 c.y.	12/29/97	Laidlaw
HP Baghouse Dust	7 drums	12/29/97	Laidlaw

E. ACCURACY AND COMPLETENESS CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that, there has not been any change(s) in the Research and Development activities at this facility that have significantly changed the process wastewater discharged to the POTW, or that notification of changed discharges was submitted to the Metro District as required per Section F.4 of the permit. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Nicole R. Mathis

Signature of Authorized Representative

1/16/98

Date

Nicole R. Mathis

Name (please print or type)

Environmental Engineer

Title (please print or type)

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	8/20/97 11:40 to 8/21/97 11:40	
Total Flow for 24 hour period:	12620	gal
Maximum Flow:	1.0	gal/sec
Average Flow:	0.146	gal/sec
Number of Tanks Discharged:	1	
Number of Samples Collected:	25	
Total Volume Collected:	7.5	liters

Total Metals Composite Analysis:

Arsenic (As):	0.007	(ppm)
Cadmium (Cd):	0.12	(ppm)
Copper (Cu):	0.03	(ppm)
Lead (Pb):	0.10	(ppm)
Nickel (Ni):	<0.025	(ppm)
Selenium (Se):	0.033	(ppm)
Zinc (Zn):	0.73	(ppm)

GRAB SAMPLING DATA:

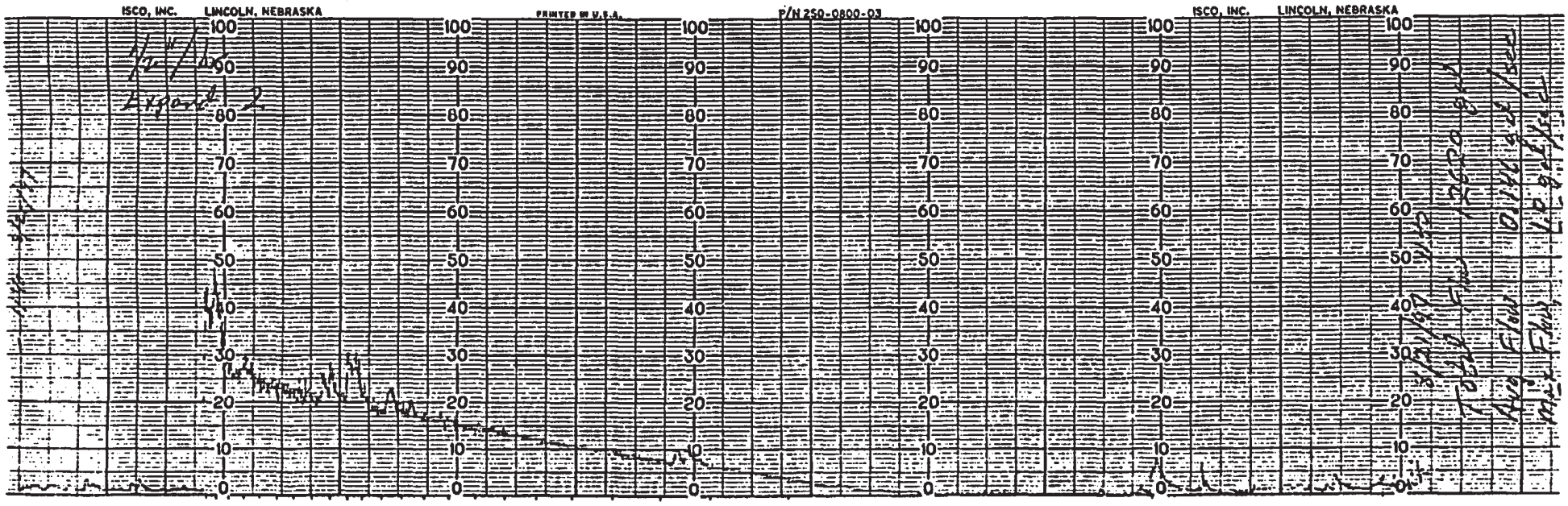
Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time:	8/21/97 11:42
Analysis Date/Time:	8/21/97 11:51

pH Grab Analysis:

pH	6.95	(units)

Sampled / Analyzed By: Wayne Rabb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ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.

PROJECT NAME: Quarterly Sewer Discharge Monitoring

SAMPLERS: (Signature) Wayne Rolle

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 Liter Unfilt/HNO3	1 250mL unfilt/Hydrogen					REMARKS
001	8/20-21/97	1140-	✓		001	1	✓						
001	8/21/97	1142		✓	001	1		✓					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Wayne Rolle	8/26/97 1505				
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AC 000010

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-005-97	Well Number	
Category	SEWER	Location	
Description	001 COMP	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	08/21/97

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.007	3114 B 4.d	08/25/97	WR
Cd	SAMPLE	0.12	3111 B	08/25/97	WR
Cu	SAMPLE	0.03	3111 B	08/25/97	WR
Ni	SAMPLE	<0.025	3111 B	08/25/97	WR
Pb	SAMPLE	0.10	3111 B	08/25/97	WR
Se	SAMPLE	0.033	3114 B	08/25/97	WR
Zn	SAMPLE	0.73	3111 B	08/25/97	WR

Lab ID Number	208-006-97	Well Number	
Category	SEWER	Location	
Description	PH GRAB	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	08/21/97

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	6.95	EPA150.1	08/21/97 11:51	WR

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-013-97	Well Number	
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	08/25/97
QAQC for LabID	208-005-97		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.002	3114 B 4.d	08/25/97	WR
Cd	BLANK	0.01	3111 B	08/25/97	WR
Cu	BLANK	0.01	3111 B	08/25/97	WR
Ni	BLANK	<0.025	3111 B	08/25/97	WR
Pb	BLANK	<0.05	3111 B	08/25/97	WR
Se	BLANK	<0.002	3114 B	08/25/97	WR
Zn	BLANK	0.01	3111 B	08/25/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number 200-014-97
Category QAQC
Description 001 COMP
QAQC Type DUPLICATE
QAQC for LabID 208-005-97

Well Number
Location
Parameter TOTAL
Date Sampled 08/25/97

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.008	0.007	13.3	3114 B 4.d	08/25/97	WR
Cd	DUPLICATE	0.12	0.12	0.0	3111 B	08/25/97	WR
Cu	DUPLICATE	0.03	0.03	0.0	3111 B	08/25/97	WR
Ni	DUPLICATE	<0.025	<0.025	0.0	3111 B	08/25/97	WR
Pb	DUPLICATE	0.11	0.10	9.5	3111 B	08/25/97	WR
Se	DUPLICATE	0.027	0.033	20.0	3114 B	08/25/97	WR
Zn	DUPLICATE	0.71	0.73	2.7	3111 B	08/25/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-015-97	Well Number	
Category	QAQC	Location	
Description	001 COMP	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	08/28/97
QAQC for LabID	208-005-97		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.028	0.007	0.020	105.0	3114 B 4.d	08/25/97	WR
Cd	SPIKE	0.33	0.12	0.200	105.0	3111 B	08/25/97	WR
Cu	SPIKE	0.22	0.03	0.200	95.0	3111 B	08/25/97	WR
Ni	SPIKE	0.20	<0.025	0.200	100.0	3111 B	08/25/97	WR
Pb	SPIKE	0.29	0.10	0.200	95.0	3111 B	08/25/97	WR
Se	SPIKE	0.056	0.033	0.020	115.0	3114 B	08/25/97	WR
Zn	SPIKE	0.91	0.73	0.200	90.0	3111 B	08/25/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-016-97	Well Number	
Category	QAQC	Location	
Description	REFERENCE STANDARD 9968	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	08/25/97
QAQC for LabID	208-005-97		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.039	0.0324	120.3	3114 B 4.d	08/25/97	WR
Cd	STANDARD	0.06	0.0595	100.8	3111 B	08/25/97	WR
Cu	STANDARD	0.24	0.2380	100.8	3111 B	08/25/97	WR
Ni	STANDARD	0.33	0.3240	101.8	3111 B	08/25/97	WR
Pb	STANDARD	0.30	0.2970	101.0	3111 B	08/25/97	WR
Se	STANDARD	0.088	0.0811	108.5	3114 B	08/25/97	WR
Zn	STANDARD	0.13	0.1190	109.2	3111 B	08/25/97	WR

Lab ID Number	200-017-97	Well Number	
Category	QAQC	Location	
Description	ICV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	08/25/97
QAQC for LabID	208-005-97		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.0100	100.0	3114 B 4.d	08/25/97	WR
Cd	STANDARD	1.00	1.0000	100.0	3111 B	08/25/97	WR
Cu	STANDARD	1.00	1.0000	100.0	3111 B	08/25/97	WR
Ni	STANDARD	1.00	1.0000	100.0	3111 B	08/25/97	WR
Pb	STANDARD	1.00	1.0000	100.0	3111 B	08/25/97	WR
Se	STANDARD	0.010	0.0100	100.0	3114 B	08/25/97	WR
Zn	STANDARD	1.00	1.0000	100.0	3111 B	08/25/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-018-97	Well Number	
Category	QAQC	Location	
Description	CCV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	08/25/97
QAQC for LabID	208-005-97		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0115	0.0100	115.0	3114 B 4.d	08/25/97	WR
Cd	STANDARD	1.01	1.0000	101.0	3111 B	08/25/97	WR
Cu	STANDARD	0.97	1.0000	97.0	3111 B	08/25/97	WR
Ni	STANDARD	1.05	1.0000	105.0	3111 B	08/25/97	WR
Pb	STANDARD	1.02	1.0000	102.0	3111 B	08/25/97	WR
Se	STANDARD	0.0082	0.0100	82.0	3114 B	08/25/97	WR
Zn	STANDARD	1.04	1.0000	104.0	3111 B	08/25/97	WR

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM -
SPLIT SAMPLES

SAMPLERS: J. Hy M. Ils

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE TYPE*	MONITORING POINT	SAMPLE PRESERVATIVE	METRO ANALYSES
340512	ASARCO #600	10-7-8-97	820 850	FC24	001	HNO3	Sb, Zn, Cd, Pb, Ni, Cr, Be, Cu, As, Se

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	10-9-97 0735	[illegible]	[illegible]	10/9/97 0740	Buddy D. Burn
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

WHITE - METRO DISTRICT'S COPY

YELLOW - INDUSTRY'S COPY

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-004-97	~~Well~~ Metro ID Number	340512
Category	SEWER	Location	
Description	001 COMP / SPLIT	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	10/09/1997

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.002	3114 B 4.d	10/16/1997	WR
Cd	SAMPLE	0.04	3111 B	10/16/1997	WR
Cu	SAMPLE	0.03	3111 B	10/16/1997	WR
Ni	SAMPLE	<0.025	3111 B	10/16/1997	WR
Pb	SAMPLE	0.34	3111 B	10/16/1997	WR
Se	SAMPLE	<0.002	3114 B	10/16/1997	WR
Zn	SAMPLE	0.19	3111 B	10/16/1997	WR

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	10/14/97 12:55 to 10/15/97 12:55	
Total Flow for 24 hour period:	7830	gal
Maximum Flow:	0.54	gal/sec
Average Flow:	0.091	gal/sec
Number of Tanks Discharged:	1	
Number of Samples Collected:	15	
Total Volume Collected:	3.8	liters

Total Metals Composite Analysis:

Arsenic (As):	0.009	(ppm)
Cadmium (Cd):	0.04	(ppm)
Copper (Cu):	0.01	(ppm)
Lead (Pb):	0.26	(ppm)
Nickel (Ni):	0.09	(ppm)
Selenium (Se):	0.008	(ppm)
Zinc (Zn):	0.19	(ppm)

Sampled By: Wayne Robb

Analyzed By: Wayne Robb

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 10/15/97 13:04

Analysis Date/Time: 10/15/97 13:10

pH Grab Analysis:

pH 8.0 (units)

Sampled By: Wayne Robb

Analyzed By: Wayne Robb

ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.

PROJECT NAME: Quarterly Sewer Monitoring

SAMPLERS: (Signature) Wayne Robb

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 Liter HP/HNO3	250 ml / HF/unpres					REMARKS
001	10/14-15/97	1255-1255	✓		001	1	✓						
001	10/15/97	1304		✓				✓					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

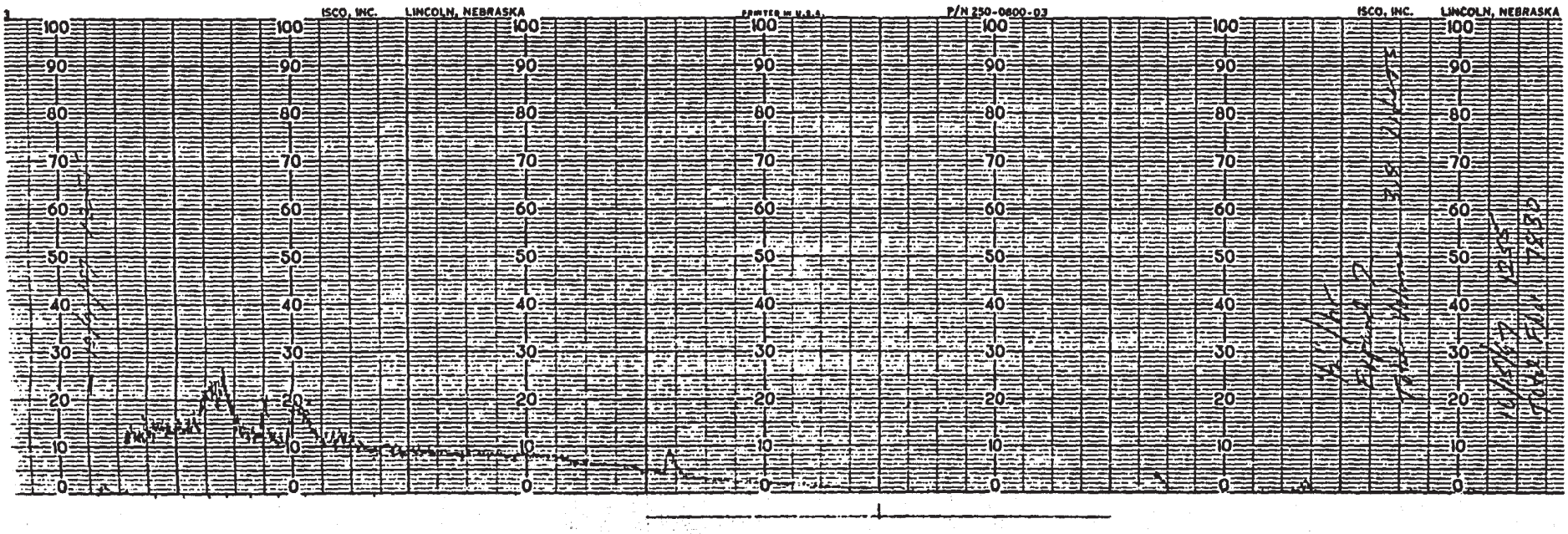
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)

Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples:
☐ Accepted ☐ Declined _____ Signature

AG-000918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ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-007-97	Well Number	
Category	SEWER	Location	
Description	001 COMP	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	10/15/1997

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.009	3114 B 4.d	10/16/1997	WR
Cd	SAMPLE	0.04	3111 B	10/16/1997	WR
Cu	SAMPLE	0.01	3111 B	10/16/1997	WR
Ni	SAMPLE	0.09	3111 B	10/16/1997	WR
Pb	SAMPLE	0.26	3111 B	10/16/1997	WR
Se	SAMPLE	0.008	3114 B	10/16/1997	WR
Zn	SAMPLE	0.19	3111 B	10/16/1997	WR

Lab ID Number	208-008-97	Well Number	
Category	SEWER	Location	
Description	001 PH GRAB	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	10/15/1997

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
Ph	SAMPLE	8.00	EPA150.1	10/15/1997	WR

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-019-97	~~Well~~ Metrol ID Number	340512
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	10/16/97
QAQC for LabID	208-007-97 209-004-97		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.002	3114 B 4.d	10/16/97	WR
Cd	BLANK	0.01	3111 B	10/16/97	WR
Cu	BLANK	<0.01	3111 B	10/16/97	WR
Ni	BLANK	<0.025	3111 B	10/16/97	WR
Pb	BLANK	<0.05	3111 B	10/16/97	WR
Se	BLANK	<0.002	3114 B	10/16/97	WR
Zn	BLANK	<0.01	3111 B	10/16/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number 200-020-97
Category QAQC
Description 001 DUPE
QAQC Type DUPLICATE
QAQC for LabID 208-007-97 ~~208-007-97~~ JHZM 1/23/98

Metro ID ~~Well~~ Number ~~340512~~ JHZM 1/23/98
Location
Parameter TOTAL
Date Sampled 10/16/97

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.009	0.009	0.0	3114 B 4.d	10/16/97	WR
Cd	DUPLICATE	0.04	0.04	0.0	3111 B	10/16/97	WR
Cu	DUPLICATE	0.01	0.01	0.0	3111 B	10/16/97	WR
Ni	DUPLICATE	0.08	0.09	11.7	3111 B	10/16/97	WR
Pb	DUPLICATE	0.23	0.26	12.2	3111 B	10/16/97	WR
Se	DUPLICATE	0.008	0.008	0.0	3114 B	10/16/97	WR
Zn	DUPLICATE	0.18	0.19	5.4	3111 B	10/16/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-021-97	Metro ID ~~Well~~ Number	340512
Category	QAQC	Location	
Description	001 SPLIT	Parameter	TOTAL
QAQC Type	SPIKE	Date Sampled	10/16/97
QAQC for LabID	208-007-97 209-004-97		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.023	0.009	0.010	140.0	3114 B 4.d	10/16/97	WR
Cd	SPIKE	0.24	0.04	0.200	100.0	3111 B	10/16/97	WR
Cu	SPIKE	0.21	0.01	0.200	100.0	3111 B	10/16/97	WR
Ni	SPIKE	0.28	0.09	0.200	95.0	3111 B	10/16/97	WR
Pb	SPIKE	0.44	0.26	0.200	90.0	3111 B	10/16/97	WR
Se	SPIKE	0.017	0.008	0.010	90.0	3114 B	10/16/97	WR
Zn	SPIKE	0.37	0.19	0.200	90.0	3111 B	10/16/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-022-97
Category QAQC
Description ERA 9968
QAQC Type STANDARD
QAQC for LabID 208-007-97
209-009-97

Metro ID
~~Well~~ Number 340512
Location
Parameter TOTAL
Date Sampled 10/16/97

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.029	0.0324	89.5	3114 B 4.d	10/16/97	WR
Cd	STANDARD	0.06	0.0595	100.8	3111 B	10/16/97	WR
Cu	STANDARD	0.23	0.2380	96.6	3111 B	10/16/97	WR
Ni	STANDARD	0.32	0.3240	98.7	3111 B	10/16/97	WR
Pb	STANDARD	0.31	0.2970	104.3	3111 B	10/16/97	WR
Se	STANDARD	0.076	0.0811	93.7	3114 B	10/16/97	WR
Zn	STANDARD	0.13	0.1190	109.2	3111 B	10/16/97	WR

Lab ID Number 200-023-97
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 208-007-97
209-009-97

Metro ID
~~Well~~ Number 340512
Location
Parameter TOTAL
Date Sampled 10/16/97

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.0100	100.0	3114 B 4.d	10/16/97	WR
Cd	STANDARD	1.00	1.0000	100.0	3111 B	10/16/97	WR
Cu	STANDARD	0.99	1.0000	99.0	3111 B	10/16/97	WR
Ni	STANDARD	1.02	1.0000	102.0	3111 B	10/16/97	WR
Pb	STANDARD	1.02	1.0000	102.0	3111 B	10/16/97	WR
Se	STANDARD	0.010	0.0100	100.0	3114 B	10/16/97	WR
Zn	STANDARD	1.01	1.0000	101.0	3111 B	10/16/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-024-97	Metro ID ~~Well~~ Number	340512
Category	QAQC	Location	
Description	CCV	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	10/16/97
QAQC for LabID	208-007-97 209-004-97		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.0100	100.0	3114 B 4.d	10/16/97	WR
Cd	STANDARD	0.99	1.0000	99.0	3111 B	10/16/97	WR
Cu	STANDARD	0.98	1.0000	98.0	3111 B	10/16/97	WR
Ni	STANDARD	0.97	1.0000	97.0	3111 B	10/16/97	WR
Pb	STANDARD	1.04	1.0000	104.0	3111 B	10/16/97	WR
Se	STANDARD	0.010	0.0100	100.0	3114 B	10/16/97	WR
Zn	STANDARD	0.97	1.0000	97.0	3111 B	10/16/97	WR

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM -
SPLIT SAMPLES

SAMPLERS: C.T. Hill

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE TYPE*	MONITORING POINT	SAMPLE PRESERVATIVE	METRO ANALYSES
344 112	ASARCO #600	11/20-21/97	0730 ↓ 0730	FC 24	001	HNO_3	Cd, Cr, Cu, Pb, Ni, Ag Zn, As, Se

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	11-26-97 1006	Kent Black	Kent Black	11-26-97 10:26 AM	[illegible]
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
		[illegible]			

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

WHITE - METRO DISTRICT'S COPY YELLOW - INDUSTRY'S COPY

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-005-97	Metro ID Well Number	344112
Category	SEWER	Location	
Description	001 COMP/SPLIT	Parameter	TOTAL
QAQC Type	SAMPLE	Date Sampled	11/20/1997

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
* ~~As~~	~~SAMPLE~~	~~0.005~~	~~3114 B 4.d~~	~~12/10/1997~~	~~DL~~
~~As~~	~~SAMPLE~~	~~0.005~~	~~3114 B 4.d~~	~~12/10/1997~~	~~DL~~
~~As~~	~~SAMPLE~~	~~0.005~~	~~3114 B 4.d~~	~~12/10/1997~~	~~DL~~
~~As~~	~~SAMPLE~~	~~0.005~~	~~3114 B 4.d~~	~~12/10/1997~~	~~DL~~
As	SAMPLE	0.005	3114 B 4.d	12/10/1997	DL
~~Cd~~	~~SAMPLE~~	~~0.03~~	~~3111 B~~	~~12/10/1997~~	~~DL~~
Cd	SAMPLE	0.03	3111 B	12/10/1997	DL
~~Cu~~	~~SAMPLE~~	~~0.02~~	~~3111 B~~	~~12/10/1997~~	~~DL~~
Cu	SAMPLE	0.02	3111 B	12/10/1997	DL
~~Ni~~	~~SAMPLE~~	~~0.025~~	~~3111 B~~	~~12/10/1997~~	~~DL~~
Ni	SAMPLE	<0.025	3111 B	12/10/1997	DL
~~Pb~~	~~SAMPLE~~	~~<0.05~~	~~3111 B~~	~~12/10/1997~~	~~DL~~
Pb	SAMPLE	<0.05	3111 B	12/10/1997	DL
~~Se~~	~~SAMPLE~~	~~0.002~~	~~3114 B~~	~~12/10/1997~~	~~DL~~
Se	SAMPLE	0.002	3114 B	12/10/1997	DL
~~Zn~~	~~SAMPLE~~	~~0.26~~	~~3111 B~~	~~12/10/1997~~	~~DL~~
Zn	SAMPLE	0.26	3111 B	12/10/1997	DL

* Something wrong with the database as it prints more than one copy of each analyte.

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-025-97	Method ID ~~Well~~ Number	349112
Category	QAQC	Location	
Description	METHOD BLANK	Parameter	TOTAL
QAQC Type	BLANK	Date Sampled	~~12/10~~/1997
QAQC for LabID	209-005-97		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.002	3114 B 4.d	12/10/1997	DL
Cd	BLANK	<0.01	3111 B	12/10/1997	DL
Cu	BLANK	<0.01	3111 B	12/10/1997	DL
Ni	BLANK	<0.025	3111 B	12/10/1997	DL
Pb	BLANK	0.05	3111 B	12/10/1997	DL
Se	BLANK	0.002	3114 B +	12/10/1997	DL
Zn	BLANK	0.01	3111 B	12/10/1997	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-026-97
Category QAQC
Description ICV
QAQC Type STANDARD
QAQC for LabID 209-005-97

Metro ID ~~Well~~ Number 344112
Location
Parameter TOTAL
Date Sampled ~~12/10~~/1997

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.005	0.0050	100.0	3114 B 4.d	12/10/1997	DL
Cd	STANDARD	1.02	1.0000	102.0	3111 B	12/10/1997	DL
Cu	STANDARD	1.00	1.0000	100.0	3111 B	12/10/1997	DL
Ni	STANDARD	1.00	1.0000	100.0	3111 B	12/10/1997	DL
Pb	STANDARD	0.98	1.0000	98.0	3111 B	12/10/1997	DL
Se	STANDARD	0.005	0.0050	100.0	3114 B	12/10/1997	DL
Zn	STANDARD	1.00	1.0000	100.0	3111 B	12/10/1997	DL

Lab ID Number 200-027-97
Category QAQC
Description CCV
QAQC Type STANDARD
QAQC for LabID 209-005-97

Metro ID ~~Well~~ Number 344112
Location
Parameter TOTAL
Date Sampled ~~12/10~~/1997

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.005	0.0050	100.0	3114 B 4.d	12/10/1997	DL
Cd	STANDARD	1.00	1.0000	100.0	3111 B	12/10/1997	DL
Cu	STANDARD	0.99	1.0000	99.0	3111 B	12/10/1997	DL
Ni	STANDARD	0.98	1.0000	98.0	3111 B	12/10/1997	DL
Pb	STANDARD	0.96	1.0000	96.0	3111 B	12/10/1997	DL
Se	STANDARD	0.005	0.0050	100.0	3114 B	12/10/1997	DL
Zn	STANDARD	1.00	1.0000	100.0	3111 B	12/10/1997	DL

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-028-97	~~Well~~ Metrol ID Number	344112
Category	QAQC	Location	
Description	ERA 9968	Parameter	TOTAL
QAQC Type	STANDARD	Date Sampled	~~12/10/~~1997
QAQC for LabID	209-005-97		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0345	0.0324	106.4	3114 B 4.d	12/10/1997	DL
Cd	STANDARD	0.0590	0.0595	99.1	3111 B	12/10/1997	DL
Cu	STANDARD	0.220	0.2380	92.4	3111 B	12/10/1997	DL
Ni	STANDARD	0.315	0.3240	97.2	3111 B	12/10/1997	DL
Pb	STANDARD	0.280	0.2970	94.2	3111 B	12/10/1997	DL
Se	STANDARD	0.0807	0.0811	99.5	3114 B	12/10/1997	DL
Zn	STANDARD	0.111	0.1190	93.2	3111 B	12/10/1997	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number 200-031-97
Category QAQC
Description 001 SPLIT
QAQC Type SPIKE
QAQC for LabID 209-005-97

Metro ID ~~Well~~ Number 349112
Location
Parameter TOTAL
Date Sampled ~~12/10~~/1997

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.007	0.005	0.002	100.0	3114 B 4.d	12/10/1997	DL
As	SPIKE	0.007	0.005	0.002	100.0	3114 B 4.d	12/10/1997	DL
Cd	SPIKE	0.45	0.03	0.400	105.0	3111 B	12/10/1997	DL
Cd	SPIKE	0.45	0.03	0.400	105.0	3111 B	12/10/1997	DL
Cu	SPIKE	0.37	0.02	0.400	87.5	3111 B	12/10/1997	DL
Cu	SPIKE	0.37	0.02	0.400	87.5	3111 B	12/10/1997	DL
Ni	SPIKE	0.38	<0.025	0.400	95.0	3111 B	12/10/1997	DL
Ni	SPIKE	0.38	<0.025	0.400	95.0	3111 B	12/10/1997	DL
Pb	SPIKE	0.40	<0.05	0.400	100.0	3111 B	12/10/1997	DL
Pb	SPIKE	0.40	<0.05	0.400	100.0	3111 B	12/10/1997	DL
Se	SPIKE	0.005	0.002	0.002	150.0	3114 B	12/10/1997	DL
Se	SPIKE	0.005	0.002	0.002	150.0	3114 B	12/10/1997	DL
Zn	SPIKE	0.62	0.26	0.400	90.0	3111 B	12/10/1997	DL
Zn	SPIKE	0.62	0.26	0.400	90.0	3111 B	12/10/1997	DL

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number 200-034-97
Category QAQC
Description 001 DUPE
QAQC Type DUPLICATE
QAQC for LabID 209-005-97

Metro ID ~~Well~~ Number 344112
Location
Parameter TOTAL
Date Sampled ~~12/10~~/1997

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.005	0.005	0.0	3114 B 4.d	12/10/1997	DL
Cd	DUPLICATE	0.03	0.03	0.0	3111 B	12/10/1997	DL
Cu	DUPLICATE	0.01	0.02	66.6	3111 B	12/10/1997	DL
Ni	DUPLICATE	0.025	<0.025	0.0	3111 B	12/10/1997	DL
Pb	DUPLICATE	0.05	<0.05	0.0	3111 B	12/10/1997	DL
Se	DUPLICATE	0.002	0.002	0.0	3114 B	12/10/1997	DL
Zn	DUPLICATE	0.25	0.26	3.9	3111 B	12/10/1997	DL

CORE LABORATORIES

ANALYTICAL REPORT

JOB NUMBER: 973474

Prepared For:

Asarco Globe
495 East 51st Avenue
Denver, CO 80216-2098

Attention: Nikki Mathis

Date: 01/09/98

AMENDED

Don Morris
Signature

Name: Don L. Morris

Title: Project Coordinator

January 9, 1998
Date

Core Laboratories, Inc.
10703 East Bethany Drive
Aurora, CO 80014

Phone: (303) 751-1780
Fax: (303) 751-1784

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CORELAB

CORE LABORATORIES, INC.

No. 121293

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: ASARCO	PROJECT NAME/NUMBER: Annual PCTW Organics Analysis
SEND REPORT TO: Nicole Mathis	BILLING INFORMATION
ADDRESS: ASARCO - Globe Plant	BILL TO: same
495 E. 51st Ave.	ADDRESS:
Denver, CO 80216	
PHONE: (303) 296-5111	PHONE:
FAX: (303) 296-0598	FAX: PO NO.:

LAB JOB NO. 973474

SAMPLE NO. ID	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER OF CONTAINERS	Volatile Organics, EPA 624;	(methylene chloride, tetrachloroethane, trichloroethane)	Semivolatile Organics, EPA 625;	(Acenaphthene, Fluoranthene, Pyrene, Phenanthrene, Pyrene)	Fluorene, Phenanthrene, Pyrene, Penta chlorophenol)			REMARKS / PRECAUTIONS
001	Asarco Wastewater grab sample	12/11/97	13:25	water	VOA	HCl	3	✓							Tag#s 001-1, 001-2, 001-3
001	Asarco Wastewater grab sample	12/11/97	13:27	water	Amber glass	None	2				✓				Tag#s 001-4, 001-5

SAMPLER: Nicole Mathis

SHIPMENT METHOD: Courier from Core

AIRBILL NO.:

REQUIRED TURNAROUND:* [ ] SAME DAY [ ] 24 HOURS [ ] 48 HOURS [ ] 72 HOURS [ ] 5 DAYS [ ] 10 DAYS [X] ROUTINE OTHER

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE: Nicole R. Mathis	12/11/97	SIGNATURE: [signature]	12/11/97	SIGNATURE: [signature]	12/11/97
PRINTED NAME/COMPANY: Nicole Mathis, ASARCO	TIME 1:50 pm	PRINTED NAME/COMPANY:	TIME 1600	PRINTED NAME/COMPANY: WATSON core	TIME 1700
1. RECEIVED BY:	**DATE**	**2. RECEIVED BY:**	**DATE**	**3. RECEIVED BY:**	**DATE**
SIGNATURE: Elvinette Arthur	12/11/97	SIGNATURE: [signature]	12/11/97	SIGNATURE: [signature]	12/11/97
PRINTED NAME/COMPANY: ELVINETTE ARTHUR, ASARCO	TIME 1:50 p.m.	PRINTED NAME/COMPANY: WATSON core	TIME 1600	PRINTED NAME/COMPANY: Gallion	TIME 1700

RUSH TURNAROUND MAY REQUIRE SURCHARGE

☐ Anaheim, CA
1250 E. Gene Autry Way
Anaheim, CA 92805
(714) 937-1094 Fax (714) 937-1170

☒ Aurora, CO
10703 E. Bethany Drive
Aurora, CO 80014
(303) 751-1780 Fax (303) 751-1784

☐ Carson, CA
21730 S. Wilmington Ave. - Suite 201
Carson, CA 90810-1640
(310) 513-2031 Fax (310) 513-2035

☐ Casper, WY
420 W. First Street
Casper, WY 82601
(307) 235-5741 Fax (307) 266-1676

☐ Corpus Christi, TX
1733 N. Padre Island Drive
Corpus Christi, TX 78408
(512) 289-2673 Fax (512) 289-2471

☐ Edison, NJ
284 Raritan Center Parkway
Edison, NJ 08837
(732) 225-6700 Fax (732) 225-6777

☐ Houston, TX (Env)
6310 Rothway Drive

☐ Houston, TX (Pet)
6210 Mosley Road

☐ Indianapolis, IN
7726 Moller Road

☐ Lake Charles, LA
3645 Bogle Parkway
Sulphur, LA 70663

☐ Valparaiso, IN
2400 Cumberland Drive
Valparaiso, IN 46383

CORE LABORATORIES

SAMPLE DELIVERY GROUP NARRATIVE

January 8, 1997

Customer: Asarco Globe
Project: ANNUAL POTW ORGANICS
Core Laboratory Project Number: 973474

Method 625 GC/MS Semivolatiles Analysis:

Sample 973474-2 had the surrogate phenol-d6 below acceptance criteria on 12/22/97. This sample was reanalyzed on 12/23/97 and had reproducible surrogate recovery.

Kathy Klausmeier
Laboratory Supervisor

Linda L. Benkers
QA/QC Coordinator

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CORE LABORATORIES

SAMPLE INFORMATION
Date: 01/09/98

Job Number.: 973474
Customer ..: Asarco Globe
Attn.....: Nikki Mathis

Project Number.....: 96000238
Customer Project ID....: ANNUAL POTW ORGANICS
Project Description....: Asarco Wastewater

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
973474-1	ASARCO WASTEWATER	Water	12/11/97	13:25	12/11/97	17:00
973474-2	ASARCO WASTEWATER	Water	12/11/97	13:27	12/11/97	17:00

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LABORATORY TEST RESULTS

Job Number: 973474

Date: 01/09/98

CUSTOMER: Asarco Globe | PROJECT: ANNUAL POTW ORGANICS | ATTN: Nikki Mathis

Customer Sample ID: ASARCO WASTEWATER
Date Sampled.....: 12/11/97
Time Sampled.....: 13:25
Sample Matrix.....: Water

Laboratory Sample ID: 973474-1
Date Received.....: 12/11/97
Time Received.....: 17:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 624	Volatile Organics					
	Methylene chloride	ND	5	ug/L	12/16/97	klk
	Tetrachloroethene	ND	5	ug/L	12/16/97	klk
	Trichloroethene	ND	5	ug/L	12/16/97	klk

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LABORATORY TEST RESULTS

Job Number: 973474

Date: 01/09/98

CUSTOMER: Asarco Globe PROJECT: ANNUAL POTW ORGANICS ATTN: Nikki Mathis

Customer Sample ID: ASARCO WASTEWATER
Date Sampled.....: 12/11/97
Time Sampled.....: 13:27
Sample Matrix.....: Water

Laboratory Sample ID: 973474-2
Date Received.....: 12/11/97
Time Received.....: 17:00

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 625	Semivolatile Organics					
	Acenaphthylene	ND	10	ug/L	12/22/97	dmj
	Fluoranthene	ND	10	ug/L	12/22/97	dmj
	Fluorene	ND	10	ug/L	12/22/97	dmj
	Phenanthrene	ND	10	ug/L	12/22/97	dmj
	Pyrene	ND	10	ug/L	12/22/97	dmj
	Pentachlorophenol	ND	50	ug/L	12/22/97	dmj
EPA 625	Extraction (Sep. Funnel) SVOC					
	Separatory Funnel Liq/Liq Extraction	Complete			12/17/97	jcm

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QUALITY CONTROL RESULTS

Job Number: 973474 Date: 01/09/98

CUSTOMER: Asarco Globe PROJECT: ANNUAL POTW ORGANICS ATTN: Nikki Mathis

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: EPA 624 Batch.....: 29368 Analyst ...: klk
Method Description.: Volatile Organics Units.....: ug/L

MB	Method Blank	CLE09			12/15/97	2114

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Methylene chloride	ND						5
Tetrachloroethene	ND						5
Trichloroethene	ND						5

LCS	Laboratory Control Sample	V971215G			12/16/97	0126

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Methylene chloride	20.42		20.00		102.1	%	60-140
Tetrachloroethene	19.75		20.00		98.8	%	74-126
Trichloroethene	22.13		20.00		110.7	%	71-120

Test Method.....: EPA 625 Batch.....: 29610 Analyst ...: dmj
Method Description.: Semivolatile Organics Units.....: ug/L

MB	Method Blank	MB4071 A			12/22/97	0515

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Acenaphthylene	ND						10
Fluoranthene	ND						10
Fluorene	ND						10
Phenanthrene	ND						10
Pyrene	ND						10
Pentachlorophenol	ND						50

LCS	Laboratory Control Sample	B971126A			12/22/97	0717

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Pyrene	93.84		100.1	ND	93.7	%	26-127
Pentachlorophenol	89.69		99.96	ND	89.7	%	9-103

LCD	Laboratory Control Sample Duplicate	B971126A			12/22/97	0919

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits
Pyrene	96.59	93.84	100.1	ND	96.5	%	26-127
					2.9	R	31
Pentachlorophenol	92.40	89.69	99.96	ND	92.4	%	9-103
					3.0	R	50

* %-% REC R-RPD A-ABS Diff. D-% Diff.

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SURROGATE RECOVERIES REPORT

Job Number.: 973474

Report Date: 01/09/98

CUSTOMER: Asarco Globe | PROJECT: ANNUAL POTW ORGANICS | ATTN: Nikki Mathis

Method.....: EPA 624
Method Code.....: 624C

Batch.....: 29368
Analyst.....: klk

Surrogate	Units
4-Bromofluorobenzene	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB		48.59	50.172	96.8	86-115		12/15/97	2114
		LCS		48.37	50.172	96.4	86-115		12/16/97	0126
973474-1				49.00	50.172	97.7	86-115		12/16/97	0613

Surrogate	Units
Dibromofluoromethane	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB		45.92	50.190	91.5	86-118		12/15/97	2114
		LCS		47.95	50.190	95.5	86-118		12/16/97	0126
973474-1				47.03	50.190	93.7	86-118		12/16/97	0613

Surrogate	Units
Toluene-d8	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB		49.37	50.175	98.4	88-110		12/15/97	2114
		LCS		49.97	50.175	99.6	88-110		12/16/97	0126
973474-1				49.99	50.175	99.6	88-110		12/16/97	0613

Method.....: EPA 625
Method Code.....: 625

Batch.....: 29610
Analyst.....: dmj

Surrogate	Units
2,4,6-Tribromophenol	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB	1.00	95.05	100.01	95	10-123		12/22/97	0515
		LCS	1.00	90.32	100.01	90	10-123		12/22/97	0717
		LCD	1.00	90.25	100.01	90	10-123		12/22/97	0919
973474-2			1.00	79.59	100.01	80	10-123		12/22/97	1122

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SURROGATE RECOVERIES REPORT

Job Number.: 973474

Report Date: 01/09/98

CUSTOMER: Asarco Globe | PROJECT: ANNUAL POTW ORGANICS | ATTN: Nikki Mathis

Surrogate	Units
2-Fluorobiphenyl	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB	1.00	47.46	49.98	95	43-116		12/22/97	0515
		LCS	1.00	45.47	49.98	91	43-116		12/22/97	0717
		LCD	1.00	44.14	49.98	88	43-116		12/22/97	0919
973474-2			1.00	45.41	49.98	91	43-116		12/22/97	1122

Surrogate	Units
2-Fluorophenol	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB	1.00	51.80	100.00	52	21-100		12/22/97	0515
		LCS	1.00	53.96	100.00	54	21-100		12/22/97	0717
		LCD	1.00	40.61	100.00	41	21-100		12/22/97	0919
973474-2			1.00	26.00	100.00	26	21-100		12/22/97	1122

Surrogate	Units
Nitrobenzene-d5	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB	1.00	40.23	50.01	80	35-114		12/22/97	0515
		LCS	1.00	40.72	50.01	81	35-114		12/22/97	0717
		LCD	1.00	39.02	50.01	78	35-114		12/22/97	0919
973474-2			1.00	38.89	50.01	78	35-114		12/22/97	1122

Surrogate	Units
Phenol-d6	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB	1.00	38.00	100.03	38	10-94		12/22/97	0515
		LCS	1.00	37.81	100.03	38	10-94		12/22/97	0717
		LCD	1.00	27.62	100.03	28	10-94		12/22/97	0919
973474-2			1.00	1.50	100.03	1	10-94	X	12/22/97	1122
973474-2			1.00	1.47	100.03	1	10-94	X	12/23/97	0225

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SURROGATE RECOVERIES REPORT

Job Number.: 973474

Report Date: 01/09/98

CUSTOMER: Asarco Globe | PROJECT: ANNUAL POTW ORGANICS | ATTN: Nikki Mathis

Surrogate	Units
Terphenyl-d14	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
		MB	1.00	52.80	50.01	106	33-141		12/22/97	0515
		LCS	1.00	51.22	50.01	102	33-141		12/22/97	0717
		LCD	1.00	51.45	50.01	103	33-141		12/22/97	0919
973474-2			1.00	46.70	50.01	93	33-141		12/22/97	1122

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CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 01/09/98

	WATER LIMITS Recovery	RPD	SOIL LIMITS Recovery	RPD
VOLATILE ORGANICS				
Methods 602/8020 Surrogate				
Bromofluorobenzene	89-110%		78-123%	
Methods 602/8020 Spike/Spike Duplicate				
Benzene	39-150%	25	75-125%	25
Ethylbenzene	32-160%	25	60-140%	25
Toluene	46-148%	25	70-130%	25
Xylenes	75-125%	25	61-139%	25
Method 8015 Mod. Spike/Spike Duplicate				
TVPH	75-125%	20	48-152%	20
TEPH	54-135%	20	54-135%	20
Methods 624/8240/8260 Surrogates				
Dibromofluoromethane	86-118%		80-120%	
Toluene-(d8)	88-110%		81-117%	
4-Bromofluorobenzene	86-115%		74-121%	
Method 524.2 Surrogates				
4-Bromofluorobenzene	80-120%			
1,4-Dichlorobenzene-d4	80-120%			
Methods 624/8240 Spike/Spike Duplicate				
1,1-Dichloroethene	61-145%	14	59-172%	22
Trichloroethene	71-120%	14	62-137%	24
Benzene	76-127%	11	66-142%	21
Toluene	76-125%	13	59-139%	21
Chlorobenzene	75-130%	13	60-133%	21
Method 8260 Spike/Spike Duplicate				
1,1-Dichloroethene	70-130%	14	70-130%	22
Trichloroethene	71-120%	14	70-130%	24
Benzene	76-127%	11	70-130%	21
Toluene	76-125%	13	70-130%	21
Chlorobenzene	75-130%	13	70-130%	21
Method 524.2 Spike/Spike Duplicate				
1,1-Dichloroethene	80-120%	14		
Trichloroethene	80-120%	14		
Benzene	80-120%	11		
Toluene	80-120%	13		
Chlorobenzene	80-120%	13		
PESTICIDES AND PCB'S				
Methods 608/8080 Surrogates				
Tetrachloro-m-xylene	60-150%		60-150%	
4,4'-Dichlorobiphenyl	60-150%		60-150%	
Decachlorobiphenyl	60-150%		60-150%	
Method 8140 Surrogates				
Tributylphosphate	36-152%		36-152%	
Triphenylphosphate	36-152%		36-152%	

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CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 01/09/98

	WATER LIMITS Recovery	RPD	SOIL LIMITS Recovery	RPD
SEMIVOLATILE ORGANICS				
Methods 625/8270 Surrogates				
Nitrobenzene-d5	35-114%		23-120%	
2-Fluorobiphenyl	43-116%		30-115%	
4-Terphenyl-d14	33-141%		18-137%	
Phenol-d6	10-94%		24-113%	
2-Fluorophenol	21-100%		25-121%	
2,4,6-Tribromophenol	10-123%		19-122%	
Methods 625/8270 Spike/Spike Duplicate				
Phenol	12-110%	42	26-90%	35
2-Chlorophenol	27-123%	40	25-102%	50
1,4-Dichlorobenzene	36-97%	28	28-104%	27
N-Nitroso-di-n-propylamine	41-116%	38	41-126%	38
1,2,4-Trichlorobenzene	39-98%	28	38-107%	23
4-Chloro-3-methylphenol	23-97%	42	26-103%	33
Acenaphthene	46-118%	31	31-137%	19
4-Nitrophenol	10-80%	50	11-114%	50
2,4-Dintrotoluene	24-96%	38	28-89%	47
Pentachlorophenol	9-103%	50	17-109%	47
Pyrene	26-127%	31	35-142%	36
HERBICIDES				
Method 8150 Surrogate				
2,4-Dichlorophenylacetic acid	50-150%		50-150%	
Method 8150 Spike/Spike Duplicate				
2,4-D	41-126%	25	41-126%	25
2,4,5-T	45-119%	25	45-119%	25

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CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 01/09/98

(1) EPA 600/4-79-020 Methods for Chemical Analysis of Water and Wastes, March 1983

(2) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986

(3) EPA SW846 Test Methods for Evaluating Solid Waste, Final Update I, July 1992

(4) EPA SW846 Test Methods for Evaluating Solid Waste, Final Update II, September 1994

(5) EPA SW846 Test Methods for Evaluating Solid Waste, Final Update IIA, August 1993

(6) EPA SW846 Test Methods for Evaluating Solid Waste, Final Update IIB, January 1995

(7) Standard Methods for the Examination of Water and Wastewater, 16th Edition, 1985

(8) Standard Methods for the Examination of Water and Wastewater, 17th Edition, 1989

(9) Standard Methods for the Examination of Water and Wastewater, 18th Edition, 1992

(10) EPA 600/4-80-032 Prescribed Procedures For Measurement Of Radioactivity in Drinking Water, August 1980

(11) EPA 600/8-78-017 Microbiological Methods For Monitoring The Environment, December 1978

(12) Federal Register, July 1, 1990 (40 CFR Part 136)

(13) EPA 600/4-88-03 Methods For The Determination of Organics Compounds in Drinking Water, December 1988

(14) U.S.G.S. Methods For Determination of Inorganic Substances In Water And Fluvial Sediments, Book 5, Chapter A1, 1985

(15) Federal Register, June 7, 1991 (40 CFR Parts 141 & 142)

(16) ASTM Section 11 Water and Environmental Technology, Volume 11.01 Water (1), 1991

(17) Methods of Soil Analysis, American Society of Agronomy, Agronomy No. 9, 1965

(18) ASTM Section 5, Petroleum Products, Lubricants, and Fossil Fuels, Volume 05.05, Gaseous Fuels, Coal, and Coke

(19) EPA 600/2-78-054 Field and Laboratory Methods Applicable To Overburdens and Mine Soils, March 1978

(20) ASTM Part 19, Soils and Rocks; Building Stones, 1981

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CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 01/09/98

COMMENTS

a) ND = Not detected. NC = Not calculable due to value(s) lower than the detection limit.

b) Data in the QA report may differ from final results due to digestion and/or dilution of samples into analytical ranges. Quality control results are reported "as analyzed" within the instruments established calibration range.

c) The "Time Analyzed" in the QA report refers to the start time of the analytical batch which may not reflect the actual time of each analysis. The "Date Analyzed" is the actual date of analysis.

d) Results for soil and sludge samples are reported on a wet weight basis (i.e. not corrected for percent moisture) unless otherwise indicated.

BLANK QC SAMPLE IDENTIFICATION

MB	Method Blank
EB	Extraction Blank
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank

SPIKE QC SAMPLE IDENTIFICATION

MS	Method (Matrix) Spike
MSD	Method (Matrix) Spike Duplicate
PDS	Post-Digestion Spike
PSD	Post-Digestion Spike Duplicate
SB	Spike Blank
SBD	Spike Blank Duplicate

REFERENCE STANDARD QC SAMPLE IDENTIFICATION

LCS	Laboratory Control Standard
RS	Reference Standard
ICV	Initial Calibration Verification Standard
CCV	Continuing Calibration Verification Standard
ISA/ISB	ICP Interference Check Sample
ICL	Initial Calibration/Laboratory Control Sample
DSC	Distilled Standard Check
CRI	CRDL Low-Level ICP Standard

DUPLICATE QC SAMPLE IDENTIFICATION

MD	Method (Matrix) Duplicate
ED	Extraction Duplicate
SD	Serial Dilution

Analyses performed by a subcontract laboratory are indicated on the analytical and/or quality control reports under "Technician" using the following codes:

SUBCONTRACT LABORATORY	CODE
Core Laboratories - Anaheim, CA	* AN
Core Laboratories - Casper, WY	* CA
Core Laboratories - Corpus Christi, TX	* CC
Core Laboratories - Edison, NJ	* ED

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CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 01/09/98

Core Laboratories - Gulf States - Houston, TX	* HE
Core Laboratories - Houston, TX	* HP
Core Laboratories - Indianapolis, IN	* IN
Core Laboratories - Lake Charles, LA	* LC
Core Laboratories - Long Beach, CA	* LB
Core Laboratories - Tampa, FL	* TP
Core Laboratories - Valparaiso, IN	* VP
Other Subcontract Laboratories	* XX

EXPLANATION OF DATA QUALIFIERS - ORGANIC PARAMETERS

U - This qualifier indicates that the analyte was analyzed for but not detected.

J - This qualifier indicates that the value is an estimate. It is used when a compound is determined to be present based on the mass spectral data but at a concentration less than the practical quantitation limit of the method.

E - This qualifier indicates that a sample result is an estimate because the concentration exceeded the upper calibration range of the instrument.

EXPLANATION OF DATA QUALIFIERS - METALS & INORGANIC PARAMETERS

U - This qualifier indicates that the analyte was analyzed for but not detected.

B - This qualifier indicates that the analyte was detected at a level below the reporting limit but greater than or equal to the instrument detection limit.

EXPLANATION OF DATA FLAGS - ALL PARAMETERS

B - This flag indicates that an analyte is present in the method blank as well as in the sample. The client should consider this when evaluating the data.

E - This flag indicates the reported value is estimated due to sample matrix interference.

W - This flag indicates that a post-digestion spike for GFAA analysis is outside quality control limits.

X - This flag indicates that a surrogate recovery is outside quality control limits.

Y - This flag indicates a spike or spike duplicate recovery is outside quality control limits.

Z - This flag indicates a relative percent difference for a spike and spike duplicate is outside quality control limits.

* - This flag indicates a relative percent difference for a duplicate analysis is outside quality control limits.

^ - This flag indicates a percent recovery for a standard is outside quality control limits.

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ASARCO

GLOBE PLANT

July 25 1997

Ms. Celia VanDerLoop, Remedial Project Manager
Colorado Dept. of Public Health and Environment
HMWMD-RP-B2
4300 Cherry Creek Drive South
Denver, Colorado 80222-1530

RE: Transmittal of Globe Plant Environmental Related Correspondence

Dear Celia:

Enclosed please find the following Globe Plant environmental related correspondence.

Nicole Mathis of Asarco letter dated July 22, 1997
re: Asarco Globe Plant's Periodic Compliance Report
for the period of January - June, 1997.

If you have any questions, please contact me at (303) 296-5115.

Sincerely,

Robert A. Litle
Site Manager

RAL/eja
Enclosure

cc: F. Hartogh - AGO (w/o enclosure)
C. Goldman - GDC (w/o enclosure)
D. Folkes - EG (w/o enclosure)
N. Mathis - Asarco (w/o enclosure)

ASARCO Incorporated, 495 East 51st Avenue, Denver, Colorado 80216-2098
Phone (303) 296-5900 FAX (303) 296-0508

ASARCO

GLOBE PLANT

July 22, 1997

Mr. James T. Graber
Industrial Waste Specialist
Metro Wastewater Reclamation District
6450 York Street
Denver, Colorado 80229-7499

Dear Mr. Graber:

Enclosed for your review is the Asarco Globe Plant's Periodic Compliance Report (PCR) for the period of January - June, 1997. The PCR contains flow monitoring data, sampling results and waste disposal activities. The volume attributed to groundwater discharge under Section B: Flow Monitoring is zero since construction of the Terrace Drain has not yet begun and Asarco has quit pumping groundwater from underneath the Old Laboratory.

During past conversations, we have discussed how difficult it is to keep up with new and experimental processes at the plant. As a courtesy, I thought it would be helpful to summarize these processes currently and for the January - June, 1997 period. The Globe Plant has or continues to experiment with several processes including the "wet" processes of lead sulfide, bismuth carbonate and bismuth/tellurium recycling and the "dry" processes of lead selenide, lead chloride and antimony telluride. The bismuth powder and hydrometallurgical bismuth oxide experiments mentioned in the last PCR have been scaled up to full-scale production.

Based on my inquiry of the people responsible for these areas or gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. If you should require additional information, please contact me at 296-5111.

Sincerely,

Nicole R. Mathis

Nicole R. Mathis
Environmental Engineer

enc.

cc: (w/ enc.)
R. Litle
R. Marcus
C. Dungey
(w/o enc.)
M. Staub
W. Rolle

ASARCO Limited. 495 East 51st Avenue. Denver, Colorado 80216-2098
Phone (303) 296-5900 FAX (303) 296-0508

PERIODIC COMPLIANCE REPORT

NOTE: Periodic compliance reports (PCRs) are due on or before the last day of the month following the end of the reporting period and must be submitted to the address(es) listed in the "Reporting Requirements for Permittee" section of your wastewater discharge permit. Not all of the sections listed below apply to all permittees. Some permittees may also need to submit information in addition to the items appearing on this checklist. Consult your wastewater discharge permit for your specific reporting requirements.

Reporting period from: January 1, 1997 to June 30, 1997

Date prepared: July 16, 1997

Prepared by: Wayne Rolle/Nikki Mathis

A. FACILITY INFORMATION

Name: ASARCO Globe Plant

Location: 495 E. 51st Avenue
Denver, Colorado 80216

Phone: (303) 296-5900 Fax: (303)296-0508 Emergency: _____

B. FLOW MONITORING

(Flow monitoring information may be required for more than one Monitoring Point. Attach additional sheets as necessary. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point	001	[ ] No discharge	
Average daily flow volume (gallons per day)	3528 gals	[ ] Measured	[X]Estimated
Maximum daily flow volume (gallons per day)	18359 gals	[X] Measured	[ ]Estimated
Process water discharge (gallons per day)	1328 gals	[X] Measured	[ ]Estimated
Groundwater discharge (gallons per day -- Terrace Drain)	0	[X] Measured	[ ]Estimated

Note: Daily flow volumes are used, in part, to determine self-monitoring and reporting frequencies. Reported values, especially estimates, must be as accurate as possible.

C. SAMPLING RESULTS

Attach copies of the analytical results of all samplings of the regulated wastestreams performed by the permittee during the reporting period. Attach copies of the analytical results of all split samplings of the regulated wastestream performed by the permittee or other agency during the reporting period. Results transmitted to the permittee by any other agency, including the Metro District, do not have to be submitted, but must be kept on file for at least 3 years and be available for inspection.

Analytical results submitted with this PCR must contain the following information:

1. Concentrations and measurements of all parameters for which there are self-monitoring requirements.

2. The date, time and location of all sampling activities. Include the start-stop dates and times for composite samples.

(Note: To avoid self-monitoring reporting errors or violations, the analytical results included in this PCR should also contain the information listed below for all samples. At a minimum, this information must be kept on file for at least 3 years and be available for inspection.)

3. The method of sampling (grab, time composite, flow composite, or continuous measurement) and name of the person collecting the sample.

4. The name of the laboratory (or person) that performed the analyses.

5. The date the analyses were performed.

6. The analytical techniques/methods used for the analyses.

D. WASTE DISPOSAL

(Attach copies of disposal records for wastes hauled off-site during the reporting period, or provide a summary of waste disposal activities in the space provided below, or indicate "no activity" if no wastes were disposed of during the reporting period.)

[ ] No waste disposal activity occurred during the reporting period

[X] ~~Disposal record copies attached~~ Summary provided below.

Waste Name	Volume	Ship Date	Disposal Company
Fluorescent Bulbs	295 lbs	1/29/97	Recyclights
Waste paint	275 gal	3/26/97	Chemical Waste Mgt.

D. WASTE DISPOSAL (cont.)

Waste Name	Volume	Ship Date	Disposal Company
" Burnables"	20 c.y.	3/26/97	Rollins Hwy. 36
" Burnables"	40 c.y.	3/27/97	Rollins Hwy. 36
"Burnables/Crushables"	20 c.y.	6/19/97	Rollins Hwy 36

E. ACCURACY AND COMPLETENESS CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that, there has not been any change(s) in the Research and Development activities at this facility that have significantly changed the process wastewater discharged to the POTW, or that notification of changed discharges was submitted to the Metro District as required per Section F.4 of the permit. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Nicole R. Mathis — 7/22/97

Signature of Authorized Representative — Date

Nicole R. Mathis

Name (please print or type)

Environmental Engineer

Title (please print or type)

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-001-97	Well Number	
Project Number		Location	
Category	SEWER	Description	METALS COMP
Source	GLOBE	Parameter	TOTAL
QA/QC Type	SAMPLE	Date Sampled	03/21/97

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.007	3114 B 4.d	04/04/97	WR
Cd	SAMPLE	0.13	3111 B	04/04/97	WR
Cu	SAMPLE	0.06	3111 B	04/04/97	WR
Ni	SAMPLE	0.06	3111 B	04/04/97	WR
Pb	SAMPLE	0.35	3111 B	04/04/97	WR
Se	SAMPLE	0.018	3114 B	04/04/97	WR
Zn	SAMPLE	0.27	3111 B	04/04/97	WR

Lab ID Number	208-002-97	Well Number	
Project Number		Location	
Category	SEWER	Description	PH GRAB
Source	GLOBE	Parameter	TOTAL
QA/QC Type	SAMPLE	Date Sampled	03/21/97

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
pH	SAMPLE	7.60	EPA150.1	03/21/97	WR

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-003-97	Well Number	
Project Number		Location	001
Category	SEWER	Description	METALS COMP
Source	GLOBE	Parameter	TOTAL
QA/QC Type	SAMPLE	Date Sampled	05/30/97

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.010	3114 B 4.d	06/03/97	WR
Cd	SAMPLE	0.12	3111 B	06/03/97	WR
Cu	SAMPLE	0.05	3111 B	06/03/97	WR
Mn	SAMPLE	0.07	3111 B	06/03/97	WR
Ni	SAMPLE	<0.025	3111 B	06/03/97	WR
Pb	SAMPLE	0.29	3111 B	06/03/97	WR
Se	SAMPLE	0.025	3114 B	06/03/97	WR
Zn	SAMPLE	0.59	3111 B	06/03/97	WR

Lab ID Number	208-004-97	Well Number	
Project Number		Location	001
Category	SEWER	Description	PH GRAB
Source	GLOBE	Parameter	TOTAL
QA/QC Type	SAMPLE	Date Sampled	05/30/97

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
PH	SAMPLE	7.5	EPA150.1	05/30/97	WR

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-001-97	Well Number	
Project Number		Location	
Category	SEWER	Description	METALS COMP SPLIT
Source	METRO	Parameter	TOTAL
QA/QC Type	SAMPLE	Date Sampled	04/02/97

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.005	3114 B 4.d	04/04/97	WR
Cd	SAMPLE	0.03	3111 B	04/04/97	WR
Cu	SAMPLE	0.04	3111 B	04/04/97	WR
Ni	SAMPLE	0.05	3111 B	04/04/97	WR
Pb	SAMPLE	0.10	3111 B	04/04/97	WR
Se	SAMPLE	0.019	3114 B	04/04/97	WR
Zn	SAMPLE	0.54	3111 B	04/04/97	WR

Lab ID Number	209-002-97	Well Number	
Project Number		Location	
Category	SEWER	Description	METALS COMP SPLIT
Source	METRO	Parameter	TOTAL
QA/QC Type	SAMPLE	Date Sampled	04/02/97

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.003	3114 B 4.d	04/04/97	WR
Cd	SAMPLE	0.03	3111 B	04/04/97	WR
Cu	SAMPLE	0.04	3111 B	04/04/97	WR
Ni	SAMPLE	0.07	3111 B	04/04/97	WR
Pb	SAMPLE	0.11	3111 B	04/04/97	WR
Se	SAMPLE	0.026	3114 B	04/04/97	WR
Zn	SAMPLE	0.52	3111 B	04/04/97	WR

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-003-97	Well Number	
Project Number		Location	001
Category	SEWER	Description	METALS COMP SPLIT
Source	METRO	Parameter	TOTAL
QA/QC Type	SAMPLE	Date Sampled	06/24/97

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.041	3114 B 4.d	07/15/97	WR
Cd	SAMPLE	1.11	3111 B	07/15/97	WR
Cu	SAMPLE	0.17	3111 B	07/15/97	WR
Mn	SAMPLE	0.24	3111 B	07/15/97	WR
Ni	SAMPLE	<0.025	3111 B	07/15/97	WR
Pb	SAMPLE	1.43	3111 B	07/15/97	WR
Se	SAMPLE	0.032	3114 B	07/15/97	WR
Zn	SAMPLE	4.76	3111 B	07/15/97	WR

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period: 3/20/97 15:00 to 3/21/97 1510

Total Flow for 24 hour period: 7750 gal

Maximum Flow: 0.28 gal/sec

Average Flow: 0.089 gal/sec

Number of Tanks Discharged: 1

Number of Samples Collected: 15

Total Volume Collected: 3.9 liters

Total Metals Composite Analysis:

Arsenic (As):	0.007	(ppm)
Cadmium (Cd):	0.13	(ppm)
Copper (Cu):	0.06	(ppm)
Lead (Pb):	0.35	(ppm)
Nickel (Ni):	0.06	(ppm)
Selenium (Se):	0.018	(ppm)
Zinc (Zn):	0.27	(ppm)

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time: 3/20/97 1515

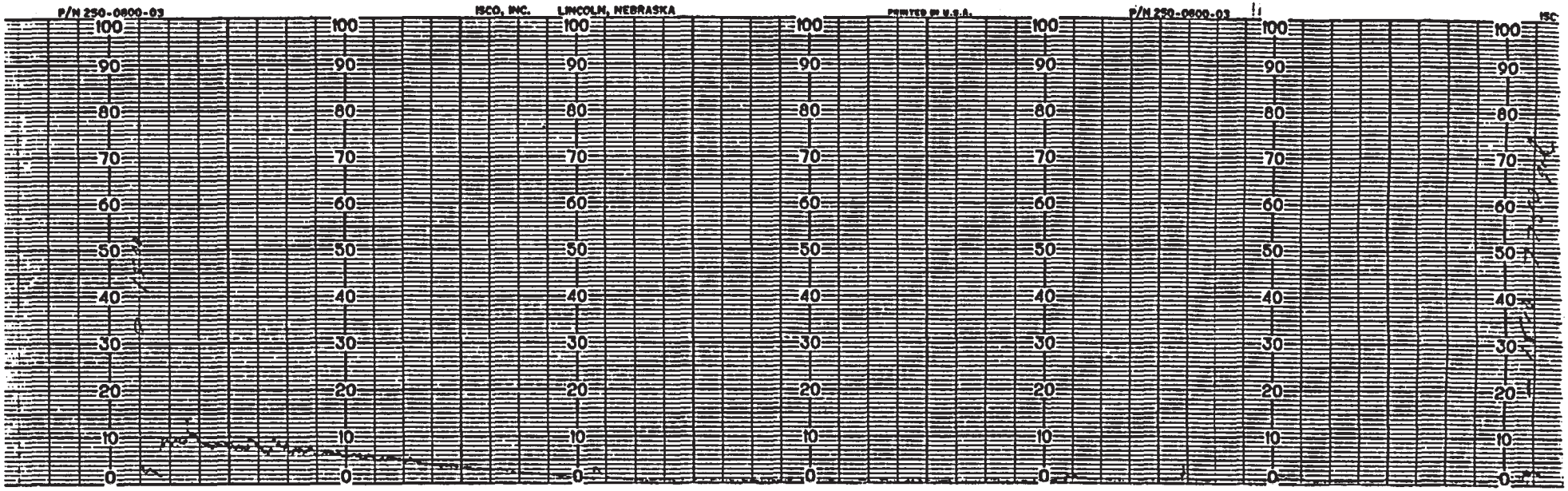
Analysis Date/Time: 3/20/97 1523

pH Grab Analysis:

pH 7.6 (units)

Sampled / Analyzed By: Wayne Roll

P/N 250-0800-03 ISCO, INC. LINCOLN, NEBRASKA PRINTED IN U.S.A. P/N 250-0800-03 ISC



ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.

PROJECT NAME: Quarterly Monitoring

SAMPLERS: (Signature) Wayne [illegible]

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 Liter UF/HNO3	1 250ml UF/Vinyl					REMARKS
001	3/20-21/97	1500-1515	✓		Monitoring Point 001	1	✓						
001	3/21/97	1515		✓	"	1		✓					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
[illegible]					
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000897

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM - SPLIT SAMPLES

SAMPLERS: Jorge Garcia

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE TYPE*	MONITORING POINT	SAMPLE PRESERVATIVE	METRO ANALYSES
324129	ASARCO #600	4/1-2/97	11:20 - 12:06	FC24	001	HNO3	Hg, Mo, Se, As, Ag, Sb, Zn, Cd, Pb, Ni, Cr, Be, Cu.
324130	✓	↓	11:20 12:06	↓	↓		↓

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Glen H. Jones	4-3-97 0915	[illegible]	[illegible]	4/3/97 1018	[illegible]
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

WHITE - METRO DISTRICT'S COPY

YELLOW - INDUSTRY'S COPY

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-001-97	Well Number	
Project Number		Location	
Category	SEWER	Description	METALS COMP
QA/QC Type	SAMPLE	Parameter	TOTAL
Date Sampled	03/21/97		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.007	3114 B 4.d	04/04/97	WR
Cd	SAMPLE	0.13	3111 B	04/04/97	WR
Cu	SAMPLE	0.06	3111 B	04/04/97	WR
Ni	SAMPLE	0.06	3111 B	04/04/97	WR
Pb	SAMPLE	0.35	3111 B	04/04/97	WR
Se	SAMPLE	0.018	3114 B	04/04/97	WR
Zn	SAMPLE	0.27	3111 B	04/04/97	WR

Lab ID Number	208-002-97	Well Number	
Project Number		Location	
Category	SEWER	Description	PH GRAB
QA/QC Type	SAMPLE	Parameter	TOTAL
Date Sampled	03/21/97		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
pH	SAMPLE	7.60	EPA150.1	03/21/97	WR

Lab ID Number	209-001-97	Well Number	
Project Number		Location	
Category	SEWER	Description	METRO SPLIT SAMPLE, METALS COMP
QA/QC Type	SAMPLE	Parameter	TOTAL
Date Sampled	04/02/97		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.005	3114 B 4.d	04/04/97	WR
Cd	SAMPLE	0.03	3111 B	04/04/97	WR
Cu	SAMPLE	0.04	3111 B	04/04/97	WR
Ni	SAMPLE	0.05	3111 B	04/04/97	WR
Pb	SAMPLE	0.10	3111 B	04/04/97	WR
Se	SAMPLE	0.019	3114 B	04/04/97	WR
Zn	SAMPLE	0.54	3111 B	04/04/97	WR

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-002-97	Well Number	
Project Number		Location	
Category	SEWER	Description	METRO SPLIT SAMPLE, METALS COMP
QA/QC Type	SAMPLE	Parameter	TOTAL
Date Sampled	04/02/97		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.003	3114 B 4.d	04/04/97	WR
Cd	SAMPLE	0.03	3111 B	04/04/97	WR
Cu	SAMPLE	0.04	3111 B	04/04/97	WR
Ni	SAMPLE	0.07	3111 B	04/04/97	WR
Pb	SAMPLE	0.11	3111 B	04/04/97	WR
Se	SAMPLE	0.026	3114 B	04/04/97	WR
Zn	SAMPLE	0.52	3111 B	04/04/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-001-97	Well Number	
Project Number		Location	
Category	QAQC	Description	METHOD BLANK
QA/QC Type	BLANK	Parameter	TOTAL
Date Sampled	04/04/97		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.002	3114 B 4.d	04/04/97	WR
Cd	BLANK	<0.01	3111 B	04/04/97	WR
Cu	BLANK	<0.01	3111 B	04/04/97	WR
Ni	BLANK	<0.025	3111 B	04/04/97	WR
Pb	BLANK	<0.05	3111 B	04/04/97	WR
Se	BLANK	<0.002	3114 B	04/04/97	WR
Zn	BLANK	0.01	3111 B	04/04/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-002-97	Well Number	
Project Number		Location	
Category	QAQC	Description	DUPLICATE
QA/QC Type	DUPLICATE	Parameter	TOTAL
Date Sampled	04/04/97		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.009	0.007	25.0	3114 B 4.d	04/04/97	WR
Cd	DUPLICATE	0.14	0.13	7.4	3111 B	04/04/97	WR
Cu	DUPLICATE	0.06	0.06	0.0	3111 B	04/04/97	WR
Ni	DUPLICATE	0.04	0.06	40.0	3111 B	04/04/97	WR
Pb	DUPLICATE	0.32	0.35	8.9	3111 B	04/04/97	WR
Se	DUPLICATE	0.021	0.018	15.3	3114 B	04/04/97	WR
Zn	DUPLICATE	0.29	0.27	7.1	3111 B	04/04/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-003-97	Well Number	
Project Number		Location	
Category	QAQC	Description	SAMPLE SPIKE
QA/QC Type	SPIKE	Parameter	TOTAL
Date Sampled	04/04/97		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.028	0.007	0.020	105.0	3114 B 4.d	04/04/97	WR
Cd	SPIKE	0.34	0.13	0.200	105.0	3111 B	04/04/97	WR
Cu	SPIKE	0.26	0.06	0.200	100.0	3111 B	04/04/97	WR
Ni	SPIKE	0.25	0.06	0.200	95.0	3111 B	04/04/97	WR
Pb	SPIKE	0.58	0.35	0.200	115.0	3111 B	04/04/97	WR
Se	SPIKE	0.039	0.018	0.020	105.0	3114 B	04/04/97	WR
Zn	SPIKE	0.50	0.27	0.200	115.0	3111 B	04/04/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-004-97	Well Number	
Project Number		Location	
Category	QAQC	Description	REFERENCE STANDARD
QA/QC Type	STANDARD	Parameter	TOTAL
Date Sampled	04/04/97		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.028	0.0324	86.4	3114 B 4.d	04/04/97	WR
Cd	STANDARD	0.06	0.0595	100.8	3111 B	04/04/97	WR
Cu	STANDARD	0.25	0.2380	105.0	3111 B	04/04/97	WR
Ni	STANDARD	0.30	0.3240	92.5	3111 B	04/04/97	WR
Pb	STANDARD	0.27	0.2970	90.9	3111 B	04/04/97	WR
Se	STANDARD	0.072	0.0811	88.7	3114 B	04/04/97	WR
Zn	STANDARD	0.10	0.1190	84.0	3111 B	04/04/97	WR

Lab ID Number	200-005-97	Well Number	
Project Number		Location	
Category	QAQC	Description	ICV
QA/QC Type	STANDARD	Parameter	TOTAL
Date Sampled	04/04/97		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.0100	100.0	3114 B 4.d	04/04/97	WR
Cd	STANDARD	1.02	1.0000	102.0	3111 B	04/04/97	WR
Cu	STANDARD	1.01	1.0000	101.0	3111 B	04/04/97	WR
Ni	STANDARD	0.98	1.0000	98.0	3111 B	04/04/97	WR
Pb	STANDARD	0.97	1.0000	97.0	3111 B	04/04/97	WR
Se	STANDARD	0.010	0.0100	100.0	3114 B	04/04/97	WR
Zn	STANDARD	1.00	1.0000	100.0	3111 B	04/04/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-006-97	Well Number	
Project Number		Location	
Category	QAQC	Description	CCV
QA/QC Type	STANDARD	Parameter	TOTAL
Date Sampled	04/04/97		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.009	0.0100	90.0	3114 B 4.d	04/04/97	WR
Cd	STANDARD	1.02	1.0000	102.0	3111 B	04/04/97	WR
Cu	STANDARD	1.00	1.0000	100.0	3111 B	04/04/97	WR
Ni	STANDARD	1.01	1.0000	101.0	3111 B	04/04/97	WR
Pb	STANDARD	1.02	1.0000	102.0	3111 B	04/04/97	WR
Se	STANDARD	0.010	0.0100	100.0	3114 B	04/04/97	WR
Zn	STANDARD	0.97	1.0000	97.0	3111 B	04/04/97	WR

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	5/29/97 12:45 to 5/30/97 12:45	
Total Flow for 24 hour period:	11480	gal
Maximum Flow:	0.60	gal/sec
Average Flow:	0.133	gal/sec
Number of Tanks Discharged:	1	
Number of Samples Collected:	22	
Total Volume Collected:	5.7	liters

Total Metals Composite Analysis:

Arsenic (As):	0.010	(ppm)
Cadmium (Cd):	0.12	(ppm)
Copper (Cu):	0.05	(ppm)
Lead (Pb):	0.29	(ppm)
Nickel (Ni):	<0.025	(ppm)
Selenium (Se):	0.025	(ppm)
Zinc (Zn):	0.59	(ppm)

GRAB SAMPLING DATA:

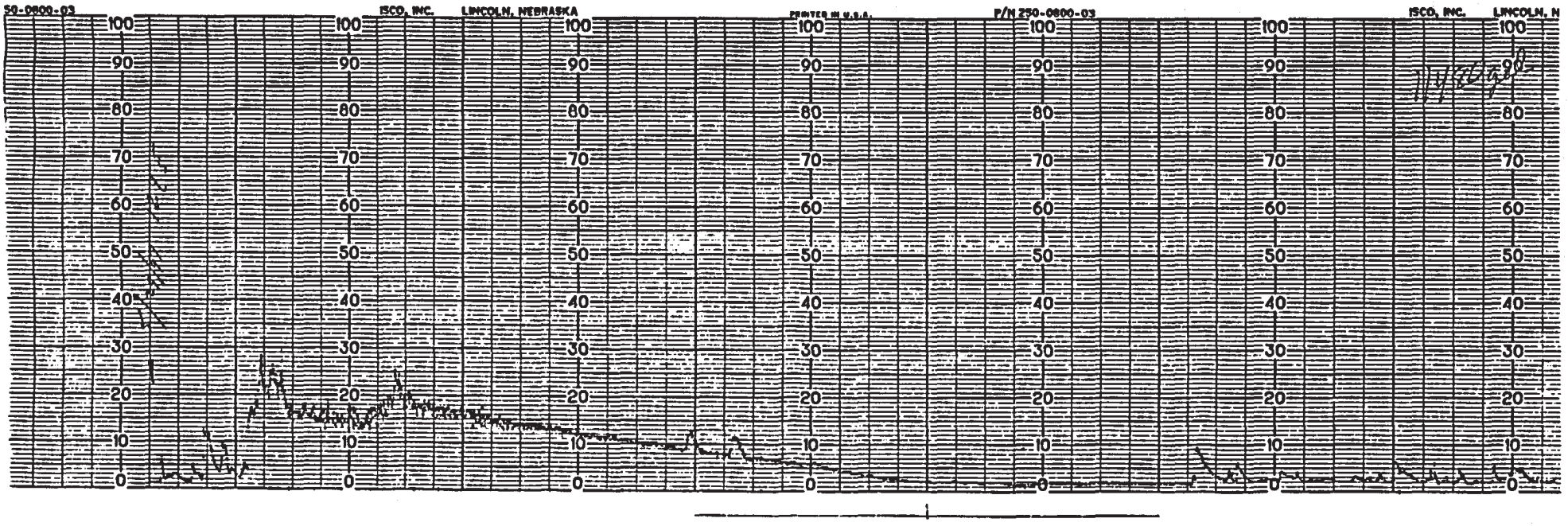
Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated immediately prior to each use.

Sampling Date/Time:	5/30/97 13:02
Analysis Date/Time:	5/30/97 13:11

pH Grab Analysis:

pH	7.5	(units)

Sampled / Analyzed By: Wayne Roll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ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.	PROJECT NAME
	Quarterly Plant Discharge Monitoring

SAMPLERS: *(Signature)* Wayne Rd[illegible]

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 Liter UF/HNO3	2 [illegible] UF [illegible]					REMARKS
001	5/29-30 97	12:[illegible] 12:[illegible]	✓			1	✓						
001	5/30/97	1302		✓		1	[illegible]	✓	[illegible]				

Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
[illegible]					
Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date/Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date/Time	Received for Laboratory by: *(Signature)*	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000902

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	208-003-97	Well Number	
Project Number		Location	001
Category	SEWER	Description	METALS COMP
QA/QC Type	SAMPLE	Parameter	TOTAL
Date Sampled	05/30/97		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.010	3114 B 4.d	06/03/97	WR
Cd	SAMPLE	0.12	3111 B	06/03/97	WR
Cu	SAMPLE	0.05	3111 B	06/03/97	WR
Mn	SAMPLE	0.07	3111 B	06/03/97	WR
Ni	SAMPLE	<0.025	3111 B	06/03/97	WR
Pb	SAMPLE	0.29	3111 B	06/03/97	WR
Se	SAMPLE	0.025	3114 B	06/03/97	WR
Zn	SAMPLE	0.59	3111 B	06/03/97	WR

Lab ID Number	208-004-97	Well Number	
Project Number		Location	001
Category	SEWER	Description	PH GRAB
QA/QC Type	SAMPLE	Parameter	TOTAL
Date Sampled	05/30/97		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
PH	SAMPLE	7.5	EPA150.1	05/30/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-007-97	Well Number	
Project Number		Location	001
Category	QAQC	Description	
QA/QC Type	BLANK	Parameter	TOTAL
Date Sampled	06/03/97		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.002	3114 B 4.d	06/03/97	WR
Cd	BLANK	0.01	3111 B	06/03/97	WR
Cu	BLANK	0.01	3111 B	06/03/97	WR
Mn	BLANK	<0.025	3111 B	06/03/97	WR
Ni	BLANK	<0.025	3111 B	06/03/97	WR
Pb	BLANK	<0.05	3111 B	06/03/97	WR
Se	BLANK	<0.002	3114 B	06/03/97	WR
Zn	BLANK	0.01	3111 B	06/03/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-008-97	Well Number	
Project Number		Location	001
Category	QAQC	Description	
QA/QC Type	DUPLICATE	Parameter	TOTAL
Date Sampled	06/03/97		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.009	0.010	10.5	3114 B 4.d	06/03/97	WR
Cd	DUPLICATE	0.12	0.12	0.0	3111 B	06/03/97	WR
Cu	DUPLICATE	0.05	0.05	0.0	3111 B	06/03/97	WR
Mn	DUPLICATE	0.09	0.07	25.0	3111 B	06/03/97	WR
Ni	DUPLICATE	<0.025	<0.025	0.0	3111 B	06/03/97	WR
Pb	DUPLICATE	0.28	0.29	3.5	3111 B	06/03/97	WR
Se	DUPLICATE	0.022	0.025	12.7	3114 B	06/03/97	WR
Zn	DUPLICATE	0.60	0.59	1.6	3111 B	06/03/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-009-97	Well Number	
Project Number		Location	001
Category	QAQC	Description	
QA/QC Type	SPIKE	Parameter	TOTAL
Date Sampled	06/03/97		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.033	0.010	0.020	115.0	3114 B 4.d	06/03/97	WR
Cd	SPIKE	0.34	0.12	0.200	110.0	3111 B	06/03/97	WR
Cu	SPIKE	0.23	0.05	0.200	90.0	3111 B	06/03/97	WR
Mn	SPIKE	0.26	0.07	0.200	95.0	3111 B	06/03/97	WR
Ni	SPIKE	0.19	<0.025	0.200	95.0	3111 B	06/03/97	WR
Pb	SPIKE	0.47	0.29	0.200	90.0	3111 B	06/03/97	WR
Se	SPIKE	0.047	0.025	0.020	110.0	3114 B	06/03/97	WR
Zn	SPIKE	0.78	0.59	0.200	95.0	3111 B	06/03/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-010-97	Well Number	
Project Number		Location	
Category	QAQC	Description	REF ERA 9968
QA/QC Type	STANDARD	Parameter	TOTAL
Date Sampled	06/03/97		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.036	0.0324	111.1	3114 B 4.d	06/03/97	WR
Cd	STANDARD	0.05	0.0595	84.0	3111 B	06/03/97	WR
Cu	STANDARD	0.24	0.2380	100.8	3111 B	06/03/97	WR
Mn	STANDARD	0.43	0.4320	99.5	3111 B	06/03/97	WR
Ni	STANDARD	0.33	0.3240	101.8	3111 B	06/03/97	WR
Pb	STANDARD	0.29	0.2970	97.6	3111 B	06/03/97	WR
Se	STANDARD	0.090	0.0811	110.9	3114 B	06/03/97	WR
Zn	STANDARD	0.13	0.1190	109.2	3111 B	06/03/97	WR

Lab ID Number	200-011-97	Well Number	
Project Number		Location	
Category	QAQC	Description	ICV
QA/QC Type	STANDARD	Parameter	TOTAL
Date Sampled	06/03/97		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.0100	100.0	3114 B 4.d	06/03/97	WR
Cd	STANDARD	1.00	1.0000	100.0	3111 B	06/03/97	WR
Cu	STANDARD	1.00	1.0000	100.0	3111 B	06/03/97	WR
Mn	STANDARD	1.02	1.0000	102.0	3111 B	06/03/97	WR
Ni	STANDARD	1.00	1.0000	100.0	3111 B	06/03/97	WR
Pb	STANDARD	0.98	1.0000	98.0	3111 B	06/03/97	WR
Se	STANDARD	0.010	0.0100	100.0	3114 B	06/03/97	WR
Zn	STANDARD	1.01	1.0000	101.0	3111 B	06/03/97	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-012-97	Well Number	
Project Number		Location	
Category	QAQC	Description	CCV
QA/QC Type	STANDARD	Parameter	TOTAL
Date Sampled	06/03/97		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.0100	100.0	3114 B 4.d	06/03/97	WR
Cd	STANDARD	1.02	1.0000	102.0	3111 B	06/03/97	WR
Cu	STANDARD	1.00	1.0000	100.0	3111 B	06/03/97	WR
Mn	STANDARD	1.01	1.0000	101.0	3111 B	06/03/97	WR
Ni	STANDARD	0.98	1.0000	98.0	3111 B	06/03/97	WR
Pb	STANDARD	1.03	1.0000	103.0	3111 B	06/03/97	WR
Se	STANDARD	0.009	0.0100	90.0	3114 B	06/03/97	WR
Zn	STANDARD	1.00	1.0000	100.0	3111 B	06/03/97	WR

ASARCO Incorporated
Quality Assurance Report Form

Lab ID Number	209-003-97	Well Number	
Project Number		Location	001
Category	SEWER	Description	METALS COMP SPLIT
QA/QC Type	SAMPLE	Parameter	TOTAL
Date Sampled	06/24/97		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.041	3114 B 4.d	07/15/97	WR
Cd	SAMPLE	1.11	3111 B	07/15/97	WR
Cu	SAMPLE	0.17	3111 B	07/15/97	WR
Mn	SAMPLE	0.24	3111 B	07/15/97	WR
Ni	SAMPLE	<0.025	3111 B	07/15/97	WR
Pb	SAMPLE	1.43	3111 B	07/15/97	WR
Se	SAMPLE	0.032	3114 B	07/15/97	WR
Zn	SAMPLE	4.76	3111 B	07/15/97	WR

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: 209-007-97

Description: 11 TK 12 TK

Sample I.D: Metro Split

Date Submitted: 6/25/97

Date Sample Prepared: 7/15/97

Parameter	Value	Units	Method	Date Completed	Chemist
Tl		ppm	Standard Methods 18 Ed. 3111B		
Zn	4.76			7/15	WA
Fe					
Cd	1.11			7/15	WA
Pb	1.43				
Ni	<0.025				
Mn	0.24				
Cu	0.17				
Ag					
Cr					
Na					
Ca					
Mg					
As	0.041		Standard Methods 18 Ed. 3114 B	7/15	WA
Se	0.032				
pH		pH	Standard Methods 18 Ed. 4500-H^+ B		
S		ppm	Standard Methods 18 Ed. 4500-S^{2-} E		
SO4			Standard Methods 18 Ed. 4500-SO_4^{2-} D		

Approved

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM -
SPLIT SAMPLES

SAMPLERS: Jorge Garcia

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE TYPE*	MONITORING POINT	SAMPLE PRESERVATIVE	METRO ANALYSES
331152	ASARCO # 600	6/23-24/97	855 700	FC24	001	HNO3	Sb, Zn, Co, Pb, Ni, Cu, Be, As, Se

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[illegible]	6-25-97/1311	[illegible]	[illegible]	6/25/97 1335	[illegible]
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

WHITE - METRO DISTRICT'S COPY

YELLOW - INDUSTRY'S COPY

ASARCO

GLOBE PLANT

January 21, 1997

Ms. Celia VanDerLoop, P.E.
HMWMD - RP - B2
Colorado Department of Public
Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado 80222

Re: Transmittal of Globe Plant Related Environmental Correspondences

Dear Celia:

Enclosed please find two letters regarding Globe Plant environmental issues: 1) Asarco's Periodic Compliance Report (PCR) for the period July - December, 1996 submitted to Metro Wastewater Reclamation District; and 2) A letter to the APCD regarding experimental bismuth oxide precipitation.

If you have any questions regarding this information, please contact me at (303) 296-5104.

Sincerely,

Margaret W. Staub
Site Manager

enc.
cc: F. Hartogh - letter only
C. Goldman - letter only
D. Folkes - letter only

ASARCO Incorporated. 495 East 51st Avenue. Denver, Colorado 80216-2098
Phone (303) 296-5900 FAX (303) 296-0508

ASARCO

GLOBE PLANT

January 21, 1997

Mr. James T. Graber
Industrial Waste Specialist
Metro Wastewater Reclamation District
6450 York Street
Denver, Colorado 80229-7499

Dear Mr. Graber:

Enclosed for your review is the Asarco Globe Plant's Periodic Compliance Report (PCR) for the period of July - December, 1996. The PCR contains flow monitoring data, sampling results, including those from the 1996 organics monitoring, and waste disposal activities. As agreed, since construction of the Terrace Drain has not yet begun, the volume attributed to groundwater discharge under Section B: Flow Monitoring only includes the groundwater from underneath the Old Laboratory and the water from the test trench excavated on November 13, 1996.

During past conversations, we have discussed how difficult it is to keep up with new and experimental processes at the plant. As a courtesy, I thought it would be helpful to summarize these processes currently and for the July - December, 1996 period. The Globe Plant has or continues to experiment with several processes including the "wet" processes of cadmium shot, bismuth/tellurium recycling, and precipitation based bismuth oxide and the "dry" processes of copper indium diselenide, lead telluride, and bismuth powder. The bismuth powder and precipitation based bismuth oxide show promise and Asarco is currently fine-tuning these processes for use in production. Asarco has also brought a new "dry" process of manufacturing bismuth pellets to the plant within the last six months.

Based on my inquiry of the people responsible for these areas or gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. If you should require additional information, please contact me at 296-5111.

Sincerely,

Nicole R. Mathis

Nicole R. Mathis
Environmental Engineer

enc.

cc: (w/ enc.)
M. Staub
R. Marcus
C. Dungey
W. Rolle

ASARCO Incorporated. 495 East 51st Avenue. Denver, Colorado 80216-2098
Phone (303) 296-5900 FAX (303) 296-0508

PERIODIC COMPLIANCE REPORT

NOTE: Periodic compliance reports (PCRs) are due on or before the last day of the month following the end of the reporting period and must be submitted to the address(es) listed in the "Reporting Requirements for Permittee" section of your wastewater discharge permit. Not all of the sections listed below apply to all permittees. Some permittees may also need to submit information in addition to the items appearing on this checklist. Consult your wastewater discharge permit for your specific reporting requirements.

Reporting period from: July 1996 to December 1996

Date prepared: 1/15/97

Prepared by: Wayne Rolle

A. FACILITY INFORMATION

Name: ASARCO Globe Plant

Location: 495 E. 51st Avenue
Denver, Colorado 80216

Phone: (303) 296-5900 Fax: (303)296-0508 Emergency: _____

B. FLOW MONITORING

(Flow monitoring information may be required for more than one Monitoring Point. Attach additional sheets as necessary. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point	001	[ ] No discharge
Average daily flow volume (gallons per day)	4815	[ ] Measured [X] Estimated
Maximum daily flow volume (gallons per day)	18881	[X] Measured [ ] Estimated
Process water discharge (gallons per day)	2815	[X] Measured [ ] Estimated
Groundwater discharge (gallons per day -- ~~Terrace Drain~~)	1380	[ ] Measured [X] Estimated

Note: Daily flow volumes are used, in part, to determine self-monitoring and reporting frequencies. Reported values, especially estimates, must be as accurate as possible.

C. SAMPLING RESULTS

Attach copies of the analytical results of all samplings of the regulated wastestreams performed by the permittee during the reporting period. Attach copies of the analytical results of all split samplings of the regulated wastestream performed by the permittee or other agency during the reporting period. Results transmitted to the permittee by any other agency, including the Metro District, do not have to be submitted, but must be kept on file for at least 3 years and be available for inspection.

Analytical results submitted with this PCR must contain the following information:

1. Concentrations and measurements of all parameters for which there are self-monitoring requirements.

2. The date, time and location of all sampling activities. Include the start-stop dates and times for composite samples.

(Note: To avoid self-monitoring reporting errors or violations, the analytical results included in this PCR should also contain the information listed below for all samples. At a minimum, this information must be kept on file for at least 3 years and be available for inspection.)

3. The method of sampling (grab, time composite, flow composite, or continuous measurement) and name of the person collecting the sample.

4. The name of the laboratory (or person) that performed the analyses.

5. The date the analyses were performed.

6. The analytical techniques/methods used for the analyses.

D. WASTE DISPOSAL

(Attach copies of disposal records for wastes hauled off-site during the reporting period, or provide a summary of waste disposal activities in the space provided below, or indicate "no activity" if no wastes were disposed of during the reporting period.)

[ ] No waste disposal activity occurred during the reporting period

[ ] Disposal record copies attached

Waste Name	Volume	Ship Date	Disposal Company
CERCLA Investigation Derived Waste - PPE	410 pounds	8/27/96	Rollins OPC Inc
			Cont'd on next page

D. WASTE DISPOSAL (cont.)

Waste Name	Volume	Ship Date	Disposal Company
"Crushables"	26 tons	12/6/96	East Helena Smelter
WWTP Sludge	61 tons	12/6/96	
#7 metals baghouse Dust	670 lbs (net)	12/6/96	

E. ACCURACY AND COMPLETENESS CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that, there has not been any change(s) in the Research and Development activities at this facility that have significantly changed the process wastewater discharged to the POTW, or that notification of changed discharges was submitted to the Metro District as required per Section F.4 of the permit. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Nicole R. Mathus
Signature of Authorized Representative

1/21/97
Date

Nicole R. Mathus
Name (please print or type)

Environmental Engineer
Title (please print or type)

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	9/24/96 0900 to 9/25/96 1300	
Total Flow for 24 hour period:	6420	gal
Maximum Flow:	0.22	gal/sec
Average Flow:	0.064	gal/sec
Number of Tanks Discharged:	1	
Number of Samples Collected:	9	
Total Volume Collected:	2.4	liters

Total Metals Composite Analysis:

Arsenic (As):	0.008	(ppm)
Cadmium (Cd):	0.14	(ppm)
Copper (Cu):	0.03	(ppm)
Lead (Pb):	0.15	(ppm)
Nickel (Ni):	<0.025	(ppm)
Selenium (Se):	0.016	(ppm)
Zinc (Zn):	0.78	(ppm)

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated prior to each use.

Sampling Date/Time:	9/25/96 1300
Analysis Date/Time:	9/25/96 1300

pH Grab Analysis:

pH	7.86	(units)

Sampled By: Wayne Rall

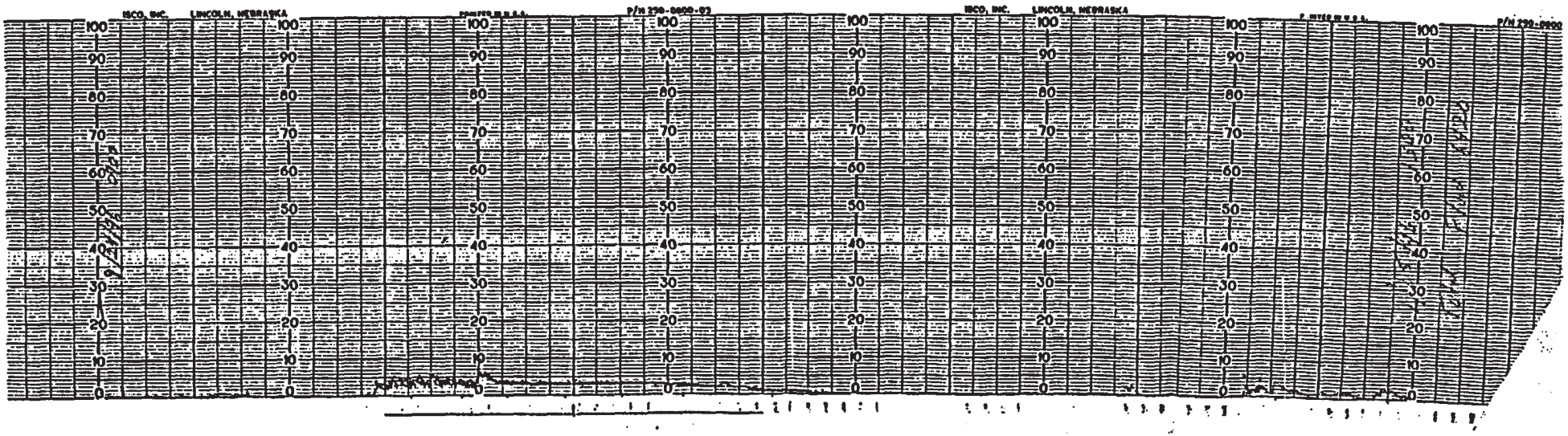
ASARCO Incorporated
Quality Assurance Report Form
Sewer Effluent

Lab ID Number	208-005-96	Well Number	
Project Number		Location	001
Category	SEWER	Description	
QA/QC Type	SAMPLE	Parameter	TOTAL
Date Sampled	09/25/96		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.008	3114 B 4.d	10/02/96	WR
Cd	SAMPLE	0.14	3111 B	10/02/96	WR
Cu	SAMPLE	0.03	3111 B	10/02/96	WR
Ni	SAMPLE	<0.025	3111 B	10/02/96	WR
Pb	SAMPLE	0.15	3111 B	10/02/96	WR
Se	SAMPLE	0.016	3114 B	10/02/96	WR
Zn	SAMPLE	0.78	3111 B	10/02/96	WR

Lab ID Number	208-006-96	Well Number	
Project Number		Location	001
Category	SEWER	Description	PH GRAB
QA/QC Type	SAMPLE	Parameter	TOTAL
Date Sampled	09/25/96 13:00		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
pH	SAMPLE	7.86	4500 H+ B	09/25/96 13:00	WR


ISCO, INC. LINCOLN, NEBRASKA
P/N 230-0800-02
ISCO, INC. LINCOLN, NEBRASKA
P/N 230-0800
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ASARCO INCORPORATED
Environmental Laboratory

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

CHAIN OF CUSTODY RECORD

PROJ. NO.

PROJECT NAME: Quarterly Sanitary Sewer Monitoring

SAMPLERS: (Signature) Wayne Roll

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 Liter UF/HNO3	250 ml UF/unpres					REMARKS
001	9/24-25/96	0900-1300	✓		Metals Comp	1	✓						
001	9/25/96	1300		✓	pH Comp	1		✓					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)	Date/Time	Remarks	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-000889

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Flow composite sample is collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Sampling Period:	12/5/96 11:00 to 12/6/96 11:00	
Total Flow for 24 hour period:	3510	gal
Maximum Flow:	0.18	gal/sec
Average Flow:	0.041	gal/sec
Number of Tanks Discharged:	1	
Number of Samples Collected:	6	
Total Volume Collected:	1.3	liters

Total Metals Composite Analysis:

Arsenic (As):	0.004	(ppm)
Cadmium (Cd):	0.05	(ppm)
Copper (Cu):	0.03	(ppm)
Lead (Pb):	0.14	(ppm)
Nickel (Ni):	<0.025	(ppm)
Selenium (Se):	<0.002	(ppm)
Zinc (Zn):	0.17	(ppm)

GRAB SAMPLING DATA:

Grab sample is collected, and pH is measured within 15 minutes of sample time using an Orion Model 301 pH meter. Meter is calibrated and maintained in accordance with manufacturers' specifications. Meter is calibrated prior to each use.

Sampling Date/Time:	12/6/96 11:00
Analysis Date/Time:	12/6/96 11:11

pH Grab Analysis:

pH	11.2	(units)

Sampled By: Wayne Rolle

ASARCO Incorporated
Quality Assurance Report Form
Sewer Effluent

Lab ID Number	208-007-96	Well Number	
Project Number		Location	001 COMP
Category	SEWER	Description	001 COMP
QA/QC Type	SAMPLE	Parameter	TOTAL
Date Sampled	12/06/96		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.004	3114 B 4.d	12/10/96	WR
Cd	SAMPLE	0.05	3111 B	12/10/96	WR
Cu	SAMPLE	0.03	3111 B	12/10/96	WR
Ni	SAMPLE	<0.025	3111 B	12/10/96	WR
Pb	SAMPLE	0.14	3111 B	12/10/96	WR
Se	SAMPLE	<0.002	3114 B	12/10/96	WR
Zn	SAMPLE	0.17	3111 B	12/10/96	WR

Lab ID Number	208-008-96	Well Number	
Project Number		Location	001 GRAB
Category	SEWER	Description	001 GRAB
QA/QC Type	SAMPLE	Parameter	TOTAL
Date Sampled	12/06/96 11:00		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
pH	SAMPLE	11.2	4500 H+	12/06/96 11:11	WR

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-061-96	Well Number	
Project Number		Location	
Category	QAQC	Description	001 COMP
QA/QC Type	BLANK	Parameter	TOTAL
Date Sampled	12/10/96		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.002	3114 B 4.d	12/10/96	WR
Cd	BLANK	0.02	3111 B	12/10/96	WR
Cu	BLANK	0.01	3111 B	12/10/96	WR
Ni	BLANK	<0.025	3111 B	12/10/96	WR
Pb	BLANK	<0.05	3111 B	12/10/96	WR
Se	BLANK	<0.002	3114 B	12/10/96	WR
Zn	BLANK	0.02	3111 B	12/10/96	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-062-96	Well Number	
Project Number		Location	
Category	QAQC	Description	001 COMP
QA/QC Type	DUPLICATE	Parameter	TOTAL
Date Sampled	12/10/96		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.004	0.004	0.0	3114 B 4.d	12/10/96	WR
Cd	DUPLICATE	0.05	0.05	0.0	3111 B	12/10/96	WR
Cu	DUPLICATE	0.03	0.03	0.0	3111 B	12/10/96	WR
Ni	DUPLICATE	<0.025	<0.025	0.0	3111 B	12/10/96	WR
Pb	DUPLICATE	0.13	0.14	7.4	3111 B	12/10/96	WR
Se	DUPLICATE	<0.002	<0.002	0.0	3114 B	12/10/96	WR
Zn	DUPLICATE	0.16	0.17	6.0	3111 B	12/10/96	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-063-96	Well Number	
Project Number		Location	
Category	QAQC	Description	001 COMP
QA/QC Type	SPIKE	Parameter	TOTAL
Date Sampled	12/10/96		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.015	0.004	0.010	110.0	3114 B 4.d	12/10/96	WR
Cd	SPIKE	0.26	0.05	0.200	105.0	3111 B	12/10/96	WR
Cu	SPIKE	0.23	0.03	0.200	100.0	3111 B	12/10/96	WR
Ni	SPIKE	0.22	<0.025	0.200	110.0	3111 B	12/10/96	WR
Pb	SPIKE	0.32	0.14	0.200	90.0	3111 B	12/10/96	WR
Se	SPIKE	0.009	<0.002	0.010	90.0	3114 B	12/10/96	WR
Zn	SPIKE	0.36	0.17	0.200	95.0	3111 B	12/10/96	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-064-96	Well Number	
Project Number		Location	
Category	QAQC	Description	ERA 9968
QA/QC Type	STANDARD	Parameter	TOTAL
Date Sampled	12/10/96		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.0376	0.0324	116.0	3114 B 4.d	12/10/96	WR
Cd	STANDARD	0.07	0.0595	117.6	3111 B	12/10/96	WR
Cu	STANDARD	0.27	0.2380	113.4	3111 B	12/10/96	WR
Ni	STANDARD	0.35	0.3240	108.0	3111 B	12/10/96	WR
Pb	STANDARD	0.30	0.2970	101.0	3111 B	12/10/96	WR
Se	STANDARD	0.0752	0.0811	92.7	3114 B	12/10/96	WR
Zn	STANDARD	0.14	0.1190	117.6	3111 B	12/10/96	WR

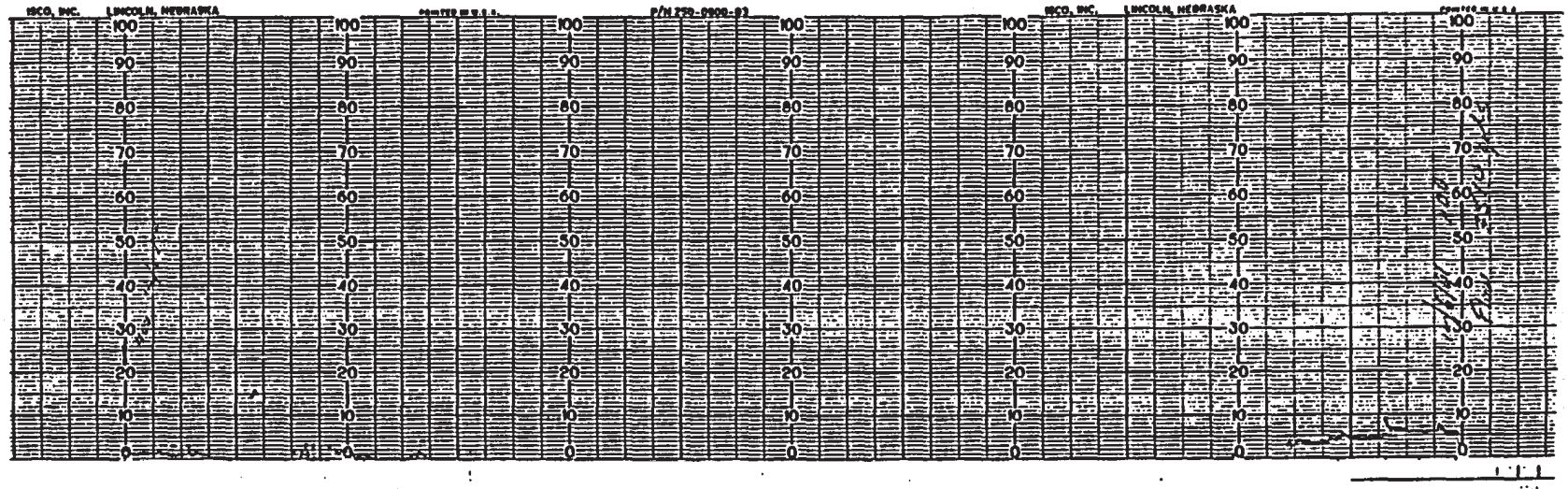
Lab ID Number	200-065-96	Well Number	
Project Number		Location	
Category	QAQC	Description	ICV
QA/QC Type	STANDARD	Parameter	TOTAL
Date Sampled	12/10/96		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.0100	100.0	3114 B 4.d	12/10/96	WR
Cd	STANDARD	1.00	1.0000	100.0	3111 B	12/10/96	WR
Cu	STANDARD	1.00	1.0000	100.0	3111 B	12/10/96	WR
Ni	STANDARD	1.02	1.0000	102.0	3111 B	12/10/96	WR
Pb	STANDARD	1.03	1.0000	103.0	3111 B	12/10/96	WR
Se	STANDARD	0.010	0.0100	100.0	3114 B	12/10/96	WR
Zn	STANDARD	0.99	1.0000	99.0	3111 B	12/10/96	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-066-96	Well Number	
Project Number		Location	
Category	QAQC	Description	CCV
QA/QC Type	STANDARD	Parameter	TOTAL
Date Sampled	12/10/96		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.0100	100.0	3114 B 4.d	12/10/96	WR
Cd	STANDARD	1.02	1.0000	102.0	3111 B	12/10/96	WR
Cu	STANDARD	1.01	1.0000	101.0	3111 B	12/10/96	WR
Ni	STANDARD	1.03	1.0000	103.0	3111 B	12/10/96	WR
Pb	STANDARD	1.00	1.0000	100.0	3111 B	12/10/96	WR
Se	STANDARD	0.009	0.0100	90.0	3114 B	12/10/96	WR
Zn	STANDARD	1.01	1.0000	101.0	3111 B	12/10/96	WR


ISCO, INC. LINCOLN, NEBRASKA
P/N 270-0900-03
ISCO, INC. LINCOLN, NEBRASKA
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ASARCO INCORPORATED
Environmental Laboratory

CHAIN OF CUSTODY RECORD

GLOBE PLANT
495 E. 51ST AVENUE
DENVER, CO 80216

PROJ. NO.

PROJECT NAME: Quarterly Sanitary Sewer Monitoring

SAMPLERS: (Signature) Wayne Rabb

STAT. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 L. jar u.f./HNO3	250 ml u.f./unpres					REMARKS
001	12/5-6/96	0001-1100	✓		Metals Comp	1	✓						
001	12/6/96	1100		✓	pH Grab	1		✓					

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	**Date/Time**	**Received by: (Signature)**	**Relinquished by: (Signature)**	**Date/Time**	**Received by: (Signature)**
Relinquished by: (Signature)	**Date/Time**	**Received for Laboratory by: (Signature)**	**Date/Time**	**Remarks**	

Distribution: Original Accompanies Shipment; First Copy to Coordinator Field Files; Second Copy to Representative of Inspected Facility

Split Samples: ☐ Accepted ☐ Declined _____ Signature

AG-0008871

ASARCO Incorporated
Quality Assurance Report Form
Sewer Effluent

Lab ID Number	209-005-96	Well Number	
Project Number		Location	001
Category	SEWER - SPLIT	Description	
QA/QC Type	SAMPLE	Parameter	TOTAL
Date Sampled	10/23/96		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	SAMPLE	0.009	3114 B 4.d	11/04/96	WR
Cd	SAMPLE	0.12	3111 B	11/04/96	WR
Cr	SAMPLE	0.10	3111 B	11/04/96	WR
Cu	SAMPLE	0.04	3111 B	11/04/96	WR
Ni	SAMPLE	<0.025	3111 B	11/04/96	WR
Pb	SAMPLE	0.15	3111 B	11/04/96	WR
Se	SAMPLE	<0.002	3114 B	11/04/96	WR
Zn	SAMPLE	1.33	3111 B	11/04/96	WR

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-055-96	Well Number	
Project Number		Location	
Category	QAQC	Description	001 COMP
QA/QC Type	BLANK	Parameter	TOTAL
Date Sampled	10/24/96		

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.002	3114 B 4.d	11/04/96	WR
Cd	BLANK	<0.01	3111 B	11/04/96	WR
Cr	BLANK	<0.05	3111 B	11/04/96	WR
Cu	BLANK	<0.01	3111 B	11/04/96	WR
Ni	BLANK	<0.025	3111 B	11/04/96	WR
Pb	BLANK	<0.05	3111 B	11/04/96	WR
Se	BLANK	<0.002	3114 B	11/04/96	WR
Zn	BLANK	0.01	3111 B	11/04/96	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number	200-056-96	Well Number	
Project Number		Location	
Category	QAQC	Description	001 COMP
QA/QC Type	DUPLICATE	Parameter	TOTAL
Date Sampled	10/24/96		

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.012	0.009	28.5	3114 B 4.d	11/04/96	WR
Cd	DUPLICATE	0.12	0.12	0.0	3111 B	11/04/96	WR
Cr	DUPLICATE	0.07	0.10	35.2	3111 B	11/04/96	WR
Cu	DUPLICATE	0.04	0.04	0.0	3111 B	11/04/96	WR
Ni	DUPLICATE	<0.025	<0.025	0.0	3111 B	11/04/96	WR
Pb	DUPLICATE	0.13	0.15	14.2	3111 B	11/04/96	WR
Se	DUPLICATE	<0.002	<0.002	0.0	3114 B	11/04/96	WR
Zn	DUPLICATE	1.31	1.33	1.5	3111 B	11/04/96	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-057-96	Well Number	
Project Number		Location	
Category	QAQC	Description	001 COMP
QA/QC Type	SPIKE	Parameter	TOTAL
Date Sampled	10/24/96		

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.027	0.009	0.020	90.0	3114 B 4.d	11/04/96	WR
Cd	SPIKE	0.34	0.12	0.200	110.0	3111 B	11/04/96	WR
Cr	SPIKE	0.29	0.10	0.200	95.0	3111 B	11/04/96	WR
Cu	SPIKE	0.22	0.04	0.200	90.0	3111 B	11/04/96	WR
Ni	SPIKE	0.19	<0.025	0.200	95.0	3111 B	11/04/96	WR
Pb	SPIKE	0.34	0.15	0.200	95.0	3111 B	11/04/96	WR
Se	SPIKE	0.018	<0.002	0.020	90.0	3114 B	11/04/96	WR
Zn	SPIKE	1.52	1.33	0.200	95.0	3111 B	11/04/96	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-058-96	Well Number	
Project Number		Location	
Category	QAQC	Description	ERA 9968
QA/QC Type	STANDARD	Parameter	TOTAL
Date Sampled	10/24/96		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.036	0.0324	111.1	3114 B 4.d	11/04/96	WR
Cd	STANDARD	0.06	0.0595	100.8	3111 B	11/04/96	WR
Cr	STANDARD	0.11	0.1190	92.4	3111 B	11/04/96	WR
Cu	STANDARD	0.26	0.2380	109.2	3111 B	11/04/96	WR
Ni	STANDARD	0.32	0.3240	98.7	3111 B	11/04/96	WR
Pb	STANDARD	0.31	0.2970	104.3	3111 B	11/04/96	WR
Se	STANDARD	0.070	0.0811	86.3	3114 B	11/04/96	WR
Zn	STANDARD	0.12	0.1190	100.8	3111 B	11/04/96	WR

Lab ID Number	200-059-96	Well Number	
Project Number		Location	
Category	QAQC	Description	ICV
QA/QC Type	STANDARD	Parameter	TOTAL
Date Sampled	10/24/96		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.0100	100.0	3114 B 4.d	11/04/96	WR
Cd	STANDARD	1.00	1.0000	100.0	3111 B	11/04/96	WR
Cr	STANDARD	0.99	1.0000	99.0	3111 B	11/04/96	WR
Cu	STANDARD	0.98	1.0000	98.0	3111 B	11/04/96	WR
Ni	STANDARD	0.98	1.0000	98.0	3111 B	11/04/96	WR
Pb	STANDARD	1.04	1.0000	104.0	3111 B	11/04/96	WR
Se	STANDARD	0.010	0.0100	100.0	3114 B	11/04/96	WR
Zn	STANDARD	1.01	1.0000	101.0	3111 B	11/04/96	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-060-96	Well Number	
Project Number		Location	
Category	QAQC	Description	CCV
QA/QC Type	STANDARD	Parameter	TOTAL
Date Sampled	10/24/96		

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.0100	100.0	3114 B 4.d	11/04/96	WR
Cd	STANDARD	1.02	1.0000	102.0	3111 B	11/04/96	WR
Cr	STANDARD	1.02	1.0000	102.0	3111 B	11/04/96	WR
Cu	STANDARD	1.01	1.0000	101.0	3111 B	11/04/96	WR
Ni	STANDARD	1.03	1.0000	103.0	3111 B	11/04/96	WR
Pb	STANDARD	1.01	1.0000	101.0	3111 B	11/04/96	WR
Se	STANDARD	0.010	0.0100	100.0	3114 B	11/04/96	WR
Zn	STANDARD	0.99	1.0000	99.0	3111 B	11/04/96	WR

METRO WASTEWATER RECLAMATION DISTRICT

CHAIN OF CUSTODY FORM – SPLIT SAMPLES

SAMPLERS: Lance Weaver / Robert Rodriguez
(Signature)

SPLIT SAMPLE ALIQUOT OF METRO CONTROL NO.	INDUSTRIAL USER (I.U. Number)	MONITORING POINT	SAMPLE DATE(S)	TIME (IF APPLIC.)	SAMPLE PRESERVATIVE	SAMPLE TYPE*	METRO ANALYSES
311527	Asarco #600	001	10/22-23/96	0800-0758	HNO_3	FC24	Cd, Cr, Cu, Pb, Ni, ~~Hg~~, Zn ~~Ag~~, As, Se, ~~Hg~~

*SAMPLE TYPE (REQUIRED): G = GRAB, TC = TIME COMPOSITE, FC24 = FLOW COMPOSITE

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Ken Weller	10-24-96/1050	[illegible]	[illegible]	10/24/96 11:10AM	[illegible]
Relinquished by: (Signature)	**Date / Time**	**Received by: (Signature)**	**Relinquished by: (Signature)**	**Date / Time**	**Received by: (Signature)**

Split sample results must be submitted to the appropriate connector and the Metro District.

The split sample must be properly maintained, and available to the Metro District for sample result evaluation.

WHITE – METRO DISTRICT'S COPY YELLOW – INDUSTRY'S COPY

CORE LABORATORIES

ANALYTICAL REPORT

JOB NUMBER: 963338

Prepared For:

Asarco Globe
495 East 51st Avenue
Denver, CO 80216-2098

Attention: Nikki Mathis

Date: 12/23/96

Timothy L. Kellogg for
Signature

12-23-96
Date

Name: Don L. Morris

Title: Project Manager

CORE LABORATORIES, INC.
10703 East Bethany Drive
Aurora, CO 80014

PHONE: (303) 751-1780
FAX: (303) 751-1784

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CORELAB

CORE LABORATORIES, INC.

No. 87982

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION

COMPANY: ASARCO
SEND REPORT TO: Nikki Methis
ADDRESS: 495 E. 51st Avenue
Denver, CO 80216
PHONE: (303) 296-5900
FAX: (303) 296-0508

PROJECT INFORMATION

PROJECT NAME/NUMBER: Annual Organics Analysis

BILLING INFORMATION

BILL TO: SAME
ADDRESS:
PHONE:
FAX: PO NO.:

LAB JOB NO. 963338

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER OF CONTAINERS	Semivolatile Organics, EPA 625; (Acenaphthene, Fluoranthene, Fluorene, Phenanthrene, Pyrene, Pentachlorophenol)	Volatile Organics, EPA 624; (Methylene chloride, Tetrachloroethene, Trichloroethene)	REMARKS / PRECAUTIONS
001	ASARCO WASTEWATER	12/6/96	0813	Water	Glass	None	2	✓		Tag #'s 2190, 2191
001	ASARCO WASTEWATER	12/6/96	0813	Water	VOA	HCl	3		✓	Tag #'s 2192, 2193, 2194
										temp 2.2°C
										lab

SAMPLER: Wayne Rolle
SHIPMENT METHOD:
AIRBILL NO.:

REQUIRED TURNAROUND:* ☐ SAME DAY ☐ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☐ 5 DAYS ☐ 10 DAYS ☒ ROUTINE OTHER

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE: Wayne Rolle	12/6/96	SIGNATURE: Ben Watson	12/6/96	SIGNATURE:	
PRINTED NAME/COMPANY: Wayne Rolle ASARCO	TIME 1052	PRINTED NAME/COMPANY: WATSON core	TIME 1245	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY:	**DATE**	**2. RECEIVED BY:**	**DATE**	**3. RECEIVED BY:**	**DATE**
SIGNATURE: Ben Watson	12/6/96	SIGNATURE: Michelle Weatherford	12/6/96	SIGNATURE:	
PRINTED NAME/COMPANY: WATSON core	TIME 1052	PRINTED NAME/COMPANY: CORE	TIME 1245	PRINTED NAME/COMPANY:	TIME

* RUSH TURNAROUND MAY REQUIRE SURCHARGE

☐ Anaheim, CA 1250 E. Gene Autry Way Anaheim, CA 92805 (714) 937-1084 Fax (714) 937-1170
☒ Aurora, CO 10703 E. Bethany Drive Aurora, CO 80014 (303) 751-1760 Fax (303) 751-1704
☐ Casper, WY 420 W. First Street Casper, WY 82601 (307) 235-5741 Fax (307) 266-1676
☐ Corpus Christi, TX 1733 N. Padre Island Drive Corpus Christi, TX 78408 (512) 289-2673 Fax (512) 289-2671
☐ Edison, NJ 294 Raritan Center Parkway Edison, NJ 08837 (908) 225-8700 Fax (908) 225-8777
☐ Houston, TX (Eng) 6316 Fairway Drive Houston, TX 77040 (713) 690-4444 Fax (713) 690-5646
☐ Houston, TX (Pet) 8310 Mosley Road Houston, TX 77075 (713) 943-9776 Fax (713) 943-3046
☐ Indianapolis, IN 7726 Moller Road Indianapolis, IN 46268 (317) 875-5894 Fax (317) 872-6109
☐ Lake Charles, LA 3646 Beglis Parkway Sulphur, LA 70663 (318) 583-4928 Fax (318) 583-4929
☐ Long Beach, CA 3700 Cherry Avenue Long Beach, CA 90807 (310) 595-0401 Fax (310) 427-6174
☐ Tampa, FL 5460 Beaumont Center Blvd. Tampa, FL 33634 (813) 884-8266 Fax (813) 885-4036
☐ Valparaiso, IN 2400 Cumberland Drive Valparaiso, IN 46383 (219) 464-2388 Fax (219) 462-2153

CORE LABORATORIES

SAMPLE INFORMATION
Date: 12/23/96

Job Number.: 963338
Customer ..: Asarco Globe
Attn.....: Nikki Mathis

Project Number.....: 96000238
Customer Project ID....: ANNUAL ORGANICS ANAL
Project Description....: Asarco Wastewater

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
963338-1	ASARCO WASTEWATER	Water	12/06/96	08:13	12/06/96	12:45

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CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 963338 Date: 12/23/96

CUSTOMER: Asarco Globe PROJECT: ANNUAL ORGANICS ANAL ATTN: Nikki Mathis

Customer Sample ID: ASARCO WASTEWATER
Date Sampled.....: 12/06/96
Time Sampled.....: 08:13
Sample Matrix.....: Water

Laboratory Sample ID: 963338-1
Date Received.....: 12/06/96
Time Received.....: 12:45

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
EPA 625	Semivolatile Organics					
	Acenaphthylene	ND	10	ug/L	12/17/96	mla
	Fluoranthene	ND	10	ug/L	12/17/96	mla
	Fluorene	ND	10	ug/L	12/17/96	mla
	Phenanthrene	ND	10	ug/L	12/17/96	mla
	Pyrene	ND	10	ug/L	12/17/96	mla
	Pentachlorophenol	ND	50	ug/L	12/17/96	mla
EPA 625	Extraction (Sep. Funnel) SVOC					
	Separatory Funnel Liq/Liq Extraction	Complete			12/11/96	rwm
EPA 624	Volatile Organics					
	Methylene chloride	ND	5.	ug/L	12/17/96	tdw
	Tetrachloroethene	ND	5.	ug/L	12/17/96	tdw
	Trichloroethene	ND	5.	ug/L	12/17/96	tdw

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CORE LABORATORIES

QUALITY CONTROL RESULTS

Job Number: 963338 Date: 12/23/96

CUSTOMER: Asarco Globe PROJECT: ANNUAL ORGANICS ANAL ATTN: Nikki Mathis

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

Test Method.....: EPA 624 Batch.....: 16614 Analyst ...: tdw
Method Description.: Volatile Organics Units.....: ug/L

RS	Reference Standard	V961217A				12/17/96	0942

Parameter/Test Description	QC Result	QC Result	Rep. Limit	True Value	Orig. Value	Calc. Result	Units
Methylene chloride	18.83		5.	19.88		94.7	% REC
Tetrachloroethene	15.74		5.	20.00		78.7	% REC
Trichloroethene	20.33		5.	20.00		101.7	% REC

MB	Method Blank	ALG05				12/17/96	1049

Parameter/Test Description	QC Result	QC Result	Rep. Limit	True Value	Orig. Value	Calc. Result	Units
Methylene chloride	ND		5.				
Tetrachloroethene	ND		5.				
Trichloroethene	ND		5.				

Test Method.....: EPA 625 Batch.....: 16664 Analyst ...: mla
Method Description.: Semivolatile Organics Units.....: ug/L

MB	Method Blank	MB2201				12/17/96	1729

Parameter/Test Description	QC Result	QC Result	Rep. Limit	True Value	Orig. Value	Calc. Result	Units
Acenaphthylene	ND		10				
Fluoranthene	ND		10				
Fluorene	ND		10				
Phenanthrene	ND		10				
Pyrene	ND		10				
Pentachlorophenol	ND		50				

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CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 963338

Report Date: 12/23/96

CUSTOMER: Asarco Globe | PROJECT: ANNUAL ORGANICS ANAL | ATTN: Nikki Mathis

Method.....: EPA 624
Method Code.....: 624C

Batch.....: 16614
Analyst.....: tdw

Surrogate	Units
4-Bromofluorobenzene	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Flag	Date	Time
		RS		48.16	50.179	96.0		12/17/96	0942
		MB		46.38	50.179	92.4		12/17/96	1049
963338-1				45.65	50.179	91.0		12/17/96	2201

Surrogate	Units
Dibromofluoromethane	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Flag	Date	Time
		RS		47.79	50.219	95.2		12/17/96	0942
		MB		49.07	50.219	97.7		12/17/96	1049
963338-1				52.33	50.219	104.2		12/17/96	2201

Surrogate	Units
Toluene-d8	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Flag	Date	Time
		RS		48.12	50.204	95.8		12/17/96	0942
		MB		46.99	50.204	93.6		12/17/96	1049
963338-1				47.91	50.204	95.4		12/17/96	2201

Method.....: EPA 625
Method Code.....: 625 =

Batch.....: 16664
Analyst.....: mla

Surrogate	Units
2,4,6-Tribromophenol	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Flag	Date	Time
963338-1			1.00	81.02	100.01	81		12/17/96	1533
		MB	1.00	97.76	100.01	98		12/17/96	1729
963307-1			1.00	84.64	100.01	85		12/17/96	1925
963307-2			1.00	107.38	100.01	107		12/17/96	2122

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CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 963338

Report Date: 12/23/96

CUSTOMER: Asarco Globe | PROJECT: ANNUAL ORGANICS ANAL | ATTN: Nikki Mathis

Surrogate	Units
2-Fluorobiphenyl	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Flag	Date	Time
963338-1			1.00	40.34	50.01	81		12/17/96	1533
		MB	1.00	37.54	50.01	75		12/17/96	1729
963307-1			1.00	35.97	50.01	72		12/17/96	1925
963307-2			1.00	42.62	50.01	85		12/17/96	2122

Surrogate	Units
2-Fluorophenol	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Flag	Date	Time
963338-1			1.00	34.11	100.00	34		12/17/96	1533
		MB	1.00	47.73	100.00	48		12/17/96	1729
963307-1			1.00	46.18	100.00	46		12/17/96	1925
963307-2			1.00	50.36	100.00	50		12/17/96	2122

Surrogate	Units
Nitrobenzene-d5	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Flag	Date	Time
963338-1			1.00	36.41	50.05	73		12/17/96	1533
		MB	1.00	36.63	50.05	73		12/17/96	1729
963307-1			1.00	35.95	50.05	72		12/17/96	1925
963307-2			1.00	42.96	50.05	86		12/17/96	2122

Surrogate	Units
Phenol-d6	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Flag	Date	Time
963338-1			1.00	10.44	100.02	10		12/17/96	1533
		MB	1.00	30.72	100.02	31		12/17/96	1729
963307-1			1.00	29.08	100.02	29		12/17/96	1925
963307-2			1.00	32.64	100.02	33		12/17/96	2122

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CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 963338

Report Date: 12/23/96

CUSTOMER: Asarco Globe | PROJECT: ANNUAL ORGANICS ANAL | ATTN: Nikki Mathis

Surrogate	Units
Terphenyl-d14	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Flag	Date	Time
963338-1			1.00	42.90	50.00	86		12/17/96	1533
		MB	1.00	46.93	50.00	94		12/17/96	1729
963307-1			1.00	37.97	50.00	76		12/17/96	1925
963307-2			1.00	44.04	50.00	88		12/17/96	2122

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CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/23/96

Volatile Organics

Method 602/8020

Surrogate Recovery Limits

	Water	Soil
Bromofluorobenzene	89-110%	78-123%

Spike/Spike Duplicate Recovery Limits

	Water	Soil
Benzene	39-150%	75-125%
Ethylbenzene	32-160%	60-140%
Toluene	46-148%	70-130%
Xylenes	75-125%	61-139%

Method 8015 Modified

Spike/Spike Duplicate Recovery Limits

	Water	Soil
TVPH	81-124%	48-152%
TEPH	54-135%	54-135%

Method 624/8240/8260

Surrogate Recovery Limits

	Water	Soil
Dibromofluoromethane	86-118%	80-120%
Toluene-(d8)	88-110%	81-117%
4-Bromofluorobenzene	86-115%	74-121%

Spike/Spike Duplicate Recovery & RPD Limits

	Water		Soil	
	Recovery	RPD	Recovery	RPD
1,1-Dichloroethene	61-145%	14	59-172%	22
Trichloroethene	71-120%	14	82-137%	24
Benzene	76-127%	11	66-142%	21
Toluene	76-125%	13	59-139%	21
Chlorobenzene	75-130%	13	60-133%	21

Pesticides/PCB Organics

Method 608/8080

Surrogate Recovery Limits

	Water	Soil
Tetrachloro-m-xylene	60-150%	60-150%
4,4'-Dichlorobiphenyl	60-150%	60-150%

Method 8140

Surrogate Recovery Limits

	Water	Soil
Tributylphosphate	36-152%	36-152%
Triphenylphosphate	40-152%	40-152%

Base/Neutral/Acid Organics

Method 625/8270

Surrogate Recovery Limits

	Water	Soil
Nitrobenzene-d5	35-114%	23-120%
2-Fluorobiphenyl	43-116%	30-115%
4-Terphenyl-d14	33-141%	18-137%
Phenol-d6	10-94%	24-113%
2-Fluorophenol	21-100%	25-121%
2,4,6-Tribromophenol	10-123%	19-122%

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CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/23/96

Matrix Spike/Matrix Spike Duplicate Recovery & RPD Limits

	Water Recovery	RPD	Soil Recovery	RPD
Phenol	12-110%	42	26-90%	35
2-Chlorophenol	27-123%	40	25-102%	50
1,4-Dichlorobenzene	36-97%	28	28-104%	27
N-Nitroso-di-n-propylamine	41-116%	38	41-126%	38
1,2,4-Trichlorobenzene	39-98%	28	38-107%	23
4-Chloro-3-methylphenol	23-97%	42	26-103%	33
Acenaphthene	46-118%	31	31-137%	19
4-Nitrophenol	10-80%	50	11-114%	50
2,4-Dintrotoluene	24-96%	38	28-89%	47
Pentachlorophenol	9-103%	50	17-109%	47
Pyrene	26-127%	31	35-142%	36

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CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/23/96

(1) EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983

(2) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, 1989

(3) Standard Methods for The Examination of Water and Wastewater, 17th Edition, 1989

(4) EPA 600/4-80-032, Prescribed Procedures For Measurement Of Radioactivity In Drinking Water, August 1980

(5) EPA 600/8-78-017, Microbiological Methods For Monitoring The Environment, December 1978

(6) Federal Register, July 1, 1990 (40 CFR Part 136)

(7) EPA 600/4-88-03, Methods For The Determination of Organics Compounds In Drinking Water, December 1988

(8) U.S.G.S. Methods For Determination of Inorganic Substances In Water And Fluvial Sediments, Book 5, Chapter A1, 1985

(9) Federal Register, Friday, June 7, 1991 (40 CFR Parts 141 & 142)

(10) Standard Methods For The Examination of Water and Wastewater, 16th Edition, 1985

(11) ASTM, Section 11 Water and Environmental Technology, Volume 11.01 Water (1), 1991

(12) Methods of Soil Analysis, American Society of Agronomy, Agronomy No. 9, 1965

(13) EPA SW-846, Test Methods For Evaluating Solid Waste, Third Edition, Revision 1, November 1990

(14) ASTM, Section 5, Petroleum Products, Lubricants, and Fossil Fuels, Volume 05.05, Gaseous Fuels, Coal, and Coke

(15) EPA 600/2-78-054, Field and Laboratory Methods Applicable To Overburdens and Mine Soils, March 1978

(16) ASTM, Part 19, Soils and Rocks; Building Stones, 1981

Comments: Data in the QA report may differ from final results due to digestion and/or dilution of sample into analytical ranges. The "Time Analyzed" in the QA report refers to the start time of the analytical batch which may not reflect the actual time of each analysis. The "Date Analyzed" is the actual date of analysis. Results for soil and sludge samples are reported on a wet weight basis (i.e. not corrected for percent moisture) unless otherwise indicated.

NC = Not Calculable Due to Value(s) lower than the Detection Limit.

BLANK QC SAMPLE IDENTIFICATION

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QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/23/96

MB	Method Blank
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank

SPIKE QC SAMPLE IDENTIFICATION

MS	Method (Matrix) Spike
MSD	Method (Matrix) Spike Duplicate
PDS	Post Digestion Spike
SB	Spiked Blank
SBD	Spike Blank Duplicate

REFERENCE STANDARD QC SAMPLE IDENTIFICATION

LCS	Laboratory Control Standard
RS	Reference Standard
ICV	Initial Calibration Verification Standard
CCV	Continuing Calibration Verification Standard
ISA/ISB	ICP Interface Check Sample
ICL	Initial Calibration/Laboratory Control Sample
DSC	Distilled Standard Check

DUPLICATE QC SAMPLE IDENTIFICATION

MD	Method (Matrix) Duplicate
ED	Extraction Duplicate
DD	Digestion Duplicate

Analyses performed by a subcontract laboratory are indicated on the analytical and/or quality control reports under "technician" using the following codes:

SUBCONTRACT LABORATORY	CODE
Core Laboratories - Anaheim, CA	* AN
Core Laboratories - Casper, WY	* CA
Core Laboratories - Corpus Christi, TX	* CC
Core Laboratories - Houston, TX	* HP
Core Laboratories - Lake Charles, LA	* LC
Core Laboratories - Long Beach, CA	* LB
Other Subcontract Laboratories	* XX

EXPLANATION OF DATA FLAGS

B - This flag is used to indicate that an analyte is present in the method blank as well as in the sample. It indicates that the client should consider this when evaluating the results.

D - This flag indicates that surrogates were diluted out of calibration range and cannot be quantified.

E - Indicates that a sample result is an estimate because the concentration exceeded the calibration range of the instrument.

I - Used to indicate matrix interference.

J - Indicates that a value is an estimate. It is used when a compound is determined to be present based on the mass spectral data, but at a concentration less than the practical quantitation limit of the method.

The analytical results, opinions or interpretations contained in this report are based upon information and material supplied by the client for whose exclusive and confidential use this report has been made. The analytical results, opinions or interpretations expressed represent the best judgment of Core Laboratories. Core Laboratories, however, makes no warranty or representation, express or implied, of any kind, and expressly disclaims same as to the productivity, proper operations or profitableness of any oil, gas, coal or other mineral, property, well or sand in connection with which such report is used or relied upon for any reason whatsoever. The report shall not be reproduced, in whole or in part, without the written approval of Core Laboratories.

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/23/96

This flag is also used when estimating the concentration of a tentatively identified compound.

X - Indicates that a surrogate recovery is outside the specified quality control limits.

Y - Used to identify a spike or spike duplicate recovery that is outside the specified quality control limits.

Z - Indicates a relative percent difference for a spike and spike duplicate is outside the specified quality control limits.

* - Indicates a relative percent difference for a duplicate analysis is outside the specified quality control limits.

* - Used to indicate that a standard is outside specified quality control limits.

The analytical results, opinions or interpretations contained in the report are based upon information and material supplied by the client for whose exclusive and confidential use the report has been made. The analytical results, opinions or interpretations expressed represent the best judgment of Core Laboratories. Core Laboratories, however, makes no warranty or representation, express or implied, of any kind, and expressly disclaims same as to the productivity, proper operations or profitableness of any oil, gas, coal or other mineral, property, well or sand in connection with which such report is used or relied upon for any reason whatsoever. The report shall not be reproduced, in whole or in part, without the written approval of Core Laboratories.

ASARCO

GLOBE PLANT

July 15, 1996

Mr. James T. Graber
Industrial Waste Specialist
Metro Wastewater Reclamation District
6450 York Street
Denver, Colorado 80229-7499

Dear Mr. Graber:

As per our telephone conversation on Friday, July 12, 1996, I am forwarding the following information to supplement the Asarco Globe Plant's Periodic Compliance Report (PCR) for the reporting period of January - June 1996 submitted to you on July 10, 1996. Based on my inquiry of the person directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

- Although Globe has consistently used the analytical method of 3114 ~~b.d~~ B.4.d for arsenic analysis, the general analytical method of 3114 b has been indicated on the analytical reports. All analytical reports have been revised to reflect the specific analytical method of 3114 b.d and are enclosed. In addition, due to improper preservation of Metro's January 29 -30, 1996 flow composite sample, Globe has removed its split analytical report from the PCR and database.

  (made correction via phone conversation w/ Ted on 7/16) NRM

- Flow measurements for the sampling periods of March 20 - 21, 1996 and May 22 - 23, 1996 are enclosed.

Thank you for your prompt review of Globe's PCR in an effort to help us ensure all requirements are being met with the new reporting format. If you should require additional information, please contact me at 296-5111.

Sincerely,

Nicole R. Mathis

Nicole R. Mathis
Environmental Engineer

enc.

cc: (w/ enc)
R. Marcus
C. Dungey
(w/o enc)
T. Li
D. Faust
W. Rolle/D. Lux

ASARCO Incorporated. 495 East 51st Avenue. Denver. Colorado 80216 2098
Phone (303) 296-5900 FAX (303) 296-0508

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/12/96 10:14:36

Lab ID Number:	209-001-96
Sample Type:	SEWER
Location:	001
Sampling Period:	0755 1/29/96 - 0730 1/30/96
Sample Description:	FLOW COMP
Sampled By:	METRO

Analysis			Date Analyzed	Analyzed By	Method Used
As	<0.002	(ppm)	02/09/96	WR	3114 B 4.d
Cd	0.18	(ppm)	02/09/96	WR	3111 B
Cu	0.04	(ppm)	02/09/96	WR	3111 B
Ni	<0.025	(ppm)	02/09/96	WR	3111 B
Pb	0.26	(ppm)	02/09/96	WR	3111 B
Se	<0.002	(ppm)	02/09/96	WR	3114 B ~~4.d~~
Zn	1.90	(ppm)	02/09/96	WR	3111 B

This split was thrown out by Metro due to their sample being improperly preserved. These results will not be entered into Metro's database as per discussion with Ted Graber on July 12, 1996. ARM

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Sampling Period: 5/22/96 0820 to 5/23/96 0830

Total Flow for 24 hour period: 21700 gal

Maximum Flow: 0.45 gal/sec

Average Flow: 0.249 gal/sec

Number of Tanks Discharged: 2

Number of Samples Collected: 31

Total Volume Collected: 9.9 liters

Flow composite sample was collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Total Metals Composite Analysis:

Arsenic (As):	0.003	(ppm)
Cadmium (Cd):	0.05	(ppm)
Copper (Cu):	0.05	(ppm)
Lead (Pb):	0.15	(ppm)
Nickel (Ni):	<0.025	(ppm)
Selenium (Se):	<0.002	(ppm)
Zinc (Zn):	0.27	(ppm)

GRAB SAMPLING DATA:

Sampling Date/Time: 5/23/96 0830

Analysis Date/Time: 5/23/96 0838

pH Grab Analysis:

pH 7.8 (units)

Sampled By: Wayne Robb

ASARCO INC.
GLOBE PLANT

SANITARY SEWER MONITORING DATA
Monitoring Point 001

FLOW COMPOSITE SAMPLING DATA:

Sampling Period: 3/20/96 1320 to 3/21/96 1350

Total Flow for 24 hour period: 8340 gal

Maximum Flow: 0.40 gal/sec

Average Flow: 0.097 gal/sec

Number of Tanks Discharged: 1

Number of Samples Collected: 11

Total Volume Collected: 2.4 liters

Flow composite sample was collected using an ISCO 3710 sampler, and an ISCO 2870 Flow Meter.

Total Metals Composite Analysis:

Arsenic (As):	0.005	(ppm)
Cadmium (Cd):	0.02	(ppm)
Copper (Cu):	<0.01	(ppm)
Lead (Pb):	0.14	(ppm)
Nickel (Ni):	<0.025	(ppm)
Selenium (Se):	0.005	(ppm)
Zinc (Zn):	0.17	(ppm)

GRAB SAMPLING DATA:

Sampling Date/Time: 3/21/96 1355

Analysis Date/Time: 3/21/96 1402

pH Grab Analysis:

pH 8.7 (units)

Sampled By: Wayne Kolb

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/12/96 10:14:35

Lab ID Number:	208-001-96
Sample Type:	SEWER
Location:	001
Sampling Period:	1355 3/21/96
Sample Description:	PH GRAB
Sampled By:	GLOBE

Analysis		Date Analyzed	Analyzed By	Method Used
pH	8.7	03/21/96	WR	4500 H+ B

ASARCO INCORPORATED
GLOBE PLANT

Se method used is 3114B. Correction was made via phone to T. Graber on 7/18/96 AKM

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/12/96 10:14:35

Lab ID Number:	208-002-96
Sample Type:	SEWER
Location:	001
Sampling Period:	1320 3/20/96 - 1350 3/21/96
Sample Description:	FLOW COMP
Sampled By:	GLOBE

Analysis			Date Analyzed	Analyzed By	Method Used
As	0.005	(ppm)	04/03/96	WR	3114 B 4.d
Cd	0.02	(ppm)	04/03/96	WR	3111 B
Cu	<0.01	(ppm)	04/03/96	WR	3111 B
Ni	<0.025	(ppm)	04/03/96	WR	3111 B
Pb	0.14	(ppm)	04/03/96	WR	3111 B
Se	0.005	(ppm)	04/03/96	WR	3114 B ~~4.d~~
Zn	0.17	(ppm)	04/03/96	WR	3111 B

Wayne - 7/18/96
Please correct
Se Method to
3114B. AKM

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/12/96 10:14:36

Lab ID Number:	208-003-96
Sample Type:	SEWER
Location:	001
Sampling Period:	0830 5/23/96
Sample Description:	PH GRAB
Sampled By:	GLOBE

Analysis		Date Analyzed	Analyzed By	Method Used
pH	7.8	05/23/96	WR	4500 H+ B

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/12/96 10:14:36

Lab ID Number:	208-004-96
Sample Type:	SEWER
Location:	001
Sampling Period:	0820 5/22/96 - 0830 5/23/96
Sample Description:	FLOW COMP
Sampled By:	GLOBE

Analysis			Date Analyzed	Analyzed By	Method Used
As	0.003	(ppm)	06/13/96	WR	3114 B 4.d
Cd	0.05	(ppm)	06/13/96	WR	3111 B
Cu	0.05	(ppm)	06/13/96	WR	3111 B
Ni	<0.025	(ppm)	06/13/96	WR	3111 B
Pb	0.15	(ppm)	06/13/96	WR	3111 B
Se	<0.002	(ppm)	06/13/96	WR	3114 B ~~4.d~~
Zn	0.27	(ppm)	06/13/96	WR	3111 B

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/12/96 10:14:36

Lab ID Number:	209-002-96
Sample Type:	SEWER
Location:	001
Sampling Period:	0855 2/26/96 - 0855 2/27/96
Sample Description:	FLOW COMP
Sampled By:	METRO

Analysis			Date Analyzed	Analyzed By	Method Used
As	0.007	(ppm)	03/14/96	WR	3114 B 4.d
Cd	0.05	(ppm)	03/14/96	WR	3111 B
Cu	0.08	(ppm)	03/14/96	WR	3111 B
Ni	<0.025	(ppm)	03/14/96	WR	3111 B
Pb	0.18	(ppm)	03/14/96	WR	3111 B
Se	<0.002	(ppm)	03/14/96	WR	3114 B ~~4.d~~
Zn	0.59	(ppm)	03/14/96	WR	3111 B

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/12/96 10:14:36

Lab ID Number:	209-003-96
Sample Type:	SEWER
Location:	001
Sampling Period:	0831 4/8/96 - 0920 4/9/96
Sample Description:	FLOW COMP
Sampled By:	METRO

Analysis			Date Analyzed	Analyzed By	Method Used
As	0.006	(ppm)	05/06/96	WR	3114 B 4.d
Cd	0.02	(ppm)	05/06/96	WR	3111 B
Cu	0.03	(ppm)	05/06/96	WR	3111 B
Ni	<0.025	(ppm)	05/06/96	WR	3111 B
Pb	<0.05	(ppm)	05/06/96	WR	3111 B
Se	<0.002	(ppm)	05/06/96	WR	3114 B ~~4.d~~
Zn	0.11	(ppm)	05/06/96	WR	3111 B

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/12/96 10:14:36

Lab ID Number:	209-004-96
Sample Type:	SEWER
Location:	001
Sampling Period:	1010 6/17/96 - 1325 6/18/96
Sample Description:	FLOW COMP
Sampled By:	METRO

Analysis			Date Analyzed	Analyzed By	Method Used
As	0.014	(ppm)	07/02/96	WR	3114 B 4.d
Cd	0.08	(ppm)	07/02/96	WR	3111 B
Cu	0.03	(ppm)	07/02/96	WR	3111 B
Ni	<0.025	(ppm)	07/02/96	WR	3111 B
Pb	0.14	(ppm)	07/02/96	WR	3111 B
Se	<0.002	(ppm)	07/02/96	WR	3114 B ~~4.d~~
Zn	0.61	(ppm)	07/02/96	WR	3111 B

PERIODIC COMPLIANCE REPORT

NOTE: Periodic compliance reports (PCRs) are due on or before the last day of the month following the end of the reporting period and must be submitted to the address(es) listed in the "Reporting Requirements for Permittee" section of your wastewater discharge permit. Not all of the sections listed below apply to all permittees. Some permittees may also need to submit information in addition to the items appearing on this checklist. Consult your wastewater discharge permit for your specific reporting requirements.

Reporting period from January 1996 to June 1996

Date prepared 7/9/96 Phone _____

Prepared by Wayne Rolle

A. FACILITY INFORMATION

Name ASARCO

Location 495 E. 51st

Denver, CO 80216

Phone 296-5900 Fax 296-5908 Emergency _____

B. FLOW MONITORING

(Flow monitoring information may be required for more than one Monitoring Point. Attach additional sheets as necessary. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point 001 [ ] No discharge

Average daily flow volume (gallons per day) 7515 [ ] Measured [X] Estimated

Maximum daily flow volume (gallons per day) 26413 [X] Measured [ ] Estimated

Process water discharge (gallons per day) 5315 [X] Measured [ ] Estimated

Groundwater discharge (gallons per day -- Terrace Drain) 0 [X] Measured [ ] Estimated

Note: Daily flow volumes are used, in part, to determine self-monitoring and reporting frequencies. Reported values, especially estimates, must be as accurate as possible.

C. SAMPLING RESULTS

Attach copies of the analytical results of all samplings of the regulated wastestreams performed by the permittee during the reporting period. Attach copies of the analytical results of all split samplings of the regulated wastestream performed by the permittee or other agency during the reporting period. Results transmitted to the permittee by any other agency, including the Metro District, do not have to be submitted, but must be kept on file for at least 3 years and be available for inspection.

Analytical results submitted with this PCR must contain the following information:

1. Concentrations and measurements of all parameters for which there are self-monitoring requirements.

2. The date, time and location of all sampling activities. Include the start-stop dates and times for composite samples.

(Note: To avoid self-monitoring reporting errors or violations, the analytical results included in this PCR should also contain the information listed below for all samples. At a minimum, this information must be kept on file for at least 3 years and be available for inspection.)

3. The method of sampling (grab, time composite. flow composite, or continuous measurement) and name of the person collecting the sample.

4. The name of the laboratory (or person) that performed the analyses.

5. The date the analyses were performed.

6. The analytical techniques/methods used for the analyses.

D. WASTE DISPOSAL

(Attach copies of disposal records for wastes hauled off-site during the reporting period, or provide a summary of waste disposal activities in the space provided below, or indicate "no activity" if no wastes were disposed of during the reporting period.)

[X] No waste disposal activity occurred during the reporting period

[ ] Disposal record copies attached

Waste Name	Volume	Ship Date	Disposal Company

D. WASTE DISPOSAL (cont'd.)

Waste Name	Volume	Ship Date	Disposal Company

E. ACCURACY AND COMPLETENESS CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that, there has not been any change(s) in the Research and Development activities at this facility that have significantly changed the process wastewater discharged to the POTW, or that notification of changed discharges was submitted to the Metro District as required per Section F.4 of the permit. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Nicole R. Mathis
Signature of Authorized Representative

7/9/96
Date

Nicole R. Mathis
Name (please print or type)

Environmental Engineer
Title (please print or type)

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/09/96 07:53:25

Lab ID Number:	208-001-96
Sample Type:	SEWER
Location:	001
Sampling Period:	1355 3/21/96
Sample Description:	PH GRAB
Sampled By:	GLOBE /WR

Analysis		Date Analyzed	Analyzed By	Method Used
pH	8.7	03/21/96	WR	4500 H+ B

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/09/96 07:53:25

Lab ID Number:	208-002-96
Sample Type:	SEWER
Location:	001
Sampling Period:	1320 3/20/96 - 1350 3/21/96
Sample Description:	FLOW COMP
Sampled By:	GLOBE /WR

Analysis			Date Analyzed	Analyzed By	Method Used
As	0.005	(ppm)	04/03/96	WR	3114 B
Cd	0.02	(ppm)	04/03/96	WR	3111 B
Cu	<0.01	(ppm)	04/03/96	WR	3111 B
Ni	<0.025	(ppm)	04/03/96	WR	3111 B
Pb	0.14	(ppm)	04/03/96	WR	3111 B
Se	0.005	(ppm)	04/03/96	WR	3114 B
Zn	0.17	(ppm)	04/03/96	WR	3111 B

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/09/96 07:53:25

Lab ID Number:	208-003-96
Sample Type:	SEWER
Location:	001
Sampling Period:	0830 5/23/96
Sample Description:	PH GRAB
Sampled By:	GLOBE

Analysis		Date Analyzed	Analyzed By	Method Used
pH	7.8	05/23/96	WR	4500 H+ B

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/09/96 07:53:25

Lab ID Number:	208-004-96
Sample Type:	SEWER
Location:	001
Sampling Period:	0820 5/22/96 - 0830 5/23/96
Sample Description:	FLOW COMP
Sampled By:	GLOBE /WR

Analysis			Date Analyzed	Analyzed By	Method Used
As	0.003	(ppm)	06/13/96	WR	3114 B
Cd	0.05	(ppm)	06/13/96	WR	3111 B
Cu	0.05	(ppm)	06/13/96	WR	3111 B
Ni	<0.025	(ppm)	06/13/96	WR	3111 B
Pb	0.15	(ppm)	06/13/96	WR	3111 B
Se	<0.002	(ppm)	06/13/96	WR	3114 B
Zn	0.27	(ppm)	06/13/96	WR	3111 B

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/09/96 07:53:25

Lab ID Number:	209-001-96
Sample Type:	SEWER
Location:	001
Sampling Period:	0755 1/29/96 - 0730 1/30/96
Sample Description:	FLOW COMP
Sampled By:	METRO

Analysis			Date Analyzed	Analyzed By	Method Used
As	<0.002	(ppm)	02/09/96	WR	3114 B
Cd	0.18	(ppm)	02/09/96	WR	3111 B
Cu	0.04	(ppm)	02/09/96	WR	3111 B
Ni	<0.025	(ppm)	02/09/96	WR	3111 B
Pb	0.26	(ppm)	02/09/96	WR	3111 B
Se	<0.002	(ppm)	02/09/96	WR	3114 B
Zn	1.90	(ppm)	02/09/96	WR	3111 B

Thrown out by Metro due to improper preservation of their sample according T. Graber (7/12/96 conversation). These results will not be entered into their database. WRM

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/09/96 07:53:25

Lab ID Number:	209-002-96
Sample Type:	SEWER
Location:	001
Sampling Period:	0855 2/26/96 - 0855 2/27/96
Sample Description:	FLOW COMP
Sampled By:	METRO

Analysis			Date Analyzed	Analyzed By	Method Used
As	0.007	(ppm)	03/14/96	WR	3114 B
Cd	0.05	(ppm)	03/14/96	WR	3111 B
Cu	0.08	(ppm)	03/14/96	WR	3111 B
Ni	<0.025	(ppm)	03/14/96	WR	3111 B
Pb	0.18	(ppm)	03/14/96	WR	3111 B
Se	<0.002	(ppm)	03/14/96	WR	3114 B
Zn	0.59	(ppm)	03/14/96	WR	3111 B

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/09/96 07:53:25

Lab ID Number:	209-003-96
Sample Type:	SEWER
Location:	001
Sampling Period:	0831 4/8/96 - 0920 4/9/96
Sample Description:	FLOW COMP
Sampled By:	METRO

Analysis			Date Analyzed	Analyzed By	Method Used
As	0.006	(ppm)	05/06/96	WR	3114 B
Cd	0.02	(ppm)	05/06/96	WR	3111 B
Cu	0.03	(ppm)	05/06/96	WR	3111 B
Ni	<0.025	(ppm)	05/06/96	WR	3111 B
Pb	<0.05	(ppm)	05/06/96	WR	3111 B
Se	<0.002	(ppm)	05/06/96	WR	3114 B
Zn	0.11	(ppm)	05/06/96	WR	3111 B

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/09/96 07:53:25

Lab ID Number:	209-004-96
Sample Type:	SEWER
Location:	001
Sampling Period:	1010 6/17/96 - 1325 6/18/96
Sample Description:	FLOW COMP
Sampled By:	METRO

Analysis			Date Analyzed	Analyzed By	Method Used
As	0.014	(ppm)	07/02/96	WR	3114 B
Cd	0.08	(ppm)	07/02/96	WR	3111 B
Cu	0.03	(ppm)	07/02/96	WR	3111 B
Ni	<0.025	(ppm)	07/02/96	WR	3111 B
Pb	0.14	(ppm)	07/02/96	WR	3111 B
Se	<0.002	(ppm)	07/02/96	WR	3114 B
Zn	0.61	(ppm)	07/02/96	WR	3111 B

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 07/12/96 10:14:36

Lab ID Number:	209-001-96
Sample Type:	SEWER
Location:	001
Sampling Period:	0755 1/29/96 - 0730 1/30/96
Sample Description:	FLOW COMP
Sampled By:	METRO

Analysis			Date Analyzed	Analyzed By	Method Used
As	<0.002	(ppm)	02/09/96	WR	3114 B 4.d
Cd	0.18	(ppm)	02/09/96	WR	3111 B
Cu	0.04	(ppm)	02/09/96	WR	3111 B
Ni	<0.025	(ppm)	02/09/96	WR	3111 B
Pb	0.26	(ppm)	02/09/96	WR	3111 B
Se	<0.002	(ppm)	02/09/96	WR	3114 B 4.d
Zn	1.90	(ppm)	02/09/96	WR	3111 B

This split was thrown out by Metro due to their sample being improperly preserved. These results will not be entered into Metro's database as per discussion with Ted Graber on July 12, 1996. ARM

4-9/96 version

4.6.5.2

PERIODIC COMPLIANCE REPORT

NOTE: Periodic compliance reports (PCRs) are due on or before the last day of the month following the end of the reporting period and must be submitted to the address(es) listed in the "Reporting Requirements for Permittee" section of your wastewater discharge permit. Not all of the sections listed below apply to all permittees. Some permittees may also need to submit information in addition to the items appearing on this checklist. Consult your wastewater discharge permit for your specific reporting requirements.

Reporting period from _____ to _____

Date prepared _____ Phone _____

Prepared by _____

A. FACILITY INFORMATION

Name _____

Location _____

_____

Phone _____ Fax _____ Emergency _____

B. FLOW MONITORING

(Flow monitoring information may be required for more than one Monitoring Point. Attach additional sheets as necessary. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point _____ [ ] No discharge

Average daily flow volume (gallons per day) _____ [ ] Measured [ ] Estimated

Maximum daily flow volume (gallons per day) _____ [ ] Measured [ ] Estimated

Maximum daily flow volume (gallons per day) _____ [ ] Measured [ ] Estimated

Process water discharge (gallons per day) _____ [ ] Measured [ ] Estimated

Groundwater discharge _____ [ ] Measured [ ] Estimated
(gallons per day -- Terrace Drain)

Note: Daily flow volumes are used, in part, to determine self-monitoring and reporting frequencies. Reported values, especially estimates, must be as accurate as possible.

C. BATCH DISCHARGES

(Section B may also need to be completed by most batch dischargers. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point_____ [ ] No discharge or [ ] Not applicable

Number of batch discharges_____ [ ] Batch discharge log attached

Average volume of batch discharges_____ (gallons per batch)

Maximum volume of batch discharges_____ (gallons per day)

D. PRODUCTION INFORMATION

[ ] Not applicable

[ ] Production data attached

E. SAMPLING RESULTS

Attach copies of the analytical results of all samplings of the regulated wastestreams performed by the permittee during the reporting period. Attach copies of the analytical results of all split samplings of the regulated wastestream performed by the permittee or other agency during the reporting period. Results transmitted to the permittee by any other agency, including the Metro District, do not have to be submitted, but must be kept on file for at least 3 years and be available for inspection.

Analytical results submitted with this PCR must contain the following information:

1. Concentrations and measurements of all parameters for which there are self-monitoring requirements.

2. The date, time and location of all sampling activities. Include the start-stop dates and times for composite samples.

(Note: To avoid self-monitoring reporting errors or violations, the analytical results included in this PCR should also contain the information listed below for all samples. At a minimum, this information must be kept on file for at least 3 years and be available for inspection.)

3. The method of sampling (grab, time composite, flow composite, or continuous measurement) and name of the person collecting the sample.

4. The name of the laboratory (or person) that performed the analyses.

5. The date the analyses were performed.

6. The analytical techniques/methods used for the analyses.

F. WASTE DISPOSAL

(Attach copies of disposal records for wastes hauled off-site during the reporting period, or provide a summary of waste disposal activities in the space provided below, or indicate "no activity" if no wastes were disposed of during the reporting period.)

[ ] No waste disposal activity occurred during the reporting period

[ ] Disposal record copies attached

Waste Name	Volume	Ship Date	Disposal Company

G. EYEWASH CERTIFICATION STATEMENT

[ ] Not applicable

"Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standards for this facility, I certify that, to the best of my knowledge and belief, there was no eyewash discharge during any compliance monitoring event."

Signature of Authorized Representative Date

Name (please print or type)

Title (please print or type)

H. CERTIFICATION STATEMENT FOR TOTAL TOXIC ORGANICS

[ ] Not applicable

"Based on my inquiry of the person or persons directly responsible for managing compliance with the permit limitation for Total Toxic Organics, I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewaters has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the toxic organic management plan submitted to the control authority."

Signature of Authorized Representative Date

Name (please print or type)

Title (please print or type)

I. ACCURACY AND COMPLETENESS CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that, there has not been any change(s) in the Research and Development activities at this facility that have significantly changed the process wastewater discharged to the POTW, or that notification of changed discharges was submitted to the Metro District as required per Section F.4 of the permit. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

_____ _____

Signature of Authorized Representative Date

_____

Name (please print or type)

_____

Title (please print or type)

PERIODIC COMPLIANCE REPORT

NOTE: Periodic compliance reports (PCRs) are due on or before the last day of the month following the end of the reporting period and must be submitted to the address(es) listed in the "Reporting Requirements for Permittee" section of your wastewater discharge permit. Not all of the sections listed below apply to all permittees. Some permittees may also need to submit information in addition to the items appearing on this checklist. Consult your wastewater discharge permit for your specific reporting requirements.

Reporting period from July 1995 to Dec 1995

Date prepared _____ Phone _____

Prepared by Wayne Rolle

A. FACILITY INFORMATION

Name ASARCO - GLOBE PLANT

Location _____

_____

Phone 296-5900 Fax 296-5908 Emergency _____

B. FLOW MONITORING

(Flow monitoring information may be required for more than one Monitoring Point. Attach additional sheets as necessary. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point 001 [ ] No discharge

Average daily flow volume 5563 [ ] Measured [ ] Estimated
(gallons per day)

Maximum daily flow volume 19145 [ ] Measured [ ] Estimated
(gallons per day)

Monitoring Point _____ [ ] No discharge or [ ] Not applicable

Average daily flow volume _____ [ ] Measured [ ] Estimated
(gallons per day)

Maximum daily flow volume _____ [ ] Measured [ ] Estimated
(gallons per day)

Note: Daily flow volumes are used, in part, to determine self-monitoring and reporting frequencies. Reported values, especially estimates, must be as accurate as possible.

C. BATCH DISCHARGES

(Section B may also need to be completed by most batch dischargers. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point 1/2/12 Tanks [ ] No discharge or [ ] Not applicable

Number of batch discharges 85 [ ] Batch discharge log attached

Average volume of batch discharges 7279 (gallons per ~~day~~ batch)

Maximum volume of batch discharges 16945 (gallons per day)

D. PRODUCTION INFORMATION

[ ] Not applicable

[ ] Production data attached

E. SAMPLING RESULTS

Attach copies of the analytical results of all samplings of the regulated wastestreams performed by the permittee during the reporting period. Attach copies of the analytical results of all split samplings of the regulated wastestream performed by the permittee or other agency during the reporting period. Results transmitted to the permittee by any other agency, including the Metro District, do not have to be submitted, but must be kept on file for at least 3 years and be available for inspection.

Analytical results submitted with this PCR must contain the following information:

1. Concentrations and measurements of all parameters for which there are self-monitoring requirements.

2. The date, time and location of all sampling activities. Include the start-stop dates and times for composite samples.

(Note: To avoid self-monitoring reporting errors or violations, the analytical results included in this PCR should also contain the information listed below for all samples. At a minimum, this information must be kept on file for at least 3 years and be available for inspection.)

3. The method of sampling (grab, time composite, flow composite, or continuous measurement) and name of the person collecting the sample.

4. The name of the laboratory (or person) that performed the analyses.

5. The date the analyses were performed.

6. The analytical techniques/methods used for the analyses.

F. WASTE DISPOSAL

(Attach copies of disposal records for wastes hauled off-site during the reporting period, or provide a summary of waste disposal activities in the space provided below, or indicate "no activity" if no wastes were disposed of during the reporting period.)

[ ] No waste disposal activity occurred during the reporting period

[ ] Disposal record copies attached

Waste Name	Volume	Ship Date	Disposal Company

G. EYEWASH CERTIFICATION STATEMENT

[·] Not applicable

"Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standards for this facility, I certify that, to the best of my knowledge and belief, there was no eyewash discharge during any compliance monitoring event."

Nicole R. Mathis
Signature of Authorized Representative

1/8/96
Date

Nicole R. Mathis
Name (please print or type)

Environmental Engineer
Title (please print or type)

H. CERTIFICATION STATEMENT FOR TOTAL TOXIC ORGANICS

[ ] Not applicable

"Based on my inquiry of the person or persons directly responsible for managing compliance with the permit limitation for Total Toxic Organics, I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewaters has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the toxic organic management plan submitted to the control authority."

Nicole R. Mathis
Signature of Authorized Representative

1/8/95
Date

Nicole R. Mathis
Name (please print or type)

Environmental Engineer
Title (please print or type)

I. ACCURACY AND COMPLETENESS CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that, there has not been any change(s) in the Research and Development activities at this facility that have significantly changed the process wastewater discharged to the POTW, or that notification of changed discharges was submitted to the Metro District as required per Section F.4 of the permit. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Nicole R. Mathis
Signature of Authorized Representative

1/8/95
Date

Nicole R. Mathis
Name (please print or type)

Environmental Engineer
Title (please print or type)

ASARCO

GLOBE PLANT

October 22, 1995 File: 2.45.5.2

Mr. Ted Graber
Metro Wastewater Reclamation
6450 York Street
Denver, Colorado 80229-7499

Re: Quarterly Sanitary Sewer Self-Monitoring

Dear Mr. Graber,

In accordance with the conditions of our discharge permit issued by the City and County of Denver, Wastewater Management, we monitored the discharge through manhole 001 on the following dates:

A 24 hour flow composite sample and a grab sample were collected and the following parameters were analyzed:

Flow Composite Sample Date/Time: 09/20/95 1430 - 09/21/95 1430

Total flow for 24 HR:	4090	gallons
Total vol. collected:	1.6	liters
Number of samples:	7	
Arsenic (As)	0.008	ppm
Cadmium (Cd)	0.04	ppm
Copper (Cu)	0.03	ppm
Lead (Pb)	0.08	ppm
Nickel (Ni)	<0.025	ppm
Selenium (Se)	0.003	ppm
Zinc (Zn)	0.13	ppm

Grab Sample Date/Time: 09/21/95 1432

pH	7.1	pH units

Flow Data Date/Time 09/19/95 1220 - 09/20/95 1430

Total flow:	1930	gallons
Maximum flow:	0.18	gallons/sec
Average flow:	0.022	gallons/sec

NR Mathis

Nikki Mathis
Environmental Engineer

ASARCO Incorporated, 495 East 51st Avenue, Denver, Colorado 80216-2098
Phone (303) 296-5900 FAX (303) 296-0508

ASARCO

GLOBE PLANT

December 22, 1995 File: 2.45.5.2

Mr. Ted Graber
Metro Wastewater Reclamation
6450 York Street
Denver, Colorado 80229-7499

Re: Quarterly Sanitary Sewer Self-Monitoring

Dear Mr. Graber,

In accordance with the conditions of our discharge permit issued by the City and County of Denver, Wastewater Management, we monitored the discharge through manhole 001 on the following dates:

A 24 hour flow composite sample and a grab sample were collected and the following parameters were analyzed:

Flow Composite Sample Date/Time: 12/12/95 0950 - 12/13/95 0950

Total flow for 24 HR:	16530	gallons
Total vol. collected:	5.1	liters
Number of samples:	21	
Arsenic (As)	0.006	ppm
Cadmium (Cd)	0.14	ppm
Copper (Cu)	<0.01	ppm
Lead (Pb)	0.22	ppm
Nickel (Ni)	<0.025	ppm
Selenium (Se)	0.003	ppm
Zinc (Zn)	2.84	ppm

Grab Sample Date/Time: 12/13/95 1000

pH	7.9	pH units

Flow Data Date/Time 12/11/95 0945 - 12/12/95 0945

Total flow:	2810	gallons
Maximum flow:	0.20	gallons/sec
Average flow:	0.033	gallons/sec

AR Mathis
Nikki Mathis
Environmental Engineer

ASARCO Incorporated, 495 East 51st Avenue, Denver, Colorado 80216-2098
Phone (303) 296-5900 FAX (303) 296-0508

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 01/08/96 09:22:03

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
208-013-95	09/21/95	SEWER	GLOBE	001 GRAB

As:(ppm)	Cd:(ppm)	Cu:(ppm)	Ni:(ppm)	Pb:(ppm)	Se:(ppm)	Zn:(ppm)	pH:
							7.1

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
208-014-95	09/21/95	SEWER	GLOBE	001 COMP

As:(ppm)	Cd:(ppm)	Cu:(ppm)	Ni:(ppm)	Pb:(ppm)	Se:(ppm)	Zn:(ppm)	pH:
0.008	0.04	0.03	<0.025	0.08	0.003	0.13	

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
208-015-95	12/13/95	SEWER	GLOBE	001 GRAB

As:(ppm)	Cd:(ppm)	Cu:(ppm)	Ni:(ppm)	Pb:(ppm)	Se:(ppm)	Zn:(ppm)	pH:
							7.9

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
208-016-95	12/13/95	SEWER	GLOBE	001 COMP

As:(ppm)	Cd:(ppm)	Cu:(ppm)	Ni:(ppm)	Pb:(ppm)	Se:(ppm)	Zn:(ppm)	pH:
0.006	0.14	<0.01	<0.025	0.22	0.003	2.84	

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 01/08/96 09:18:57

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
209-008-95	08/08/95	SEWER	METRO	001 METRO SPLIT - COMP

As:(ppm)	Cd:(ppm)	Cu:(ppm)	Ni:(ppm)	Pb:(ppm)	Se:(ppm)	Zn:(ppm)	pH:
0.012	0.08	0.03	<0.025	0.14	<0.002	1.45	

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
209-009-95	11/28/95	SEWER	METRO	001 METRO SPLIT - COMP

As:(ppm)	Cd:(ppm)	Cu:(ppm)	Ni:(ppm)	Pb:(ppm)	Se:(ppm)	Zn:(ppm)	pH:
<0.002	<0.01	0.01	<0.025	<0.05	<0.002	0.02	

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/11/96 10:52:52

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description	
205-192-95	07/31/95	WATER TREATMENT	MONTHLY	JUL COMP	11-12 COMP

Ag:	<0.01	ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	1885	ppm
As:	0.005	ppm	Fe:	0.2	ppm	Pb:	0.20	ppm	S:	3	ppm
Ca:	950	ppm	Mg:	3.0	ppm	Se:	0.011	ppm	pH:	9.3	
Cd:	0.05	ppm	Mn:	0.18	ppm	Tl:	<0.1	ppm			
Cr:	<0.05	ppm	Na:	800	ppm	Zn:	0.48	ppm			

ACC: X
REJ:
APP:

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description	
205-211-95	08/31/95	WATER TREATMENT	MONTHLY	AUG COMP	11-12 COMP

Ag:	<0.01	ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	1885	ppm
As:	0.004	ppm	Fe:	0.2	ppm	Pb:	0.15	ppm	S:	1	ppm
Ca:	510	ppm	Mg:	5.5	ppm	Se:	0.006	ppm	pH:	9.7	
Cd:	0.06	ppm	Mn:	0.26	ppm	Tl:	<0.1	ppm			
Cr:	<0.05	ppm	Na:	800	ppm	Zn:	0.68	ppm			

ACC: X
REJ:
APP:

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description	
205-222-95	09/30/95	WATER TREATMENT	MONTHLY	SEP COMP	11-12 COMP

Ag:	<0.01	ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	2037	ppm
As:	0.006	ppm	Fe:	<0.1	ppm	Pb:	0.09	ppm	S:	1	ppm
Ca:	300	ppm	Mg:	2.3	ppm	Se:	0.007	ppm	pH:	10.0	
Cd:	0.07	ppm	Mn:	0.22	ppm	Tl:	<0.1	ppm			
Cr:	<0.05	ppm	Na:	800	ppm	Zn:	0.64	ppm			

ACC: X
REJ:
APP:

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/11/96 10:52:52

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description	
205-232-95	10/31/95	WATER TREATMENT	MONTHLY	OCT COMP	11-12 COMP

Ag:	<0.01	ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	1513	ppm
As:	0.003	ppm	Fe:	0.08	ppm	Pb:	0.14	ppm	S:	9	ppm
Ca:	450	ppm	Mg:	1.38	ppm	Se:	0.010	ppm	pH:	10.1	
Cd:	0.09	ppm	Mn:	0.21	ppm	Tl:	<0.1	ppm			
Cr:	<0.05	ppm	Na:	580	ppm	Zn:	1.23	ppm			

ACC: X
REJ:
APP:

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description	
205-248-95	11/30/95	WATER TREATMENT	MONTHLY	NOV COMP	11-12 COMP

Ag:	<0.01	ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	1721	ppm
As:	<0.002	ppm	Fe:	<0.01	ppm	Pb:	0.26	ppm	S:	9	ppm
Ca:	420	ppm	Mg:	0.55	ppm	Se:	<0.002	ppm	pH:	11.6	
Cd:	0.02	ppm	Mn:	0.03	ppm	Tl:	<0.1	ppm			
Cr:	<0.05	ppm	Na:	370	ppm	Zn:	0.33	ppm			

ACC: X
REJ:
APP:

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description	
205-258-95	12/31/95	WATER TREATMENT	MONTHLY	DEC COMP.	11-12 COMP

Ag:	<0.01	ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	2548	ppm
As:	0.011	ppm	Fe:	0.19	ppm	Pb:	0.34	ppm	S:	2	ppm
Ca:	302	ppm	Mg:	4.8	ppm	Se:	0.009	ppm	pH:	10.2	
Cd:	0.10	ppm	Mn:	0.20	ppm	Tl:	0.8	ppm			
Cr:	<0.05	ppm	Na:	420	ppm	Zn:	1.36	ppm			

ACC: X
REJ:
APP:

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:13

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-163-95	07/05/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.008	ppm	Fe:		ppm	Pb:	0.15	ppm	S: 2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.002	ppm	pH: 6.1		APP: X
Cd:	0.25	ppm	Mn:	0.68	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	3.86	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-164-95	07/05/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.03	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.005	ppm	Fe:		ppm	Pb:	0.22	ppm	S: 4	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.023	ppm	pH: 11.4		APP: X
Cd:	0.04	ppm	Mn:	0.07	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.37	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-165-95	07/05/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.006	ppm	Fe:		ppm	Pb:	0.07	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.033	ppm	pH: 11.1		APP: X
Cd:	0.05	ppm	Mn:	0.10	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.44	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:13

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-168-95	07/06/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.02	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.011	ppm	Fe:		ppm	Pb:	0.09	ppm	S: 2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.004	ppm	pH: 5.1		
Cd:	0.16	ppm	Mn:	0.83	ppm	Tl:		ppm			APP: X
Cr:		ppm	Na:		ppm	Zn:	1.85	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-169-95	07/06/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.008	ppm	Fe:		ppm	Pb:	0.08	ppm	S: 5	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.011	ppm	pH: 11.3		
Cd:	0.04	ppm	Mn:	0.09	ppm	Tl:		ppm			APP: X
Cr:		ppm	Na:		ppm	Zn:	0.47	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-170-95	07/07/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.002	ppm	Fe:		ppm	Pb:	0.24	ppm	S: 16	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.026	ppm	pH: 11.5		
Cd:	0.05	ppm	Mn:	0.08	ppm	Tl:		ppm			APP: X
Cr:		ppm	Na:		ppm	Zn:	0.83	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-171-95	07/07/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.03	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.012	ppm	Fe:		ppm	Pb:	0.88	ppm	S: 12	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.007	ppm	pH: 11.5		
Cd:	0.16	ppm	Mn:	0.32	ppm	Tl:		ppm			APP: X
Cr:		ppm	Na:		ppm	Zn:	1.60	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:13

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-172-95	07/08/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.08	ppm	S: 1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.009	ppm	pH: 9.9		
Cd:	0.09	ppm	Mn:	0.31	ppm	Tl:		ppm			APP: X
Cr:		ppm	Na:		ppm	Zn:	0.93	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-173-95	07/08/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.014	ppm	Fe:		ppm	Pb:	0.27	ppm	S: 14	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.008	ppm	pH: 11.3		
Cd:	0.03	ppm	Mn:	0.06	ppm	Tl:		ppm			APP: X
Cr:		ppm	Na:		ppm	Zn:	0.30	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-174-95	07/10/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.007	ppm	Fe:		ppm	Pb:	0.32	ppm	S: 8	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.020	ppm	pH: 11.5		
Cd:	0.05	ppm	Mn:	0.07	ppm	Tl:		ppm			APP:
Cr:		ppm	Na:		ppm	Zn:	0.34	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-175-95	07/11/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.007	ppm	Fe:		ppm	Pb:	0.13	ppm	S: 5	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.011	ppm	pH: 11.5		
Cd:	0.03	ppm	Mn:	0.04	ppm	Tl:		ppm			APP:
Cr:		ppm	Na:		ppm	Zn:	0.16	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:13

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-176-95	07/12/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.008	ppm	Fe:		ppm	Pb:	0.18	ppm	S: 10	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.009	ppm	pH: 11.6		APP:
Cd:	0.11	ppm	Mn:	0.26	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	1.14	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-177-95	07/12/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.02	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.28	ppm	S: 8	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.008	ppm	pH: 11.6		APP:
Cd:	0.04	ppm	Mn:	0.09	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.26	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-178-95	07/13/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.010	ppm	Fe:		ppm	Pb:	0.05	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.004	ppm	pH: 6.0		APP:
Cd:	0.01	ppm	Mn:	0.05	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.09	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-179-95	07/13/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.006	ppm	Fe:		ppm	Pb:	0.28	ppm	S: 6	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.008	ppm	pH: 11.8		APP:
Cd:	0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.08	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:14

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-180-95	07/14/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.002	ppm	Fe:		ppm	Pb:	0.19	ppm	S: 1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.011	ppm	pH: 10.8		
Cd:	0.01	ppm	Mn:	0.04	ppm	Tl:		ppm			APP:
Cr:		ppm	Na:		ppm	Zn:	0.14	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-181-95	07/14/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.012	ppm	Fe:		ppm	Pb:	0.37	ppm	S: 3	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.007	ppm	pH: 11.3		
Cd:	0.03	ppm	Mn:	0.09	ppm	Tl:		ppm			APP:
Cr:		ppm	Na:		ppm	Zn:	0.03	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-182-95	07/17/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.18	ppm	S: 6	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.005	ppm	pH: 10.3		
Cd:	0.02	ppm	Mn:	0.06	ppm	Tl:		ppm			APP:
Cr:		ppm	Na:		ppm	Zn:	0.23	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-183-95	07/18/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.02	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.11	ppm	S: 2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.003	ppm	pH: 8.1		
Cd:	0.10	ppm	Mn:	0.44	ppm	Tl:		ppm			APP:
Cr:		ppm	Na:		ppm	Zn:	0.70	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:14

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-184-95	07/18/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.03	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.09	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.008	ppm	pH:	11.4		APP:
Cd:	0.02	ppm	Mn:	<0.025	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.14	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-185-95	07/19/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.031	ppm	Fe:		ppm	Pb:	0.12	ppm	S:	13	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.007	ppm	pH:	11.5		APP:
Cd:	0.03	ppm	Mn:	0.06	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.25	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-186-95	07/22/95	WATER TREATMENT	9&10 TANK	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	<0.05	ppm	S:	3	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.003	ppm	pH:	7.3		APP:
Cd:	0.10	ppm	Mn:	0.58	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.74	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-187-95	07/22/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	<0.05	ppm	S:	4	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.004	ppm	pH:	11.5		APP:
Cd:	0.07	ppm	Mn:	<0.025	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.15	ppm				

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:14

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-188-95	07/26/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.09	ppm	S: 2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.003	ppm	pH: 11.2		APP:
Cd:	0.03	ppm	Mn:	0.17	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.06	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-189-95	07/26/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.007	ppm	Fe:		ppm	Pb:	0.13	ppm	S: 2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.005	ppm	pH: 8.2		APP:
Cd:	0.02	ppm	Mn:	<0.025	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.47	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-190-95	08/01/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.002	ppm	Fe:		ppm	Pb:	0.09	ppm	S: 2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.003	ppm	pH: 7.3		APP:
Cd:	0.18	ppm	Mn:	1.07	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	1.82	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-191-95	08/01/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.21	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.002	ppm	pH: 11.5		APP:
Cd:	0.04	ppm	Mn:	0.05	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.18	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:14

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-194-95	08/03/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.007	ppm	Fe:		ppm	Pb:	0.07	ppm	S: 3	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.003	ppm	pH: 9.7		APP:
Cd:	0.10	ppm	Mn:	0.42	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.93	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-195-95	08/04/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.005	ppm	Fe:		ppm	Pb:	<0.05	ppm	S: 2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.007	ppm	pH: 7.2		APP:
Cd:	0.23	ppm	Mn:	1.41	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	1.83	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-196-95	08/04/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.03	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.002	ppm	Fe:		ppm	Pb:	0.05	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.010	ppm	pH: 11.7		APP:
Cd:	0.05	ppm	Mn:	0.14	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.49	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-197-95	08/05/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.002	ppm	Fe:		ppm	Pb:	0.05	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.009	ppm	pH: 11.6		APP:
Cd:	<0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.06	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:15

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-198-95	08/07/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.004	ppm	Fe:		ppm	Pb:	0.05	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.007	ppm	pH: 7.2		APP:
Cd:	0.10	ppm	Mn:	0.47	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	1.75	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-199-95	08/08/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.007	ppm	Fe:		ppm	Pb:	0.60	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.010	ppm	pH: 11.6		APP:
Cd:	0.01	ppm	Mn:	0.03	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.28	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-200-95	08/11/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.004	ppm	Fe:		ppm	Pb:	<0.05	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.013	ppm	pH: 7.1		APP:
Cd:	0.19	ppm	Mn:	0.71	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	2.20	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-201-95	08/11/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.004	ppm	Fe:		ppm	Pb:	0.10	ppm	S: 1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.006	ppm	pH: 11.6		APP:
Cd:	0.02	ppm	Mn:	0.05	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.20	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:15

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-202-95	08/14/95	WATER TREATMENT	9&10 TANK	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.004	ppm	Fe:		ppm	Pb:	0.05	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.005	ppm	pH: 10.8		APP:
Cd:	0.06	ppm	Mn:	0.11	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.67	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-203-95	08/14/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.004	ppm	Fe:		ppm	Pb:	0.08	ppm	S: 1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.011	ppm	pH: 11.5		APP:
Cd:	<0.01	ppm	Mn:	0.04	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.11	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-204-95	08/15/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.004	ppm	Fe:		ppm	Pb:	0.10	ppm	S: 2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.007	ppm	pH: 11.6		APP:
Cd:	0.02	ppm	Mn:	0.08	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.20	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-205-95	08/21/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	<0.05	ppm	S: 3	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.004	ppm	pH: 6.2		APP:
Cd:	0.13	ppm	Mn:	0.79	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	1.21	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:15

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-206-95	08/21/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.03	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.06	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.003	ppm	pH:	11.3		APP:
Cd:	<0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.08	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-207-95	08/23/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	<0.05	ppm	S:	2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.005	ppm	pH:	6.1		APP:
Cd:	0.15	ppm	Mn:	0.91	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	1.30	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-208-95	08/23/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.11	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH:	11.5		APP:
Cd:	<0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.08	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-209-95	08/29/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.005	ppm	Fe:		ppm	Pb:	0.14	ppm	S:	2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.004	ppm	pH:	8.4		APP:
Cd:	0.08	ppm	Mn:	0.29	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	1.22	ppm				

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:15

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-210-95	08/29/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.02	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.13	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH:	11.2		APP:
Cd:	0.01	ppm	Mn:	0.03	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.12	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-213-95	09/08/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.008	ppm	Fe:		ppm	Pb:	<0.05	ppm	S:	1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.003	ppm	pH:	7.0		APP:
Cd:	0.09	ppm	Mn:	0.80	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.30	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-214-95	09/12/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.17	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.004	ppm	pH:	11.8		APP:
Cd:	<0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.02	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-215-95	09/13/95	WATER TREATMENT	9&10 TANK	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.007	ppm	Fe:		ppm	Pb:	0.09	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.006	ppm	pH:	11.3		APP:
Cd:	0.05	ppm	Mn:	0.07	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.55	ppm				

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:16

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-216-95	09/21/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.03	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	<0.05	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH:	11.3		APP:
Cd:	0.07	ppm	Mn:	0.03	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.21	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-217-95	09/21/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.03	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.07	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH:	11.8		APP:
Cd:	<0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.01	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-218-95	09/29/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.002	ppm	Fe:		ppm	Pb:	0.06	ppm	S:	4	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.003	ppm	pH:	6.3		APP:
Cd:	0.27	ppm	Mn:	1.02	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	4.52	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-219-95	09/29/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.11	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.002	ppm	pH:	11.5		APP:
Cd:	<0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.01	ppm				

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:16

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-220-95	10/02/95	WATER TREATMENT	9&10 TANK	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.07	ppm	S: 32	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH: 11.7		APP:
Cd:	0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.22	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-221-95	10/02/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	<0.05	ppm	S: 64	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH: 11.7		APP:
Cd:	<0.01	ppm	Mn:	0.04	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.08	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-223-95	10/13/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.1	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.008	ppm	Fe:		ppm	Pb:	0.05	ppm	S: 2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.009	ppm	pH: 6.4		APP:
Cd:	0.19	ppm	Mn:	0.87	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	4.35	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-224-95	10/13/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.02	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.05	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.008	ppm	pH: 11.8		APP:
Cd:	0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.02	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:16

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-225-95	10/18/95	WATER TREATMENT	9&10 TANK	11 TANK

Ag:		ppm	Cu:	0.03	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.20	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.003	ppm	pH:	11.5		APP:
Cd:	0.04	ppm	Mn:	0.04	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.09	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-226-95	10/18/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.04	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.29	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.002	ppm	pH:	11.8		APP:
Cd:	0.05	ppm	Mn:	0.05	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.37	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-228-95	10/23/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.02	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.76	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.002	ppm	pH:	11.4		APP:
Cd:	0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.11	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-227-95	10/23/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.009	ppm	Fe:		ppm	Pb:	1.12	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.003	ppm	pH:	5.4		APP:
Cd:	0.30	ppm	Mn:	0.81	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	5.18	ppm				

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:16

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-229-95	10/27/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.02	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.26	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH: 11.9		APP:
Cd:	0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.08	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-230-95	10/30/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.02	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.38	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH: 5.1		APP:
Cd:	0.42	ppm	Mn:	0.94	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	4.4	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-231-95	10/30/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.04	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.81	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH: 11.7		APP:
Cd:	0.29	ppm	Mn:	0.05	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	1.18	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-234-95	11/06/95	WATER TREATMENT	9&10 TANK	11 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.019	ppm	Fe:		ppm	Pb:	0.11	ppm	S: 6	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.005	ppm	pH: 11.8		APP:
Cd:	0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.97	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:17

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-235-95	11/06/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.005	ppm	Fe:		ppm	Pb:	0.22	ppm	S: 8	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.007	ppm	pH: 11.9		
Cd:	0.03	ppm	Mn:	<0.025	ppm	Tl:		ppm			APP:
Cr:		ppm	Na:		ppm	Zn:	0.17	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-236-95	11/10/95	WATER TREATMENT	9&10 TANK	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.005	ppm	Fe:	<0.1	ppm	Pb:	<0.05	ppm	S: 28	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.011	ppm	pH: 11.9		
Cd:	0.02	ppm	Mn:	<0.025	ppm	Tl:		ppm			APP:
Cr:	<0.05	ppm	Na:		ppm	Zn:	0.25	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-237-95	11/10/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.006	ppm	Fe:	<0.1	ppm	Pb:	<0.05	ppm	S: 32	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.012	ppm	pH: 11.9		
Cd:	0.02	ppm	Mn:	<0.025	ppm	Tl:		ppm			APP:
Cr:	<0.05	ppm	Na:		ppm	Zn:	0.20	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-238-95	11/13/95	WATER TREATMENT	9&10 TANK	11 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.08	ppm	S: 19	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.008	ppm	pH: 11.9		
Cd:	0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm			APP:
Cr:		ppm	Na:		ppm	Zn:	0.17	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:17

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-239-95	11/13/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.22	ppm	S: 6	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.007	ppm	pH: 12.0		APP:
Cd:	0.02	ppm	Mn:	<0.025	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.33	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-240-95	11/17/95	WATER TREATMENT	9&10 TANK	11 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.020	ppm	Fe:		ppm	Pb:	0.05	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.007	ppm	pH: 11.1		APP:
Cd:	0.04	ppm	Mn:	0.17	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	1.05	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-241-95	11/17/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.008	ppm	Fe:		ppm	Pb:	0.05	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.023	ppm	pH: 12.0		APP:
Cd:	<0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.15	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-242-95	11/27/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	<0.05	ppm	S: 11	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH: 11.7		APP:
Cd:	0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.32	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:17

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-243-95	11/28/95	WATER TREATMENT	9710 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	<0.05	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.002	ppm	pH:	12.0		APP:
Cd:	<0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.07	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-244-95	11/29/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.02	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.007	ppm	Fe:		ppm	Pb:	<0.05	ppm	S:	2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.003	ppm	pH:	9.7		APP:
Cd:	0.02	ppm	Mn:	0.43	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.64	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-245-95	11/29/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.002	ppm	Fe:		ppm	Pb:	0.30	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.004	ppm	pH:	12.0		APP:
Cd:	<0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.57	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-246-95	11/30/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.57	ppm	S:	3	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH:	11.8		APP:
Cd:	0.01	ppm	Mn:	0.05	ppm	Tl:		ppm				
Cr:		ppm	Na:		ppm	Zn:	0.23	ppm				

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:17

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-247-95	12/01/95	WATER TREATMENT	9&10 TANK	11 TANK

Ag:		ppm	Cu:	0.02	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.10	ppm	S: 6	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH: 11.7		APP:
Cd:	0.02	ppm	Mn:	<0.025	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.29	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-249-95	12/04/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.020	ppm	Fe:		ppm	Pb:	<0.05	ppm	S: 1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.027	ppm	pH: 6.5		APP:
Cd:	0.04	ppm	Mn:	0.24	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.51	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-250-95	12/05/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.007	ppm	Fe:		ppm	Pb:	1.52	ppm	S: 2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH: 11.5		APP:
Cd:	<0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	0.78	ppm			

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-251-95	12/12/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:	ppm	ACC: X
As:	0.014	ppm	Fe:		ppm	Pb:	<0.05	ppm	S: <1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.008	ppm	pH: 9.1		APP:
Cd:	0.29	ppm	Mn:	0.82	ppm	Tl:		ppm			
Cr:		ppm	Na:		ppm	Zn:	5.13	ppm			

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:18

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-252-95	12/12/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.62	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH:	11.9		
Cd:	0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm				APP:
Cr:		ppm	Na:		ppm	Zn:	0.09	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-253-95	12/13/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.09	ppm	S:	5	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.005	ppm	pH:	12.0		
Cd:	0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm				APP:
Cr:		ppm	Na:		ppm	Zn:	0.13	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-254-95	12/18/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.003	ppm	Fe:		ppm	Pb:	0.14	ppm	S:	2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.003	ppm	pH:	8.8		
Cd:	0.12	ppm	Mn:	0.53	ppm	Tl:		ppm				APP:
Cr:		ppm	Na:		ppm	Zn:	1.48	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-255-95	12/18/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	<0.002	ppm	Fe:		ppm	Pb:	0.10	ppm	S:	<1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	<0.002	ppm	pH:	11.8		
Cd:	0.01	ppm	Mn:	<0.025	ppm	Tl:		ppm				APP:
Cr:		ppm	Na:		ppm	Zn:	0.15	ppm				

ANALYSIS REPORT FORM

WATER TREATMENT

Printed: 01/02/96 11:05:18

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-256-95	12/26/95	WATER TREATMENT	BIOBEAD	11 TANK

Ag:		ppm	Cu:	0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.028	ppm	Fe:		ppm	Pb:	0.10	ppm	S:	1	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.019	ppm	pH:	6.6		
Cd:	0.44	ppm	Mn:	1.02	ppm	Tl:		ppm				APP:
Cr:		ppm	Na:		ppm	Zn:	7.80	ppm				

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
205-257-95	12/26/95	WATER TREATMENT	9&10 TANK	12 TANK

Ag:		ppm	Cu:	<0.01	ppm	Ni:	<0.025	ppm	SO4:		ppm	ACC: X
As:	0.024	ppm	Fe:		ppm	Pb:	0.15	ppm	S:	2	ppm	REJ:
Ca:		ppm	Mg:		ppm	Se:	0.016	ppm	pH:	11.8		
Cd:	0.02	ppm	Mn:	<0.025	ppm	Tl:		ppm				APP:
Cr:		ppm	Na:		ppm	Zn:	0.21	ppm				

ASARCO INC.

GLOBE PLANT (303)-296-5900 DENVER COLORADO

SANITARY SEWER MONITORING
DISCHARGE PERMIT COMPLIANCE

MONITORING POINT 001:

FLOW DATA

Sample Date Started 9/19/95

Sample Time Started 1220

Sample Date Ended 9/20/95

Sample Time Ended 1430

Total Flow Over 24 hour Period 1930 gallons

Maximum Flow Rate during That 24 Hours 0.18 gallons/sec

Average Daily Flow Rate 0.022 gallons/sec

Sampling Performed By : Wayne Robb

Reviewed By: D P Lux

Date Reviewed : 1-8-96

ASARCO INC.

GLOBE PLANT (303)-296-5900 DENVER COLORADO

SANITARY SEWER MONITORING
DISCHARGE PERMIT COMPLIANCE

MONITORING POINT 001:

FLOW COMPOSITE SAMPLING DATA

Sampling Date Started 9/20/95

Sampling time Started 1430

Sampling Date Ended 9/21/95

Sampling Time Ended 1430

Total Flow For 24 hour Period 4090 gallons

Number of Tanks Discharged ~~7~~ 2 partial tanks

Number Of Samples Collected 7

Total Volume Collected 1.6 liters

Flow composite sample was collected using an ISCO 3710 sampler and a 2870 Flow Meter.

Total Metals:(ppm)

Arsenic	(As)	0.008	ppm
Cadmium	(Cd)	0.04	ppm
Copper	(Cu)	0.03	ppm
Lead	(Pb)	0.08	ppm
Nickel	(Ni)	<0.025	ppm
Selenium	(Se)	0.003	ppm
Zinc	(Zn)	0.13	ppm
pH		7.1	units

Date pH Grab Sample Taken: 9/21/95

Time pH Grab Sample Taken: 1432

Sampled By: Wayne Roll

Reviewed By: DC Lux

Date Reviewed: 1-8-96

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 12/28/95 11:13:34

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
208-013-95	09/21/95	SEWER	GLOBE	001 GRAB

As:(ppm)	Cd:(ppm)	Cu:(ppm)	Ni:(ppm)	Pb:(ppm)	Se:(ppm)	Zn:(ppm)	pH:
							7.1

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
208-014-95	09/21/95	SEWER	GLOBE	

As:(ppm)	Cd:(ppm)	Cu:(ppm)	Ni:(ppm)	Pb:(ppm)	Se:(ppm)	Zn:(ppm)	pH:
0.008	0.04	0.03	<0.025	0.08	0.003	0.13	

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number	200-014-95	Well Number	
Project Number		Location	
Category	QAQC	Description	001 COMP
Date Sampled	09/21/95	Parameter	TOTAL

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.029	0.008	0.020	105.0	3114 B	10/13/95	WR
Cd	SPIKE	0.24	0.04	0.200	100.0	3111 B	10/13/95	WR
Cu	SPIKE	0.22	0.03	0.200	95.0	3111 B	10/13/95	WR
Ni	SPIKE	0.22	<0.025	0.200	110.0	3111 B	10/13/95	WR
Pb	SPIKE	0.31	0.08	0.200	115.0	3111 B	10/13/95	WR
Se	SPIKE	0.020	0.003	0.020	85.0	3114 B	10/13/95	WR
Zn	SPIKE	0.32	0.13	0.200	95.0	3111 B	10/13/95	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number 200-015-95
Project Number
Category QAQC
Date Sampled 09/21/95

Well Number 001 COMP
Location
Description
Parameter TOTAL

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.010	0.008	22.2	3114 B	10/13/95	WR
As	DUPLICATE	0.010	0.008	22.2	3114 B	10/13/95	WR
Cd	DUPLICATE	0.04	0.04	0.0	3111 B	10/13/95	WR
Cd	DUPLICATE	0.04	0.04	0.0	3111 B	10/13/95	WR
Cu	DUPLICATE	0.03	0.03	0.0	3111 B	10/13/95	WR
Cu	DUPLICATE	0.03	0.03	0.0	3111 B	10/13/95	WR
Ni	DUPLICATE	<0.025	<0.025	0.0	3111 B	10/13/95	WR
Ni	DUPLICATE	<0.025	<0.025	0.0	3111 B	10/13/95	WR
Pb	DUPLICATE	0.09	0.08	11.7	3111 B	10/13/95	WR
Pb	DUPLICATE	0.09	0.08	11.7	3111 B	10/13/95	WR
Se	DUPLICATE	0.002	0.003	40.0	3114 B	10/13/95	WR
Se	DUPLICATE	0.002	0.003	40.0	3114 B	10/13/95	WR
Zn	DUPLICATE	0.13	0.13	0.0	3111 B	10/13/95	WR
Zn	DUPLICATE	0.13	0.13	0.0	3111 B	10/13/95	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-016-95
Project Number
Category QAQC
Date Sampled 09/21/95

Well Number 001 COMP
Location
Description ERA 9964
Parameter TOTAL

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.071	0.064	110.9	3114 B	10/13/95	WR
Cd	STANDARD	0.09	0.079	113.9	3111 B	10/13/95	WR
Cu	STANDARD	0.21	0.207	101.4	3111 B	10/13/95	WR
Ni	STANDARD	0.24	0.229	104.8	3111 B	10/13/95	WR
Pb	STANDARD	0.18	0.157	114.6	3111 B	10/13/95	WR
Se	STANDARD	0.119	0.114	104.3	3114 B	10/13/95	WR
Zn	STANDARD	0.25	0.264	94.6	3111 B	10/13/95	WR

Lab ID Number 200-018-95
Project Number
Category QAQC
Date Sampled 09/21/95

Well Number 001 COMP
Location
Description ICV
Parameter TOTAL

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.010	100.0	3114 B	10/13/95	WR
Cd	STANDARD	1.01	1.000	101.0	3111 B	10/13/95	WR
Cu	STANDARD	0.99	1.000	99.0	3111 B	10/13/95	WR
Ni	STANDARD	1.03	1.000	103.0	3111 B	10/13/95	WR
Pb	STANDARD	1.04	1.000	104.0	3111 B	10/13/95	WR
Se	STANDARD	0.010	0.010	100.0	3114 B	10/13/95	WR
Zn	STANDARD	1.00	1.000	100.0	3111 B	10/13/95	WR

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-017-95	Well Number	001 COMP
Project Number		Location	
Category	QAQC	Description	METHOD BLANK
Date Sampled	09/21/95	Parameter	TOTAL

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.002	3114 B	10/13/95	WR
Cd	BLANK	0.01	3111 B	10/13/95	WR
Cu	BLANK	0.01	3111 B	10/13/95	WR
Ni	BLANK	<0.025	3111 B	10/13/95	WR
Pb	BLANK	<0.05	3111 B	10/13/95	WR
Se	BLANK	<0.002	3114 B	10/13/95	WR
Zn	BLANK	<0.01	3111 B	10/13/95	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number	200-019-95	Well Number	001 COMP
Project Number		Location	
Category	QAQC	Description	CCV
Date Sampled	09/21/95	Parameter	TOTAL

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.010	100.0	3114 B	10/13/95	WR
Cd	STANDARD	1.02	1.000	102.0	3111 B	10/13/95	WR
Cu	STANDARD	1.01	1.000	101.0	3111 B	10/13/95	WR
Ni	STANDARD	1.00	1.000	100.0	3111 B	10/13/95	WR
Pb	STANDARD	1.06	1.000	106.0	3111 B	10/13/95	WR
Se	STANDARD	0.010	0.010	100.0	3114 B	10/13/95	WR
Zn	STANDARD	1.01	1.000	101.0	3111 B	10/13/95	WR

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: 208-013-95 Description: 001 Grab

Sample I.D: ~~9/20-21/95~~ 9/21/95 1432 Date Submitted: 9/21/95

Parameter	Value	Units	Method	Date Completed	Chemist
pH	7.1	pH	meter	9/21/95	WR

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: 208-014-95 Description: 001 - Comp

Sample I.D: 9/20-21/95 Date Submitted: 9/21/95

Parameter	Value	Units	Method	Date Completed	Chemist
Cd	0.04	ppm	3111 B	10/13	WR
Cu	0.03				
Pb	0.08				
Ni	<0.025				
Zn	0.13				
As	0.008		3114B		
Se	0.003				

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: 200-014-95 Description: 001 Spike

Sample I.D: 9/20-21/95 Date Submitted: _____

rameter	Value	% Rec	Units	Method	Date Completed	Chemist
Cd	0.24	100%	ppm ~~3111B~~	3111B	10/13	WR
Cu	0.22	95%				
Pb	0.31	115%				
Ni	0.22	110%				
Zn	0.32	95%				
As	0.029		~~3114B~~	3114B		
Se	0.020	85%				

Sample was spiked w/ 2 mls 10ppm Cd, Cu, Pb, Ni, Zn standard.
Final conc 0.20 ppm.
As + Se were spiked w/ 1ml 1ppm standard, Final conc 0.010 p

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: 200-015-95 Description: 001 Dupe

Sample I.D: 9/20-21/95 Date Submitted:

Parameter	Value	%Rpd	Units	Method	Date Completed	Chemist
Cd	0.04	0.0	ppm	3111 B	10/13	WR
Cu	0.03	0.0				
Pb	0.09					
Ni	<0.025	0.0				
Zn	0.13	0.0				
As	0.010			3114B		
Se	0.002					

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: 200-016-95 Description: Standard

Sample I.D: 9/20-21/95 Date Submitted:

ERA 9964

rameter	Value	Units	Method	Date Completed	Chemist
Cd	0.09 / .0786	115% ppm	3111B	10/13	WR
Cu	0.21 / .207	101%			
Pb	0.18 / .157	115%			
Ni	0.24 / .229	105%			
Zn	0.25 / .264	95%			
As	0.071 / .0643		3114B		
Se	0.119 / .114				

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: 200-017-95 Description: Method Blank

Sample I.D: 9/20/95 Date Submitted:

rameter	Value	Units	Method	Date Completed	Chemist
Cd	0.01	ppm	3111B	10/13	WR
Cu	0.01				
Pb	<.05				
Ni	<.025				
Zn	<.01				
As	<.002		3.114B		
Se	<.002				

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: 200-018-95 Description: ICV

Sample I.D: _____ Date Submitted: _____

Parameter	Value	Units	Method	Date Completed	Chemist
Cd	1.01	PPM	3111B	10/13	UR
Cu	0.99				
Pb	1.04				
Ni	1.03				
Zn	1.00				
As	0.010		3114B		
Se	0.010				

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: 200-019-95 Description: CCV

Sample I.D: _____ Date Submitted: _____

rameter	Value	Units	Method	Date Completed	Chemist
Cd	1.02	ppm	3111B	10/13	WR
Cu	1.01				
Pb	1.06				
Ni	1.00				
Zn	1.01				
As	0.010		3114B		
Se	0.010				

ASARCO INC.

PLANT (303)-296-5900 DENVER COLORADO

SANITARY SEWER MONITORING
DISCHARGE PERMIT COMPLIANCE

ORING POINT 001:

FLOW DATA

Date Started 12/11/95

Time Started 0945

Date Ended 12/12/95

Time Ended 0945

0 Flow

Flow Over 24 hour Period 2810 gallons

Flow Rate during That 24 Hours 0.20 gallons/sec

Daily Flow Rate 0.033 gallons/sec

Sampling Performed By : Wayne Kolb

Reviewed By: D P Lux

Date Reviewed : 1-8-96

ASARCO INCORPORATED
GLOBE PLANT

ANALYSIS REPORT FORM

SEWER EFFLUENT

Printed: 01/02/96 14:32:55

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
208-015-95	12/13/95	SEWER	GLOBE	001 GRAB

As:(ppm)	Cd:(ppm)	Cu:(ppm)	Ni:(ppm)	Pb:(ppm)	Se:(ppm)	Zn:(ppm)	pH:
							7.9

Lab ID	Date Samp	Sample ID	Sample Type	Sample Description
208-016-95	12/13/95	SEWER	GLOBE	

As:(ppm)	Cd:(ppm)	Cu:(ppm)	Ni:(ppm)	Pb:(ppm)	Se:(ppm)	Zn:(ppm)	pH:
0.006	0.14	<0.01	<0.025	0.22	0.003	2.84	

ASARCO Incorporated
Quality Assurance Report Form
Analytical Duplicate

Lab ID Number 200-020-95
Project Number
Category QAQC
Date Sampled 12/13/95

Well Number 001 COMP
Location
Description
Parameter TOTAL

Analyte	Qaqc Type	Analysis	Original Sample Analysis	Percent RPD	Method Used	Date Analyzed	Analyst
As	DUPLICATE	0.005	0.006	18.1	3114 B	12/19/95	WR
As	DUPLICATE	0.005	0.006	18.1	3114 B	12/19/95	WR
Cd	DUPLICATE	0.13	0.14	7.4	3111 B	12/19/95	WR
Cd	DUPLICATE	0.13	0.14	7.4	3111 B	12/19/95	WR
Cu	DUPLICATE	<0.01	<0.01	0.0	3111 B	12/19/95	WR
Cu	DUPLICATE	<0.01	<0.01	0.0	3111 B	12/19/95	WR
Ni	DUPLICATE	<0.025	<0.025	0.0	3111 B	12/19/95	WR
Ni	DUPLICATE	<0.025	<0.025	0.0	3111 B	12/19/95	WR
Pb	DUPLICATE	0.23	0.22	4.4	3111 B	12/19/95	WR
Pb	DUPLICATE	0.23	0.22	4.4	3111 B	12/19/95	WR
Se	DUPLICATE	0.002	0.003	40.0	3114 B	12/19/95	WR
Se	DUPLICATE	0.002	0.003	40.0	3114 B	12/19/95	WR
Zn	DUPLICATE	2.79	2.84	1.7	3111 B	12/19/95	WR
Zn	DUPLICATE	2.79	2.84	1.7	3111 B	12/19/95	WR

ASARCO Incorporated
Quality Assurance Report Form
Analytical Spike

Lab ID Number 200-021-95
Project Number
Category QAQC
Date Sampled 12/13/95

Well Number 001 COMP
Location
Description
Parameter TOTAL

Analyte	Qaqc Type	Analysis	Original Value	Spike Added	Spike Recovery	Method Used	Date Analyzed	Analyst
As	SPIKE	0.015	0.006	0.010	90.0	3114 B	12/19/95	WR
Cd	SPIKE	0.35	0.14	0.200	105.0	3111 B	12/19/95	WR
Cu	SPIKE	0.20	<0.01	0.200	100.0	3111 B	12/19/95	WR
Ni	SPIKE	0.21	<0.025	0.200	105.0	3111 B	12/19/95	WR
Pb	SPIKE	0.42	0.22	0.200	100.0	3111 B	12/19/95	WR
Se	SPIKE	0.014	0.003	0.010	110.0	3114 B	12/19/95	WR
Zn	SPIKE	3.03	2.84	0.200	95.0	3111 B	12/19/95	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-022-95
Project Number
Category QAQC
Date Sampled 12/13/95

Well Number 001 COMP
Location
Description
Parameter TOTAL

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.073	0.064	114.0	3114 B	12/19/95	WR
Cd	STANDARD	0.08	0.079	101.2	3111 B	12/19/95	WR
Cu	STANDARD	0.22	0.207	106.2	3111 B	12/19/95	WR
Ni	STANDARD	0.24	0.229	104.8	3111 B	12/19/95	WR
Pb	STANDARD	0.15	0.157	95.5	3111 B	12/19/95	WR
Se	STANDARD	0.127	0.114	111.4	3114 B	12/19/95	WR
Zn	STANDARD	0.26	0.264	98.4	3111 B	12/19/95	WR

Lab ID Number 200-023-95
Project Number
Category QAQC
Date Sampled 12/19/95

Well Number 001 COMP
Location
Description
Parameter TOTAL

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.010	100.0	3114 B	12/19/95	WR
Cd	STANDARD	1.00	1.000	100.0	3111 B	12/19/95	WR
Cu	STANDARD	0.98	1.000	98.0	3111 B	12/19/95	WR
Ni	STANDARD	0.99	1.000	99.0	3111 B	12/19/95	WR
Pb	STANDARD	1.02	1.000	102.0	3111 B	12/19/95	WR
Se	STANDARD	0.010	0.010	100.0	3114 B	12/19/95	WR
Zn	STANDARD	1.01	1.000	101.0	3111 B	12/19/95	WR

ASARCO Incorporated
Quality Assurance Report Form
Standard Reference Material

Lab ID Number 200-024-95
Project Number
Category QAQC
Date Sampled 12/19/95

Well Number 001 COMP
Location
Description
Parameter TOTAL

Analyte	Qaqc Type	Analysis	Standard True Value	Standard Recovery	Method Used	Date Analyzed	Analyst
As	STANDARD	0.010	0.010	100.0	3114 B	12/19/95	WR
Cd	STANDARD	0.99	1.000	99.0	3111 B	12/19/95	WR
Cu	STANDARD	1.00	1.000	100.0	3111 B	12/19/95	WR
Ni	STANDARD	1.01	1.000	101.0	3111 B	12/19/95	WR
Pb	STANDARD	1.03	1.000	103.0	3111 B	12/19/95	WR
Se	STANDARD	0.010	0.010	100.0	3114 B	12/19/95	WR
Zn	STANDARD	1.00	1.000	100.0	3111 B	12/19/95	WR

ASARCO Incorporated
Quality Assurance Report Form
Method Blank

Lab ID Number	200-025-95	Well Number	001 COMP
Project Number		Location	
Category	QAQC	Description	
Date Sampled	12/19/95	Parameter	TOTAL

Analyte	Qaqc Type	Analysis	Method Used	Date Analyzed	Analyst
As	BLANK	<0.002	3114 B	12/19/95	WR
Cd	BLANK	<0.01	3111 B	12/19/95	WR
Cu	BLANK	<0.01	3111 B	12/19/95	WR
Ni	BLANK	<0.025	3111 B	12/19/95	WR
Pb	BLANK	<0.05	3111 B	12/19/95	WR
Se	BLANK	<0.002	3114 B	12/19/95	WR
Zn	BLANK	<0.01	3111 B	12/19/95	WR

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: 208 ~~205~~ 015-95

Description: 11 Tank 12 Tank

Sample I.D: 001 Grab

Date Submitted: 12/13/95

Date Sample Prepared:

arameter	Value	Units	Method	Date Completed	Chemist
Cd		ppm			
Zn					
Pb					
Ni					
Cu					
Mn					
As					
Se					
$S^{=}$					
pH	7.9		meter	12/13/95	WR

Approved

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: ~~205~~ 208-016-95

Description: 11 Tank 12 Tank

Sample I.D: 001 Comp

Date Submitted: 12/13/95

Date Sample Prepared: 12/14/95

Parameter	Value	Units	Method	Date Completed	Chemist
Cd	0.14	ppm	3114 B	12/19	WR
Zn	2.84				
Pb	0.22				
Ni	<0.025				
Cu	<0.01				
Mn					
As	0.006		3114 B		
Se	0.003				
$S^{=}$					
pH	—				

Approved

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: ~~205~~ 200-020-95

Description: 11 Tank 12 Tank

Sample I.D: 001 Dupe

Date Submitted:

Date Sample Prepared: 12/19/95

Parameter	Value	% RPD	Units	Method	Date Completed	Chemist
Cd	0.13	7.4	ppm	3111 B	12/19	WR
Zn	2.79	1.8				
Pb	0.23	4.4				
Ni	< 0.025	6.0				
Cu	< 0.01	1.0				
Mn						
As	0.005	18.2%		3114 B		
Se	0.002	40.0%				
$S^{=}$						
pH						

Approved

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: ~~205~~ 200- 021-95

Description: 11 Tank 12 Tank

Sample I.D: 001 Spike

Date Submitted:

Date Sample Prepared: 12/19/95

arameter	Value	% Rec	Units	Method	Date Completed	Chemist
Cd	0.35	105%	ppm	3111 B	12/19	WR
Zn	3.03	95%				
Pb	0.42	100%				
Ni	0.21	105%				
Cu	0.20	100%				
Mn						
As	0.015	90%		3114B		
Se	0.014	110%				
$S^{=}$						
pH						

Approved

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: ~~205~~ 200- 022-95

Description: 11 Tank 12 Tank

Sample I.D: Ref Standard ERA 9915

Date Submitted:

Date Sample Prepared: 12/19/95

arameter	Value	True Value	% Rec Units	Method	Date Completed	Chemist
Cd	0.048	0.049	102.3 ppm	3111 B	12/19	WR
Zn	0.26	0.264	97.9			
Pb	0.15	~~0.157~~ 0.157	95.5			
Ni	0.24	0.229	104.8			
Cu	0.22	0.207	106.3			
Mn						
As	0.073	0.064	114.7	3114 B		
Se	0.127	0.114	111.7			
$S^{=}$						
pH						

Approved

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: ~~205~~ 200 023-95

Description: 11 Tank 12 Tank

Sample I.D: ICV

Date Submitted:

Date Sample Prepared: 12/19/95

Parameter	Value	Units	Method	Date Completed	Chemist
Cd	1.00	ppm	3111 B	12/19	WR
Zn	1.01				
Pb	1.02				
Ni	0.99				
Cu	0.98				
Mn					
As	0.010		3114 B		
Se	0.010				
$S^{=}$					
pH					

Approved

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: ~~205~~ 220-024-95

Description: 11 Tank 12 Tank

Sample I.D: CCV

Date Submitted:

Date Sample Prepared: 12/19/95

arameter	Value	Units	Method	Date Completed	Chemist
Cd	0.99	ppm	3111B	12/19	WR
Zn	1.00				
Pb	1.03				
Ni	1.01				
Cu	1.00				
Mn					
As	0.010		3114B		
Se	0.010				
$S^{=}$					
pH					

Approved

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: ~~205~~ 200-025-95

Description: 11 Tank 12 Tank

Sample I.D: Reagent Blank

Date Submitted:

Date Sample Prepared: 12/14/95

arameter	Value	Units	Method	Date Completed	Chemist
Cd	<0.01	ppm	3111 B	12/19	JM
Zn	<0.01				
Pb	<0.05				
Ni	<0.025				
Cu	<.01				
Mn					
As	<0.002		3114 B		
Se	<0.002				
$S^{=}$					
pH					

Approved

August, 1995 — 1995

WASTE WATER TREATMENT FLOW METER REPORT

FORM W-1

Date	Tank	Time Start	Flow Rate/Min	Start Reading	End. Reading	Volume	Volume
11/95	11	1120	70	3219137	7274		8320
↓	12	↓	↓	987424	7798		8179
13/95	12	1530	70	195215	7295		9178
14/95	11	1530	70	3226713	6977		8278
↓	12	↓	↓	1002510	7665		8345
7-95	12	1003	70	1010175	6980		6297
7-95	11	1553	70	3233690	8185		6120
8-95	12	1525	70	1017155	7593		
11-95	11	1500	70	3241875	7251		
↓	12	↓	↓	1024743	7707		
14-95	11	1728	70	3249126	7679		
↓	12	↓	↓	1032455	8282		
5-95	12	1645	70	1040737	7373		
21/95	11	1500	70	3256805	7667		
↓	12	↓	↓	1048110	8275		
23	11	1530	70	3264472	5478		
↓	12	↓	↓	1053585	7569		
29	11	1505	70	3269950	8 1362 32773	12	57873
↓	12	↓	↓	1063754	11 1553 1071507	84033	
						141951	

Oct. 1995

WASTE WATER TREATMENT FLOW METER REPORT

FORM W-1

	Date	Tank	Time Start	Flow Rate/Min	Start Reading	End. Reading	Volume
WR	10/3/95	11	0908	70	3308386		7252
		12		70	1094450		8432
WR	10/14	11	1635	20	3315638		5742
		12		1	1102882		7354
WR	10/18	11	1400	70	3321380		6558
		12			1110236		7436
WR	10/23	11	1505	70	3327938		6090
		12			1117672		6496
WR	10/27	12	1448	70	1124168		7513
WR	10/30	11	1500	70	3334028	3341606	7578 33220
WR		12			1131651	1138768	7087 44318
							77538

Nov. 1995

WASTE WATER TREATMENT FLOW METER REPORT

FORM W-1

	Date	Tank	Time Start	Flow Rate/Min	Start Reading	End. Reading	Volume
DZ	11/6	11	1000	70	3341606		7691
		12			1138768		8262
DZ	11/10	11	1141	70	3349277		5016
		12			1147030		8268
DZ	11/14	11	732	70	3354313		6671
		12			1155298		7974
DZ	11/17	11	1011	70	3360984		5896
		12			1163272		7933
WR	11/27	12	1530	70	1171205		7775
WR	11/28	12	1500	70	1178980		7820
WR	11/29	11	1530	70	3366880	3371958	5078
		12		70	1186800		7435
WR	11/30	12	1445	70	1194235	1201654	7419
WR	12/1	11	1510	70	11 - 3371958	~~3341606~~	
					12 - 1201654		
						3371958	1201654
						3341606	1138768
						30352	62886
						93238	

Dec. 1995

WASTE WATER TREATMENT FLOW METER REPORT

FORM W-1

	Date	Tank	Time Start	Flow Rate/Min	Start Reading	End. Reading	Volume
WR	12/1	11	1510	70	3371958		7503
WR	12/4	11	1600	70	3379461		5549
WR	12/6	12	0610	70	1201654		7330
WR	12/12	11	1345	70	3385010		7699
✓	✓	12	✓	✓	1208984		6936
WR	12/13	12	1512	70	1215920		6830
WR	12/15	11	1530	70	3392709		6999
	✓	12	✓	✓	1222750		6948
WR	12/26	11	1615	70	3399708	3408002	8294
✓	✓	12	✓	✓	1229698	1237995	8297
					12 Tank	36341	
					11 Tank	36044	
					Total	72385	

July, 1995

WASTE WATER TREATMENT FLOW METER REPORT

FORM W-1

	Date	Tank	Time Start	Flow Rate/Min	Start Reading	End. Reading	Volume
WR	7/5	11	1020	70	3150288		5430
↓	↓	12	1020	↓	876989		7330
WR	7/5	12	1550	70	884319		4662
WR	7/7	11	0625	70	3155718		6596
↓	↓	12	↓	70	888981		7987
WR	7/7	11	1545	70	3162314		7093
↓	↓	12	↓	↓	896968		5836
DL	7/8	11	1400	70	3169407		5555
↓	↓	12	↓	↓	902804		6516
WR	7/10	12	1518	70	909320		6445
WR	7/11	12	1630	70	915765		8510
DL	7/12	11	1118	70	3174962		8650
WR	7/12	12	1600	70 ~~924975~~	924275		8295
DL	7/13	11	1500	70	3183612		6882
↓	↓	12	↓	↓	932570		8269
WR	7/14	11	1730	70	3190494		7374
↓	↓	12	↓	↓	940839		8200
WR	7/17	12	1525	70	949039		7940
WR	7/18	11	1500	70	3197868		7703
↓	↓	12	↓	↓	956978		8358
DL	7/19	12	1528	70	965337		7263
WR	7/24	11	1445	70	3205571		7014
↓	↓	12	↓	↓	972600		7105
WR	7/26	11	1530	70	3212585	3219439	6854 69,151
↓	↓	12	↓	↓	979705	987424	TH 110,435

CORE LABORATORIES

CORE LABORATORIES

ANALYTICAL REPORT

JOB NUMBER: 955044

Prepared For:
Asarco Globe
Nikki Mathis
495 East 51st Avenue

Denver, CO 80216-2098

Date: 12/26/95

Signature

Date: 12-26-95

Name: Linda L. Benkers

Title: QA/QC Coordinator

CORE LABORATORIES, INC.
Analytical Chemistry Division
10703 East Bethany Drive
Aurora, CO 80014

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CORELAB

CORE LABORATORIES, INC.

No. 48418

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: ASARCO GROUP	PROJECT NAME/NUMBER:
SEND REPORT TO: Nikki Mathis	BILLING INFORMATION
ADDRESS: 495 E. 51st	BILL TO: SAME
Denver CO 80216	ADDRESS:
PHONE: 296-5900	PHONE:
FAX: 296-5908	FAX: PO NO.:

LAB JOB NO. 955044

ANALYSIS / METHOD REQUEST: 624 + 625

SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	PRESERV.	NUMBER OF CONTAINERS	REMARKS / PRECAUTIONS
	001	12/7/95		water	Glass	None	1	
	001	12/7/95		water	VOA	HCl	3	

SAMPLER: Wayne Rolle

SHIPMENT METHOD:

AIRBILL NO.:

REQUIRED TURNAROUND:* | | SAME DAY | | 24 HOURS | | 48 HOURS | | 72 HOURS | | 5 DAYS | | 10 DAYS | | ROUTINE OTHER

1. RELINQUISHED BY: SIGNATURE:	DATE 12/7/95	2. RELINQUISHED BY: SIGNATURE:	DATE	3. RELINQUISHED BY: SIGNATURE:	DATE
PRINTED NAME/COMPANY: Wayne Rolle / ASARCO	TIME 1620	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY: SIGNATURE: Ken Watson	DATE 12/7/95	2. RECEIVED BY: SIGNATURE:	DATE	3. RECEIVED BY: SIGNATURE:	DATE
PRINTED NAME/COMPANY: WATSON CORE	TIME 1620	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

* RUSH TURNAROUND MAY REQUIRE SURCHARGE

☐ Anaheim, California
1250 E. Gene Autry Way
Anaheim, California 92805
(714) 937-1094
(800) 404-2673

☐ Aurora (Denver), Colorado
10703 E. Bethany Drive
Aurora, Colorado 80014
(303) 751-1780
(800) 972-2673

☐ Casper, Wyoming
420 West 1st Street
Casper, Wyoming 82601
(307) 235-5741
(800) 666-0306

☐ Corpus Christi, Texas
1733 North Padre Island Drive
Corpus Christi, Texas 78408
(512) 289-2673
(800) 548-8228

☐ Houston, Texas
8210 Mosley Road
Houston, Texas 77075
(713) 943-9776
(800) 734-2673

☐ Lake Charles, Louisiana
3645 Boyles Parkway
Sulphur, Louisiana 70663
(318) 583-4926
(800) 259-4926

☐ Long Beach, California
3700 Cherry Avenue
Long Beach, California 90807
(310) 595-8401
(800) 814-3433

CORE LABORATORIES

JOB SAMPLE INFORMATION
Report Date: 12/26/95

Job Number.....: 955044
Customer .....: Asarco Globe
Job Received Date...: 12/07/95

Project Number.....: 95000349
Customer Project ID....:
Project Description....: ASARCO NPDES

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
955044-1	001	Water	12/07/95	00:00	12/07/95	16:20

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CORE LABORATORIES

LABORATORY TEST RESULTS

Job Number: 955044

Report Date: 12/26/95

CUSTOMER: Asarco Globe

PROJECT:

ATTN: Nikki Mathis

Customer Sample ID: 001
Sample Date.....: 12/07/95
Sample Time.....: 00:00
Sample Matrix.....: Water

Laboratory Sample ID: 955044-1
Date Received.....: 12/07/95
Time Received.....: 16:20

TEST DESCRIPTION	TEST MATRIX	FINAL RESULT	DETECTION LIMIT	UNITS	TEST METHOD	ANALYZED
Semivolatile Organics					EPA 625	
Acenaphthene		ND	10	ug/L		12/20/95
4-Chlorophenyl phenyl ether		ND	10	ug/L		12/20/95
Fluoranthene		ND	10	ug/L		12/20/95
Fluorene		ND	10	ug/L		12/20/95
Phenanthrene		ND	10	ug/L		12/20/95
Pyrene		ND	10	ug/L		12/20/95
Pentachlorophenol		ND	50	ug/L		12/20/95
Extraction (Sep. Funnel) SVOC					EPA 625	
Separatory Funnel Liq/Liq Extraction		Complete				12/12/95
Volatile Organics					EPA 624	
Benzene		ND	1	ug/L		12/12/95
Methylene chloride		ND	5	ug/L		12/12/95
Tetrachloroethene		ND	5	ug/L		12/12/95
Trichloroethene		ND	5	ug/L		12/12/95

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CORE LABORATORIES

QUALITY CONTROL REPORT

Job Number: 955044 Report Date: 12/26/95

CUSTOMER: Asarco Globe PROJECT: ATTN: Nikki Mathis

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time

Method .....: EPA 624 Batch.....: 4504 Analyst ...: bfr
Method Description.: Volatile Organics Units.....: ug/L

MB	Method Blank	CLB05			12/12/95	1219

Test Description	QC Result	Det. Limit	True Value	Orig. Value	Alt. Value	Calc	Result
Benzene	ND	1					
Methylene chloride	ND	5					
Tetrachloroethene	ND	5					
Trichloroethene	ND	5					

ST	Spiked Blank	V951212B			12/12/95	1705

Test Description	QC Result	Det. Limit	True Value	Orig. Value	Alt. Value	Calc	Result
Benzene	52.95	1	50.885			% REC	104.1
Trichloroethene	51.59	5	50.615			% REC	101.9

STD	Spiked Blank Duplicate	V951212B			12/12/95	1739

Test Description	QC Result	Det. Limit	True Value	Orig. Value	Alt. Value	Calc	Result
Benzene	53.17	1	50.885		52.95	% REC	104.5
						RPD	0.4
Trichloroethene	51.34	5	50.615		51.59	% REC	101.4
						RPD	0.5

RS	Reference Standard	V951212C			12/12/95	1905

Test Description	QC Result	Det. Limit	True Value	Orig. Value	Alt. Value	Calc	Result
Benzene	50.16	1	50.3			% REC	99.7
Methylene chloride	47.97	5	50.3			% REC	95.4
Tetrachloroethene	54.73	5	50.3			% REC	108.8
Trichloroethene	52.05	5	50.3			% REC	103.5

Method .....: EPA 625 Batch.....: 4698 Analyst ...: mla
Method Description.: Semivolatile Organics Units.....: ug/L

MB	Method Blank				12/20/95	2252

Test Description	QC Result	Det. Limit	True Value	Orig. Value	Alt. Value	Calc	Result
Acenaphthene	ND	10					
4-Chlorophenyl phenyl ether	ND	10					
Fluoranthene	ND	10					
Fluorene	ND	10					
Phenanthrene	ND	10					

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CORE LABORATORIES

QUALITY CONTROL REPORT

Job Number: 955044

Report Date: 12/26/95

CUSTOMER: Asarco Globe

PROJECT:

ATTN: Nikki Mathis

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank				12/20/95	2252

Test Description	QC Result	Det. Limit	True Value	Orig. Value	Alt. Value	Calc	Result
Pyrene	ND	10					
Pentachlorophenol	ND	50					

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CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 955044 Report Date: 12/26/95

CUSTOMER: Asarco Globe PROJECT: ATTN: Nikki Mathis

Method.....: EPA 62 Batch.....: 4504
Method Code.....: 624 Analyst.....: bfr

Surrogate	Dilution Factor	Units
4-Bromofluorobenzene	2.74	ug/L

Lab ID	Matrix	QC Type	Result	True Value	Percent Recovery	Flag	Date	Time
		MB	48.37	50.186	96.4		12/12/95	1219
		ST	51.56	50.186	102.7		12/12/95	1705
		STD	53.26	50.186	106.1		12/12/95	1739
		RS	49.53	50.186	98.7		12/12/95	1905
955044-1			49.15	50.186	97.9		12/12/95	2141

Surrogate	Dilution Factor	Units
Dibromofluoromethane	2.74	ug/L

Lab ID	Matrix	QC Type	Result	True Value	Percent Recovery	Flag	Date	Time
		MB	49.06	50.109	97.9		12/12/95	1219
		ST	47.13	50.109	94.1		12/12/95	1705
		STD	48.15	50.109	96.1		12/12/95	1739
		RS	47.90	50.109	95.6		12/12/95	1905
955044-1			49.06	50.109	97.9		12/12/95	2141

Surrogate	Dilution Factor	Units
Toluene-d8	2.74	ug/L

Lab ID	Matrix	QC Type	Result	True Value	Percent Recovery	Flag	Date	Time
		MB	49.24	50.190	98.1		12/12/95	1219
		ST	49.80	50.190	99.2		12/12/95	1705
		STD	49.71	50.190	99.0		12/12/95	1739
		RS	47.42	50.190	94.5		12/12/95	1905
955044-1			49.28	50.190	98.2		12/12/95	2141

Method.....: EPA 62 Batch.....: 4698
Method Code.....: 625 Analyst.....: mla

Surrogate	Dilution Factor	Units
2,4,6-Tribromophenol		ug/L

Lab ID	Matrix	QC Type	Result	True Value	Percent Recovery	Flag	Date	Time
		MB	86.85	100.01	87		12/20/95	2252
955044-1			98.76	100.01	99		12/20/95	2354

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CORE LABORATORIES

SURROGATE RECOVERIES REPORT

Job Number.: 955044

Report Date: 12/26/95

CUSTOMER: Asarco Globe | PROJECT: | ATTN: Nikki Mathis

Surrogate	Dilution Factor	Units
2-Fluorobiphenyl		ug/L

Lab ID	Matrix	QC Type	Result	True Value	Percent Recovery	Flag	Date	Time
		MB	33.05	50.01	66		12/20/95	2252
955044-1			36.24	50.01	72		12/20/95	2354

Surrogate	Dilution Factor	Units
2-Fluorophenol		ug/L

Lab ID	Matrix	QC Type	Result	True Value	Percent Recovery	Flag	Date	Time
		MB	56.80	100.00	57		12/20/95	2252
955044-1			56.83	100.00	57		12/20/95	2354

Surrogate	Dilution Factor	Units
Nitrobenzene-d5		ug/L

Lab ID	Matrix	QC Type	Result	True Value	Percent Recovery	Flag	Date	Time
		MB	32.81	50.05	66		12/20/95	2252
955044-1			34.42	50.05	69		12/20/95	2354

Surrogate	Dilution Factor	Units
Phenol-d6		ug/L

Lab ID	Matrix	QC Type	Result	True Value	Percent Recovery	Flag	Date	Time
		MB	66.36	100.02	66		12/20/95	2252
-955044-1			26.27	100.02	26		12/20/95	2354

Surrogate	Dilution Factor	Units
Terphenyl-d14		ug/L

Lab ID	Matrix	QC Type	Result	True Value	Percent Recovery	Flag	Date	Time
		MB	42.20	50.00	84		12/20/95	2252
955044-1			32.46	50.00	65		12/20/95	2354

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CORE LABORATORIES

QUALITY ASSURANCE METHODS
REFERENCES AND NOTES

Report Date: 12/26/95

Volatile Organics

Method 602/8020

Surrogate Recovery Limits

	Water	Soil
Bromofluorobenzene	89-110%	78-123%

Spike/Spike Duplicate Recovery Limits

	Water	Soil
Benzene	75-125%	75-125%
Ethylbenzene	75-125%	75-125%
Toluene	75-125%	75-125%
Xylenes	75-125%	75-125%

Method 8015 Modified

Spike/Spike Duplicate Recovery Limits

	Water	Soil
TVPH	81-124%	81-124%
TEPH	54-135%	54-135%

Method 624/8240/8260

Surrogate Recovery Limits

	Water	Soil
Dibromofluoromethane	86-118%	80-120%
Toluene-(d8)	88-110%	81-117%
4-Bromofluorobenzene	86-115%	74-121%

Spike/Spike Duplicate Recovery & RPD Limits

	Water Recovery	RPD	Soil Recovery	RPD
1,1-Dichloroethene	61-145%	14	59-172%	22
Trichloroethene	71-120%	14	62-137%	24
Benzene	76-127%	11	66-142%	21
Toluene	76-125%	13	59-139%	21
Chlorobenzene	75-130%	13	60-133%	21

Pesticides/PCB Organics

Method 608/8080

Surrogate Recovery Limits

	Water	Soil
Tetrachloro-m-xylene	60-150%	60-150%
4,4'-Dichlorobiphenyl	60-150%	60-150%

Method 8140

Surrogate Recovery Limits

	Water	Soil
Tributylphosphate	36-152%	36-152%
Triphenylphosphate	40-152%	40-152%

Base/Neutral/Acid Organics

Method 625/8270

Surrogate Recovery Limits

	Water	Soil
Nitrobenzene-d5	35-114%	23-120%
2-Fluorobiphenyl	43-116%	30-115%
4-Terphenyl-d14	33-141%	18-137%
Phenol-d6	10-94%	24-113%
2-Fluorophenol	21-100%	25-121%
2,4,6-Tribromophenol	10-123%	19-122%

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CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/26/95

Matrix Spike/Matrix Spike Duplicate Recovery & RPD Limits

	Water Recovery	RPD	Soil Recovery	RPD
Phenol	12-110%	42	26-90%	35
2-Chlorophenol	27-123%	40	25-102%	50
1,4-Dichlorobenzene	36-97%	28	28-104%	27
N-Nitroso-di-n-propylamine	41-116%	38	41-126%	38
1,2,4-Trichlorobenzene	39-98%	28	38-107%	23
4-Chloro-3-methylphenol	23-97%	42	26-103%	33
Acenaphthene	46-118%	31	31-137%	19
4-Nitrophenol	10-80%	50	11-114%	50
2,4-Dintrotoluene	24-96%	38	28-89%	47
Pentachlorophenol	9-103%	50	17-109%	47
Pyrene	26-127%	31	35-142%	36

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CORE LABORATORIES

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/26/95

(1) EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, March 1983

(2) EPA SW-846, Test Methods for Evaluating Solid Waste, Third Edition, 1989

(3) Standard Methods for The Examination of Water and Wastewater, 17th Edition, 1989

(4) EPA 600/4-80-032, Prescribed Procedures For Measurement Of Radioactivity In Drinking Water, August 1980

(5) EPA 600/8-78-017, Microbiological Methods For Monitoring The Environment, December 1978

(6) Federal Register, July 1, 1990 (40 CFR Part 136)

(7) EPA 600/4-88-03, Methods For The Determination of Organics Compounds in Drinking Water, December 1988

(8) U.S.G.S. Methods For Determination of Inorganic Substances In Water And Fluvial Sediments, Book 5, Chapter A1, 1985

(9) Federal Register, Friday, June 7, 1991 (40 CFR Parts 141 & 142)

(10) Standard Methods For The Examination of Water and Wastewater, 16th Edition, 1985

(11) ASTM, Section 11 Water and Environmental Technology, Volume 11.01 Water (1), 1991

(12) Methods of Soil Analysis, American Society of Agronomy, Agronomy No. 9, 1965

(13) EPA SW-846, Test Methods For Evaluating Solid Waste, Third Edition, Revision 1, November 1990

(14) ASTM, Section 5, Petroleum Products, Lubricants, and Fossil Fuels, Volume 05.05, Gaseous Fuels, Coal, and Coke

(15) EPA 600/2-78-054, Field and Laboratory Methods Applicable To Overburdens and Mine Soils, March 1978

(16) ASTM, Part 19, Soils and Rocks; Building Stones, 1981

Comments: Data in the QA report may differ from final results due to digestion and/or dilution of sample into analytical ranges. The "Time Analyzed" in the QA report refers to the start time of the analytical batch which may not reflect the actual time of each analysis. The "Date Analyzed" is the actual date of analysis. Results for soil and sludge samples are reported on a wet weight basis (i.e. not corrected for percent moisture) unless otherwise indicated.

NC = Not Calculable Due to Value(s) lower than the Detection Limit.

BLANK QC SAMPLE IDENTIFICATION

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QUALITY ASSURANCE METHODS
REFERENCES AND NOTES

Report Date: 12/26/95

MB	Method Blank
ICB	Initial Calibration Blank
CCB	Continuing Calibration Blank

SPIKE QC SAMPLE IDENTIFICATION

MS	Method (Matrix) Spike
MSD	Method (Matrix) Spike Duplicate
PDS	Post Digestion Spike
SB	Spiked Blank
SBD	Spike Blank Duplicate

REFERENCE STANDARD QC SAMPLE IDENTIFICATION

LCS	Laboratory Control Standard
RS	Reference Standard
ICV	Initial Calibration Verification Standard
CCV	Continuing Calibration Verification Standard
ISA/ISB	ICP Interface Check Sample
ICL	Initial Calibration/Laboratory Control Sample
DSC	Distilled Standard Check

DUPLICATE QC SAMPLE IDENTIFICATION

MD	Method (Matrix) Duplicate
ED	Extraction Duplicate
DD	Digestion Duplicate

Analyses performed by a subcontract laboratory are indicated on the analytical and/or quality control reports under "technician" using the following codes:

SUBCONTRACT LABORATORY	CODE
Core Laboratories - Anaheim, CA	* AN
Core Laboratories - Casper, WY	* CA
Core Laboratories - Corpus Christi, TX	* CC
Core Laboratories - Houston, TX	* HP
Core Laboratories - Lake Charles, LA	* LC
Core Laboratories - Long Beach, CA	* LB
Other Subcontract Laboratories	* XX

EXPLANATION OF DATA FLAGS

B - This flag is used to indicate that an analyte is present in the method blank as well as in the sample. It indicates that the client should consider this when evaluating the results.

D - This flag indicates that surrogates were diluted out of calibration range and cannot be quantified.

E - Indicates that a sample result is an estimate because the concentration exceeded the calibration range of the instrument.

I - Used to indicate matrix interference.

J - Indicates that a value is an estimate. It is used when a compound is determined to be present based on the mass spectral data, but at a concentration less than the practical quantitation limit of the method.

The analyses, opinions or interpretations contained in this report are based upon observations and material supplied by the client for whose exclusive and confidential use this report has been made. The interpretations or opinions expressed represent the best judgment of Core Laboratories. Core Laboratories, however, assumes no responsibility and makes no warranty or representations, express or implied, as to the productivity, proper operations, or profitableness of any oil, gas, coal or other mineral, property, well or sand in connection with which such report is used or relied upon for any reason whatsoever. This report shall not be reproduced except in its entirety, without the written approval of Core Laboratories.

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 12/26/95

This flag is also used when estimating the concentration of a tentatively identified compound.

X - Indicates that a surrogate recovery is outside the specified quality control limits.

Y - Used to identify a spike or spike duplicate recovery that is outside the specified quality control limits.

Z - Indicates a relative percent difference for a spike and spike duplicate is outside the specified quality control limits.

* - Indicates a relative percent difference for a duplicate analysis is outside the specified quality control limits.

^ - Used to indicate that a standard is outside specified quality control limits.

The analyses, opinions or interpretations contained in this report are based upon observations and material supplied by the client for whose exclusive and confidential use this report has been made. The interpretations or opinions expressed represent the best judgment of Core Laboratories. Core Laboratories, however, assumes no responsibility and makes no warranty or representations, express or implied, as to the productivity, proper operations, or profitableness of any oil, gas, coal or other mineral, property, well or sand in connection with which such report is used or relied upon for any reason whatsoever. This report shall not be reproduced except in its entirety, without the written approval of Core Laboratories.

PERIODIC COMPLIANCE REPORT

NOTE: Periodic compliance reports (PCRs) are due on or before the last day of the month following the end of the reporting period and must be submitted to the address(es) listed in the "Reporting Requirements for Permittee" section of your wastewater discharge permit. Not all of the sections listed below apply to all permittees. Some permittees may also need to submit information in addition to the items appearing on this checklist. Consult your wastewater discharge permit for your specific reporting requirements.

Reporting period from January 95 to March 95

Date prepared 4/28/95 Phone 296-5900

Prepared by Wayne Rolle

A. FACILITY INFORMATION

Name ASARCO Incorporated

Location 495 E. 51st Avenue

Denver, CO 80216

Phone 296-5900 Fax 296-0508 Emergency

B. FLOW MONITORING

(Flow monitoring information may be required for more than one Monitoring Point. Attach additional sheets as necessary. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point 001 [ ] No discharge

Average daily flow volume 5,865 [ ] Measured [✓] Estimated
(gallons per day)

Maximum daily flow volume 18,400 [ ] Measured [✓] Estimated
(gallons per day)

Monitoring Point [ ] No discharge or [ ] Not applicable

Average daily flow volume [ ] Measured [ ] Estimated
(gallons per day)

Maximum daily flow volume [ ] Measured [ ] Estimated
(gallons per day)

Note: Daily flow volumes are used, in part, to determine self-monitoring and reporting frequencies. Reported values, especially estimates, must be as accurate as possible.

C. BATCH DISCHARGES

(Section B may also need to be completed by most batch dischargers. If no discharge occurred during the reporting period, complete the first line below and go to Section F.)

Monitoring Point Effluent Holding Tank [ ] No discharge or [ ] Not applicable

Number of batch discharges 45 [ ] Batch discharge log attached

Average volume of batch discharges 7,329 (gallons per ~~day~~ batch)

Maximum volume of batch discharges 16,193 (gallons per day)

Number of days with batch discharges 34

D. PRODUCTION INFORMATION

[X] Not applicable

[ ] Production data attached

E. SAMPLING RESULTS

Attach copies of the analytical results of all samplings of the regulated wastestreams performed by the permittee during the reporting period. Attach copies of the analytical results of all split samplings of the regulated wastestream performed by the permittee or other agency during the reporting period. Results transmitted to the permittee by any other agency, including the Metro District, do not have to be submitted, but must be kept on file for at least 3 years and be available for inspection.

Analytical results submitted with this PCR must contain the following information:

1. Concentrations and measurements of all parameters for which there are self-monitoring requirements.

2. The date, time and location of all sampling activities. Include the start-stop dates and times for composite samples.

(Note: To avoid self-monitoring reporting errors or violations, the analytical results included in this PCR should also contain the information listed below for all samples. At a minimum, this information must be kept on file for at least 3 years and be available for inspection.)

3. The method of sampling (grab, time composite, flow composite, or continuous measurement) and name of the person collecting the sample.

4. The name of the laboratory (or person) that performed the analyses.

5. The date the analyses were performed.

6. The analytical techniques/methods used for the analyses.

F. WASTE DISPOSAL

(Attach copies of disposal records for wastes hauled off-site during the reporting period, or provide a summary of waste disposal activities in the space provided below, or indicate "no activity" if no wastes were disposed of during the reporting period.)

[X] No waste disposal activity occurred during the reporting period

[ ] Disposal record copies attached

Waste Name	Volume	Ship Date	Disposal Company

G. EYEWASH CERTIFICATION STATEMENT

[ ] Not applicable

"Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standards for this facility, I certify that, to the best of my knowledge and belief, there was no eyewash discharge during any compliance monitoring event."

Margaret W. Staub
Signature of Authorized Representative

4/28/94
Date

Margaret W. Staub
Name (please print or type)

Senior Env. Engineer
Title (please print or type)

H. CERTIFICATION STATEMENT FOR TOTAL TOXIC ORGANICS

[ ] Not applicable

"Based on my inquiry of the person or persons directly responsible for managing compliance with the permit limitation for Total Toxic Organics, I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewaters has occurred since filing of the last discharge monitoring report. I further certify that this facility is implementing the toxic organic management plan submitted to the control authority."

Margaret L. Stab — 4/28/95

Signature of Authorized Representative — Date

Margaret W. Stab

Name (please print or type)

Senior Env. Engineer

Title (please print or type)

I. ACCURACY AND COMPLETENESS CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I further certify that, there has not been any change(s) in the Research and Development activities at this facility that have significantly changed the process wastewater discharged to the POTW, or that notification of changed discharges was submitted to the Metro District as required per Section F.4 of the permit. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Margaret L. Stab — 4/28/95

Signature of Authorized Representative — Date

Margaret W. Stab

Name (please print or type)

Senior Env. Engineer

Title (please print or type)

ASARCO

GLOBE PLANT

April 28, 1995 File: 2.45.5.2

Mr. Ted Graber
Metro Wastewater Reclamation
6450 York Street
Denver, Colorado 80229-7499

Re: Quarterly Sanitary Sewer Self-Monitoring

Dear Mr. Graber,

In accordance with the conditions of our discharge permit issued by the City and County of Denver, Wastewater Management, we monitored the discharge through manhole 001 on the following dates:

A 24 hour flow composite sample and a grab sample were collected and the following parameters were analyzed:

Flow Composite Sample Date/Time: 04/25/95 1310 - 04/26/95 1310

Total flow for 24 HR:	8600	gallons
Total vol. collected:	2.8	liters
Number of samples:	8	
Arsenic (As)	0.002	ppm
Cadmium (Cd)	0.05	ppm
Copper (Cu)	0.02	ppm
Lead (Pb)	0.23	ppm
Nickel (Ni)	0.07	ppm
Selenium (Se)	0.007	ppm
Zinc (Zn)	0.15	ppm

Grab Sample Date/Time: 04/26/95 1314

pH	6.9	pH units

Flow Data Date/Time 04/25/95 1310 - 04/26/95 1310

Total flow:	8600	gallons
Maximum flow:	0.73	gallons/sec
Average flow:	0.100	gallons/sec

Margaret Staub
Environmental Operations

ASARCO INC.

GLOBE PLANT (303)-296-5900 DENVER COLORADO

SANITARY SEWER MONITORING
DISCHARGE PERMIT COMPLIANCE

MONITORING POINT 001:

FLOW COMPOSITE SAMPLING DATA

Sampling Date Started 4/25/95

Sampling time Started 1310

Sampling Date Ended 4/26/95

Sampling Time Ended 1310

Total Flow For 24 hour Period 8600 gallons

Number of Tanks Discharged 1

Number Of Samples Collected 8

Total Volume Collected 2.8 liters

Flow composite sample was collected using an ISCO 3710 sampler and a 2870 Flow Meter.

Total Metals:(ppm)

Arsenic	(As)	0.002	ppm
Cadmium	(Cd)	0.05	ppm
Copper	(Cu)	0.02	ppm
Lead	(Pb)	0.23	ppm
Nickel	(Ni)	0.07	ppm
Selenium	(Se)	0.007	ppm
Zinc	(Zn)	0.15	ppm
pH		6.9	units

Date pH Grab Sample Taken: 4/26/95

Time pH Grab Sample Taken: 1314

Sampled By: Wayne Rable

Reviewed By: D C Lux

Date Reviewed: 4-28-95

ASARCO INC.

GLOBE PLANT (303)-296-5900 DENVER COLORADO

SANITARY SEWER MONITORING
DISCHARGE PERMIT COMPLIANCE

MONITORING POINT 001:

FLOW DATA

Sample Date Started 4/25/95

Sample Time Started 1310

Sample Date Ended 4/26/95

Sample Time Ended 1310

Total Flow Over 24 hour Period 8600 gallons

Maximum Flow Rate during That 24 Hours 0.73 gallons/sec

Average Daily Flow Rate 0.100 gallons/sec

Sampling Performed By : Wayne Rolle

Reviewed By: N H Lux

Date Reviewed : 4-28-95

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: 208-009-95

Description: 001

Sample I.D: 001

Date Submitted: 4/27/95

Date Sample Prepared: 4/27/95

Parameter	Value	Units	Method	Date Completed	Chemist
Tl	0.1	ppm	Standard Methods 18 Ed. 3111B	4/27/95	WR
Zn	0.15				
Fe	0.11				
Cd	0.05				
Pb	0.23				
Ni	0.07				
Mn	0.04				
Cu	0.02				
Ag	<0.01				
Cr	<0.05				
Na					
Ca					
Mg					
As	0.002		Standard Methods 18 Ed. 3114 B		
Se	0.007				
pH		pH	Standard Methods 18 Ed. 4500-H^+ B		
S		ppm	Standard Methods 18 Ed. 4500-S^{2-} E		
SO4			Standard Methods 18 Ed. 4500-SO_4^{2-} D		

WR

Approved

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: [redacted]- 208-010-95

Description: ~~[redacted]~~ ~~[redacted]~~

Sample I.D: _____

Date Submitted: 4/27/95

Date Sample Prepared: _____

Parameter	Value	Units	Method	Date Completed	Chemist
Tl		ppm	Standard Methods 18 Ed. 3111B		
Zn					
Fe					
Cd					
Pb					
Ni					
Mn					
Cu					
Ag					
Cr					
Na					
Ca					
Mg					
As			Standard Methods 18 Ed. 3114 B		
Se					
pH	6.9	pH	Standard Methods 18 Ed. 4500-H^+ B	4/27/95	WR
S		ppm	Standard Methods 18 Ed. 4500-S^{2-} E		
SO4			Standard Methods 18 Ed. 4500-SO_4^{2-} D		

WR

Approved

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: ~~[illegible]~~ 200-003-95

Description: Analytical Dupe ~~[illegible]~~ ~~[illegible]~~

Sample I.D: 001 Dupe

Date Submitted: 4/27/95

Date Sample Prepared: 4/27/95

arameter	Value/%RPD	Units	Method	Date Completed	Chemist
Tl	0.1/0.0	ppm	Standard Methods 18 Ed. 3111B	4/27	[illegible]
Zn	0.18/18.2				
Fe	0.10/9.5				
Cd	0.06/18.2				
Pb	0.26/12.2				
Ni	0.06/15.4				
Mn	0.04/0.0				
Cu	0.02/0.0				
Ag	<0.01/0.0				
Cr	<0.05/0.0				
Na					
Ca					
Mg					
As	0.003/40.0	& < Detection Limit	Standard Methods 18 Ed. 3114 B		
Se	0.008/13.3				
pH		pH	Standard Methods 18 Ed. 4500-H^+ B		
S		ppm	Standard Methods 18 Ed. 4500-S^{2-} E		
SO4			Standard Methods 18 Ed. 4500-SO_4^{2-} D		

[illegible]

Approved

ASARCO, Incorporated

Analytical Laboratory Results

Lab No: 200-004-95

Description: Sample Spike

Sample I.D:

Date Submitted: 4/27/95

Date Sample Prepared: 4/27/95

- 50 ml sample was spiked with 1 ml 10ppm std for Cd, Pb, Zn, Cu, Cr Mn, + Ni
- Hydride sample was spiked with 1 ml 1ppm As + Se standards.

Parameter	Value / % Rec	Units	Method	Date Completed	Chemist
Tl	0.1 / —	ppm	Standard Methods 18 Ed. 3111B	4/27/95	WR
Zn	0.33 / 90%				
Fe	0.07 / —				
Cd	0.25 / 100%				
Pb	0.45 / 110%				
Ni	0.25 / 90%				
Mn	0.22 / 90%				
Cu	0.21 / 95%				
Ag	<0.01 / —				
Cr	0.19 / 95%				
Na					
Ca					
Mg					
As	0.011 / 100%		Standard Methods 18 Ed. 3114 B		
Se	0.013 / 95%				
pH		pH	Standard Methods 18 Ed. 4500-H^+ B		
S		ppm	Standard Methods 18 Ed. 4500-S^{2-} E		
SO4			Standard Methods 18 Ed. 4500-SO_4^{2-} D		

WR

Approved

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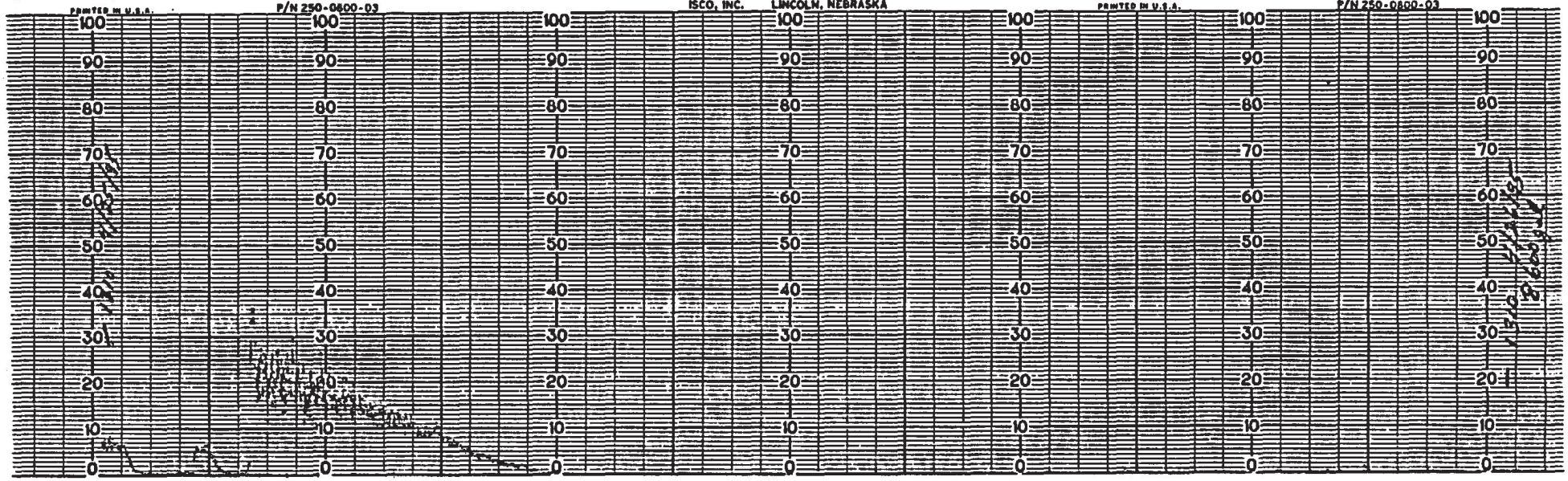

ASARCO GLOBE PLANT
ANALYSIS REPORT FORM
WATER TREATMENT
Printed: 04/28/95 07:47

SAMPLE DESCRIPTION		PPM		PPM		PPM		PPM		PPM		
LAB ID NO: 205-001-95	TL:	<0.1	PB:	0.07	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 01/03/95	ZN:	3.95	NI:	<0.025	CR:	<0.05	SE:	0.014	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	<0.1	MN:	0.62	pH:	6.70	MG:		SO4:		APP:	X
11 TANK-	CD:	0.26	CU:	<0.01	S-2:	4	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-007-95	TL:	<0.1	PB:	0.10	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 01/05/95	ZN:	0.03	NI:	<0.025	CR:	<0.05	SE:	0.005	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.3	MN:	<0.025	pH:	7.20	MG:		SO4:		APP:	X
12 TANK-	CD:	0.01	CU:	0.01	S-2:	4	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-008-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 01/06/95	ZN:	0.01	NI:	<0.025	CR:	<0.05	SE:	0.006	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.3	MN:	<0.025	pH:	7.30	MG:		SO4:		APP:	X
12 TANK-	CD:	0.01	CU:	<0.01	S-2:	4	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-009-95	TL:	<0.1	PB:	0.1	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 01/11/95	ZN:	1.70	NI:	<0.025	CR:	<0.05	SE:	0.008	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	<0.1	MN:	0.35	pH:	5.80	MG:		SO4:		APP:	X
11 TANK-	CD:	0.18	CU:	0.01	S-2:	2	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-010-95	TL:	<0.1	PB:	0.05	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 01/13/95	ZN:	0.11	NI:	<0.025	CR:	<0.05	SE:	0.005	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.6	MN:	<0.025	pH:	7.60	MG:		SO4:		APP:	X
12 TANK-	CD:	0.02	CU:	0.02	S-2:	4	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-011-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 01/17/95	ZN:	1.78	NI:	<0.025	CR:	<0.05	SE:	0.005	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	<0.1	MN:	0.30	pH:	5.60	MG:		SO4:		APP:	X
11 TANK-	CD:	0.11	CU:	<0.01	S-2:	3	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-012-95	TL:	<0.1	PB:	0.17	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 01/17/95	ZN:	0.07	NI:	<0.025	CR:	<0.05	SE:	0.007	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.5	MN:	<0.025	pH:	6.40	MG:		SO4:		APP:	X
12 TANK-	CD:	0.01	CU:	<0.01	S-2:	3	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-013-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	0.003	CA:		ACC:	X
DATE SAMP: 01/18/95	ZN:	0.01	NI:	<0.025	CR:	<0.05	SE:	0.004	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.3	MN:	<0.025	pH:	7.10	MG:		SO4:		APP:	X
12 TANK-	CD:	0.01	CU:	0.01	S-2:	4	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-014-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	0.007	CA:		ACC:	X
DATE SAMP: 01/19/95	ZN:	0.02	NI:	<0.025	CR:	<0.05	SE:	<0.002	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.2	MN:	<0.025	pH:	6.90	MG:		SO4:		APP:	X
12 TANK-	CD:	0.01	CU:	0.01	S-2:	3	CL:		HARDNESS:			
VOLUME:									AL:			

ASARCO GLOBE PLANT
ANALYSIS REPORT FORM
WATER TREATMENT
Printed: 04/28/95 07:47

SAMPLE DESCRIPTION		PPM		PPM		PPM		PPM		PPM		
LAB ID NO: 205-015-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	0.007	CA:		ACC:	X
DATE SAMP: 01/23/95	ZN:	0.04	NI:	<0.025	CR:	<0.05	SE:	0.002	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.4	MN:	<0.025	pH:	6.90	MG:		SO4:		APP:	X
12 TANK-	CD:	0.01	CU:	<0.01	S-2:	4	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-016-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	0.011	CA:		ACC:	
DATE SAMP: 01/24/95	ZN:	1.42	NI:	<0.025	CR:	<0.05	SE:	0.006	NA:		REJ:	X
SAMPLE ID: DAILY	FE:	<0.1	MN:	0.36	pH:	6.40	MG:		SO4:		APP:	X
11 TANK-	CD:	0.12	CU:	<0.01	S-2:	1	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-017-95	TL:	<0.1	PB:	0.17	AG:	<0.01	AS:	0.005	CA:		ACC:	X
DATE SAMP: 01/25/95	ZN:	0.04	NI:	<0.025	CR:	<0.05	SE:	<0.002	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.6	MN:	<0.025	pH:	7.30	MG:		SO4:		APP:	X
12 TANK-	CD:	0.01	CU:	0.01	S-2:	3	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-018-95	TL:	<0.1	PB:	0.29	AG:	<0.01	AS:	0.002	CA:		ACC:	X
DATE SAMP: 01/30/95	ZN:	0.16	NI:	<0.025	CR:	<0.05	SE:	0.010	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.6	MN:	<0.025	pH:	6.40	MG:		SO4:		APP:	X
12 TANK-	CD:	0.05	CU:	0.02	S-2:	3	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-019-95	TL:	<0.01	PB:	0.05	AG:	<0.01	AS:	0.013	CA:		ACC:	X
DATE SAMP: 01/31/95	ZN:	1.70	NI:	<0.025	CR:	<0.05	SE:	0.008	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	<0.1	MN:	0.13	pH:	6.10	MG:		SO4:		APP:	X
11 TANK-	CD:	0.15	CU:	0.01	S-2:	<1	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-022-95	TL:	<0.1	PB:	0.09	AG:	<0.01	AS:	0.002	CA:		ACC:	X
DATE SAMP: 02/01/95	ZN:	0.05	NI:	<0.025	CR:	<0.05	SE:	0.009	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.3	MN:	<0.025	pH:	7.60	MG:		SO4:		APP:	X
12 TANK-	CD:	0.02	CU:	0.03	S-2:	3	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-023-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	0.011	CA:		ACC:	X
DATE SAMP: 02/03/95	ZN:	0.05	NI:	<0.025	CR:	<0.05	SE:	0.008	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.2	MN:	0.03	pH:	7.10	MG:		SO4:		APP:	X
12 TANK-	CD:	0.04	CU:	0.01	S-2:	3	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-024-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	0.005	CA:		ACC:	X
DATE SAMP: 02/06/95	ZN:	2.47	NI:	<0.025	CR:	<0.05	SE:	0.007	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.8	MN:	<0.025	pH:	5.80	MG:		SO4:		APP:	X
11 TANK-	CD:	0.11	CU:	0.02	S-2:	2	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-025-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 02/06/95	ZN:	0.12	NI:	<0.025	CR:	<0.05	SE:	0.011	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	0.4	MN:	<0.025	pH:	7.40	MG:		SO4:		APP:	X
12 TANK-	CD:	0.04	CU:	0.03	S-2:	<1	CL:		HARDNESS:			
VOLUME:									AL:			

ASARCO GLOBE PLANT
ANALYSIS REPORT FORM
WATER TREATMENT
Printed: 04/28/95 07:47

SAMPLE DESCRIPTION		PPM		PPM		PPM		PPM		PPM		
LAB ID NO: 205-026-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 02/08/95	ZN:	0.02	NI:	<0.025	CR:	<0.05	SE:	0.009	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.3	MN:	0.04	pH:	6.90	MG:		SO4:		APP:	X
12 TANK-	CD:	0.02	CU:	0.02	S-2:	3	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-027-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	0.003	CA:		ACC:	X
DATE SAMP: 02/09/95	ZN:	0.08	NI:	<0.025	CR:	<0.05	SE:	0.012	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.9	MN:	<0.025	pH:	6.90	MG:		SO4:		APP:	X
12 TANK-	CD:	0.04	CU:	0.02	S-2:	1	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-028-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 02/13/95	ZN:	0.15	NI:	<0.025	CR:	<0.05	SE:	0.003	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	<0.1	MN:	0.08	pH:	5.90	MG:		SO4:		APP:	X
11 TANK-	CD:	0.03	CU:	<0.01	S-2:	1	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-029-95	TL:	<0.1	PB:	0.23	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 02/13/95	ZN:	0.06	NI:	<0.025	CR:	<0.05	SE:	0.009	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.6	MN:	<0.025	pH:	6.50	MG:		SO4:		APP:	X
12 TANK-	CD:	0.02	CU:	<0.01	S-2:	2	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-033-95	TL:	<0.1	PB:	0.25	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 02/14/95	ZN:	0.02	NI:	<0.025	CR:	<0.05	SE:	0.028	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.5	MN:	<0.025	pH:	7.00	MG:		SO4:		APP:	X
12 TANK-	CD:	0.02	CU:	<0.01	S-2:	2	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-034-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 02/17/95	ZN:	0.06	NI:	<0.025	CR:	<0.05	SE:	0.174	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.2	MN:	<0.025	pH:	7.10	MG:		SO4:		APP:	X
12 TANK-	CD:	0.02	CU:	0.01	S-2:	2	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-035-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	0.002	CA:		ACC:	X
DATE SAMP: 02/20/95	ZN:	<0.01	NI:	<0.025	CR:	<0.05	SE:	0.013	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.5	MN:	<0.025	pH:	7.00	MG:		SO4:		APP:	X
12 TANK-	CD:	0.04	CU:	<0.01	S-2:	2	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-036-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	0.006	CA:		ACC:	X
DATE SAMP: 02/21/95	ZN:	3.20	NI:	<0.025	CR:	<0.05	SE:	0.008	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	<0.1	MN:	0.60	pH:	6.80	MG:		SO4:		APP:	X
11 TANK-	CD:	0.15	CU:	<0.01	S-2:	<1	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-037-95	TL:	<0.1	PB:	0.30	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 02/21/95	ZN:	0.18	NI:	<0.025	CR:	<0.05	SE:	0.018	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.4	MN:	<0.025	pH:	6.40	MG:		SO4:		APP:	X
12 TANK-	CD:	0.01	CU:	<0.01	S-2:	1	CL:		HARDNESS:			
VOLUME:									AL:			

ASARCO GLOBE PLANT
ANALYSIS REPORT FORM
WATER TREATMENT
Printed: 04/28/95 07:47

SAMPLE DESCRIPTION		PPM		PPM		PPM		PPM		PPM		
LAB ID NO: 205-038-95	TL:	<0.1	PB:	0.40	AG:	<0.01	AS:	0.011	CA:		ACC:	X
DATE SAMP: 02/23/95	ZN:	0.07	NI:	<0.025	CR:	<0.05	SE:	0.009	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.7	MN:	<0.025	pH:	6.80	MG:		SO4:		APP:	X
12 TANK-7,8 BY-PASS	CD:	0.01	CU:	<0.01	S-2:	1	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-039-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 02/28/95	ZN:	2.08	NI:	<0.025	CR:	<0.05	SE:	0.011	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	<0.1	MN:	0.44	pH:	5.00	MG:		SO4:		APP:	X
11 TANK-	CD:	0.14	CU:	0.01	S-2:	<1	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-040-95	TL:	<0.1	PB:	0.46	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 02/28/95	ZN:	0.25	NI:	<0.025	CR:	<0.05	SE:	0.013	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.2	MN:	<0.025	pH:	6.80	MG:		SO4:		APP:	X
12 TANK-	CD:	0.04	CU:	<0.01	S-2:	4	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-043-95	TL:	<0.1	PB:	0.15	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 03/06/95	ZN:	0.13	NI:	<0.025	CR:	<0.05	SE:	0.015	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	0.2	MN:	0.31	pH:	6.40	MG:		SO4:		APP:	X
11 TANK-	CD:	0.04	CU:	<0.01	S-2:	1	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-044-95	TL:	<0.1	PB:	1.52	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 03/06/95	ZN:	0.20	NI:	<0.025	CR:	<0.05	SE:	0.015	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.5	MN:	<0.025	pH:	7.30	MG:		SO4:		APP:	X
12 TANK-	CD:	0.03	CU:	0.02	S-2:	<1	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-045-95	TL:	<0.1	PB:	0.08	AG:	<0.01	AS:	0.007	CA:		ACC:	X
DATE SAMP: 03/14/95	ZN:	0.01	NI:	<0.025	CR:	<0.05	SE:	<0.002	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.8	MN:	<0.025	pH:	5.40	MG:		SO4:		APP:	X
11 TANK-	CD:	0.03	CU:	0.02	S-2:	2	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-046-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	0.003	CA:		ACC:	X
DATE SAMP: 03/14/95	ZN:	0.03	NI:	<0.025	CR:	<0.05	SE:	0.003	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	<0.1	MN:	0.19	pH:	5.90	MG:		SO4:		APP:	X
12 TANK-	CD:	0.04	CU:	<0.01	S-2:	<1	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-047-95	TL:	<0.1	PB:	0.41	AG:	<0.01	AS:	0.002	CA:		ACC:	X
DATE SAMP: 03/17/95	ZN:	0.17	NI:	<0.025	CR:	<0.05	SE:	0.008	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.9	MN:	<0.025	pH:	6.60	MG:		SO4:		APP:	X
12 TANK-	CD:	0.03	CU:	<0.01	S-2:	2	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-048-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 03/21/95	ZN:	3.35	NI:	<0.025	CR:	<0.05	SE:	0.003	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	0.1	MN:	0.89	pH:	5.40	MG:		SO4:		APP:	X
11 TANK-	CD:	0.28	CU:	0.03	S-2:	1	CL:		HARDNESS:			
VOLUME:									AL:			

ASARCO GLOBE PLANT
ANALYSIS REPORT FORM
WATER TREATMENT
Printed: 04/28/95 07:47

SAMPLE DESCRIPTION		PPM		PPM		PPM		PPM		PPM		
LAB ID NO: 205-049-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 03/21/95	ZN:	0.10	NI:	<0.025	CR:	<0.05	SE:	0.005	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.4	MN:	0.04	pH:	6.90	MG:		SO4:		APP:	X
12 TANK-	CD:	0.02	CU:	0.02	S-2:	5	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-050-95	TL:	<0.1	PB:	0.12	AG:	<0.01	AS:	0.006	CA:		ACC:	X
DATE SAMP: 03/23/95	ZN:	0.15	NI:	<0.025	CR:	<0.05	SE:	0.003	NA:		REJ:	
SAMPLE ID: DAILY	FE:	1.1	MN:	0.03	pH:	6.30	MG:		SO4:		APP:	X
12 TANK-	CD:	0.02	CU:	0.01	S-2:	2	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-051-95	TL:	<0.1	PB:	0.05	AG:	<0.01	AS:	0.005	CA:		ACC:	X
DATE SAMP: 03/24/95	ZN:	6.00	NI:	<0.025	CR:	<0.05	SE:	0.007	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	0.2	MN:	0.94	pH:	6.30	MG:		SO4:		APP:	X
11 TANK-	CD:	0.39	CU:	<0.01	S-2:	<1	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-052-95	TL:	<0.1	PB:	0.18	AG:	<0.01	AS:	0.002	CA:		ACC:	X
DATE SAMP: 03/24/95	ZN:	0.23	NI:	<0.025	CR:	<0.05	SE:	0.014	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.4	MN:	0.04	pH:	6.00	MG:		SO4:		APP:	X
12 TANK-	CD:	0.02	CU:	<0.01	S-2:	4	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-053-95	TL:	<0.1	PB:	0.05	AG:	<0.01	AS:	0.004	CA:		ACC:	X
DATE SAMP: 03/27/95	ZN:	3.35	NI:	<0.025	CR:	<0.05	SE:	0.006	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	<0.1	MN:	0.72	pH:	6.10	MG:		SO4:		APP:	X
11 TANK-	CD:	0.31	CU:	<0.01	S-2:	<1	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-054-95	TL:	<0.1	PB:	0.05	AG:	<0.01	AS:	0.004	CA:		ACC:	X
DATE SAMP: 03/27/95	ZN:	0.14	NI:	<0.025	CR:	<0.05	SE:	0.010	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.3	MN:	<0.025	pH:	7.00	MG:		SO4:		APP:	X
12 TANK-	CD:	0.03	CU:	<0.01	S-2:	3	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-055-95	TL:	<0.1	PB:	<0.05	AG:	<0.01	AS:	0.005	CA:		ACC:	X
DATE SAMP: 03/29/95	ZN:	0.07	NI:	<0.025	CR:	<0.05	SE:	0.006	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.5	MN:	0.04	pH:	7.50	MG:		SO4:		APP:	X
12 TANK-	CD:	0.03	CU:	0.01	S-2:	2	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-056-95	TL:	<0.1	PB:	0.10	AG:	<0.01	AS:	0.004	CA:		ACC:	X
DATE SAMP: 03/30/95	ZN:	2.64	NI:	<0.025	CR:	<0.05	SE:	<0.002	NA:		REJ:	
SAMPLE ID: HARRISON STUDY	FE:	<0.1	MN:	0.52	pH:	6.30	MG:		SO4:		APP:	X
11 TANK-	CD:	0.19	CU:	<0.01	S-2:	2	CL:		HARDNESS:			
VOLUME:									AL:			
LAB ID NO: 205-057-95	TL:	<0.1	PB:	0.19	AG:	<0.01	AS:	<0.002	CA:		ACC:	X
DATE SAMP: 03/30/95	ZN:	0.23	NI:	<0.025	CR:	<0.05	SE:	0.002	NA:		REJ:	
SAMPLE ID: DAILY	FE:	0.7	MN:	0.04	pH:	6.10	MG:		SO4:		APP:	X
12 TANK-	CD:	0.04	CU:	<0.01	S-2:	2	CL:		HARDNESS:			
VOLUME:									AL:			

Jan. 1995

WASTE WATER TREATMENT FLOW METER REPORT

FORM W-1

	Date	Tank	Time Start	Flow Rate/Min	Start Reading	End. Reading	Volume
DL	1/4	11	1142	70	2786262		7388
WR	1/5	12	1530	70	237220		6607
DL	1/8	12	1430	70	243827		6918
WR	1/11	11	0820	70	2793650		6677
WR	1/13	12	1430	70	250745		6737
WR	1/17	11	1505	70	2800327		6535 667
WR	1/17	12	1505	70	257482		7381
WR	1/18	12	1515	70	264863		7807
WR	1/19	12	1505	70	272670		6849
WR	1/23	12	1520	70	279519		7684
WR	1/25	12	1503	70	287203		6212
WR	1/30	12	1525	70	293415	301032	7617
DL	1/31	11	1445	70	2806862	2814480	7618
					#12	63812	
					#11	28218	
						92030	gal

Feb. 1995

WASTE WATER TREATMENT FLOW METER REPORT

	Date	Tank	Time Start	Flow Rate/Min	Start Reading	End. Reading	Volume
WR	2/1/95	12	1540	70	301032		7663
WR	2/3/95	12	1530	70	308695		7755
WR	2/6/95	11	1530	70	2814380		6390
↓	↓	12	↓	↓	316450		7571
WR	2/8/95	12	1540	70	324021		7869
WR	2/9/95	12	1510	70	331890		6965
WR	2/13	11	1420	70	2820770		6278
↓	↓	12	↓	↓	338855		7335
WR	2/14	12	1513	70	346190		6737
WR	2/17	12	1410	70	352927		7648
WR	2/20	12	1630	70	360575		7726
WR	2/21	11	1600	35	2827048		7518
↓	↓	12	↓	70	368301		8470
WR	2/23	12	1612	70	376771		7532
WR	2/28	11	1522	70	2834566	2841113	6547
↓	↓	12	↓	70	384303	391692	7389
							11739
						16	

March, 1995

WASTE WATER TREATMENT FLOW METER REPORT

FORM W-1

	Date	Tank	Time Start	Flow Rate/Min	Start Reading	End. Reading	Volume
WR	3/6	11	1424	70	2841113		5903
↓	↓	12	↓	↓	396152		7435
WR	3/14	11	1530	70	2847016		7854
↓	↓	12	↓	↓	399127		8339
WR	3/17	12	1450	70	407466		8192
WR	3/21	11	1437	70	2854870		6912
↓	↓	12	↓	↓	416658		7841
DY	3/23	12	1530	70	423499		7116
DY	3/24	11	1440	70	2861782		6734
↓	↓	12	↓	↓	430615		6865
DY	3/27	11	1520	70	2868516		6964
↓	↓	12	↓	↓	437480		8473
WR	3/29	12	1510	70	445953		9645
WR	3/30	11	1530	70	2875480	2881906	6426
↓	↓	12	↓	↓	455598		8140
WR	3/31	12	1530	70	463738	471297	7559
						120,398	