ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

D930001187 Cooler # 121

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: ZG7030
PROJECT NAME: HOD Landfill RI/FS(O)
SAMPLERS: (Signature) L Knorz

Low Concentration Surface Water

REMARKS: Superfund 1187 SHEET 10 OF 4

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA (HCL)	Extractable	Metals (HNO_3)	Cyanide (NaOH)	Mercury ($K_2Cr_2O_7$ HNO_3)		TAG NUMERS
ZE33538	5/13/93	1515		X	SW1 + MS/MSD	19	8	8	1	1	1		031734-52
ZE06R63	5/13/93	1000		X	SWTB01	2	2						148211-12

CRL Form in Cooler # 96

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
L Knorz	5/13/93 1700	William Sugo Jr			
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) William Sugo Jr	Date / Time 5/14/93 2:15pm	Remarks HAND DELIVERED Custody seals: 32451-52	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 00640

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

D930001187 COOLER # 96

CHAIN OF CUSTODY RECORD

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

PROJ. NO.: ZG7030
PROJECT NAME: HOD Landfill RI/FS (c)
SAMPLERS: (Signature) Linda Knorr

Supergrad 1187
REMARKS SHEET 2 OF 4

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA (HCL)	Extractable	Metals (HNO3)	Cyanide (NaOH)	HCl/VOA (K2Cr2O7+HNO3)		TAG NUMBERS
ZE33D38	5/13/93	1530		X	SWLD	9	3	3	1	1	1		031753-61
ZE06R62	5/13/93	1600		X	SWFB01	9	3	3	1	1	1		031762-70

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Linda Knorr	5/13/93 1700	William Sungo Jr			
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) William Sungo Jr	Date / Time 5/14/93 2:15 pm	Remarks Hand Delivered Custody Seals: 32453-54	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 00641

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

0930001187 COOLER # 12

CHAIN OF CUSTODY RECORD

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

PROJ. NO.: ZG7030
PROJECT NAME: HOD Landfill RI/FS (0)
SAMPLERS: (Signature) Linda Knorz

Low Concentration Groundwater
SHEET 3 OF 4

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA (HCL)	Extractables	Metals (HNO3)	Cyanide (NaOH)	Mercury (K2Cr2O7 + HNO3)	Alkalinity/Sulfate/Chloride	Hardness (HNO3)	TOC (H2SO4)	Nitrate/Nitrite (H2SO4)	Ammonia/Nitrogen (H2SO4)	REMARKS Supersed 1187 TAG NUMBERS
ZE06R64	5/13/93	1100		X	LFB01	14	3	3	1	1	1	1	1	1	1	1	031715-28

METALS ARE Filtered

CRL Tracking FORM IN Cooler # 12

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Linda Knorz	5/13/93 1300	William Sayo Jr			
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) William Sayo Jr	Date / Time 5/14/93 2:15pm	Remarks HAND DELIVERED Custody Seals: 32445-46	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 00639

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

D93000 1187

CHAIN OF CUSTODY RECORD

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

PROJ. NO.: ZG7030
PROJECT NAME: HOD Landfill
SAMPLERS: (Signature) L. Knox

Low Concentration Soil

REMARKS: Signed 1187 SHEET 1 OF 4
Tag Numbers:

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Metals/Cyanide	Organics	TOC				
ZE33540	5/14/93	0900		X	SD1 + MSD	2	1		1				148219-20
ZE33D40	5/14/93	0900		X	SD1D	2	1		1				148221-22

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
L. Knox	5/14/93 1300	William Sayre Jr			
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	
		William Sayre Jr	5/14/93 2:15pm	Hand Delivered Custody Seals: 32457-58	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

D930001187 TFA301 DAY 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: TOXIC SUBSTANCES

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER VOLATILE ORGANICS SCAN UG/L TOX 17684	WATER ABN ORGANICS SCAN UG/L TOX 17674	SEDIMENTS SOLIDS VOLATILE ORGANICS SCAN MG/KG (DRY) TOX 215622	SEDIMENTS SOLIDS ABN ORGANICS SCAN MG/KG (DRY) TOX 215722
93ZE33S38	5-031743-34-5-6-7-38-9-40-41 SW1+MSD	X			
↓ D38	SW1D 5-031753-754-755	X			
93ZE06R62	SWFB01 5-031762-763-764	X			
93ZE06R63	SWTB01 5-148211 5-148212	X			
93ZE33S38	SW1+MSD 5-031742-3-4		X		
93ZE33D38	SW1 DUPLICATE 5-031756		X		
93ZE06R62	SWFB01 5-031765		X		

Shipment complete

D93000 1187 TFA 301 DAY 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: TOXIC SUBSTANCES

VISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

RL LOG NUMBER	SAMPLE DESCRIPTION	WATER VOLATILE ORGANICS SCAN UG/L TOX 17564	WATER ABN ORGANICS SCAN UG/L TOX 17574	SEDIMENTS SOLIDS VOLATILE ORGANICS SCAN MG/KG (DRY) TOX 215622	SEDIMENTS SOLIDS ABN ORGANICS SCAN MG/KG (DRY) TOX 215722	
93ZE33539	L1 + MSD	X	X			LK
↓ D39	L1D	X	X			
3ZE06R64	LFB01 5-031715 716-717	X	X			LK
7E06R65	LTB01					
93ZE06R64	LFB01 5-031718		X			

D93000187 TFA301 DAY 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: PESTICIDES AND PCB'S

DIVISION/BRANCH ARCS / SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER TRIHALOMETHANES UG/L PES17414	WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144	WATER CHLORINATED PESTICIDES UG/L PES 17134	WATER HERBICIDES UG/L PES 17424	WATER OIL AND GREASE MG/L PES 17439
93ZE33538	5-0317-45-6-7-8-SW1+MSD		X	X		
↓ D38	SW1D 5-0317-57-758		X	X		
93ZE06R62	SWFB01 5-031766-5-031767		X	X		

D930001187

TFA301 DHY2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: PESTICIDES AND PCB'S

DIVISION/BRANCH ARCS / SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/14/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.D.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER TRIHALOMETHANES UG/L PES17414	WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144	WATER CHLORINATED PESTICIDES UG/L PES 17134	WATER HERBICIDES UG/L PES 17424	WATER OIL AND GREASE MG/L PES 17439
LK 93ZE33S39	L1 + MSD		X	X		
↓ D39	L1D		X	X		
93ZE06R64	LFBD1 5-013719-720		X	X		

D9300U1187

TFA301 DAY2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER _____ DATA SET NUMBER _____ STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — F&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 76020	WATER CR^{+6} UG CR^{+6}/L MIN 74616	WATER MERCURY UG HG/L MIN 74717
93ZE33S38	5-031-750 SW1+MSD		X			X
↓ D38	SW1D 5-031760		X			X
93ZE06R62	SWFB01 5-031769		X			X
93ZE33S38	SW1+MSD 5-031752					X
93ZE33D38	SW1D 5-031761					X
93ZE06R62	SWFB01 5-031770					X

D930001187 TFA301 DAY 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 4/5/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74819	WATER GROSS ALPHA P CI/L MIN 78020	WATER CR^{+6} UG CR^{+6}/L MIN 74816	WATER MERCURY UG HG/L MIN 74717
93ZE33539	L1-MSD		X			X
↓ D39	L1D		X			X
93ZE06R64	L.FB015-031722		X			X
93ZE06R64	LGB01 5-031723					X

Shipment not complete

D93000 1187 TFA301 DAY 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER Cd UG/L		TOTAL METALS WATER TOTAL ICAP UG/L MET111		TOTAL METALS WATER AS UG/L MET161		TOTAL METALS WATER PB UG/L MET1191		TOTAL METALS WATER SB UG/L MET1201		TOTAL METALS WATER SE UG/L MET1211		TOTAL METALS WATER TL UG/L MET1721		
93ZE33S38	SW1+MSD	X		X		X		X		X		X		X		5-031-751
↓ D38	SW1D	X		X		X		X		X		X		X		5-031-759
93ZE06R62	SWFB01	X		X		X		X		X		X		X		5-031-768

ENVIRONMENTAL PROTECTION AGENCY D930001187 DAY 2
FOR THE TEAM: METALS TFA301

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/~~8~~4/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER Cd UG/L	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET161	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221
93ZE33S39	L1, MSD	X	X	X	X	X	X	X
↓ D39	L1D	X	X	X	X	X	X	X
93ZE06R64	LFBD1 5-031-721	X	X	X	X	X	X	X

LK

D930001187 TFA301 DAY 2 ①

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH ARCS SAMPLING DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DW NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CRL LNG NUMBER	SAMPLE DESCRIPTION	WATER NITRATE & Nitrite TL MG N/L MIN7284	WATER AMMONIA MG N/L MIN7294	WATER TOTAL KJELDAHL NITROGEN MG N/L MIN7304	WATER TOTAL PHOSPHORUS MG P/L MIN7315	WATER TOTAL DISSOLVED PHOSPHORUS MG P/L MIN7325	
93ZE33539	L1 + MSD	X	X				LK
V. D39	L1D	X	X				
93ZE06R64	LFB01	X	X				5-031727

D930001187

DAY 2

③

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

TFA301

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/~~18~~ 4/93

BU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY _____ CONTRACTOR E&E.

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER HARDNESS	WATER TDS	WATER ALKALINITY MG CACO3/L MIN74011	WATER SULFATE MG SO4/L MIN74112	WATER CHLORIDE MG CL/L MIN74213	
93ZE33S39	L1 + MSD	X	X	X	X	X	LK
↓ D39	L1D	X	X	X	X	X	
93ZE06R64	LFB01		X	X	X	X	5-031724
93ZE06R64	LFB01	X					5-031725

D930001187 TFA301 DAY 2 (2)

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR F&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER CHEMICAL OXYGEN DEMAND MG COD/L MIN7336	WATER TOTAL ORGANIC C ARROW MG C/L MIN7347	WATER BIOCHEMICAL OXYGEN DEMAND MG HOD5/L MIN7356	WATER RESIDUE-FILTERABLE MG/L MIN7342	WATER RESIDUE-NONFILTERABLE MG/L MIN7372
3ZE33539	L1 + MSD		X			
D39	L1D		X			
3ZED6R64	LFB01		X			

LK

5-031726

CRL V.2: 1/93

D930001187

ENVIRONMENTAL PROTECTION AGENCY
FIND THE TEAMS METALS

TFA301 DAY 2

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/14/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLIDS TOTAL ICAP MG/KG (DRY WT.) MET413	SEDIMENTS SOLIDS AS MG/KG (DRY WT.) MET463	SEDIMENTS SOLIDS SB UG/KG (DRY WT.) MET4203	SEDIMENTS SOLIDS SE MG/KG (DRY WT.) MET4213	SEDIMENTS SOLIDS TL MG/KG (DRY WT.) MET4223
93LE33540	SD1+MSD	X	X	X	X	X
0 40	SD1D	X	X	X	X	X

Shipment Complete

5-148219
5-148221

CRL V.2; 3/85

[redacted]

D93000 1187 TFA 301 DAY 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/14/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DLI NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR

CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLID S PB MG/KG (DRY WT.) MET4193	SEDIMENTS SOLID CD MG/KG (DRY WT.) MET	
93ZE33540	SD1+MSD	X	X	5-148219
✓ D40	SD1D	X	X	5-148221

D93000187 TFA301 DAY 2 (4)

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/14/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

CU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLIDS CHEMICAL OXYGEN DEMAND MG CHO/KG (DRY) MIN43327	SEDIMENTS SOLIDS MERCURY UG HG/KG (DRY) MIN44728	SEDIMENTS SOLIDS ~~PHENOLICS~~ TOC UG PHENOL/KG (DRY) MIN44829	SEDIMENTS SOLIDS CYANIDE MG CN/KG (DRY) MIN44930	
93IE33540	SD1 +MSD		X		X	5-148219
040	SD1D		X		X	5-148221
540	SD1 +MSD			X		5-148220
040	SD1 DUPLICATE			X		5-148222

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: SEP 17 1993

Subject: Review of Region 5 Data for H.O.D. Landfill 3TFA05WU2F

From: Charles T. Elly, Director Eli Yang for
Region 5 Central Regional Laboratory

To:

Attached are the results for H.O.D. Landfill 3TFA05WU2F
CRL request number SF 1187
for analyses for Antimony, Arsenic, Cadmium, Lead, Selenium and Thallium
Results are reported for sample designations: 93ZE33S36, 93ZE33S37, 93ZE33D37, 93ZE33S38, 93ZE33D38, 93ZE33S39, 93ZE33D39, 93ZE33R60, 93ZE33R62, 93ZE33R64, 93ZE33S40 and 93ZE33D40

Results Status:
(x) Acceptable for Use
( ) Data Qualified, but Acceptable for use
( ) Data Unacceptable for Use

(x) Sewer Disposal Criteria Met; Exceptions: Acid preserved samples must be neutralized prior to disposal. Samples 93ZE33S39 and 93ZE33D39 exceed the disposal criterion for lead. Sewer disposal criteria do not apply to soil samples 93ZE33S40 and 93ZE33D40.

Comments on Data Quality by Reviewer

Antimony spike recovery for the soil digestion was 43%, which is typical for the method used. These results may be biased low. The poor duplication for lead analysis on field duplicates 93ZE33S39 and 93ZE33D39 was verified many times because of the many dilution necessary. Sample 93ZE33S39 was also used as a laboratory duplicate and spike, with an RPD of 1.8%, and a spike recovery of 102%.

Comments by Laboratory Director or Quality Control Coordinator

Review Record for H.O.D. Landfill 3TFA05WU2F

John V. Moore 16 Sept 93

Team Leader and Date (X) Reviewed ( ) Unreviewed

James H. Adams, Jr. 9/16/93

Section Chief and Date (✓) Reviewed ( ) Unreviewed

James H. Adams, Jr. 9/16/93

QC Coordinator and Date (✓) Reviewed ( ) Unreviewed

Sylvia Griffin 9-17-93

Data Management Coordinator and Date Received

Date Transmitted SEP 17 1993

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Received by and Date

Comments:

ESAT-5-007.0

Method Number: GFAA FOR SOIL AND WATER

Site Name: H.O.D. LANDFILL

Date Generated: 7-30-93

Charge Number: 232-51-107

Author: BAI YUEN

TID Number: 05-93-05-06

CASE NARRATIVE

This package (SF1187) contains 10 water samples (93ZE33S36, S37, D37, R60, S39, D39, R64, S38, D38 and R62) and 2 soil samples (93ZE33S40 and D40) analyzed for As, Sb, Pb, Cd, Se and Tl. The Sb matrix spike recovery (42.7%) for the soil sample (93ZE33S40) is below the CRL guidelines (80-120%). This low bias is characteristic of the soil digestion method used. The soil result is considered to be estimated.

Bai Yuen

Bai Yuen

7-30-93

LOCKHEED ESAT CONTRACT
DATA SET CUSTODY TRANSFER FORM

DATA SET NUMBER SF1187 CHARGE NUMBER 232-51-107

SITE NAME: H.O.D. LANDFILL TID NUMBER 05-93-05-06

PARAMETER: GFAA METALS MATRIX: WATER / SOIL

SF DU/ACT NO: TFA 301 Y _____ /C _____

SAMPLE NUMBERS: 93ZE33S36, S37, D37, R60, S39, D39, R64, S38, D38, R62, S40 AND D40

NUMBER OF SAMPLES: 12

ESAT APPROVALS:

B.L. for L. Teanova	7-30-93	Timothy J. Mazzaro	8/4/93
Analyst	Date	Task Group Leader	Date
Laura Kraus	8/11/93	Denise Miller	8-11-93
QA/QC Coordinator	Date	ESAT Team Manager	Date

COMMENTS: _____

The above identified data set was transferred from ESAT custody to the custody of the U.S. EPA Region V Central Regional Laboratory in its entirety on the indicated date relinquished.

Timothy J. Mazzaro	8/12/93	John V. Moore	12 Aug 93
Relinquished by	Date	Received by	Date

EPA APPROVALS:

John V. Moore 16 Sep 93
EPA Task Monitor Date

[X] Reviewed
[ ] Unreviewed
[X] Accepted
[ ] Rejected
[ ] Returned: _____ Date

COMMENTS: _____

_____ Section Chief Date

[ ] Reviewed [ ] Unreviewed

_____ ESAT DPO Date

_____/_____/_____ DATA COORDINATOR/RECD/TRANSMTD

A COPY OF THIS CUSTODY TRANSFER FORM WITH A RECEIVED BY EPA SIGNATURE IS TO BE FILED WITH THE AOC IN THE TID FILE. THE ORIGINAL CUSTODY TRANSFER ACCOMPANIES THE DATA SET TO BE APPROVED BY THE EPA AND A COMPLETED COPY RETURNED TO ESAT.

D930001187

TFA301 DAY 1

Jun 16 Sep 93

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/~~12~~ 3/93

OU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER Cd UG/L	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET161	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221	
93ZE33S36	W7D	X 0.2u	X	X 4	X 2u	X 2u	X 2u	X 2u	5031617
37	US6D	X 0.2u	X	X 2u	X 2u	X 2u	X 3	X 2u	5031642
D37	DUS6D	X 0.2u	X	X 3	X 2u	X 2u	X 2u	X 2u	5031666
93ZE06R60	MWFB01	X 0.2u	X	X 2u	X 2u	X 2u	X 2u	X 2u	5031681
		L. Leonova		L. Leonova/B. Yuen	B. Yuen	B. Yuen	B. Yuen	B. Yuen	
		7-2-93		7-30-93	7-1-93	7-1-93	7-10-93	7-2-93	

D930001187

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

TFA 301 DAY 1 16 Sep 93

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/~~12~~ 3/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER Cd UG/L	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET161	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221	
93ZE33S39	L1+MSD	3.6		11	217	2u	6u	2u	5-031-694
↓ D39	L1D	8.1		12	656	2u	6u	2u	5-031-707
~~93ZE06R64~~	~~LFBD1~~								LK
		L. Leonard		L. Leonard	B. L. Jones	B. L. Jones	B. L. Jones	B. L. Jones	
		7/1/93		7-30-93	7-1-93	7-10-93	7-27-93	7-2-93	

D930001187 Day 2 TFA301 16 Sep 93

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/~~8~~4/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER Cd UG/L	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET161	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1321
93ZE33S39	L1 MSD	X	X	X	X	X	X	X
↓ D39	L1D	X	X	X	X	X	X	X
93ZE06R64	LFBD1 5-031-721	X 0.2u	X	X 2u	X 2u	X 2u	X 2u	X 2u
		L. Leonard		L. Leonard	B. Lynen	B. Lynen	B. Lynen	B. Lynen
		7-2-93		7/29/93	7-1-93	7-1-93	7-10-93	7-2-93

LK

D930001187 TFA301 DAY 2 16 Sept 93

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER Cd UG/L	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET161	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1721	
93ZE33S38	SW1+MSD	0.2u		2u	2u	2u	2u	2u	5-031-751
↓ D38	SW1D	0.2u		2u	2	3	2u	2u	5-031-759
93ZE06R62	SWFB01	0.2u		2u	2u	2u	2u	2u	5-031-768
		L. Leon		L. Leonora/B. Yuen	B. Yuen	B. Yuen	B. Yuen	B. Yuen	
		7-2-93		7-30-93	7-1-93	7-10-93	7-10-93	7-2-93	

D930001181

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

TFA.301 DAY 2

(2)

JVM
16 Sept 93

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/14/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLID S TOTAL ICAP MG/KG (DRY WT.) MET413	SEDIMENTS SOLID S AS MG/KG (DRY WT.) MET403	SEDIMENTS SOLID S SB MG/KG (DRY WT.) MET4203	SEDIMENTS SOLID S SE MG/KG (DRY WT.) MET4213	SEDIMENTS SOLID S TL MG/KG (DRY WT.) MET4223	
93LE33S40	SD1+MSD	~~0.19~~ L.L. 7/2/93	6.9	0.3	1.6 u	0.3	5-148219
√ D40	SD1D	~~0.18~~ L.L. 7/2/93	7.5	0.2	3.1 u	0.2	5-148221
		L. Leonora	B. L. Juen	B. L. Juen	B. L. Juen	B. L. Juen	
		7-2-93	7-30-93	7-10-93	7-10-93	7-2-93	

Shipment 15

Complete

CRL V.2; 3/85

[redacted]

D930001187 TFA 301 DAY 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/14/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR

CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLID S PB MG/KG (DRY WT.) MET4193	SEDIMENTS SOLID CD MG/KG (DRY WT.) MET	
93ZE33S40	SD1+MSD	X 14	X 0.19	5-148219
↓ D40	SD1D	X 18	X 0.18	5-148221
		B. Lynen	L. Yeanova	
		7-1-93	7-2-93	

D930001187

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

TFA301 DAY 1

JVF 9/6/93

IVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/~~2~~3/93

U NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER Cd UG/L	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET161	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1321	
93ZE33S36	W7D	0.2u		4	2u	2u	2u	2u	5031617
37	US6D	0.2u		2u	2u	2u	3	2u	5031642
D37	DUS6D	0.2u		3	2u	2u	2u	2u	5031666
93ZE06R60	MWFB01	0.2u		2u	2u	2u	2u	2u	5031681
		L. Leonard		L. Leonard/B. Yuen	B. Yuen	B. Yuen	B. Yuen	B. Yuen	
		7-2-93		7-30-93	7-1-93	7-1-93	7-10-93	7-2-93	

D930001187

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

TFA301 DAY 1 JUN 16 Sep 93

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/~~12~~ 3/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER Cd UG/L	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET161	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221	
93ZE33S39	L1 + MSD	X 3.6	X	X 11	X 217	X 2u	X 6u	X 2u	5-031-694
↓ D39	L1D	X 8.1	X	X 12	X 656	X 2u	X 6u	X 2u	5-031-707
~~93ZE06R64~~	~~LFBD1~~	X	X	X	X	X	X	X	LK
		T. Leonard		T. Leonard	B. Lynen	B. Lynen	B. Lynen	B. Lynen	
		7/1/93		7-30-93	7-1-93	7-10-93	7-27-93	7-2-93	

D930001187 Day 2 jun 16 Sep 93

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

TFA301

VISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/~~8~~4/93

NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

RL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER Cd UG/L	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET161	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221
93ZE33S39	L1 MSD	X	X	X	X	X	X	X
↓ D39	L1D	X	X	X	X	X	X	X
93ZE06R64	LFBD1 5-031-721	X 0.2u	X	X 2u	X 2u	X 2u	X 2u	X 2u
		L. Leonard		L. Leonard	B. Yuen	B. Yuen	B. Yuen	B. Yuen
		7-2-93		7/29/93	7-1-93	7-1-93	7-10-93	7-2-93

LK

D930001187 TFA301 DAY 2 Jun 1654 197

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER Cd UG/L	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET101	TOTAL METALS WATER PB UG/L MET1101	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221	
93ZE33538	SW1+MSD	0.2u		2u	2u	2u	2u	2u	5-031-751
↓ D38	SW1D	0.2u		2u	2	3	2u	2u	5-031-759
93ZE06R62	SWFB01	0.2u		2u	2u	2u	2u	2u	5-031-768
		L. Leon		L. Leon/B. Lynn	B. Lynn	B. Lynn	B. Lynn	B. Lynn	
		7-2-93		7-30-93	7-1-93	7-10-93	7-10-93	7-2-93	

D93000118 1

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

TFA.301 DAY 2

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/14/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLID S TOTAL ICAP MG/KG (DRY WT.) MET413	SEDIMENTS SOLID S AS MG/KG (DRY WT.) MET403	SEDIMENTS SOLID S BR MG/KG (DRY WT.) MET4203	SEDIMENTS SOLID S SE MG/KG (DRY WT.) MET4213	SEDIMENTS SOLID S TL MG/KG (DRY WT.) MET4223	
93LE33S40	SD1+MSD	~~0.19 L~~ L 7/2/93	6.9	0.3	1.6 u	0.3	5-148219
√ D40	SD1D	~~0.18 L~~ L 7/2/93	7.5	0.2	3.1 u	0.2	5-148221
		L. Leonova	B. L[illegible]	B. L[illegible]	B. L[illegible]	B. L[illegible]	
		7-2-93	7-30-93	7-10-93	7-10-93	7-2-93	

Shipment 15

Complete

CRL V.2; 3/85

D930001187 TFA 301 DAY 2

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ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/14/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. LANDFILL PRIORITY N CONTRACTOR

CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLID S PR MG/KG (DRY WT.) MET4193	SEDIMENTS SOLID CD MG/KG (DRY WT.) MET	
93ZE33S40	SD1+MSD	X 14	X 0.19	5-148219
↓ D40	SD1D	X 18	X 0.18	5-148221
		B. Yuen	L. Yeanova	
		7-1-93	7-2-93	

DIGESTION RECORD

Prepared by BY/LL Date 6-29-93 Run Number 111

Vessel Number	Data Set	Sample Number	Notes		Vessel Number	Data Set	Sample Number	Notes
1	SF1187	93ZE33538						
2		D38						
3		S39						
4		D39						
5		S38	Dup					
6		S38	SpK	*				
7		S39	Dup					
8		S39	SpK	*				
9	SF1191	93ZF53502						
10		D02						
11		S03						
12		S11						
13		S11	Dup					
14		S11	SpK	*				
15		Dig. Blank						
16		SpKed. Blk		*				

COMMENTS: * 2.5 ml of 100 ppb Cd
0.5 ml of 5 ppm As, Sb, Pb, Se and Tl > Final ~~100~~ 50 ml
BY 7-1-93

B. L. [illegible]
7-10-93

DIGESTION RECORD

Prepared by BY/LL Date 7-8-93 Run Number 115

Vessel Number	Data Set	Sample Number	Notes		Vessel Number	Data Set	Sample Number	Notes
1	SF1187	93ZE33538						
2		D38						
3		S39						
4		D39						
5		S38	Dup					
6		S38	SpK	*				
7		S39	Dup					
8		S39	SpK	*				
9	SF1191	93ZF33502						
10		D02						
11		S03						
12		S11						
13		S11	Dup					
14		S11	SpK	*				
15		Dig. Blank						
16		Spiked Blank		*				

COMMENTS: * 0.5 ml of 5 ppm Sb → final volume 50 ml

Sb Only

B.L. [illegible]
7-10-93

DIGESTION RECORD

Prepared by BY/LL Date 6-29-93 Run Number 110

Vessel Number	Data Set	Sample Number	Notes	Vessel Number	Data Set	Sample Number	Notes
1	SF1187	93ZE3354d			1.0118 g		
2		D4d			1.0231 g		
3		S40	Dup		0.9858 g		
4		S40	SpK *		0.9990 g		
5		LCS			1.0002 g		
6		Dig. Blank					

COMMENTS: * 1 ml of 5 ppm Cd
1 ml of 20 ppm As, Sb, Pb, Se and Tl > Final 100 ml

B. L. [illegible]
7-10-93

DIGESTION RECORD

Prepared by BY /LL Date 7-8-93 Run Number 114

Vessel Number	Data Set	Sample Number	Notes	Vessel Number	Data Set	Sample Number	Notes
1	SF1187	93ZE33540			0.9815 g		
2		D40			0.9878 g		
3		S40	Dup		0.9866 g		
4		S40	SpK *		1.0046 g		
5		LCS			1.0664 g		
6		Digest Blk					

COMMENTS: * 1ml of 20ppm Sb → final volume 100ml

Sb Only

B. L. [illegible]
7-10-93

Perkin-Elmer Model 5100 PC
Report Of Analytical Results
July 07, 1993

Data File: ASLL706.DAT
Data Collected: 07/06/93 At: 15:09:52 By: LL SF 1187

	As ug/L	
Blank	0.00	R=.99877
Standard 1	40.00	
Standard 2	30.00	
Standard 3	20.00	
Standard 4	10.00	
AQC 25 UG/L	23.20	%R = 92.8 Limit = 100±10%
CCB	0.43	= 2u Limit = ±2 µg/L
93ZE33S36	2.03	– not used, %R < 90%
93ZE33S37	-0.33	
93ZE33D37	-2.45	– less than ±2 µg/L, not used.
93ZE33R60	1.67	– not used, %R < 90%
93ZE33R62	0.67	= 2u
AQC 25 UG/L	23.72	%R = 94.9 Limit = 100 ± 10%
CCB	0.84	= 2u Limit = ±2 µg/L
93ZE33R64	-1.15	= 2u
93ZE33S38	0.49	— not used, %R < 90%
DIJ BLK	0.56	= 2u Limit = ±2 µg/L
93ZE33SD38	-0.58	= 2u
93ZE33S38DDUP	0.36	– not used, %R < 90%
AQC 25 UG/L	24.80	%R = 99% Limit = 100 ± 10%
CCB	0.79	2u Limit = ±2 µg/L
93ZE33S39	10.94	10.94 µg/L
93ZE33S36WDUP	1.98	2u
93ze33s36	24.65	– not used, wrong cup (AQC cup)
93ZE33S37	1.07	2u
93ZE33D37	5.94	– not used, %R < 90%
AQC 25 UG/L	23.83	%R = 95.3 Limit = 100 ± 10%
CCB	0.03	2u Limit = ±2 µg/L
93ZE33S39SPK	13.09	not used, AQC – out.
93ZE33S38SPK	14.80	
93ZE33S36	1.45	
93ZE33D37	1.47	
93ZE33S38	0.92	
AQC 25 UG/L	19.58	

Analyst: L. Leonova Supervisor: _____

L. Leonova
7/28/93

8F SF 1187

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lement File: ASMSC.GEL Element: As
ate: 07/06/93 Time: 15:07
ata Storage File: ASLL706.DAT ID/Weight File: ASBY703.A60
echnique: HGA Calibration Type: Linear

~~~~~~

D: Blank Seq. No.: 00001 A/S Pos.: 1 Date: 07/06/93

L dispensed: 10 from 1, 5 from 36, 10 from 1
eplicate 1 Time: 15:09
eak Area (A-s): 0.017 Peak Height (A): 0.031
ackground Pk Area (A-s): 0.022 Background Pk Height (A): 0.014
lank Corrected Pk Area (A-s): 0.017

uto-zero performed.

~~~~~~

D: Standard 1 Seq. No.: 00002 A/S Pos.: 2 Date: 07/06/93

L dispensed: 10 from 1, 5 from 36, 10 from 2
eplicate 1 Time: 15:12
eak Area (A-s): 0.139 Peak Height (A): 0.226
ackground Pk Area (A-s): 0.033 Background Pk Height (A): 0.033
lank Corrected Pk Area (A-s): 0.121

tandard number 1 applied. [40.00]
orrelation coefficient: 1.00000 Slope: 0.0030 Int: 0.000

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D: Standard 2 Seq. No.: 00003 A/S Pos.: 3 Date: 07/06/93

L dispensed: 10 from 1, 5 from 36, 10 from 3
eplicate 1 Time: 15:15
eak Area (A-s): 0.110 Peak Height (A): 0.172
ackground Pk Area (A-s): 0.036 Background Pk Height (A): 0.031
lank Corrected Pk Area (A-s): 0.093
oncentration (ug/L): 30.54

tandard number 2 applied. [30.00]
orrelation coefficient: 0.99990 Slope: 0.0030 Int: 0.000

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D: Standard 3 Seq. No.: 00004 A/S Pos.: 4 Date: 07/06/93

L dispensed: 10 from 1, 5 from 36, 10 from 4
eplicate 1 Time: 15:19
eak Area (A-s): 0.082 Peak Height (A): 0.132
ackground Pk Area (A-s): 0.032 Background Pk Height (A): 0.024
lank Corrected Pk Area (A-s): 0.064
oncentration (ug/L): 21.08

tandard number 3 applied. [20.00]
orrelation coefficient: 0.99940 Slope: 0.0030 Int: 0.001

~~~~~~

D: Standard 4 Seq. No.: 00005 A/S Pos.: 5 Date: 07/06/93

L. Leonova
7/6/93
L. Leonova
7/28/93
~~~~~~

uL dispensed: 10 from 1, 5 from 36, 10 from 5
Replicate 1 Time: 15:22
Peak Area (A-s): 0.044 Peak Height (A): 0.080
Background Pk Area (A-s): 0.037 Background Pk Height (A): 0.023
Blank Corrected Pk Area (A-s): 0.027
Concentration (ug/L): 8.54

Standard number 4 applied. [10.00]
Correlation coefficient: 0.99877 Slope: 0.0031 Int: -0.000

ID: AQC 25 UG/L Seq. No.: 00006 A/S Pos.: 37 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 37
Replicate 1 Time: 15:25
Peak Area (A-s): 0.088 Peak Height (A): 0.142
Background Pk Area (A-s): 0.040 Background Pk Height (A): 0.028
Blank Corrected Pk Area (A-s): 0.071
Concentration (ug/L): 23.20

Check sample is within range 22.50 - 27.50

ID: CCB Seq. No.: 00007 A/S Pos.: 6 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 6
Replicate 1 Time: 15:28
Peak Area (A-s): 0.018 Peak Height (A): 0.033
Background Pk Area (A-s): 0.037 Background Pk Height (A): 0.020
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.43

ID: CCB Seq. No.: 00008 A/S Pos.: 6 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 6
Replicate 1 Time: 15:31
Peak Area (A-s): 0.062 Peak Height (A): 0.109
Background Pk Area (A-s): 0.078 Background Pk Height (A): 0.092
Blank Corrected Pk Area (A-s): 0.045
Concentration (ug/L): 14.61

Recovery is 70.9%

ID: 93ZE33S36 Seq. No.: 00009 A/S Pos.: 7 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 7
Replicate 1 Time: 15:34
Peak Area (A-s): 0.023 Peak Height (A): 0.031
Background Pk Area (A-s): 0.039 Background Pk Height (A): 0.024
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L): 2.03

ID: 93ZE33S36 Seq. No.: 00010 A/S Pos.: 7 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 7
Replicate 1 Time: 15:37

L. Leonard
7/6/93
L. Leonard
7/28/93

Peak Area (A-s): 0.074 Peak Height (A): 0.111
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.057
Concentration (ug/L): 18.58

Recovery is 82.8%

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ID: 93ZE33S37 Seq. No.: 00011 A/S Pos.: 8 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 8
Replicate 1 Time: 15:40
Peak Area (A-s): 0.016 Peak Height (A): 0.027
Background Pk Area (A-s): 0.041 Background Pk Height (A): 0.023
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.33

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ID: 93ZE33S37 Seq. No.: 00012 A/S Pos.: 8 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 8
Replicate 1 Time: 15:43
Peak Area (A-s): 0.063 Peak Height (A): 0.122
Background Pk Area (A-s): 0.032 Background Pk Height (A): 0.022
Blank Corrected Pk Area (A-s): 0.046
Concentration (ug/L): 15.01

Recovery is 76.7%

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ID: 93ZE33D37 Seq. No.: 00013 A/S Pos.: 9 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 9
The background signal is changing during BOC measurement.
Replicate 1 Time: 15:47
Peak Area (A-s): 0.009 Peak Height (A): 0.021
Background Pk Area (A-s): 0.075 Background Pk Height (A): 0.026
Blank Corrected Pk Area (A-s): -0.008
Concentration (ug/L): -2.45

~~~~~~

ID: 93ZE33D37 Seq. No.: 00014 A/S Pos.: 9 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 9
Replicate 1 Time: 15:50
Peak Area (A-s): 0.074 Peak Height (A): 0.111
Background Pk Area (A-s): 0.044 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.057
Concentration (ug/L): 18.60

Recovery is 105.3%

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ID: 93ZE33R60 Seq. No.: 00015 A/S Pos.: 10 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 10
Replicate 1 Time: 15:53
Peak Area (A-s): 0.022 Peak Height (A): 0.028
Background Pk Area (A-s): 0.039 Background Pk Height (A): 0.020

L. Leonard 7/6/93
L. Leonard 7/6/93
~~~~~~

Blank Corrected Pk Area (A-s): 0.005
Concentration (ug/L): 1.67

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ID: 93ZE33R60 Seq. No.: 00016 A/S Pos.: 10 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 10
Replicate 1 Time: 15:56
Peak Area (A-s): 0.076 Peak Height (A): 0.118
Background Pk Area (A-s): 0.039 Background Pk Height (A): 0.025
Blank Corrected Pk Area (A-s): 0.059
Concentration (ug/L): 19.34

Recovery is 88.3%

~~~~~~

ID: 93ZE33R62 Seq. No.: 00017 A/S Pos.: 11 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 11
Replicate 1 Time: 15:59
Peak Area (A-s): 0.019 Peak Height (A): 0.034
Background Pk Area (A-s): 0.041 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.67

~~~~~~

ID: 93ZE33R62 Seq. No.: 00018 A/S Pos.: 11 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 11
Replicate 1 Time: 16:02
Peak Area (A-s): 0.076 Peak Height (A): 0.125
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.058
Concentration (ug/L): 19.14

Recovery is 92.3%

~~~~~~

ID: AQC 25 UG/L Seq. No.: 00019 A/S Pos.: 37 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 37
Replicate 1 Time: 16:06
Peak Area (A-s): 0.090 Peak Height (A): 0.137
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.026
Blank Corrected Pk Area (A-s): 0.073
Concentration (ug/L): 23.72

Check sample is within range 22.50 - 27.50

~~~~~~

ID: CCB Seq. No.: 00020 A/S Pos.: 12 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 12
Replicate 1 Time: 16:09
Peak Area (A-s): 0.019 Peak Height (A): 0.030
Background Pk Area (A-s): 0.041 Background Pk Height (A): 0.022
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.84

L. Leonova
7/6/93
L. Leonova
7/28/93
~~~~~~

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ID: CCB Seq. No.: 00021 A/S Pos.: 12 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 12
Replicate 1 Time: 16:12
Peak Area (A-s): 0.073 Peak Height (A): 0.125
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.056
Concentration (ug/L): 18.33

Recovery is 87.4%

~~~~~~

ID: 93ZE33R64 Seq. No.: 00022 A/S Pos.: 13 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 13
Replicate 1 Time: 16:15
Peak Area (A-s): 0.013 Peak Height (A): 0.027
Background Pk Area (A-s): 0.108 Background Pk Height (A): 0.136
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -1.15

~~~~~~

ID: 93ZE33R64 Seq. No.: 00023 A/S Pos.: 13 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 13
Replicate 1 Time: 16:18
Peak Area (A-s): 0.076 Peak Height (A): 0.130
Background Pk Area (A-s): 0.040 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.059
Concentration (ug/L): 19.30

Recovery is 102.3%

~~~~~~

ID: 93ZE33S38 Seq. No.: 00024 A/S Pos.: 14 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 14
Replicate 1 Time: 16:21
Peak Area (A-s): 0.018 Peak Height (A): 0.029
Background Pk Area (A-s): 0.037 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.49

~~~~~~

ID: 93ZE33S38 Seq. No.: 00025 A/S Pos.: 14 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 14
Replicate 1 Time: 16:24
Peak Area (A-s): 0.068 Peak Height (A): 0.106
Background Pk Area (A-s): 0.086 Background Pk Height (A): 0.107
Blank Corrected Pk Area (A-s): 0.051
Concentration (ug/L): 16.64

Recovery is 80.7%

~~~~~~

ID: DIJ BLK Seq. No.: 00026 A/S Pos.: 15 Date: 07/06/93

L. Leonova 7/28/93 L. Leonova 7/6/93

uL dispensed: 10 from 1, 5 from 36, 10 from 15
Replicate 1 Time: 16:27
Peak Area (A-s): 0.018 Peak Height (A): 0.033
Background Pk Area (A-s): 0.037 Background Pk Height (A): 0.018
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.56

~~~~~~

ID: DIJ BLK Seq. No.: 00027 A/S Pos.: 15 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 15
Replicate 1 Time: 16:31
Peak Area (A-s): 0.075 Peak Height (A): 0.128
Background Pk Area (A-s): 0.042 Background Pk Height (A): 0.026
Blank Corrected Pk Area (A-s): 0.058
Concentration (ug/L): 18.90

Recovery is 91.7%

~~~~~~

ID: 93ZE33SD38 Seq. No.: 00028 A/S Pos.: 16 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 16
Replicate 1 Time: 16:34
Peak Area (A-s): 0.015 Peak Height (A): 0.026
Background Pk Area (A-s): 0.070 Background Pk Height (A): 0.075
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.58

~~~~~~

ID: 93ZE33SD38 Seq. No.: 00029 A/S Pos.: 16 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 16
Replicate 1 Time: 16:37
Peak Area (A-s): 0.077 Peak Height (A): 0.114
Background Pk Area (A-s): 0.051 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.060
Concentration (ug/L): 19.71

Recovery is 101.4%

~~~~~~

ID: 93ZE33S38DDUP Seq. No.: 00030 A/S Pos.: 17 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 17
Replicate 1 Time: 16:40
Peak Area (A-s): 0.018 Peak Height (A): 0.027
Background Pk Area (A-s): 0.076 Background Pk Height (A): 0.084
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.36

~~~~~~

ID: 93ZE33S38DDUP Seq. No.: 00031 A/S Pos.: 17 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 17
Replicate 1 Time: 16:43
Peak Area (A-s): 0.066 Peak Height (A): 0.097
Background Pk Area (A-s): 0.071 Background Pk Height (A): 0.075

L. Leonard
7/6/93
L. Leonard
7/28/93
~~~~~~

lank Corrected Pk Area (A-s): 0.049
oncentration (ug/L): 16.11

ecovery is 78.8%

~~~~~~

D: AQC 25 UG/L Seq. No.: 00032 A/S Pos.: 37 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 37
eplicate 1 Time: 16:46
eak Area (A-s): 0.093 Peak Height (A): 0.146
ackground Pk Area (A-s): 0.045 Background Pk Height (A): 0.028
lank Corrected Pk Area (A-s): 0.076
oncentration (ug/L): 24.80

heck sample is within range 22.50 - 27.50

~~~~~~

D: CCB Seq. No.: 00033 A/S Pos.: 18 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 18
eplicate 1 Time: 16:49
eak Area (A-s): 0.019 Peak Height (A): 0.035
ackground Pk Area (A-s): 0.039 Background Pk Height (A): 0.020
lank Corrected Pk Area (A-s): 0.002
oncentration (ug/L): 0.79

~~~~~~

ID: CCB Seq. No.: 00034 A/S Pos.: 18 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 18
eplicate 1 Time: 16:52
eak Area (A-s): 0.082 Peak Height (A): 0.141
ackground Pk Area (A-s): 0.041 Background Pk Height (A): 0.026
lank Corrected Pk Area (A-s): 0.065
oncentration (ug/L): 21.23

Recovery is 102.2%

~~~~~~

ID: 93ZE33S39 Seq. No.: 00035 A/S Pos.: 19 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 19
Replicate 1 Time: 16:55
Peak Area (A-s): 0.050 Peak Height (A): 0.066
Background Pk Area (A-s): 0.197 Background Pk Height (A): 0.156
Blank Corrected Pk Area (A-s): 0.033
Concentration (ug/L): 10.94

~~~~~~

ID: 93ZE33S39 Seq. No.: 00036 A/S Pos.: 19 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 19
Replicate 1 Time: 16:58
Peak Area (A-s): 0.112 Peak Height (A): 0.162
Background Pk Area (A-s): 0.201 Background Pk Height (A): 0.166
Blank Corrected Pk Area (A-s): 0.094
Concentration (ug/L): 30.82

L. Leonard
7/6/93
L. Leonard
7/28/93
~~~~~~

Recovery is 99.4%

~~~~~~

ID: 93ZE33S36WDUP Seq. No.: 00037 A/S Pos.: 20 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 20
Replicate 1 Time: 17:01
Peak Area (A-s): 0.023 Peak Height (A): 0.031
Background Pk Area (A-s): 0.063 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L): 1.98

~~~~~~

ID: 93ZE33S36WDUP Seq. No.: 00038 A/S Pos.: 20 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 20
Replicate 1 Time: 17:04
Peak Area (A-s): 0.082 Peak Height (A): 0.121
Background Pk Area (A-s): 0.055 Background Pk Height (A): 0.028
Blank Corrected Pk Area (A-s): 0.065
Concentration (ug/L): 21.25

Recovery is 96.4%

~~~~~~

ID: 93ze33s36 Seq. No.: 00039 A/S Pos.: 21 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 21
Replicate 1 Time: 17:07
Peak Area (A-s): 0.093 Peak Height (A): 0.111
Background Pk Area (A-s): 0.321 Background Pk Height (A): 0.278
Blank Corrected Pk Area (A-s): 0.075
Concentration (ug/L): 24.65

wrong cup (AQC cup) LL 7/6/93

~~~~~~

ID: 93ze33s36 Seq. No.: 00040 A/S Pos.: 21 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 21
Replicate 1 Time: 17:10
Peak Area (A-s): 0.145 Peak Height (A): 0.215
Background Pk Area (A-s): 0.322 Background Pk Height (A): 0.321
Blank Corrected Pk Area (A-s): 0.128
Concentration (ug/L): 41.64

Recovery is 85.0%

~~~~~~

ID: 93ZE33S37 Seq. No.: 00041 A/S Pos.: 22 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 22
Replicate 1 Time: 17:13
Peak Area (A-s): 0.020 Peak Height (A): 0.037
Background Pk Area (A-s): 0.068 Background Pk Height (A): 0.035
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 1.07

~~~~~~

ID: 93ZE33S37 Seq. No.: 00042 A/S Pos.: 22 Date: 07/06/93

L. Leonard
7/6/93
L. Leonard
7/28/93

uL dispensed: 5 from 36, 10 from 4, 10 from 22
Replicate 1 Time: 17:16
Peak Area (A-s): 0.079 Peak Height (A): 0.140
Background Pk Area (A-s): 0.055 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 20.26

Recovery is 95.9%

~~~~~~

ID: 93ZE33D37 Seq. No.: 00043 A/S Pos.: 23 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 23
Replicate 1 Time: 17:19
Peak Area (A-s): 0.035 Peak Height (A): 0.050
Background Pk Area (A-s): 0.047 Background Pk Height (A): 0.023
Blank Corrected Pk Area (A-s): 0.018
Concentration (ug/L): 5.94

~~~~~~

ID: 93ZE33D37 Seq. No.: 00044 A/S Pos.: 23 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 23
Replicate 1 Time: 17:22
Peak Area (A-s): 0.090 Peak Height (A): 0.144
Background Pk Area (A-s): 0.053 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): 0.073
Concentration (ug/L): 23.74

Recovery is 89.0%

~~~~~~

ID: AQC 25 UG/L Seq. No.: 00045 A/S Pos.: 37 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 37
Replicate 1 Time: 17:25
Peak Area (A-s): 0.090 Peak Height (A): 0.143
Background Pk Area (A-s): 0.051 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): 0.073
Concentration (ug/L): 23.83

Check sample is within range 22.50 - 27.50

~~~~~~

ID: CCB Seq. No.: 00046 A/S Pos.: 24 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 24
Replicate 1 Time: 17:28
Peak Area (A-s): 0.017 Peak Height (A): 0.034
Background Pk Area (A-s): 0.049 Background Pk Height (A): 0.021
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): 0.03

~~~~~~

ID: CCB Seq. No.: 00047 A/S Pos.: 24 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 24
Replicate 1 Time: 17:31
Peak Area (A-s): 0.079 Peak Height (A): 0.127

L. Leonard
7/28/93
L. Leonard
7/6/93
~~~~~~

ackground Pk Area (A-s): 0.045 Background Pk Height (A): 0.026
lank Corrected Pk Area (A-s): 0.062
oncentration (ug/L): 20.36

ecovery is 101.6%

~~~~~~

D: 93ZE33S39SPK Seq. No.: 00048 A/S Pos.: 25 Date: 07/06/93

L dispensed: 10 from 1, 5 from 36, 10 from 25
eplicate 1 Time: 17:35
eak Area (A-s): 0.057 Peak Height (A): 0.070
ackground Pk Area (A-s): 0.095 Background Pk Height (A): 0.055
lank Corrected Pk Area (A-s): 0.040
oncentration (ug/L): 13.09

~~~~~~

D: 93ZE33S39SPK Seq. No.: 00049 A/S Pos.: 25 Date: 07/06/93

L dispensed: 5 from 36, 10 from 4, 10 from 25
he background signal is changing during BOC measurement.
eplicate 1 Time: 17:38
eak Area (A-s): 0.111 Peak Height (A): 0.158
ackground Pk Area (A-s): -0.018 Background Pk Height (A): 0.042
lank Corrected Pk Area (A-s): 0.094
oncentration (ug/L): 30.63

ecovery is 87.7%

~~~~~~

D: 93ZE33S38SPK Seq. No.: 00050 A/S Pos.: 26 Date: 07/06/93

L dispensed: 10 from 1, 5 from 36, 10 from 26
eplicate 1 Time: 17:41
eak Area (A-s): 0.062 Peak Height (A): 0.074
ackground Pk Area (A-s): 0.041 Background Pk Height (A): 0.024
lank Corrected Pk Area (A-s): 0.045
oncentration (ug/L): 14.80

~~~~~~

D: 93ZE33S38SPK Seq. No.: 00051 A/S Pos.: 26 Date: 07/06/93

L dispensed: 5 from 36, 10 from 4, 10 from 26
eplicate 1 Time: 17:44
eak Area (A-s): 0.115 Peak Height (A): 0.159
ackground Pk Area (A-s): 0.049 Background Pk Height (A): 0.030
lank Corrected Pk Area (A-s): 0.097
oncentration (ug/L): 31.77

ecovery is 84.9%

~~~~~~

D: 93ZE33S36 Seq. No.: 00052 A/S Pos.: 27 Date: 07/06/93

L dispensed: 10 from 1, 5 from 36, 10 from 27
eplicate 1 Time: 17:47
eak Area (A-s): 0.021 Peak Height (A): 0.034
ackground Pk Area (A-s): 0.045 Background Pk Height (A): 0.021
lank Corrected Pk Area (A-s): 0.004

L. Leonard
7/1/93
J. Leonard
7/28/93
~~~~~~

Concentration (ug/L): 1.45

~~~~~~

ID: 93ZE33S36 Seq. No.: 00053 A/S Pos.: 27 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 27
Replicate 1 Time: 17:50
Peak Area (A-s): 0.083 Peak Height (A): 0.138
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.025
Blank Corrected Pk Area (A-s): 0.066
Concentration (ug/L): 21.52

Recovery is 100.3%

~~~~~~

ID: 93ZE33D37 Seq. No.: 00054 A/S Pos.: 28 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 28
Replicate 1 Time: 17:53
Peak Area (A-s): 0.021 Peak Height (A): 0.032
Background Pk Area (A-s): 0.041 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 1.47

~~~~~~

ID: 93ZE33D37 Seq. No.: 00055 A/S Pos.: 28 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 28
Replicate 1 Time: 17:57
Peak Area (A-s): 0.087 Peak Height (A): 0.137
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.025
Blank Corrected Pk Area (A-s): 0.070
Concentration (ug/L): 22.94

Recovery is 107.4%

~~~~~~

ID: 93ZE33S38 Seq. No.: 00056 A/S Pos.: 29 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 29
Replicate 1 Time: 18:00
Peak Area (A-s): 0.020 Peak Height (A): 0.034
Background Pk Area (A-s): 0.044 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.92

~~~~~~

ID: 93ZE33S38 Seq. No.: 00057 A/S Pos.: 29 Date: 07/06/93

uL dispensed: 5 from 36, 10 from 4, 10 from 29
Replicate 1 Time: 18:03
Peak Area (A-s): 0.068 Peak Height (A): 0.113
Background Pk Area (A-s): 0.089 Background Pk Height (A): 0.091
Blank Corrected Pk Area (A-s): 0.051
Concentration (ug/L): 16.63

Recovery is 78.5%

~~~~~~

L. Leoa 7/26/93
L. Leoa 7/6/93

ID: AQC 25 UG/L Seq. No.: 00058 A/S Pos.: 37 Date: 07/06/93

uL dispensed: 10 from 1, 5 from 36, 10 from 37
Replicate 1 Time: 18:06
Peak Area (A-s): 0.077 Peak Height (A): 0.118
Background Pk Area (A-s): 0.110 Background Pk Height (A): 0.139
Blank Corrected Pk Area (A-s): 0.060
Concentration (ug/L): 19.58

Check sample is out of range 22.50 - 27.50

I. Leonce
7/6/93

I. Leonce
7/28/93

Element	Instrument	QC Source	
☐ Ag	☐ 5000	☐ WP 284 TM I #2	Analyst L. Leonard
☒ As	☐ 4000	☐ WP 1183 TM II #1	Date 7/06/93
☐ Cd	☐ 5000 ZE	☐ WP 1183 TM II #2	Lamp # 8327
☐ Cr	☐ 5000 ZW	☐ ICV 2	Energy 76
☐ Pb	☒ 5100	☐ SPEX II	Expansion 3
☐ Sb	☐ Varian 30	☐ NBS SRM 1643b	Stock 3-104A,S opened 5-16-93 10-31-93
☐ Se		☒ CLP-80	☐ platform ☒ MSC
☐ Tl		☐	☐ wall ☐ MSA

Blank	Slope	AQC	Digestion QC
0.43	0.0031	23.20	1) Dij. BL = 2u
0.84		23.72	Limit = ±2 µg/l.
0.79		24.80	
0.03		23.83	

Blank cup absorbance

L. Leonard
7/28/93

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI
DATE OF ANALYSIS --: 07-29-1993
PARAMETER NAME ----: AS
DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	-.5758563	.9986502	9.029999E-03	2u Limit = ±2 ug/l
AQC 25 UG/L	26.41618	.9998993	8.650001E-03	%R = 105.7 Limit = 100±10%
93ZE33S40	54.45458	.9938106	5.499996E-03	Rerun, r<0.995
93ZE33S40SPKx12	20.59226	.9956338	8.779999E-03	adj. conc. = 24.74 mg/kg SpK conc. = 20.02 mg/kg
LCSx500	17.58065	.9971336	9.299999E-03	adj. conc. = 87.9 mg/kg * %R = 89.1
93ZE33D40x3	25.51205	.9980272	.00664	adj. conc. = 7.5 mg/kg Limit = 80-120
93ZE33S40DUPx3	20.10431	.9991809	7.669999E-03	adj. conc. = 6.1 mg/kg %RPD = 12.3 **
AQC 25 UG/L	23.90728	.997074	9.060001E-03	%R = 95.6 Limit = 100±10%
DIG.BLK(SOIL)	-1.854301	.9908043	7.549999E-03	Rerun, r<0.995
93ZE33S40x3	25.99298	.99066	5.689999E-03	
DIG.BLK.(SOIL)	-1.366709	.9969615	.00739	0.2 mg/kg (u) Limit = ±0.2 mg/kg
93ZE33S40x3	23.17411	.9983255	6.490002E-03	adj. conc. = 6.9 mg/kg
93ZE33S38	.6153846	.9992908	.0065	2u
93ZE33S38DUP	.8134668	.9982284	7.130001E-03	2u Duplicate diff. < 2 ug/l Limit = ±2 ug/l
93ZE33S38SPKx3	18.52348	.9813041	7.450003E-03	Rerun, r<0.995
AQC 25 UG/L	17.25027	.9883386	9.309998E-03	
AQC 25 UG/L	24.41279	.9958839	8.430004E-03	%R = 97.6 Limit = 100±10%

* Limit = 635 ~ 1199 mg/kg ** Limit = 20% RPD

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-5.199982E-03	-5.199982E-03	100 %
10	.08	.0851	5.100005E-03	5.992955 %
20	.17	.1754	5.399987E-03	3.07867 %
30	.271	.2657	-5.300015E-03	-1.994737 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.23	.2285	-1.500011E-03	-.6564598 %
10	.313	.315	2.000004E-03	.634922 %
20	.401	.4015	5.000234E-04	.1245388 %
30	.489	.4880001	-9.999573E-04	-.2049093 %

B. Yuen
7-30-93

93ZE33S40

SPIKE	MEASURED	CALC.	ERROR	PER CENT

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.292	.2995	7.499993E-03	2.504171 %
10	.364	.3544999	-9.500056E-03	-2.679847 %
20	.413	.4094999	-3.500074E-03	-.8547192 %
30	.459	.4644999	.0054999	1.184048 %

93ZE33S40SPKx12

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.172	.1808001	8.800044E-03	4.86728 %
10	.284	.2686001	-1.539996E-02	-5.733418 %
20	.352	.3564	4.400015E-03	1.234572 %
30	.442	.4442	2.200008E-03	.4952741 %

LCSx500

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.168	.1635	-4.500002E-03	-2.752295 %
10	.256	.2565	4.999936E-04	.1949293 %
20	.337	.3495	1.249999E-02	3.576535 %
30	.451	.4425	-8.50001E-03	-1.920906 %

93ZE33D40x3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.168	.1694	1.399964E-03	.8264253 %
10	.234	.2358	1.799956E-03	.7633403 %
20	.31	.3022	-7.800043E-03	-2.581087 %
30	.364	.3686	4.599959E-03	1.247954 %

93ZE33S40DUPx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.154	.1542	2.000183E-04	.1297135 %
10	.234	.2309	-3.099993E-03	-1.34257 %
20	.302	.3076	5.600006E-03	1.820548 %
30	.387	.3843	-2.700031E-03	-.7025842 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.217	.2166	-4.000217E-04	-.1846822 %
10	.313	.3072	-5.800009E-03	-1.888024 %
20	.385	.3978	1.280001E-02	3.217699 %
30	.495	.4884	-6.599993E-03	-1.35135 %

B. L[illegible]
7-30-93

DIG.BLK(SOIL)

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.007	-1.399997E-02	-6.99997E-03	49.99989 %
10	.06	6.150002E-02	1.500014E-03	2.439047 %
20	.119	.137	1.799999E-02	13.13868 %
30	.225	.2125	-1.250002E-02	-5.882362 %

93ZE33S40x3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.139	.1479	8.900031E-03	6.0176 %
10	.214	.2048	-9.199992E-03	-4.492183 %
20	.27	.2617	-8.300006E-03	-3.171573 %
30	.31	.3186	8.599997E-03	2.699309 %

DIG.BLK.(SOIL)

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.004	-1.009998E-02	-6.099975E-03	60.39594 %
10	.053	6.380001E-02	1.080002E-02	16.92792 %
20	.141	.1377	-3.299996E-03	-2.396511 %
30	.213	.2116	-1.399994E-03	-.6616228 %

93ZE33S40x3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.155	.1504	-4.600033E-03	-3.058534 %
10	.209	.2153	6.299973E-03	2.926137 %
20	.279	.2802	1.199991E-03	.4282622 %
30	.348	.3451	-2.899975E-03	-.8403288 %

93ZE33S38

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	.004	-.002	-50 %
10	6.800001E-02	.069	9.999946E-04	1.449268 %
20	.13	.134	3.999993E-03	2.98507 %
30	.202	.199	-3.000006E-03	-1.507541 %

93ZE33S38DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	5.800018E-03	4.800018E-03	82.75868 %
10	.082	7.710002E-02	-4.899986E-03	-6.355364 %
20	.153	.1484	-4.599974E-03	-3.099712 %
30	.215	.2197	4.70002E-03	2.13929 %

93ZE33S38SPKx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.155	.1379999	-1.700006E-02	-12.31889 %
10	.194	.2125	1.849996E-02	8.705863 %
20	.273	.287	.014	4.878049 %
30	.377	.3615	-1.549998E-02	-4.287684 %

B. Yue
7-30-93

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT

20	.273	.287	.014	4.878049 %
30	.377	.3615	-1.549998E-02	-4.287684 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.169	.1606	-8.400023E-03	-5.230401 %
10	.254	.2537	-3.000498E-04	-.1182695 %
20	.321	.3468	2.579993E-02	7.439428 %
30	.457	.4398999	-1.710007E-02	-3.887263 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.213	.2057999	-7.200077E-03	-3.498581 %
10	.285	.2901	5.099982E-03	1.758008 %
20	.363	.3744	1.140001E-02	3.044876 %
30	.468	.4587001	-9.299934E-03	-2.027454 %

B. Green
7-30-93

As		AA-BG	BG				
MAIN:	0.005	PA	0.005				

SF1187

0.000 AUTOZERO

Blank	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	-0.005	PA	0.000	MAIN:	0.075	PA	0.080
				+0				+10
	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	0.165	PA	0.170	MAIN:	0.266	PA	0.271
				+20				+30
AQC	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	0.225	PA	0.230	MAIN:	0.308	PA	0.313
				+0				+10
	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	0.396	PA	0.401	MAIN:	0.484	PA	0.489
				+20				+30
93ZE33S40	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	0.287	PA	0.292	MAIN:	0.359	PA	0.364
				+0				+10
	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	0.408	PA	0.413	MAIN:	0.454	PA	0.459
				+20				+30
93ZE33S40 5gK x12	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	0.167	PA	0.172	MAIN:	0.279	PA	0.284
				+0				+10
	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	0.347	PA	0.352	MAIN:	0.437	PA	0.442
				+20				+30
LCS x 500	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	0.163	PA	0.168	MAIN:	0.251	PA	0.256
				+0				+10
	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	0.332	PA	0.337	MAIN:	0.446	PA	0.451
				+20				+30
93ZE33D40 x3	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	0.163	PA	0.168	MAIN:	0.229	PA	0.234
				+0				+10
	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	0.305	PA	0.310	MAIN:	0.359	PA	0.364
				+20				+30
	As		AA-BG	BG	As		AA-BG	BG
	MAIN:	0.149	PA	0.154	MAIN:	0.229	PA	0.234
				+0				+10

B. Lyne 7-30-93

93ZE33540 Dup x3	As MAIN: 0.297	PA AA-BG 0.302 +20	BG	As MAIN: 0.382	PA AA-BG 0.387 +30	BG
BQC	As MAIN: 0.212	PA AA-BG 0.217 +0	BG	As MAIN: 0.308	PA AA-BG 0.313 +10	BG
	As MAIN: 0.380	PA AA-BG 0.385 +20	BG	As MAIN: 0.490	PA AA-BG 0.495 +30	BG
Blank cups	As MAIN: -0.014	PA AA-BG -0.009	BG	As MAIN: 0.002	PA AA-BG 0.007	BG
Digest blank (Soil)	As MAIN: -0.012	PA AA-BG -0.007 +0	BG	As MAIN: 0.055	PA AA-BG 0.060 +10	BG
	As MAIN: 0.114	PA AA-BG 0.119 +20	BG	As MAIN: 0.220	PA AA-BG 0.225 +30	BG
93ZE33540 x 3	As MAIN: 0.134	PA AA-BG 0.139 +0	BG	As MAIN: 0.209	PA AA-BG 0.214 +10	BG
	As MAIN: 0.265	PA AA-BG 0.270 +20	BG	As MAIN: 0.305	PA AA-BG 0.310 +30	BG
Digest Blank (Soil)	As MAIN: -0.009	PA AA-BG -0.004 +0	BG	As MAIN: 0.048	PA AA-BG 0.053 +10	BG
	As MAIN: 0.136	PA AA-BG 0.141 +20	BG	As MAIN: 0.208	PA AA-BG 0.213 +30	BG
93ZE33540 x3	As MAIN: 0.150	PA AA-BG 0.155 +0	BG	As MAIN: 0.204	PA AA-BG 0.209 +10	BG
	As MAIN: 0.274	PA AA-BG 0.279 +20	BG	As MAIN: 0.343	PA AA-BG 0.348 +30	BG
93ZE33538	As MAIN: 0.001	PA AA-BG 0.006 +0	BG	As MAIN: 0.063	PA AA-BG 0.068 +10	BG
	As MAIN: 0.125	PA AA-BG 0.130 +20	BG	As MAIN: 0.197	PA AA-BG 0.202 +30	BG
	As MAIN: -0.004	PA AA-BG 0.001 +0	BG	As MAIN: 0.077	PA AA-BG 0.082 +10	BG

B L Jue 7-30-93

932E33538 Dup	As MAIN: 0.148	PA	AA-BG 0.153 +20	BG	As MAIN: 0.210	PA	AA-BG 0.215 +30	BG
932E33538	As MAIN: 0.150	PA	AA-BG 0.155 +0	BG	As MAIN: 0.189	PA	AA-BG 0.194 +10	BG
Spk x3	As MAIN: 0.268	PA	AA-BG 0.273 +20	BG	As MAIN: 0.372	PA	AA-BG 0.377 +30	BG
BQC	As MAIN: 0.164	PA	AA-BG 0.169 +0	BG	As MAIN: 0.249	PA	AA-BG 0.254 +10	BG
	As MAIN: 0.316	PA	AA-BG 0.321 +20	BG	As MAIN: 0.452	PA	AA-BG 0.457 +30	BG
BQC	As MAIN: 0.208	PA	AA-BG 0.213 +0	BG	As MAIN: 0.280	PA	AA-BG 0.285 +10	BG
	As MAIN: 0.358	PA	AA-BG 0.363 +20	BG	As MAIN: 0.463	PA	AA-BG 0.468 +30	BG
Blank cups	As MAIN: -0.013	PA	AA-BG -0.008	BG	As MAIN: -0.001	PA	AA-BG 0.004	BG
	As MAIN: 0.104	PA	AA-BG 0.109	BG	As MAIN: 0.174	PA	AA-BG 0.179	BG
	As MAIN: 0.254	PA	AA-BG 0.259	BG	As MAIN: 0.294	PA	AA-BG 0.299	BG
	As MAIN: 0.145	PA	AA-BG 0.150	BG	As MAIN: 0.207	PA	AA-BG 0.212	BG
	As MAIN: 0.286	PA	AA-BG 0.291	BG	As MAIN: 0.363	PA	AA-BG 0.368	BG
	As MAIN: 0.072	PA	AA-BG 0.077	BG	As MAIN: 0.133	PA	AA-BG 0.138	BG
	As MAIN: 0.189	PA	AA-BG 0.194	BG	As MAIN: 0.261	PA	AA-BG 0.266	BG
	As MAIN: 0.073	PA	AA-BG 0.078	BG	As MAIN: 0.140	PA	AA-BG 0.145	BG

Not used BY 7-30-93

B. Lyne 7-30-93

AAS RUN LOG

Element As

Date 7-28-93

Analyst B. Yuen

Data Set SF1187

	ID	spike	comment .
1	Blank	0	
2		10	
3		20	
4		30	
5	AQC	0	TV= 25 µg/l
6		10	
7		20	
8		30	
9	93ZE33540	0	Rerun
10		10	
11		20	
12		30	
13	93ZE33540 spk x 12	0	
14		10	
15		20	
16		30	
17	LCS x 500	0	
18		10	
19		20	
20		30	
21	93ZE33D40 x 3	0	
22		10	
23		20	
24		30	
25	93ZE33540 Dup x 3	0	
26		10	B. Yuen
27		20	7-30-93

AAS RUN LOG

Element As

Analyst B. Yuen

Date 7-28-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	Digest Blank (soil)	0	Rerun
2		10	
3		20	
4		30	
5	93ZE33540 x 3	0	Rerun
6		10	
7		20	
8		30	
9	Digest Blank (soil)	0	
10		10	
11		20	
12		30	
13	93ZE33540 x 3	0	
14		10	
15		20	
16		30	
17	93ZE33538	0	
18		10	
19		20	B. Yuen
20		30	7-30-93

AAS RUN LOG

Element As

Date 7-28-93

Analyst B. Lynen

Data Set SF1187

	ID	spike	comment
21	93ZE33S38 Dup	0	
22		10	
23		20	
24		30	
25	93ZE33S38 SpK x 3	0	Rerun
26		10	
27		20	
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 3		
1		0	
2		10	
3		20	
4		30	
5		0	
6		10	
7		20	
8		30	
9		0	
10		10	
11		20	
12		30	B. Lynen
13		0	7-30-93

Element	Instrument	QC Source
☐ Ag	☐ 5100 A3	☐ CLP-40
☒ As	☐ 5100 A6	☐ CLP-70
☐ Cd	☒ 5000 A4	☒ CLP-80
☐ Cr	☐ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☐
☐ Sb	☐	☐
☐ Se		☐
☐ Tl		☐

Analyst B. Yuen
Date 7-28-93
Lamp # 8316
Energy 37
Expansion 3
Stock 3-104AS opened: 3-16-93
Expires: 10-31-93

☐ platform ☐ MSC
☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
-0.58	0.00903	26.42 23.91 24.41	① Soil digestion blank < 0.2 mg/kg Limit = ± 0.2 mg/kg ② S40: Duplicate ~~diff~~ %RPD = 12.3 BY 7-30-93 Limit = 20 %RPD ③ S40: Spike %R = 89.1 Limit = 80 – 120% ④ LCS = 879 mg/kg (Limit = 635 – 1199 mg/kg) ⑤ S38: Duplicate diff < 2 µg/l Limit = ±2 µg/l

Blank cup absorbance
-0.009
0.007
-0.008
0.004

B. Yuen
7-30-93

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI
DATE OF ANALYSIS --: 07-29-1993
PARAMETER NAME ----: AS
DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	-1.892456	.9986308	9.670002E-03	2u Limit=±2 µg/l
AQC 25 UG/L	26.05691	.9516442	7.380001E-03	Rerun, r<0.995
AQC 25 UG/L	21.10521	.9911437	9.409999E-03	
AQC 25 UG/L	25.07565	.9815926	8.590004E-03	
AQC 25 UG/L	23.23078	.9974697	9.749996E-03	%R=92.9 Limit=100±10%
93ZE33S38SPKx3	15.30163	.9983898	5.470001E-03	adj.conc.=45.90 µg/l Spk.conc.=50 µg/l
93ZE33D39	12.53456	.9963229	.00651	12 %R=91.8
93ZE33S36	4.559098	.9972551	.00533	4 Limit=85-115%
93ZE33S39DUP	9.441338	.9946232	.00537	Rerun, r<0.995
93ZE33D37	2.883666	.9989938	.00808	3
AQC 25 UG/L	20.24944	.9888739	9.220001E-03	Rerun, r<0.995
AQC 25 UG/L	25.00556	.9958831	8.930008E-03	%R=100.0 Limit=100±10%

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.014	-1.830005E-02	-4.300049E-03	23.49747 %
10	.076	7.839998E-02	2.399981E-03	3.061201 %
20	.167	.1751	8.100003E-03	4.62593 %
30	.278	.2718	-6.199986E-03	-2.281084 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.199	.1923	-6.700009E-03	-3.484144 %
10	.236	.2661	3.009999E-02	11.31153 %
20	.38	.3399	-4.009998E-02	-11.79758 %
30	.397	.4137001	1.670003E-02	4.036749 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.198	.1986	5.999804E-04	.302105 %
10	.282	.2927	1.069999E-02	3.655616 %
20	.41	.3868	-2.320001E-02	-5.997934 %
30	.469	.4809	1.189998E-02	2.474522 %

B. Lyne
7-30-93

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.223	.2154	-7.600039E-03	-3.528338 %
10	.277	.3013	2.430001E-02	8.065054 %
20	.413	.3872001	-2.579993E-02	-6.663204 %
30	.464	.4731002	9.100139E-03	1.923512 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.226	.2265	5.000085E-04	.2207543 %
10	.331	.324	-7.000029E-03	-2.160503 %
20	.409	.4215	1.249993E-02	2.965583 %
30	.525	.519	-6.000042E-03	-1.156078 %

93ZE33S38SPKx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.08	8.369995E-02	3.699951E-03	4.420494 %
10	.144	.1384	-5.600035E-03	-4.04627 %
20	.193	.1931	9.997189E-05	5.177209E-02 %
30	.246	.2478	1.799986E-03	.7263866 %

93ZE33D39

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.088	8.159998E-02	-6.400027E-03	-7.843172 %
10	.14	.1467	6.699965E-03	4.567121 %
20	.206	.2118	5.799979E-03	2.738423 %
30	.283	.2769	-6.099999E-03	-2.202961 %

93ZE33S36

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.02	2.429999E-02	4.299989E-03	17.69544 %
10	.085	7.759999E-02	-7.400014E-03	-9.536101 %
20	.129	.1309	1.900002E-03	1.451492 %
30	.183	.1842	1.200005E-03	.6514687 %

93ZE33S39DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.057	5.069999E-02	-6.300017E-03	-12.42607 %
10	.098	.1044	6.399982E-03	6.130253 %
20	.152	.1581	6.099984E-03	3.858308 %
30	.218	.2118	-6.200016E-03	-2.927298 %

B. Green 7-30-93

93ZE33D37

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.022	2.330002E-02	1.300018E-03	5.579473 %
10	.109	.1041	-4.899979E-03	-4.706991 %
20	.179	.1849	5.900011E-03	3.19092 %
30	.268	.2657	-2.299994E-03	-.8656358 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.202	.1866999	-1.530011E-02	-8.195028 %
10	.264	.2788999	1.489991E-02	5.342386 %
20	.355	.3710999	1.609993E-02	4.338435 %
30	.479	.4633	-1.570007E-02	-3.388749 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.22	.2232999	3.299862E-03	1.477772 %
10	.31	.3126	2.599955E-03	.8317195 %
20	.417	.4019	-1.509997E-02	-3.757146 %
30	.482	.4912001	9.200096E-03	1.872984 %

B. Green
7-30-83

As		AA-BG	BG				
MAIN:	0.013	PA	0.013				

0.000 AUTOZERO

SF1187

As		AA-BG	BG	As		AA-BG	BG
MAIN:	-0.027	PA	-0.014	MAIN:	0.063	PA	0.076
			+0				+10

Blank

As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.154	PA	0.167	MAIN:	0.265	PA	0.278
			+20				+30

As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.186	PA	0.199	MAIN:	0.223	PA	0.236
			+0				+10

AQC

B. L. Green
7-30-93

	As MAIN: 0.367	PA AA-BG 0.380 +20	BG	As MAIN: 0.384	PA AA-BG 0.397 +30	BG
~~93ZE33538~~ SpK BY 7-29-93 AQC	As MAIN: 0.185	PA AA-BG 0.198 +0	BG	As MAIN: 0.269	PA AA-BG 0.282 +10	BG
	As MAIN: 0.397	PA AA-BG 0.410 +20	BG	As MAIN: 0.456	PA AA-BG 0.469 +30	BG
BY 7-29-93 ~~93ZE33D39~~ AQC	As MAIN: 0.210	PA AA-BG 0.223 +0	BG	As MAIN: 0.264	PA AA-BG 0.277 +10	BG
	As MAIN: 0.400	PA AA-BG 0.413 +20	BG	As MAIN: 0.451	PA AA-BG 0.464 +30	BG
AQC	As MAIN: 0.213	PA AA-BG 0.226 +0	BG	As MAIN: 0.318	PA AA-BG 0.331 +10	BG
	As MAIN: 0.396	PA AA-BG 0.409 +20	BG	As MAIN: 0.512	PA AA-BG 0.525 +30	BG
93ZE33538 SpK x3	As MAIN: 0.067	PA AA-BG 0.080 +0	BG	As MAIN: 0.131	PA AA-BG 0.144 +10	BG
	As MAIN: 0.233	PA AA-BG 0.246 +30	BG	As MAIN: 0.217	PA AA-BG 0.230 +30 Not Used	BG
	As MAIN: 0.180	PA AA-BG 0.193 +20	BG	As MAIN: -0.025	PA AA-BG -0.012 Blank cup	BG
93ZE33D39	As MAIN: 0.075	PA AA-BG 0.088 +0	BG	As MAIN: 0.127	PA AA-BG 0.140 +10	BG
	As MAIN: 0.193	PA AA-BG 0.206 +20	BG	As MAIN: 0.270	PA AA-BG 0.283 +30	BG
93ZE33536	As MAIN: 0.007	PA AA-BG 0.020 +0	BG	As MAIN: 0.072	PA AA-BG 0.085 +10	BG
	As MAIN: 0.116	PA AA-BG 0.129 +20	BG	As MAIN: 0.170	PA AA-BG 0.183 +30	BG
	As MAIN: 0.044	PA AA-BG 0.057 +0	BG	As MAIN: 0.085	PA AA-BG 0.098 +10	BG

B. L. [illegible] 7-30-93

PERKIN-ELMER FIAS 93/07/28 PAGE 6

932E33S39 Dup	As MAIN: 0.205	AA-BG PA 0.218 +30	BG	As MAIN: 0.139	AA-BG PA 0.152 +20	BG
932E33D37	As MAIN: 0.009	AA-BG PA 0.022 +0	BG	As MAIN: 0.096	AA-BG PA 0.109 +10	BG
	As MAIN: 0.166	AA-BG PA 0.179 +20	BG	As MAIN: 0.255	AA-BG PA 0.268 +30	BG
AQC	As MAIN: 0.189	AA-BG PA 0.202 +0	BG	As MAIN: 0.251	AA-BG PA 0.264 +10	BG
	As MAIN: 0.342	AA-BG PA 0.355 +20	BG	As MAIN: 0.466	AA-BG PA 0.479 +30	BG
AQC	As MAIN: 0.207	AA-BG PA 0.220 +0	BG	As MAIN: 0.297	AA-BG PA 0.310 +10	BG
	As MAIN: 0.404	AA-BG PA 0.417 +20	BG	As MAIN: 0.469	AA-BG PA 0.482 +30	BG
Blank cups	As MAIN: -0.028	AA-BG PA -0.015	BG	As MAIN: -0.018	AA-BG PA -0.005	BG
	As MAIN: -0.024	AA-BG PA -0.011	BG	As MAIN: 0.054	AA-BG PA 0.067	BG
	As MAIN: 0.229	AA-BG PA 0.242	BG	As MAIN: 0.137	AA-BG PA 0.150	BG
	As MAIN: 0.072	AA-BG PA 0.085	BG	As MAIN: 0.126	AA-BG PA 0.139	BG
	As MAIN: 0.249	AA-BG PA 0.262	BG	As MAIN: 0.204	AA-BG PA 0.217	BG
	As MAIN: -0.026	AA-BG PA -0.013	BG	As MAIN: 0.069	AA-BG PA 0.082	BG
	As MAIN: 0.257	AA-BG PA 0.270	BG	As MAIN: 0.183	AA-BG PA 0.196	BG
	As MAIN: 0.088	AA-BG PA 0.101	BG	As MAIN: 0.125	AA-BG PA 0.138	BG

Not Used By 7-30-93

B. L[illegible] 7-30-93

AAS RUN LOG

Element As

Analyst B. Lynen

Date 7-28-93

Data Set SF1187

	ID	spike	comment.
1	Blank	0	
2		10	
3		20	
4		30	
5	AQC	0	TV= 25 µg/l
6		10	
7		20	
8		30	
9	93ZE33S38 SpK x3	0	
10		10	
11		20	
12		30	
13	93ZE33D39	0	
14		10	
15		20	
16		30	
17	93ZE33S36	0	
18		10	
19		20	
20		30	
21	93ZE33S39 Dup	0	Rerun
22		10	
23		20	
24		30	
25	93ZE33D37	0	
26		10	
27		20	

B. Lynen 7-30-93

AAS RUN LOG

Element As

Analyst B. Green

Date 7-28-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1		0	
2		10	
3		20	
4		30	
5		0	
6		10	
7		20	
8		30	
9		0	
10		10	
11		20	
12		30	
13		0	
14		10	
15		20	
16		30	
17		0	
18		10	
19		20	
20		30	

B. Green

7-30-93

Element	Instrument	QC Source
☐ Ag	☐ 5100 A3	☐ CLP-40
☒ As	☐ 5100 A6	☐ CLP-70
☐ Cd	☒ 5000 A4	☒ CLP-80
☐ Cr	☐ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☐
☐ Sb	☐	☐
☐ Se		☐
☐ Tl		☐

Analyst B. Lynen

Date 7-28-93

Lamp # 8316

Energy 36

Expansion 3

Stock 3-104AS Opened: 3-16-93
Expires: 10-31-9

☐ platform ☐ MSC

☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
-1.89	0.00967	23.23 25.00	538: Spike %R = 91.8 (Limit = 85-115%)

Blank cup absorbance
-0.015
-0.005

B. Lynen
7-30-93

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI
DATE OF ANALYSIS --: 07-30-1993
PARAMETER NAME ----: AS
DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	-.9631171	.9994629	9.760002E-03	2u Limit=±2 µg/l
AQC 25 UG/L	26.23376	.9961424	9.240001E-03	%R=104.9 Limit=100±10%
93ZE33S39DUP	14.29072	.9933593	5.709999E-03	SF1187
93ZF53S11	9.029123	.9930353	6.180001E-03	Rerun, r<0.995 SF1191
93ZE33S39DUP	11.74242	.9945128	6.600001E-03	SF1187
93ZE33S39DUP	12.03095	.9987194	5.170001E-03	12 Dup %RPD=9.1 Limit=20%RPD
93ZF53S11DUP	10.36928	.9976453	6.770001E-03	10
AQC 25 UG/L	31.42857	.946515	.00707	
AQC 25 UG/L	19.4055	.9877858	.01127	Rerun, r<0.995
AQC 25 UG/L	24.3791	.9858669	9.179996E-03	
AQC 25 UG/L	24.28571	.9973483	.01001	%R=97.1 Limit=100±10%
93ZF53S11	7.191889	.9714185	.00641	Rerun, r<0.995
93ZF53S12	24.14393	.9987519	8.059997E-03	24
93ZF53S11	10.4259	.9982548	5.869999E-03	10
93ZF53S13	3.171024	.9987359	8.419998E-03	3
93ZF53D13	2.481665	.9999733	.00818	2
93ZF53R01	.193844	.9984396	.00877	24
93ZF53R03	.3498879	.9986752	8.859999E-03	24
AQC 25 UG/L	21.77034	.9092472	.01045	Rerun, r<0.995
AQC 25 UG/L	26.62896	.9978423	.00884	%R=106.5 Limit=100±10%

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.011	-9.400024E-03	1.599976E-03	-17.02098 %
10	.093	8.819999E-02	-4.800014E-03	-5.442194 %
20	.181	.1858	4.800007E-03	2.583427 %
30	.285	.2834	-1.599997E-03	-.5645721 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.252	.2424	-9.600043E-03	-3.960415 %
10	.324	.3348	1.079997E-02	3.225799 %
20	.42	.4272	7.200003E-03	1.685394 %
30	.528	.5196001	-8.399963E-03	-1.616621 %

B. L. Jones 7-30-93

93ZE33S39DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.075	.0816	.0066	8.088235 %
10	.144	.1387	-5.300001E-03	-3.821197 %

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.075	.0816	.0066	8.088235 %
10	.144	.1387	-5.300001E-03	-3.821197 %
20	.205	.1958	-9.200022E-03	-4.698684 %
30	.245	.2529	7.89997E-03	3.123753 %

93ZF53S11

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.055	5.579999E-02	7.999875E-04	1.43367 %
10	.112	.1176	5.599991E-03	4.761897 %
20	.193	.1794	-1.360001E-02	-7.580829 %
30	.234	.2412	7.200003E-03	2.985076 %

93ZE33S39DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.072	.0775	5.500004E-03	7.096779 %
10	.146	.1435	-2.499998E-03	-1.742159 %
20	.221	.2095	-1.149999E-02	-5.489254 %
30	.267	.2755	8.50001E-03	3.085303 %

93ZE33S39DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.059	6.220002E-02	3.200013E-03	5.144715 %
10	.118	.1139	-4.09998E-03	-3.599631 %
20	.167	.1656	-1.399979E-03	-.8453978 %
30	.215	.2173	2.300009E-03	1.058449 %

93ZF53S11DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.074	7.020001E-02	-3.79999E-03	-5.41309 %
10	.136	.1379	1.900017E-03	1.377822 %
20	.198	.2056	7.600025E-03	3.696509 %
30	.279	.2733	-5.699992E-03	-2.085617 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.234	.2222	-1.179999E-02	-5.310527 %
10	.257	.2929	.0359	12.25674 %
20	.4	.3636	-3.639999E-02	-10.011 %
30	.422	.4343	1.230002E-02	2.832147 %

B. Green
7-30-93

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.197	.2187	2.169995E-02	9.922248 %
10	.359	.3314	-2.760005E-02	-8.328321 %
20	.454	.4441	-9.900034E-03	-2.229236 %

30	.422	.4343	1.230002E-02	2.832147 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.197	.2187	2.169995E-02	9.922248 %
10	.359	.3314	-2.760005E-02	-8.328321 %
20	.454	.4441	-9.900034E-03	-2.229236 %
30	.541	.5568	1.579994E-02	2.837633 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.242	.2238001	-1.819995E-02	-8.132238 %
10	.287	.3156	2.860001E-02	9.062105 %
20	.41	.4074	-2.600044E-03	-.6382043 %
30	.5070001	.4992	-7.800102E-03	-1.562521 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.247	.2431	-3.900021E-03	-1.604287 %
10	.344	.3432	-8.000136E-04	-.2331042 %
20	.43	.4433	.0133	3.000226 %
30	.552	.5434001	-8.599937E-03	-1.582616 %

93ZF53S11

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.055	4.610001E-02	-8.899994E-03	-19.30584 %
10	.111	.1102	-7.999987E-04	-.7259516 %
20	.146	.1743	.0283	16.23638 %
30	.257	.2384	-.0186	-7.802014 %

93ZF53S12

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.195	.1946	-4.000217E-04	-.205561 %
10	.271	.2752	4.199952E-03	1.526146 %
20	.363	.3557999	-7.200092E-03	-2.023635 %
30	.433	.4363999	3.399879E-03	.7790742 %

93ZF53S11

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.061	6.120001E-02	2.000108E-04	.3268151 %
10	.117	.1199	2.900005E-03	2.418686 %
20	.185	.1786	-6.400004E-03	-3.583429 %
30	.234	.2373	3.299981E-03	1.390637 %

B. L[illegible]
7-30-93

93ZF53S13

SPIKE	MEASURED	CALC.	ERROR	PER CENT

93ZF53S13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.031	2.670001E-02	-4.299987E-03	-16.10481 %
10	.103	.1109	7.899992E-03	7.123529 %
20	.198	.1951	-2.900019E-03	-1.486427 %
30	.28	.2793	-7.000268E-04	-.2506362 %

93ZF53D13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.02	2.030002E-02	3.000181E-04	1.47792 %
10	.103	.1021	-8.999854E-04	-.8814743 %
20	.183	.1839	9.000152E-04	.4894047 %
30	.266	.2657	-2.999902E-04	-.1129056 %

93ZF53R01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	1.700012E-03	2.700012E-03	158.8231 %
10	.089	8.940002E-02	4.000142E-04	.4474432 %
20	.186	.1771	-8.899987E-03	-5.025402 %
30	.259	.2648	5.800009E-03	2.190336 %

93ZF53R03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	3.100006E-03	1.000061E-04	3.225998 %
10	.096	9.169999E-02	-4.300006E-03	-4.689211 %
20	.172	.1803	8.299977E-03	4.603426 %
30	.273	.2689	-4.100055E-03	-1.524751 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.215	.2275	.0125	5.494507 %
10	.306	.332	2.600002E-02	7.831332 %
20	.526	.4365	-8.950001E-02	-20.50401 %
30	.49	.541	.051	9.426987 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.233	.2354	2.400026E-03	1.019552 %
10	.322	.3238	1.800031E-03	.5559081 %
20	.423	.4122	-1.079997E-02	-2.620081 %
30	.494	.5006001	6.600052E-03	1.318428 %

B. Lyon
7-30-93

			As MAIN: 0.003		AA-BG PA 0.003	BG	

0.000 AUTOZERO

As MAIN: -0.014	AA-BG PA -0.011 +0	BG	As MAIN: 0.090	AA-BG PA 0.093 +10	BG	Blank
As MAIN: 0.178	AA-BG PA 0.181 +20	BG	As MAIN: 0.282	AA-BG PA 0.285 +30	BG	
As MAIN: 0.249	AA-BG PA 0.252 +0	BG	As MAIN: 0.321	AA-BG PA 0.324 +10	BG	AQC
As MAIN: 0.417	AA-BG PA 0.420 +20	BG	As MAIN: 0.525	AA-BG PA 0.528 +30	BG	
As MAIN: 0.072	AA-BG PA 0.075 +0	BG	As MAIN: 0.141	AA-BG PA 0.144 +10	BG	932E33S39 Dup
As MAIN: 0.202	AA-BG PA 0.205 +20	BG	As MAIN: 0.242	AA-BG PA 0.245 +30	BG	SF1187
As MAIN: 0.052	AA-BG PA 0.055 +0	BG	As MAIN: 0.109	AA-BG PA 0.112 +10	BG	SF1191
As MAIN: 0.190	AA-BG PA 0.193 +20	BG	As MAIN: 0.231	AA-BG PA 0.234 +30	BG	932F53S11
As MAIN: 0.069	AA-BG PA 0.072 +0	BG	As MAIN: 0.143	AA-BG PA 0.146 +10	BG	SF1187
As MAIN: 0.218	AA-BG PA 0.221 +20	BG	As MAIN: 0.264	AA-BG PA 0.267 +30	BG	932E33S39 Dup

B. [illegible]
7-30-93

As MAIN: 0.056	AA-BG PA 0.059 +0	BG	As MAIN: 0.115	AA-BG PA 0.118 +10	BG	93ZE33539 Dup
As MAIN: 0.164	AA-BG PA 0.167 +20	BG	As MAIN: 0.212	AA-BG PA 0.215 +30	BG	
As MAIN: -0.009	AA-BG PA -0.006	BG	As MAIN: -0.012	AA-BG PA -0.009	BG	No sample was injected. SF1187 SF1191
As MAIN: 0.071	AA-BG PA 0.074 +0	BG	As MAIN: 0.133	AA-BG PA 0.136 +10	BG	93ZF53511 Dup
As MAIN: 0.195	AA-BG PA 0.198 +20	BG	As MAIN: 0.276	AA-BG PA 0.279 +30	BG	
As MAIN: 0.231	AA-BG PA 0.234 +0	BG	As MAIN: 0.254	AA-BG PA 0.257 +10 Furnace was not cool down.	BG	AQC
As MAIN: 0.397	AA-BG PA 0.400 +20	BG	As MAIN: 0.419	AA-BG PA 0.422 +30 Furnace was not cool down.	BG	
As MAIN: 0.194	AA-BG PA 0.197 +0	BG	As MAIN: 0.356	AA-BG PA 0.359 +10	BG	AQC
As MAIN: 0.451	AA-BG PA 0.454 +20	BG	As MAIN: 0.538	AA-BG PA 0.541 +30	BG	
As MAIN: 0.239	AA-BG PA 0.242 +0	BG	As MAIN: 0.284	AA-BG PA 0.287 +10	BG	AQC
As MAIN: 0.407	AA-BG PA 0.410 +20	BG	As MAIN: 0.504	AA-BG PA 0.507 +30	BG	
As MAIN: 0.244	AA-BG PA 0:247 +0	BG	As MAIN: 0.341	AA-BG PA 0.344 +10	BG	AQC
As MAIN: 0.427	AA-BG PA 0.430 +20	BG	As MAIN: 0.549	AA-BG PA 0.552 +30	BG	
As MAIN: -0.002	AA-BG PA 0.001	BG	As MAIN: -0.008	AA-BG PA -0.005	BG	Blank cup
As MAIN: 0.052	AA-BG PA 0.055 +0	BG	As MAIN: 0.108	AA-BG PA 0.111 +10	BG	B. Lyne. 7-30-93

As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.143	PA 0.146		MAIN:	0.254	PA 0.257	
		+2σ				+3σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.192	PA 0.195		MAIN:	0.268	PA 0.271	
		+0				+1σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.360	PA 0.363		MAIN:	0.430	PA 0.433	
		+2σ				+3σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.058	PA 0.061		MAIN:	0.114	PA 0.117	
		+0				+1σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.182	PA 0.185		MAIN:	0.231	PA 0.234	
		+2σ				+3σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.028	PA 0.031		MAIN:	0.100	PA 0.103	
		+0				+1σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.195	PA 0.198		MAIN:	0.277	PA 0.280	
		+2σ				+3σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.017	PA 0.020		MAIN:	0.100	PA 0.103	
		+0				+1σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.180	PA 0.183		MAIN:	0.263	PA 0.266	
		+2σ				+3σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	-0.004	PA-0.001		MAIN:	0.086	PA 0.089	
		+0				+1σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.183	PA 0.186		MAIN:	0.256	PA 0.259	
		+2σ				+3σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.000	PA 0.003		MAIN:	0.093	PA 0.096	
		+0				+1σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.169	PA 0.172		MAIN:	0.270	PA 0.273	
		+2σ				+3σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.212	PA 0.215		MAIN:	0.303	PA 0.306	
		+0				+1σ	
As		AA-BG	BG	As		AA-BG	BG
MAIN:	0.523	PA 0.526		MAIN:	0.487	PA 0.490	
		+2σ				+3σ	

932F53S11

932F53S12

932F53S11

932F53S13

932F53D13

932F53R01

932F53R03

BQC

B. Lynn

7-30-93

As		AA-BG	BG	As		AA-BG	BG
MAIN: 0.230	PA	0.233		MAIN: 0.319	PA	0.322	
		+0				+10	
As		AA-BG	BG	As		AA-BG	BG
MAIN: 0.420	PA	0.423		MAIN: 0.423	PA	0.426	
		+20				+20 same cup, not used.	
As		AA-BG	BG	As		AA-BG	BG
MAIN: 0.491	PA	0.494		MAIN: -0.006	PA	-0.003	
		AQC+30				Blank cup	

AQC

B. [illegible]
7-30-93

AAS RUN LOG

Element As

Date 7-29-93

Analyst B. Lynen

Data Set SF1187

	ID	spike	comment.
1	Blank	0	
2		10	
3		20	
4		30	
5	AQC	0	TV=25 µg/l
6		10	
7		20	
8		30	
9	93ZE33539 Dup	0	Rerun SF1187
10		10	
11		20	
12		30	
13	93ZF53511	0	Rerun SF1191
14		10	
15		20	
16		30	
17	93ZE33539 Dup	0	Rerun SF1187
18		10	
19		20	
20		30	
21	93ZE33539 Dup	0	
22		10	
23		20	B. Lynen
24		30	7-30-93
25	93ZF33511 Dup	0	SF1191
26		10	
27		20	

AAS RUN LOG

Element AS

Analyst B. Yuen

Date 7-29-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	93ZF53S11	0	Rerun
2		10	
3		20	
4		30	
5	93ZF53S12	0	
6		10	
7		20	
8		30	
9	93ZF53S11	0	
10		10	
11		20	
12		30	
13	93ZF53S13	0	
14		10	
15		20	
16		30	
17	93ZF53D13	0	
18		10	
19		20	B. Yuen
20		30	

7-30-93

AAS RUN LOG

Element AS

Analyst B. Yuen

Date 7-29-93

Data Set

	ID	spike	comment
21	93ZF53R01	0	
22	"	10	
23		20	
24		30	
25	93ZF53R03	0	
26		10	
27		20	
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 3		
1		0	
2		10	
3		20	
4		30	
5		0	
6		10	
7		20	
8		30	
9		0	
10		10	
11		20	
12		30	B. Yuen
13		0	

7-30-93

Element	Instrument	QC Source
☐ Ag	☐ 5100 A3	☐ CLP-40
☒ As	☐ 5100 A6	☐ CLP-70
☐ Cd	☒ 5000 A4	☒ CLP-80
☐ Cr	☐ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☐
☐ Sb	☐	☐
☐ Se		☐
☐ Tl		☐

Analyst B. Green

Date 7-29-93

Lamp # 8316

Energy 37

Expansion 3

Stock 3-104As Opened: 3-16-9=
Expires: 10-31-9=

☐ platform ☐ MSC

☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
-0.96	0.00976	26.23 24.28 26.63	S39: Duplicate %RPD = 9.1 Limit = 20% RPD

Blank cup absorbance
0.001
-0.005
-0.003

B. Green
7-30-93

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI
DATE OF ANALYSIS --: 07-30-1993
PARAMETER NAME ----: AS
DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	-8.147134E-02	.9983984	9.820003E-03	2u Limit=±2 µg/l
AQC 25 UG/L	29.65145	.9910248	.00832	Rerun, r<0.995
AQC 25 UG/L	25.47342	.9995575	8.660004E-03	%R=101.9 Limit=100±10%
93ZE33S39DUP	12.05697	.9948132	.00632	Rerun, r<0.995
93ZE33S39SPKx4	13.63902	.9987251	6.869997E-03	adj. conc.=54.56 µg/l spk. conc.=50 µg/l %R=87.2 Limit=85-115% SF1187
93ZE33S39DUP	11.7699	.9948019	6.780001E-03	Rerun, r<0.995 SF1191
93ZF53S11SPKx2	42.52421	.801327	3.090004E-03	
93ZF53S11SPKx3	21.53264	.9970049	6.589998E-03	adj. conc.=64.60 µg/l spk. conc.=50 µg/l %R=108.4 Limit=85-115%
AQC 25 UG/L	25.26548	.99852	9.040001E-03	%R=101.1 Limit=100±10%
93ZF53S11	8.921834	.9999132	.00742	Rerun SF1187
93ZE33S39DUP	10.33557	.9999097	.00596	
93ZF53S02	1.64326	.9995702	7.119999E-03	2u SF1191
93ZF53D02	1.20879	.9981785	7.280001E-03	2u
93ZF53S03	.9383018	.9991123	.00778	2u
93ZF53S11DUP	11.76379	.9996754	6.520002E-03	Rerun
93ZE33R60	-.3466936	.9992461	.00923	2u SF1187
AQC 25 UG/L	27.66109	.9983692	8.380001E-03	%R=110.6 Limit=100±10%

All sample results are less than IDL and acceptable.

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-8.000488E-04	1.199951E-03	-149.9848 %
10	.104	9.739998E-02	-6.600023E-03	-6.776205 %
20	.186	.1956	9.599999E-03	4.907975 %
30	.298	.2938001	-4.199952E-03	-1.429527 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.245	.2467001	1.700074E-03	.6891257 %
10	.322	.3299001	7.900089E-03	2.394692 %
20	.434	.4131001	-2.089992E-02	-5.059288 %
30	.485	.4963001	1.130006E-02	2.27686 %

AQC 25 UG/L

B. Yuen 7-30-93

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.221	.2205999	-4.000813E-04	-.1813606 %
10	.309	.3072	-1.800031E-03	-.5859475 %
20	.389	.3938	4.799992E-03	1.218891 %
30	.483	.4804001	-2.599985E-03	-.5412124 %

30 .483

93ZE33S39DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.07	7.620002E-02	6.200016E-03	8.136501 %
10	.144	.1394	-4.599989E-03	-3.299848 %
20	.212	.2026	-9.399995E-03	-4.639682 %
30	.258	.2658	7.800013E-03	2.934542 %

93ZE33S39SPKx4

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.097	9.370004E-02	-3.299959E-03	-3.521833 %
10	.156	.1624	6.400004E-03	3.940889 %
20	.234	.2311	-2.900005E-03	-1.25487 %
30	.3	.2998	-2.00063E-04	-6.673216E-02 %

93ZE33S39DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.076	7.979996E-02	3.79996E-03	4.761857 %
10	.147	.1476	5.999655E-04	.4064808 %
20	.228	.2154	-1.260002E-02	-5.849592 %
30	.275	.2832	8.19999E-03	2.895477 %

93ZF53S11SPKx2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.159	.1314	-2.760004E-02	-21.0046 %
10	.121	.1623	4.129999E-02	25.4467 %
20	.193	.1932	2.000332E-04	.1035368 %
30	.238	.2241001	-1.389992E-02	-6.202552 %

93ZF53S11SPKx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.142	.1419	-9.998679E-05	-7.046285E-02 %
10	.203	.2078	4.800007E-03	2.309917 %
20	.283	.2737	-9.299994E-03	-3.397879 %
30	.335	.3396	4.599959E-03	1.354523 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.23	.2283999	-1.600102E-03	-.7005702 %
10	.321	.3187999	-2.200097E-03	-.6901184 %
20	.4	.4091999	9.199918E-03	2.24827 %
30	.505	.4996	-5.400062E-03	-1.080877 %

B. Yue - 7-30-93

93ZF53S11

SPIKE	MEASURED	CALC.	ERROR	PER CENT

93ZF53S11

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.067	6.620001E-02	-7.999912E-04	-1.208446 %
10	.14	.1404	4.000217E-04	.2849157 %
20	.213	.2146	1.600027E-03	.7455857 %
30	.29	.2888	-1.199991E-03	-.4155092 %

93ZE33S39DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.062	6.160001E-02	-3.999919E-04	-.6493374 %
10	.12	.1212	1.199998E-03	.9900974 %
20	.182	.1808	-1.200005E-03	-.6637198 %
30	.24	.2404	3.999919E-04	.166386 %

93ZF53S02

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.011	1.170001E-02	7.000119E-04	5.983001 %
10	.082	.0829	9.000003E-04	1.085646 %
20	.158	.1541	-3.900007E-03	-2.530828 %
30	.223	.2253	2.299979E-03	1.020852 %

93ZF53D02

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.011	8.799988E-03	-2.200012E-03	-25.00017 %
10	.075	8.159999E-02	6.599985E-03	8.088219 %
20	.161	.1544	-6.600008E-03	-4.274616 %
30	.225	.2272	2.200008E-03	.9683131 %

93ZF53S03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.011	7.299988E-03	-3.700012E-03	-50.68519 %
10	7.900001E-02	8.509999E-02	6.099984E-03	7.16802 %
20	.164	.1629	-1.100019E-03	-.6752724 %
30	.242	.2407	-1.300022E-03	-.5401006 %

93ZF53S11DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.078	7.669995E-02	-1.300052E-03	-1.694984 %
10	.139	.1419	2.899975E-03	2.043675 %
20	.209	.2071	-1.900002E-03	-.9174323 %
30	.272	.2723	2.999902E-04	.110169 %

B. Lyne
7-30-93

93ZE33R60

SPIKE	MEASURED	CALC.	ERROR	PER CENT

93ZE33R60

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-3.199982E-03	-2.199982E-03	68.74983 %
10	.089	8.910002E-02	1.000166E-04	.1122521 %
20	.175	.1814	6.400019E-03	3.528125 %
30	.278	.2737	-4.299999E-03	-1.571063 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.228	.2318	3.79999E-03	1.63934 %
10	.324	.3156	-8.399993E-03	-2.661595 %
20	.394	.3994	5.400032E-03	1.352036 %
30	.484	.4832001	-7.99954E-04	-.1655534 %

B. Yue..
7-30-93

As	AA-BG	BG			
MAIN: -0.005	PA -0.005				

0.000 AUTOZERO

As	AA-BG	BG	As	AA-BG	BG
MAIN: 0.008	PA 0.003		MAIN: 0.084	PA 0.079	
As	AA-BG	BG	As	AA-BG	BG
MAIN: 0.191	PA 0.186		MAIN: 0.294	PA 0.289	
As	AA-BG	BG	Not used BY 7-30-93		
MAIN: -0.008	PA -0.008				

0.000 AUTOZERO

As	AA-BG	BG	As	AA-BG	BG
MAIN: 0.009	PA 0.001		MAIN: 0.094	PA 0.086	
As	AA-BG	BG	As	AA-BG	BG
MAIN: 0.211	PA 0.203		MAIN: 0.282	PA 0.274	
As	AA-BG	BG	As	AA-BG	BG
MAIN: 0.010	PA 0.002 autozero		MAIN: 0.006	PA -0.002 Blank +0	
As	AA-BG	BG	As	AA-BG	BG
MAIN: 0.112	PA 0.104 Blank +10		MAIN: 0.194	PA 0.186 Blank +20	
As	AA-BG	BG	As	AA-BG	BG
MAIN: 0.306	PA 0.298 Blank +30		MAIN: 0.013	PA 0.005 Blank cup	
As	AA-BG	BG	As	AA-BG	BG
MAIN: 0.253	PA 0.245 +0		MAIN: 0.330	PA 0.322 +10	
As	AA-BG	BG	As	AA-BG	BG
MAIN: 0.442	PA 0.434 +20		MAIN: 0.493	PA 0.485 +30	
As	AA-BG	BG	As	AA-BG	BG
MAIN: 0.229	PA 0.221 +0		MAIN: 0.317	PA 0.309 +10	
As	AA-BG	BG	As	AA-BG	BG
MAIN: 0.397	PA 0.389 +20		MAIN: 0.491	PA 0.483 +30	
As	AA-BG	BG	As	AA-BG	BG
MAIN: 0.078	PA 0.070 +0		MAIN: 0.152	PA 0.144 +10	

AQC

AQC

B. Lyons 7-30-93

93ZE33539 Dup	As MAIN: 0.220	AA-BG PA 0.212 +20	BG	As MAIN: 0.266	AA-BG PA 0.258 +30	BG
93ZE33539 SpK x 4	As MAIN: 0.105	AA-BG PA 0.097 +0	BG	As MAIN: 0.164	AA-BG PA 0.156 +10	BG
	As MAIN: 0.242	AA-BG PA 0.234 +20	BG	As MAIN: 0.308	AA-BG PA 0.300 +30	BG
93ZE33539 Dup	As MAIN: 0.084	AA-BG PA 0.076 +0	BG	As MAIN: 0.155	AA-BG PA 0.147 +10	BG
SF1187	As MAIN: 0.236	AA-BG PA 0.228 +20	BG	As MAIN: 0.283	AA-BG PA 0.275 +30	BG
SF1191	As MAIN: 0.167	AA-BG PA 0.159 +0	BG	As MAIN: 0.129	AA-BG PA 0.121 +10	BG
93ZF53511 SpK x 2	As MAIN: 0.201	AA-BG PA 0.193 +20	BG	As MAIN: 0.246	AA-BG PA 0.238 +30	BG
93ZF53511 SpK x 3	As MAIN: 0.150	AA-BG PA 0.142 +0	BG	As MAIN: 0.211	AA-BG PA 0.203 +10	BG
	As MAIN: 0.291	AA-BG PA 0.283 +20	BG	As MAIN: 0.343	AA-BG PA 0.335 +30	BG
AQC	As MAIN: 0.238	AA-BG PA 0.230 +0	BG	As MAIN: 0.329	AA-BG PA 0.321 +10	BG
	As MAIN: 0.408	AA-BG PA 0.400 +20	BG	As MAIN: 0.513	AA-BG PA 0.505 +30	BG
	As MAIN: 0.002	AA-BG PA-0.006 Blank cup	BG	As MAIN: 0.075	AA-BG PA 0.067 93ZF53511 +0	BG
	As MAIN: 0.148	AA-BG PA 0.140 93ZF53511 +10	BG	As MAIN: 0.221	AA-BG PA 0.213 93ZF53511 +20	BG
	As MAIN: 0.298	AA-BG PA 0.290 93ZF53511 +30	BG	As MAIN: 0.070	AA-BG PA 0.062 93ZE33539 Dup +0	BG
SF1187	As MAIN: 0.128	AA-BG PA 0.120 93ZE33539 Dup +10	BG	As MAIN: 0.190	AA-BG PA 0.182 93ZE33539 Dup +20	BG

B. L. Jones 7-30-93

	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.248	PA 0.240		MAIN: 0.019	PA 0.011		
		93ZE33S39Dup +30			93ZF53S02+0		
SF1191 93ZF53S02	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.090	PA 0.082		MAIN: 0.166	PA 0.158		
		+10			+20		
	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.231	PA 0.223		MAIN: 0.019	PA 0.011		
		93ZF53S02+30			93ZF53D02+0		
93ZF53D02	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.083	PA 0.075		MAIN: 0.169	PA 0.161		
		+10			+20		
	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.233	PA 0.225		MAIN: 0.019	PA 0.011		
		93ZF53D02+30			93ZF53S03+0		
93ZF53S03	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.087	PA 0.079		MAIN: 0.172	PA 0.164		
		+10			+20		
	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.250	PA 0.242		MAIN: 0.011	PA 0.003		
		93ZF53S03+30			Blank cup		
93ZF53S11 Dup	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.086	PA 0.078		MAIN: 0.147	PA 0.139		
		+0			+10		
	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.217	PA 0.209		MAIN: 0.280	PA 0.272		
		+20			+30		
93ZE33R60	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.007	PA-0.001		MAIN: 0.097	PA 0.089		
		+0			+10		
	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.183	PA 0.175		MAIN: 0.286	PA 0.278		
		+20			+30		
AQC	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.236	PA 0.228		MAIN: 0.332	PA 0.324		
		+0			+10		
	As	AA-BG	BG	As	AA-BG	BG	
	MAIN: 0.402	PA 0.394		MAIN: 0.492	PA 0.484		
		+20			+30		
	As	AA-BG	BG				
	MAIN: 0.007	PA-0.001					
		Blank cup					

B. Lynen
7-30-93

AAS RUN LOG

Element As

Date 7-29-93

Analyst B. Yuen

Data Set SF1187

	ID	spike	comment.
1	Blank	0	
2		10	
3		20	
4		30	
5	AQC	0	TV=25 µg/l
6		10	
7		20	
8		30	
9	93ZE33539 Dup	0	SF1187 Rerun
10		10	
11		20	
12		30	
13	93ZE33539 SpK x4	0	
14		10	
15		20	
16		30	
17	93ZE33539 Dup	0	Rerun
18		10	
19		20	
20		30	
21	93ZF53511 SpK x2	0	SF1191 Rerun
22		10	
23		20	
24		30	
25	93ZF53511 SpK x3	0	
26		10	B. Yuen
27		20	7-30-93

AAS RUN LOG

Element As

Date 7-29-93

Analyst B. Ufner

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	93ZF53S11	0	Rerun
2		10	
3		20	
4		30	
5	93ZE33S39 Dup	0	Rerun
6		10	
7		20	
8		30	
9	93ZF53S02	0	
10		10	
11		20	
12		30	
13	93ZF53D02	0	
14		10	
15		20	
16		30	
17	93ZF53S03	0	B. Ufner
18		10	
19		20	7-30-93
20		30	

AAS RUN LOG

Element As

Analyst B. Lynn

Date 7-29-93

Data Set SF1187

	ID	spike	comment
21	93ZF53511 Dup	0	SF1191 Rerun
22		10	
23		20	
24		30	
25	93ZE33R60	0	SF1187
26		10	
27		20	
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 3		
1		0	
2		10	
3		20	
4		30	
5		0	B. Lynn
6		10	
7		20	7-30-93
8		30	
9		0	
10		10	
11		20	
12		30	
13		0	

Element	Instrument	QC Source
☐ Ag	☐ 5100 A3	☐ CLP-40
☒ As	☐ 5100 A6	☐ CLP-70
☐ Cd	☒ 5000 A4	☒ CLP-80
☐ Cr	☐ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☐
☐ Sb	☐	☐
☐ Se		☐
☐ Tl		☐

Analyst B. Lynen

Date 7-29-93

Lamp # 8316

Energy 37

Expansion 3

Stock 3-104 As Opened: 3-16-93
Expires: 10-31-93

☐ platform ☐ MSC

☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
-0.08	0.00982	25.47 25.26 27.66	① S39: Spike %R = 87.2 Limit = 85 - 115 % ② S11: Spike %R = 108.4 Limit = 85 - 115 %

Blank cup absorbance
-0.006
-0.001

B. Lynen
7-30-93

Perkin-Elmer Model 5100 PC
Report Of Analytical Results
July 02, 1993

L. Leonova

Data File: CDLL702.DAT
Data Collected: 07/02/93 At: 09:34:21 By: LL

SF1187, SF 1191

	Cd ug/L		
lank	0.000	r= 0.99964	
tandard 1	2.000		
tandard 2	1.500		
tandard 3	1.000		
tandard 4	0.500		
QC 1.25 UG/L	1.221	%R=97.7	Limit = 100±10%
CB1	0.063	0.2 U	Limit = ± 0.2 µg/l
IJ.BLK	0.086	%R=96	0.2U Limit = ±0.2 µg/l
IJ.BLK+1	1.044		
3ZF53S11SPKx5	1.076	%R=96.8	Adj. conc = 0.269 mg/kg; Adj. spike conc = 0.25 mg/kg; %R=107.6; Limit=85-115%
3ZF53S11SPx5+1	2.044		
3ZF53S11DDUP	0.203	%R=98.6	~~0.02~~ 0.01 mg/kg - Adj. conc.
3ZF53S11DDUP+1	1.189		
3ZE33S40	2.211	%R=86	- rerun delisted below.
3ZE33S40+1	3.070		
3ZE33S11x2	1.200	%R=89	- not used.
3ZE33S[illegible]x2+1 LL 7/2/93	2.088		
QC 1.25 UG/L	1.239	%R=99.1	Limit = 100 ± 10%
CB2	0.074	0.2u	Limit = ±0.2 µg/l
3ZE33D40x2	0.916	%R=93.7	Adj. conc = 0.18 mg/kg
3ZE33D40x2+1	1.853		
3ZE33S40DDUPx2	0.980	%R=99.1	Adj. conc = 0.197 mg/kg; Dupl. diff=5.7%; Limit=20%
3ZE33S40DDUP+1	1.971		
3ZE33S40x2	1.192	%R=89.2	- RERUN below
3ZE33S40x2+1	2.084		
3ZE33S40SPx100	0.547	%R=99	Adj. conc = 5.475 mg/kg; Adj. spike conc = 5 mg/kg; %R=109.5; Limit = 80 -120%
3ZE33S40SP+1	1.537		
3ZE33S36	0.102	%R=92.5	0.2u
3ZES33S36+1	1.027		
QC 1.25 UG/L	1.341	%R=107.3	Limit = 100±10%
CB3	0.044	0.2u	Limit = ± 0.2 µg/l
3ZE33S40x2WDup	1.266	%R=86	- out, RERUN with another sample.
3ZE33S40x2+1WDup	2.124		
3ZE33S37	-0.002	%R=105	0.2U
3ZE33S37+1	1.049		
3ZE33D37	0.030	%R=95.8	0.2u
3ZE33D37+1	0.988		
3ZE33S36WDUP	0.030	%R=112%	0.2u (Sample's conc < IDL, therefore acceptable).
3ZE33S39+1WD	1.091		
3ZE33D40	1.239	84.5	- not used.
3ZE33D40+1	2.084		
QC 1.25 UG/L	1.293	%R=103.4	Limit = 100±10%
CB1	0.070	0.2u	Limit = ± 0.2 µg/l
3ZE33R60	0.035	%R= 99.1	0.2u
3ZE33R60+1	1.026		
3ZE33R62	0.078	%R=96.1	0.2u
3ZE33R62+1	1.039		
3ZE33R64	0.060	%R=93.2	0.2u
3ZE33R64+1	0.992		
3ZE33S40x3	0.626	%R=96.1	Adj. cocn=0.186 mg/kg
3ZE33S40x3+1	1.587		
3ZE53S12 SF 1191	0.634	%R=92.8	Adj. conc = 0.63 ug/L

L. Leonova
7/3/93

	Cd ug/L		
3ZF53S12+1	1.562		
QC 1.25 UG/L	1.275	%R=102	Limit = 100 ±10%
CB2	0.067	0.2u	Limit = ± 0.2 µg/L
3ZF53S13	0.147	%R=97.7	0.2u
3ZF53S13+1	1.124		
3ZF53D13	0.210	%R=96.2	0.21 ug/L
3ZF53D13+1	1.172		
3ZF53R01	0.106	%R=97	0.2u
3ZF53R01+1	1.076		
3ZF53R03	-0.021	%R=108	0.2u
3ZF53R03+1	1.058		
3ZF53S13WDUP	0.092	%R=102	0.2u
3ZF53S13WDUP+1	1.112		
QC 1.25 UG/L	1.296	%R=103.7	Limit = 100 ± 10%
CB3	0.070	0.2u	Limit = ±0.2 µg/L

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nalyst: L. Leonova 07/02/93 Supervisor: _____

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L. Leonova
7/3/93

L. Leonova
7/2/93

Element File: CDMSC.GEL
Date: 07/02/93
Data Storage File: CDLL702.DAT
Technique: HGA

Element: Cd
Time: 09:31
ID/Weight File: CDBY802.A60
Calibration Type: Linear

ID: Blank Seq. No.: 00001 A/S Pos.: 1 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 1
Replicate 1 Time: 09:34
Peak Area (A-s): 0.012 Peak Height (A): 0.023
Background Pk Area (A-s): 0.267 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): -0.023
Concentration (ug/L): -0.229

Auto-zero performed.

ID: Standard 1 Seq. No.: 00002 A/S Pos.: 2 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 2
Replicate 1 Time: 09:37
Peak Area (A-s): 0.131 Peak Height (A): 0.238
Background Pk Area (A-s): 0.228 Background Pk Height (A): 0.094
Blank Corrected Pk Area (A-s): 0.118
Concentration (ug/L): 1.944

Standard number 1 applied. [2.000]

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7/3/93

Correlation coefficient: 1.00000 Slope: 0.0592 Int: 0.000

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ID: Standard 2 Seq. No.: 00003 A/S Pos.: 3 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 3
Replicate 1 Time: 09:41
Peak Area (A-s): 0.104 Peak Height (A): 0.192
Background Pk Area (A-s): 0.225 Background Pk Height (A): 0.086
Blank Corrected Pk Area (A-s): 0.092
Concentration (ug/L): 1.550

Standard number 2 applied. [1.500]
Correlation coefficient: 0.99965 Slope: 0.0597 Int: 0.000

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ID: Standard 3 Seq. No.: 00004 A/S Pos.: 4 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 4
Replicate 1 Time: 09:44
Peak Area (A-s): 0.072 Peak Height (A): 0.127
Background Pk Area (A-s): 0.224 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.060
Concentration (ug/L): 0.992

Standard number 3 applied. [1.000]
Correlation coefficient: 0.99965 Slope: 0.0597 Int: 0.000

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ID: Standard 4 Seq. No.: 00005 A/S Pos.: 5 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 5
Replicate 1 Time: 09:47
Peak Area (A-s): 0.041 Peak Height (A): 0.078
Background Pk Area (A-s): 0.224 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): 0.029
Concentration (ug/L): 0.480

Standard number 4 applied. [0.500]
Correlation coefficient: 0.99964 Slope: 0.0600 Int: -0.000

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ID: AQC 1.25 UG/L Seq. No.: 00006 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 37
Replicate 1 Time: 09:50
Peak Area (A-s): 0.085 Peak Height (A): 0.159
Background Pk Area (A-s): 0.219 Background Pk Height (A): 0.075
Blank Corrected Pk Area (A-s): 0.073
Concentration (ug/L): 1.221

Check sample is within range 1.125 - 1.375

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ID: CCB1 Seq. No.: 00007 A/S Pos.: 6 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 6
Replicate 1 Time: 09:54
Peak Area (A-s): 0.016 Peak Height (A): 0.026

L. Leonora 7/3/93
L. Leonora 7/2/93
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Background Pk Area (A-s): 0.198 Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 0.063

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ID: DIJ.BLK Seq. No.: 00008 A/S Pos.: 7 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 7
Replicate 1 Time: 09:57
Peak Area (A-s): 0.017 Peak Height (A): 0.034
Background Pk Area (A-s): 0.200 Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.005
Concentration (ug/L): 0.086

~~~~~~

ID: DIJ.BLK+1 Seq. No.: 00009 A/S Pos.: 8 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 8
Replicate 1 Time: 10:00
Peak Area (A-s): 0.075 Peak Height (A): 0.142
Background Pk Area (A-s): 0.210 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 1.044

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ID: 93ZF53S11SPKx5 Seq. No.: 00010 A/S Pos.: 9 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 9
Replicate 1 Time: 10:03
Peak Area (A-s): 0.077 Peak Height (A): 0.139
Background Pk Area (A-s): 0.382 Background Pk Height (A): 0.110
Blank Corrected Pk Area (A-s): 0.064
Concentration (ug/L): 1.076

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ID: 93ZF53S11SPx5+1 Seq. No.: 00011 A/S Pos.: 10 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 10
Replicate 1 Time: 10:07
Peak Area (A-s): 0.135 Peak Height (A): 0.254
Background Pk Area (A-s): 0.389 Background Pk Height (A): 0.119
Blank Corrected Pk Area (A-s): 0.122
Concentration (ug/L): 2.044

~~~~~~

ID: 93ZF53S11DDUP Seq. No.: 00012 A/S Pos.: 11 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 11
Replicate 1 Time: 10:10
Peak Area (A-s): 0.024 Peak Height (A): 0.046
Background Pk Area (A-s): 0.730 Background Pk Height (A): 0.243
Blank Corrected Pk Area (A-s): 0.012
Concentration (ug/L): 0.203

~~~~~~

ID: 93ZF53S11DDUP+1 Seq. No.: 00013 A/S Pos.: 12 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 12
Replicate 1 Time: 10:13

L. Leonard 7/2/93
L. Leonard 7/2/93

Peak Area (A-s): 0.083　　Peak Height (A): 0.159
Background Pk Area (A-s): 0.734　　Background Pk Height (A): 0.238
Blank Corrected Pk Area (A-s): 0.071
Concentration (ug/L): 1.189

~~~~~~

ID: 93ZF33S40　　Seq. No.: 00014　　A/S Pos.: 13　　Date: 07/02/93

µL dispensed: 5 from 36, 15 from 13
Sample abs. is greater than that of the largest standard.
Replicate 1　　Time: 10:17
Peak Area (A-s): 0.145　　Peak Height (A): 0.249
Background Pk Area (A-s): 1.097　　Background Pk Height (A): 0.349
Blank Corrected Pk Area (A-s): 0.132
Concentration (ug/L): 2.211

RERUN 1:1 dilution LL

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ID: 93ZF33S40+1　　Seq. No.: 00015　　A/S Pos.: 14　　Date: 07/02/93

µL dispensed: 5 from 36, 15 from 14
Sample abs. is greater than that of the largest standard.
Replicate 1　　Time: 10:20
Peak Area (A-s): 0.196　　Peak Height (A): 0.342
Background Pk Area (A-s): 1.119　　Background Pk Height (A): 0.359
Blank Corrected Pk Area (A-s): 0.184
Concentration (ug/L): 3.070

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ID: 93ZF33S[redacted]x2 LL 7/2/93　　Seq. No.: 00016　　A/S Pos.: 15　　Date: 07/02/93

µL dispensed: 5 from 36, 15 from 15
Replicate 1　　Time: 10:23
Peak Area (A-s): 0.084　　Peak Height (A): 0.158
Background Pk Area (A-s): 1.056　　Background Pk Height (A): 0.325
Blank Corrected Pk Area (A-s): 0.072
Concentration (ug/L): 1.200

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ID: 93ZF33S[redacted]x2+1 LL 7/2/93　　Seq. No.: 00017　　A/S Pos.: 16　　Date: 07/02/93

µL dispensed: 5 from 36, 15 from 16
Replicate 1　　Time: 10:26
Peak Area (A-s): 0.137　　Peak Height (A): 0.253
Background Pk Area (A-s): 1.032　　Background Pk Height (A): 0.318
Blank Corrected Pk Area (A-s): 0.125
Concentration (ug/L): 2.088

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ID: AQC 1.25 UG/L　　Seq. No.: 00018　　A/S Pos.: 37　　Date: 07/02/93

µL dispensed: 5 from 36, 15 from 37
Replicate 1　　Time: 10:29
Peak Area (A-s): 0.086　　Peak Height (A): 0.172
Background Pk Area (A-s): 0.212　　Background Pk Height (A): 0.073
Blank Corrected Pk Area (A-s): 0.074
Concentration (ug/L): 1.239

Check sample is within range 1.125 - 1.375

L. Leonora 7/3/93
L. Leonora 7/2/93
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ID: CCB2 Seq. No.: 00019 A/S Pos.: 17 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 17
Replicate 1 Time: 10:33
Peak Area (A-s): 0.016 Peak Height (A): 0.029
Background Pk Area (A-s): 0.180 Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 0.074

~~~~~~

ID: 93ZF33D40x2 Seq. No.: 00020 A/S Pos.: 18 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 18
Replicate 1 Time: 10:36
Peak Area (A-s): 0.067 Peak Height (A): 0.127
Background Pk Area (A-s): 0.932 Background Pk Height (A): 0.304
Blank Corrected Pk Area (A-s): 0.055
Concentration (ug/L): 0.916

~~~~~~

ID: 93ZF33D40x2+1 Seq. No.: 00021 A/S Pos.: 19 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 19
Replicate 1 Time: 10:39
Peak Area (A-s): 0.123 Peak Height (A): 0.218
Background Pk Area (A-s): 0.823 Background Pk Height (A): 0.279
Blank Corrected Pk Area (A-s): 0.111
Concentration (ug/L): 1.853

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ID: 93ZF33S40DDUPx2 Seq. No.: 00022 A/S Pos.: 20 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 20
Replicate 1 Time: 10:42
Peak Area (A-s): 0.071 Peak Height (A): 0.139
Background Pk Area (A-s): 0.967 Background Pk Height (A): 0.307
Blank Corrected Pk Area (A-s): 0.059
Concentration (ug/L): 0.980

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ID: 93ZF33S40DDUP+1 Seq. No.: 00023 A/S Pos.: 21 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 21
Replicate 1 Time: 10:45
Peak Area (A-s): 0.130 Peak Height (A): 0.240
Background Pk Area (A-s): 0.991 Background Pk Height (A): 0.305
Blank Corrected Pk Area (A-s): 0.118
Concentration (ug/L): 1.971

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ID: 93ZF33S40x2 W·Dup Seq. No.: 00024 A/S Pos.: 22 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 22
Replicate 1 Time: 10:48
Peak Area (A-s): 0.084 Peak Height (A): 0.158
Background Pk Area (A-s): 1.064 Background Pk Height (A): 0.328
Blank Corrected Pk Area (A-s): 0.071

L. Leonard 7/2/93
L. Leonard

Concentration (ug/L): 1.192

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ID: 93ZF33S40x2+1 Seq. No.: 00025 A/S Pos.: 23 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 23
Replicate 1 Time: 10:52
Peak Area (A-s): 0.137 Peak Height (A): 0.259
Background Pk Area (A-s): 1.087 Background Pk Height (A): 0.346
Blank Corrected Pk Area (A-s): 0.125
Concentration (ug/L): 2.084

~~~~~~

ID: 93ZF33S40SPx100 Seq. No.: 00026 A/S Pos.: 24 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 24
Replicate 1 Time: 10:55
Peak Area (A-s): 0.045 Peak Height (A): 0.090
Background Pk Area (A-s): 0.227 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.033
Concentration (ug/L): 0.547

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ID: 93ZF33S40SP+1 Seq. No.: 00027 A/S Pos.: 25 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 25
Replicate 1 Time: 10:58
Peak Area (A-s): 0.104 Peak Height (A): 0.204
Background Pk Area (A-s): 0.236 Background Pk Height (A): 0.088
Blank Corrected Pk Area (A-s): 0.092
Concentration (ug/L): 1.537

~~~~~~

ID: 93ZF33S36 Seq. No.: 00028 A/S Pos.: 26 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 26
Replicate 1 Time: 11:01
Peak Area (A-s): 0.018 Peak Height (A): 0.034
Background Pk Area (A-s): 0.459 Background Pk Height (A): 0.149
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L): 0.102

~~~~~~

ID: 93ZFS33S36+1 Seq. No.: 00029 A/S Pos.: 27 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 27
Replicate 1 Time: 11:05
Peak Area (A-s): 0.074 Peak Height (A): 0.146
Background Pk Area (A-s): 0.474 Background Pk Height (A): 0.147
Blank Corrected Pk Area (A-s): 0.061
Concentration (ug/L): 1.027

~~~~~~

ID: AQC 1.25 UG/L Seq. No.: 00030 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 37
Replicate 1 Time: 11:08
Peak Area (A-s): 0.092 Peak Height (A): 0.174
Background Pk Area (A-s): 0.189 Background Pk Height (A): 0.076

L. Leonora
7/2/93
L. Leonora
7/3/93

Blank Corrected Pk Area (A-s): 0.080
Concentration (ug/L): 1.341

Check sample is within range 1.125 - 1.375

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ID: CCB3 Seq. No.: 00031 A/S Pos.: 28 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 28
Replicate 1 Time: 11:11
Peak Area (A-s): 0.015 Peak Height (A): 0.029
Background Pk Area (A-s): 0.171 Background Pk Height (A): 0.056
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.044

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ID: 93ZF33S40x2 V. Dup Seq. No.: 00032 A/S Pos.: 29 Date: 07/02/93
ZZ 7/2/93
uL dispensed: 5 from 36, 15 from 29
Replicate 1 Time: 11:14
Peak Area (A-s): 0.088 Peak Height (A): 0.159
Background Pk Area (A-s): 1.041 Background Pk Height (A): 0.322
Blank Corrected Pk Area (A-s): 0.076
Concentration (ug/L): 1.266

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ID: 93ZF33S40x2+1 V. Dup Seq. No.: 00033 A/S Pos.: 30 Date: 07/02/93
ZZ 7/2/93
uL dispensed: 5 from 36, 15 from 30
Replicate 1 Time: 11:18
Peak Area (A-s): 0.139 Peak Height (A): 0.260
Background Pk Area (A-s): 1.068 Background Pk Height (A): 0.339
Blank Corrected Pk Area (A-s): 0.127
Concentration (ug/L): 2.124

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ID: 93ZF33S37 Seq. No.: 00034 A/S Pos.: 31 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 31
Replicate 1 Time: 11:21
Peak Area (A-s): 0.012 Peak Height (A): 0.029
Background Pk Area (A-s): 0.477 Background Pk Height (A): 0.154
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.002

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ID: 93ZF33S37+1 Seq. No.: 00035 A/S Pos.: 32 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 32
Replicate 1 Time: 11:24
Peak Area (A-s): 0.075 Peak Height (A): 0.144
Background Pk Area (A-s): 0.493 Background Pk Height (A): 0.156
Blank Corrected Pk Area (A-s): 0.063
Concentration (ug/L): 1.049

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ID: 93ZF33D37 Seq. No.: 00036 A/S Pos.: 33 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 33

L. Leonova
L. Leonova 7/3/93
7/2/93

Replicate 1 Time: 11:27
Peak Area (A-s): 0.014 Peak Height (A): 0.027
Background Pk Area (A-s): 0.467 Background Pk Height (A): 0.154
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.030

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ID: 93ZF33D37+1 Seq. No.: 00037 A/S Pos.: 34 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 34
Replicate 1 Time: 11:31
Peak Area (A-s): 0.071 Peak Height (A): 0.142
Background Pk Area (A-s): 0.485 Background Pk Height (A): 0.154
Blank Corrected Pk Area (A-s): 0.059
Concentration (ug/L): 0.988

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ID: 93ZF33S36WDUP Seq. No.: 00038 A/S Pos.: 35 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 35
Replicate 1 Time: 11:34
Peak Area (A-s): 0.014 Peak Height (A): 0.031
Background Pk Area (A-s): 0.457 Background Pk Height (A): 0.145
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.030

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ID: 93ZF33S39+1WD Seq. No.: 00039 A/S Pos.: 38 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 38
Replicate 1 Time: 11:37
Peak Area (A-s): 0.077 Peak Height (A): 0.148
Background Pk Area (A-s): 0.470 Background Pk Height (A): 0.147
Blank Corrected Pk Area (A-s): 0.065
Concentration (ug/L): 1.091

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ID: 93ZF33D40 Seq. No.: 00040 A/S Pos.: 39 Date: 07/02/93
LL 7/2/93
uL dispensed: 5 from 36, 15 from 39
Replicate 1 Time: 11:40
Peak Area (A-s): 0.086 Peak Height (A): 0.166
Background Pk Area (A-s): 1.071 Background Pk Height (A): 0.328
Blank Corrected Pk Area (A-s): 0.074
Concentration (ug/L): 1.239

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ID: 93ZF33D40+1 Seq. No.: 00041 A/S Pos.: 40 Date: 07/02/93
LL 7/2/93
uL dispensed: 5 from 36, 15 from 40
Replicate 1 Time: 11:43
Peak Area (A-s): 0.137 Peak Height (A): 0.269
Background Pk Area (A-s): 1.082 Background Pk Height (A): 0.344
Blank Corrected Pk Area (A-s): 0.125
Concentration (ug/L): 2.084

~~~~~~

ID: AQC 1.25 UG/L Seq. No.: 00042 A/S Pos.: 37 Date: 07/02/93

L. Leonora 7/3/93 L. Leonora 7/2/93

µL dispensed: 5 from 36, 15 from 37
Replicate 1 Time: 11:48
Peak Area (A-s): 0.090 Peak Height (A): 0.166
Background Pk Area (A-s): 0.187 Background Pk Height (A): 0.072
Blank Corrected Pk Area (A-s): 0.077
Concentration (ug/L): 1.293

Check sample is within range 1.125 - 1.375

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ID: CCB1 Seq. No.: 00043 A/S Pos.: 6 Date: 07/02/93

µL dispensed: 5 from 36, 15 from 6
Replicate 1 Time: 11:51
Peak Area (A-s): 0.016 Peak Height (A): 0.034
Background Pk Area (A-s): 0.172 Background Pk Height (A): 0.058
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 0.070

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ID: 93ZF33R60 Seq. No.: 00044 A/S Pos.: 7 Date: 07/02/93

µL dispensed: 5 from 36, 15 from 7
Replicate 1 Time: 11:55
Peak Area (A-s): 0.014 Peak Height (A): 0.028
Background Pk Area (A-s): 0.172 Background Pk Height (A): 0.055
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.035

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ID: 93ZF33R60+1 Seq. No.: 00045 A/S Pos.: 8 Date: 07/02/93

µL dispensed: 5 from 36, 15 from 8
Replicate 1 Time: 11:58
Peak Area (A-s): 0.074 Peak Height (A): 0.141
Background Pk Area (A-s): 0.181 Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): 0.061
Concentration (ug/L): 1.026

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ID: 93ZF33R62 Seq. No.: 00046 A/S Pos.: 9 Date: 07/02/93

µL dispensed: 5 from 36, 15 from 9
Replicate 1 Time: 12:01
Peak Area (A-s): 0.017 Peak Height (A): 0.030
Background Pk Area (A-s): 0.168 Background Pk Height (A): 0.054
Blank Corrected Pk Area (A-s): 0.005
Concentration (ug/L): 0.078

~~~~~~

ID: 93ZF33R62+1 Seq. No.: 00047 A/S Pos.: 10 Date: 07/02/93

µL dispensed: 5 from 36, 15 from 10
Replicate 1 Time: 12:05
Peak Area (A-s): 0.074 Peak Height (A): 0.145
Background Pk Area (A-s): 0.185 Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 1.039

L. Leonova
7/3/93
L. Leonova
7/2/93
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ID: 93ZF33R64 Seq. No.: 00048 A/S Pos.: 11 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 11
Replicate 1 Time: 12:08
Peak Area (A-s): 0.016 Peak Height (A): 0.027
Background Pk Area (A-s): 0.170 Background Pk Height (A): 0.053
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 0.060

ID: 93ZF33R64+1 Seq. No.: 00049 A/S Pos.: 12 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 12
Replicate 1 Time: 12:11
Peak Area (A-s): 0.072 Peak Height (A): 0.143
Background Pk Area (A-s): 0.189 Background Pk Height (A): 0.072
Blank Corrected Pk Area (A-s): 0.059
Concentration (ug/L): 0.992

ID: 93ZF33S40x3 Seq. No.: 00050 A/S Pos.: 13 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 13
Replicate 1 Time: 12:15
Peak Area (A-s): 0.050 Peak Height (A): 0.100
Background Pk Area (A-s): 0.805 Background Pk Height (A): 0.264
Blank Corrected Pk Area (A-s): 0.037
Concentration (ug/L): 0.626

ID: 93ZF33S40x3+1 Seq. No.: 00051 A/S Pos.: 14 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 14
Replicate 1 Time: 12:18
Peak Area (A-s): 0.107 Peak Height (A): 0.210
Background Pk Area (A-s): 0.866 Background Pk Height (A): 0.276
Blank Corrected Pk Area (A-s): 0.095
Concentration (ug/L): 1.587

ID: 93ZF53S12 Seq. No.: 00052 A/S Pos.: 15 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 15
Replicate 1 Time: 12:21
Peak Area (A-s): 0.050 Peak Height (A): 0.100
Background Pk Area (A-s): 1.664 Background Pk Height (A): 0.853
Blank Corrected Pk Area (A-s): 0.038
Concentration (ug/L): 0.634

ID: 93ZF53S12+1 Seq. No.: 00053 A/S Pos.: 16 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 16
Replicate 1 Time: 12:24
Peak Area (A-s): 0.106 Peak Height (A): 0.206
Background Pk Area (A-s): 1.664 Background Pk Height (A): 0.880
Blank Corrected Pk Area (A-s): 0.093

L. Leonova 7/3/93
L. Leonova 7/2/93

Concentration (ug/L): 1.562

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ID: AQC 1.25 UG/L Seq. No.: 00054 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 37
Replicate 1 Time: 12:28
Peak Area (A-s): 0.089 Peak Height (A): 0.163
Background Pk Area (A-s): 0.201 Background Pk Height (A): 0.075
Blank Corrected Pk Area (A-s): 0.076
Concentration (ug/L): 1.275

Check sample is within range 1.125 - 1.375

~~~~~~

ID: CCB2 Seq. No.: 00055 A/S Pos.: 17 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 17
Replicate 1 Time: 12:31
Peak Area (A-s): 0.016 Peak Height (A): 0.030
Background Pk Area (A-s): 0.177 Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 0.067

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ID: 93ZF53S13 Seq. No.: 00056 A/S Pos.: 18 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 18
Replicate 1 Time: 12:34
Peak Area (A-s): 0.021 Peak Height (A): 0.032
Background Pk Area (A-s): 0.523 Background Pk Height (A): 0.170
Blank Corrected Pk Area (A-s): 0.009
Concentration (ug/L): 0.147

~~~~~~

ID: 93ZF53S13+1 Seq. No.: 00057 A/S Pos.: 19 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 19
Replicate 1 Time: 12:37
Peak Area (A-s): 0.079 Peak Height (A): 0.149
Background Pk Area (A-s): 0.549 Background Pk Height (A): 0.178
Blank Corrected Pk Area (A-s): 0.067
Concentration (ug/L): 1.124

~~~~~~

ID: 93ZF53D13 Seq. No.: 00058 A/S Pos.: 20 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 20
Replicate 1 Time: 12:40
Peak Area (A-s): 0.025 Peak Height (A): 0.050
Background Pk Area (A-s): 0.649 Background Pk Height (A): 0.216
Blank Corrected Pk Area (A-s): 0.012
Concentration (ug/L): 0.210

~~~~~~

ID: 93ZF53D13+1 Seq. No.: 00059 A/S Pos.: 21 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 21
Replicate 1 Time: 12:43

L. Leonora 7/2/93
L. Leonora 7/3/93

Peak Area (A-s): 0.082 Peak Height (A): 0.152
Background Pk Area (A-s): 0.654 Background Pk Height (A): 0.214
Blank Corrected Pk Area (A-s): 0.070
Concentration (ug/L): 1.172

~~~~~~

ID: 93ZF53R01 Seq. No.: 00060 A/S Pos.: 22 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 22
Replicate 1 Time: 12:47
Peak Area (A-s): 0.018 Peak Height (A): 0.031
Background Pk Area (A-s): 0.176 Background Pk Height (A): 0.055
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L): 0.106

~~~~~~

ID: 93ZF53R01+1 Seq. No.: 00061 A/S Pos.: 23 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 23
Replicate 1 Time: 12:50
Peak Area (A-s): 0.077 Peak Height (A): 0.145
Background Pk Area (A-s): 0.183 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.064
Concentration (ug/L): 1.076

~~~~~~

ID: 93ZF53R03 Seq. No.: 00062 A/S Pos.: 24 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 24
Replicate 1 Time: 12:53
Peak Area (A-s): 0.011 Peak Height (A): 0.029
Background Pk Area (A-s): 0.175 Background Pk Height (A): 0.054
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.021

~~~~~~

ID: 93ZF53R03+1 Seq. No.: 00063 A/S Pos.: 25 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 25
Replicate 1 Time: 12:56
Peak Area (A-s): 0.075 Peak Height (A): 0.145
Background Pk Area (A-s): 0.190 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.063
Concentration (ug/L): 1.058

~~~~~~

ID: 93ZF53S13WDUP Seq. No.: 00064 A/S Pos.: 26 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 26
Replicate 1 Time: 12:59
Peak Area (A-s): 0.018 Peak Height (A): 0.036
Background Pk Area (A-s): 0.530 Background Pk Height (A): 0.176
Blank Corrected Pk Area (A-s): 0.005
Concentration (ug/L): 0.092

~~~~~~

ID: 93ZF53S13WDUP+1 Seq. No.: 00065 A/S Pos.: 27 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 27

L. Leonora 7/2/93
L. Leonora 7/3/93

Replicate 1 Time: 13:03
Peak Area (A-s): 0.079 Peak Height (A): 0.146
Background Pk Area (A-s): 0.536 Background Pk Height (A): 0.172
Blank Corrected Pk Area (A-s): 0.067
Concentration (ug/L): 1.112

~~~~~~

ID: AQC 1.25 UG/L Seq. No.: 00066 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 37
Replicate 1 Time: 13:06
Peak Area (A-s): 0.090 Peak Height (A): 0.168
Background Pk Area (A-s): 0.185 Background Pk Height (A): 0.075
Blank Corrected Pk Area (A-s): 0.078
Concentration (ug/L): 1.296

Check sample is within range 1.125 - 1.375

~~~~~~

ID: CCB3 Seq. No.: 00067 A/S Pos.: 28 Date: 07/02/93

uL dispensed: 5 from 36, 15 from 28
Replicate 1 Time: 13:09
Peak Area (A-s): 0.016 Peak Height (A): 0.030
Background Pk Area (A-s): 0.165 Background Pk Height (A): 0.054
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 0.070

L. Leonova
7/2/93

L. Leonova
7/3/93

Element	Instrument	QC Source	
☐ Ag	☐ 5000	☐ WP 284 TM I #2	Analyst L. Leonova
☐ As	☐ 4000	☐ WP 1183 TM II #1	Date 7/02/93
☒ Cd	☐ 5000 ZE	☐ WP 1183 TM II #2	Lamp # WL-36016
☐ Cr	☐ 5000 ZW	☐ ICV 2	Energy 53
☐ Pb	☒ 5100	☐ SPEX II	Expansion 3
☐ Sb	☐ Varian 30	☐ NBS SRM 1643b	Stock AQCD-2-500 opened 4/14/93 exp 10/01/93
☐ Se		☒ 2172 WP287 I	☒ platform ☒ MSC
☐ Tl		☐	☐ wall ☐ MSA

Blank	Slope	AQC
0.063	0.597	1.221
0.074		1.239
0.044		1.341
0.070		1.293
0.067		1.275
0.070		1.296

Blank cup absorbance

Digestion QC

1) Digestion Blank: 0.2u Limit = ±0.2µg

2) Duplicates:

S/D 11 – 0.01 mg/kg Difference = 0.

S/D 40 – 0.197 mg/kg Diff. = 5.7% Limit = 20%

3) Spikes:

S11 – 0.269 mg/kg Adj. sp. conc = 0.25 mg/kg
%R = 107.6 Limit = 85-115%

S40 – 5.475 mg/kg Adj. spk conc = 5 mg/kg
%R = 109.5 Limit = 80-120%

L. Leonova
7/3/93

Perkin-Elmer Model 5100 PC
Report Of Analytical Results
July 02, 1993

L Leonard
7/02/93

Data File: CDLL701.DAT
Data Collected: 07/01/93 At: 13:32:51 By: LL

SF1187, SF1191

	Cd ug/L	
Blank Mean Conc.	0.000	r = .99888
Standard 1 Mean Conc.	2.000	
Standard 2 Mean Conc.	1.500	
Standard 3 Mean Conc.	1.000	
Standard 4 Mean Conc.	0.500	
AQC 1.25 UG/L Mean Conc.	1.264	
Recovery	101.1%	Limit = 100 ± 10%
CCB1 Mean Conc.	-0.057 0.2u	Limit = ± 0.2 µg/l
Recovery		
DIG.BLK Mean Conc.	-0.000480	0.2u — less than IDL.
Recovery		
DIJ.BLK+1 Mean Conc.	1.060	
Recovery	106%	
P3ZE33S38 Mean Conc.	-0.064	— IDL = ±0.01 ~~mg/kg~~ µg/L or 0.2 µg/L (for water's) result is less than 0.01 mg/kg, therefore 0.01 u or 0.2 u
Recovery		
P3ZE33S38+1 Mean Conc.	1.004	
Recovery	106%	
P3ZE33D38 Mean Conc.	-0.021	Adj. conc = 0.01 u for soil; 0.2u for water sample
Recovery		
P3ZE33D38+1 Mean Conc.	1.074	
Recovery	109%	
P3ZE33S39 Mean Conc.	3.429	— Rerun after 1:3 dilution (too high) LL 7/1/93
Recovery		

L. Leonard 7/1/93

	Cd ug/L	
93ZFS39+1		
Mean Conc.	4.412	
Recovery		
93ZE33D39		
Mean Conc.	7.470	- RERUN below, after 1:7 dil. ZZ 7/1/93
Recovery		
93ZED39+1		
Mean Conc.	8.315	
Recovery		
AQC 1.25 UG/L		
Mean Conc.	1.283	
Recovery	Y.R=103	Limit = 100 ± 10%
CCB2		
Mean Conc.	0.024 0.2u	Limit = ± 0.2 µg/l
Recovery		
LCSx200		
Mean Conc.	2.575	
Recovery		- Needs 1:1 dilution ZZ 7/1/93
LCSx200+1		
Mean Conc.	3.554	
Recovery		
93ZE33S38DDUP		
Mean Conc.	-0.041	
Recovery		Adj. conc < 0.01 ~~mg/kg~~ ZZ 0.2 µg/L OR 0.01u
93ZE33S38DDUP+1		Difference < 0.01 µg/kg
Mean Conc.	1.049	Limit = ± 0.01 µg/kg
Recovery	Y.R=109	
93ZE33S38SPKx50		
Mean Conc.	0.161	
Recovery		RERUN below, too low ZZ 7/1/93
93ZE33S38SPK+1		
Mean Conc.	1.249	
Recovery	Y.R=108	
93ZE33S38W.DUP		
Mean Conc.	-0.038	
Recovery		
93ZE33S38WDUP+1		
Mean Conc.	1.073	
Recovery	Y.R=111	- Sample result is less than IDL, therefore - acceptable 7/1/93 ZZ
93ZE33S39x4		
Mean Conc.	0.901	Adj. conc = ~~0.18 mg/kg~~ 3.6 µg/L ZZ
Recovery		

L. Leonova
7/2/93

	Cd ug/L	
93ZF33S39x4+1		
Mean Conc.	1.955	
Recovery	% R=106%	
AQC 1.25 UG/L		
Mean Conc.	1.285	
Recovery	% R =103	Limit = 100 ± 10%
CCB3		
Mean Conc.	-0.150	0.2u Limit = ≤ 0.2 µg/l
Recovery		
93ZE33D39x8		
Mean Conc.	0.961	
Recovery		
93ZE33D39x8+1		
Mean Conc.	2.132	
Recovery	% R=144	– RERUN below 7/1/93 LL
LCSX400		
Mean Conc.	1.335	
Recovery		
LCSx400+1		
Mean Conc.	2.445	
Recovery	% R=111%	– RERUN below. 7/1/93 LL
93ZE33S38SPKx5		
Mean Conc.	1.054	
Recovery		
93ZE33S38SPx5+1		
Mean Conc.	2.168	
Recovery	% R= 111	– RERUN below 7/1/93
93ZE33S39DDUPx4		
Mean Conc.	0.960	
Recovery		
93ZE33S39DDUPx4		
Mean Conc.	2.064	
Recovery	% R=110.4	– RERUN below 7/1/93
LCSx400		
Mean Conc.	1.330	
Recovery		
		Adj. con = 53.19 mg/kg Limit = 35.7 – 55.1 mg/kg.
LCSx400+1		
Mean Conc.	2.397	
Recovery	% R=107	
AQC 1.25 UG/L		
Mean Conc.	1.267	
Recovery	% R=101	Limit = 100 ±10%

L. Teorova
7/2/93

	Cd ug/L	
CCB1		
Mean Conc.	-0.097	0.2u Limit = ± 0.2 µg/L
Recovery		
93ZF33S38SPKx5		
Mean Conc.	2.177	— not used, wkong cup LZ 7/1/93
Recovery		
93ZF33S38SPx5+1		
Mean Conc.	2.073	
Recovery		
93ZF33D39x8		
Mean Conc.	1.017	
Recovery		Adj. conc = ~~0.41 mg/kg~~ 8.14 µg/L LZ 7/1/93
93ZF33D39x8+1		
Mean Conc.	2.027	
Recovery	Y.R = 101	
93ZF33S39DDUPx4		
Mean Conc.	0.960	
Recovery		Adj. conc = 0.19 µg/L Difference = 0.01 µg/L (5) Limit = ± 10%
93ZF33S39DDUPx4		
Mean Conc.	2.007	
Recovery	Y.R = 105%	
93ZF33S39SPx10		
Mean Conc.	0.869	
Recovery		
93ZF33S39SPx10+		
Mean Conc.	2.034	— RERUN below.
Recovery	Y.R = 116	
93ZF33S38SPKx6		
Mean Conc.	0.969	
Recovery		— not used, RERUN below 1:4 dilution. LZ 7/1/93
93ZF33S38x6+1SP		
Mean Conc.	2.093	
Recovery		
AQC 1.25 UG/L		
Mean Conc.	1.278	
Recovery	Y.R = 102	Limit = 100 ± 10%
CCB2		
Mean Conc.	-0.048	0.2u Limit = ± 0.2 µg/L
Recovery		
93ZF53S02		
Mean Conc.	0.434	
Recovery		

L. Leonard
7/2/93

	Cd ug/L	
93ZF53D02+1		
Mean Conc.	1.598	
Recovery	%R = 115	– RERUN below. 7/1/93 LZ
93ZF53D02		
Mean Conc.	0.504	
Recovery		Adj. conc = 0.025 µg/L
93ZF53D02+1		
Mean Conc.	1.520	
Recovery	%R = 101	
93ZF53S03		
Mean Conc.	0.498	
Recovery		
93ZF53S03+1		
Mean Conc.	1.636	
Recovery	%R = 116	– RERUN below 7/1/93 LZ
93ZE33S39SPx10		
Mean Conc.	0.826	
Recovery		Adj. conc = 0.413 µg/L %R = 93.12 %
93ZE33S39SPx10+1		
Mean Conc.	1.926	
Recovery	%R = 110	
93ZE33S38SPx5		
Mean Conc.	1.062	
Recovery		Adj. conc = 0.265 µg/L %R = 106.2%
93ZE33S38SPx5+1		
Mean Conc.	2.007	
Recovery	%R = 94.5	
AQC 1.25 UG/L		
Mean Conc.	1.285	Limit = 100 ± 10%
Recovery	%R = 103	
ICB3		
Mean Conc.	-0.121 0.2u	Limit = ± 0.2 µg/L
Recovery		
93ZF53S02 W. Dup		
Mean Conc.	0.484	
Recovery		
93ZF53S02+1 W. Dup		
Mean Conc.	1.606	
Recovery	%R = 112	– RERUN below. 7/1/93 LZ
93ZF53S03		
Mean Conc.	0.516	Adj. conc = 0.026 µg/L
Recovery		

L. Zeorova
7/3/93

	Cd ug/L	
3ZF53S03+1		
Mean Conc.	1.577	Adj. conc < 0.01 µg/L
Recovery	%R = 106	
3ZF53S11		
Mean Conc.	-0.037	0.01 u
Recovery		
3ZF53S11+1		
Mean Conc.	1.107	
Recovery	%R = 114	— Sample result is less than IDL, therefore - acceptable.
3ZF53S02		
Mean Conc.	0.410	
Recovery		Adj. conc = 0.02 µg/L
3ZF53S02+1		
Mean Conc.	1.488	
Recovery	%R = 107	
3ZF53S03W.DUP		
Mean Conc.	0.550	
Recovery		Adj. conc = 0.027 µg/L Δ < 0.01 µg/L
3ZF53S03WDUP+1		
Mean Conc.	1.614	
Recovery	%R = 106	
QC 1.25 UG/L		
Mean Conc.	1.245	
Recovery	%R = 99.6	Limit = 100 ± 10%
CB1		
Mean Conc.	-0.008	0.2 u Limit = ± 0.2 µg/L
Recovery		

==========

nalyst: L. Teonova 7/8/93 Supervisor: _____

==========

L. Leonard 7/01/93

lement File: CDMSC.GEL
ate: 07/01/93
ata Storage File: CDLL701.DAT
echnique: HGA

Element: Cd
Time: 13:30
ID/Weight File: CDBY802.A60
Calibration Type: Linear

D: Blank   Seq. No.: 00001   A/S Pos.: 1   Date: 07/01/93

L dispensed: 5 from 36, 15 from 1
eplicate 1   Time: 13:32
eak Area (A-s): 0.022   Peak Height (A): 0.044
ackground Pk Area (A-s): 0.167   Background Pk Height (A): 0.049
lank Corrected Pk Area (A-s): -0.004
oncentration (ug/L): 0.038

uto-zero performed.

D: Standard 1   Seq. No.: 00002   A/S Pos.: 2   Date: 07/01/93

L dispensed: 5 from 36, 15 from 2
eplicate 1   Time: 13:35
eak Area (A-s): 0.128   Peak Height (A): 0.247
ackground Pk Area (A-s): 0.187   Background Pk Height (A): 0.089
lank Corrected Pk Area (A-s): 0.107
oncentration (ug/L): 4.335

tandard number 1 applied. [2.000]
orrelation coefficient: 1.00000   Slope: 0.0534   Int: 0.000

D: Standard 2   Seq. No.: 00003   A/S Pos.: 3   Date: 07/01/93

L dispensed: 5 from 36, 15 from 3
eplicate 1   Time: 13:39
eak Area (A-s): 0.102   Peak Height (A): 0.193
ackground Pk Area (A-s): 0.186   Background Pk Height (A): 0.077
lank Corrected Pk Area (A-s): 0.080
oncentration (ug/L): 1.502

tandard number 2 applied. [1.500]
orrelation coefficient: 1.00000   Slope: 0.0534   Int: 0.000

D: Standard 3   Seq. No.: 00004   A/S Pos.: 4   Date: 07/01/93

L dispensed: 5 from 36, 15 from 4
Replicate 1   Time: 13:42
Peak Area (A-s): 0.076   Peak Height (A): 0.143
Background Pk Area (A-s): 0.179   Background Pk Height (A): 0.064
Blank Corrected Pk Area (A-s): 0.054
Concentration (ug/L): 1.014

Standard number 3 applied. [1.000]
Correlation coefficient: 0.99997   Slope: 0.0534   Int: 0.000

L.L

ID: Standard 4   Seq. No.: 00005   A/S Pos.: 5   Date: 07/01/93

uL dispensed: 5 from 36, 15 from 5
Replicate 1   Time: 13:45
Peak Area (A-s): 0.044   Peak Height (A): 0.085
Background Pk Area (A-s): 0.169   Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.022
Concentration (ug/L): 0.410

Standard number 4 applied. [0.500]
Correlation coefficient: 0.99888   Slope: 0.0543   Int: -0.002

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ID: AQC 1.25 UG/L   Seq. No.: 00006   A/S Pos.: 37   Date: 07/01/93

uL dispensed: 5 from 36, 15 from 37
Replicate 1   Time: 13:48
Peak Area (A-s): 0.089   Peak Height (A): 0.163
Background Pk Area (A-s): 0.169   Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.067
Concentration (ug/L): 1.264

Check sample is within range 1.125 - 1.375

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ID: CCB1   Seq. No.: 00007   A/S Pos.: 6   Date: 07/01/93

uL dispensed: 5 from 36, 15 from 6
Replicate 1   Time: 13:51
Peak Area (A-s): 0.017   Peak Height (A): 0.027
Background Pk Area (A-s): 0.163   Background Pk Height (A): 0.050
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -0.057

~~~~~~

ID: DIG.BLK   Seq. No.: 00008   A/S Pos.: 7   Date: 07/01/93

uL dispensed: 5 from 36, 15 from 7
Replicate 1   Time: 13:55
Peak Area (A-s): 0.020   Peak Height (A): 0.034
Background Pk Area (A-s): 0.160   Background Pk Height (A): 0.050
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.000

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ID: DIJ.BLK+1   Seq. No.: 00009   A/S Pos.: 8   Date: 07/01/93

uL dispensed: 5 from 36, 15 from 8
Replicate 1   Time: 13:58
Peak Area (A-s): 0.077   Peak Height (A): 0.143
Background Pk Area (A-s): 0.185   Background Pk Height (A): 0.062
Blank Corrected Pk Area (A-s): 0.056
Concentration (ug/L): 1.060

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ID: 93ZF33S38   Seq. No.: 00010   A/S Pos.: 9   Date: 07/01/93

uL dispensed: 5 from 36, 15 from 9
Replicate 1   Time: 14:01

L. Leonora
7/1/93
~~~~~~

Peak Area (A-s): 0.016 Peak Height (A): 0.034
Background Pk Area (A-s): 0.379 Background Pk Height (A): 0.113
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -0.064

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ID: 93ZF33S38+1 Seq. No.: 00011 A/S Pos.: 10 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 10
Replicate 1 Time: 14:05
Peak Area (A-s): 0.074 Peak Height (A): 0.140
Background Pk Area (A-s): 0.386 Background Pk Height (A): 0.112
Blank Corrected Pk Area (A-s): 0.053
Concentration (ug/L): 1.004

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ID: 93ZF33D38 Seq. No.: 00012 A/S Pos.: 11 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 11
Replicate 1 Time: 14:08
Peak Area (A-s): 0.019 Peak Height (A): 0.035
Background Pk Area (A-s): 0.388 Background Pk Height (A): 0.116
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -0.021

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ID: 93ZF33D38+1 Seq. No.: 00013 A/S Pos.: 12 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 12
Replicate 1 Time: 14:11
Peak Area (A-s): 0.078 Peak Height (A): 0.144
Background Pk Area (A-s): 0.408 Background Pk Height (A): 0.119
Blank Corrected Pk Area (A-s): 0.057
Concentration (ug/L): 1.074

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ID: 93ZF33S39 Seq. No.: 00014 A/S Pos.: 13 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 13
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 14:15
Peak Area (A-s): 0.206 Peak Height (A): 0.394
Background Pk Area (A-s): 1.213 Background Pk Height (A): 0.482
Blank Corrected Pk Area (A-s): 0.185
Concentration (ug/L): 3.429 Rerun below after 1:3 dilution LL 7/1/93

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ID: 93ZFS39+1 Seq. No.: 00015 A/S Pos.: 14 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 14
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 14:18
Peak Area (A-s): 0.260 Peak Height (A): 0.487
Background Pk Area (A-s): 1.198 Background Pk Height (A): 0.498
Blank Corrected Pk Area (A-s): 0.238
Concentration (ug/L): 4.412

L. Leonova 7/1/93

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ID: 93ZF33D39 Seq. No.: 00016 A/S Pos.: 15 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 15
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 14:21
Peak Area (A-s): 0.426 Peak Height (A): 0.783
Background Pk Area (A-s): 1.298 Background Pk Height (A): 0.582
Blank Corrected Pk Area (A-s): 0.404
Concentration (ug/L): 7.470 Rerun below after 1:7 dilution LL 7/1/93

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ID: 93ZFD39+1 Seq. No.: 00017 A/S Pos.: 16 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 16
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 14:25
Peak Area (A-s): 0.472 Peak Height (A): 0.834
Background Pk Area (A-s): 1.225 Background Pk Height (A): 0.555
Blank Corrected Pk Area (A-s): 0.450
Concentration (ug/L): 8.315

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ID: AQC 1.25 UG/L Seq. No.: 00018 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 37
Replicate 1 Time: 14:28
Peak Area (A-s): 0.090 Peak Height (A): 0.165
Background Pk Area (A-s): 0.172 Background Pk Height (A): 0.067
Blank Corrected Pk Area (A-s): 0.068
Concentration (ug/L): 1.283

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~~ID: AQC 1.25 UG/L Seq. No.: 00019 A/S Pos.: 37 Date: 07/01/93~~

~~uL dispensed: 5 from 36, 15 from 37~~ LL 7/1/93

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ID: CCB2 Seq. No.: 00020 A/S Pos.: 17 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 17
Replicate 1 Time: 14:34
Peak Area (A-s): 0.021 Peak Height (A): 0.039
Background Pk Area (A-s): 0.149 Background Pk Height (A): 0.047
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): 0.024

~~~~~~

ID: LCSx200 Seq. No.: 00021 A/S Pos.: 18 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 18
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 14:37
Peak Area (A-s): 0.160 Peak Height (A): 0.283
Background Pk Area (A-s): 0.225 Background Pk Height (A): 0.101
Blank Corrected Pk Area (A-s): 0.138
Concentration (ug/L): 2.575 Rerun below after 1:1 dilution. LL 7/1/93

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ID: LCSx200+1 Seq. No.: 00022 A/S Pos.: 19 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 19 L. Leonova 7/1/93

Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 14:41
Peak Area (A-s): 0.213 Peak Height (A): 0.386
Background Pk Area (A-s): 0.233 Background Pk Height (A): 0.127
Blank Corrected Pk Area (A-s): 0.191
Concentration (ug/L): 3.554

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ID: 93ZF33S38DDUP Seq. No.: 00023 A/S Pos.: 20 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 20
Replicate 1 Time: 14:44
Peak Area (A-s): 0.018 Peak Height (A): 0.034
Background Pk Area (A-s): 0.336 Background Pk Height (A): 0.097
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -0.041

~~~~~~

ID: 93ZF33S38DDUP+1 Seq. No.: 00024 A/S Pos.: 21 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 21
Replicate 1 Time: 14:47
Peak Area (A-s): 0.077 Peak Height (A): 0.144
Background Pk Area (A-s): 0.363 Background Pk Height (A): 0.101
Blank Corrected Pk Area (A-s): 0.055
Concentration (ug/L): 1.049

~~~~~~

ID: 93ZF33S38SPKx50 Seq. No.: 00025 A/S Pos.: 22 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 22
Replicate 1 Time: 14:50
Peak Area (A-s): 0.029 Peak Height (A): 0.055
Background Pk Area (A-s): 0.169 Background Pk Height (A): 0.050
Blank Corrected Pk Area (A-s): 0.007
Concentration (ug/L): 0.161 Rerun below after diff. dilution
LL 7/1/93

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ID: 93ZF33S38SPK+1 Seq. No.: 00026 A/S Pos.: 23 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 23
Replicate 1 Time: 14:53
Peak Area (A-s): 0.088 Peak Height (A): 0.164
Background Pk Area (A-s): 0.180 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.066
Concentration (ug/L): 1.249 too low

~~~~~~

ID: 93ZF33S38W.DUP Seq. No.: 00027 A/S Pos.: 24 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 24
Replicate 1 Time: 14:57
Peak Area (A-s): 0.018 Peak Height (A): 0.038
Background Pk Area (A-s): 0.352 Background Pk Height (A): 0.102
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -0.038

L. Leonova
7/3/93

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ID: 93ZF33S38WDUP+1 Seq. No.: 00028 A/S Pos.: 25 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 25
Replicate 1 Time: 15:00
Peak Area (A-s): 0.078 Peak Height (A): 0.145
Background Pk Area (A-s): 0.353 Background Pk Height (A): 0.098
Blank Corrected Pk Area (A-s): 0.057
Concentration (ug/L): 1.073

~~~~~~

ID: 93ZF33S39x4 Seq. No.: 00029 A/S Pos.: 26 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 26
Replicate 1 Time: 15:03
Peak Area (A-s): 0.069 Peak Height (A): 0.132
Background Pk Area (A-s): 0.550 Background Pk Height (A): 0.172
Blank Corrected Pk Area (A-s): 0.047
Concentration (ug/L): 0.901 x4= 3.604

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ID: 93ZF33S39x4+1 Seq. No.: 00030 A/S Pos.: 27 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 27
Replicate 1 Time: 15:06
Peak Area (A-s): 0.126 Peak Height (A): 0.243
Background Pk Area (A-s): 0.566 Background Pk Height (A): 0.173
Blank Corrected Pk Area (A-s): 0.105
Concentration (ug/L): 1.955

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ID: AQC 1.25 UG/L Seq. No.: 00031 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 37
Replicate 1 Time: 15:10
Peak Area (A-s): 0.090 Peak Height (A): 0.166
Background Pk Area (A-s): 0.174 Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): 0.068
Concentration (ug/L): 1.285

Check sample is within range 1.125 - 1.375

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ID: CCB3 Seq. No.: 00032 A/S Pos.: 28 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 28
Replicate 1 Time: 15:13
Peak Area (A-s): 0.012 Peak Height (A): 0.030
Background Pk Area (A-s): 0.154 Background Pk Height (A): 0.048
Blank Corrected Pk Area (A-s): -0.010
Concentration (ug/L): -0.150

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ID: 93ZF33D39x8 Seq. No.: 00033 A/S Pos.: 29 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 29

L. Leonova
7/1/93
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eplicate 1
eak Area (A-s): 0.072
ackground Pk Area (A-s): 0.382
lank Corrected Pk Area (A-s): 0.051
oncentration (ug/L): 0.961

Time: 15:17
Peak Height (A): 0.140
Background Pk Height (A): 0.107

Rerun below LL 7/1/93

L. Leonora
7/1/93

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ID: 93ZE33D39x8+1   Seq. No.: 00034   A/S Pos.: 30   Date: 07/01/93

uL dispensed: 5 from 36, 15 from 30
Replicate 1   Time: 15:20
Peak Area (A-s): 0.136   Peak Height (A): 0.257
Background Pk Area (A-s): 0.400   Background Pk Height (A): 0.130
Blank Corrected Pk Area (A-s): 0.114
Concentration (ug/L): 2.132

~~~~~~

ID: LCSX400   Seq. No.: 00035   A/S Pos.: 31   Date: 07/01/93

uL dispensed: 5 from 36, 15 from 31
Replicate 1   Time: 15:23
Peak Area (A-s): 0.092   Peak Height (A): 0.165
Background Pk Area (A-s): 0.181   Background Pk Height (A): 0.070
Blank Corrected Pk Area (A-s): 0.071
Concentration (ug/L): 1.335

R = 111% rerun below LL 7/1/93

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ID: LCSx400+1   Seq. No.: 00036   A/S Pos.: 32   Date: 07/01/93

uL dispensed: 5 from 36, 15 from 32
Sample abs. is greater than that of the largest standard.
Replicate 1   Time: 15:26
Peak Area (A-s): 0.153   Peak Height (A): 0.276
Background Pk Area (A-s): 0.205   Background Pk Height (A): 0.097
Blank Corrected Pk Area (A-s): 0.131
Concentration (ug/L): 2.445

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ID: 93ZE33S38SPKx5   Seq. No.: 00037   A/S Pos.: 33   Date: 07/01/93

uL dispensed: 5 from 36, 15 from 33
Replicate 1   Time: 15:30
Peak Area (A-s): 0.077   Peak Height (A): 0.144
Background Pk Area (A-s): 0.197   Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.056
Concentration (ug/L): 1.054

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ID: 93ZE33S38SPx5+1   Seq. No.: 00038   A/S Pos.: 34   Date: 07/01/93

uL dispensed: 5 from 36, 15 from 34
Replicate 1   Time: 15:33
Peak Area (A-s): 0.138   Peak Height (A): 0.259
Background Pk Area (A-s): 0.212   Background Pk Height (A): 0.096
Blank Corrected Pk Area (A-s): 0.116
Concentration (ug/L): 2.168

R = 111% rerun below LL 7/1/93

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ID: 93ZF33S39DDUPx4   Seq. No.: 00039   A/S Pos.: 35   Date: 07/01/93

uL dispensed: 5 from 36, 15 from 35
Replicate 1   Time: 15:36
Peak Area (A-s): 0.072   Peak Height (A): 0.134
Background Pk Area (A-s): 0.548   Background Pk Height (A): 0.173

L. Leonova 7/1/93

Blank Corrected Pk Area (A-s): 0.050
Concentration (ug/L): 0.960

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ID: 93ZE33S39DDUPx4 Seq. No.: 00040 A/S Pos.: 38 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 38
Replicate 1 Time: 15:39
Peak Area (A-s): 0.132 Peak Height (A): 0.248
Background Pk Area (A-s): 0.552 Background Pk Height (A): 0.168
Blank Corrected Pk Area (A-s): 0.110
Concentration (ug/L): 2.064

R = 110% Rerun below LL 7/1/93

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ID: LCSx400 Seq. No.: 00041 A/S Pos.: 39 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 39
Replicate 1 Time: 15:43
Peak Area (A-s): 0.092 Peak Height (A): 0.167
Background Pk Area (A-s): 0.183 Background Pk Height (A): 0.073
Blank Corrected Pk Area (A-s): 0.071
Concentration (ug/L): 1.330

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ID: LCSx400+1 Seq. No.: 00042 A/S Pos.: 40 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 40
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 15:46
Peak Area (A-s): 0.150 Peak Height (A): 0.275
Background Pk Area (A-s): 0.193 Background Pk Height (A): 0.096
Blank Corrected Pk Area (A-s): 0.129
Concentration (ug/L): 2.397

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ID: AQC 1.25 UG/L Seq. No.: 00043 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 37
Replicate 1 Time: 15:50
Peak Area (A-s): 0.089 Peak Height (A): 0.163
Background Pk Area (A-s): 0.172 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.067
Concentration (ug/L): 1.267

Check sample is within range 1.125 - 1.375

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ID: CCB1 Seq. No.: 00044 A/S Pos.: 6 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 6
Replicate 1 Time: 15:53
Peak Area (A-s): 0.015 Peak Height (A): 0.028
Background Pk Area (A-s): 0.157 Background Pk Height (A): 0.048
Blank Corrected Pk Area (A-s): -0.007
Concentration (ug/L): -0.097

L. Leonora
7/1/93

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ID: 93ZF33S38SPKx5 Seq. No.: 00045 A/S Pos.: 7 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 7
Replicate 1 Time: 15:57
Peak Area (A-s): 0.138 Peak Height (A): 0.252
Background Pk Area (A-s): 0.214 Background Pk Height (A): 0.094
Blank Corrected Pk Area (A-s): 0.117
Concentration (ug/L): 2.177 — Wrong cup LL 7/1/93

~~~~~~

ID: 93ZF33S38SPx5+1 Seq. No.: 00046 A/S Pos.: 8 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 8
Replicate 1 Time: 16:00
Peak Area (A-s): 0.133 Peak Height (A): 0.248
Background Pk Area (A-s): 0.389 Background Pk Height (A): 0.125
Blank Corrected Pk Area (A-s): 0.111
Concentration (ug/L): 2.073

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ID: 93ZF33D39x8 Seq. No.: 00047 A/S Pos.: 9 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 9
Replicate 1 Time: 16:03
Peak Area (A-s): 0.075 Peak Height (A): 0.143
Background Pk Area (A-s): 0.394 Background Pk Height (A): 0.113
Blank Corrected Pk Area (A-s): 0.054
Concentration (ug/L): 1.017

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ID: 93ZF33D39x8+1 Seq. No.: 00048 A/S Pos.: 10 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 10
Replicate 1 Time: 16:06
Peak Area (A-s): 0.130 Peak Height (A): 0.248
Background Pk Area (A-s): 0.565 Background Pk Height (A): 0.175
Blank Corrected Pk Area (A-s): 0.108
Concentration (ug/L): 2.027

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ID: 93ZF33S39DDUPx4 Seq. No.: 00049 A/S Pos.: 11 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 11
Replicate 1 Time: 16:10
Peak Area (A-s): 0.072 Peak Height (A): 0.137
Background Pk Area (A-s): 0.546 Background Pk Height (A): 0.174
Blank Corrected Pk Area (A-s): 0.050
Concentration (ug/L): 0.960

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ID: 93ZF33S39DDUPx4 Seq. No.: 00050 A/S Pos.: 12 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 12
Replicate 1 Time: 16:13
Peak Area (A-s): 0.129 Peak Height (A): 0.245
Background Pk Area (A-s): 0.538 Background Pk Height (A): 0.166
Blank Corrected Pk Area (A-s): 0.107
Concentration (ug/L): 2.007

L. Leonora 7/1/93

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ID: 93ZF33S39SPx10 Seq. No.: 00051 A/S Pos.: 13 Date: 07/01/93

µL dispensed: 5 from 36, 15 from 13
Replicate 1 Time: 16:16
Peak Area (A-s): 0.067 Peak Height (A): 0.123
Background Pk Area (A-s): 0.320 Background Pk Height (A): 0.091
Blank Corrected Pk Area (A-s): 0.046
Concentration (ug/L): 0.869

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ID: 93ZF33S39SPx10+ Seq. No.: 00052 A/S Pos.: 14 Date: 07/01/93

µL dispensed: 5 from 36, 15 from 14
Replicate 1 Time: 16:20
Peak Area (A-s): 0.130 Peak Height (A): 0.244
Background Pk Area (A-s): 0.329 Background Pk Height (A): 0.115
Blank Corrected Pk Area (A-s): 0.109
Concentration (ug/L): 2.034
R=116% rerun below LL 7/1/93

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ID: 93ZF33S38SPKx5 Seq. No.: 00053 A/S Pos.: 15 Date: 07/01/93

µL dispensed: 5 from 36, 15 from 15
Replicate 1 Time: 16:23
Peak Area (A-s): 0.073 Peak Height (A): 0.143
Background Pk Area (A-s): 0.396 Background Pk Height (A): 0.114
Blank Corrected Pk Area (A-s): 0.051
Concentration (ug/L): 0.969

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ID: 93ZF33S38x5+1SP Seq. No.: 00054 A/S Pos.: 16 Date: 07/01/93

µL dispensed: 5 from 36, 15 from 16
Replicate 1 Time: 16:26
Peak Area (A-s): 0.134 Peak Height (A): 0.247
Background Pk Area (A-s): 0.401 Background Pk Height (A): 0.124
Blank Corrected Pk Area (A-s): 0.112
Concentration (ug/L): 2.093 rerun below 1:4 dilution LL 7/1/93

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ID: AQC 1.25 UG/L Seq. No.: 00055 A/S Pos.: 37 Date: 07/01/93

µL dispensed: 5 from 36, 15 from 37
Replicate 1 Time: 16:29
Peak Area (A-s): 0.089 Peak Height (A): 0.163
Background Pk Area (A-s): 0.176 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.068
Concentration (ug/L): 1.278

Check sample is within range 1.125 - 1.375

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ID: CCB2 Seq. No.: 00056 A/S Pos.: 17 Date: 07/01/93

µL dispensed: 5 from 36, 15 from 17
Replicate 1 Time: 16:32 L. Leonard
Peak Area (A-s): 0.017 Peak Height (A): 0.032
Background Pk Area (A-s): 0.159 Background Pk Height (A): 0.049 7/1/93
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -0.048
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ID: 93ZF53S02 Seq. No.: 00057 A/S Pos.: 18 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 18
Replicate 1 Time: 16:36
Peak Area (A-s): 0.043 Peak Height (A): 0.087
Background Pk Area (A-s): 0.409 Background Pk Height (A): 0.121
Blank Corrected Pk Area (A-s): 0.022
Concentration (ug/L): 0.434

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ID: 93ZF5302+1 Seq. No.: 00058 A/S Pos.: 19 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 19
Replicate 1 Time: 16:39
Peak Area (A-s): 0.107 Peak Height (A): 0.203
Background Pk Area (A-s): 0.422 Background Pk Height (A): 0.122
Blank Corrected Pk Area (A-s): 0.085
Concentration (ug/L): 1.598 %R = 116% Rerun below 7/1/93 LL

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ID: 93ZF53D02 Seq. No.: 00059 A/S Pos.: 20 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 20
Replicate 1 Time: 16:42
Peak Area (A-s): 0.047 Peak Height (A): 0.088
Background Pk Area (A-s): 0.412 Background Pk Height (A): 0.123
Blank Corrected Pk Area (A-s): 0.026
Concentration (ug/L): 0.504

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ID: 93ZF53D02+1 Seq. No.: 00060 A/S Pos.: 21 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 21
Replicate 1 Time: 16:45
Peak Area (A-s): 0.102 Peak Height (A): 0.195
Background Pk Area (A-s): 0.411 Background Pk Height (A): 0.117
Blank Corrected Pk Area (A-s): 0.081
Concentration (ug/L): 1.520

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ID: 93ZF53S03 Seq. No.: 00061 A/S Pos.: 22 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 22
Replicate 1 Time: 16:48
Peak Area (A-s): 0.047 Peak Height (A): 0.092
Background Pk Area (A-s): 0.404 Background Pk Height (A): 0.120
Blank Corrected Pk Area (A-s): 0.025
Concentration (ug/L): 0.498

Out

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ID: 93ZF53S03+1 Seq. No.: 00062 A/S Pos.: 23 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 23 L. Leonova 7/1/93
Replicate 1 Time: 16:51
Peak Area (A-s): 0.109 Peak Height (A): 0.207
Background Pk Area (A-s): 0.389 Background Pk Height (A): 0.117
Blank Corrected Pk Area (A-s): 0.087

Concentration (ug/L): 1.636 % R = 114 Rerun below LL 7/1/93

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ID: 93ZF33S39SPx10 Seq. No.: 00063 A/S Pos.: 24 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 24
Replicate 1 Time: 16:55
Peak Area (A-s): 0.065 Peak Height (A): 0.123
Background Pk Area (A-s): 0.340 Background Pk Height (A): -0.099
Blank Corrected Pk Area (A-s): 0.043
Concentration (ug/L): 0.826

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ID: 93ZF33S39SPx10+ Seq. No.: 00064 A/S Pos.: 25 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 25
Replicate 1 Time: 16:58
Peak Area (A-s): 0.125 Peak Height (A): 0.226
Background Pk Area (A-s): 0.337 Background Pk Height (A): 0.107
Blank Corrected Pk Area (A-s): 0.103
Concentration (ug/L): 1.926

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ID: 93ZF33S38SPx5 Seq. No.: 00065 A/S Pos.: 26 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 26
Replicate 1 Time: 17:01
Peak Area (A-s): 0.078 Peak Height (A): 0.138
Background Pk Area (A-s): 0.402 Background Pk Height (A): 0.115
Blank Corrected Pk Area (A-s): 0.056
Concentration (ug/L): 1.062

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ID: 93ZF33S38SPx5+1 Seq. No.: 00066 A/S Pos.: 27 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 27
Replicate 1 Time: 17:04
Peak Area (A-s): 0.129 Peak Height (A): 0.243
Background Pk Area (A-s): 0.544 Background Pk Height (A): 0.172
Blank Corrected Pk Area (A-s): 0.107
Concentration (ug/L): 2.007

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ID: AQC 1.25 UG/L Seq. No.: 00067 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 37
Replicate 1 Time: 17:08
Peak Area (A-s): 0.090 Peak Height (A): 0.164
Background Pk Area (A-s): 0.185 Background Pk Height (A): 0.067
Blank Corrected Pk Area (A-s): 0.068
Concentration (ug/L): 1.285

Check sample is within range 1.125 - 1.375

L. Leonova
7/1/93

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ID: CCB3 Seq. No.: 00068 A/S Pos.: 28 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 28
Replicate 1 Time: 17:11

Peak Area (A-s): 0.013 Peak Height (A): 0.028
Background Pk Area (A-s): 0.161 Background Pk Height (A): 0.050
Blank Corrected Pk Area (A-s): -0.008
Concentration (ug/L): -0.121

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ID: 93ZF53S02 W. Dup Seq. No.: 00069 A/S Pos.: 29 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 29
Replicate 1 Time: 17:14
Peak Area (A-s): 0.046 Peak Height (A): 0.084
Background Pk Area (A-s): 0.409 Background Pk Height (A): 0.123
Blank Corrected Pk Area (A-s): 0.025
Concentration (ug/L): 0.484

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ID: 93ZF53S02+1 W. Dup Seq. No.: 00070 A/S Pos.: 30 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 30
Replicate 1 Time: 17:17
Peak Area (A-s): 0.107 Peak Height (A): 0.193
Background Pk Area (A-s): 0.403 Background Pk Height (A): 0.117
Blank Corrected Pk Area (A-s): 0.086
Concentration (ug/L): 1.606

% R = 112 Rerun below. LL 07/01/93

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ID: 93ZF53S03 Seq. No.: 00071 A/S Pos.: 31 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 31
Replicate 1 Time: 17:21
Peak Area (A-s): 0.048 Peak Height (A): 0.093
Background Pk Area (A-s): 0.406 Background Pk Height (A): 0.120
Blank Corrected Pk Area (A-s): 0.026
Concentration (ug/L): 0.516

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ID: 93ZF53S03+1 Seq. No.: 00072 A/S Pos.: 32 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 32
Replicate 1 Time: 17:24
Peak Area (A-s): 0.106 Peak Height (A): 0.204
Background Pk Area (A-s): 0.431 Background Pk Height (A): 0.124
Blank Corrected Pk Area (A-s): 0.084
Concentration (ug/L): 1.577

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ID: 93ZF53S11 Seq. No.: 00073 A/S Pos.: 33 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 33
Replicate 1 Time: 17:27
Peak Area (A-s): 0.018 Peak Height (A): 0.038
Background Pk Area (A-s): 0.725 Background Pk Height (A): 0.237
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -0.037

L. Leonora
7/1/93

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ID: 93ZF53S11+1 Seq. No.: 00074 A/S Pos.: 34 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 34

Replicate 1 Time: 17:30
Peak Area (A-s): 0.080 Peak Height (A): 0.151
Background Pk Area (A-s): 0.738 Background Pk Height (A): 0.234
Blank Corrected Pk Area (A-s): 0.058
Concentration (ug/L): 1.107

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ID: 93ZF53S02 Seq. No.: 00075 A/S Pos.: 35 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 35
Replicate 1 Time: 17:33
Peak Area (A-s): 0.042 Peak Height (A): 0.083
Background Pk Area (A-s): 0.409 Background Pk Height (A): 0.121
Blank Corrected Pk Area (A-s): 0.021
Concentration (ug/L): 0.410

~~~~~~

ID: 93ZF53S02+1 Seq. No.: 00076 A/S Pos.: 38 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 38
Replicate 1 Time: 17:37
Peak Area (A-s): 0.101 Peak Height (A): 0.189
Background Pk Area (A-s): 0.388 Background Pk Height (A): 0.112
Blank Corrected Pk Area (A-s): 0.079
Concentration (ug/L): 1.488

~~~~~~

ID: 93ZF53S03W.DUP Seq. No.: 00077 A/S Pos.: 39 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 39
Replicate 1 Time: 17:40
Peak Area (A-s): 0.050 Peak Height (A): 0.090
Background Pk Area (A-s): 0.411 Background Pk Height (A): 0.123
Blank Corrected Pk Area (A-s): 0.028
Concentration (ug/L): 0.550

~~~~~~

ID: 93ZF53S03WDUP+1 Seq. No.: 00078 A/S Pos.: 40 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 40
Replicate 1 Time: 17:43
Peak Area (A-s): 0.108 Peak Height (A): 0.199
Background Pk Area (A-s): 0.435 Background Pk Height (A): 0.128
Blank Corrected Pk Area (A-s): 0.086
Concentration (ug/L): 1.614

~~~~~~

ID: AQC 1.25 UG/L Seq. No.: 00079 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 36, 15 from 37
Replicate 1 Time: 17:47
Peak Area (A-s): 0.088 Peak Height (A): 0.163
Background Pk Area (A-s): 0.189 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.066
Concentration (ug/L): 1.245

Check sample is within range 1.125 - 1.375

L. Leonova
7/1/93

~~~~~~

ID: CCB1 Seq. No.: 00080 A/S Pos.: 6 Date: 07/01/93

uL dispensed: 5 from 36. 15 from 6
Replicate 1 Time: 17:50
Peak Area (A-s): 0.019 Peak Height (A): 0.036
Background Pk Area (A-s): 0.170 Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.008

L. Leonard 7/1/93

Element	Instrument	QC Source	
[ ] Ag	[ ] 5000	[ ] WP 284 TM I #2	Analyst L. Leonora
[ ] As	[ ] 4000	[ ] WP 1183 TM II #1	Date 7/01/93
[X] Cd	[ ] 5000 ZE	[ ] WP 1183 TM II #2	Lamp # WL-36016
[ ] Cr	[ ] 5000 ZW	[ ] ICV 2	Energy 52
[ ] Pb	[X] 5100	[ ] SPEX II	Expansion 3
[ ] Sb	[ ] Varian 30	[ ] NBS SRM 1643b	Stock AQCD-2-500 opened [illegible] exp [illegible]
[ ] Se		[X] 2172 WP287I	[X] platform [X] MSC
[ ] Tl		[ ]	[ ] wall [ ] MSA

Blank	Slope	AQC
-0.057	0.0534	1.264
0.024		1.283
-0.150		1.285
-0.097		1.267
-0.048		1.278
-0.121		1.285
-0.008		1.245

Blank cup absorbance

Digestion QC

1) Digestion Blank: 0.01u < less than [illegible]
Limit = ± 0.01 mg/kg

2) Duplicates:

S038 – 0.01u Difference < 0.01 mg/kg
S039 – 0.19 mg/kg Difference = 0.01 mg/kg
Limit = ± 10%

3) LCS Conc = 53.19 mg/kg Limit = 35.7-55 mg/kg

4) Spikes:

S39 – 0.413 mg/kg %R = 93.12
Limit = 85-115%

S38 – 0.265 mg/kg %R = 106.2%
Limit = 85-115%

L. Leonora
7/1/93

==========

Report Of Analytical Results

July 01, 1993

Data File: PBBY701.DAT

Data Collected: 07/01/93 At: 09:23:10 By: BAI

==========

	Pb ug/L
Blank	
Mean Conc.	0.00
Standard 1	
Mean Conc.	40.00
Standard 2	
Mean Conc.	30.00
Standard 3	
Mean Conc.	20.00
Standard 4	
Mean Conc.	10.00

SF1187

r = 0.99839

AQC 25 UG/L

Mean Conc. 26.42 %R = 105.7 Limit = 100 ± 10 %

Recovery

B. Yue
7-7-93

CCB

Mean Conc. 0.08 2u Limit = ± 2 µg/l

Recovery

DIGEST BLANK (Soil digestion)

Mean Conc. 0.88 0.2 mg/kg (u) Limit = ± 0.2 mg/kg

Recovery 96.0%

93ZE33S40

Mean Conc. 124.76

Recovery

93ZE33S40 automatic dilution

Mean Conc. 139.64

Recovery 69.8%

See dilution by hand

93ZE33S40DUPx7

Mean Conc. 20.50 adj. Conc. = 14.56 mg/kg %RPD = 2.8 Limit = 20% RPD

Recovery 93.8%

93ZE33S40x7

Mean Conc. 20.46 adj. Conc. = 14.15 mg/kg

Recovery 91.4%

93ZE33S40SPKx20

Mean Conc. 17.52 adj. Conc. = 35.08 mg/kg Spk. Conc. = 20.02 mg/kg

Recovery 98.0% %R for spike = 104.5 Limit = 80-120%

AQC 25 UG/L

Mean Conc. 25.67 %R = 102.7 Limit = 100 ± 10%

Recovery

B. Yuen

7-7-93

Pb

ug/L

CCB

Mean Conc. 0.34 2u Limit = ± 2 µg/l

Recovery

93ZE33D40x7

Mean Conc. 25.92 adj. Conc. = 17.73 mg/kg

Recovery 90.7%

LCSx100

Mean Conc. 25.33 adj. Conc. = 253 mg/kg Limit = 188 ~ 285 mg/kg

Recovery 96.4%

SF1187

SF1187

DIGEST BLANK (Water digestion)

Mean Conc. 0.39 2u Limit = ± 2 µg/l

Recovery 103.%

93ZE33S38

Mean Conc. 1.89 2u

Recovery 96.8%

93ZE33D38

Mean Conc. 2.01 2

Recovery 96.0%

AQC 25 UG/L

Mean Conc. 25.40 %R = 101.6 Limit = 100 ± 10%

Recovery

B. Yuen
7-7-93

CCB

Mean Conc. -0.18 2u Limit = ± 2 µg/l

Recovery

93ZE33S39

Mean Conc. 152.69

Recovery

93ZE33S39 automatic dilution

Mean Conc. 189.16

Recovery 63.7%

See more dilution

93ZE33S38DUP

Mean Conc. 1.81 2u Duplicate difference is less than 2 µg/l

Limit = ± 2 µg/l

Recovery 98.6%

93ZE33D39x10

Mean Conc. 62.47 See automatic dilution

Recovery

93ZE33D39x10 automatic dilution

Mean Conc. 65.55 adj. conc. = 656 µg/l

Recovery 92.9%

93ZE33S38SPKx10

Mean Conc. 6.08 See less dilution

Recovery 95.2%

B. [illegible]

7-7-93

	Pb ug/L	
93ZE33S39x10		
Mean Conc.	21.59	Rerun. %R < 90
Recovery	89.0%	
AQC 25 UG/L		
Mean Conc.	26.17	%R = 104.7 Limit = 100±10%
Recovery		
CCB		
Mean Conc.	-1.19	2u Limit = ± 2 µg/l
Recovery		
93ZE33S39DUPx10		
Mean Conc.	22.06	adj. conc. = 221 µg/l %RPD = 1.8 Limit = 10% RPD
Recovery	90.5%	
93ZE33S39x10		
Mean Conc.	21.70	adj. conc. = 217 µg/l
Recovery	90.9%	
93ZE33S38SPKx3		
Mean Conc.	17.29	adj. conc. = 51.87 µg/l spk. conc. = 50 µg/l
Recovery	92.3%	%R for spike = 103.7 Limit = 85-115%
93ZE33S39SPKx15		
Mean Conc.	16.40	Not used, possible wrong dilution
Recovery	95.9%	

B. L. Jue
7-7-93

SF1187

SF1191

93ZF53S02

Mean Conc. 1.58 2u

Recovery 104.%

AQC 25 UG/L

Mean Conc. 24.69 %R = 98.8 Limit = 100±10%

Recovery

CCB

Mean Conc. 0.09 2u Limit = ± 2 µg/l

Recovery

93ZF53D02

Mean Conc. 2.45 2

Recovery 108.%

93ZF53S03

Mean Conc. 3.05 3

Recovery 100.%

93ZF53S11

Mean Conc. 1.98 2u

Recovery 92.4%

93ZF53S11DUP

Mean Conc. 2.85 3 Duplicate difference is less than 2 µg/l
Limit = ± 2 µg/l

Recovery 100.%

B. L. Jones
7-7-93

Pb

ug/L

93ZF53S11SPKx3

Mean Conc. 17.39 adj. Conc. = 52.17 µg/l Spk. Conc. = 50 µg/l

Recovery 104.% %R for spike = 104.3

Limit = 85-115 %

SF1191

SF1187

93ZE33S39SPKx15

Mean Conc. 17.08 Not used, program error. One more cup was run between AQCs. By 7-1-93

Recovery 99.4%

AQC 25 UG/L

Mean Conc. 24.55 %R = 98.2 Limit = 100 ±10%

Recovery

CCB

Mean Conc. -0.85 2u Limit = ±2 µg/l

Recovery

93ZE33S39SPKx15

Mean Conc. 17.86 adj. Conc. = 268 µg/l Spk. Conc. = 50 µg/l

Recovery 101.% %R for spike = 102.0

Limit = 85-115 %

SF1187

SF1187

93ZE33SS36

Mean Conc. -0.03 2u

Recovery 103.%

93ZE33S37

Mean Conc. -0.43 2u

Recovery 105.%

B. L. Jones

7-7-93

93ZE33D37

Mean Conc. 0.22 2u

Recovery 96.1%

93ZE33R60

Mean Conc. -0.83 2u

Recovery 103.%

AQC 25 UG/L

Mean Conc. 25.40 %R = 101.6 Limit = 100 ±10%

Recovery

CCB

Mean Conc. 1.07 2u Limit = ± 2 µg/l

Recovery

93ZE33R62

Mean Conc. 0.36 2u

Recovery 99.5%

93ZE33R64

Mean Conc. 0.23 2u

Recovery 102.%

SF1187

SF1191

93ZF53S12

Mean Conc. 0.18 Rerun. %R < 90

Recovery 89.2%

B. Lynn

7-7-93

	Pb	
	ug/L	
93ZF53S13		
Mean Conc.	0.29	2u
Recovery	104.%	
93ZF53D13		
Mean Conc.	0.33	2u
Recovery	103.%	
AQC 25 UG/L		
Mean Conc.	25.51	%R = 102.0 Limit = 100 ± 10%
Recovery		
CCB		
Mean Conc.	0.13	2u Limit = ± 2 µg/l
Recovery		
93ZF53R01		
Mean Conc.	-0.42	2u
Recovery	107.%	
93ZF53R03		
Mean Conc.	-0.62	2u
Recovery	107.%	
92ZF53S12		
Mean Conc.	-1.09	2u
Recovery	102.%	
93ZF53S13		

B. Yu
7-7-93

Mean Conc. -0.46 2u wheel duplicate

Recovery 104.%

AQC 25 UG/L

Mean Conc. 25.90 %R = 103.6 Limit = 100 ± 10%

Recovery

CCB

Mean Conc. -0.66 2u Limit = ± 2 µg/l

Recovery

==========

Analyst: B. Green 7-7-93 Supervisor: _____

==========

Element File: PBMSC.GEL Element: Pb Wavelength: 283.3
Date: 07/01/93 Time: 09:20 Slit: 0.70
Data File: PBBY701.DAT ID/Wt File: PBGENER.IDW Lamp Current: 5
Technique: HGA Calib. Type: Linear Energy: 52

~~~~~~

Pb ID: Blank Seq. No.: 00001 A/S Pos.: 1 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 1
Replicate 1 Time: 09:23
Peak Area (A-s): 0.006 Peak Height (A): 0.026
Background Pk Area (A-s): 0.085 Background Pk Height (A): 0.036
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): 0.43

Auto-zero performed.

~~~~~~

Pb ID: Standard 1 Seq. No.: 00002 A/S Pos.: 2 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 2
Replicate 1 Time: 09:26
Peak Area (A-s): 0.128 Peak Height (A): 0.335
Background Pk Area (A-s): 0.115 Background Pk Height (A): 0.091
Blank Corrected Pk Area (A-s): 0.122
Concentration (ug/L): 48.35

Standard number 1 applied. [40.00]
Correlation coefficient: 1.00000 Slope: 0.0031 Int: 0.000

~~~~~~

Pb ID: Standard 2 Seq. No.: 00003 A/S Pos.: 3 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 3
Replicate 1 Time: 09:29
Peak Area (A-s): 0.093 Peak Height (A): 0.261
Background Pk Area (A-s): 0.109 Background Pk Height (A): 0.072
Blank Corrected Pk Area (A-s): 0.087
Concentration (ug/L): 28.46

Standard number 2 applied. [30.00]
Correlation coefficient: 0.99914 Slope: 0.0030 Int: -0.001

~~~~~~

Pb ID: Standard 3 Seq. No.: 00004 A/S Pos.: 4 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 4
Replicate 1 Time: 09:32
Peak Area (A-s): 0.070 Peak Height (A): 0.182
Background Pk Area (A-s): 0.096 Background Pk Height (A): 0.048
Blank Corrected Pk Area (A-s): 0.064
Concentration (ug/L): 21.49

B. L[illegible]
7-7-93

Standard number 3 applied. [20.00]
Correlation coefficient: 0.99820 Slope: 0.0030 Int: 0.001

~~~~~~

Pb ID: Standard 4 Seq. No.: 00005 A/S Pos.: 5 Date: 07/01/93
~~~~~~

uL dispensed: 5 from 0, 5 from 36, 10 from 5
Replicate 1 Time: 09:36
Peak Area (A-s): 0.035 Peak Height (A): 0.099
Background Pk Area (A-s): 0.088 Background Pk Height (A): 0.036
Blank Corrected Pk Area (A-s): 0.030
Concentration (ug/L): 9.65

Standard number 4 applied. [10.00]
Correlation coefficient: 0.99839 Slope: 0.0030 Int: 0.000

~~~~~~

Pb ID: AQC 25 UG/L Seq. No.: 00006 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 37
Replicate 1 Time: 09:40
Peak Area (A-s): 0.086 Peak Height (A): 0.226
Background Pk Area (A-s): 0.101 Background Pk Height (A): 0.062
Blank Corrected Pk Area (A-s): 0.080
Concentration (ug/L): 26.42

Check sample is within range 22.50 - 27.50

~~~~~~

Pb ID: CCB Seq. No.: 00007 A/S Pos.: 1 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 1
Replicate 1 Time: 09:43
Peak Area (A-s): 0.006 Peak Height (A): 0.018
Background Pk Area (A-s): 0.080 Background Pk Height (A): 0.034
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.08

Check sample is within range -2.00 - 2.00

~~~~~~

Pb ID: DIGEST BLANK Seq. No.: 00008 A/S Pos.: 6 Date: 07/01/93
(SOIL)
uL dispensed: 5 from 0, 5 from 36, 10 from 6
Replicate 1 Time: 09:46
Peak Area (A-s): 0.009 Peak Height (A): 0.025
Background Pk Area (A-s): 0.073 Background Pk Height (A): 0.035
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 0.88

~~~~~~

Pb ID: DIGEST BLANK Seq. No.: 00009 A/S Pos.: 6 Date: 07/01/93
(SOIL)
uL dispensed: 5 from 36, 5 from 2, 10 from 6
Replicate 1 Time: 09:49
Peak Area (A-s): 0.067 Peak Height (A): 0.146
Background Pk Area (A-s): 0.055 Background Pk Height (A): 0.043
Blank Corrected Pk Area (A-s): 0.061
Concentration (ug/L): 20.08

B. L. [illegible]
7-7-93

Recovery is 96.0%

~~~~~~

Pb ID: 93ZE33S40 Seq. No.: 00010 A/S Pos.: 7 Date: 07/01/93
~~~~~~

uL dispensed: 5 from 0, 5 from 36, 10 from 7
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 09:53
Peak Area (A-s): 0.382 Peak Height (A): 0.586
Background Pk Area (A-s): 0.565 Background Pk Height (A): 0.245
Blank Corrected Pk Area (A-s): 0.376
Concentration (ug/L): 124.76

~~~~~~

Pb ID: 93ZE33S40 Seq. No.: 00011 A/S Pos.: 7 Date: 07/01/93
automatic dilution
uL dispensed: 10 from 0, 5 from 36, 5 from 7
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 09:56
Peak Area (A-s): 0.216 Peak Height (A): 0.472
Background Pk Area (A-s): 0.468 Background Pk Height (A): 0.187
Blank Corrected Pk Area (A-s): 0.211
Concentration (ug/L): 69.82 Corrected Conc (ug/L): 139.64

~~~~~~

Pb ID: 93ZE33S40 Seq. No.: 00012 A/S Pos.: 7 Date: 07/01/93
automatic dilution
uL dispensed: 5 from 0, 5 from 36, 5 from 2, 5 from 7
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 09:59
Peak Area (A-s): 0.259 Peak Height (A): 0.492
Background Pk Area (A-s): 0.461 Background Pk Height (A): 0.196
Blank Corrected Pk Area (A-s): 0.253
Concentration (ug/L): 83.78 Corrected Conc (ug/L): 167.56

Recovery is 69.8%

~~~~~~

Pb ID: 93ZE33S40DUPx7 Seq. No.: 00013 A/S Pos.: 8 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 8
Replicate 1 Time: 10:03
Peak Area (A-s): 0.068 Peak Height (A): 0.171
Background Pk Area (A-s): 0.294 Background Pk Height (A): 0.113
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 20.50

~~~~~~

Pb ID: 93ZE33S40DUPx7 Seq. No.: 00014 A/S Pos.: 8 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 8
Replicate 1 Time: 10:06
Peak Area (A-s): 0.124 Peak Height (A): 0.300
Background Pk Area (A-s): 0.289 Background Pk Height (A): 0.104
Blank Corrected Pk Area (A-s): 0.119
Concentration (ug/L): 39.26

B. Yuen
7-7-93

Recovery is 93.8%

~~~~~~

Pb ID: 93ZE33S40x7 Seq. No.: 00015 A/S Pos.: 9 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 9
Replicate 1 Time: 10:09
~~~~~~

Peak Area (A-s): 0.068 Peak Height (A): 0.175
Background Pk Area (A-s): 0.300 Background Pk Height (A): 0.113
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 20.46

~~~~~~

Pb ID: 93ZE33S40x7 Seq. No.: 00016 A/S Pos.: 9 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 9
Replicate 1 Time: 10:13
Peak Area (A-s): 0.123 Peak Height (A): 0.279
Background Pk Area (A-s): 0.290 Background Pk Height (A): 0.103
Blank Corrected Pk Area (A-s): 0.117
Concentration (ug/L): 38.74

Recovery is 91.4%

~~~~~~

Pb ID: 93ZE33S40SPKx20 Seq. No.: 00017 A/S Pos.: 10 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 10
Replicate 1 Time: 10:16
Peak Area (A-s): 0.059 Peak Height (A): 0.151
Background Pk Area (A-s): 0.169 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): 0.053
Concentration (ug/L): 17.52

~~~~~~

Pb ID: 93ZE33S40SPKx20 Seq. No.: 00018 A/S Pos.: 10 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 10
Replicate 1 Time: 10:20
Peak Area (A-s): 0.118 Peak Height (A): 0.287
Background Pk Area (A-s): 0.150 Background Pk Height (A): 0.080
Blank Corrected Pk Area (A-s): 0.112
Concentration (ug/L): 37.12

Recovery is 98.0%

~~~~~~

Pb ID: AQC 25 UG/L Seq. No.: 00019 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 37
Replicate 1 Time: 10:23
Peak Area (A-s): 0.083 Peak Height (A): 0.218
Background Pk Area (A-s): 0.085 Background Pk Height (A): 0.058
Blank Corrected Pk Area (A-s): 0.078
Concentration (ug/L): 25.67

Check sample is within range 22.50 - 27.50

B. Lyn
7-7-93

~~~~~~

Pb ID: CCB Seq. No.: 00020 A/S Pos.: 1 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 1
Replicate 1 Time: 10:26
Peak Area (A-s): 0.007 Peak Height (A): 0.022
Background Pk Area (A-s): 0.067 Background Pk Height (A): 0.030
Blank Corrected Pk Area (A-s): 0.001
~~~~~~

Concentration (ug/L): 0.34

Check sample is within range -2.00 - 2.00

~~~~~~

Pb ID: 93ZE33D40x7 Seq. No.: 00021 A/S Pos.: 11 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 11
Replicate 1 Time: 10:29
Peak Area (A-s): 0.084 Peak Height (A): 0.204
Background Pk Area (A-s): 0.302 Background Pk Height (A): 0.118
Blank Corrected Pk Area (A-s): 0.078
Concentration (ug/L): 25.92

~~~~~~

Pb ID: 93ZE33D40x7 Seq. No.: 00022 A/S Pos.: 11 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 11
Replicate 1 Time: 10:33
Peak Area (A-s): 0.139 Peak Height (A): 0.332
Background Pk Area (A-s): 0.301 Background Pk Height (A): 0.108
Blank Corrected Pk Area (A-s): 0.133
Concentration (ug/L): 44.06

Recovery is 90.7%

~~~~~~

Pb ID: LCSx100 Seq. No.: 00023 A/S Pos.: 12 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 12
Replicate 1 Time: 10:36
Peak Area (A-s): 0.082 Peak Height (A): 0.223
Background Pk Area (A-s): 0.123 Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.077
Concentration (ug/L): 25.33

~~~~~~

Pb ID: LCSx100 Seq. No.: 00024 A/S Pos.: 12 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 12
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 10:39
Peak Area (A-s): 0.141 Peak Height (A): 0.362
Background Pk Area (A-s): 0.112 Background Pk Height (A): 0.099
Blank Corrected Pk Area (A-s): 0.135
Concentration (ug/L): 44.61

Recovery is 96.4%

~~~~~~

Pb ID: DIGEST BLANK Seq. No.: 00025 A/S Pos.: 13 Date: 07/01/93
(WATER)
uL dispensed: 5 from 0, 5 from 36, 10 from 13
Replicate 1 Time: 10:43
Peak Area (A-s): 0.007 Peak Height (A): 0.030
Background Pk Area (A-s): 0.057 Background Pk Height (A): 0.028
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.39

B. [signature]
7-7-93
~~~~~~

~~~~~~

Pb ID: DIGEST BLANK (WATER) Seq. No.: 00026 A/S Pos.: 13 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 13
Replicate 1 Time: 10:46
Peak Area (A-s): 0.069 Peak Height (A): 0.166
Background Pk Area (A-s): 0.055 Background Pk Height (A): 0.046
Blank Corrected Pk Area (A-s): 0.064
Concentration (ug/L): 21.00

Recovery is 103.1%

~~~~~~

Pb ID: 93ZE33S38 Seq. No.: 00027 A/S Pos.: 14 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 14
Replicate 1 Time: 10:50
Peak Area (A-s): 0.012 Peak Height (A): 0.035
Background Pk Area (A-s): 0.170 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L): 1.89

~~~~~~

Pb ID: 93ZE33S38 Seq. No.: 00028 A/S Pos.: 14 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 14
Replicate 1 Time: 10:53
Peak Area (A-s): 0.070 Peak Height (A): 0.192
Background Pk Area (A-s): 0.169 Background Pk Height (A): 0.063
Blank Corrected Pk Area (A-s): 0.064
Concentration (ug/L): 21.26

Recovery is 96.8%

~~~~~~

Pb ID: 93ZE33D38 Seq. No.: 00029 A/S Pos.: 15 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 15
Replicate 1 Time: 10:56
Peak Area (A-s): 0.012 Peak Height (A): 0.036
Background Pk Area (A-s): 0.179 Background Pk Height (A): 0.071
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L): 2.01

~~~~~~

Pb ID: 93ZE33D38 Seq. No.: 00030 A/S Pos.: 15 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 15
Replicate 1 Time: 10:59
Peak Area (A-s): 0.070 Peak Height (A): 0.175
Background Pk Area (A-s): 0.149 Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.064
Concentration (ug/L): 21.22

B. [signature]
7-7-93

Recovery is 96.0%

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Pb ID: AQC 25 UG/L Seq. No.: 00031 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 37
Replicate 1 Time: 11:03
Peak Area (A-s): 0.083 Peak Height (A): 0.224
Background Pk Area (A-s): 0.091 Background Pk Height (A): 0.059
Blank Corrected Pk Area (A-s): 0.077
Concentration (ug/L): 25.40

Check sample is within range 22.50 - 27.50

~~~~~~

Pb ID: CCB Seq. No.: 00032 A/S Pos.: 1 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 1
Replicate 1 Time: 11:06
Peak Area (A-s): 0.006 Peak Height (A): 0.025
Background Pk Area (A-s): 0.065 Background Pk Height (A): 0.032
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.18

Check sample is within range -2.00 - 2.00

~~~~~~

Pb ID: 93ZE33S39 Seq. No.: 00033 A/S Pos.: 16 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 16
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 11:09
Peak Area (A-s): 0.466 Peak Height (A): 0.916
Background Pk Area (A-s): 0.645 Background Pk Height (A): 0.536
Blank Corrected Pk Area (A-s): 0.460
Concentration (ug/L): 152.69

~~~~~~

Pb ID: 93ZE33S39 Seq. No.: 00034 A/S Pos.: 16 Date: 07/01/93
automatic dilution
uL dispensed: 10 from 0, 5 from 36, 5 from 16
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 11:12
Peak Area (A-s): 0.291 Peak Height (A): 0.685
Background Pk Area (A-s): 0.452 Background Pk Height (A): 0.299
Blank Corrected Pk Area (A-s): 0.285
Concentration (ug/L): 94.58 Corrected Conc (ug/L): 189.16

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Pb ID: 93ZE33S39 Seq. No.: 00035 A/S Pos.: 16 Date: 07/01/93
automatic dilution
uL dispensed: 5 from 0, 5 from 36, 5 from 2, 5 from 16
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 11:16
Peak Area (A-s): 0.329 Peak Height (A): 0.753
Background Pk Area (A-s): 0.455 Background Pk Height (A): 0.327
Blank Corrected Pk Area (A-s): 0.324
Concentration (ug/L): 107.32 Corrected Conc (ug/L): 214.64

B. L Jue
7-1-93

Recovery is 63.7%

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Pb ID: 93ZE33S38DUP Seq. No.: 00036 A/S Pos.: 17 Date: 07/01/93
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uL dispensed: 5 from 0, 5 from 36, 10 from 17
Replicate 1 Time: 11:19
Peak Area (A-s): 0.012 Peak Height (A): 0.036
Background Pk Area (A-s): 0.172 Background Pk Height (A): 0.070
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L): 1.81

~~~~~~

Pb ID: 93ZE33S38DUP Seq. No.: 00037 A/S Pos.: 17 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 17
Replicate 1 Time: 11:22
Peak Area (A-s): 0.071 Peak Height (A): 0.183
Background Pk Area (A-s): 0.155 Background Pk Height (A): 0.059
Blank Corrected Pk Area (A-s): 0.065
Concentration (ug/L): 21.52

Recovery is 98.6%

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Pb ID: 93ZE33D39x10 Seq. No.: 00038 A/S Pos.: 18 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 18
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 11:26
Peak Area (A-s): 0.194 Peak Height (A): 0.484
Background Pk Area (A-s): 0.240 Background Pk Height (A): 0.155
Blank Corrected Pk Area (A-s): 0.189
Concentration (ug/L): 62.47

~~~~~~

Pb ID: 93ZE33D39x10, Seq. No.: 00039 A/S Pos.: 18 Date: 07/01/93
automatic dilution
uL dispensed: 10 from 0, 5 from 36, 5 from 18
Replicate 1 Time: 11:29
Peak Area (A-s): 0.105 Peak Height (A): 0.276
Background Pk Area (A-s): 0.156 Background Pk Height (A): 0.082
Blank Corrected Pk Area (A-s): 0.099
Concentration (ug/L): 32.77 Corrected Conc (ug/L): 65.55

~~~~~~

Pb ID: 93ZE33D39x10, Seq. No.: 00040 A/S Pos.: 18 Date: 07/01/93
automatic dilution
uL dispensed: 5 from 0, 5 from 36, 5 from 2, 5 from 18
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 11:32
Peak Area (A-s): 0.161 Peak Height (A): 0.409
Background Pk Area (A-s): 0.154 Background Pk Height (A): 0.117
Blank Corrected Pk Area (A-s): 0.155
Concentration (ug/L): 51.35 Corrected Conc (ug/L): 102.70

Recovery is 92.9%

B. Lyne
7-1-93

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Pb ID: 93ZE33S38SPKx10 Seq. No.: 00041 A/S Pos.: 19 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 19
Replicate 1 Time: 11:35
Peak Area (A-s): 0.024 Peak Height (A): 0.061
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Background Pk Area (A-s): 0.082   Background Pk Height (A): 0.034
Blank Corrected Pk Area (A-s): 0.019
Concentration (ug/L): 6.08

~~~~~~

Pb   ID: 93ZE33S38SPKx10   Seq. No.: 00042   A/S Pos.: 19   Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 19
Replicate 1   Time: 11:39
Peak Area (A-s): 0.082   Peak Height (A): 0.200
Background Pk Area (A-s): 0.080   Background Pk Height (A): 0.053
Blank Corrected Pk Area (A-s): 0.076
Concentration (ug/L): 25.12

Recovery is 95.2%

~~~~~~

Pb   ID: 93ZE33S39x10   Seq. No.: 00043   A/S Pos.: 20   Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 20
Replicate 1   Time: 11:42
Peak Area (A-s): 0.071   Peak Height (A): 0.186
Background Pk Area (A-s): 0.192   Background Pk Height (A): 0.071
Blank Corrected Pk Area (A-s): 0.065
Concentration (ug/L): 21.59

~~~~~~

Pb   ID: 93ZE33S39x10   Seq. No.: 00044   A/S Pos.: 20   Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 20
Replicate 1   Time: 11:45
Peak Area (A-s): 0.125   Peak Height (A): 0.320
Background Pk Area (A-s): 0.182   Background Pk Height (A): 0.100
Blank Corrected Pk Area (A-s): 0.119
Concentration (ug/L): 39.38

Recovery is 89.0%

~~~~~~

Pb   ID: AQC 25 UG/L   Seq. No.: 00045   A/S Pos.: 37   Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 37
Replicate 1   Time: 11:48
Peak Area (A-s): 0.085   Peak Height (A): 0.213
Background Pk Area (A-s): 0.088   Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.079
Concentration (ug/L): 26.17

Check sample is within range 22.50 - 27.50

B. [signature]
7-7-93

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Pb   ID: CCB   Seq. No.: 00046   A/S Pos.: 1   Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 1
Replicate 1   Time: 11:52
Peak Area (A-s): 0.002   Peak Height (A): 0.019
Background Pk Area (A-s): 0.070   Background Pk Height (A): 0.033
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -1.19
~~~~~~

Check sample is within range -2.00 - 2.00

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Pb ID: 93ZE33S39DUPx10 Seq. No.: 00047 A/S Pos.: 21 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 21
Replicate 1 Time: 11:55
Peak Area (A-s): 0.073 Peak Height (A): 0.195
Background Pk Area (A-s): 0.206 Background Pk Height (A): 0.073
Blank Corrected Pk Area (A-s): 0.067
Concentration (ug/L): 22.06

~~~~~~

Pb ID: 93ZE33S39DUPx10 Seq. No.: 00048 A/S Pos.: 21 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 21
Replicate 1 Time: 11:58
Peak Area (A-s): 0.127 Peak Height (A): 0.328
Background Pk Area (A-s): 0.187 Background Pk Height (A): 0.103
Blank Corrected Pk Area (A-s): 0.121
Concentration (ug/L): 40.16

Recovery is 90.5%

~~~~~~

Pb ID: 93ZE33S39x10 Seq. No.: 00049 A/S Pos.: 22 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 22
Replicate 1 Time: 12:01
Peak Area (A-s): 0.071 Peak Height (A): 0.184
Background Pk Area (A-s): 0.196 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.066
Concentration (ug/L): 21.70

~~~~~~

Pb ID: 93ZE33S39x10 Seq. No.: 00050 A/S Pos.: 22 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 22
Replicate 1 Time: 12:04
Peak Area (A-s): 0.126 Peak Height (A): 0.318
Background Pk Area (A-s): 0.187 Background Pk Height (A): 0.099
Blank Corrected Pk Area (A-s): 0.120
Concentration (ug/L): 39.89

Recovery is 90.9%

~~~~~~

Pb ID: 93ZE33S38SPKx3 Seq. No.: 00051 A/S Pos.: 23 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 23
Replicate 1 Time: 12:08
Peak Area (A-s): 0.058 Peak Height (A): 0.154
Background Pk Area (A-s): 0.103 Background Pk Height (A): 0.048
Blank Corrected Pk Area (A-s): 0.052
Concentration (ug/L): 17.29

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7-7-93

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Pb ID: 93ZE33S38SPKx3 Seq. No.: 00052 A/S Pos.: 23 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 23
Replicate 1 Time: 12:11
Peak Area (A-s): 0.114 Peak Height (A): 0.281
Background Pk Area (A-s): 0.107 Background Pk Height (A): 0.081
Blank Corrected Pk Area (A-s): 0.108
Concentration (ug/L): 35.74

Recovery is 92.3%

~~~~~~

Pb ID: 93ZE33S39SPKx15 Seq. No.: 00053 A/S Pos.: 24 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 24
Replicate 1 Time: 12:14
Peak Area (A-s): 0.055 Peak Height (A): 0.154
Background Pk Area (A-s): 0.137 Background Pk Height (A): 0.054
Blank Corrected Pk Area (A-s): 0.050
Concentration (ug/L): 16.40

~~~~~~

Pb ID: 93ZE33S39SPKx15 Seq. No.: 00054 A/S Pos.: 24 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 24
Replicate 1 Time: 12:17
Peak Area (A-s): 0.113 Peak Height (A): 0.293
Background Pk Area (A-s): 0.150 Background Pk Height (A): 0.088
Blank Corrected Pk Area (A-s): 0.107
Concentration (ug/L): 35.57

Recovery is 95.9%

~~~~~~

Pb ID: 93ZF53S02 Seq. No.: 00055 A/S Pos.: 25 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 25
Replicate 1 Time: 12:21
Peak Area (A-s): 0.011 Peak Height (A): 0.039
Background Pk Area (A-s): 0.208 Background Pk Height (A): 0.081
Blank Corrected Pk Area (A-s): 0.005
Concentration (ug/L): 1.58

~~~~~~

Pb ID: 93ZF53S02 Seq. No.: 00056 A/S Pos.: 25 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 25
Replicate 1 Time: 12:24
Peak Area (A-s): 0.073 Peak Height (A): 0.186
Background Pk Area (A-s): 0.205 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.068
Concentration (ug/L): 22.34

B. Lyne
7-7-93

Recovery is 103.8%

~~~~~~

Pb ID: AQC 25 UG/L Seq. No.: 00057 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 37
Replicate 1 Time: 12:27
Peak Area (A-s): 0.080 Peak Height (A): 0.208
~~~~~~

Background Pk Area (A-s): 0.093   Background Pk Height (A): 0.058
Blank Corrected Pk Area (A-s): 0.075
Concentration (ug/L): 24.69

Check sample is within range 22.50 - 27.50

~~~~~~

Pb   ID: CCB   Seq. No.: 00058   A/S Pos.: 1   Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 1
Replicate 1   Time: 12:31
Peak Area (A-s): 0.006   Peak Height (A): 0.023
Background Pk Area (A-s): 0.075   Background Pk Height (A): 0.033
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.09

Check sample is within range -2.00 - 2.00

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Pb   ID: 93ZF53D02   Seq. No.: 00059   A/S Pos.: 26   Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 26
Replicate 1   Time: 12:34
Peak Area (A-s): 0.013   Peak Height (A): 0.039
Background Pk Area (A-s): 0.199   Background Pk Height (A): 0.079
Blank Corrected Pk Area (A-s): 0.008
Concentration (ug/L): 2.45

~~~~~~

Pb   ID: 93ZF53D02   Seq. No.: 00060   A/S Pos.: 26   Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 26
Replicate 1   Time: 12:37
Peak Area (A-s): 0.079   Peak Height (A): 0.193
Background Pk Area (A-s): 0.203   Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.073
Concentration (ug/L): 24.07

Recovery is 108.1%

~~~~~~

Pb   ID: 93ZF53S03   Seq. No.: 00061   A/S Pos.: 27   Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 27
Replicate 1   Time: 12:41
Peak Area (A-s): 0.015   Peak Height (A): 0.042
Background Pk Area (A-s): 0.199   Background Pk Height (A): 0.077
Blank Corrected Pk Area (A-s): 0.009
Concentration (ug/L): 3.05

7-7-93

~~~~~~

Pb   ID: 93ZF53S03   Seq. No.: 00062   A/S Pos.: 27   Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 27
Replicate 1   Time: 12:44
Peak Area (A-s): 0.076   Peak Height (A): 0.194
Background Pk Area (A-s): 0.201   Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.070
Concentration (ug/L): 23.04
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Recovery is 100.0%

~~~~~~

Pb ID: 93ZF53S11 Seq. No.: 00063 A/S Pos.: 28 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 28
Replicate 1 Time: 12:47
Peak Area (A-s): 0.012 Peak Height (A): 0.028
Background Pk Area (A-s): 0.350 Background Pk Height (A): 0.137
Blank Corrected Pk Area (A-s): 0.006
Concentration (ug/L): 1.98

~~~~~~

Pb ID: 93ZF53S11 Seq. No.: 00064 A/S Pos.: 28 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 28
Replicate 1 Time: 12:51
Peak Area (A-s): 0.068 Peak Height (A): 0.171
Background Pk Area (A-s): 0.354 Background Pk Height (A): 0.130
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 20.45

Recovery is 92.4%

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Pb ID: 93ZF53S11DUP Seq. No.: 00065 A/S Pos.: 29 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 29
Replicate 1 Time: 12:54
Peak Area (A-s): 0.015 Peak Height (A): 0.036
Background Pk Area (A-s): 0.345 Background Pk Height (A): 0.131
Blank Corrected Pk Area (A-s): 0.009
Concentration (ug/L): 2.85

~~~~~~

Pb ID: 93ZF53S11DUP Seq. No.: 00066 A/S Pos.: 29 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 29
Replicate 1 Time: 12:57
Peak Area (A-s): 0.075 Peak Height (A): 0.181
Background Pk Area (A-s): 0.357 Background Pk Height (A): 0.129
Blank Corrected Pk Area (A-s): 0.069
Concentration (ug/L): 22.86

Recovery is 100.0%

~~~~~~

Pb ID: 93ZF53S11SPKx3 Seq. No.: 00067 A/S Pos.: 30 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 30
Replicate 1 Time: 13:01
Peak Area (A-s): 0.058 Peak Height (A): 0.154
Background Pk Area (A-s): 0.221 Background Pk Height (A): 0.081
Blank Corrected Pk Area (A-s): 0.053
Concentration (ug/L): 17.39

B. Lynes
7-7-93

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Pb ID: 93ZF53S11SPKx3 Seq. No.: 00068 A/S Pos.: 30 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 30
Replicate 1 Time: 13:04
Peak Area (A-s): 0.121 Peak Height (A): 0.282
Background Pk Area (A-s): 0.208 Background Pk Height (A): 0.103
Blank Corrected Pk Area (A-s): 0.116
Concentration (ug/L): 38.24

Recovery is 104.3%

~~~~~~

Pb ID: 93ZE33S39SPKx15 Seq. No.: 00069 A/S Pos.: 31 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 31
Replicate 1 Time: 13:08
Peak Area (A-s): 0.058 Peak Height (A): 0.159
Background Pk Area (A-s): 0.160 Background Pk Height (A): 0.063
Blank Corrected Pk Area (A-s): 0.052
Concentration (ug/L): 17.08

Not used, program error, one more cup was run between AQCs.

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Pb ID: 93ZE33S39SPKx15 Seq. No.: 00070 A/S Pos.: 31 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 31
Replicate 1 Time: 13:11
Peak Area (A-s): 0.117 Peak Height (A): 0.295
Background Pk Area (A-s): 0.149 Background Pk Height (A): 0.091
Blank Corrected Pk Area (A-s): 0.112
Concentration (ug/L): 36.96

Recovery is 99.4%

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Pb ID: AQC 25 UG/L Seq. No.: 00071 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 37
Replicate 1 Time: 13:14
Peak Area (A-s): 0.080 Peak Height (A): 0.196
Background Pk Area (A-s): 0.097 Background Pk Height (A): 0.056
Blank Corrected Pk Area (A-s): 0.074
Concentration (ug/L): 24.55

Check sample is within range 22.50 - 27.50

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Pb ID: CCB Seq. No.: 00072 A/S Pos.: 1 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 1
Replicate 1 Time: 13:17
Peak Area (A-s): 0.004 Peak Height (A): 0.023
Background Pk Area (A-s): 0.076 Background Pk Height (A): 0.037
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.85

Check sample is within range -2.00 - 2.00

B. L[illegible]
7-7-93

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Pb ID: 93ZE33S39SPKx15 Seq. No.: 00073 A/S Pos.: 31 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 31
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Replicate 1 Time: 13:27
Peak Area (A-s): 0.060 Peak Height (A): 0.158
Background Pk Area (A-s): 0.215 Background Pk Height (A): 0.080
Blank Corrected Pk Area (A-s): 0.054
Concentration (ug/L): 17.86

~~~~~~

Pb ID: 93ZE33S39SPKx15 Seq. No.: 00074 A/S Pos.: 31 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 31
Replicate 1 Time: 13:31
Peak Area (A-s): 0.121 Peak Height (A): 0.292
Background Pk Area (A-s): 0.220 Background Pk Height (A): 0.100
Blank Corrected Pk Area (A-s): 0.115
Concentration (ug/L): 38.11

Recovery is 101.2%

~~~~~~

Pb ID: 93ZE33SS36 Seq. No.: 00075 A/S Pos.: 32 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 32
Replicate 1 Time: 13:34
Peak Area (A-s): 0.006 Peak Height (A): 0.015
Background Pk Area (A-s): 0.221 Background Pk Height (A): 0.086
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): -0.03

~~~~~~

Pb ID: 93ZE33SS36 Seq. No.: 00076 A/S Pos.: 32 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 32
Replicate 1 Time: 13:37
Peak Area (A-s): 0.068 Peak Height (A): 0.173
Background Pk Area (A-s): 0.215 Background Pk Height (A): 0.078
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 20.64

Recovery is 103.3%

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Pb ID: 93ZE33S37 Seq. No.: 00077 A/S Pos.: 33 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 33
Replicate 1 Time: 13:40
Peak Area (A-s): 0.005 Peak Height (A): 0.015
Background Pk Area (A-s): 0.214 Background Pk Height (A): 0.086
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.43

B. [signature] 7-7-93

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Pb ID: 93ZE33S37 Seq. No.: 00078 A/S Pos.: 33 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 33
Replicate 1 Time: 13:44
Peak Area (A-s): 0.068 Peak Height (A): 0.165
Background Pk Area (A-s): 0.223 Background Pk Height (A): 0.082
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 20.48
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Recovery is 104.6%

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Pb ID: 93ZE33D37 Seq. No.: 00079 A/S Pos.: 34 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 34
Replicate 1 Time: 13:47
Peak Area (A-s): 0.007 Peak Height (A): 0.015
Background Pk Area (A-s): 0.230 Background Pk Height (A): 0.091
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.22

~~~~~~

Pb ID: 93ZE33D37 Seq. No.: 00080 A/S Pos.: 34 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 34
Replicate 1 Time: 13:50
Peak Area (A-s): 0.065 Peak Height (A): 0.168
Background Pk Area (A-s): 0.211 Background Pk Height (A): 0.079
Blank Corrected Pk Area (A-s): 0.059
Concentration (ug/L): 19.44

Recovery is 96.1%

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Pb ID: 93ZE33R60 Seq. No.: 00081 A/S Pos.: 35 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 35
Replicate 1 Time: 13:53
Peak Area (A-s): 0.004 Peak Height (A): 0.016
Background Pk Area (A-s): 0.080 Background Pk Height (A): 0.036
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.83

~~~~~~

Pb ID: 93ZE33R60 Seq. No.: 00082 A/S Pos.: 35 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 35
Replicate 1 Time: 13:57
Peak Area (A-s): 0.066 Peak Height (A): 0.150
Background Pk Area (A-s): 0.079 Background Pk Height (A): 0.045
Blank Corrected Pk Area (A-s): 0.060
Concentration (ug/L): 19.83

Recovery is 103.3%

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Pb ID: AQC 25 UG/L Seq. No.: 00083 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 37
Replicate 1 Time: 14:00
Peak Area (A-s): 0.083 Peak Height (A): 0.182
Background Pk Area (A-s): 0.107 Background Pk Height (A): 0.054
Blank Corrected Pk Area (A-s): 0.077
Concentration (ug/L): 25.40

B. Juen
7-7-93

Check sample is within range 22.50 - 27.50
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Pb   ID: CCB   Seq. No.: 00084   A/S Pos.: 1   Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 1
Replicate 1   Time: 14:03
Peak Area (A-s): 0.009   Peak Height (A): 0.022
Background Pk Area (A-s): 0.083   Background Pk Height (A): 0.039
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 1.07

Check sample is within range -2.00 - 2.00

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Pb   ID: 93ZE33R62   Seq. No.: 00085   A/S Pos.: 6   Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 6
Replicate 1   Time: 14:07
Peak Area (A-s): 0.007   Peak Height (A): 0.015
Background Pk Area (A-s): 0.084   Background Pk Height (A): 0.039
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.36

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Pb   ID: 93ZE33R62   Seq. No.: 00086   A/S Pos.: 6   Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 6
Replicate 1   Time: 14:10
Peak Area (A-s): 0.067   Peak Height (A): 0.165
Background Pk Area (A-s): 0.076   Background Pk Height (A): 0.044
Blank Corrected Pk Area (A-s): 0.061
Concentration (ug/L): 20.25

Recovery is 99.5%

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Pb   ID: 93ZE33R64   Seq. No.: 00087   A/S Pos.: 7   Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 7
Replicate 1   Time: 14:14
Peak Area (A-s): 0.007   Peak Height (A): 0.019
Background Pk Area (A-s): 0.087   Background Pk Height (A): 0.040
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.23

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Pb   ID: 93ZE33R64   Seq. No.: 00088   A/S Pos.: 7   Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 7
Replicate 1   Time: 14:17
Peak Area (A-s): 0.068   Peak Height (A): 0.161
Background Pk Area (A-s): 0.077   Background Pk Height (A): 0.043
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 20.62

Recovery is 101.9%

B. Yu
7-7-93

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Pb   ID: 93ZF53S12   Seq. No.: 00089   A/S Pos.: 8   Date: 07/01/93

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uL dispensed: 5 from 0, 5 from 36, 10 from 8
Replicate  1                          Time: 14:20
Peak Area (A-s): 0.007                Peak Height (A): 0.020
Background Pk Area (A-s): 0.629       Background Pk Height (A): 0.286
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L  ): 0.18

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Pb     ID: 93ZF53S12          Seq. No.: 00090    A/S Pos.: 8     Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 8
Replicate  1                          Time: 14:24
Peak Area (A-s): 0.060                Peak Height (A): 0.132
Background Pk Area (A-s): 0.660       Background Pk Height (A): 0.298
Blank Corrected Pk Area (A-s): 0.055
Concentration (ug/L  ): 18.02

Recovery is 89.2%

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Pb     ID: 93ZF53S13          Seq. No.: 00091    A/S Pos.: 9     Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 9
Replicate  1                          Time: 14:27
Peak Area (A-s): 0.007                Peak Height (A): 0.018
Background Pk Area (A-s): 0.294       Background Pk Height (A): 0.114
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L  ): 0.29

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Pb     ID: 93ZF53S13          Seq. No.: 00092    A/S Pos.: 9     Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 9
Replicate  1                          Time: 14:30
Peak Area (A-s): 0.070                Peak Height (A): 0.174
Background Pk Area (A-s): 0.290       Background Pk Height (A): 0.111
Blank Corrected Pk Area (A-s): 0.064
Concentration (ug/L  ): 21.06

Recovery is 103.8%

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Pb     ID: 93ZF53D13          Seq. No.: 00093    A/S Pos.: 10    Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 10
Replicate  1                          Time: 14:34
Peak Area (A-s): 0.007                Peak Height (A): 0.021
Background Pk Area (A-s): 0.278       Background Pk Height (A): 0.109
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L  ): 0.33

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Pb     ID: 93ZF53D13          Seq. No.: 00094    A/S Pos.: 10    Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 10
Replicate  1                          Time: 14:37
Peak Area (A-s): 0.069                Peak Height (A): 0.175
Background Pk Area (A-s): 0.281       Background Pk Height (A): 0.105
Blank Corrected Pk Area (A-s): 0.063
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B. L[illegible]
7-7-93

Concentration (ug/L): 20.84

Recovery is 102.6%

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Pb ID: AQC 25 UG/L Seq. No.: 00095 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 37
Replicate 1 Time: 14:40
Peak Area (A-s): 0.083 Peak Height (A): 0.195
Background Pk Area (A-s): 0.102 Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.077
Concentration (ug/L): 25.51

Check sample is within range 22.50 - 27.50

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Pb ID: CCB Seq. No.: 00096 A/S Pos.: 1 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 1
Replicate 1 Time: 14:44
Peak Area (A-s): 0.006 Peak Height (A): 0.019
Background Pk Area (A-s): 0.083 Background Pk Height (A): 0.039
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.13

Check sample is within range -2.00 - 2.00

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Pb ID: 93ZF53R01 Seq. No.: 00097 A/S Pos.: 11 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 11
Replicate 1 Time: 14:47
Peak Area (A-s): 0.005 Peak Height (A): 0.015
Background Pk Area (A-s): 0.082 Background Pk Height (A): 0.038
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.42

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Pb ID: 93ZF53R01 Seq. No.: 00098 A/S Pos.: 11 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 11
Replicate 1 Time: 14:50
Peak Area (A-s): 0.069 Peak Height (A): 0.169
Background Pk Area (A-s): 0.068 Background Pk Height (A): 0.047
Blank Corrected Pk Area (A-s): 0.063
Concentration (ug/L): 20.92

Recovery is 106.7%

B. L[illegible] 7-7-93

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Pb ID: 93ZF53R03 Seq. No.: 00099 A/S Pos.: 12 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 12
Replicate 1 Time: 14:54
Peak Area (A-s): 0.004 Peak Height (A): 0.017
Background Pk Area (A-s): 0.091 Background Pk Height (A): 0.040
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.62
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Pb ID: 93ZF53R03 Seq. No.: 00100 A/S Pos.: 12 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 12
Replicate 1 Time: 14:57
Peak Area (A-s): 0.069 Peak Height (A): 0.167
Background Pk Area (A-s): 0.077 Background Pk Height (A): 0.044
Blank Corrected Pk Area (A-s): 0.063
Concentration (ug/L): 20.86

Recovery is 107.4%

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Pb ID: 92ZF53S12 Seq. No.: 00101 A/S Pos.: 13 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 13
Replicate 1 Time: 15:00
Peak Area (A-s): 0.003 Peak Height (A): 0.018
Background Pk Area (A-s): 0.641 Background Pk Height (A): 0.302
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -1.09

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Pb ID: 92ZF53S12 Seq. No.: 00102 A/S Pos.: 13 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 13
Replicate 1 Time: 15:04
Peak Area (A-s): 0.064 Peak Height (A): 0.132
Background Pk Area (A-s): 0.654 Background Pk Height (A): 0.295
Blank Corrected Pk Area (A-s): 0.059
Concentration (ug/L): 19.33

Recovery is 102.1%

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Pb ID: 93ZF53S13 Seq. No.: 00103 A/S Pos.: 14 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 14
Replicate 1 Time: 15:07
Peak Area (A-s): 0.005 Peak Height (A): 0.018
Background Pk Area (A-s): 0.290 Background Pk Height (A): 0.114
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.46

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Pb ID: 93ZF53S13 Seq. No.: 00104 A/S Pos.: 14 Date: 07/01/93

uL dispensed: 5 from 36, 5 from 2, 10 from 14
Replicate 1 Time: 15:10
Peak Area (A-s): 0.068 Peak Height (A): 0.170
Background Pk Area (A-s): 0.294 Background Pk Height (A): 0.111
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 20.43

B. C Jones
7-7-93

Recovery is 104.4%

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Pb ID: 93ZE33R62 Seq. No.: 00105 A/S Pos.: 6 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 6

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Pb ID: AQC 25 UG/L Seq. No.: 00106 A/S Pos.: 37 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 37
Replicate 1 Time: 15:14
Peak Area (A-s): 0.084 Peak Height (A): 0.195
Background Pk Area (A-s): 0.103 Background Pk Height (A): 0.061
Blank Corrected Pk Area (A-s): 0.078
Concentration (ug/L): 25.90

Check sample is within range 22.50 - 27.50

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Pb ID: CCB Seq. No.: 00107 A/S Pos.: 1 Date: 07/01/93

uL dispensed: 5 from 0, 5 from 36, 10 from 1
Replicate 1 Time: 15:17
Peak Area (A-s): 0.004 Peak Height (A): 0.018
Background Pk Area (A-s): 0.090 Background Pk Height (A): 0.039
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.66

Check sample is within range -2.00 - 2.00

B. [signature]
7-7-93

Element	Instrument	QC Source
☐ Ag	☒ 5100 A3	☐ CLP-40
☐ As	☐ 5100 A6	☐ CLP-70
☐ Cd	☐ 5000 A4	☐ CLP-80
☐ Cr	☐ 5000 A5	☐ EPA-V-1
☒ Pb	☐	☒ CLPF-CAL-1
☐ Sb	☐	☐
☐ Se		☐
☐ Tl		☐

Analyst B. L Green

Date 7-1-93

Lamp # 420252

Energy 52

Expansion 1

Stock 3-96PB (Opened: 1-25-93 Expires: 10-31-93)

☒ platform ☒ MSC

☐ wall ☐ MSA

Blank	Slope	AQC
0.08	0.0030	26.42
0.34		25.67
-0.18		25.40
-1.19		26.17
0.09		24.69
-0.85		24.55
1.07		25.40
0.13		25.51
-0.66		25.90

Blank cup absorbance

Digestion QC

1. Digestion Blank < 0.2 mg/kg (Soil Digestion) (Limit = ± 0.2 mg/kg)
2. S40: Duplicate %RPD = 2.8 (Limit = 20 %RPD)
3. S40: Spike %R = 104.5 (Limit = 80-120%)
4. LCS = 253 mg/kg (Limit = 188 ~ 285 mg/kg)
5. Digestion Blank (Water Digestion) < 2 µg/l (Limit = ± 2 µg/l)
6. S38: Duplicate diff < 2 µg/l (Limit = ± 2 µg/l)
7. S39: Duplicate %RPD = 1.8 (Limit = 10 %RPD
8. S38: Spike %R = 103.7 (Limit = 85-115%)
9. S11: Duplicate diff. < 2 µg/l (Limit = ± 2 µg/l)
10. S11: Spike %R = 104.3 (Limit = 85-115%)
11. S39: Spike %R = 102.0 (Limit = 85-115%)

B L Green

7-7-93

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI
DATE OF ANALYSIS --: 07-01-1993
PARAMETER NAME ----: SB
DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	-.7068595	.9993653	.00481	2u Limit = ±2 µg/l
AQC 18 UG/L	16.37813	.9986172	4.390002E-03	%R=91.0 Limit=100±10%
93ZE33S38SPKx10				
	4.848488	.9990421	.00495	} not used, see redigestion results
93ZE33S40SPK	7.727275	.9807271	.00198	
93ZE33S36	.2489652	.9995356	.00241	2u
93ZE33S37	.7767021	.9970076	.00309	2u
93ZESSD37	-.1639345	.9998387	.00305	2u
AQC 18 UG/L	17.36716	.9988237	.00414	%R = 96.5 Limit=100±10%
93ZE33R60	-.3194111	.998536	.00407	2u
93ZE33R62	-.4651128	.9983815	4.299999E-03	2u
93ZE33R64	-.5568466	.9998546	4.310001E-03	2u SF1187
93ZF53S12	4.760477	.9996237	.00334	5 SF1191
93ZF53S13	.9090909	.9994496	.0033	2u
93ZF53D13	4.794947	.9993736	.00317	5
93ZF53R01	-.6635043	.9990581	.00422	2u
AQC 18 UG/L	16.48584	.9997661	4.240002E-03	%R = 91.6 Limit=100±10%
93ZF53R03	9.62025	.9999037	.00395	10
93ZF53R03	8.671496	.9988237	.00414	For verification only
93ZE33S40SPKx2	.8707839	.9993536	.00356	not used, see redigestion result
AQC 18 UG/L	17.96019	.9983453	.00402	%R= 99.8 Limit=100±10%

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-3.399994E-03	-1.399994E-03	41.17637 %
10	.044	.0447	7.000007E-04	1.565997 %
20	9.000001E-02	9.279999E-02	2.799988E-03	3.017229 %
30	.143	.1409	-2.100021E-03	-1.490434 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.071	.0719	8.999929E-04	1.251729 %
10	.115	.1158	8.000061E-04	.6908515 %
20	.164	.1597	-4.299984E-03	-2.692538 %
30	.201	.2036	2.600029E-03	1.277028 %

B. Yue 7-1-93

93ZE33S38SPKx10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.023	2.400002E-02	1.000015E-03	4.166727 %
10	.073	7.350001E-02	5.000159E-04	.6802936 %
20	.127	.123	-3.999993E-03	-3.252027 %
30	.17	.1725	2.500013E-03	1.449283 %

93ZE33S40SPK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.02	.0153	-4.699997E-03	-30.71893 %
10	.028	.0351	7.100001E-03	20.22792 %
20	.055	.0549	-9.999797E-05	-.1821457 %
30	.077	7.470001E-02	-2.299994E-03	-3.078975 %

93ZE33S36

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	6.000061E-04	6.000061E-04	100 %
10	.025	2.470001E-02	-2.999939E-04	-1.21455 %
20	.05	4.880001E-02	-1.199994E-03	-2.459004 %
30	.072	7.290001E-02	9.000078E-04	1.234579 %

93ZE33S37

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.004	2.400009E-03	-1.599991E-03	-66.66604 %
10	.033	3.330001E-02	3.000051E-04	.9009161 %
20	.06	6.420001E-02	4.200008E-03	6.542068 %
30	.098	.0951	-2.899997E-03	-3.049419 %

93ZESSD37

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-.0005	.0005	-100 %
10	.031	.03	-1.000002E-03	-3.333341 %
20	.06	6.049999E-02	4.999936E-04	.8264358 %
30	.091	9.099999E-02	-7.450581E-09	-8.187453E-06 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.07	7.190003E-02	1.900025E-03	2.642593 %
10	.117	.1133	-3.699981E-03	-3.265649 %
20	.153	.1547	1.700014E-03	1.09891 %
30	.196	.1961	1.000017E-04	5.099526E-02 %

B.L. Green
7-1-93

93ZE33R60

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-1.300003E-03	-3.00003E-04	23.0771 %
10	.037	.0394	.0024	6.09137 %
20	.084	.0801	-3.899999E-03	-4.868913 %
30	.119	.1208	1.800001E-03	1.490067 %

93ZE33R62

SPIKE	MEASURED	CALC.	ERROR	PER CENT

0	0	-1.999985E-03	-1.999985E-03	100 %
10	.04	4.100001E-02	1.000006E-03	2.439038 %
20	.08	8.399999E-02	3.999993E-03	4.761897 %
30	.13	.127	-3.000006E-03	-2.36221 %

93ZE33R64

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.003	-2.400009E-03	5.999909E-04	-24.99952 %
10	.042	.0407	-1.300003E-03	-3.194112 %
20	.083	.0838	8.000061E-04	.9546612 %
30	.127	.1269	-9.998679E-05	-7.879179E-02 %

93ZF53S12

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.016	1.589999E-02	-1.000073E-04	-.6289769 %
10	.05	.0493	-7.000081E-04	-1.419895 %
20	.081	.0827	1.699992E-03	2.055613 %
30	.117	.1161	-9.000078E-04	-.7752006 %

93ZF53S13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	.003	0	0 %
10	.037	.036	-9.999983E-04	-2.777773 %
20	.067	6.900001E-02	2.000004E-03	2.898557 %
30	.103	.102	-9.999946E-04	-.9803868 %

93ZF53D13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.014	1.519998E-02	1.199981E-03	7.894623 %
10	.049	4.689998E-02	-2.100017E-03	-4.47765 %
20	.078	7.859998E-02	5.999804E-04	.763334 %
30	.11	.1103	2.999827E-04	.2719699 %

93ZF53R01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-2.799988E-03	-1.799988E-03	64.28555 %
10	.038	3.940001E-02	1.400009E-03	3.553321 %
20	7.900001E-02	.0816	2.599999E-03	3.186274 %
30	.126	.1238	-2.200008E-03	-1.777066 %

B. L. Green
7-1-93

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.07	.0699	-1.000091E-04	-.1430746 %
10	.113	.1123	-6.999895E-04	-.623321 %
20	.153	.1547	1.700029E-03	1.09892 %
30	.198	.1971	-8.999556E-04	-.4565984 %

93ZF53R03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.038	3.799999E-02	-1.490116E-08	-3.92136E-05 %
10	.078	7.749999E-02	-5.000159E-04	-.645182 %
20	.116	.117	9.999871E-04	.8546899 %
30	.157	.1565	-5.000234E-04	-.3195038 %

93ZF53R03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.034	3.589999E-02	1.899991E-03	5.292456 %
10	.081	.0773	-3.700003E-03	-4.78655 %
20	.117	.1187	1.699999E-03	1.432181 %
30	.16	.1601	1.000017E-04	6.246202E-02 %

93ZE33S40SPKx2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	3.099991E-03	9.999075E-05	3.225518 %
10	.04	3.869999E-02	-1.300007E-03	-3.359192 %
20	.072	.0743	2.300002E-03	3.095561 %
30	.111	.1099	-1.099996E-03	-1.000906 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.07	7.219999E-02	2.199985E-03	3.047072 %
10	.114	.1124	-1.600012E-03	-1.423499 %
20	.156	.1526	-3.400013E-03	-2.228056 %
30	.19	.1928	2.799988E-03	1.452276 %

B. L Jones
7-1-93

Sb AA-BG BG
MAIN: -0.001 PA-0.001

0.000 AUTOZERO

Blank

Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: -0.001	PA-0.002		MAIN: 0.045	PA 0.044	
	+0			+10	
Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: 0.091	PA 0.090		MAIN: 0.144	PA 0.143	
	+20			+30	

AQC

Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: 0.072	PA 0.071		MAIN: 0.116	PA 0.115	
	+0			+10	
Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: 0.165	PA 0.164		MAIN: 0.202	PA 0.201	
	+20			+30	

3ZE33538 SpK x10

Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: 0.024	PA 0.023		MAIN: 0.074	PA 0.073	
	+0			+10	
Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: 0.128	PA 0.127		MAIN: 0.171	PA 0.170	
	+20			+30	

3ZE33540 ~~3ZE33537~~ SpK BY 7-1-93

Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: 0.021	PA 0.020		MAIN: 0.029	PA 0.028	
	+0			+10	
Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: 0.056	PA 0.055		MAIN: 0.078	PA 0.077	
	+20			+30	

BY 7-1-93 ~~3ZE33D37~~ 3ZE33536

Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: 0.001	PA 0.000		MAIN: 0.026	PA 0.025	
	+0			+10	
Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: 0.051	PA 0.050		MAIN: 0.073	PA 0.072	
	+20			+30	

3ZE33537 ~~3ZE33R60~~ BY 7-1-93

Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: 0.005	PA 0.004		MAIN: 0.034	PA 0.033	
	+0			+10	
Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: 0.061	PA 0.060		MAIN: 0.099	PA 0.098	
	+20			+30	

B. [illegible] 7-1-93

Sb	AA-BG	BG	Sb	AA-BG	BG
MAIN: 0.000	PA-0.001 +0		MAIN: 0.032	PA 0.031 +10	

93ZE33D37
~~93ZE33R62~~
BY 7-1-93

	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.061	PA 0.060 +20		MAIN: 0.092	PA 0.091 +30		
AQC	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.071	PA 0.070 +0		MAIN: 0.118	PA 0.117 +10		
	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.154	PA 0.153 +20		MAIN: 0.197	PA 0.196 +30		
Blank cups	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.001	PA 0.000		MAIN: -0.001	PA -0.002 ~~+10~~ BY 7-1-93		
93ZE33R60	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.000	PA -0.001 +0		MAIN: 0.038	PA 0.037 BY 7-1-93 ~~+30~~ +10		
	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.085	PA 0.084 +20		MAIN: 0.120	PA 0.119 +30		
93ZE33R62 ~~93ZF53S12~~ BY 7-1-93	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.001	PA 0.000 +0		MAIN: 0.041	PA 0.040 +10		
	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.081	PA 0.080 +20		MAIN: 0.131	PA 0.130 +30		
93ZE33R64 ~~93ZF53S13~~ BY 7-1-93 SF1187	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: -0.002	PA -0.003 +0		MAIN: 0.043	PA 0.042 +10		
	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.084	PA 0.083 +20		MAIN: 0.128	PA 0.127 +30		
SF1191 93ZF53S12 ~~93ZF53D13~~ BY 7-1-93	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.017	PA 0.016 +0		MAIN: 0.051	PA 0.050 +10		
	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.082	PA 0.081 +20		MAIN: 0.118	PA 0.117 +30		
93ZF53S13 ~~93ZF53R01~~ BY 7-1-93	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.004	PA 0.003 +0		MAIN: 0.038	PA 0.037 +10		B. L[illegible]
	Sb	AA-BG	BG	Sb	AA-BG	BG	7-1-93
	MAIN: 0.068	PA 0.067 +20		MAIN: 0.104	PA 0.103 +30		
	Sb	AA-BG	BG	Sb	AA-BG	BG	
	MAIN: 0.015	PA 0.014 +0		MAIN: 0.050	PA 0.049 +0		

PERKIN-ELMER FIAS 93/07/01 PAGE 3

93ZF53D13	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.079	PA 0.078		MAIN: 0.111	PA 0.110	
		+2σ			+3σ	
93ZF53R01	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.000	PA-0.001		MAIN: 0.039	PA 0.038	
		+0			+1σ	
	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.080	PA 0.079		MAIN: 0.127	PA 0.126	
		+2σ			+3σ	
AQC	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.071	PA 0.070		MAIN: 0.114	PA 0.113	
		+0			+1σ	
	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.154	PA 0.153		MAIN: 0.199	PA 0.198	
		+2σ			+3σ	
Blank Cups	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.000	PA-0.001		MAIN: -0.002	PA-0.003	
93ZF53R03	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.039	PA 0.038		MAIN: 0.079	PA 0.078	
		+0			+1σ	
	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.117	PA 0.116		MAIN: 0.158	PA 0.157	
		+2σ			+3σ	
93ZF53R03	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.035	PA 0.034		MAIN: 0.082	PA 0.081	
		+0			+1σ	
	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.118	PA 0.117		MAIN: 0.161	PA 0.160	
		+2σ			+3σ	
93ZE33S40	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.004	PA 0.003		MAIN: 0.041	PA 0.040	
		+0			+1σ	
SpK x 2	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.073	PA 0.072		MAIN: 0.112	PA 0.111	
		+2σ			+3σ	
AQC	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.071	PA 0.070		MAIN: 0.115	PA 0.114	
		+0			+1σ	
	Sb	AA-BG	BG	Sb	AA-BG	BG
	MAIN: 0.157	PA 0.156		MAIN: 0.191	PA 0.190	
		+2σ			+3σ	
	Sb	AA-BG	BG			
	MAIN: 0.000	PA-0.001	Blank cup			

B. Lynn
7-1-93

AAS RUN LOG

Element Sb

Date 7-1-93

Analyst B. Yuen

Data Set SF1187

	ID	spike	comment.
1	Blank	0	
2		10	
3		20	
4		30	
5	AQC	0	TV=18 µg/l
6		10	
7		20	
8		30	
9	93ZE33S38 SpK x10	0	Not Used
10		10	
11		20	
12		30	
13	93ZE33S40 SpK	0	Not Used
14		10	
15		20	
16		30	
17	93ZE33S36	0	SF1187
18		10	
19		20	
20		30	
21	93ZE33S37	0	
22		10	
23		20	B. Yuen
24		30	
25	93ZE33D37	0	7-1-93
26		10	
27		20	

AAS RUN LOG

Element Sb

Analyst B. Green

Date 7-1-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=18 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	93ZE33R60	0	
2		10	
3		20	
4		30	
5	93ZE33R62	0	
6		10	
7		20	
8		30	
9	93ZE33R64	0	
10		10	
11		20	
12		30	
13	93ZF53512	0	SF1191
14		10	
15		20	
16		30	
17	93ZF53513	0	
18		10	B. Green
19		20	
20		30	7-1-93

AAS RUN LOG

Element Sb

Date 7-1-93

Analyst B. Yuen

Data Set SF1187

	ID	spike	comment
21	932F53D13	0	
22		10	
23		20	
24		30	
25	932F53R01	0	
26		10	
27		20	
28		30	
29	AQC	0	TV=18 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 3		
1		0	
2		10	
3		20	
4		30	
5		0	
6		10	
7		20	
8		30	B Yuen
9		0	
10		10	7-1-93
11		20	
12		30	
13		0	

AAS RUN LOG

Element Sb

Analyst B. Yuen

Date 7-1-93

Data Set

	ID	spike	comment.
1	BY 7-1-93 ~~Blank~~ 93ZF53R03	0	
2	"	10	
3		20	
4		30	
5	BY 7-1-93 ~~AQC~~ 93ZF53R03	0	Not used. for verification only
6		10	
7		20	
8		30	
9	93ZE33540 SpK x2	0	Not used.
10		10	
11		20	
12		30	
13	AQC	0	TV= 18 µg/l
14		10	
15		20	
16		30	
17	Blank cups.	0	
18		10	
19		20	
20		30	
21		0	
22		10	
23		20	B. Yuen
24		30	
25		0	7-1-93
26		10	
27		20	

Element	Instrument	QC Source
☐ Ag	☐ 5100 A3	☐ CLP-40
☐ As	☐ 5100 A6	☒ CLP-70
☐ Cd	☒ 5000 A4	☐ CLP-80
☐ Cr	☐ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☐
☒ Sb	☐	☐
☐ Se		☐
☐ Tl		☐

Analyst B. Lynn

Date 7-1-93

Lamp # 507352

Energy 48

Expansion 3

Stock 1-110-MD Opened: 9-24-92
Expires: 7-31-93

☐ platform ☐ MSC

☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
-0.71	0.00481	16.38	
		17.37	
		16.48	
		17.96	

Blank cup absorbance
0.000
-0.002
-0.001
-0.003
-0.001

B. Lynn
7-1-93

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI
DATE OF ANALYSIS --: 07-09-1993
PARAMETER NAME ----: SB
DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	6.479217E-02	.9985895	4.630001E-03	2u Limit = ±2 µg/l
AQC 18 UG/L	18.05169	.9995138	5.030001E-03	%R = 100.3 Limit = 100±10%
93ZF53S02	-6.600811E-02	.9850599	.00303	not used. r<0.995
93ZF53D02	-.6382989	.9917043	.00282	
93ZF53S03	-1.333334	.9869276	.00375	
93ZF53S11	5.771139	.9973618	.00402	~~8~~ BY 7-10-93 6
93ZF53S11DUP	4.847775	.9774083	.00427	~~5 %RPD = 17.5 Limit = 2~~ Not used, r<0.99
AQC 18 UG/L	18.81783	.9998418	.00516	%R = 104.5 Limit = 100±10% SF1191
93ZE33S38SPKx2	31.79932	.9932796	.00289	Rerun, r<0.995 SF1187
93ZF53S02	.7407449	.9977066	.00297	2u
93ZF53D02	-1.096254	.9840743	3.739999E-03	Rerun, r<0.995
93ZF53S03	-.5633804	.9931284	.00355	
93ZF53S11DUP	4.404763	.9949926	.0042	SF1191
93ZE33S38SPKx3	18.84148	.9965968	3.279999E-03	adj. Conc. = 56.52 µg/l SF1187 Spk. Conc. = 50 µg/l
93ZE33S39SPKx3	15.84862	.9867889	4.360001E-03	Rerun, r<0.995 %R = 113.0 Limit = 85-115%
AQC 18 UG/L	18.34972	.9985101	5.089998E-03	%R = 101.9 Limit = 100±10%
93ZF53S39SPKx3	17.59803	.9970812	4.080001E-03	adj. Conc. = 52.79 µg/l Spk. Conc. = 50 µg/l %R = 105.6
93ZF53S11SPKx3	18.64931	.9985551	4.219997E-03	adj. Conc. = 55.95 µg/l Spk. Conc. = 50 µg/l %R = 100.4
93ZF53D02	.1273866	.9974539	3.140001E-03	2u SF1191
93ZF33S03	-1.320753	.9930476	.00371	Rerun, r<0.995
93ZF53S11DUP	3.273097	.9792987	4.979999E-03	
93ZF53S03	-.3591169	.9944154	.00362	
93ZF53S11DUP	4.662308	.9993029	.00459	5 Avg. diff. < 2 µg/l Limit = ±2 µg/l
AQC 18 UG/L	18.38323	.9972742	5.010001E-03	%R = 102.1 Limit = 100±10%
93ZF53S03	-.3693191	.9940965	.00352	Rerun, r<0.995
93ZF53S03	8.746445E-02	.9984481	.00343	2u
AQC 18 UG/L	20.46512	.9914268	.00473	Rerun, r<0.995
AQC 18 UG/L	19.54823	.9982206	4.870003E-03	%R = 108.6 Limit = 100±10%

* Limit = 85-115%

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	2.999878E-04	-2.700012E-03	-900.0407 %
10	.042	4.659999E-02	4.599989E-03	9.871222 %
20	9.399999E-02	9.289999E-02	-1.100004E-03	-1.184073 %
30	.14	.1392	-7.999987E-04	-.5747117 %

B. Lynn 7-10-93

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.089	9.079999E-02	1.799986E-03	1.982364 %
10	.144	.1411	-2.900005E-03	-2.055283 %
20	.191	.1914	3.999919E-04	.2089822 %

30	.241	.2417	7.000119E-04	.2896201 %

93ZF53S02

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-2.000046E-04	-2.000046E-04	100 %
10	.025	.0301	5.099997E-03	16.94351 %
20	.07	.0604	-9.599999E-03	-15.89404 %
30	.086	.0907	4.699998E-03	5.181916 %

93ZF53D02

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-1.800003E-03	1.999971E-04	-11.11093 %
10	.03	.0264	-.0036	-13.63636 %
20	.048	.0546	.0066	12.08791 %
30	.086	.0828	-3.200002E-03	-3.864737 %

93ZF53S03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-.005	-.005	100 %
10	.03	.0325	2.499996E-03	7.692296 %
20	.06	6.999999E-02	9.999987E-03	14.2857 %
30	.115	.1075	-7.500023E-03	-6.976767 %

93ZF53S11

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.023	2.319998E-02	1.99981E-04	.8619879 %
10	.061	6.339999E-02	2.399985E-03	3.785466 %
20	.109	.1036	-5.40001E-03	-5.212365 %
30	.141	.1438	2.799988E-03	1.947141 %

93ZF53S11DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.016	.0207	4.699996E-03	22.7053 %
10	.062	6.339999E-02	1.399987E-03	2.208181 %
20	.123	.1061	-1.690003E-02	-15.9284 %
30	.138	.1488	1.079997E-02	7.258049 %

B. Lynn 7-10-93

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.098	9.710001E-02	-8.999929E-04	-.9268721 %
10	.148	.1487	6.99997E-04	.4707445 %
20	.199	.2003	1.300007E-03	.64903 %
30	.253	.2519	-1.099974E-03	-.4366709 %

93ZE33S38SPKx2

SPIKE	MEASURED	CALC.	ERROR	PER CENT

0	.088	9.190002E-02	3.900021E-03	4.243766 %
10	.125	.1208	-4.199982E-03	-3.476806 %
20	.153	.1497	-3.299981E-03	-2.204396 %
30	.175	.1786	3.600016E-03	2.015687 %

93ZF53S02

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	2.200012E-03	2.00012E-04	9.091404 %
10	.034	3.190001E-02	-2.099991E-03	-6.583041 %
20	.058	6.160001E-02	3.600009E-03	5.84417 %
30	.093	9.130001E-02	-1.699992E-03	-1.861984 %

93ZF53D02

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	-4.099991E-03	-6.099991E-03	148.7806 %
10	.021	.0333	.0123	36.93694 %
20	.077	7.069999E-02	-6.30001E-03	-8.910906 %
30	.108	.1081	9.997934E-05	9.248784E-02 %

93ZF53S03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	-.002	-.005	250 %
10	.026	.0335	7.499997E-03	22.38805 %
20	.069	.069	-7.450581E-09	-1.079794E-05 %
30	.107	.1045	-2.500005E-03	-2.39235 %

93ZF53S11DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.019	.0185	-4.999992E-04	-2.702698 %
10	.056	.0605	4.499998E-03	7.438014 %
20	.11	.1025	-7.500001E-03	-7.317074 %
30	.141	.1445	3.499985E-03	2.422135 %

93ZE33S38SPKx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.065	6.180002E-02	-3.19998E-03	-5.177959 %
10	.091	9.460001E-02	3.600009E-03	3.805506 %
20	.125	.1274	2.399981E-03	1.883816 %
30	.163	.1602	-2.800033E-03	-1.747836 %

B. Yuen
7-10-93

93ZE33S39SPKx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.07	6.909998E-02	-9.000227E-04	-1.302494 %
10	.118	.1127	-5.300015E-03	-4.702765 %
20	.143	.1563	1.329999E-02	8.50927 %
30	.207	.1999	-7.100001E-03	-3.551777 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	9.399999E-02	9.340002E-02	-5.999729E-04	-.6423691 %
10	.146	.1443	-1.699984E-03	-1.17809 %
20	.19	.1952	5.199999E-03	2.663934 %
30	.249	.2461	-2.900019E-03	-1.178391 %

93ZF53S39SPKx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.074	7.179999E-02	-2.200015E-03	-3.064088 %
10	.112	.1126	5.999953E-04	.5328555 %
20	.148	.1534	5.400002E-03	3.52021 %
30	.198	.1942	-3.79999E-03	-1.95674 %

93ZF53S11SPKx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.076	7.870005E-02	2.700046E-03	3.430806 %
10	.124	.1209	-3.099978E-03	-2.564084 %
20	.165	.1631	-1.900017E-03	-1.16494 %
30	.203	.2052999	2.29995E-03	1.120287 %

93ZF53D02

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	3.999939E-04	2.399994E-03	600.0077 %
10	.034	.0318	-2.200004E-03	-6.918251 %
20	.066	.0632	-2.800003E-03	-4.430384 %
30	.092	9.460001E-02	2.600007E-03	2.748422 %

93ZF33S03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-4.899994E-03	-4.899994E-03	100 %
10	.024	3.220001E-02	8.200008E-03	25.46586 %
20	.071	6.930001E-02	-1.699992E-03	-2.45309 %
30	.108	.1064	-1.599997E-03	-1.503757 %

93ZF53S11DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.028	1.630002E-02	-1.169998E-02	-71.77895 %
10	.054	.0661	.0121	18.3056 %
20	.105	.1159	.0109	9.404658 %
30	.177	.1657	-1.130001E-02	-6.819562 %

B. Green
7-10-93

93ZF53S03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	-1.300003E-03	-3.300003E-03	253.8458 %

10	.033	.0349	1.899995E-03	5.444113 %
20	.065	.0711	6.099999E-03	8.579465 %
30	.112	.1073	-4.700005E-03	-4.380247 %

93ZF53S11DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.02	2.139999E-02	1.399994E-03	6.54203 %
10	6.800001E-02	.0673	-7.000119E-04	-1.040137 %
20	.116	.1132	-2.800003E-03	-2.473501 %
30	.157	.1591	2.099991E-03	1.319919 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	9.000001E-02	9.210001E-02	2.100006E-03	2.280136 %
10	.142	.1422	2.000183E-04	.1406598 %
20	.199	.1923	-6.69998E-03	-3.484128 %
30	.238	.2424	4.400015E-03	1.815188 %

93ZF53S03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	-1.300003E-03	-3.300003E-03	253.8458 %
10	.032	.0339	1.899995E-03	5.604706 %
20	.063	.0691	6.099992E-03	8.827775 %
30	.109	.1043	-4.700005E-03	-4.506237 %

93ZF53S03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	3.000031E-04	-6.99997E-04	-233.33 %
10	.032	.0346	2.599999E-03	7.514449 %
20	.072	6.890001E-02	-3.099993E-03	-4.499264 %
30	.102	.1032	1.199998E-03	1.162789 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.1	9.679999E-02	-3.200017E-03	-3.305803 %
10	.145	.1441	-9.000152E-04	-.624577 %
20	.18	.1914	1.139997E-02	5.956098 %
30	.246	.2387	-7.300034E-03	-3.058247 %

B. Jones
7-10-93

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.092	9.519995E-02	3.19995E-03	3.361294 %
10	.147	.1439	-3.100023E-03	-2.15429 %
20	.196	.1926	-3.399983E-03	-1.765308 %
30	.238	.2413	3.300011E-03	1.367597 %

```
$                                        Sb
                                         MAIN:-0.001        $    AA-BG    BG
                                                             PA-0.001

==================================================================================
 0.000     AUTOZERO
==================================================================================

Sb
MAIN: 0.004          $    AA-BG    BG
$                     PA 0.003                Sb
                        +0                   MAIN: 0.043        $    AA-BG    BG
                                                                 PA 0.042
                                                                    +10
----------------------------------------------------------------------------------
Sb
MAIN: 0.095          $    AA-BG    BG
$                     PA 0.094                Sb
                        +20                  MAIN: 0.141        $    AA-BG    BG
                                                                 PA 0.140
                                                                    +30
```

blank

B. Lyne
7-10-93

Sb
MAIN: 0.090 $ AA-BG BG
$ PA 0.089
+0

Sb
MAIN: 0.145 $ AA-BG BG
PA 0.144
+10

AQC

Sb
MAIN: 0.192 $ AA-BG BG
$ PA 0.191
+20

Sb
MAIN: 0.242 $ AA-BG BG
PA 0.241
+30

Sb
MAIN: 0.001 $ AA-BG BG
$ PA 0.000
+0

Sb
MAIN: 0.026 $ AA-BG BG
PA 0.025
+10

Sb
MAIN: 0.071 $ AA-BG BG
$ PA 0.070
+20

Sb
MAIN: 0.087 $ AA-BG BG
PA 0.086
+30

93ZF53302

Sb
MAIN:-0.001 $ AA-BG BG
$ PA-0.002
+0

Sb
MAIN: 0.031 $ AA-BG BG
PA 0.030
+10

Sb
MAIN: 0.049 $ AA-BG BG
$ PA 0.048
+20

Sb
MAIN: 0.087 $ AA-BG BG
PA 0.086
+30

93ZF53D02

Sb
MAIN: 0.001 $ AA-BG BG
$ PA 0.000
+0

Sb
MAIN: 0.031 $ AA-BG BG
PA 0.030
+10

Sb
MAIN: 0.061 $ AA-BG BG
$ PA 0.060
+20

Sb
MAIN: 0.116 $ AA-BG BG
PA 0.115
+30

93ZF53503

B. Yuen
7-10-93

Sb
MAIN: 0.024 $ AA-BG BG
$ PA 0.023 +0

Sb

				MAIN: 0.062	$	AA-BG	BG
					PA	0.061	
						+10	
Sb							932F53511
MAIN: 0.110	$	AA-BG	BG				
$	PA	0.109		Sb			
		+20		MAIN: 0.142	$	AA-BG	BG
					PA	0.141	
						+30	
Sb							
MAIN: 0.017	$	AA-BG	BG				
$	PA	0.016		Sb			
		+0		MAIN: 0.063	$	AA-BG	BG
					PA	0.062	
						+10	932F53511
Sb							Dup
MAIN: 0.124	$	AA-BG	BG				
$	PA	0.123		Sb			
		+20		MAIN: 0.139	$	AA-BG	BG
					PA	0.138	
						+30	
Sb							
MAIN: 0.099	$	AA-BG	BG				
$	PA	0.098		Sb			
		+0		MAIN: 0.149	$	AA-BG	BG
					PA	0.148	
						+10	
Sb							AQC
MAIN: 0.200	$	AA-BG	BG				
$	PA	0.199		Sb			
		+20		MAIN: 0.254	$	AA-BG	BG
					PA	0.253	
						+30	
Sb							
MAIN: 0.004	$	AA-BG	BG				
$	PA	0.003		Sb			
				MAIN: 0.001	$	AA-BG	BG
					PA	0.000	Blank Cups

B. Green

7-10-93

SF1191

SF1187

Sb
MAIN: 0.089 $ AA-BG BG
$ PA 0.088
+0

Sb
MAIN: 0.126 $ AA-BG BG
PA 0.125
+10

93ZF33538
8pK x2

Sb
MAIN: 0.154 $ AA-BG BG
$ PA 0.153
+20

Sb
MAIN: 0.176 $ AA-BG BG
PA 0.175
+30

SF1191

Sb
MAIN: 0.003 $ AA-BG BG
$ PA 0.002
+0

Sb
MAIN: 0.035 $ AA-BG BG
PA 0.034
+10

93ZF53502

Sb
MAIN: 0.059 $ AA-BG BG
$ PA 0.058
+20

Sb
MAIN: 0.094 $ AA-BG BG
PA 0.093
+30

Sb
MAIN: 0.003 $ AA-BG BG
$ PA 0.002
+0

Sb
MAIN: 0.022 $ AA-BG BG
PA 0.021
+10

93ZF53D02

Sb
MAIN: 0.078 $ AA-BG BG
$ PA 0.077
+20

Sb
MAIN: 0.109 $ AA-BG BG
PA 0.108
+30

Sb
MAIN: 0.004 $ AA-BG BG
$ PA 0.003
+0

Sb
MAIN: 0.027 $ AA-BG BG
PA 0.026
+10

93ZF53S03

Sb
MAIN: 0.070 $ AA-BG BG
$ PA 0.069
+20

Sb
MAIN: 0.108 $ AA-BG BG
PA 0.107
+30

B. Green
7-10-93

Sb
MAIN: 0.020 $ AA-BG BG
$ PA 0.019 +0

Sb

MAIN: 0.057 $ AA-BG BG
PA 0.056
+10

Sb
MAIN: 0.111 $ AA-BG BG
$ PA 0.110
+20

Sb
MAIN: 0.142 $ AA-BG BG
PA 0.141
+30

93ZF53511
Dup

SF1191

Sb
MAIN: 0.066 $ AA-BG BG
$ PA 0.065
+0

Sb
MAIN: 0.092 $ AA-BG BG
PA 0.091
+10

SF1187

Sb
MAIN: 0.126 $ AA-BG BG
$ PA 0.125
+20

Sb
MAIN: 0.164 $ AA-BG BG
PA 0.163
+30

93ZE33538
SpK x 3

Sb
MAIN: 0.071 $ AA-BG BG
$ PA 0.070
+0

Sb
MAIN: 0.119 $ AA-BG BG
PA 0.118
+10

Sb
MAIN: 0.144 $ AA-BG BG
$ PA 0.143
+20

Sb
MAIN: 0.208 $ AA-BG BG
PA 0.207
+30

93ZE33539
SpK x 3

Sb
MAIN: 0.095 $ AA-BG BG
$ PA 0.094
+0

Sb
MAIN: 0.147 $ AA-BG BG
PA 0.146
+10

SF1191

B. Lynn
7-10-93

AQC

Sb
MAIN: 0.191 $ AA-BG BG
$ PA 0.190
+20

Sb
MAIN: 0.250 $ AA-BG BG
PA 0.249
+30

Sb
MAIN: 0.002 $ AA-BG BG
$ PA 0.001

Sb
MAIN: 0.001 $ AA-BG BG
PA 0.000

Blank Cups

Sb
MAIN: 0.075 $ AA-BG BG
$ PA 0.074
+0

Sb
MAIN: 0.113 $ AA-BG BG
PA 0.112
+10

93ZF53539
SpK x 3

Sb
MAIN: 0.149 $ AA-BG BG
$ PA 0.148
+20

Sb
MAIN: 0.199 $ AA-BG BG
PA 0.198
+30

Sb
MAIN: 0.077 $ AA-BG BG
$ PA 0.076
+0

Sb
MAIN: 0.125 $ AA-BG BG
PA 0.124
+10

93ZF53511
SpK x 3

Sb
MAIN: 0.166 $ AA-BG BG
$ PA 0.165
+20

Sb
MAIN: 0.204 $ AA-BG BG
PA 0.203
+30

Sb
MAIN:-0.001 $ AA-BG BG
$ PA-0.002
+0

Sb
MAIN: 0.035 $ AA-BG BG
PA 0.034
+10

93ZF53D02

Sb
MAIN: 0.067 $ AA-BG BG
$ PA 0.066
+20

Sb
MAIN: 0.093 $ AA-BG BG
PA 0.092
+30

B. Green
7-10-93

Sb
MAIN: 0.001 $ AA-BG BG
$ PA 0.000 +0

Sb

MAIN: 0.025 $ AA-BG BG
PA 0.024
+10

93ZF53503

Sb
MAIN: 0.072 $ AA-BG BG
$ PA 0.071
+20

Sb
MAIN: 0.109 $ AA-BG BG
PA 0.108
+30

Sb
MAIN: 0.029 $ AA-BG BG
$ PA 0.028
+0

Sb
MAIN: 0.055 $ AA-BG BG
PA 0.054
+10

93ZF53511 Dup

Sb
MAIN: 0.106 $ AA-BG BG
$ PA 0.105
+20

Sb
MAIN: 0.178 $ AA-BG BG
PA 0.177
+30

Sb
MAIN: 0.003 $ AA-BG BG
$ PA 0.002
+0

Sb
MAIN: 0.034 $ AA-BG BG
PA 0.033
+10

93ZF53503

Sb
MAIN: 0.066 $ AA-BG BG
$ PA 0.065
+20

Sb
MAIN: 0.113 $ AA-BG BG
PA 0.112
+30

Sb
MAIN: 0.021 $ AA-BG BG
$ PA 0.020
+0

Sb
MAIN: 0.069 $ AA-BG BG
PA 0.068
+10

B. Lynn
7-10-93

93ZF53511
Dup

Sb
MAIN: 0.117 $ AA-BG BG
$ PA 0.116
+20

Sb
MAIN: 0.158 $ AA-BG BG
PA 0.157
+30

Sb
MAIN: 0.091 $ AA-BG BG
$ PA 0.090
+0

Sb
MAIN: 0.143 $ AA-BG BG
PA 0.142
+10

Sb
MAIN: 0.200 $ AA-BG BG
$ PA 0.199
+20

Sb
MAIN: 0.239 $ AA-BG BG
PA 0.238
+30

AQC

Sb
MAIN: 0.003 $ AA-BG BG
$ PA 0.002

Sb
MAIN: 0.002 $ AA-BG BG
PA 0.001

Blank Cups

Sb
MAIN: 0.003 $ AA-BG BG
$ PA 0.002
+0

Sb
MAIN: 0.033 $ AA-BG BG
PA 0.032
+10

932F53503

Sb
MAIN: 0.064 $ AA-BG BG
$ PA 0.063
+20

Sb
MAIN: 0.110 $ AA-BG BG
PA 0.109
+30

Sb
MAIN: 0.002 $ AA-BG BG
$ PA 0.001
+0

Sb
MAIN: 0.033 $ AA-BG BG
PA 0.032
+10

932F53503

Sb
MAIN: 0.073 $ AA-BG BG
$ PA 0.072
+20

Sb
MAIN: 0.103 $ AA-BG BG
PA 0.102
+30

B. Yue
7-10-93

Sb
MAIN: 0.101 $ AA-BG BG
$ PA 0.100 +0

Sb

MAIN: 0.146 $ AA-BG BG
PA 0.145
+10

AQC

Sb
MAIN: 0.181 $ AA-BG BG
$ PA 0.180
+20

Sb
MAIN: 0.247 $ AA-BG BG
PA 0.246
+30

Sb
MAIN: 0.093 $ AA-BG BG
$ PA 0.092
+0

Sb
MAIN: 0.148 $ AA-BG BG
PA 0.147
+10

AQC

Sb
MAIN: 0.197 $ AA-BG BG
$ PA 0.196
+20

Sb
MAIN: 0.239 $ AA-BG BG
PA 0.238
+30

Sb
MAIN: 0.008 $ AA-BG BG
PA 0.007
Blank cup

B. L. Green
7-10-93

AAS RUN LOG

Element Sb

Date 7-9-93

Analyst B. Lynn

Data Set SF1187

	ID	spike	comment.
1	Blank	0	
2		10	
3		20	
4		30	
5	AQC	0	TV=18 µg/l
6		10	
7		20	
8		30	
9	93ZF53502	0	Rerun BY 7-10-93 ~~SF1187~~ SF1191
10		10	
11		20	
12		30	
13	93ZF53502	0	Rerun
14		10	
15		20	
16		30	
17	93ZF53503	0	Rerun
18		10	
19		20	
20		30	
21	93ZF53511	0	
22		10	B. Lynn
23		20	
24		30	7-10-93
25	93ZF53511 Dup	0	Rerun
26		10	
27		20	

AAS RUN LOG

Element Sb

Analyst B. Yuen

Date 7-9-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV = 18 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	93ZE33S38 SpK x2	0	Rerun SF1187
2		10	
3		20	
4		30	
5	93ZF53S02	0	SF1191
6		10	
7		20	
8		30	
9	93ZF53D02	0	Rerun
10		10	
11		20	
12		30	B. Yuen
13	93ZF53S03	0	Rerun 7-10-93
14		10	
15		20	
16		30	
17	93ZF53S11 Dup	0	Rerun
18		10	
19		20	
20		30	

AAS RUN LOG

Element Sb

Analyst B. Yuen

Date 7-9-93

Data Set SF1187

	ID	spike	comment
21	93ZE33S38 SpK x3	0	SF1187
22		10	
23		20	
24		30	
25	93ZE33S39 SpK x3	0	Rerun
26		10	
27		20	
28		30	
29	AQC	0	TV=18 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 3		
1		0	
2		10	
3		20	
4		30	
5		0	
6		10	B. Yuen
7		20	7-10-93
8		30	
9		0	
10		10	
11		20	
12		30	
13		0	

AAS RUN LOG

Element Sb

Analyst B. Yuen

Date 7-9-93

Data Set SF1187

	ID	spike	comment.
1	BY 7-10-93 ~~Blank~~ 93ZF53539 SpK x3	0	SF1191
2	"	10	
3		20	
4		30	
5	BY 7-10-93 ~~AQC~~ 93ZF53511 SpK x 3	0	
6		10	
7		20	
8		30	
9	93ZF53502	0	
10		10	
11		20	
12		30	
13	93ZF53503	0	Rerun
14		10	
15		20	
16		30	
17	93ZF53511 Dup	0	Rerun
18		10	
19		20	
20		30	
21	93ZF53503	0	Rerun
22		10	
23		20	B. Yuen
24		30	7-10-93
25	93ZF53511 Dup	0	
26		10	
27		20	

AAS RUN LOG

Element Sb

Analyst B. Green

Date 7-9-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=18 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	93ZF53503	0	Rerun
2		10	
3		20	
4		30	
5	93ZF53503	0	
6		10	
7		20	
8		30	
9	AQC	0	TV=18 µg/l
10		10	
11		20	
12		30	
13	Blank Cup	0	
14		10	B. Green
15		20	
16		30	7-10-93
17		0	
18		10	
19		20	
20		30	

Element	Instrument	QC Source
☐ Ag	☐ 5100 A3	☐ CLP-40
☐ As	☐ 5100 A6	☒ CLP-70
☐ Cd	☐ 5000 A4	☐ CLP-80
☐ Cr	☒ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☐
☒ Sb	☐	☐
☐ Se		☐
☐ Tl		☐

Analyst B. L Jones

Date 7-9-93

Lamp # 507352

Energy 52

Expansion 3

Stock I-110ND (opened: 9-24-92 Expires: 7-31-93

☐ platform ☐ MSC

☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
0.06	0.00463	18.05 18.82 18.35 18.38 19.55	① S38: Spike %R = 113.0 Limit = 85 - 115 % ② S39: Spike %R = 105.6 ③ S11: Spike %R = 100.4 > Limit = 85-115 ④ S11: Duplicate difference < 2 µg/l (Limit = ± 2 µg/l)

Blank cup absorbance

0.003
0.000
0.001
0.000
0.002
0.001
0.007

B. L Jones
7-10-93

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI
DATE OF ANALYSIS --: 07-09-1993
PARAMETER NAME ----: SB
DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	-.379467	.9985186	4.480001E-03	2u Limit=±2 µg/l
AQC 18 UG/L	18.62783	.9998826	4.810003E-03	%R=103.5 Limit=100±10%
DIGEST BLANK (WATER DIG.)				
	-.7648718	.9983749	3.529999E-03	2u Limit=±2 µg/l
93ZE33S38	-1.212121	.998717	.0033	2u
93ZE33S38DUP	-.6194663	.9963049	.00339	2u Dup. diff <2 µg/l Limit=±2 µg/l
93ZE33S38SPKx2	21.13993	.9928826	3.859997E-03	Rerun, r<0.995
93ZE33D38	2.879749	.9995798	.00316	3
AQC 18 UG/L	18.51063	.9983741	4.700001E-03	%R=102.8 Limit=100±10%
93ZE33S38SPKx2	25.29052	.9968084	.00327	Rerun.
93ZE33S39	.1785733	.9987348	5.039999E-03	2u
93ZE33D39	1.330643	.9997074	.00496	2u
93ZE33S39DUP	1.244728	.9996351	.00474	2u Dup. diff. <2 µg/l Limit=±2 µg/l
93ZE33S39SPKx2	27.53086	.9937494	4.050001E-03	Rerun r<0.995 SF1187
93ZF53S11	5.410631	.9994639	.00414	Rerun SF1191
93ZF53S11SPKx2	33.89378	.9942454	3.390001E-03	Rerun r<0.995
AQC 18 UG/L	19.99999	.9912465	4.300001E-03	
AQC 18 UG/L	20.35634	.9976912	4.490002E-03	%R=113.1 Limit=100±10%

Sample results are less than EPE and are acceptable

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-1.700012E-03	-7.000122E-04	41.17689 %
10	.04	4.309999E-02	3.099993E-03	7.19256 %
20	.092	.0879	-4.100002E-03	-4.664395 %
30	.131	.1327	1.699999E-03	1.281084 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.089	8.959994E-02	5.999431E-04	.6695798 %
10	.139	.1377	-1.300022E-03	-.9440974 %
20	.185	.1858	8.000136E-04	.4305778 %
30	.234	.2339001	-9.995699E-05	-4.273492E-02 %

DIGEST BLANK (WATER DIG.)

B.L. 7-10-93

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-2.699997E-03	-1.699997E-03	62.96292 %
10	.029	3.259999E-02	3.599994E-03	11.04293 %
20	.07	6.789999E-02	-2.100013E-03	-3.092804 %

30	.103	.1032	1.999736E-04	.1937729 %

93ZE33S38

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.003	-.004	-.001	25.00001 %
10	.029	.029	-3.72529E-09	-1.284583E-05 %
20	.059	6.199999E-02	2.999991E-03	4.838696 %
30	.097	9.499999E-02	-2.000012E-03	-2.105276 %

93ZE33S38DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	-2.099991E-03	-3.099991E-03	147.6193 %
10	.029	3.180001E-02	2.80001E-03	8.805061 %
20	.062	6.570001E-02	3.700011E-03	5.631675 %
30	.103	9.960001E-02	-3.399991E-03	-3.413645 %

93ZE33S38SPKx2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.086	8.160004E-02	-4.399963E-03	-5.392109 %
10	.117	.1202	3.20001E-03	2.662238 %
20	.152	.1588	6.799981E-03	4.282105 %
30	.203	.1974	-5.60005E-03	-2.836906 %

93ZE33D38

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.01	9.100006E-03	-8.999938E-04	-9.890034 %
10	.04	.0407	7.000044E-04	1.719912 %
20	.071	.0723	.0013	1.798063 %
30	.105	.1039	-1.099996E-03	-1.058707 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.088	.087	-1.000002E-03	-1.149428 %
10	.135	.134	-1.000002E-03	-.7462702 %
20	.176	.181	5.000025E-03	2.762445 %
30	.231	.228	-2.999976E-03	-1.315779 %

93ZE33S38SPKx2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.085	8.269998E-02	-2.300017E-03	-2.781157 %
10	.114	.1154	1.399979E-03	1.213154 %
20	.144	.1481	4.09998E-03	2.768387 %
30	.184	.1808	-3.200039E-03	-1.769934 %

B. L. Jones
7-10-93

93ZE33S39

0	.004	9.000092E-04	-3.099991E-03	-344.44 %
10	.047	.0513	4.299999E-03	8.382064 %
20	.101	.1017	6.999821E-04	.6882814 %
30	.154	.1521	-1.900017E-03	-1.24919 %

93ZE33D39

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	6.599991E-03	5.999906E-04	9.090779 %
10	.058	5.619999E-02	-1.800008E-03	-3.202862 %
20	.104	.1058	1.799993E-03	1.701317 %
30	.156	.1554	-6.000102E-04	-.386107 %

93ZE33S39DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	5.900009E-03	-9.999098E-05	-1.69476 %
10	.052	5.330001E-02	1.300007E-03	2.439037 %
20	.103	.1007	-2.299994E-03	-2.284006 %
30	.147	.1481	1.100004E-03	.742744 %

93ZE33S39SPKx2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.106	.1115	5.500004E-03	4.932739 %
10	.16	.152	-7.999986E-03	-5.263149 %
20	.193	.1925	-4.999787E-04	-.2597292 %
30	.23	.2330001	3.000036E-03	1.287569 %

93ZF53S11

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.021	2.240001E-02	1.400009E-03	6.250037 %
10	.065	.0638	-1.199998E-03	-1.880875 %
20	.107	.1052	-1.800008E-03	-1.711034 %
30	.145	.1466	1.599997E-03	1.091403 %

93ZF53S11SPKx2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.119	.1149	-4.10004E-03	-3.568356 %
10	.142	.1488	6.799981E-03	4.56988 %
20	.184	.1827	-1.300007E-03	-.711553 %
30	.218	.2166	-1.399994E-03	-.64635 %

B. L. [illegible]
7-10-93

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.081	8.599998E-02	4.999973E-03	5.813924 %
10	.132	.129	-3.000021E-03	-2.325598 %
20	.181	.172	-9.000003E-03	-5.23256 %
30	.208	.215	.007	3.255814 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.088	.0914	3.399998E-03	3.719911 %
10	.142	.1363	-5.699992E-03	-4.181945 %
20	.18	.1812	1.20002E-03	.6622628 %
30	.225	.2261001	1.100048E-03	.4865317 %

B.L. [illegible]

7-10-93

```
-----------------------------------------------------------------------
Sb
MAIN: 0.000          $    AA-BG    BG
                      PA 0.000

=======================================================================
 0.000     AUTOZERO
=======================================================================

Sb
MAIN:-0.001          $    AA-BG    BG
$                     PA-0.001          Sb
                         +0             MAIN: 0.040        $    AA-BG    BG
                                                            PA 0.040
                                                                +10
-----------------------------------------------------------------------
Sb
MAIN: 0.092          $    AA-BG    BG
$                     PA 0.092          Sb
                         +20            MAIN: 0.131        $    AA-BG    BG
                                                            PA 0.131
                                                                +30
-----------------------------------------------------------------------
Sb
MAIN: 0.089          $    AA-BG    BG
$                     PA 0.089          Sb
                         +0             MAIN: 0.139        $    AA-BG    BG
                                                            PA 0.139
                                                                +10
-----------------------------------------------------------------------
Sb
MAIN: 0.185          $    AA-BG    BG
$                     PA 0.185          Sb
                         +20            MAIN: 0.234        $    AA-BG    BG
                                                            PA 0.234
                                                                +30
-----------------------------------------------------------------------
Sb
MAIN:-0.001          $    AA-BG    BG
$                     PA-0.001          Sb
                         +0             MAIN: 0.029        $    AA-BG    BG
                                                            PA 0.029
                                                                +10
-----------------------------------------------------------------------
Sb
MAIN: 0.070          $    AA-BG    BG
$                     PA 0.070          Sb
                         +20            MAIN: 0.103        $    AA-BG    BG
                                                            PA 0.103
                                                                +30
-----------------------------------------------------------------------
Sb
MAIN:-0.003          $    AA-BG    BG
$                     PA-0.003          Sb
                         +0             MAIN: 0.029        $    AA-BG    BG
                                                            PA 0.029
                                                            BY 7-10-93 ~~+20~~ +10
-----------------------------------------------------------------------
```

Blank

AQC

Digest Blank (Water Dig.)

B.L [illegible] 7-10-93

93ZE33538

```
MAIN: 0.059          $   AA-BG    BG
$                     PA 0.059          Sb
                         +20            MAIN: 0.097          $   AA-BG    BG
                                                                PA 0.097
                                                                   +30
PERKIN-ELMER                    FIAS                    93/07/09     PAGE 2
-----------------------------------------------------------------------------
Sb
MAIN: 0.001          $   AA-BG    BG
$                     PA 0.001          Sb
                         +0             MAIN: 0.029          $   AA-BG    BG
                                                                PA 0.029
                                                                   +10
-----------------------------------------------------------------------------
Sb
MAIN: 0.062          $   AA-BG    BG
$                     PA 0.062          Sb
                         +20            MAIN: 0.103          $   AA-BG    BG
                                                                PA 0.103
                                                                   +30
-----------------------------------------------------------------------------
Sb
MAIN: 0.086          $   AA-BG    BG
$                     PA 0.086          Sb
                         +0             MAIN: 0.117          $   AA-BG    BG
                                                                PA 0.117
                                                                   +10
-----------------------------------------------------------------------------
Sb
MAIN: 0.152          $   AA-BG    BG
$                     PA 0.152          Sb
                         +20            MAIN: 0.203          $   AA-BG    BG
                                                                PA 0.203
                                                                   +30
-----------------------------------------------------------------------------
Sb
MAIN: 0.010          $   AA-BG    BG
$                     PA 0.010          Sb
                         +0             MAIN: 0.040          $   AA-BG    BG
                                                                PA 0.040
                                                                   +10
-----------------------------------------------------------------------------
Sb
MAIN: 0.071          $   AA-BG    BG
$                     PA 0.071          Sb
                         +20            MAIN: 0.105          $   AA-BG    BG
                                                                PA 0.105
                                                                   +30
-----------------------------------------------------------------------------
Sb
MAIN: 0.088          $   AA-BG    BG
$                     PA 0.088          Sb
                         +0             MAIN: 0.135          $   AA-BG    BG
                                                                PA 0.135
                                                                   +10
-----------------------------------------------------------------------------
Sb
MAIN: 0.176          $   AA-BG    BG
$                     PA 0.176          Sb
                         +20            MAIN: 0.231          $   AA-BG    BG
                                                                PA 0.231
                                                                   +30
-----------------------------------------------------------------------------
Sb
```

93ZE33S38
Dup

93ZE33S38
SpK x2

93ZE33D38

AQC

B. L[illegible]
7-10-93

+30

Sb
MAIN: 0.001 $ AA-BG BG
$ PA 0.001 ~~+0~~ By 7-10-93

Sb
MAIN: 0.004 $ AA-BG BG
PA 0.004
~~+10~~ By 7-10-93

Blank cups

Sb
MAIN: 0.085 $ AA-BG BG
$ PA 0.085
~~+20~~ By 7-10-93
+0

Sb
MAIN: 0.114 $ AA-BG BG
PA 0.114 +10
~~+30~~ By 7-10-93

93ZE33538
SpK x2

Sb
MAIN: 0.144 $ AA-BG BG
$ PA 0.144
+20

Sb
MAIN: 0.184 $ AA-BG BG
PA 0.184
+30

Sb
MAIN: 0.004 $ AA-BG BG
$ PA 0.004
+0

Sb
MAIN: 0.047 $ AA-BG BG
PA 0.047
+10

93ZE33539

Sb
MAIN: 0.101 $ AA-BG BG
$ PA 0.101
+20

Sb
MAIN: 0.154 $ AA-BG BG
PA 0.154
+30

Sb
MAIN: 0.006 $ AA-BG BG
$ PA 0.006
+0

Sb
MAIN: 0.058 $ AA-BG BG
PA 0.058
+10

93ZE33D39

Sb
MAIN: 0.104 $ AA-BG BG
$ PA 0.104
+20

Sb
MAIN: 0.156 $ AA-BG BG
PA 0.156
+30

B. L. [illegible]
7-10-93

Sb
MAIN: 0.006 $ AA-BG BG
$ PA 0.006
+0

Sb
MAIN: 0.052 $ AA-BG BG
PA 0.052
+10

Sb
MAIN: 0.103 $ AA-BG BG
$ PA 0.103
+20

Sb
MAIN: 0.147 $ AA-BG BG
PA 0.147
+30

93ZE33539
Dup

Sb
MAIN: 0.106 $ AA-BG BG
$ PA 0.106
+0

Sb
MAIN: 0.160 $ AA-BG BG
PA 0.160
+10

Sb
MAIN: 0.193 $ AA-BG BG
$ PA 0.193
+20

Sb
MAIN: 0.230 $ AA-BG BG
PA 0.230
+30

93ZE33539
SpK x2

SF1187

SF1191

Sb
MAIN: 0.021 $ AA-BG BG
$ PA 0.021
+0

Sb
MAIN: 0.065 $ AA-BG BG
PA 0.065
+10

93ZF53511
~~93ZE53511~~ B/ 7-9-93
~~SpK x~~

Sb
MAIN: 0.107 $ AA-BG BG
$ PA 0.107
+20

Sb
MAIN: 0.145 $ AA-BG BG
PA 0.145
+30

Sb
MAIN: 0.119 $ AA-BG BG
$ PA 0.119
+0

Sb
MAIN: 0.142 $ AA-BG BG
PA 0.142
+10

93ZF53511
SpK x2

Sb
MAIN: 0.184 $ AA-BG BG
$ PA 0.184
+20

Sb
MAIN: 0.218 $ AA-BG BG
PA 0.218
+30

B. [illegible]
7-10-93

Sb
MAIN: 0.081 $ AA-BG BG
$ PA 0.081 +0

Sb

MAIN: 0.132 $ AA-BG BG
PA 0.132
+10

Sb
MAIN: 0.181 $ AA-BG BG
$ PA 0.181
+20

Sb
MAIN: 0.208 $ AA-BG BG
PA 0.208
+30

AQC

Sb
MAIN: 0.088 $ AA-BG BG
$ PA 0.088
+0

Sb
MAIN: 0.142 $ AA-BG BG
PA 0.142
+10

Sb
MAIN: 0.180 $ AA-BG BG
$ PA 0.180
+20

Sb
MAIN: 0.225 $ AA-BG BG
PA 0.225
+30

AQC

Sb
MAIN:-0.001 $ AA-BG BG
PA-0.001

Blank cup

B. [illegible]
7-10-93

AAS RUN LOG

Element Sb

Analyst B. Green

Date 7-9-93

Data Set SF1187

	ID	spike	comment.
1	Blank	0	
2		10	
3		20	
4		30	
5	AQC	0	TV= 18 µg/l
6		10	
7		20	
8		30	
9	Digest Blank	0	Water Digestion SF1187
10		10	
11		20	
12		30	
13	93ZE33538	0	
14		10	
15		20	
16		30	
17	93ZE33538 Dup	0	
18		10	
19		20	
20		30	
21	93ZE33538 Spk x2	0	Rerun
22		10	
23		20	
24		30	
25	93ZE33D38	0	B. Green
26		10	
27		20	7-10-93

AAS RUN LOG

Element Sb

Analyst B. Yuen

Date 7-9-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=18 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	93ZE33538 SpK x2	0	Rerun
2		10	
3		20	
4		30	
5	93ZE33539	0	
6		10	
7		20	
8		30	
9	93ZE33D39	0	
10		10	
11		20	
12		30	
13	93ZE33539 Dup	0	
14		10	
15		20	
16		30	
17	93ZE33539 SpK x2	0	Rerun
18		10	
19		20	B. Yuen
20		30	7-10-93

AAS RUN LOG

Element Sb

Analyst B. L Green

Date 7-9-93

Data Set SF1187

	ID	spike	comment
21	93ZF 53511	0	Rerun SF1191
22		10	
23		20	
24		30	
25	93ZF 53511 Spk x2	0	Rerun
26		10	
27		20	
28		30	
29	AQC	0	TV = 18 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 3		
1		0	
2		10	
3		20	
4		30	
5		0	
6		10	
7		20	
8		30	
9		0	
10		10	B. L Green
11		20	7-10-93
12		30	
13		0	

Element	Instrument	QC Source
☐ Ag	☐ 5100 A3	☐ CLP-40
☐ As	☐ 5100 A6	☒ CLP-70
☐ Cd	☐ 5000 A4	☐ CLP-80
☐ Cr	☒ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☐
☒ Sb	☐	☐
☐ Se		☐
☐ Tl		☐

Analyst B. Lynen

Date 7-9-93

Lamp # 507352

Energy 52

Expansion 3

Stock 1-10-MD Opened: 9-24-92
Expires: 7-31-93

☐ platform ☐ MSC

☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
-0.38	0.00448	18.63 18.51 20.36	① Digest Blank (water digestion) <2 µg/l (Limit = ±2 µg/l) ② 538: Duplicate diff. <2 µg/l (Limit = ±2 µg/l) ③ 539: Duplicate diff <2 µg/l (Limit = ±2 µg/l)

Blank cup absorbance
0.001
0.004
-0.001

B. Lynen
7-10-93

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI
DATE OF ANALYSIS --: 07-09-1993
PARAMETER NAME ----: SB
DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	.3719939	.9999856	.00457	24 Limit = ± 2 µg/l
AQC 18 UG/L	20.48218	.9913112	4.770001E-03	Rerun, r<0.995
AQC 18 UG/L	17.76031	.9987402	.00509	%R=98.7 Limit=100±10%
DIGEST BLANK (SOIL)	.5544173	.9977183	.00487	0.24 (mg/kg) Limit = ± 0.2 mg/kg
93ZE33S40	2.916664	.9969755	.0048	adj. conc. = 0.3 mg/kg
93ZE33S40DUP	1.448695	.9981307	4.969999E-03	adj. conc. = 0.2 mg/kg (4) Dup. diff. < 0.3 mg/kg Limit = ± 0.2 mg/kg
LCSx100	23.53943	.9986976	4.690003E-03	adj. conc. = 220 mg/kg*
93ZE33S40SPKx10	8.834958	.9974648	.00515	adj. conc. = 8.8 mg/kg SPK conc. = 19.9 mg/kg %R = 42.7** Limit = 80-120%
AQC 18 UG/L	17.93652	.9990099	5.039997E-03	%R=99.6 Limit=100±10%
93ZE33D40	2.474227	.9952933	4.849999E-03	adj. conc. = 0.2 mg/kg
AQC 18 UG/L	19.69828	.9950578	.00464	%R=109.4 Limit=100±10%

* Limit = 127 ~ 294 mg/kg ** See conc. narrative

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	1.700012E-03	-2.999879E-04	-17.64622 %
10	.047	4.740002E-02	4.000142E-04	.8439116 %
20	.093	9.310001E-02	1.000091E-04	.1074212 %
30	.139	.1388	-1.999885E-04	-.1440839 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	9.000001E-02	9.769999E-02	7.699982E-03	7.881252 %
10	.155	.1454	-9.600014E-03	-6.602486 %
20	.197	.1931	-3.900007E-03	-2.019682 %
30	.235	.2408	5.799994E-03	2.408636 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.088	9.039999E-02	2.399996E-03	2.654863 %
10	.146	.1413	-4.700005E-03	-3.32626 %
20	.19	.1922	2.200008E-03	1.144645 %
30	.243	.2431	1.000017E-04	4.113603E-02 %

B. Yuen 7-10-93

DIGEST BLANK (SOIL DIGESTION)

SPIKE	MEASURED	CALC.	ERROR	PER CENT

0	.003	2.700012E-03	-2.999879E-04	-11.11061 %
10	.048	5.140001E-02	3.400009E-03	6.614803 %
20	.106	.1001	-5.899988E-03	-5.894094 %
30	.146	.1488	2.800018E-03	1.881732 %

93ZE33S40

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.018	1.399999E-02	-4.000015E-03	-28.57157 %
10	.055	6.199999E-02	6.999985E-03	11.2903 %
20	.112	.11	-2.000019E-03	-1.818199 %
30	.159	.158	-1.000002E-03	-.6329127 %

93ZE33S40DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.01	7.200012E-03	-2.799988E-03	-38.88865 %
10	.055	.0569	1.900002E-03	3.339196 %
20	.102	.1066	4.599996E-03	4.315193 %
30	.16	.1563	-3.700003E-03	-2.367245 %

LCSx100

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.112	.1104	-1.600042E-03	-1.449314 %
10	.157	.1573	2.999902E-04	.1907121 %
20	.2	.2042	4.200012E-03	2.056813 %
30	.254	.2511	-2.899975E-03	-1.154908 %

93ZE33S40SPKx10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.046	4.550003E-02	-4.999712E-04	-1.098837 %
10	.093	9.700002E-02	4.000023E-03	4.123734 %
20	.155	.1485	-6.499976E-03	-4.377088 %
30	.197	.2	3.000021E-03	1.50001 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.093	9.040002E-02	-2.599977E-03	-2.87608 %
10	.138	.1408	2.800003E-03	1.988638 %
20	.189	.1912	2.199963E-03	1.150608 %
30	.244	.2415999	-2.400071E-03	-.9934069 %

B. L. Green
7-10-93

93ZE33D40

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.007	.012	.005	41.66667 %
10	.065	.0605	-4.500002E-03	-7.43802 %
20	.115	.109	-6.000012E-03	-5.504599 %
30	.152	.1575	5.499974E-03	3.492048 %

AQC 18 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.087	.0914	.0044	4.814005 %
10	.141	.1378	-3.20001E-03	-2.322213 %
20	.191	.1842	-6.800011E-03	-3.691646 %
30	.225	.2306	5.599991E-03	2.428444 %

B. L. Jones

7-10-93

Sb
MAIN:-0.001 $ AA-BG BG
PA-0.001

0.000 AUTOZERO

Not used
BY 7-9-93

Sb
MAIN:-0.002 $ AA-BG BG
$ PA-0.003

Sb
MAIN: 0.038 $ AA-BG BG
PA 0.037

Sb
MAIN: 0.062 $ AA-BG BG
$ PA 0.061

Sb
MAIN: 0.094 $ AA-BG BG
PA 0.093

Sb
MAIN:-0.003 $ AA-BG BG
PA-0.003

0.000 AUTOZERO

SF1187

Sb
MAIN: 0.005 $ AA-BG BG
$ PA 0.002
+0

Sb
MAIN: 0.050 $ AA-BG BG
PA 0.047
+10

Blank

Sb
MAIN: 0.096 $ AA-BG BG
$ PA 0.093
+20

Sb
MAIN: 0.142 $ AA-BG BG
PA 0.139
+30

Sb
MAIN: 0.093 $ AA-BG BG
$ PA 0.090
+0

Sb
MAIN: 0.158 $ AA-BG BG
PA 0.155
+10

AQC

Sb
MAIN: 0.200 $ AA-BG BG
$ PA 0.197
+20

Sb
MAIN: 0.238 $ AA-BG BG
PA 0.235
+30

B. L[illegible]
7-10-93

Sb
MAIN: 0.091 $ AA-BG BG
$ PA 0.088 +0

Sb
MAIN: 0.149 $ AA-BG BG

MAIN: 0.149 $ AA-BG BG
PA 0.146
+10

Sb
MAIN: 0.193 $ AA-BG BG
$ PA 0.190
+20

Sb
MAIN: 0.246 $ AA-BG BG
PA 0.243
+30

ADC

Sb
MAIN: 0.006 $ AA-BG BG
$ PA 0.003
+0

Sb
MAIN: 0.051 $ AA-BG BG
PA 0.048
+10

Sb
MAIN: 0.109 $ AA-BG BG
$ PA 0.106
+20

Sb
MAIN: 0.149 $ AA-BG BG
PA 0.146
+30

Digest Blank

Sb
MAIN: 0.021 $ AA-BG BG
$ PA 0.018
+0

Sb
MAIN: 0.058 $ AA-BG BG
PA 0.055
+10

Sb
MAIN: 0.115 $ AA-BG BG
$ PA 0.112
+20

Sb
MAIN: 0.162 $ AA-BG BG
PA 0.159
+30

93ZE33540

B. L. Green
7-10-93

Sb MAIN: 0.013 $	$ AA-BG BG PA 0.010 +0	Sb MAIN: 0.058	$ AA-BG BG PA 0.055 +10
Sb MAIN: 0.105 $	$ AA-BG BG PA 0.102 +20	Sb MAIN: 0.163	$ AA-BG BG PA 0.160 +30
Sb MAIN: 0.115 $	$ AA-BG BG PA 0.112 +0	Sb MAIN: 0.160	$ AA-BG BG PA 0.157 +10
Sb MAIN: 0.203 $	$ AA-BG BG PA 0.200 +20	Sb MAIN: 0.257	$ AA-BG BG PA 0.254 +30
Sb MAIN: 0.200 $	$ AA-BG BG PA 0.197	Sb MAIN: 0.242	$ AA-BG BG PA 0.239
Sb MAIN: 0.049 $	$ AA-BG BG PA 0.046 +0	Sb MAIN: 0.096	$ AA-BG BG PA 0.093 +10
Sb MAIN: 0.158 $	$ AA-BG BG PA 0.155 +20	Sb MAIN: 0.200	$ AA-BG BG PA 0.197 +30
Sb MAIN: 0.096 $	$ AA-BG BG PA 0.093 +0	Sb MAIN: 0.141	$ AA-BG BG PA 0.138 +10
Sb MAIN: 0.192 $	$ AA-BG BG PA 0.189 +20	Sb MAIN: 0.247	$ AA-BG BG PA 0.244 +30

932E33540 Dup

LCS x100

932E33540 SpK x2 not used, wrong dilution

932E33540 SpK x10

ASC

B.L. [illegible] 7-10-93

Sb MAIN: 0.006 $	$ AA-BG BG PA 0.003 blank cup	Sb MAIN: 0.001	$ AA-BG BG PA-0.002	blank cups
Sb MAIN: 0.010 $	$ AA-BG BG PA 0.007 +0	Sb MAIN: 0.068	$ AA-BG BG PA 0.065 +10	932E33540 D RY 7-9-93
Sb MAIN: 0.118 $	$ AA-BG BG PA 0.115 +20	Sb MAIN: 0.155	$ AA-BG BG PA 0.152 +30	
Sb MAIN: 0.090 $	$ AA-BG BG PA 0.087 +0	Sb MAIN: 0.144	$ AA-BG BG PA 0.141 +10	ABC
Sb MAIN: 0.194 $	$ AA-BG BG PA 0.191 +20	Sb MAIN: 0.228	$ AA-BG BG PA 0.225 +30	
Sb MAIN: 0.007	$ AA-BG BG PA 0.004 blank cup			

B. L. [illegible]
7-10-93

AAS RUN LOG

Element Sb

Analyst B. Green

Date 7-8-93

Data Set SF1187

	ID	spike	comment.
1	Blank	0	
2		10	
3		20	
4		30	
5	AQC	0	TV = 18 µg/l
6		10	
7		20	
8		30	
9	Digest Blank	0	
10		10	
11		20	
12		30	
13	93ZE33540	0	
14		10	
15		20	
16		30	
17	93ZE33540 Dup	0	
18		10	
19		20	
20		30	
21	LCS x100	0	
22		10	
23		20	
24		30	B. Green
25	93ZE33540 SpK x10	0	
26		10	7-10-93
27		20	

AAS RUN LOG

Element Sb

Analyst B. L-[illegible]

Date 7-8-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV = 18 µg/L
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	93ZE33D40	0	
2		10	
3		20	
4		30	
5	AQC	0	TV = 18 µg/L
6		10	
7		20	
8		30	
9	Blank Cup	0	
10		10	
11		20	
12		30	
13		0	
14		10	
15		20	
16		30	
17		0	B. L-[illegible]
18		10	
19		20	7-10-93
20		30	

Element	Instrument	QC Source
☐ Ag	☐ 5100 A3	☐ CLP-40
☐ As	☐ 5100 A6	☒ CLP-70
☐ Cd	☐ 5000 A4	☐ CLP-80
☐ Cr	☒ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☐
☒ Sb	☐	☐
☐ Se		☐
☐ Tl		☐

Analyst B. Yuen

Date 7-8-93

Lamp # 507352

Energy 52

Expansion 3

Stock 1-110-MD exp 9-24-92
Expires 7-31-93

☐ platform ☐ MSC

☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
0.37	0.00457	17.76 17.94 19.70	① Digest Blank (soil Digestion) < 0.2 mg/kg (Limit = ± 0.2 mg/kg) ② Duplicate difference < 0.2 mg/kg (Limit = ± 0.2 mg/kg) ③ %R for Spike = 42.7 (See case narrative) (Limit = 80-120%) ④ LCS = 220 mg/kg (Limit = 127 ~ 294 mg/kg)

Blank cup absorbance
0.003
-0.002
0.004

7-8-93

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI

DATE OF ANALYSIS --: 07-27-1993

PARAMETER NAME ----: SE

DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	.1729569	.9992048	.00636	2u Limit = ±2 µg/l
AQC 25 UG/L	26.66666	.9984829	6.150002E-03	%R = 106.7 Limit = 100±10%
93ZE33S39	.6091433	.9877819	.00197	Rerun, r<0.995
93ZE33S39SPKx3	16.08698	.9988679	2.299999E-03	adj. Conc. = 43.26 µg/l Spk. Conc. = 50 µg/l %R = 96.5 Limit = 85-115%
93ZE33S39x3	.6130262	.9978491	.00261	64
93ZE33D39x3	.2255634	.9972974	.00266	64
93ZE33S39DUPx3	1.176472	.9995059	.00238	64 Dup. diff. < 2 µg/l (Limit = ±2 µg/l
AQC 25 UG/L	26.01853	.9992809	5.399998E-03	%R = 104.1 Limit = 100±10%
93ZF53S11	2.91339	.9985771	.00254	3 SF1187 SF1.91
93ZF53S11SPKx3	15.52559	.9992231	3.710002E-03	adj. Conc. = 46.58 µg/l Spk. Conc. = 50 µg/l Spk. %R = 87.3 Limit = 85-115%
93ZF~~33~~53S11DUP (53 By 7-27-93)	2.250928	.9980044	.00271	Dup diff. < 2 µg/l Limit = ±2 µg/l
93ZF53S02	5.180727	.9764708	.00166	Rerun, r<0.995
93ZF53D02	2.105262	.9691068	.00171	Rerun, r<0.995
93ZF53S03	1.129032	.9819441	.00186	Rerun, r<0.995
93ZF53S02x3	.6504049	.9989223	.00369	64
AQC 25 UG/L	45.59325	.9689344	2.949999E-03	Rerun, r<0.995
AQC 25 UG/L	26.28919	.9980563	5.740002E-03	%R = 105.2 Limit = 100±10%
93ZF53D02x3	.5617978	.9991176	.00445	64 B. Yuen
93ZF53S03x3	.9624429	.9993285	.00426	64 7-27-93
AQC 25 UG/L	25.39765	.9996941	5.909996E-03	%R = 101.6 Limit = 100±10%

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.004	1.100006E-03	-2.899994E-03	-263.6344 %
10	.06	.0647	4.700002E-03	7.264299 %
20	.129	.1283	-6.99997E-04	-.545594 %
30	.193	.1919	-1.100019E-03	-.573225 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.16	.164	4.000008E-03	2.439029 %
10	.23	.2255	-4.499987E-03	-1.995559 %
20	.29	.287	-2.999962E-03	-1.045283 %
30	.345	.3485001	3.500074E-03	1.004325 %

93ZE33S39

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	1.200012E-03	-3.799988E-03	-316.6625 %
10	.016	2.090001E-02	4.900011E-03	23.44501 %
20	.039	4.060001E-02	1.600009E-03	3.940907 %
30	.063	6.030001E-02	-2.699994E-03	-4.477601 %

B. L. [illegible]
7-27-93

93ZE33S39SPKx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.038	3.700003E-02	-9.999685E-04	-2.702615 %
10	.058	6.000003E-02	2.000026E-03	3.333376 %
20	.084	8.300002E-02	-9.999797E-04	-1.204795 %
30	.106	.106	1.490116E-08	1.40577E-05 %

93ZE33S39x3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	1.599999E-03	-1.400002E-03	-87.50019 %
10	.027	.0277	6.999988E-04	2.527072 %
20	.051	.0538	2.799999E-03	5.20446 %
30	.082	.0799	-2.100006E-03	-2.628293 %

93ZE33D39x3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	5.999985E-04	-2.400002E-03	-400.0013 %
10	.024	.0272	3.199997E-03	11.76469 %
20	.053	.0538	7.999949E-04	1.48698 %
30	.082	8.039999E-02	-1.600012E-03	-1.990065 %

P.L. Jue
7-27-93

93ZE33S39DUPx3

0	.002	2.800003E-03	8.000031E-04	28.57151 %
10	.028	2.660001E-02	-1.399996E-03	-5.263141 %
20	.05	5.040001E-02	4.000068E-04	.7936641 %
30	.074	7.420001E-02	2.000034E-04	.2695463 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.141	.1405	-4.999787E-04	-.3558566 %
10	.192	.1945	2.499998E-03	1.285346 %
20	.252	.2485	-3.500015E-03	-1.408457 %
30	.301	.3025	1.499951E-03	.4958516 %

93ZF53S11

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	7.40001E-03	1.400009E-03	18.91902 %
10	.034	3.280001E-02	-1.199998E-03	-3.65853 %
20	.06	.0582	-1.799997E-03	-3.092778 %
30	.082	.0836	1.59999E-03	1.913864 %

B. L. Jones
7-27-93

93ZF53S11SPKx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.059	5.759998E-02	-1.400024E-03	-2.430598 %
10	.092	9.469999E-02	2.699994E-03	2.851102 %

10	.092	[illegible]	[illegible]	[illegible]
20	.133	.1318	-1.199976E-03	-.9104517 %
30	.169	.1689	-9.995699E-05	-5.918115E-02 %

53 By 7-27-93
93ZF~~33~~S11DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.000001E-03	6.100014E-03	-1.899987E-03	-31.14725 %
10	.03	3.320001E-02	3.200011E-03	9.638585 %
20	.061	6.030001E-02	-6.99997E-04	-1.160857 %
30	.088	8.739999E-02	-6.000027E-04	-.686502 %

93ZF53S02

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	8.600006E-03	3.600006E-03	41.86051 %
10	.028	2.520001E-02	-2.799997E-03	-11.1111 %
20	.047	.0418	-5.199999E-03	-12.44019 %
30	.054	.0584	4.399997E-03	7.534241 %

B. [illegible]
7-27-93

93ZF53D02

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	3.599999E-03	-1.400001E-03	-38.88894 %
10	.015	.0207	5.700001E-03	27.53624 %
20	.045	.0378	-7.199999E-03	-19.04762 %
30	.052	5.490001E-02	2.900008E-03	5.282346 %

93ZF53S03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	2.099999E-03	1.099999E-03	52.38092 %
10	.019	.0207	1.699997E-03	8.212548 %
20	.046	.0393	-6.700006E-03	-17.04836 %
30	.054	.0579	3.899992E-03	6.735738 %

93ZF53S02x3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	2.399994E-03	-6.000062E-04	-25.00032 %
10	.04	3.929999E-02	-7.000081E-04	-1.781192 %
20	.073	.0762	3.199995E-03	4.199468 %
30	.115	.1131	-1.900017E-03	-1.679945 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.142	.1345	-7.499978E-03	-5.576191 %
10	.158	.164	6.000012E-03	3.658544 %
20	.183	.1935	1.050001E-02	5.426364 %
30	.232	.223	-9.000003E-03	-4.035876 %

B. Yuen
7-27-93

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.155	.1509	-4.10004E-03	-2.717058 %
10	.204	.2083	4.299984E-03	2.064323 %
20	.262	.2657	3.699988E-03	1.392544 %
30	.327	.3231	-3.899962E-03	-1.207045 %

93ZF53D02x3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	.0025	4.999999E-04	19.99999 %
10	.046	.047	1.000002E-03	2.127664 %
20	.095	.0915	-.0035	-3.825136 %
30	.134	.136	1.999989E-03	1.47058 %

93ZF53S03x3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	4.100006E-03	-1.899994E-03	-46.34125 %
10	.044	.0467	2.700001E-03	5.781587 %
20	.089	8.929999E-02	2.999902E-04	.3359353 %
30	.133	.1319	-1.100004E-03	-.833968 %

B. Green
7-27-93

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.15	.1501	1.000315E-04	6.664322E-02 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.15	.1501	1.000315E-04	6.664322E-02 %
10	.208	.2092	1.199991E-03	.5736093 %
20	.271	.2683	-2.700031E-03	-1.006348 %
30	.326	.3273999	1.399905E-03	.4275825 %

B. L. Jones
7-27-83

Se AA-BG BG
MAIN: -0.003 PA -0.003

0.000 AUTOZERO

blank	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.007	PA	0.004	MAIN: 0.063	PA	0.060
			+0			+10
	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.132	PA	0.129	MAIN: 0.196	PA	0.193
			+20			+30
BQC	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.163	PA	0.160	MAIN: 0.233	PA	0.230
			+0			+10
	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.293	PA	0.290	MAIN: 0.348	PA	0.345
			+20			+30
932E33539	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.008	PA	0.005	MAIN: 0.019	PA	0.016
			+0			+10
	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.042	PA	0.039	MAIN: 0.066	PA	0.063
			+20			+30
932E33539 SpK x3	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.041	PA	0.038	MAIN: 0.061	PA	0.058
			+0			+10
	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.087	PA	0.084	MAIN: 0.109	PA	0.106
			+20			+30
932E33539 x3	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.006	PA	0.003	MAIN: 0.030	PA	0.027
			+0			+10
	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.054	PA	0.051	MAIN: 0.085	PA	0.082
			+20			+30
932E33D39 x3	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.006	PA	0.003	MAIN: 0.027	PA	0.024
			+0			+10
	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.056	PA	0.053	MAIN: 0.085	PA	0.082
			+20			+30
	Se		AA-BG BG	Se		AA-BG BG
	MAIN: 0.005	PA	0.002	MAIN: 0.031	PA	0.028
			+0			+10

B. Yue
7-27-93

932E33539 Dup x 3	Se MAIN: 0.053	PA	AA-BG 0.050 +20	BG	Se MAIN: 0.077	PA	AA-BG 0.074 +30	BG
BQC	Se MAIN: 0.144	PA	AA-BG 0.141 +0	BG	Se MAIN: 0.195	PA	AA-BG 0.192 +10	BG
SF1187	Se MAIN: 0.255	PA	AA-BG 0.252 +20	BG	Se MAIN: 0.304	PA	AA-BG 0.301 +30	BG
SF1191 Blank cups	Se MAIN: 0.010	PA	AA-BG 0.007	BG	Se MAIN: 0.006	PA	AA-BG 0.003	BG
932F53511	Se MAIN: 0.009	PA	AA-BG 0.006 +0	BG	Se MAIN: 0.037	PA	AA-BG 0.034 +10	BG
	Se MAIN: 0.063	PA	AA-BG 0.060 +20	BG	Se MAIN: 0.085	PA	AA-BG 0.082 +30	BG
932F53511 Spk x 3	Se MAIN: 0.062	PA	AA-BG 0.059 +0	BG	Se MAIN: 0.095	PA	AA-BG 0.092 +10	BG
	Se MAIN: 0.136	PA	AA-BG 0.133 +20	BG	Se MAIN: 0.172	PA	AA-BG 0.169 +30	BG
932F53511 Dup	Se MAIN: 0.011	PA	AA-BG 0.008 +0	BG	Se MAIN: 0.033	PA	AA-BG 0.030 +10	BG
	Se MAIN: 0.064	PA	AA-BG 0.061 +20	BG	Se MAIN: 0.091	PA	AA-BG 0.088 +30	BG
932F53502	Se MAIN: 0.008	PA	AA-BG 0.005 +0	BG	Se MAIN: 0.031	PA	AA-BG 0.028 +10	BG
	Se MAIN: 0.050	PA	AA-BG 0.047 +20	BG	Se MAIN: 0.057	PA	AA-BG 0.054 +30	BG
932F53D02	Se MAIN: 0.008	PA	AA-BG 0.005 +0	BG	Se MAIN: 0.018	PA	AA-BG 0.015 +10	BG
	Se MAIN: 0.048	PA	AA-BG 0.045 +20	BG	Se MAIN: 0.055	PA	AA-BG 0.052 +30	BG
	Se MAIN: 0.004	PA	AA-BG 0.001 +0	BG	Se MAIN: 0.022	PA	AA-BG 0.019 +10	BG

B. L. Green 7-27-93

932F53503	Se MAIN: 0.049	PA AA-BG 0.046 +20	BG	Se MAIN: 0.057	PA AA-BG 0.054 +30	BG
932F53502 x3	Se MAIN: 0.006	PA AA-BG 0.003 +0	BG	Se MAIN: 0.043	PA AA-BG 0.040 +10	BG
	Se MAIN: 0.076	PA AA-BG 0.073 +20	BG	Se MAIN: 0.118	PA AA-BG 0.115 +30	BG
BQC	Se MAIN: 0.145	PA AA-BG 0.142 +0	BG	Se MAIN: 0.161	PA AA-BG 0.158 +10	BG
	Se MAIN: 0.186	PA AA-BG 0.183 +20	BG	Se MAIN: 0.235	PA AA-BG 0.232 +30	BG
BQC	Se MAIN: 0.158	PA AA-BG 0.155 +0	BG	Se MAIN: 0.207	PA AA-BG 0.204 +10	BG
	Se MAIN: 0.265	PA AA-BG 0.262 +20	BG	Se MAIN: 0.330	PA AA-BG 0.327 +30	BG
Blank cups	Se MAIN: 0.007	PA AA-BG 0.004	BG	Se MAIN: 0.004	PA AA-BG 0.001 –	BG
932F53D02 x3	Se MAIN: 0.005	PA AA-BG 0.002 +0	BG	Se MAIN: 0.049	PA AA-BG 0.046 +10	BG
	Se MAIN: 0.098	PA AA-BG 0.095 +20	BG	Se MAIN: 0.137	PA AA-BG 0.134 +30	BG
932F53503 x3	Se MAIN: 0.009	PA AA-BG 0.006 +0	BG	Se MAIN: 0.047	PA AA-BG 0.044 +10	BG
	Se MAIN: 0.092	PA AA-BG 0.089 +20	BG	Se MAIN: 0.136	PA AA-BG 0.133 +30	BG
BQC	Se MAIN: 0.153	PA AA-BG 0.150 +0	BG	Se MAIN: 0.211	PA AA-BG 0.208 +10	BG
	Se MAIN: 0.274	PA AA-BG 0.271 +20	BG	Se MAIN: 0.329	PA AA-BG 0.326 +30	BG
	Se MAIN: 0.008	PA AA-BG 0.005 Blank cup	BG			

B. L. Jones
7-27-93

AAS RUN LOG

Element Se

Analyst B. L Green

Date 7-27-93

Data Set SF1187

	ID	spike	comment.
1	Blank	0	
2		10	
3		20	
4		30	
5	AQC	0	TV=25 µg/l
6		10	
7		20	
8		30	
9	93ZE33539	0	Rerun SF1187
10		10	
11		20	
12		30	
13	93ZE33539 Spk x3	0	
14		10	
15		20	
16		30	
17	93ZE33539 x 3	0	
18		10	
19		20	
20		30	
21	93ZE33D39 x 3	0	
22		10	
23		20	B. L Green
24		30	
25	93ZE33539 Dup x 3	0	7-27-93
26		10	
27		20	

AAS RUN LOG

Element Se

Analyst B. Lynn

Date 7-27-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	93ZF53511	0	SF1191
2		10	
3		20	
4		30	
5	93ZF53511 spk x 3	0	
6		10	
7		20	
8		30	
9	93ZF53511 Dup	0	
10		10	
11		20	
12		30	
13	93ZF53502	0	Rerun
14		10	
15		20	
16		30	
17	93ZF53D02	0	Rerun
18		10	
19		20	B. Lynn
20		30	

7-27-93

AAS RUN LOG

Element Se

Analyst B. L Green

Date 7-27-93

Data Set SF1187

	ID	spike	comment
21	93ZF53503	0	Rerun
22	"	10	
23		20	
24		30	
25	93ZF53502x3	0	
26		10	
27		20	
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 3		
1		0	
2		10	
3		20	
4		30	
5		0	
6		10	
7		20	
8		30	
9		0	
10		10	B. L Green
11		20	7-27-93
12		30	
13		0	

AAS RUN LOG

Element Se

Date 7-27-93

Analyst B. Yner

Data Set SF1187

	ID	spike	comment.
1	BY 7-27-93 ~~Blank~~ 932F53D02x3	0	SF1191
2		10	
3		20	
4		30	
5	BY 7-27-93 ~~AQC~~ 932F53503x3	0	
6		10	
7		20	
8		30	
9	AQC	0	TV=25 µg/l
10		10	
11		20	
12		30	
13	Blank cup	0	
14		10	
15		20	
16		30	
17		0	
18		10	
19		20	
20		30	
21		0	
22		10	
23		20	
24		30	B. Yner
25		0	7-27-93
26		10	
27		20	

Element	Instrument	QC Source	
☐ Ag	☐ 5000	☐ WP 284 TM I #2	Analyst B. L. Jones
☐ As	☐ 4000	☐ WP 1183 TM II #1	Date 7-27-93
☐ Cd	☐ 5000 ZE	☐ WP 1183 TM II #2	Lamp # 11930
☐ Cr	☒ 5000 ZW	☐ ICV 2	Energy 45
☐ Pb	☐ 5100	☐ SPEX II	Expansion 3
☐ Sb	☐ Varian 30	☐ NBS SRM 1643b	Stock 3-795E Opened: 5-24-93 Expires: 5-15-94
☒ Se		☒ CLP-80	☐ platform ☐ MSC
☐ Tl		☐	☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
0.17	0.00636	26.67 26.02 26.29 25.40	① S39: Duplicate difference < 2 µg/l (Limit = ± 2 µg/l) ② S39: %R for spike = ~~48.2~~ 96.5 BY 7-27-93 (Limit = 85 - 115 %) ③ S11: Duplicate difference < 2 µg/l (Limit = ± 2 µg/l) ④ S11: %R for spike = 87.3 (Limit = 85 - 115 %)

Blank cup absorbance

0.007
0.003
0.004
0.001
0.005

B. L. Jones
7-27-93

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI
DATE OF ANALYSIS --: 07-07-1993
PARAMETER NAME ----: SE
DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	1.46868	.9997064	4.630001E-03	2u Limit = ±2 µg/l
AQC 25 UG/L	25.37679	.9985633	.00491	%R = 101.5 Limit = 100±10%
DIGEST BLANK (SOIL)				
	1.522989	.9995215	.00348	adj. Conc. = 0.2 mg/kg (u) Limit = ±0.2 mg/kg
93ZE33S40	21.11111	.99846	.00072	Rerun, possible artifact
93ZE33S40DUP	11.23967	.9861547	.00121	Rerun, r<0.995
93ZE33S40SPKx10				
	22.06395	.9896664	3.440001E-03	
LCSx20	23.62498	.945914	4.000002E-03	
AQC 25 UG/L	23.81419	.9966271	.00409	%R = 95.2 Limit = 100±10%
93ZE33S40SPKx10				
	21.38497	.9576546	4.260001E-03	Rerun, r<0.995
LCSx20	18.75	.9948239	.0044	
93ZE33S40SPKx10				
	16.09482	.9897497	4.429999E-03	
LCSx20	19.3602	.9992261	.00422	adj. Conc. = 38.7 mg/kg Limit = 19.1-57.4 mg/kg
93ZE33S40SPKx10				
	21.06772	.9967475	3.839998E-03	adj. Conc. = 21.09 mg/kg, SPK Conc. = 20.2 mg/kg
93ZE33S40x2	4.170409	.9900361	.00223	Rerun, r<0.995 %R = 105.3 Limit = 80-120%
93ZE33S40DUPx2	4.246031	.9813548	.00252	
AQC 25 UG/L	23.00812	.99717	3.690001E-03	%R = 92.0 Limit = 100±10%
93ZE33S40x4	1.346152	.9898764	.00364	Rerun, r<0.995
93ZE33S40DUPx2	.6705595	.9974343	3.429999E-03	adj. Conc. = 0.4 mg/kg (u)
93ZE33D40x4	3.26241	.9875606	.00282	adj. diff. < 0.2 mg/kg Limit = ±0.2 mg/kg
93ZE33S40x4	1.066282	.9767288	.00347	Rerun, r<0.995
93ZE33D40x8	-.6435621	.9814619	.00404	
93ZE33S40x8	1.348971	.9994242	3.410001E-03	adj. Conc. = 1.6 mg/kg (u)
93ZE33D40x16	2.492499	.9861961	.00333	Rerun, r<0.995
AQC 25 UG/L	25.82841	.9994926	3.379999E-03	%R = 103.3 Limit = 100±10%
93ZE33D40x16	1.533542	.9905114	.00313	Rerun, r<0.995
DIGEST BLANK (WATER)				
	5.602156E-02	.9843456	.00357	
93ZE33D40x16	.7766983	.9998351	.00412	adj. Conc. = 3.1 mg/kg (u)
93ZE33S36	1.518983	.9992635	.00395	24
93ZE33S37	2.607526	.9964205	.00372	3
93ZE33D37	-5.05856	.8347345	.01793	Rerun, r<0.995
93ZE33R60	.7142858	.9996602	.0042	24
AQC 25 UG/L	23.57759	.9988319	.00464	%R = 94.3 Limit = 100±10%

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BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.000001E-03	6.799988E-03	-1.200012E-03	-17.64727 %
10	.051	5.309999E-02	2.099991E-03	3.954786 %
20	.1	9.939999E-02	-6.000102E-04	-.603632 %
30	.146	.1457	-3.000051E-04	-.205906 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.126	.1246	-1.399994E-03	-1.123591 %
10	.174	.1737	-2.999902E-04	-.1727059 %
20	.218	.2228	4.800007E-03	2.154402 %
30	.275	.2719	-3.100008E-03	-1.140128 %

DIGEST BLANK (S

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	5.300003E-03	-6.99997E-04	-13.20748 %
10	.04	4.010001E-02	1.000054E-04	.24939 %
20	.073	.0749	1.900002E-03	2.536719 %
30	.111	.1097	-.0013	-1.18505 %

93ZE33S40

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.015	.0152	2.000015E-04	1.315799 %
10	.023	.0224	-5.99999E-04	-2.678567 %
20	.029	.0296	6.000027E-04	2.027036 %
30	.037	.0368	-1.999997E-04	-.5434773 %

93ZE33S40DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.016	.0136	-2.400003E-03	-17.64708 %
10	.023	.0257	2.699996E-03	10.50582 %
20	.036	.0378	1.799997E-03	4.761897 %
30	.052	4.989999E-02	-2.10001E-03	-4.208437 %

93ZE33S40SPKx10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.075	.0759	8.999929E-04	1.185762 %
10	.107	.1103	3.300004E-03	2.991844 %
20	.154	.1447	-9.299994E-03	-6.427086 %
30	.174	.1791	5.100012E-03	2.847578 %

LCSx20

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	7.900001E-02	9.449997E-02	1.549996E-02	16.40208 %
10	.16	.1345	-.0255	-18.95911 %
20	.17	.1745	4.500017E-03	2.578806 %
30	.209	.2145001	5.500034E-03	2.564118 %

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AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.101	9.740002E-02	-3.599979E-03	-3.696076 %
10	.132	.1383	6.300032E-03	4.555337 %
20	.181	.1792	-1.799971E-03	-1.004448 %
30	.221	.2201	-8.999854E-04	-.4088984 %

93ZE33S40SPKx10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.098	9.109998E-02	-6.90002E-03	-7.574118 %
10	.114	.1337	1.969998E-02	14.73447 %
20	.195	.1763	-.0187	-10.60692 %
30	.213	.2189	5.899981E-03	2.695286 %

LCSx20

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	7.900001E-02	8.250001E-02	.0035	4.242424 %
10	.128	.1265	-1.500011E-03	-1.185779 %
20	.178	.1705	-7.500008E-03	-4.398832 %
30	.209	.2145	5.499974E-03	2.564091 %

93ZE33S40SPKx10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.077	7.130001E-02	-5.699985E-03	-7.994367 %
10	.104	.1156	.0116	10.0346 %
20	.166	.1599	-6.100014E-03	-3.814894 %
30	.204	.2042	1.999736E-04	9.793027E-02 %

LCSx20

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.083	8.170001E-02	-1.299985E-03	-1.591168 %
10	.121	.1239	2.900012E-03	2.340607 %
20	.168	.1661	-1.900002E-03	-1.143891 %
30	.208	.2083	2.999902E-04	.1440183 %

93ZE33S40SPKx10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.078	8.090002E-02	2.900019E-03	3.584695 %
10	.125	.1193	-5.699992E-03	-4.777864 %
20	.155	.1577	2.699986E-03	1.712103 %
30	.196	.1961	9.997189E-05	5.098007E-02 %

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93ZE33S40x2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.007	9.30001E-03	2.30001E-03	24.73127 %
10	.037	3.160001E-02	-5.399995E-03	-17.08859 %
20	.05	5.390001E-02	3.900003E-03	7.235626 %
30	.077	.0762	-8.000061E-04	-1.049877 %

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.101	9.740002E-02	-3.599979E-03	-3.696076 %
10	.132	.1383	6.300032E-03	4.555337 %
20	.181	.1792	-1.799971E-03	-1.004448 %
30	.221	.2201	-8.999854E-04	-.4088984 %

93ZE33S40SPKx10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.098	9.109998E-02	-6.90002E-03	-7.574118 %
10	.114	.1337	1.969998E-02	14.73447 %
20	.195	.1763	-.0187	-10.60692 %
30	.213	.2189	5.899981E-03	2.695286 %

LCSx20

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	7.900001E-02	8.250001E-02	.0035	4.242424 %
10	.128	.1265	-1.500011E-03	-1.185779 %
20	.178	.1705	-7.500008E-03	-4.398832 %
30	.209	.2145	5.499974E-03	2.564091 %

93ZE33S40SPKx10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.077	7.130001E-02	-5.699985E-03	-7.994367 %
10	.104	.1156	.0116	10.0346 %
20	.166	.1599	-6.100014E-03	-3.814894 %
30	.204	.2042	1.999736E-04	9.793027E-02 %

LCSx20

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.083	8.170001E-02	-1.299985E-03	-1.591168 %
10	.121	.1239	2.900012E-03	2.340607 %
20	.168	.1661	-1.900002E-03	-1.143891 %
30	.208	.2083	2.999902E-04	.1440183 %

93ZE33S40SPKx10

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.078	8.090002E-02	2.900019E-03	3.584695 %
10	.125	.1193	-5.699992E-03	-4.777864 %
20	.155	.1577	2.699986E-03	1.712103 %
30	.196	.1961	9.997189E-05	5.098007E-02 %

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93ZE33S40x2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.007	9.30001E-03	2.30001E-03	24.73127 %
10	.037	3.160001E-02	-5.399995E-03	-17.08859 %
20	.05	5.390001E-02	3.900003E-03	7.235626 %
30	.077	.0762	-8.000061E-04	-1.049877 %

20	.1	9.939999E-02	-6.000102E-04	-.603632 %
30	.146	.1457	-3.000051E-04	-.205906 %

93ZE33S40DUPx2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.011	.0107	-3.000032E-04	-2.803769 %
10	.04	.0359	-4.100002E-03	-11.42062 %
20	.052	.0611	9.099998E-03	14.89361 %
30	.091	.0863	-4.699998E-03	-5.446116 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.087	8.489996E-02	-2.100036E-03	-2.473541 %
10	.121	.1218	7.999689E-04	.6567891 %
20	.154	.1587	4.699976E-03	2.961548 %
30	.199	.1956	-3.400028E-03	-1.738256 %

93ZE33S40x4

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.007	4.899994E-03	-2.100006E-03	-42.85733 %
10	.043	.0413	-1.700006E-03	-4.116239 %
20	6.800001E-02	.0777	9.699993E-03	12.4839 %
30	.12	.1141	-5.899996E-03	-5.170899 %

93ZE33S40DUPx2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	2.300018E-03	-2.699982E-03	-117.3896 %
10	.032	3.660001E-02	4.600004E-03	12.56831 %
20	.072	.0709	-1.100004E-03	-1.551486 %
30	.106	.1052	-8.000136E-04	-.7604693 %

93ZE33D40x4

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.000001E-03	9.199998E-03	1.199997E-03	13.04345 %
10	.043	.0374	-5.600002E-03	-14.97327 %
20	.058	.0656	7.600002E-03	11.58537 %
30	.097	9.380001E-02	-3.199995E-03	-3.411508 %

93ZE33S40x4

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.011	3.699997E-03	-7.300003E-03	-197.2976 %
10	.033	.0384	5.399999E-03	14.0625 %
20	.062	.0731	.0111	15.18468 %
30	.117	.1078	-9.199992E-03	-8.534315 %

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93ZE33D40x8

SPIKE	MEASURED	CALC.	ERROR	PER CENT

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	-2.599991E-03	-4.599992E-03	176.9234 %
10	.038	3.780001E-02	-1.999922E-04	-.5290799 %
20	.064	7.820001E-02	.0142	18.15857 %
30	.128	.1186	-9.399995E-03	-7.925796 %

93ZE33S40x8

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	4.599991E-03	-1.400009E-03	-30.43505 %
10	.037	.0387	1.699999E-03	4.392762 %
20	.072	.0728	8.000061E-04	1.098909 %
30	.108	.1069	-1.099989E-03	-1.028989 %

93ZE33D40x16

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	8.300019E-03	6.300018E-03	75.90366 %
10	.052	4.160001E-02	-1.039999E-02	-24.99997 %
20	.073	7.490001E-02	1.90001E-03	2.536729 %
30	.106	.1082	2.200008E-03	2.033279 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.088	8.730002E-02	-6.999821E-04	-.8018121 %
10	.121	.1211	1.000091E-04	8.258393E-02 %
20	.153	.1549	1.900002E-03	1.226599 %
30	.19	.1887	-1.300007E-03	-.688928 %

93ZE33D40x16

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.000001E-03	4.799988E-03	-3.200013E-03	-66.66711 %
10	.035	3.609999E-02	1.099989E-03	3.047062 %
20	.06	6.739999E-02	7.399988E-03	10.97921 %
30	.104	9.869999E-02	-5.300015E-03	-5.369824 %

DIGEST BLANK (W

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.000001E-03	1.99997E-04	-7.800004E-03	-3900.061 %
10	.026	.0359	9.899996E-03	27.5766 %
20	6.800001E-02	.0716	3.599994E-03	5.027925 %
30	.113	.1073	-.0057	-5.312208 %

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93ZE33D40x16

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	3.199997E-03	1.999969E-04	6.249908 %
10	.044	.0444	3.999993E-04	.9008994 %
20	.087	8.559999E-02	-1.400001E-03	-1.635516 %
30	.126	.1268	7.999987E-04	.6309138 %

93ZE33S36

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	5.999985E-03	9.999848E-04	16.66646 %
10	.048	4.549999E-02	-2.500013E-03	-5.494535 %
20	.083	8.499999E-02	1.999989E-03	2.352929 %
30	.125	.1245	-5.000085E-04	-.4016133 %

93ZE33S37

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	9.699996E-03	3.699997E-03	38.14431 %
10	.051	.0469	-4.100002E-03	-8.74201 %
20	.087	8.409999E-02	-2.900005E-03	-3.448281 %
30	.118	.1213	3.299996E-03	2.720525 %

93ZE33D37

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.999999E-03	-9.069998E-02	-9.969998E-02	109.9228 %
10	.034	8.860003E-02	5.460003E-02	61.6253 %
20	.078	.2679001	.1899	70.88466 %
30	.592	.4472001	-.1448	-32.37924 %

93ZE33R60

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	.003	0	0 %
10	.046	.045	-1.000002E-03	-2.222227 %
20	.085	.087	1.999997E-03	2.298847 %
30	.13	.129	-1.000002E-03	-.7751955 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.112	.1094	-2.600007E-03	-2.376606 %
10	.153	.1558	2.799988E-03	1.797168 %
20	.2	.2022	2.199993E-03	1.088028 %
30	.251	.2486	-2.400011E-03	-.9654107 %

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PERKIN-ELMER FIAS 93/07/02 PAGE 1

Se AA-BG BG
MAIN: -0.005 PA-0.005

SF1187

0.000 AUTOZERO

Blank	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.013	PA 0.008	+0	MAIN: 0.056	PA 0.051	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.105	PA 0.100	+20	MAIN: 0.151	PA 0.146	+30
A2C	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.131	PA 0.126	+0	MAIN: 0.179	PA 0.174	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.223	PA 0.218	+20	MAIN: 0.280	PA 0.275	+30
Digest blank (soil)	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.011	PA 0.006	+0	MAIN: 0.045	PA 0.040	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.078	PA 0.073	+20	MAIN: 0.116	PA 0.111	+30
93ZE33540	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.020	PA 0.015	+0	MAIN: 0.028	PA 0.023	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.034	PA 0.029	+20	MAIN: 0.042	PA 0.037	+30
93ZE33540 Dup	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.021	PA 0.016	+0	MAIN: 0.028	PA 0.023	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.041	PA 0.036	+20	MAIN: 0.057	PA 0.052	+30
93ZE33540 spKx10	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.080	PA 0.075	+0	MAIN: 0.112	PA 0.107	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.159	PA 0.154	+20	MAIN: 0.179	PA 0.174	+30
1/5x20	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.084	PA 0.079	+0	MAIN: 0.165	PA 0.160	+10

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	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.175	PA 0.170		MAIN: 0.214	PA 0.209	
		+20			+30	
AQC	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.106	PA 0.101		MAIN: 0.137	PA 0.132	
		+0			+10	
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.186	PA 0.181		MAIN: 0.226	PA 0.221	
		+20			+30	
Blank cups	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.007	PA 0.002		MAIN: 0.007	PA 0.002	
932E33540 SpK x10	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.103	PA 0.098		MAIN: 0.119	PA 0.114	
		+0			+10	
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.200	PA 0.195		MAIN: 0.218	PA 0.213	
		+20			+30	
LCS x20	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.084	PA 0.079		MAIN: 0.133	PA 0.128	
		+0			+10	
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.183	PA 0.178		MAIN: 0.214	PA 0.209	
		+20			+30	
93ZE33540 SpK x10	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.111	PA 0.106		MAIN: 0.015	PA 0.010	
				Not used, wrong cups RY 7-2-93		
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.082	PA 0.077		MAIN: 0.109	PA 0.104	
		+0			+10	
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.171	PA 0.166		MAIN: 0.209	PA 0.204	
		+20			+30	
LCS x20	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.088	PA 0.083		MAIN: 0.126	PA 0.121	
		+0			+10	
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.173	PA 0.168		MAIN: 0.213	PA 0.208	
		+20			+30	
93ZE33540 SpK x10	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.083	PA 0.078		MAIN: 0.130	PA 0.125	
		+0			+10	
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.160	PA 0.155		MAIN: 0.201	PA 0.196	
		+20			+30	

B. Yuen 7-10-93

93ZE33540 x2	Se MAIN: 0.012	PA 0.007	AA-BG +0	BG	Se MAIN: 0.042	PA 0.037	AA-BG +10	BG
	Se MAIN: 0.055	PA 0.050	AA-BG +20	BG	Se MAIN: 0.082	PA 0.077	AA-BG +30	BG
93ZE33540 Dup x2	Se MAIN: 0.016	PA 0.011	AA-BG +0	BG	Se MAIN: 0.045	PA 0.040	AA-BG +10	BG
	Se MAIN: 0.057	PA 0.052	AA-BG +20	BG	Se MAIN: 0.096	PA 0.091	AA-BG +30	BG
AQC	Se MAIN: 0.092	PA 0.087	AA-BG +0	BG	Se MAIN: 0.126	PA 0.121	AA-BG +10	BG
	Se MAIN: 0.159	PA 0.154	AA-BG +20	BG	Se MAIN: 0.204	PA 0.199	AA-BG +30	BG
Blank cups	Se MAIN: 0.013	PA 0.008	AA-BG	BG	Se MAIN: 0.009	PA 0.004	AA-BG ~~+10~~ By 7-7-93	BG
93ZE33540 x4	Se MAIN: 0.012	PA 0.007	AA-BG +0	BG	Se MAIN: 0.048	PA 0.043	AA-BG +10 ~~+30~~ By 7-7-93	BG
	Se MAIN: 0.073	PA 0.068	AA-BG +20	BG	Se MAIN: 0.125	PA 0.120	AA-BG +30	BG
93ZE33540 Dup x4	Se MAIN: 0.010	PA 0.005	AA-BG +0	BG	Se MAIN: 0.037	PA 0.032	AA-BG 10+ ~~+30~~ By 7-7-93	BG
	Se MAIN: 0.077	PA 0.072	AA-BG +20	BG	Se MAIN: 0.111	PA 0.106	AA-BG +30	BG
93ZE33D40 x 4	Se MAIN: 0.013	PA 0.008	AA-BG +0	BG	Se MAIN: 0.048	PA 0.043	AA-BG +10 ~~+30~~ By 7-7-93	BG
	Se MAIN: 0.063	PA 0.058	AA-BG +20	BG	Se MAIN: 0.102	PA 0.097	AA-BG +30	BG
93ZE33540 x4	Se MAIN: 0.016	PA 0.011	AA-BG +0	BG	Se MAIN: 0.038	PA 0.033	AA-BG +10	BG
	Se MAIN: 0.067	PA 0.062	AA-BG +20	BG	Se MAIN: 0.122	PA 0.117	AA-BG +30	BG

B. Lynn 7-10-93

932E33D40 x8	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.007	PA 0.002		MAIN:	0.043	PA 0.038	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.069	PA 0.064		MAIN:	0.133	PA 0.128	
			+20				+30	
932E33540 x8	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.011	PA 0.006		MAIN:	0.042	PA 0.037	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.077	PA 0.072		MAIN:	0.113	PA 0.108	
			+20				+30	
932E33D40 x16	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.007	PA 0.002		MAIN:	0.057	PA 0.052	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.078	PA 0.073		MAIN:	0.111	PA 0.106	
			+20				+30	
AQC	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.093	PA 0.088		MAIN:	0.126	PA 0.121	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.158	PA 0.153		MAIN:	0.195	PA 0.190	
			+20				+30	
Blank Cup	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.007	PA 0.002		MAIN:	0.014	PA 0.009	
932E33D40 x16	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.013	PA 0.008		MAIN:	0.040	PA 0.035	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.065	PA 0.060		MAIN:	0.109	PA 0.104	
			+20				+30	
Digest Blank (Water Dign)	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.013	PA 0.008		MAIN:	0.031	PA 0.026	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.073	PA 0.068		MAIN:	0.118	PA 0.113	
			+20				+30	
932E33D40 x16	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.008	PA 0.003		MAIN:	0.049	PA 0.044	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.092	PA 0.087		MAIN:	0.131	PA 0.126	
			+20				+30	

B. Yuen 7-10-93

93ZE33536	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.010	PA 0.005		MAIN:	0.053	PA 0.048	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.088	PA 0.083		MAIN:	0.130	PA 0.125	
			+20				+30	
93ZE33537	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.011	PA 0.006		MAIN:	0.056	PA 0.051	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.092	PA 0.087		MAIN:	0.123	PA 0.118	
			+20				+30	
93ZE33D37	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.014	PA 0.009		MAIN:	0.039	PA 0.034	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.083	PA 0.078		MAIN:	0.597	PA 0.592	
			+20				+30	
93ZE33R60	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.008	PA 0.003		MAIN:	0.051	PA 0.046	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.090	PA 0.085		MAIN:	0.135	PA 0.130	
			+20				+30	
AQC	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.117	PA 0.112		MAIN:	0.158	PA 0.153	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.205	PA 0.200		MAIN:	0.256	PA 0.251	
			+20				+30	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.015	PA 0.010		MAIN:	0.013	PA 0.008	
			Blank cup				Blank cup	

B. Yuen
7-10-93

AAS RUN LOG

Element Se

Analyst B. Lynn

Date 7-2-93

Data Set SF1187

	ID	spike	comment.
1	Blank	0	
2		10	
3		20	
4		30	
5	AQC	0	TV=25 µg/l
6		10	
7		20	
8		30	
9	Digest Blank	0	soil digestion
10		10	
11		20	
12		30	
13	93ZE33540	0	Rerun
14		10	
15		20	
16		30	
17	93ZE33540 Dup	0	Rerun
18		10	
19		20	
20		30	
21	93ZE33540 SK x10	0	Rerun
22		10	
23		20	
24		30	B. Lynn
25	LCS x 20	0	Rerun
26		10	7-10-93
27		20	

AAS RUN LOG

Element Se

Analyst B. Yuen

Date 7-2-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV = 25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	93ZE33540 SpK x10	0	Rerun
2		10	
3		20	
4		30	
5	LCS x20	0	Rerun
6		10	
7		20	
8		30	
9	93ZE33540 SpK x10	0	Rerun
10		10	
11		20	
12		30	
13	LCS x20	0	
14		10	
15		20	B. Yuen
16		30	
17	93ZE33540 SpK x10	0	7-10-93
18		10	
19		20	
20		30	

AAS RUN LOG

Element Se

Analyst B. Yuen

Date 7-2-93

Data Set SF1187

	ID	spike	comment
21	93ZE 33540x2	0	Rerun
22		10	
23		20	
24		30	
25	93ZE33540Dup x2	0	Rerun
26		10	
27		20	
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 3		
1		0	
2		10	
3		20	
4		30	
5		0	
6		10	
7		20	
8		30	
9		0	
10		10	B. Yuen
11		20	7-10-93
12		30	
13		0	

AAS RUN LOG

Element Se

Analyst B. Yuen

Date 7-2-93

Data Set SF1187

	ID	spike	comment.
1	By 7-10-93 ~~Blank~~ 93ZE33S40x4	0	Rerun
2		10	
3		20	
4		30	
5	By 7-10-93 ~~AQC~~ 93ZE33S40Dupx2	0	
6		10	
7		20	
8		30	
9	93ZE33D40x4	0	Rerun
10		10	
11		20	
12		30	
13	93ZE33S40x4	0	Rerun
14		10	
15		20	
16		30	
17	93ZE33D40x8	0	Rerun
18		10	
19		20	
20		30	
21	93ZE33S40x8	0	B. Yuen
22		10	
23		20	7-10-93
24		30	
25	93ZE33D40x16	0	Rerun
26		10	
27		20	

AAS RUN LOG

Element Se

Analyst B. Yuen

Date 7-2-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	93ZE33D40 x16	0	Rerun
2		10	
3		20	
4		30	
5	Digest Blank (Water Digestion)	0	Rerun
6		10	
7		20	
8		30	
9	93ZE33D40 x16	0	
10		10	
11		20	
12		30	
13	93ZE33S36	0	
14		10	
15		20	
16		30	B. Yuen
17	93ZE33S37	0	
18		10	7-10-93
19		20	
20		30	

AAS RUN LOG

Element 1 Se

Analyst B. Yuen

Date 7-2-93

Data Set SF1187

	ID	spike	comment
21	93ZE33D37	0	Rerun
22		10	
23		20	
24		30	
25	93ZE33R60	0	
26		10	
27		20	
28		30	
29	AQC	0	TV = 25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 3		
1		0	
2		10	
3		20	
4		30	
5		0	
6		10	
7		20	
8		30	
9		0	B. Yuen
10		10	
11		20	7-10-93
12		30	
13		0	

Element	Instrument	QC Source
☐ Ag	☐ 5100 A3	☐ CLP-40
☐ As	☐ 5100 A6	☐ CLP-70
☐ Cd	☒ 5000 A4	☒ CLP-80
☐ Cr	☐ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☐
☐ Sb	☐	☐
☒ Se		☐
☐ Tl		☐

Analyst B. Yuen
Date 7-2-93
Lamp # 11930
Energy 47
Expansion 3
Stock 3-795E Opened: 5-24-93
Expires: 5-15-94

☐ platform ☐ MSC
☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
1.47	0.00463	25.38 23.81 23.01 25.83 23.58	① Digest Blank (soil digestion) < 0.2 mg/kg (Limit = ± 0.2 mg/kg) ② LCS = 38.7 mg/kg (Limit = 19.1 – 59.4 mg/kg) ③ S40: Spike %R = 105.3 (Limit = 80-120 %) ④ S40: Duplicate difference < 0.2 mg/kg (Limit = ± 0.2 mg/kg)

Blank cup absorbance

0.002
0.002
0.008
0.004
0.002
0.009
0.010
0.008

B. Yuen
7-10-93

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI
DATE OF ANALYSIS --: 07-07-1993
PARAMETER NAME ----: SE
DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	1.883354E-02	.9982069	5.310001E-03	2u Limit=±2 µg/l
AQC 25 UG/L	23.73016	.9963668	6.300001E-03	%R=94.9 Limit=100 ±10%
93ZE33D38	.8662913	.998913	.00531	2u
93ZE33D37	-.4554859	.99896	.00483	2u
93ZE33R62	1.865501E-02	.9959799	5.360001E-03	2u
93ZE33R64	.2550052	.99852	5.490001E-03	2u
93ZE33S38DUP	-3.521073E-02	.9999132	5.680001E-03	2u Dup. diff<2 µg/l Limit=±2 µg/l
AQC 25 UG/L	27.23825	.9971381	5.540003E-03	%R=108.9 Limit=100±10% SF1187
93ZF53S11SPKx3	43.87095	.6023587	2.790001E-03	SF1191
93ZF53S12	3.351066	.8786583	.00188	Rerun, r<0.995
93ZF53S13	1.741743	.9981743	3.330001E-03	2u
93ZF53D13	10.86721	-.236828	-.0369	Rerun, r<0.995
93ZF53R01	-.5825272	.9994912	5.150001E-03	2u
93ZF53R03	-.8812939	.9944758	.00556	Rerun, r<0.995
93ZF53S11SPKx3	29.32909	.731806	3.129999E-03	
AQC 25 UG/L	24.2202	.9977353	5.449997E-03	%R=96.9 Limit=100±10%
93ZF53D13	1.363631	.9926439	3.300001E-03	Rerun, r<0.995
93ZF53R03	.3100758	.998531	.00516	2u
93ZF53D13	0	.9991681	.0041	2u
93ZF53S12x5	-7.730238	.7554192	.02758	Rerun, r<0.995
93ZF53S12x5	.3037426	.9949184	.00428	
93ZF53S12x5	.7635522	.9990186	4.059999E-03	10u
93ZE33S39SPKx3	10.39682	.949289	5.040001E-03	Rerun, r<0.995 SF1187
AQC 25 UG/L	22.81835	.9968817	5.889998E-03	%R=91.3 Limit=100±10%

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.004	1.000061E-04	-3.899994E-03	-3899.756 %
10	.048	5.320001E-02	5.20001E-03	9.774453 %
20	.105	.1063	1.300022E-03	1.222974 %
30	.162	.1594	-2.599985E-03	-1.631107 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.156	.1495	-6.500006E-03	-4.34783 %
10	.203	.2125	9.500012E-03	4.470594 %
20	.275	.2755	4.999936E-04	.1814859 %
30	.342	.3385	-3.499985E-03	-1.033969 %

B. L. [illegible]
7-16-93

93ZE33D38

SPIKE MEASURED CALC. ERROR PER CENT

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	4.600006E-03	2.600006E-03	56.5218 %
10	.06	.0577	-2.299998E-03	-3.986132 %
20	.114	.1108	-3.20001E-03	-2.888096 %
30	.161	.1639	2.89999E-03	1.769365 %

93ZE33D37

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-2.199997E-03	-2.199997E-03	100 %
10	.042	.0461	4.100002E-03	8.893714 %
20	.096	9.439999E-02	-1.600005E-03	-1.69492 %
30	.143	.1427	-3.0002E-04	-.2102453 %

93ZE33R62

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	9.999084E-05	-2.900009E-03	-2900.275 %
10	.046	.0537	7.699996E-03	14.33891 %
20	.114	.1073	-6.699994E-03	-6.244169 %
30	.159	.1609	1.900017E-03	1.180868 %

93ZE33R64

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	1.399979E-03	-3.600021E-03	-257.1483 %
10	.051	5.629999E-02	5.299989E-03	9.413836 %
20	.111	.1112	1.999959E-04	.1798525 %
30	.168	.1661	-1.899988E-03	-1.143882 %

93ZE33S38DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-1.99997E-04	8.000031E-04	-400.0076 %
10	.058	5.660001E-02	-1.399994E-03	-2.473487 %
20	.113	.1134	4.000142E-04	.3527462 %
30	.17	.1702	2.000034E-04	.1175108 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.147	.1509	3.899962E-03	2.584468 %
10	.209	.2063	-2.700016E-03	-1.308781 %
20	.268	.2617	-6.300003E-03	-2.407338 %
30	.312	.3171001	5.100042E-03	1.608338 %

B. Yne 7-10-93

93ZF53S11SPKx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.167	.1224	-.0446	-36.43791 %
10	.085	.1503	.0653	43.44644 %
20	.175	.1782	3.20001E-03	1.79574 %

93ZF53S12

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.004	6.300004E-03	2.300003E-03	36.50797 %
10	.019	2.510001E-02	6.100005E-03	24.3028 %
20	.063	4.390001E-02	-.0191	-43.50796 %
30	.052	6.270001E-02	1.070001E-02	17.0654 %

93ZF53S13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.000001E-03	5.800003E-03	-2.199997E-03	-37.93097 %
10	.037	3.910001E-02	2.100006E-03	5.370858 %
20	.07	7.240001E-02	2.400011E-03	3.314932 %
30	.108	.1057	-2.299987E-03	-2.175957 %

93ZF53D13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	-.401	-.404	100.7481 %
10	.04	-.77	-.81	105.1948 %
20	-3.971	-1.139	2.832	-248.6392 %
30	.11	-1.508	-1.618	107.2944 %

93ZF53R01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-3.000015E-03	-2.000015E-03	66.66684 %
10	.046	.0485	2.499994E-03	5.154628 %
20	.099	.1	1.000002E-03	1.000002 %
30	.153	.1515	-1.499996E-03	-.9900961 %

93ZF53R03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	-4.899994E-03	-6.899994E-03	140.8164 %
10	.043	.0507	.0077	15.18738 %
20	.101	.1063	5.299993E-03	4.985883 %
30	.168	.1619	-6.099999E-03	-3.767757 %

93ZF53S11SPKx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.102	9.180002E-02	-1.019998E-02	-11.11109 %
10	.135	.1231	-1.189999E-02	-9.666931 %
20	.1	.1544	5.440001E-02	35.23316 %
30	.218	.1857	-.0323	-17.39364 %

B. Lynn
7-10-93

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.125	.120	[illegible]	[illegible] %

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.135	.132	-2.999976E-03	-2.272709 %
10	.185	.1865	1.499996E-03	.8042872 %
20	.235	.241	5.999968E-03	2.489613 %
30	.3	.2954999	-4.500091E-03	-1.522874 %

93ZF53D13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	4.499985E-03	1.499985E-03	33.33311 %
10	.036	.0375	1.499996E-03	3.999989 %
20	.078	7.050001E-02	-7.499993E-03	-10.63829 %
30	.099	.1035	4.500024E-03	4.347849 %

93ZF53R03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	1.599991E-03	-3.400009E-03	-212.5018 %
10	.049	5.319999E-02	4.199989E-03	7.894718 %
20	.103	.1048	1.799986E-03	1.717544 %
30	.159	.1564	-2.599999E-03	-1.662404 %

93ZF53D13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	0	-.002	-1.701412E+38 %
10	.038	.041	3.000002E-03	7.317079 %
20	.082	.082	0	0 %
30	.124	.123	-9.999946E-04	-.8130038 %

93ZF53S12x5

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	-.2132	-.2142	100.4691 %
10	-.074	6.260003E-02	.1366	218.2108 %
20	-.031	.3384	.3694	109.1608 %
30	.906	.6142	-.2918	-47.50896 %

93ZF53S12x5

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.005	1.300018E-03	-3.699982E-03	-284.61 %
10	.042	4.410002E-02	2.100013E-03	4.761934 %
20	.08	8.690001E-02	6.900013E-03	7.940175 %
30	.135	.1297	-5.300001E-03	-4.086353 %

B. Green
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93ZF53S12x5

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.004	3.100021E-03	-8.999789E-04	-29.03138 %
10	.044	4.370002E-02	-2.999827E-04	-.6864591 %
20	.081	8.430001E-02	3.300011E-03	3.914604 %

93ZF53S12x5

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.004	3.100021E-03	-8.999789E-04	-29.03138 %
10	.044	4.370002E-02	-2.999827E-04	-.6864591 %
20	.081	8.430001E-02	3.300011E-03	3.914604 %
30	.127	.1249	-2.100006E-03	-1.68135 %

93ZE33S39SPKx3

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.056	.0524	-3.600009E-03	-6.870247 %
10	.113	.1028	-1.019999E-02	-9.922172 %
20	.122	.1532	3.120002E-02	20.36554 %
30	.221	.2036	-1.739998E-02	-8.546159 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.14	.1344	-5.599976E-03	-4.166648 %
10	.185	.1933	8.299991E-03	4.29384 %
20	.252	.2522	1.999736E-04	7.929167E-02 %
30	.314	.3111	-2.900064E-03	-.9321969 %

B. Yue
7-10-93

Se		AA-BG	BG				
MAIN: -0.004	PA	-0.004					

0.000 AUTOZERO

Blank	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.008	PA 0.004		MAIN:	0.052	PA 0.048	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.109	PA 0.105		MAIN:	0.166	PA 0.162	
			+20				+30	
AQC	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.160	PA 0.156		MAIN:	0.207	PA 0.203	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.279	PA 0.275		MAIN:	0.346	PA 0.342	
			+20				+30	
932E33D38	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.006	PA 0.002		MAIN:	0.064	PA 0.060	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.118	PA 0.114		MAIN:	0.165	PA 0.161	
			+20				+30	
932E33D37	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.004	PA 0.000		MAIN:	0.046	PA 0.042	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.100	PA 0.096		MAIN:	0.147	PA 0.143	
			+20				+30	

B. [illegible]
7-10-93

932E33R62	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.007	PA 0.003	+0	MAIN: 0.050	PA 0.046	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.118	PA 0.114	+20	MAIN: 0.163	PA 0.159	+30
932E33R64	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.009	PA 0.005	+0	MAIN: 0.055	PA 0.051	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.115	PA 0.111	+20	MAIN: 0.172	PA 0.168	+30
932E33S38 Dup	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.003	PA-0.001	+0	MAIN: 0.062	PA 0.058	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.117	PA 0.113	+20	MAIN: 0.174	PA 0.170	+30
AQC	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.151	PA 0.147	+0	MAIN: 0.213	PA 0.209	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.272	PA 0.268	+20	MAIN: 0.316	PA 0.312	+30
Blank cups SF1187	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.002	PA-0.002		MAIN: 0.006	PA 0.002	
SF1191 932F53511 SpK x3	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.171	PA 0.167	+0	MAIN: 0.089	PA 0.085	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.179	PA 0.175	+20	MAIN: 0.234	PA 0.230	+30
932F53S12	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.008	PA 0.004	+0	MAIN: 0.023	PA 0.019	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.067	PA 0.063	+20	MAIN: 0.056	PA 0.052	+30
932F53S13	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.012	PA 0.008	+0	MAIN: 0.041	PA 0.037	+10
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.074	PA 0.070	+20	MAIN: 0.112	PA 0.108	+30

B. Lynn 7-10-93

93ZF53D13	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.007	PA 0.003		MAIN:	0.044	PA 0.040	
			+10				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	-3.967	PA -3.971		MAIN:	0.114	PA 0.110	
			+20 power supply problem				+30	
93ZF53R01	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.003	PA -0.001		MAIN:	0.050	PA 0.046	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.103	PA 0.099		MAIN:	0.157	PA 0.153	
			+20				+30	
93ZF53R03	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.006	PA 0.002		MAIN:	0.047	PA 0.043	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.105	PA 0.101		MAIN:	0.172	PA 0.168	
			+20				+30	
93ZF53S11 SpK x3	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.106	PA 0.102		MAIN:	0.139	PA 0.135	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.104	PA 0.100		MAIN:	0.222	PA 0.218	
			+20				+30	
ARC	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.139	PA 0.135		MAIN:	0.189	PA 0.185	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.239	PA 0.235		MAIN:	0.304	PA 0.300	
			+20				+30	
Blank Cups	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.008	PA 0.004		MAIN:	0.005	PA 0.001	
93ZF53D13	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.007	PA 0.003		MAIN:	0.040	PA 0.036	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.082	PA 0.078		MAIN:	0.103	PA 0.099	
			+20				+30	
93ZF53R03	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.009	PA 0.005		MAIN:	0.053	PA 0.049	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.107	PA 0.103		MAIN:	0.163	PA 0.159	
			+20				+30	

B. Jue
7-10-93

	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: -3.554	PA -3.558		MAIN: 0.006		PA 0.002	
		power supply problem				blank cup	
	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: 0.006	PA 0.002		MAIN: 0.042		PA 0.038	
	93ZF53D13	+0				93ZF53D13 +10	
	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: -0.669	PA -0.673		MAIN: 0.128		PA 0.124	
		power supply problem				93ZF53D13 +30	
	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: 0.086	PA 0.082		MAIN: 0.006		PA 0.002	
	93ZF53D13	+20				blank cup	
93ZF53S12 x5	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: 0.005	PA 0.001		MAIN: -0.070		PA -0.074	
		+0				+10	
	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: -0.027	PA -0.031		MAIN: 0.910		PA 0.906	
		+20				+30	
93ZF53S12 x5	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: 0.009	PA 0.005		MAIN: 0.046		PA 0.042	
		+0				+10	
	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: 0.084	PA 0.080		MAIN: 0.139		PA 0.135	
		+20				+30	
93ZF53S12 x5	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: 0.008	PA 0.004		MAIN: 0.048		PA 0.044	
		+0				+10	
	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: 0.085	PA 0.081		MAIN: -2.191		PA -2.195	
		+20				power supply problem	
	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: 0.131	PA 0.127		MAIN: 0.060		PA 0.056	
SF1191	93ZF53S12x5	+30				93ZE33S39 SpK x3 +0	
SF1187 93ZE33S39 SpK x3	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: 0.117	PA 0.113		MAIN: 0.126		PA 0.122	
		+10				+20	
	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: 0.225	PA 0.221		MAIN: 0.152		PA 0.148	
	93ZE33S39 SpK x3	+30				AQC +0, not used	
	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: 2.548	PA 2.544		MAIN: 0.144		PA 0.140	
		power supply problem				AQC +0	
	Se	AA-BG	BG	Se		AA-BG	BG
	MAIN: 0.189	PA 0.185		MAIN: 0.256		PA 0.252	
		AQC +10				AQC +20	

B. Ljuer 7-10-93

Se	AA-BG	BG	Se	AA-BG	BG
MAIN: 0.318	PA 0.314		MAIN: 0.003	PA-0.001	
	AQC +30			blank cup	

B. Yue
7-10-93

AAS RUN LOG

Element Se

Date 7-6-93

Analyst B. Yuen

Data Set SF1187

	ID	spike	comment.
1	Blank	0	
2		10	
3		20	
4		30	
5	AQC	0	TV=25 µg/l
6		10	
7		20	
8		30	
9	93ZE33D38	0	SF1187
10		10	
11		20	
12		30	
13	93ZE33D37	0	
14		10	
15		20	
16		30	
17	93ZE33R62	0	
18		10	
19		20	
20		30	
21	93ZE33R64	0	
22		10	
23		20	
24		30	
25	93ZE33S38 Dup	0	
26		10	B. Yuen
27		20	

7-10-93

AAS RUN LOG

Element Se

Analyst B. Yuen

Date 7-6-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	93ZF53S11 SpK x 3	0	SF1191 Rerun
2		10	
3		20	
4		30	
5	93ZF53S12	0	Rerun
6		10	
7		20	
8		30	
9	93ZF53S13	0	
10		10	
11		20	
12		30	
13	93ZF53D13	0	Rerun
14		10	
15		20	
16		30	
17	93ZF53R01	0	
18		10	
19		20	B. Yuen
20		30	

7-10-93

AAS RUN LOG

Element Se

Analyst B. Green

Date 7-6-93

Data Set SF1187

	ID	spike	comment
21	93ZF53R03	0	Rerun
22		10	
23		20	
24		30	
25	93ZF53S11 SpK x3	0	Rerun
26		10	
27		20	
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 3		
1		0	
2		10	
3		20	
4		30	
5		0	
6		10	
7		20	
8		30	
9		0	
10		10	
11		20	
12		30	B. Green
13		0	

7-10-93

AAS RUN LOG

Element Se

Analyst B. Yuen

Date 7-6-93

Data Set SF1187

	ID	spike	comment.
1	BY 7-10-93 ~~Blank~~ 93ZF53D13	0	Rerun SF1191
2	"	10	
3		20	
4		30	
5	BY 7-10-93 ~~AQC~~ 93ZF53R03	0	
6		10	
7		20	
8		30	
9	93ZF53D13	0	
10		10	
11		20	
12		30	
13	93ZF53S12 x 5	0	Rerun
14		10	
15		20	
16		30	
17	93ZF53S12 x 5	0	Rerun
18		10	
19		20	
20		30	
21	93ZF53S12 x 5	0	B. Yuen
22		10	
23		20	7-10-93
24		30	
25	93ZE33S39 SpK x 3	0	Rerun SF1187
26		10	
27		20	

AAS RUN LOG

Element Se

Analyst B. Yuen

Date 7-6-93

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1		0	
2		10	
3		20	
4		30	
5		0	
6		10	
7		20	
8		30	
9		0	
10		10	
11		20	
12		30	
13		0	
14		10	
15		20	
16		30	B. Yuen
17		0	
18		10	7-10-93
19		20	
20		30	

Element	Instrument	QC Source
☐ Ag	☐ 5100 A3	☐ CLP-40
☐ As	☐ 5100 A6	☐ CLP-70
☐ Cd	☒ 5000 A4	☒ CLP-80
☐ Cr	☐ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☐
☐ Sb	☐	☐
☒ Se		☐
☐ Tl		☐

Analyst B. Yuen

Date 7-6-93

Lamp # 11930

Energy 48

Expansion 3

Stock 3-795E Opened: 5-24-93
Expires: 5-15-94

☐ platform ☐ MSC

☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
0.02	0.00531	23.73 27.24 24.22 22.82	S38: ① Duplicate difference <2 µg/l Limit = ±2 µg/l

Blank cup absorbance
-0.002
0.002
0.004
0.001
-0.001

B. Yuen
7-10-93

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI
DATE OF ANALYSIS --: 07-07-1993
PARAMETER NAME ----: SE
DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	-1.604362	.9996652	.00642	2u Limit = ±2 µg/l
AQC 25 UG/L	23.78503	.9981169	6.420002E-03	%R = 95.1 Limit = 100±10%
DIGEST BLANK (WATER)				
	-1.822125	.9990274	.00461	2u adj. conc. = 51.60 µg/l spk conc = 50 µg/l
93ZE33S38SPKx4	12.89968	.9990726	6.380001E-03	spk. %R = 103.2 Limit = 85–115%
93ZE33S38	-.2040785	.9970974	.0049	2u
93ZE33D38	-29.74359	-.6843693	-.01755	Rerun, r<0.995
93ZE33S38DUP	-2.956809	.9904049	.00602	
AQC 25 UG/L	25.60934	.9975919	5.990002E-03	%R = 102.4 Limit = 100±10%

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.01	-.0103	-3.000032E-04	2.912652 %
10	.052	.0539	1.899995E-03	3.525037 %
20	.121	.1181	-2.900005E-03	-2.45555 %
30	.181	.1823	1.300007E-03	.7131141 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.155	.1527	-2.300054E-03	-1.506257 %
10	.217	.2169	-1.000315E-04	-4.611873E-02 %
20	.274	.2811	7.099986E-03	2.525787 %
30	.35	.3453	-4.699976E-03	-1.361128 %

DIGEST BLANK (WATER DIG.)

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.006	-8.399994E-03	-2.399994E-03	28.57138 %
10	.034	3.770001E-02	3.700003E-03	9.81433 %
20	.084	.0838	-1.999959E-04	-.2386586 %
30	.131	.1299	-1.100004E-03	-.8468081 %

B. [illegible]
7-10-93

93ZE33S38SPKx4

SPIKE	MEASURED	CALC.	ERROR	PER CENT

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.085	8.229996E-02	-2.700046E-03	-3.280738 %
10	.144	.1461	2.099961E-03	1.437345 %
20	.206	.2099	3.899962E-03	1.85801 %
30	.277	.2737	-3.300011E-03	-1.205704 %

93ZE33S38

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-9.999848E-04	1.000015E-03	-100.0031 %
10	.046	4.800001E-02	2.000012E-03	4.16669 %
20	.104	.097	-.007	-7.216494 %
30	.142	.146	3.999993E-03	2.739721 %

93ZE33D38

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.751	.522	-.229	-43.86973 %
10	.042	.3465001	.3045001	87.87879 %
20	.093	.171	7.800003E-02	45.61405 %
30	.149	-4.499972E-03	-.1535	3411.132 %

93ZE33S38DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.012	-1.779999E-02	-5.799989E-03	32.58423 %
10	.041	.0424	1.400001E-03	3.30189 %
20	.088	.1026	1.459999E-02	14.23001 %
30	.173	.1628	-1.020001E-02	-6.265363 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.15	.1534	3.399953E-03	2.216398 %
10	.215	.2133	-1.700029E-03	-.7970131 %
20	.28	.2732	-6.799996E-03	-2.489018 %
30	.328	.3331	5.100012E-03	1.531075 %

B. Green
7-10-93

SF1187

Se	AA-BG	BG
MAIN: 0.006	PA 0.006	

0.000 AUTOZERO

blank	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: -0.016	PA -0.010		MAIN: 0.046	PA 0.052	
		+0			+10	
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.115	PA 0.121		MAIN: 0.175	PA 0.181	
		+20			+30	
AQC	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.158	PA 0.164		MAIN: 1.192	PA 1.198	
		AQC+0			Not used, power supply problem	
AQC	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.149	PA 0.155		MAIN: 0.211	PA 0.217	
		+0			+10	
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.268	PA 0.274		MAIN: 0.344	PA 0.350	
		+20			+30	
Digest blank (Water Dign)	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: -0.012	PA -0.006		MAIN: 0.028	PA 0.034	
		+0			+10	
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.078	PA 0.084		MAIN: 0.125	PA 0.131	
		+20			+30	
32E33538 SpK x4	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.079	PA 0.085		MAIN: 0.138	PA 0.144	
		+0			+10	
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.200	PA 0.206		MAIN: 0.271	PA 0.277	
		+20			+30	
32E33538	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: -0.008	PA -0.002		MAIN: 0.040	PA 0.046	
		+0			+10	
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.098	PA 0.104		MAIN: 0.136	PA 0.142	
		+20			+30	
32E33D38	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.745	PA 0.751		MAIN: 0.036	PA 0.042	
		+0			+10	
	Se	AA-BG	BG	Se	AA-BG	BG
	MAIN: 0.087	PA 0.093		MAIN: 0.143	PA 0.149	
		+20			+30	

B. [illegible]
7-10-93

13ZE33538 Dup	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	-0.018	PA -0.012		MAIN:	0.035	PA 0.041	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.082	PA 0.088		MAIN:	0.167	PA 0.173	
			+20				+30	
SQC	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.144	PA 0.150		MAIN:	0.209	PA 0.215	
			+0				+10	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.274	PA 0.280		MAIN:	0.322	PA 0.328	
			+20				+30	
Blank Cups	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	-0.010	PA -0.004		MAIN:	-0.012	PA -0.006	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	-0.011	PA -0.005		MAIN:	0.031	PA 0.037	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.110	PA 0.116		MAIN:	0.149	PA 0.155	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	-0.010	PA -0.004		MAIN:	0.037	PA 0.043	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.086	PA 0.092		MAIN:	0.153	PA 0.159	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	-0.014	PA -0.008		MAIN:	0.010	PA 0.016	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.043	PA 0.049		MAIN:	0.044	PA 0.050	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	-0.012	PA -0.006		MAIN:	-0.091	PA -0.085	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.081	PA 0.087		MAIN:	0.136	PA 0.142	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.052	PA 0.058		MAIN:	0.073	PA 0.079	
	Se		AA-BG	BG	Se		AA-BG	BG
	MAIN:	0.125	PA 0.131		MAIN:	0.164	PA 0.170	

Not Used By 7-7-93

B. L. [illegible]
7-10-93

AAS RUN LOG

Element Se

Date 7-6-93

Analyst B. Green

Data Set SF1187

	ID	spike	comment.
1	Blank	0	
2	"	10	
3		20	
4		30	
5	AQC	0	TV=25 µg/l
6		10	
7		20	
8		30	
9	Digestion blank (water)	0	
10		10	
11		20	
12		30	
13	93ZE33S38 spk x 4	0	
14		10	
15		20	
16		30	
17	93ZE33S38	0	
18		10	
19		20	
20		30	
21	93ZE33D38	0	Rerun
22		10	
23		20	
24		30	
25	93ZE33S38 Dup	0	Rerun B. Green 7-10-93
26		10	
27		20	

AAS RUN LOG

Element Se

Date 7-6-93

Analyst B. Yuen

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1		0	
2		10	
3		20	
4		30	
5		0	
6		10	
7		20	
8		30	
9		0	
10		10	
11		20	
12		30	
13		0	
14		10	
15		20	
16		30	
17		0	
18		10	B. Yuen
19		20	7-10-93
20		30	

Element	Instrument	QC Source
☐ Ag	☐ 5100 A3	☐ CLP-40
☐ As	☐ 5100 A6	☐ CLP-70
☐ Cd	☒ 5000 A4	☐ CLP-80
☐ Cr	☐ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☒ CLP-80
☐ Sb	☐	☐
☒ Se		☐
☐ Tl		☐

Analyst B. Yuen

Date 7-6-93

Lamp # 11930

Energy 48

Expansion 3

Stock 3-795E Opened: 5-24-93
Expires: 5-15-94

☐ platform ☐ MSC

☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
-1.60	0.00642	23.78 25.61	① Digest Blank (Water Digestion) <2 µg/l Limit = ±2 µg/l ② S38: Spike %R = 103.2 Limit = 85-115%

Blank cup absorbance

-0.004
-0.006

B. Yuen
7-10-93

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: BAI
DATE OF ANALYSIS --: 07-07-1993
PARAMETER NAME ----: TL
DATA SET # --------: SF1187

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	.3522186	.9995244	6.530001E-03	2u Limit=±2 µg/l
AQC 25 UG/L	24.77589	.9988992	7.140003E-03	%R=99.1 Limit=100±10%
93ZE33S38SPKx5	10.7837	.9979721	3.190001E-03	adj. Conc.=53.92 µg/l spk. Conc.=50 µg/l %R=107.8 * SF1187
93ZF53S11SPKx4	140.0001	.3042905	1.999998E-04	SF1191
93ZF53S11SPKx8	6.23656	.9927942	.00186	Rerun, r<0.995
93ZF53S11SPKx8	5.380431	.9782256	.00184	
93ZF53S11SPKx8	8.507464	.9313646	.00134	
AQC 25 UG/L	26.92075	.9977492	6.559998E-03	%R=107.7 Limit=100±10% SF1187
93ZE33S39SPKx4	19.99999	.9658785	2.200001E-03	Rerun, r<0.995
93ZF53S11SPKx8	5.569622	.9750114	.00158	SF1191
~~93ZE33S39SPKx4~~	~~10~~	~~.3333334~~	~~.0014~~ NOT USED. WRONG ENTRY	Rerun, r<0.995 SF1187
93ZE33S39SPKx4	24.94253	.9628114	.00174	
93ZF53S11SPKx8	5.714286	.9988592	.00175	adj. Conc.=45.71 µg/l spk. Conc.=50 µg/l %R=91.4 * SF1187
93ZE33S39SPKx4	13.73444	.9814688	.00241	
93ZE33S39SPKx4	18.8384	.9703086	.00198	Rerun, r<0.995
93ZE33S39SPKx4	509.998	5.286649E-02	1.000004E-04	
AQC 25 UG/L	25.65218	.9986584	6.899998E-03	%R=102.6 Limit=100±10%
93ZE33S39SPKx8	15.63066	.9571101	2.219998E-03	
93ZE33S39SPKx8	4.395604	.9932342	.00455	
93ZE33S39SPKx8	7.506232	.9909999	.00401	Rerun, r<0.995
93ZE33S39SPKx8	6.9863	.991588	3.650001E-03	
93ZE33S39SPKx8	6.275397	.9974468	.00443	adj. Conc.=50.26 µg/l spk. Conc.=50 µg/l * %R=100.4 *
AQC 25 UG/L	25.06367	.9987558	7.069996E-03	%R=100.2 Limit=100±10%

* Limit=85-115%

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.004	2.299988E-03	-1.700013E-03	-73.91399 %
10	.064	.0676	3.599994E-03	5.325435 %
20	.135	.1329	-2.099991E-03	-1.580128 %
30	.198	.1982	2.000183E-04	.1009174 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.181	.1768999	-4.100099E-03	-2.317751 %
10	.243	.2482999	5.299926E-03	2.134486 %
20	.318	.3197	1.699954E-03	.5317343 %
30	.394	.3911	-2.900005E-03	-.7414995 %

B. Green
7-8-93

93ZE33S38SPKx5

SPIKE	MEASURED	CALC.	ERROR	PER CENT

0	.034	3.439999E-02	3.999919E-04	1.162767 %
10	.065	.0663	.0013	1.960784 %
20	.102	.0982	-3.799997E-03	-3.869651 %
30	.128	.1301	2.100006E-03	1.614147 %

93ZF53S11SPKx4

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.021	.028	7.000001E-03	25.00001 %
10	.037	.03	-7.000001E-03	-23.33334 %
20	.039	.032	-7.000003E-03	-21.87501 %
30	.027	.034	6.999994E-03	20.58822 %

93ZF53S11SPKx8

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.999999E-03	.0116	2.599999E-03	22.41379 %
10	.033	.0302	-2.800005E-03	-9.27154 %
20	.051	4.879999E-02	-2.200008E-03	-4.508213 %
30	.065	6.739999E-02	2.399989E-03	3.560815 %

93ZF53S11SPKx8

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.999999E-03	9.899994E-03	8.999947E-04	9.090861 %
10	.026	.0283	2.299996E-03	8.127196 %
20	.054	.0467	-7.300001E-03	-15.63169 %
30	.061	.0651	4.099999E-03	6.298001 %

93ZF53S11SPKx8

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.01	.0114	1.400001E-03	12.28071 %
10	.022	.0248	2.800001E-03	11.29033 %
20	.048	.0382	-9.800002E-03	-25.65446 %
30	.046	.0516	5.600002E-03	10.85272 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.176	.1766	6.0004E-04	.3397734 %
10	.239	.2422	3.200024E-03	1.321232 %
20	.316	.3078	-8.20002E-03	-2.664074 %
30	.369	.3734	4.399985E-03	1.178357 %

B. Gruen 7-8-93

93ZE33S39SPKx4

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.037	.044	.007	15.90909 %
10	.074	6.600001E-02	-7.999994E-03	-12.1212 %
20	.093	8.800001E-02	-4.999988E-03	-5.681803 %
30	.104	.11	6.00002E-03	5.454562 %

93ZF53S11SPKx8

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.013	8.800002E-03	-4.199998E-03	-47.72723 %
10	.02	.0246	4.600004E-03	18.6992 %
20	.037	4.040001E-02	3.400006E-03	8.415854 %
30	.06	5.620001E-02	-3.79999E-03	-6.761547 %

93ZE33S39SPKx4

Not used
Wrong entry
BY 7-7-93

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.042	.014	-.028	-200 %
10	0	0	0	1.701412E+38 %
0	0	.014	.014	100 %
0	0	.014	.014	100 %

93ZE33S39SPKx4

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.042	.0434	1.399994E-03	3.225793 %
10	.067	6.079999E-02	-6.200012E-03	-10.19739 %
20	.07	7.819998E-02	8.199983E-03	10.48591 %
30	.099	9.559999E-02	-3.400013E-03	-3.556499 %

93ZF53S11SPKx8

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.011	.01	-.001	-10 %
10	.026	.0275	1.499999E-03	5.454543 %
20	.045	.045	0	0 %
30	.063	.0625	-5.00001E-04	-.8000016 %

93ZE33S39SPKx4

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.031	3.310001E-02	2.100006E-03	6.344427 %
10	.064	5.720001E-02	-6.799996E-03	-11.8881 %
20	.074	8.130001E-02	7.300005E-03	8.979094 %
30	.108	.1054	-2.599992E-03	-2.466785 %

93ZE33S39SPKx4

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.043	3.730002E-02	-5.699985E-03	-15.28145 %
10	.051	5.710002E-02	6.100014E-03	10.68303 %
20	.072	7.690001E-02	4.900009E-03	6.371922 %
30	.102	.0967	-5.300001E-03	-5.48087 %

B. Yuen
7-8-93

93ZE33S39SPKx4

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.029	5.099999E-02	2.199999E-02	43.13725 %

10	.076	.052	-2.400001E-02	-46.15386 %
20	.071	.053	-.018	-33.96227 %
30	.034	.054	.02	37.03704 %

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.181	.177	-3.999993E-03	-2.259883 %
10	.242	.246	3.999978E-03	1.626008 %
20	.311	.315	3.999949E-03	1.269825 %
30	.388	.384	-4.000068E-03	-1.041685 %

93ZE33S39SPKx8

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.027	3.470003E-02	7.700028E-03	22.19026 %
10	.065	5.690001E-02	-8.099988E-03	-14.23548 %
20	.086	.0791	-6.900005E-03	-8.723142 %
30	9.399999E-02	.1013	7.299982E-03	7.206302 %

93ZE33S39SPKx8

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.024	.02	-4.000001E-03	-20 %
10	.064	6.550001E-02	1.500003E-03	2.290081 %
20	.102	.111	9.000003E-03	8.108111 %
30	.163	.1565	-6.500006E-03	-4.153359 %

93ZE33S39SPKx8

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.034	3.009999E-02	-3.90001E-03	-12.95685 %
10	.061	.0702	9.199996E-03	13.10541 %
20	.117	.1103	-6.700009E-03	-6.074352 %
30	.149	.1504	1.399994E-03	.9308471 %

93ZE33S39SPKx8

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.025	.0255	4.999992E-04	1.960781 %
10	.067	6.200001E-02	-4.999995E-03	-8.064508 %
20	9.000001E-02	9.850001E-02	8.50001E-03	8.629451 %
30	.139	.135	-3.999978E-03	-2.962947 %

B. L. Green
7-8-93

93ZE33S39SPKx8

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.027	.0278	8.000024E-04	2.877706 %
10	.076	.0721	-3.899999E-03	-5.409153 %
20	.111	.1164	5.399987E-03	4.639165 %
30	.163	.1607	-2.300024E-03	-1.431253 %

AQC 25 UG/L

AQC 25 UG/L

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.174	.1772	3.200024E-03	1.805883 %
10	.25	.2479	-2.100021E-03	-.8471242 %
20	.324	.3186	-5.400062E-03	-1.694935 %
30	.385	.3892999	4.299909E-03	1.104524 %

B. Lynn
7-8-93

```
-----------------------------------------------------------------------
T1
MAIN:-0.003          $    AA-BG    BG
                      PA-0.003

=======================================================================
 0.000     AUTOZERO
```

B. Yue
7-8-93

T1 MAIN: 0.007	$	AA-BG	BG	T1 MAIN: 0.067	$	AA-BG	BG
$	PA	0.004 +0			PA	0.064 +10	
T1 MAIN: 0.138	$	AA-BG	BG	T1 MAIN: 0.201	$	AA-BG	BG
$	PA	0.135 +20			PA	0.198 +30	
T1 MAIN: 0.184	$	AA-BG	BG	T1 MAIN: 0.246	$	AA-BG	BG
$	PA	0.181 +0			PA	0.243 +10	
T1 MAIN: 0.321	$	AA-BG	BG	T1 MAIN: 0.397	$	AA-BG	BG
$	PA	0.318 +20			PA	0.394 +30	
T1 MAIN: 0.037	$	AA-BG	BG	T1 MAIN: 0.068	$	AA-BG	BG
$	PA	0.034 +0			PA	0.065 +10	
T1 MAIN: 0.105	$	AA-BG	BG	T1 MAIN: 0.131	$	AA-BG	BG
$	PA	0.102 +20			PA	0.128 +30	
T1 MAIN: 0.024	$	AA-BG	BG	T1 MAIN: 0.040	$	AA-BG	BG
$	PA	0.021 +0			PA	0.037 +10	
T1 MAIN: 0.042	$	AA-BG	BG	T1 MAIN: 0.030	$	AA-BG	BG
$	PA	0.039 +20			PA	0.027 +30	
T1 MAIN: 0.012	$	AA-BG	BG	T1 MAIN: 0.036	$	AA-BG	BG
$	PA	0.009 +0			PA	0.033 +10	

Blank

AQC

93ZE33538 SK x 5

SF1187

SF1191

93ZF53511 SK x 4

B. Yuen 7-8-93

T1							93ZF53511 SpK x 8
MAIN: 0.054	$	AA-BG	BG				
$	PA	0.051		T1			
		+20		MAIN: 0.068	$	AA-BG	BG
					PA	0.065	
						+30	
T1							
MAIN: 0.012	$	AA-BG	BG				
$	PA	0.009		T1			
		+0		MAIN: 0.029	$	AA-BG	BG
					PA	0.026	
						+10	
T1							93ZF53511 SpK x 8
MAIN: 0.057	$	AA-BG	BG				
$	PA	0.054		T1			
		+20		MAIN: 0.064	$	AA-BG	BG
					PA	0.061	
						+30	
T1							
MAIN: 0.013	$	AA-BG	BG				
$	PA	0.010		T1			
		+0		MAIN: 0.025	$	AA-BG	BG
					PA	0.022	
						+10	
T1							93ZF53511 SpK x 8
MAIN: 0.051	$	AA-BG	BG				
$	PA	0.048		T1			
		+20		MAIN: 0.049	$	AA-BG	BG
					PA	0.046	
						+30	
T1							
MAIN: 0.179	$	AA-BG	BG				
$	PA	0.176		T1			
		+0		MAIN: 0.242	$	AA-BG	BG
					PA	0.239	
						+10	

B. Yuen
7-8-93

AQC

T1 MAIN: 0.319 $	$ AA-BG BG PA 0.316 +20	T1 MAIN: 0.372	$ AA-BG BG PA 0.369 +30	
T1 MAIN: 0.001 $	$ AA-BG BG PA-0.002	T1 MAIN: 0.006	$ AA-BG BG PA 0.003	Blank cups SF1191
T1 MAIN: 0.040 $	$ AA-BG BG PA 0.037 +0	T1 MAIN: 0.077	$ AA-BG BG PA 0.074 +10	SF1187
T1 MAIN: 0.096 $	$ AA-BG BG PA 0.093 +20	T1 MAIN: 0.107	$ AA-BG BG PA 0.104 +30	93ZE33539 SpK x 4
T1 MAIN: 0.016 $	$ AA-BG BG PA 0.013 +0	T1 MAIN: 0.023	$ AA-BG BG PA 0.020 +10	SF1191
T1 MAIN: 0.040 $	$ AA-BG BG PA 0.037 +20	T1 MAIN: 0.063	$ AA-BG BG PA 0.060 +30	93ZF53511 SpK x 8
T1 MAIN: 0.045 $	$ AA-BG BG PA 0.042 +0	T1 MAIN: 0.070	$ AA-BG BG PA 0.067 +10	SF1187
T1 MAIN: 0.073 $	$ AA-BG BG PA 0.070 +20	T1 MAIN: 0.102	$ AA-BG BG PA 0.099 +30	93ZE33539 SpK x 4 B. Lynn 7-8-93
T1 MAIN: 0.014 $	$ AA-BG BG PA 0.011 +0	T1 MAIN: 0.029	$ AA-BG BG PA 0.026 ~~+20~~ +10	SF1191 BY 7-7-93

T1 MAIN: 0.032 $	$ AA-BG BG PA 0.029 ~~+20~~ +10 BY 7-7-93 (not used,)	T1 MAIN: 0.048 $	$ AA-BG BG PA 0.045 +20	932F53511 8pK x 8
T1 MAIN: 0.045 $	$ AA-BG BG PA 0.042 +20 (not used)	T1 MAIN: 0.066 $	$ AA-BG BG PA 0.063 +30	
T1 MAIN: 0.034 $	$ AA-BG BG PA 0.031 +0	T1 MAIN: 0.067 $	$ AA-BG BG PA 0.064 +10	SF1187
T1 MAIN: 0.077 $	$ AA-BG BG PA 0.074 +20	T1 MAIN: 0.111 $	$ AA-BG BG PA 0.108 +30	932E33539 8pK x 4
T1 MAIN: 0.046 $	$ AA-BG BG PA 0.043 +0	T1 MAIN: 0.054 $	$ AA-BG BG PA 0.051 +10	
T1 MAIN: 0.075 $	$ AA-BG BG PA 0.072 +20	T1 MAIN: 0.105 $	$ AA-BG BG PA 0.102 +30	932E33539 8pK x 4

B. Yue
7-8-93

T1
MAIN: 0.032 $ AA-BG BG
$ PA 0.029
+0

T1
MAIN: 0.079 $ AA-BG BG
PA 0.076
+10

T1
MAIN: 0.074 $ AA-BG BG
$ PA 0.071
+20

T1
MAIN: 0.037 $ AA-BG BG
PA 0.034
+30

93ZE33539 SpK x 4

T1
MAIN: 0.079 $ AA-BG BG
$ PA 0.076
Wrong cup

T1
MAIN: 0.091 $ AA-BG BG
PA 0.088
Wrong cup

T1
MAIN: 0.084 $ AA-BG BG
$ PA 0.081
Wrong cup

T1
MAIN: 0.184 $ AA-BG BG
PA 0.181
ABC + 0

T1
MAIN: 0.245 $ AA-BG BG
$ PA 0.242
ABC + 10

T1
MAIN: 0.314 $ AA-BG BG
PA 0.311
ABC + 20

T1
MAIN: 0.391 $ AA-BG BG
$ PA 0.388
ABC + 30

T1
MAIN: 0.027 $ AA-BG BG
PA 0.024
93ZE33539 SpK x 8 +0 Not Used

T1
MAIN: 0.092 $ AA-BG BG
$ PA 0.089
+10

T1
MAIN: 0.111 $ AA-BG BG
PA 0.108
+20

93ZE33539 SpK x 8 Not Used

T1
MAIN: 0.168 $ AA-BG BG
$ PA 0.165
93ZE33539 SpK x 8 +30
Not Used,

T1
MAIN: 0.005 $ AA-BG BG
PA 0.002
Blank cup

B. Green 7-8-93

T1
MAIN: 0.030 $ AA-BG BG
$ PA 0.027
+0

T1
MAIN: 0.068 $ AA-BG BG
PA 0.065
+10

T1							93ZE33539
MAIN: 0.089	$	AA-BG	BG				SpK x 8
$	PA	0.086		T1			
		+20		MAIN: 0.097	$	AA-BG	BG
					PA	0.094	
						+30	
T1							
MAIN: 0.027	$	AA-BG	BG				
$	PA	0.024		T1			
		+0		MAIN: 0.067	$	AA-BG	BG
					PA	0.064	
						+10	
T1							93ZE33539
MAIN: 0.105	$	AA-BG	BG				SpK x 8
$	PA	0.102		T1			
		+20		MAIN: 0.166	$	AA-BG	BG
					PA	0.163	
						+30	
T1							
MAIN: 0.037	$	AA-BG	BG				
$	PA	0.034		T1			
		+0		MAIN: 0.064	$	AA-BG	BG
					PA	0.061	
						+10	
T1							93ZE33539
MAIN: 0.120	$	AA-BG	BG				SpK x 8
$	PA	0.117		T1			
		+20		MAIN: 0.152	$	AA-BG	BG
					PA	0.149	
						+30	
T1							
MAIN: 0.028	$	AA-BG	BG				
$	PA	0.025		T1			
		+0		MAIN: 0.070	$	AA-BG	BG
					PA	0.067	
						+10	
							93ZE33539
							SpK x 8

B. Lynn

7-8-93

T1
MAIN: 0.093 $ AA-BG BG
$ PA 0.090
+20

T1
MAIN: 0.142 $ AA-BG BG
PA 0.139
+30

T1
MAIN: 0.032 $ AA-BG BG
$ PA 0.029

T1
MAIN: 0.020 $ ~~AA-BG~~ BG
PA 0.017 Wrong cup.

Not used

T1
MAIN: 0.030 $ AA-BG BG
$ PA 0.027
+0

T1
MAIN: 0.079 $ AA-BG BG
PA 0.076
+10

93ZE33539
spk x 8

T1
MAIN: 0.114 $ AA-BG BG
$ PA 0.111
+20

T1
MAIN: 0.166 $ AA-BG BG
PA 0.163
+30

T1
MAIN: 0.177 $ AA-BG BG
$ PA 0.174
+0

T1
MAIN: 0.253 $ AA-BG BG
PA 0.250
+10

AQC

T1
MAIN: 0.327 $ AA-BG BG
$ PA 0.324
+20

T1
MAIN: 0.388 $ AA-BG BG
PA 0.385
+30

T1
MAIN: 0.008 $ AA-BG BG
PA 0.005
Blank cup

B. Yuen
7-8-93

AAS RUN LOG

Element TL

Date 7-6-93

Analyst B. Green

Data Set SF1187

	ID	spike	comment .
1	Blank	0	
2	"	10	
3		20	
4		30	
5	AQC	0	TV=25 µg/l
6		10	
7		20	
8		30	
9	93ZE33538 SpK x 5	0	SF1187
10		10	
11		20	
12		30	
13	93ZF53511 SpK x 4	0	Rerun
14		10	
15		20	
16		30	
17	93ZF53511 SpK x 8	0	Rerun
18		10	
19		20	
20		30	
21	93ZF53511 SpK x 8	0	Rerun
22		10	
23		20	B. Green
24		30	7-8-93
25	93ZF53511 SpK x 8	0	Rerun
26		10	
27		20	

AAS RUN LOG

Element TL

Date 7-6-93

Analyst B. Green

Data Set SF1187

	ID	spike	comment
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 2		
1	93ZE33539 SpK x 4	0	Rerun
2		10	
3		20	
4		30	
5	93ZF53511 SpK x 8	0	Rerun
6		10	
7		20	
8		30	
9	93ZE33539 SpK x 4	0	Rerun
10		10	
11		20	
12		30	
13	93ZF53511 SpK x 8	0	
14		10	
15		20	
16		30	
17	93ZE33539 SpK x 4	0	Rerun
18		10	
19		20	B. Green
20		30	7-8-93

AAS RUN LOG

Element TL

Date 7-6-93

Analyst B.L Green

Data Set SF1187

	ID	spike	comment
21	93ZE33539 SpK x 4	0	Rerun
22	"	10	
23		20	
24		30	
25	93ZE33539 SpK x 4	0	Rerun
26		10	
27		20	
28		30	
29	AQC	0	TV=25 µg/l
30		10	
31		20	
32		30	
33	Blank Cup	0	
	Start Wheel 3		
1		0	
2		10	
3		20	
4		30	B. Green
5		0	
6		10	7-8-93
7		20	
8		30	
9		0	
10		10	
11		20	
12		30	
13		0	

AAS RUN LOG

Element TL

Date 7-6-93 Wheel 3

Analyst B. Yuen

Data Set SF1187

	ID	spike	comment.
1	BY 7-6-93 ~~Blank~~ 93ZE33559 SpK x 8	0	Rerun
2	"	10	
3		20	
4		30	
5	BY 7-6-93 ~~AQC~~ 93ZE33539 SpK x 8	0	Rerun
6		10	
7		20	
8		30	
9	93ZE33559 SpK x 8	0	Rerun
10		10	
11		20	
12		30	
13	93ZE33539 SpK x 8	0	Rerun
14		10	
15		20	
16		30	
17	93ZE33539 SpK x 8	0	
18		10	
19		20	
20		30	
21	AQC	0	TV = 25 µg/l
22		10	
23		20	
24		30	
25	Blank cup	0	B. Yuen
26		10	
27		20	7-8-93

Element	Instrument	QC Source
☐ Ag	☐ 5100 A3	☐ CLP-40
☐ As	☐ 5100 A6	☐ CLP-70
☐ Cd	☐ 5000 A4	☐ CLP-80
☐ Cr	☒ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☒ CLPF-CAL-1
☐ Sb	☐	☐
☐ Se		☐
☒ Tl		☐

Analyst B. Lynen

Date 7-6-93

Lamp # 384272

Energy 42

Expansion 3

Stock 3-117TL Opened: 5-5-93
Expires: 5-15-94

☐ platform ☐ MSC

☒ wall ☒ MSA

Blank	Slope	AQC	Digestion QC
0.35	0.00653	24.78 26.92 25.65 25.06	① 538: Spike %R = 107.8 Limit = 85—115% ② 511: Spike %R = 91.4 ③ 539: Spike %R = 100.4 > Limit = 85-115%

Blank cup absorbance

-0.002
0.003
0.002
0.005

B. Lynen
7-8-93

==========

Report Of Analytical Results
July 02, 1993

Data File: TLBY702.DAT
Data Collected: 07/02/93 At: 11:34:28 By: BAI

==========

	Tl ug/L	
Blank		
Mean Conc.	0.00	
Standard 1		
Mean Conc.	40.00	
Standard 2		
Mean Conc.	30.00	$r = 0.99829$
Standard 3		
Mean Conc.	20.00	
Standard 4		
Mean Conc.	10.00	

SF1187

AQC 25 UG/L
Mean Conc. 25.66 %R = 102.6 Limit = 100 ± 10%
Recovery

~~AS Position 40~~ CCB 1 By 7-7-93
Mean Conc. -1.05 2u Limit = ± 2 µg/l
Recovery

DIGEST BLANK (SOIL Digestion)
Mean Conc. -0.61 adj. Conc. = 0.2 mg/kg (u) Limit = ± 0.2 mg/kg
Recovery 94.3%

93ZE33S40
Mean Conc. 2.83 adj. Conc. = 0.3 mg/kg
Recovery 105.%

93ZE33S40DUP
Mean Conc. 3.24 adj. Conc. = 0.3 mg/kg Dup. diff. < 0.2 mg/kg (Limit = ± 0.2 mg/kg)
Recovery 103.%

93ZE33S40SPKx10
Mean Conc. 22.13 adj. Conc. = 22.15 mg/kg Spk. Conc. = 20.02 mg/kg
Recovery 94.1% Spk. %R = 109.1 Limit = 80 ~ 120%

LCSx20
Mean Conc. 22.10 adj. Conc. = 44.2 mg/kg Limit = 24.6 ~ 53.5 mg/kg
Recovery 101.%

AQC 25 UG/L
Mean Conc. 25.83 %R = 103.3 Limit = 100 ± 10%
Recovery

~~AS Position 40~~ CCB 2 By 7-7-93
Mean Conc. -0.23 2u Limit = ± 2 µg/l
Recovery

B. Yuen
7-7-93

	Tl ug/L	
93ZE33D40		
Mean Conc.	2.35	adj. Conc. = 0.2 mg/kg
Recovery	108.%	
DIGEST BLANK (Water Digestion)		
Mean Conc.	-1.04	2u
Recovery	118.%	
93ZE33S38		
Mean Conc.	-0.19	2u
Recovery	117.%	

} Sample results are less than IDL and are acceptable

93ZE33S38DUP		
Mean Conc.	-0.31	Rerun, %R < 90
Recovery	52.2%	
93ZE33S38SPKx3		
Mean Conc.	17.40	Rerun, %R > 110
Recovery	112.%	
AQC 25 UG/L		
Mean Conc.	24.18	%R = 96.7 Limit = 100 ± 10 %
Recovery		
~~AS Position 40~~ CCB3	By 7-7-93	
Mean Conc.	0.27	2u Limit = ± 2 µg/l
Recovery		
93ZE33D38		
Mean Conc.	-0.69	2u Sample result is less than IDL and is acceptable
Recovery	116.%	
93ZE33S39		
Mean Conc.	-0.56	Rerun, %R < 90
Recovery	47.4%	
93ZE33S39DUP		
Mean Conc.	-0.75	2u Sample result is less than IDL and is acceptable
Recovery	125.%	Dup. diff < 2 µg/l Limit = ± 2 µg/l
93ZE33D39		
Mean Conc.	-0.62	
Recovery	47.5%	
93ZE33S39SPKx3		
Mean Conc.	18.95	
Recovery	79.7%	

} Rerun, %Rs < 90

AQC 25 UG/L		
Mean Conc.	23.36	%R = 93.4 Limit = 100 ± 10 %
Recovery		
~~AS Position 40~~ CCB4	By 7-7-93	
Mean Conc.	-0.38	2u Limit = ± 2 µg/l
Recovery		

B. Lyne
7-7-93

SF1187
SF1191

	Tl ug/L	
93ZF53S02		
Mean Conc.	0.50	2u
Recovery	111.%	
93ZF53D02		
Mean Conc.	-0.72	2u
Recovery	122.%	
93ZF53S03		
Mean Conc.	-0.28	2u
Recovery	124.%	
93ZF53S11		
Mean Conc.	-1.21	2u
Recovery	120.%	
93ZF53S11DUP		
Mean Conc.	-1.35	2u
Recovery	134.%	
AQC 25 UG/L		
Mean Conc.	24.59	%R = 98.4 Limit = 100±10%
Recovery		
~~AS Position 10~~ CCB 5 BY 7-7-93		
Mean Conc.	0.03	2u Limit = ± 2 µg/l
Recovery		
93ZF53S11SPKx3		
Mean Conc.	17.09	Rerun, %R > 110
Recovery	123.%	

Sample results are less than IDL and acceptable

Dup. diff. < 2 µg/l, Limit = ± 2 µg/l

SF1191

SF1187

93ZE33S36		
Mean Conc.	-1.34	2u
Recovery	125.%	
93ZE33S37		
Mean Conc.	-1.74	2u
Recovery	124.%	
93ZE33D37		
Mean Conc.	-1.12	2u
Recovery	106.%	
93ZE33R60		
Mean Conc.	0.38	Rerun, %R < 90
Recovery	89.2%	
93ZB10S06		
Mean Conc.	-1.19	Not used, program error.
Recovery		
AQC 25 UG/L		
Mean Conc.	22.79	%R = 91.2 Limit = 100±10%
Recovery		

Sample results are less than IDL and are acceptable

B. Lynn
7-7-93

	Tl ug/L
~~AS Position 40~~ CCB6 By 7-7-93	
Mean Conc.	-0.15 2u Limit = ± 2 µg/l
Recovery	
93ZE33R62	
Mean Conc.	-0.52
Recovery	101.%
93ZE33R64	
Mean Conc.	-0.86
Recovery	98.4%
93ZE33R60	
Mean Conc.	-0.78
Recovery	104.%
93ZE33S38DUP	
Mean Conc.	0.33
Recovery	109.%
93ZE33S38SPKx3	
Mean Conc.	16.91
Recovery	108.%
AQC 25 UG/L	
Mean Conc.	21.26
Recovery	

Not used, AQC is out.

==========

Analyst: B. L. Jones 7-7-93 Supervisor: _____

==========

Element File: TLMSC.GEL Element: Tl Wavelength: 276.8
Date: 07/02/93 Time: 11:32 Slit: 0.70
Data File: TLBY702.DAT ID/Wt File: TL924.IDW Lamp Current: 20
Technique: HGA Calib. Type: Linear Energy: 47
Remark 1: NICKEL NITRATE MODIFIER AT 36
Remark 2: CITRIC ACID MODOFIER AT 38

~~~~~~

Tl ID: Blank Seq. No.: 00001 A/S Pos.: 1 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 1
Replicate 1 Time: 11:34
Peak Area (A-s): 0.002 Peak Height (A): 0.013
Background Pk Area (A-s): 0.013 Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.002

Auto-zero performed.

~~~~~~

Tl ID: Standard 1 Seq. No.: 00002 A/S Pos.: 2 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 2
Replicate 1 Time: 11:37
Peak Area (A-s): 0.145 Peak Height (A): 0.110
Background Pk Area (A-s): 0.153 Background Pk Height (A): 0.102
Blank Corrected Pk Area (A-s): 0.143

Standard number 1 applied. [40.00]
Correlation coefficient: 1.00000 Slope: 0.0036 Int: -0.000

~~~~~~

Tl ID: Standard 2 Seq. No.: 00003 A/S Pos.: 3 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 3
Replicate 1 Time: 11:39
Peak Area (A-s): 0.105 Peak Height (A): 0.082
Background Pk Area (A-s): 0.115 Background Pk Height (A): 0.074
Blank Corrected Pk Area (A-s): 0.104
Concentration (ug/L): 29.03

Standard number 2 applied. [30.00]
Correlation coefficient: 0.99966 Slope: 0.0035 Int: -0.001

~~~~~~

Tl ID: Standard 3 Seq. No.: 00004 A/S Pos.: 4 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 4
Replicate 1 Time: 11:42
Peak Area (A-s): 0.079 Peak Height (A): 0.059
Background Pk Area (A-s): 0.084 Background Pk Height (A): 0.064
Blank Corrected Pk Area (A-s): 0.077
Concentration (ug/L): 21.91

B. Yuen
7-7-93

Standard number 3 applied. [20.00]
Correlation coefficient: 0.99810 Slope: 0.0035 Int: 0.002

~~~~~~

Tl ID: Standard 4 Seq. No.: 00005 A/S Pos.: 5 Date: 07/02/93
~~~~~~

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 5
Replicate 1 Time: 11:44
Peak Area (A-s): 0.037 Peak Height (A): 0.034
Background Pk Area (A-s): 0.046 Background Pk Height (A): 0.033
Blank Corrected Pk Area (A-s): 0.035
Concentration (ug/L): 9.60

Standard number 4 applied. [10.00]
Correlation coefficient: 0.99829 Slope: 0.0035 Int: 0.001

~~~~~~

Tl ID: AQC 25 UG/L Seq. No.: 00006 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 37
Replicate 1 Time: 11:47
Peak Area (A-s): 0.094 Peak Height (A): 0.071
Background Pk Area (A-s): 0.100 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.092
Concentration (ug/L): 25.66

Check sample is within range 22.50 - 27.50

~~~~~~

Tl ID: ~~AS Position 40~~ Seq. No.: 00007 A/S Pos.: 40 Date: 07/02/93
CCB 1 BY 7-7-93
uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 40
Replicate 1 Time: 11:50
Peak Area (A-s): -0.001 Peak Height (A): 0.012
Background Pk Area (A-s): 0.015 Background Pk Height (A): 0.039
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -1.05

Check sample is within range -2.00 - 2.00

~~~~~~

Tl ID: DIGEST BLANK Seq. No.: 00008 A/S Pos.: 6 Date: 07/02/93
(Soil Digestion)
uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 6
Replicate 1 Time: 11:52
Peak Area (A-s): 0.000 Peak Height (A): 0.013
Background Pk Area (A-s): 0.019 Background Pk Height (A): 0.035
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.61

~~~~~~

Tl ID: DIGEST BLANK Seq. No.: 00009 A/S Pos.: 6 Date: 07/02/93
(Soil Digestion)
uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 6
Replicate 1 Time: 11:55
Peak Area (A-s): 0.067 Peak Height (A): 0.052
Background Pk Area (A-s): 0.081 Background Pk Height (A): 0.049
Blank Corrected Pk Area (A-s): 0.066
Concentration (ug/L): 18.25

B. Yner
7-7-93

Recovery is 94.3%

~~~~~~

Tl ID: 93ZE33S40 Seq. No.: 00010 A/S Pos.: 7 Date: 07/02/93
~~~~~~

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 7
Replicate 1 Time: 11:58
Peak Area (A-s): 0.013 Peak Height (A): 0.020
Background Pk Area (A-s): 0.030 Background Pk Height (A): 0.030
Blank Corrected Pk Area (A-s): 0.011
Concentration (ug/L): 2.83

~~~~~~

Tl ID: 93ZE33S40 Seq. No.: 00011 A/S Pos.: 7 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 7
Replicate 1 Time: 12:00
Peak Area (A-s): 0.087 Peak Height (A): 0.083
Background Pk Area (A-s): 0.092 Background Pk Height (A): 0.084
Blank Corrected Pk Area (A-s): 0.085
Concentration (ug/L): 23.82

Recovery is 104.9%

~~~~~~

Tl ID: 93ZE33S40DUP Seq. No.: 00012 A/S Pos.: 8 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 8
Replicate 1 Time: 12:03
Peak Area (A-s): 0.014 Peak Height (A): 0.023
Background Pk Area (A-s): 0.024 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): 0.012
Concentration (ug/L): 3.24

~~~~~~

Tl ID: 93ZE33S40DUP Seq. No.: 00013 A/S Pos.: 8 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 8
Replicate 1 Time: 12:05
Peak Area (A-s): 0.087 Peak Height (A): 0.086
Background Pk Area (A-s): 0.097 Background Pk Height (A): 0.084
Blank Corrected Pk Area (A-s): 0.086
Concentration (ug/L): 23.92

Recovery is 103.4%

~~~~~~

Tl ID: 93ZE33S40SPKx10 Seq. No.: 00014 A/S Pos.: 9 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 9
Replicate 1 Time: 12:08
Peak Area (A-s): 0.081 Peak Height (A): 0.072
Background Pk Area (A-s): 0.083 Background Pk Height (A): 0.071
Blank Corrected Pk Area (A-s): 0.079
Concentration (ug/L): 22.13

B. Yuen
7-7-93

~~~~~~

Tl ID: 93ZE33S40SPKx10 Seq. No.: 00015 A/S Pos.: 9 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 9
Replicate 1 Time: 12:11
Peak Area (A-s): 0.148 Peak Height (A): 0.137
Background Pk Area (A-s): 0.155 Background Pk Height (A): 0.127
Blank Corrected Pk Area (A-s): 0.146
~~~~~~

Concentration (ug/L): 40.94

Recovery is 94.1%

~~~~~~

Tl ID: LCSx20 Seq. No.: 00016 A/S Pos.: 10 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 10
Replicate 1 Time: 12:13
Peak Area (A-s): 0.081 Peak Height (A): 0.073
Background Pk Area (A-s): 0.082 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): 0.079
Concentration (ug/L): 22.10

~~~~~~

Tl ID: LCSx20 Seq. No.: 00017 A/S Pos.: 10 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 10
Replicate 1 Time: 12:16
Peak Area (A-s): 0.152 Peak Height (A): 0.131
Background Pk Area (A-s): 0.156 Background Pk Height (A): 0.127
Blank Corrected Pk Area (A-s): 0.151
Concentration (ug/L): 42.26

Recovery is 100.8%

~~~~~~

Tl ID: AQC 25 UG/L Seq. No.: 00018 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 37
Replicate 1 Time: 12:18
Peak Area (A-s): 0.094 Peak Height (A): 0.063
Background Pk Area (A-s): 0.094 Background Pk Height (A): 0.059
Blank Corrected Pk Area (A-s): 0.093
Concentration (ug/L): 25.83

Check sample is within range 22.50 - 27.50

~~~~~~

Tl ID: ~~AS Position 40~~ Seq. No.: 00019 A/S Pos.: 40 Date: 07/02/93
CCB 2 BY 7-7-93
uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 40
Replicate 1 Time: 12:21
Peak Area (A-s): 0.002 Peak Height (A): 0.010
Background Pk Area (A-s): 0.009 Background Pk Height (A): 0.036
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): -0.23

B. L[illegible]
7-7-93

Check sample is within range -2.00 - 2.00

~~~~~~

Tl ID: 93ZE33D40 Seq. No.: 00020 A/S Pos.: 11 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 11
Replicate 1 Time: 12:24
Peak Area (A-s): 0.011 Peak Height (A): 0.019
Background Pk Area (A-s): 0.033 Background Pk Height (A): 0.026
Blank Corrected Pk Area (A-s): 0.009
Concentration (ug/L): 2.35
~~~~~~

~~~~~~

Tl ID: 93ZE33D40 Seq. No.: 00021 A/S Pos.: 11 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 11
Replicate 1 Time: 12:26
Peak Area (A-s): 0.088 Peak Height (A): 0.090
Background Pk Area (A-s): 0.098 Background Pk Height (A): 0.092
Blank Corrected Pk Area (A-s): 0.086
Concentration (ug/L): 23.95

Recovery is 108.0%

~~~~~~

Tl ID: DIGEST BLANK Seq. No.: 00022 A/S Pos.: 12 Date: 07/02/93
(Water Digestion)
uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 12
Replicate 1 Time: 12:29
Peak Area (A-s): -0.001 Peak Height (A): 0.012
Background Pk Area (A-s): 0.005 Background Pk Height (A): 0.021
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -1.04

~~~~~~

Tl ID: DIGEST BLANK Seq. No.: 00023 A/S Pos.: 12 Date: 07/02/93
(Water Digestion)
uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 12
Replicate 1 Time: 12:31
Peak Area (A-s): 0.082 Peak Height (A): 0.057
Background Pk Area (A-s): 0.073 Background Pk Height (A): 0.051
Blank Corrected Pk Area (A-s): 0.081
Concentration (ug/L): 22.47

Recovery is 117.6%

~~~~~~

Tl ID: 93ZE33S38 Seq. No.: 00024 A/S Pos.: 13 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 13
Replicate 1 Time: 12:34
Peak Area (A-s): 0.002 Peak Height (A): 0.011
Background Pk Area (A-s): 0.005 Background Pk Height (A): 0.025
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): -0.19

~~~~~~

Tl ID: 93ZE33S38 Seq. No.: 00025 A/S Pos.: 13 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 13
Replicate 1 Time: 12:37
Peak Area (A-s): 0.085 Peak Height (A): 0.076
Background Pk Area (A-s): 0.086 Background Pk Height (A): 0.081
Blank Corrected Pk Area (A-s): 0.083
Concentration (ug/L): 23.15

Recovery is 116.7%

B. L. Jones
7-7-93

~~~~~~

Tl ID: 93ZE33S38DUP Seq. No.: 00026 A/S Pos.: 14 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 14
Replicate 1 Time: 12:39
Peak Area (A-s): 0.002 Peak Height (A): 0.013
Background Pk Area (A-s): 0.004 Background Pk Height (A): 0.033
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.31

~~~~~~

Tl ID: 93ZE33S38DUP Seq. No.: 00027 A/S Pos.: 14 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 14
Replicate 1 Time: 12:42
Peak Area (A-s): 0.039 Peak Height (A): 0.052
Background Pk Area (A-s): 0.214 Background Pk Height (A): 0.090
Blank Corrected Pk Area (A-s): 0.037
Concentration (ug/L): 10.12

Recovery is 52.2%

~~~~~~

Tl ID: 93ZE33S38SPKx3 Seq. No.: 00028 A/S Pos.: 15 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 15
Replicate 1 Time: 12:44
Peak Area (A-s): 0.064 Peak Height (A): 0.047
Background Pk Area (A-s): 0.069 Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.063
Concentration (ug/L): 17.40

~~~~~~

Tl ID: 93ZE33S38SPKx3 Seq. No.: 00029 A/S Pos.: 15 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 15
Replicate 1 Time: 12:47
Peak Area (A-s): 0.144 Peak Height (A): 0.110
Background Pk Area (A-s): 0.146 Background Pk Height (A): 0.108
Blank Corrected Pk Area (A-s): 0.142
Concentration (ug/L): 39.77

Recovery is 111.9%

~~~~~~

Tl ID: AQC 25 UG/L Seq. No.: 00030 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 37
Replicate 1 Time: 12:50
Peak Area (A-s): 0.088 Peak Height (A): 0.061
Background Pk Area (A-s): 0.093 Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.087
Concentration (ug/L): 24.18

Check sample is within range 22.50 - 27.50

B. Green
7-7-93

~~~~~~

Tl ID: ~~AS Position 40~~ CCB3 BY 7-7-93 Seq. No.: 00031 A/S Pos.: 40 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 40
Replicate 1 Time: 12:52
Peak Area (A-s): 0.004 Peak Height (A): 0.014
~~~~~~

Background Pk Area (A-s): 0.008 Background Pk Height (A): 0.034
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.27

Check sample is within range -2.00 - 2.00

~~~~~~

Tl ID: 93ZE33D38 Seq. No.: 00032 A/S Pos.: 16 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 16
The background signal is changing during BOC measurement.
Replicate 1 Time: 12:55
Peak Area (A-s): 0.000 Peak Height (A): 0.013
Background Pk Area (A-s): 0.016 Background Pk Height (A): 0.021
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.69

~~~~~~

Tl ID: 93ZE33D38 Seq. No.: 00033 A/S Pos.: 16 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 16
The background signal is changing during BOC measurement.
Replicate 1 Time: 12:57
Peak Area (A-s): 0.082 Peak Height (A): 0.078
Background Pk Area (A-s): 0.087 Background Pk Height (A): 0.075
Blank Corrected Pk Area (A-s): 0.081
Concentration (ug/L): 22.46

Recovery is 115.7%

~~~~~~

Tl ID: 93ZE33S39 Seq. No.: 00034 A/S Pos.: 17 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 17
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:00
Peak Area (A-s): 0.001 Peak Height (A): 0.015
Background Pk Area (A-s): 0.025 Background Pk Height (A): 0.022
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.56

~~~~~~

Tl ID: 93ZE33S39 Seq. No.: 00035 A/S Pos.: 17 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 17
Replicate 1 Time: 13:02
Peak Area (A-s): 0.034 Peak Height (A): 0.061
Background Pk Area (A-s): 2.040 Background Pk Height (A): 0.759
Blank Corrected Pk Area (A-s): 0.033
Concentration (ug/L): 8.93

Recovery is 47.4%

B. Lyren
7-7-93

~~~~~~

Tl ID: 93ZE33S39DUP Seq. No.: 00036 A/S Pos.: 18 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 18
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:05
~~~~~~

Peak Area (A-s): -0.000 Peak Height (A): 0.012
Background Pk Area (A-s): 0.033 Background Pk Height (A): 0.023
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.75

~~~~~~

Tl ID: 93ZE33S39DUP Seq. No.: 00037 A/S Pos.: 18 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 18
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:08
Peak Area (A-s): 0.088 Peak Height (A): 0.071
Background Pk Area (A-s): 0.109 Background Pk Height (A): 0.081
Blank Corrected Pk Area (A-s): 0.087
Concentration (ug/L): 24.20

Recovery is 124.8%

~~~~~~

Tl ID: 93ZE33D39 Seq. No.: 00038 A/S Pos.: 19 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 19
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:10
Peak Area (A-s): 0.000 Peak Height (A): 0.012
Background Pk Area (A-s): 0.033 Background Pk Height (A): 0.021
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.62

~~~~~~

Tl ID: 93ZE33D39 Seq. No.: 00039 A/S Pos.: 19 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 19
Replicate 1 Time: 13:13
Peak Area (A-s): 0.034 Peak Height (A): 0.065
Background Pk Area (A-s): 2.055 Background Pk Height (A): 0.639
Blank Corrected Pk Area (A-s): 0.032
Concentration (ug/L): 8.88

Recovery is 47.5%

~~~~~~

Tl ID: 93ZE33S39SPKx3 Seq. No.: 00040 A/S Pos.: 20 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 20
Replicate 1 Time: 13:15
Peak Area (A-s): 0.070 Peak Height (A): 0.067
Background Pk Area (A-s): 0.069 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.068
Concentration (ug/L): 18.95

B Lyne
7-7-93

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Tl ID: 93ZE33S39SPKx3 Seq. No.: 00041 A/S Pos.: 20 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 20
Replicate 1 Time: 13:18
Peak Area (A-s): 0.126 Peak Height (A): 0.117
Background Pk Area (A-s): 0.350 Background Pk Height (A): 0.168
Blank Corrected Pk Area (A-s): 0.125
~~~~~~

Concentration (ug/L): 34.90

Recovery is 79.7%

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Tl ID: AQC 25 UG/L Seq. No.: 00042 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 37
Replicate 1 Time: 13:20
Peak Area (A-s): 0.085 Peak Height (A): 0.057
Background Pk Area (A-s): 0.088 Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.084
Concentration (ug/L): 23.36

Check sample is within range 22.50 - 27.50

~~~~~~

Tl ID: ~~AS Position 40~~ CCB4 BY 7-7-93 Seq. No.: 00043 A/S Pos.: 40 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 40
Replicate 1 Time: 13:23
Peak Area (A-s): 0.001 Peak Height (A): 0.013
Background Pk Area (A-s): 0.006 Background Pk Height (A): 0.030
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.38

Check sample is within range -2.00 - 2.00

~~~~~~

Tl ID: 93ZF53S02 Seq. No.: 00044 A/S Pos.: 21 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 21
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:26
Peak Area (A-s): 0.004 Peak Height (A): 0.016
Background Pk Area (A-s): -0.002 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): 0.003
Concentration (ug/L): 0.50

~~~~~~

Tl ID: 93ZF53S02 Seq. No.: 00045 A/S Pos.: 21 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 21
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:28
Peak Area (A-s): 0.083 Peak Height (A): 0.075
Background Pk Area (A-s): 0.078 Background Pk Height (A): 0.067
Blank Corrected Pk Area (A-s): 0.081
Concentration (ug/L): 22.69

Recovery is 111.0%

B. Lyons
7-7-93

~~~~~~

ID: 93ZF53D02 Seq. No.: 00046 A/S Pos.: 22 Date: 07/02/93

dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 22
background signal is changing during BOC measurement.
licate 1 Time: 13:31
Area (A-s): 0.000 Peak Height (A): 0.011
~~~~~~

Background Pk Area (A-s): -0.003 Background Pk Height (A): 0.019
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.72

~~~~~~

Tl ID: 93ZF53D02 Seq. No.: 00047 A/S Pos.: 22 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 22
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:33
Peak Area (A-s): 0.087 Peak Height (A): 0.081
Background Pk Area (A-s): 0.082 Background Pk Height (A): 0.076
Blank Corrected Pk Area (A-s): 0.085
Concentration (ug/L): 23.77

Recovery is 122.4%

~~~~~~

Tl ID: 93ZF53S03 Seq. No.: 00048 A/S Pos.: 23 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 23
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:36
Peak Area (A-s): 0.002 Peak Height (A): 0.014
Background Pk Area (A-s): 0.000 Background Pk Height (A): 0.021
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): -0.28

~~~~~~

Tl ID: 93ZF53S03 Seq. No.: 00049 A/S Pos.: 23 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 23
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:38
Peak Area (A-s): 0.089 Peak Height (A): 0.081
Background Pk Area (A-s): 0.078 Background Pk Height (A): 0.075
Blank Corrected Pk Area (A-s): 0.088
Concentration (ug/L): 24.50

Recovery is 123.9%

~~~~~~

Tl ID: 93ZF53S11 Seq. No.: 00050 A/S Pos.: 24 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 24
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:41
Peak Area (A-s): -0.002 Peak Height (A): 0.012
Background Pk Area (A-s): 0.010 Background Pk Height (A): 0.022
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -1.21

B. L. Jones
7-7-93

~~~~~~

Tl ID: 93ZF53S11 Seq. No.: 00051 A/S Pos.: 24 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 24
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:44
Peak Area (A-s): 0.083 Peak Height (A): 0.087
~~~~~~

Background Pk Area (A-s): 0.085 Background Pk Height (A): 0.088
Blank Corrected Pk Area (A-s): 0.081
Concentration (ug/L): 22.70

Recovery is 119.5%

~~~~~~

Tl ID: 93ZF53S11DUP Seq. No.: 00052 A/S Pos.: 25 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 25
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:46
Peak Area (A-s): -0.002 Peak Height (A): 0.010
Background Pk Area (A-s): 0.010 Background Pk Height (A): 0.018
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -1.35

~~~~~~

Tl ID: 93ZF53S11DUP Seq. No.: 00053 A/S Pos.: 25 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 25
The background signal is changing during BOC measurement.
Replicate 1 Time: 13:49
Peak Area (A-s): 0.092 Peak Height (A): 0.086
Background Pk Area (A-s): 0.097 Background Pk Height (A): 0.095
Blank Corrected Pk Area (A-s): 0.091
Concentration (ug/L): 25.35

Recovery is 133.5%

~~~~~~

Tl ID: AQC 25 UG/L Seq. No.: 00054 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 37
Replicate 1 Time: 13:51
Peak Area (A-s): 0.090 Peak Height (A): 0.063
Background Pk Area (A-s): 0.080 Background Pk Height (A): 0.053
Blank Corrected Pk Area (A-s): 0.088
Concentration (ug/L): 24.59

Check sample is within range 22.50 - 27.50

~~~~~~

Tl ID: ~~AS Position 40~~ Seq. No.: 00055 A/S Pos.: 40 Date: 07/02/93
CCB5 BY 7-7-93
uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 40
Replicate 1 Time: 13:54
Peak Area (A-s): 0.003 Peak Height (A): 0.015
Background Pk Area (A-s): 0.007 Background Pk Height (A): 0.031
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.03

Check sample is within range -2.00 - 2.00

B. Lyuen
7-7-93

~~~~~~

Tl ID: 93ZF53S11SPKx3 Seq. No.: 00056 A/S Pos.: 26 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 26
Replicate 1 Time: 13:56
~~~~~~

Peak Area (A-s): 0.063   Peak Height (A): 0.056
Background Pk Area (A-s): 0.073   Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.062
Concentration (ug/L): 17.09

~~~~~~

Tl ID: 93ZF53S11SPKx3 Seq. No.: 00057 A/S Pos.: 26 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 26
Replicate 1   Time: 13:59
Peak Area (A-s): 0.151   Peak Height (A): 0.134
Background Pk Area (A-s): 0.154   Background Pk Height (A): 0.127
Blank Corrected Pk Area (A-s): 0.149
Concentration (ug/L): 41.76

Recovery is 123.4%

~~~~~~

Tl ID: 93ZE33S36 Seq. No.: 00058 A/S Pos.: 27 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 27
Replicate 1   Time: 14:02
Peak Area (A-s): -0.002   Peak Height (A): 0.015
Background Pk Area (A-s): 0.013   Background Pk Height (A): 0.031
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -1.34

~~~~~~

Tl ID: 93ZE33S36 Seq. No.: 00059 A/S Pos.: 27 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 27
Replicate 1   Time: 14:04
Peak Area (A-s): 0.087   Peak Height (A): 0.069
Background Pk Area (A-s): 0.094   Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.085
Concentration (ug/L): 23.72

Recovery is 125.3%

~~~~~~

Tl ID: 93ZE33S37 Seq. No.: 00060 A/S Pos.: 28 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 28
Replicate 1   Time: 14:07
Peak Area (A-s): -0.004   Peak Height (A): 0.010
Background Pk Area (A-s): 0.013   Background Pk Height (A): 0.030
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -1.74

B. L[illegible]
7-7-93

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Tl ID: 93ZE33S37 Seq. No.: 00061 A/S Pos.: 28 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 28
Replicate 1   Time: 14:09
Peak Area (A-s): 0.084   Peak Height (A): 0.077
Background Pk Area (A-s): 0.102   Background Pk Height (A): 0.072
Blank Corrected Pk Area (A-s): 0.083
Concentration (ug/L): 23.07
~~~~~~

Recovery is 124.0%

~~~~~~

Tl ID: 93ZE33D37 Seq. No.: 00062 A/S Pos.: 29 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 29
Replicate 1 Time: 14:12
Peak Area (A-s): -0.001 Peak Height (A): 0.013
Background Pk Area (A-s): 0.012 Background Pk Height (A): 0.027
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -1.12

~~~~~~

Tl ID: 93ZE33D37 Seq. No.: 00063 A/S Pos.: 29 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 29
Replicate 1 Time: 14:14
Peak Area (A-s): 0.073 Peak Height (A): 0.064
Background Pk Area (A-s): 0.088 Background Pk Height (A): 0.060
Blank Corrected Pk Area (A-s): 0.072
Concentration (ug/L): 19.99

Recovery is 105.5%

~~~~~~

Tl ID: 93ZE33R60 Seq. No.: 00064 A/S Pos.: 30 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 30
Replicate 1 Time: 14:17
Peak Area (A-s): 0.004 Peak Height (A): 0.013
Background Pk Area (A-s): 0.007 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.38

~~~~~~

Tl ID: 93ZE33R60 Seq. No.: 00065 A/S Pos.: 30 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 30
Replicate 1 Time: 14:20
Peak Area (A-s): 0.067 Peak Height (A): 0.050
Background Pk Area (A-s): 0.073 Background Pk Height (A): 0.044
Blank Corrected Pk Area (A-s): 0.066
Concentration (ug/L): 18.22

B. L. Jun
7-7-93

Recovery is 89.2%

~~~~~~

Tl ID: 93ZB10S06 Seq. No.: 00066 A/S Pos.: 31 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 31
Replicate 1 Time: 14:22
Peak Area (A-s): -0.002 Peak Height (A): 0.014
Background Pk Area (A-s): 0.028 Background Pk Height (A): 0.150
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -1.19

Not used, program error
BY 7-7-93

~~~~~~

Tl ID: 93ZB10S06 Seq. No.: 00067 A/S Pos.: 31 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 31

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Tl ID: AQC 25 UG/L Seq. No.: 00068 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 37
Replicate 1 Time: 14:25
Peak Area (A-s): 0.083 Peak Height (A): 0.055
Background Pk Area (A-s): 0.079 Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.082
Concentration (ug/L): 22.79

Check sample is within range 22.50 - 27.50

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Tl ID: ~~AS Position 40~~ CCB6 BY 7-7-93 Seq. No.: 00069 A/S Pos.: 40 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 40
Replicate 1 Time: 14:28
Peak Area (A-s): 0.002 Peak Height (A): 0.014
Background Pk Area (A-s): 0.010 Background Pk Height (A): 0.031
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): -0.15

Check sample is within range -2.00 - 2.00

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Tl ID: 93ZE33R62 Seq. No.: 00070 A/S Pos.: 6 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 6
Replicate 1 Time: 14:31
Peak Area (A-s): 0.001 Peak Height (A): 0.015
Background Pk Area (A-s): 0.008 Background Pk Height (A): 0.025
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.52

Not used, AQC is out BY 7-7-93

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Tl ID: 93ZE33R62 Seq. No.: 00071 A/S Pos.: 6 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 6
Replicate 1 Time: 14:33
Peak Area (A-s): 0.072 Peak Height (A): 0.052
Background Pk Area (A-s): 0.082 Background Pk Height (A): 0.050
Blank Corrected Pk Area (A-s): 0.071
Concentration (ug/L): 19.62

Recovery is 100.7%

~~~~~~

Tl ID: 93ZE33R64 Seq. No.: 00072 A/S Pos.: 7 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 7
Replicate 1 Time: 14:36
Peak Area (A-s): -0.000 Peak Height (A): 0.011
Background Pk Area (A-s): 0.031 Background Pk Height (A): 0.035
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.86

B. Lyren
7-7-93

~~~~~~

Tl ID: 93ZE33R64 Seq. No.: 00073 A/S Pos.: 7 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 7
Replicate 1 Time: 14:38
Peak Area (A-s): 0.069 Peak Height (A): 0.052
Background Pk Area (A-s): 0.088 Background Pk Height (A): 0.083
Blank Corrected Pk Area (A-s): 0.068
Concentration (ug/L): 18.81

Recovery is 98.4%

~~~~~~

Tl ID: 93ZE33R60 Seq. No.: 00074 A/S Pos.: 8 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 8 Not Used, AQC is out BY 7-7-93
Replicate 1 Time: 14:41
Peak Area (A-s): -0.000 Peak Height (A): 0.013
Background Pk Area (A-s): 0.010 Background Pk Height (A): 0.031
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.78

~~~~~~

Tl ID: 93ZE33R60 Seq. No.: 00075 A/S Pos.: 8 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 8
Replicate 1 Time: 14:44
Peak Area (A-s): 0.073 Peak Height (A): 0.053
Background Pk Area (A-s): 0.079 Background Pk Height (A): 0.053
Blank Corrected Pk Area (A-s): 0.072
Concentration (ug/L): 19.95

Recovery is 103.6%

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Tl ID: 93ZE33S38DUP Seq. No.: 00076 A/S Pos.: 9 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 9
Replicate 1 Time: 14:46
Peak Area (A-s): 0.004 Peak Height (A): 0.014
Background Pk Area (A-s): 0.000 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.33

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Tl ID: 93ZE33S38DUP Seq. No.: 00077 A/S Pos.: 9 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 9
Replicate 1 Time: 14:49
Peak Area (A-s): 0.081 Peak Height (A): 0.074
Background Pk Area (A-s): 0.076 Background Pk Height (A): 0.065
Blank Corrected Pk Area (A-s): 0.079
Concentration (ug/L): 22.13

B. [signature]
7-7-93

Recovery is 109.0%

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Tl ID: 93ZE33S38SPKx3 Seq. No.: 00078 A/S Pos.: 10 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 10
Replicate 1 Time: 14:51
Peak Area (A-s): 0.063 Peak Height (A): 0.048
~~~~~~

Background Pk Area (A-s): 0.059   Background Pk Height (A): 0.044
Blank Corrected Pk Area (A-s): 0.061
Concentration (ug/L): 16.91

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Tl   ID: 93ZE33S38SPKx3   Seq. No.: 00079   A/S Pos.: 10   Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 10
Replicate 1   Time: 14:54
Peak Area (A-s): 0.139   Peak Height (A): 0.106
Background Pk Area (A-s): 0.143   Background Pk Height (A): 0.093
Blank Corrected Pk Area (A-s): 0.138
Concentration (ug/L): 38.55

Not used, AQC is out
[initials] 7-7-93

Recovery is 108.2%

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Tl   ID: AQC 25 UG/L   Seq. No.: 00080   A/S Pos.: 37   Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 37
Replicate 1   Time: 14:57
Peak Area (A-s): 0.078   Peak Height (A): 0.058
Background Pk Area (A-s): 0.087   Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.076
Concentration (ug/L): 21.26

Check sample is out of range 22.50 - 27.50

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Tl   ID: AS Position 40   Seq. No.: 00081   A/S Pos.: 40   Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 40

B. [signature]
7-7-93
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Element	Instrument	QC Source	
☐ Ag	☒ 5100 A3	☐ CLP-40	Analyst B. Yuen
☐ As	☐ 5100 A6	☐ CLP-70	Date 7-2-93
☐ Cd	☐ 5000 A4	☐ CLP-80	Lamp # 384272
☐ Cr	☐ 5000 A5	☐ EPA-V-1	Energy 47
☐ Pb	☐	☒ CLPF-CAL-1	Expansion 1
☐ Sb	☐	☐	Stock 3-117TL Opened: 5-5-9 Expires: 5-15-9
☐ Se		☐	☒ platform ☒ MSC
☒ Tl		☐	☐ wall ☐ MSA

Blank	Slope	AQC
-1.05	0.0035	25.66
-0.23		25.83
0.27		24.18
-0.38		23.36
0.03		24.59
-0.15		22.79

Blank cup absorbance

Digestion QC

① Digestion blank (soil digestion) < 0.2 mg/kg (Limit = ± 0.2 mg/kg)

② S40: Duplicate diff. < 0.2 mg/kg (Limit = ± 0.2 mg/kg)

③ S40: Spike % R = 109.1 (Limit = 80-120 %)

④ LCS = 44.2 mg/kg (Limit = 24.6 ~ 53.5 mg/kg)

⑤ Digestion blank (water digestion) < 2 µg/l (Limit = ± 2 µg/l)

⑥ S39: Duplicate difference < 2 µg/l (Limit = ± 2 µg/l)

⑦ S11: Duplicate difference < 2 µg/l (Limit = ± 2 µg/l)

B. Yuen
7-7-93

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Report Of Analytical Results
July 02, 1993

Data File: TLBY702A.DAT
Data Collected: 07/02/93 At: 15:12:22 By: BAI

==========

	Tl ug/L	
Blank		
Mean Conc.	0.00	
Standard 1		SF1187
Mean Conc.	40.00	
Standard 2		
Mean Conc.	30.00	$\gamma = 0.99950$
Standard 3		
Mean Conc.	20.00	
Standard 4		
Mean Conc.	10.00	
AQC 25 UG/L		
Mean Conc.	25.94	%R = 103.8 Limit = 100 ± 10%
Recovery		
~~AS Position 40~~ CCB1 By 7-2-93		
Mean Conc.	0.36	2u Limit = ± 2 µg/l
Recovery		
93ZE33R62		
Mean Conc.	-0.50	2u
Recovery	106.%	
93ZE33R64		
Mean Conc.	-1.71	2u Sample result is less than IDL and acceptable
Recovery	118.%	
93ZE33R60		
Mean Conc.	0.09	2u
Recovery	101.%	
93ZE33S38DUP		
Mean Conc.	0.90	2u Sample result is less than IDL and acceptable
Recovery	115.%	Duplicate difference is less than 2 µg/l (Limit = ± 2 µg/l)
93ZE33S38SPKx3		
Mean Conc.	17.59	Not used. %R > 110
Recovery	110.%	
AQC 25 UG/L		
Mean Conc.	24.73	%R = 98.9 Limit = 100 ± 10%
Recovery		
~~AS Position 40~~ CCB2 By 7-2-93		
Mean Conc.	-0.78	2u Limit = ± 2 µg/l

B. Yner
7-7-93

	Tl ug/L		
93ZE33S39			
Mean Conc.	0.36	2u	Sample result is less than IDL and acceptable
Recovery	130.%		
93ZE33D39			
Mean Conc.	-0.25	Not Used. %R < 90	
Recovery	66.2%		
93ZE33S39SPKx3			
Mean Conc.	18.92		
Recovery	125.%		SF1187
93ZF53S11SPKx3			SF1191
Mean Conc.	19.60	Not Used. See rerun by MSA.	
Recovery	115.%		
93ZE33S38SPKx3			
Mean Conc.	17.43		
Recovery	121.%		
AQC 25 UG/L			
Mean Conc.	24.40	%R= 97.6 Limit = 100±10%	
Recovery			
~~AS Position 10~~ CCB 3 By 7-2-93			
Mean Conc.	-0.38	2u Limit = ±2 µg/l	
Recovery			
93ZE33D39			
Mean Conc.	0.23	2u Sample result is less than IDL and acceptable	
Recovery	131.%		SF1187
93ZF53S12			SF1191
Mean Conc.	-1.02	2u	
Recovery	95.6%		
93ZF53S13			
Mean Conc.	-1.09	2u	
Recovery	112.%		
93ZF53D13		Sample results are less than IDL and acceptable	
Mean Conc.	-0.82	2u	
Recovery	111.%		
93ZF53R01			
Mean Conc.	-0.09	2u	
Recovery	93.6%		
AQC 25 UG/L			
Mean Conc.	24.07	%R = 96.3 Limit = 100±10%	
Recovery			
~~AS Position 10~~ CCB 4 By 7-2-93			
Mean Conc.	-0.11	2u Limit = ±2 µg/l	
Recovery			

B. Jones
7-7-93

	Tl ug/L	
93ZF53R03		
Mean Conc.	-0.97	2u
Recovery	104.%	
93ZF53S12 wheel duplicate		
Mean Conc.	-1.40	2u Sample result is less than IDL and acceptable
Recovery	127.%	
AQC 25 UG/L		
Mean Conc.	23.52	%R = 94.1 Limit = 100±10%
Recovery		
~~AS Position 40~~ CCB 5 By 7-2-93		
Mean Conc.	-1.81	2u Limit = ±2 µg/l
Recovery		

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Analyst: B. Yuen 7-7-93 Supervisor: _____

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Element File: TLMSC.GEL Element: Tl Wavelength: 276.8
Date: 07/02/93 Time: 15:09 Slit: 0.70
Data File: TLBY702A.DAT ID/Wt File: TL924.IDW Lamp Current: 20
Technique: HGA Calib. Type: Linear Energy: 47
Remark 1: NICKEL NITRATE MODIFIER AT 36
Remark 2: CITRIC ACID MODOFIER AT 38

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Tl ID: Blank Seq. No.: 00001 A/S Pos.: 1 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 1
Replicate 1 Time: 15:12
Peak Area (A-s): 0.004 Peak Height (A): 0.013
Background Pk Area (A-s): 0.012 Background Pk Height (A): 0.051
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): -0.02

Auto-zero performed.

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Tl ID: Standard 1 Seq. No.: 00002 A/S Pos.: 2 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 2
Replicate 1 Time: 15:14
Peak Area (A-s): 0.139 Peak Height (A): 0.088
Background Pk Area (A-s): 0.134 Background Pk Height (A): 0.083
Blank Corrected Pk Area (A-s): 0.135
Concentration (ug/L): 40.17

Standard number 1 applied. [40.00]
Correlation coefficient: 1.00000 Slope: 0.0034 Int: 0.000

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Tl ID: Standard 2 Seq. No.: 00003 A/S Pos.: 3 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 3
Replicate 1 Time: 15:17
Peak Area (A-s): 0.102 Peak Height (A): 0.069
Background Pk Area (A-s): 0.109 Background Pk Height (A): 0.061
Blank Corrected Pk Area (A-s): 0.098
Concentration (ug/L): 29.03

Standard number 2 applied. [30.00]
Correlation coefficient: 0.99966 Slope: 0.0034 Int: -0.001

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Tl ID: Standard 3 Seq. No.: 00004 A/S Pos.: 4 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 4
Replicate 1 Time: 15:19
Peak Area (A-s): 0.072 Peak Height (A): 0.054
Background Pk Area (A-s): 0.079 Background Pk Height (A): 0.047
Blank Corrected Pk Area (A-s): 0.068
Concentration (ug/L): 20.50

Standard number 3 applied. [20.00]
Correlation coefficient: 0.99956 Slope: 0.0034 Int: 0.000

B. [illegible]
7-7-93

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Tl   ID: Standard 4   Seq. No.: 00005   A/S Pos.: 5   Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 5
Replicate 1   Time: 15:22
Peak Area (A-s): 0.039   Peak Height (A): 0.032
Background Pk Area (A-s): 0.045   Background Pk Height (A): 0.037
Blank Corrected Pk Area (A-s): 0.035
Concentration (ug/L): 10.57

Standard number 4 applied. [10.00]
Correlation coefficient: 0.99950   Slope: 0.0033   Int: 0.001

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Tl   ID: AQC 25 UG/L   Seq. No.: 00006   A/S Pos.: 37   Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 37
Replicate 1   Time: 15:25
Peak Area (A-s): 0.091   Peak Height (A): 0.066
Background Pk Area (A-s): 0.095   Background Pk Height (A): 0.058
Blank Corrected Pk Area (A-s): 0.087
Concentration (ug/L): 25.94

Check sample is within range 22.50 - 27.50

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Tl   ID: ~~AS Position 40~~ CCB1 BY 7-2-93   Seq. No.: 00007   A/S Pos.: 40   Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 40
Replicate 1   Time: 15:27
Peak Area (A-s): 0.006   Peak Height (A): 0.014
Background Pk Area (A-s): 0.013   Background Pk Height (A): 0.034
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.36

Check sample is within range -2.00 - 2.00

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Tl   ID: 93ZE33R62   Seq. No.: 00008   A/S Pos.: 6   Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 6
Replicate 1   Time: 15:30
Peak Area (A-s): 0.003   Peak Height (A): 0.013
Background Pk Area (A-s): 0.009   Background Pk Height (A): 0.044
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.50

~~~~~~

Tl   ID: 93ZE33R62   Seq. No.: 00009   A/S Pos.: 6   Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 6
Replicate 1   Time: 15:33
Peak Area (A-s): 0.074   Peak Height (A): 0.053
Background Pk Area (A-s): 0.086   Background Pk Height (A): 0.084
Blank Corrected Pk Area (A-s): 0.070
Concentration (ug/L): 20.71

Recovery is 106.1%

B. Jones
7-7-93
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Tl ID: 93ZE33R64 Seq. No.: 00010 A/S Pos.: 7 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 7
Replicate 1 Time: 15:35
Peak Area (A-s): -0.001 Peak Height (A): 0.014
Background Pk Area (A-s): 0.013 Background Pk Height (A): 0.035
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -1.71

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Tl ID: 93ZE33R64 Seq. No.: 00011 A/S Pos.: 7 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 7
Replicate 1 Time: 15:38
Peak Area (A-s): 0.078 Peak Height (A): 0.054
Background Pk Area (A-s): 0.088 Background Pk Height (A): 0.092
Blank Corrected Pk Area (A-s): 0.074
Concentration (ug/L): 21.98

Recovery is 118.4%

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Tl ID: 93ZE33R60 Seq. No.: 00012 A/S Pos.: 8 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 8
Replicate 1 Time: 15:40
Peak Area (A-s): 0.005 Peak Height (A): 0.012
Background Pk Area (A-s): 0.013 Background Pk Height (A): 0.055
Blank Corrected Pk Area (A-s): 0.001
Concentration (ug/L): 0.09

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Tl ID: 93ZE33R60 Seq. No.: 00013 A/S Pos.: 8 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 8
Replicate 1 Time: 15:43
Peak Area (A-s): 0.072 Peak Height (A): 0.051
Background Pk Area (A-s): 0.084 Background Pk Height (A): 0.066
Blank Corrected Pk Area (A-s): 0.069
Concentration (ug/L): 20.37

Recovery is 101.4%

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Tl ID: 93ZE33S38DUP Seq. No.: 00014 A/S Pos.: 9 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 9
Replicate 1 Time: 15:45
Peak Area (A-s): 0.007 Peak Height (A): 0.016
Background Pk Area (A-s): -0.002 Background Pk Height (A): 0.018
Blank Corrected Pk Area (A-s): 0.004
Concentration (ug/L): 0.90

B. [signature]
7-7-93

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Tl ID: 93ZE33S38DUP Seq. No.: 00015 A/S Pos.: 9 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 9
Replicate 1 Time: 15:48

Peak Area (A-s): 0.084 Peak Height (A): 0.068
Background Pk Area (A-s): 0.076 Background Pk Height (A): 0.069
Blank Corrected Pk Area (A-s): 0.081
Concentration (ug/L): 23.93

Recovery is 115.2%

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Tl ID: 93ZE33S38SPKx3 Seq. No.: 00016 A/S Pos.: 10 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 10
Replicate 1 Time: 15:50
Peak Area (A-s): 0.063 Peak Height (A): 0.048
Background Pk Area (A-s): 0.061 Background Pk Height (A): 0.048
Blank Corrected Pk Area (A-s): 0.059
Concentration (ug/L): 17.59

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Tl ID: 93ZE33S38SPKx3 Seq. No.: 00017 A/S Pos.: 10 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 10
Replicate 1 Time: 15:53
Peak Area (A-s): 0.137 Peak Height (A): 0.096
Background Pk Area (A-s): 0.139 Background Pk Height (A): 0.089
Blank Corrected Pk Area (A-s): 0.133
Concentration (ug/L): 39.65

Recovery is 110.3%

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Tl ID: AQC 25 UG/L Seq. No.: 00018 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 37
Replicate 1 Time: 15:56
Peak Area (A-s): 0.087 Peak Height (A): 0.058
Background Pk Area (A-s): 0.092 Background Pk Height (A): 0.055
Blank Corrected Pk Area (A-s): 0.083
Concentration (ug/L): 24.73

Check sample is within range 22.50 - 27.50

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Tl ID: ~~AS Position 10~~ Seq. No.: 00019 A/S Pos.: 40 Date: 07/02/93
CCB 2 BY 7-2-93
uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 40
Replicate 1 Time: 15:58
Peak Area (A-s): 0.002 Peak Height (A): 0.013
Background Pk Area (A-s): 0.012 Background Pk Height (A): 0.036
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.78

B. [illegible]
7-7-93

Check sample is within range -2.00 - 2.00

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Tl ID: 93ZE33S39 Seq. No.: 00020 A/S Pos.: 11 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 11
The background signal is changing during BOC measurement.
~~~~~~

Peak Area (A-s): 0.006 Peak Height (A): 0.016
Background Pk Area (A-s): 0.011 Background Pk Height (A): 0.020
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.36

Tl ID: 93ZE33S39 Seq. No.: 00021 A/S Pos.: 11 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 11
The background signal is changing during BOC measurement.
Replicate 1 Time: 16:03
Peak Area (A-s): 0.092 Peak Height (A): 0.071
Background Pk Area (A-s): 0.091 Background Pk Height (A): 0.068
Blank Corrected Pk Area (A-s): 0.089
Concentration (ug/L): 26.32

Recovery is 129.8%

Tl ID: 93ZE33D39 Seq. No.: 00022 A/S Pos.: 12 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 12
The background signal is changing during BOC measurement.
Replicate 1 Time: 16:06
Peak Area (A-s): 0.004 Peak Height (A): 0.012
Background Pk Area (A-s): 0.011 Background Pk Height (A): 0.017
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.25

Tl ID: 93ZE33D39 Seq. No.: 00023 A/S Pos.: 12 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 12
The background signal is changing during BOC measurement.
Replicate 1 Time: 16:09
Peak Area (A-s): 0.048 Peak Height (A): 0.067
Background Pk Area (A-s): 0.266 Background Pk Height (A): 0.108
Blank Corrected Pk Area (A-s): 0.044
Concentration (ug/L): 13.00

Recovery is 66.2%

Tl ID: 93ZE33S39SPKx3 Seq. No.: 00024 A/S Pos.: 13 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 13
Replicate 1 Time: 16:11
Peak Area (A-s): 0.068 Peak Height (A): 0.065
Background Pk Area (A-s): 0.069 Background Pk Height (A): 0.058
Blank Corrected Pk Area (A-s): 0.064
Concentration (ug/L): 18.92

B. [signature]
7-7-93

Tl ID: 93ZE33S39SPKx3 Seq. No.: 00025 A/S Pos.: 13 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 13
Replicate 1 Time: 16:14
Peak Area (A-s): 0.151 Peak Height (A): 0.132
Background Pk Area (A-s): 0.152 Background Pk Height (A): 0.134

Blank Corrected Pk Area (A-s): 0.147
Concentration (ug/L): 43.97

Recovery is 125.2%

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Tl ID: 93ZF53S11SPKx3 Seq. No.: 00026 A/S Pos.: 14 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 14
Replicate 1 Time: 16:16
Peak Area (A-s): 0.070 Peak Height (A): 0.066
Background Pk Area (A-s): 0.070 Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.066
Concentration (ug/L): 19.60

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Tl ID: 93ZF53S11SPKx3 Seq. No.: 00027 A/S Pos.: 14 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 14
Replicate 1 Time: 16:19
Peak Area (A-s): 0.147 Peak Height (A): 0.127
Background Pk Area (A-s): 0.150 Background Pk Height (A): 0.121
Blank Corrected Pk Area (A-s): 0.143
Concentration (ug/L): 42.68

Recovery is 115.4%

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Tl ID: 93ZE33S38SPKx3 Seq. No.: 00028 A/S Pos.: 15 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 15
Replicate 1 Time: 16:22
Peak Area (A-s): 0.063 Peak Height (A): 0.046
Background Pk Area (A-s): 0.059 Background Pk Height (A): 0.040
Blank Corrected Pk Area (A-s): 0.059
Concentration (ug/L): 17.43

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Tl ID: 93ZE33S38SPKx3 Seq. No.: 00029 A/S Pos.: 15 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 15
Replicate 1 Time: 16:24
Peak Area (A-s): 0.143 Peak Height (A): 0.100
Background Pk Area (A-s): 0.136 Background Pk Height (A): 0.092
Blank Corrected Pk Area (A-s): 0.139
Concentration (ug/L): 41.53

B. L [signature]
7-7-93

Recovery is 120.5%

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Tl ID: AQC 25 UG/L Seq. No.: 00030 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 37
Replicate 1 Time: 16:27
Peak Area (A-s): 0.086 Peak Height (A): 0.055
Background Pk Area (A-s): 0.081 Background Pk Height (A): 0.050
Blank Corrected Pk Area (A-s): 0.082
Concentration (ug/L): 24.40
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Check sample is within range 22.50 - 27.50

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Tl ID: ~~AS Position 40~~ CCB3 BY 7-2-93 Seq. No.: 00031 A/S Pos.: 40 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 40
Replicate 1 Time: 16:29
Peak Area (A-s): 0.003 Peak Height (A): 0.013
Background Pk Area (A-s): 0.010 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.38

Check sample is within range -2.00 - 2.00

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Tl ID: 93ZE33D39 Seq. No.: 00032 A/S Pos.: 16 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 16
Replicate 1 Time: 16:32
Peak Area (A-s): 0.005 Peak Height (A): 0.037
Background Pk Area (A-s): 2.844 Background Pk Height (A): 0.946
Blank Corrected Pk Area (A-s): 0.002
Concentration (ug/L): 0.23

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Tl ID: 93ZE33D39 Seq. No.: 00033 A/S Pos.: 16 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 16
The background signal is changing during BOC measurement.
Replicate 1 Time: 16:34
Peak Area (A-s): 0.093 Peak Height (A): 0.071
Background Pk Area (A-s): 0.097 Background Pk Height (A): 0.072
Blank Corrected Pk Area (A-s): 0.089
Concentration (ug/L): 26.50

Recovery is 131.4%

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Tl ID: 93ZF53S12 Seq. No.: 00034 A/S Pos.: 17 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 17
Replicate 1 Time: 16:37
Peak Area (A-s): 0.001 Peak Height (A): 0.014
Background Pk Area (A-s): 0.354 Background Pk Height (A): 0.297
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -1.02

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Tl ID: 93ZF53S12 Seq. No.: 00035 A/S Pos.: 17 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 17
Replicate 1 Time: 16:40
Peak Area (A-s): 0.065 Peak Height (A): 0.072
Background Pk Area (A-s): 0.359 Background Pk Height (A): 0.242
Blank Corrected Pk Area (A-s): 0.061
Concentration (ug/L): 18.09

B. Lyu
7-7-93

Recovery is 95.6%
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Tl ID: 93ZF53S13 Seq. No.: 00036 A/S Pos.: 18 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 18
Replicate 1 Time: 16:42
Peak Area (A-s): 0.001 Peak Height (A): 0.013
Background Pk Area (A-s): 0.035 Background Pk Height (A): 0.037
Blank Corrected Pk Area (A-s): -0.003
Concentration (ug/L): -1.09

~~~~~~

Tl ID: 93ZF53S13 Seq. No.: 00037 A/S Pos.: 18 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 18
Replicate 1 Time: 16:45
Peak Area (A-s): 0.076 Peak Height (A): 0.065
Background Pk Area (A-s): 0.102 Background Pk Height (A): 0.073
Blank Corrected Pk Area (A-s): 0.072
Concentration (ug/L): 21.31

Recovery is 112.0%

~~~~~~

Tl ID: 93ZF53D13 Seq. No.: 00038 A/S Pos.: 19 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 19
Replicate 1 Time: 16:47
Peak Area (A-s): 0.002 Peak Height (A): 0.012
Background Pk Area (A-s): 0.037 Background Pk Height (A): 0.023
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.82

~~~~~~

Tl ID: 93ZF53D13 Seq. No.: 00039 A/S Pos.: 19 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 19
Replicate 1 Time: 16:50
Peak Area (A-s): 0.076 Peak Height (A): 0.067
Background Pk Area (A-s): 0.103 Background Pk Height (A): 0.073
Blank Corrected Pk Area (A-s): 0.072
Concentration (ug/L): 21.41

Recovery is 111.2%

~~~~~~

Tl ID: 93ZF53R01 Seq. No.: 00040 A/S Pos.: 20 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 20
Replicate 1 Time: 16:52
Peak Area (A-s): 0.004 Peak Height (A): 0.013
Background Pk Area (A-s): 0.010 Background Pk Height (A): 0.037
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): -0.09

B. Yu
7-7-93

~~~~~~

Tl ID: 93ZF53R01 Seq. No.: 00041 A/S Pos.: 20 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 20
Replicate 1 Time: 16:55

Peak Area (A-s): 0.067 Peak Height (A): 0.047
Background Pk Area (A-s): 0.073 Background Pk Height (A): 0.047
Blank Corrected Pk Area (A-s): 0.063
Concentration (ug/L): 18.63

Recovery is 93.6%

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Tl ID: AQC 25 UG/L Seq. No.: 00042 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 37
Replicate 1 Time: 16:58
Peak Area (A-s): 0.085 Peak Height (A): 0.057
Background Pk Area (A-s): 0.082 Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.081
Concentration (ug/L): 24.07

Check sample is within range 22.50 - 27.50

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Tl ID: ~~AS Position 40~~ Seq. No.: 00043 A/S Pos.: 40 Date: 07/02/93
CCB4 BY 7-2-93
uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 40
Replicate 1 Time: 17:00
Peak Area (A-s): 0.004 Peak Height (A): 0.012
Background Pk Area (A-s): 0.004 Background Pk Height (A): 0.032
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): -0.11

Check sample is within range -2.00 - 2.00

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Tl ID: 93ZF53R03 Seq. No.: 00044 A/S Pos.: 21 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 21
Replicate 1 Time: 17:03
Peak Area (A-s): 0.001 Peak Height (A): 0.013
Background Pk Area (A-s): 0.015 Background Pk Height (A): 0.038
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.97

~~~~~~

Tl ID: 93ZF53R03 Seq. No.: 00045 A/S Pos.: 21 Date: 07/02/93

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 21
Replicate 1 Time: 17:05
Peak Area (A-s): 0.070 Peak Height (A): 0.047
Background Pk Area (A-s): 0.069 Background Pk Height (A): 0.039
Blank Corrected Pk Area (A-s): 0.067
Concentration (ug/L): 19.79

B. Yu
7-7-93

Recovery is 103.8%

~~~~~~

Tl ID: 93ZF53S12 Seq. No.: 00046 A/S Pos.: 22 Date: 07/02/93
wheat duplicate
uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 22
Replicate 1 Time: 17:08
Peak Area (A-s): -0.000 Peak Height (A): 0.013
~~~~~~

Background Pk Area (A-s): 0.268 Background Pk Height (A): 0.192
Blank Corrected Pk Area (A-s): -0.004
Concentration (ug/L): -1.40

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Tl ID: 93ZF53S12 Seq. No.: 00047 A/S Pos.: 22 Date: 07/02/93
wheel duplicate

uL dispensed: 12 from 36, 6 from 38, 5 from 39, 20 from 22
Replicate 1 Time: 17:10
Peak Area (A-s): 0.084 Peak Height (A): 0.095
Background Pk Area (A-s): 0.402 Background Pk Height (A): 0.309
Blank Corrected Pk Area (A-s): 0.081
Concentration (ug/L): 23.94

Recovery is 126.7%

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Tl ID: AQC 25 UG/L Seq. No.: 00048 A/S Pos.: 37 Date: 07/02/93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 37
Replicate 1 Time: 17:13
Peak Area (A-s): 0.083 Peak Height (A): 0.054
Background Pk Area (A-s): 0.085 Background Pk Height (A): 0.052
Blank Corrected Pk Area (A-s): 0.079
Concentration (ug/L): 23.52

Check sample is within range 22.50 - 27.50

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Tl ID: ~~AS Position 40~~ Seq. No.: 00049 A/S Pos.: 40 Date: 07/02/93
CCB 5 BY 7-2-93

uL dispensed: 5 from 0, 12 from 36, 6 from 38, 20 from 40
Replicate 1 Time: 17:16
Peak Area (A-s): -0.002 Peak Height (A): 0.014
Background Pk Area (A-s): 0.008 Background Pk Height (A): 0.029
Blank Corrected Pk Area (A-s): -0.005
Concentration (ug/L): -1.81

Check sample is within range -2.00 - 2.00

B. Yu
7-7-93
~~~~~~

Element	Instrument	QC Source
☐ Ag	☒ 5100 A3	☐ CLP-40
☐ As	☐ 5100 A6	☐ CLP-70
☐ Cd	☐ 5000 A4	☐ CLP-80
☐ Cr	☐ 5000 A5	☐ EPA-V-1
☐ Pb	☐	☒ CLPF-CAL-1
☐ Sb	☐	☐
☐ Se		☐
☒ Tl		☐

Analyst B. Green

Date 7-2-93

Lamp # 384272

Energy 47

Expansion 1

Stock 3-117TL Opened: 5-5-93
Expires: 5-15-94

☒ platform ☒ MSC

☐ wall ☐ MSA

Blank	Slope	AQC	Digestion QC
0.36	0.0033	25.94	S38:
-0.78		24.73	Duplicate difference < 2 µg/l
-0.38		24.40	(Limit = ±2 µg/l)
-0.11		24.07	
-1.81		23.52	

Blank cup absorbance

B. Green

7-7-93

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: JUL 0 6 1993

Subject: Review of Region 5 Data for H.O.D. Landfill 3TFA05WU2F

From: Charles T. Elly, Director
Region 5 Central Regional Laboratory

To:

Attached are the results for H.O.D. Landfill 3TFA05WU2F
CRL request number SF1187
for analyses for ICP
Results are reported for sample designations: 93ZE33S40 and 93ZE33D40

Results Status:
(x) Acceptable for Use
( ) Data Qualified, but Acceptable for use
( ) Data Unacceptable for Use

( ) Sewer Disposal Criteria DO NOT Apply to Soil Samples.

Comments on Data Quality by Reviewer

Because of a bug in the report writing software, the low concentration magnesium channel was reported when the high concentration channel should have been used. This error was corrected manually.

Comments by Laboratory Director or Quality Control Coordinator

Review Record for H.O.D. Landfill 3TFA05WU2F

John V. Moore 25 June 93

Team Leader and Date (X) Reviewed ( ) Unreviewed

Francis A. Awanya for JHA Jr 6/30/93

Section Chief and Date (X) Reviewed ( ) Unreviewed

Francis A. Awanya for JHA Jr 6/30/93

QC Coordinator and Date (X) Reviewed ( ) Unreviewed

Sylvia Griffin 7-6-93

Data Management Coordinator and Date Received

Date Transmitted JUL 0 6 1993

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Received by and Date

Comments:

ESAT-5-014.6

LOCKHEED ESAT CONTRACT
DATA SET CUSTODY TRANSFER FORM

DATA SET NUMBER SF1187 CHARGE NUMBER 232-51-107

SITE NAME: H.O.D. LANDFILL TID NUMBER 05-93-05-06

PARAMETER: ICAP MATRIX: SOILS

SF DU/ACT NO: TFA 301 Y ____ /C ____

SAMPLE NUMBERS: 93ZE33S40, D40

NUMBER OF SAMPLES: 2

ESAT APPROVALS:

Analyst — Date 6-16-93

Task Group Leader — Date 6/18/93

QA/QC Coordinator — Date 6/18/93

ESAT Team Manager — Date

COMMENTS:

The above identified data set was transferred from ESAT custody to the custody of the U.S. EPA Region V Central Regional Laboratory in its entirety on the indicated date relinquished.

Relinquished by — Date

Received by — Date 23 June 93

EPA APPROVALS:

EPA Task Monitor — Date 25 June 93

[X] Reviewed
[ ] Unreviewed
[X] Accepted
[ ] Rejected
[ ] Returned: ____ Date

COMMENTS:

Section Chief — Date

[ ] Reviewed [ ] Unreviewed

ESAT DPO — Date

DATA COORDINATOR/RECD/TRANSMTD

A COPY OF THIS CUSTODY TRANSFER FORM WITH A RECEIVED BY EPA SIGNATURE IS TO BE FILED WITH THE AOC IN THE TID FILE. THE ORIGINAL CUSTODY TRANSFER ACCOMPANIES THE DATA SET TO BE APPROVED BY THE EPA AND A COMPLETED COPY RETURNED TO ESAT.

Method Number: 200.7
Date Generated: June 16, 1993
Author: R. Dilg, LOCKHEED/ESAT

Site Name: H.O.D. Landfill
Charge Number: 232-51-107
TID Number: 05-93-05-06

ICAP NARRATIVE for SF1187 - Soils

This ICAP narrative is intended for internal laboratory use only. The purpose for this narrative is to comment on the protocols used for the ICAP analysis of samples from the above named site. Comments deal with a number of the findings, problems, and possible variances that occurred or resulted because of the ICAP analysis. This ICAP narrative was not intended to be a final case review narrative.

SOILS: 93ZE33S40 and 93ZE33D40

This narrative covers the analysis of two soil samples from SF1187 for the analysis of ICAP metals. (Water samples for this SF sample group were analyzed and the resulting sample reports were submitted as a separate deliverable.) The samples were prepared using microwave digestion protocols and were analyzed using the ICAP TJA 61 spectrometer using analysis run method TJA61Y; the data was stored in file RUN106.

Narrative by: R. Dilg ESAT
Date: 6-16-93

Q. Dilg
6-16-93

JVM
25 Jun 93

SAMPLE REPORT

Sample SF1187 93ZE33S40 File name RUN106

Date analyzed 06/15/93 Correction factor 0.18796

Element	Unit	Concentration
Silver	mg/kg	1.1 U
Aluminum	mg/kg	11000.
Barium	mg/kg	48.
Beryllium	mg/kg	0.9
Calcium	mg/kg	68000.
Cobalt	mg/kg	10.
Chromium	mg/kg	19.
Copper	mg/kg	23.
Magnesium	mg/kg	~~29000.~~ 36000. QD 6-25-93
Iron	mg/kg	22000.
Potassium	mg/kg	3100.
Manganese	mg/kg	490.
Sodium	mg/kg	670.
Nickel	mg/kg	27.
Vanadium	mg/kg	23.
Zinc	mg/kg	58.

R. Dilg
6-16-93
JVM
5 June 93

SAMPLE REPORT

Sample SF1187 93ZE33D40 File name RUN106

Date analyzed 06/15/93 Correction factor 0.21034

Element	Unit	Concentration
Silver	mg/kg	1.3 U
Aluminum	mg/kg	11000.
Barium	mg/kg	48.
Beryllium	mg/kg	0.6
Calcium	mg/kg	68000.
Cobalt	mg/kg	9.7
Chromium	mg/kg	18.
Copper	mg/kg	22.
Magnesium	mg/kg	~~30000.~~ 36 000. RD 6-25-93
Iron	mg/kg	21000.
Potassium	mg/kg	3000.
Manganese	mg/kg	470.
Sodium	mg/kg	690.
Nickel	mg/kg	25.
Vanadium	mg/kg	25.
Zinc	mg/kg	58.

R. Dilg 6-16-93

JM 25 June 93

SAMPLE REPORT

Sample SF1187 93ZE33S40 File name RUN106

Date analyzed 06/15/93 Correction factor 0.18796

Element	Unit	Concentration
Silver	mg/kg	1.1 U
Aluminum	mg/kg	11000.
Barium	mg/kg	48.
Beryllium	mg/kg	0.9
Calcium	mg/kg	68000.
Cobalt	mg/kg	10.
Chromium	mg/kg	19.
Copper	mg/kg	23.
Magnesium	mg/kg	~~29000.~~ 36000. QD 6-25-93
Iron	mg/kg	22000.
Potassium	mg/kg	3100.
Manganese	mg/kg	490.
Sodium	mg/kg	670.
Nickel	mg/kg	27.
Vanadium	mg/kg	23.
Zinc	mg/kg	58.

R. Dilg
6-16-93
JVM
25 June 93

SAMPLE REPORT

Sample SF1187 93ZE33D40 File name RUN106

Date analyzed 06/15/93 Correction factor 0.21034

Element	Unit	Concentration
Silver	mg/kg	1.3 U
Aluminum	mg/kg	11000.
Barium	mg/kg	48.
Beryllium	mg/kg	0.6
Calcium	mg/kg	68000.
Cobalt	mg/kg	9.7
Chromium	mg/kg	18.
Copper	mg/kg	22.
Magnesium	mg/kg	~~30000.~~ 36000. RD 6-25-93
Iron	mg/kg	21000.
Potassium	mg/kg	3000.
Manganese	mg/kg	470.
Sodium	mg/kg	690.
Nickel	mg/kg	25.
Vanadium	mg/kg	25.
Zinc	mg/kg	58.

R. Dila
6-16-93

Samples analyzed by TJA61Y on 06/15/93 stored in file RUN106 .

Data set	Sample id	Correction Factor	Dig QC	Ins QC
20 ppm	MO IEC	1.00000	IEC	S
400 ppm	AL IEC	0.00250	IEC	S
400 ppm	FE IEC	0.00250	IEC	S
20 ppm	AS IEC	1.00000	IEC	S
20 ppm	BA IEC	1.00000	IEC	S
20 ppm	CU IEC	1.00000	IEC	S
20 ppm	NI IEC	1.00000	IEC	S
20 ppm	MN IEC	1.00000	IEC	S
20 ppm	TI IEC	1.00000	IEC	S
20 ppm	ZN IEC	1.00000	IEC	S
20 ppm	V IEC	1.00000	IEC	S
	INSTR BLANK 1	1.00000		B
	AQC EV1&2 1	1.00000		Q
	HIGH AQC EV3 1	1.00000		Q
	INSTR BLANK 1A	1.00000		B
	AQC EV1&2 1A	1.00000		Q
SF1187	93ZE33S40	0.18796	SMP1	S
SF1187	93ZE33S40 DUP	0.20251	DUP1	S
SF1187	93ZE33S40 SPIKE	0.18580	SPK1	S
SF1187	93ZE33D40	0.21034		S
SF1187	LCS EPA 0287	0.18580		S
RUN 106	DIGESTION BLANK	1.00000		B
	INSTR BLANK 2	1.00000		B
	AQC EV1&2 2	1.00000		Q
	HIGH AQC EV3 2	1.00000		Q

R Dilg
6-16-93

DIGESTION RECORD

Prepared by R.D. Date 6-16-93 Run Number 106

Vessel Number	Data Set	Sample Number	Notes	Vessel Number	Data Set	Sample Number	Notes
39	SF1187	93ZE33S40			0.5320g		136.52
45		S40	DUP		0.4938g		136.67
36		S40	+ 10ml SED SPIKE SPIKE + 1ml 10ppm Ag 30ppm AS		0.5443g		136.42
37		D40			0.4754g		137.02
35		LCS EPA 0287			0.5382g		137.25
38		DIGEST BLANK					

COMMENTS: 1 ml of 1000 ppm Y added
final volume = 100 ml

R. Dilg
6-19-93

BLANK REPORT

Blank name INSTR BLANK 1A

Date analyzed 06/15/93 File name RUN106

Element	Blank Value	Detection limit	Units
Ag	-0.88	6.0	ug/L
Alhigh	10.80	20000.0	ug/L
Allow	9.89	80.0	ug/L
As	7.88	80.0	ug/L
B	-7.13	80.0	ug/L
Ba	-0.26	6.0	ug/L
Be	0.17	2.0	ug/L
Cahigh	-25.60	500.0	ug/L
Cd2144	-1.77	10.0	ug/L
Cd	-2.81	10.0	ug/L
Co	0.07	6.0	ug/L
Cr2061	0.13	10.0	ug/L
Cr	0.02	10.0	ug/L
Cu	-1.01	6.0	ug/L
Mglow	2.00	100.0	ug/L
Mghigh	-46.30	100.0	ug/L
Felow	-3.18	80.0	ug/L
Fehigh	-103.30	20000.0	ug/L
K	-383.40	5000.0	ug/L
Li	-1.92	20.0	ug/L
Mn	-0.47	5.0	ug/L
Mo	0.26	15.0	ug/L
Na	-25.90	1000.0	ug/L
Ni	4.58	20.0	ug/L
Pb1822	28.01	150.0	ug/L
Pb	-3.66	80.0	ug/L
Sn	5.27	40.0	ug/L
Sr	-0.17	10.0	ug/L
Ti	0.11	25.0	ug/L
V	-0.59	8.0	ug/L
Znlow	-1.78	40.0	ug/L

All values for the blank are less than detection limit.

R. Dilg
6-16-93

BLANK REPORT

Blank name INSTR BLANK 2

Date analyzed 06/15/93 File name RUN106

Element	Blank Value	Detection limit	Units
Ag	-0.79	6.0	ug/L
Alhigh	6.60	20000.0	ug/L
Allow	6.09	80.0	ug/L
As	5.34	80.0	ug/L
B	-11.16	80.0	ug/L
Ba	-0.26	6.0	ug/L
Be	-0.04	2.0	ug/L
Cahigh	-36.00	500.0	ug/L
Cd2144	-2.01	10.0	ug/L
Cd	-2.58	10.0	ug/L
Co	-1.51	6.0	ug/L
Cr2061	2.11	10.0	ug/L
Cr	1.23	10.0	ug/L
Cu	-1.10	6.0	ug/L
Mglow	9.40	100.0	ug/L
Mghigh	-48.90	100.0	ug/L
Felow	-0.93	80.0	ug/L
Fehigh	-130.60	20000.0	ug/L
K	-421.70	5000.0	ug/L
Li	-1.96	20.0	ug/L
Mn	-0.53	5.0	ug/L
Mo	-1.96	15.0	ug/L
Na	-21.80	1000.0	ug/L
Ni	3.51	20.0	ug/L
Pb1822	35.48	150.0	ug/L
Pb	-1.94	80.0	ug/L
Sn	2.60	40.0	ug/L
Sr	-0.23	10.0	ug/L
Ti	0.06	25.0	ug/L
V	-1.06	8.0	ug/L
Znlow	-3.74	40.0	ug/L

All values for the blank are less than detection limit.

R. Dilg
6-16-93

BLANK REPORT

Blank name DIGESTION BLANK RUN 106

Date analyzed 06/15/93 File name RUN106

Element	Blank Value	Detection limit	Units
Ag	-0.97	6.0	ug/L
Alhigh	19.70	20000.0	ug/L
Allow	18.04	80.0	ug/L
As	34.55	80.0	ug/L
B	-10.74	80.0	ug/L
Ba	0.14	6.0	ug/L
Be	-0.05	2.0	ug/L
Cahigh	59.70	500.0	ug/L
Cd2144	-0.28	10.0	ug/L
Cd	-2.40	10.0	ug/L
Co	-1.19	6.0	ug/L
Cr2061	0.12	10.0	ug/L
Cr	0.37	10.0	ug/L
Cu	2.21	6.0	ug/L
Mglow	49.20	100.0	ug/L
Mghigh	-6.10	100.0	ug/L
Felow	14.55	80.0	ug/L
Fehigh	-115.90	20000.0	ug/L
K	-387.30	5000.0	ug/L
Li	-2.86	20.0	ug/L
Mn	-0.44	5.0	ug/L
Mo	1.62	15.0	ug/L
Na	37.50	1000.0	ug/L
Ni	-1.97	20.0	ug/L
Pb1822	16.38	150.0	ug/L
Pb	-25.00	80.0	ug/L
Sn	-1.51	40.0	ug/L
Sr	-0.07	10.0	ug/L
Ti	0.20	25.0	ug/L
V	0.05	8.0	ug/L
Znlow	1.00	40.0	ug/L

All values for the blank are less than detection limit.

R. Dila
6-16-93

QUALITY CONTROL SAMPLE REPORT

QC ID AQC EV1&2 1A

Operator

Date analyzed 06/15/93

File name RUN106

Element	Found Value	True Value	Percent Deviation	Units
Ag	477.3	500.0	4.5%	ug/L
Allow	4824.7	5000.0	3.5%	ug/L
As	5081.9	5000.0	1.6%	ug/L
B	4977.8	5000.0	0.4%	ug/L
Ba	4991.5	5000.0	0.2%	ug/L
Be	5020.3	5000.0	0.4%	ug/L
Cd2144	5047.2	5000.0	0.9%	ug/L
Cd	5043.4	5000.0	0.9%	ug/L
Co	4962.8	5000.0	0.7%	ug/L
Cr2061	5082.0	5000.0	1.6%	ug/L
Cr	5009.0	5000.0	0.2%	ug/L
Cu	4867.7	5000.0	2.6%	ug/L
Mglow	5071.2	5000.0	1.4%	ug/L
Felow	4979.4	5000.0	0.4%	ug/L
Li	5016.3	5000.0	0.3%	ug/L
Mn	4962.5	5000.0	0.8%	ug/L
Mo	4941.8	5000.0	1.2%	ug/L
Ni	5090.7	5000.0	1.8%	ug/L
Pb1822	5101.6	5000.0	2.0%	ug/L
Pb	5009.5	5000.0	0.2%	ug/L
Sn	4973.9	5000.0	0.5%	ug/L
Sr	5011.4	5000.0	0.2%	ug/L
Ti	5040.4	5000.0	0.8%	ug/L
V	4999.3	5000.0	0.0%	ug/L
Znlow	5047.6	5000.0	1.0%	ug/L

All elements within 5 % of the true value.

R. Dilg
6-16-93

QUALITY CONTROL SAMPLE REPORT

QC ID AQC EV1&2 2 Operator

Date analyzed 06/15/93 File name RUN106

Element	Found Value	True Value	Percent Deviation	Units
Ag	476.6	500.0	4.7%	ug/L
Allow	4795.6	5000.0	4.1%	ug/L
As	5086.3	5000.0	1.7%	ug/L
B	5028.2	5000.0	0.6%	ug/L
Ba	4990.5	5000.0	0.2%	ug/L
Be	5017.8	5000.0	0.4%	ug/L
Cd2144	5046.8	5000.0	0.9%	ug/L
Cd	5052.1	5000.0	1.0%	ug/L
Co	4943.5	5000.0	1.1%	ug/L
Cr2061	5084.0	5000.0	1.7%	ug/L
Cr	4997.4	5000.0	0.1%	ug/L
Cu	4798.0	5000.0	4.0%	ug/L
Mglow	5071.7	5000.0	1.4%	ug/L
Felow	4962.4	5000.0	0.8%	ug/L
Li	5017.2	5000.0	0.3%	ug/L
Mn	4945.8	5000.0	1.1%	ug/L
Mo	4943.0	5000.0	1.1%	ug/L
Ni	5084.9	5000.0	1.7%	ug/L
Pb1822	5150.7	5000.0	3.0%	ug/L
Pb	4986.3	5000.0	0.3%	ug/L
Sn	4927.9	5000.0	1.4%	ug/L
Sr	4993.3	5000.0	0.1%	ug/L
Ti	5033.0	5000.0	0.7%	ug/L
V	4964.8	5000.0	0.7%	ug/L
Znlow	5034.4	5000.0	0.7%	ug/L

All elements within 5 % of the true value.

R. Dilg
6-16-93

QUALITY CONTROL SAMPLE REPORT

QC ID HIGH AQC EV3 1 Operator

Date analyzed 06/15/93 File name RUN106

Element	Found Value	True Value	Percent Deviation	Units
Alhigh	106934.0	100000.0	6.9%	ug/L
Cahigh	95532.3	100000.0	4.5%	ug/L
Mghigh	59607.0	60000.0	0.7%	ug/L
Fehigh	104392.4	100000.0	4.4%	ug/L
K	100278.4	100000.0	0.3%	ug/L
Na	99817.5	100000.0	0.2%	ug/L

All elements within 10 % of true value.

R. Dilg
6-16-93

QUALITY CONTROL SAMPLE REPORT

QC ID HIGH AQC EV3 2 Operator

Date analyzed 06/15/93 File name RUN106

Element	Found Value	True Value	Percent Deviation	Units
Alhigh	106417.2	100000.0	6.4%	ug/L
Cahigh	95158.7	100000.0	4.8%	ug/L
Mghigh	59118.1	60000.0	1.5%	ug/L
Fehigh	104031.8	100000.0	4.0%	ug/L
K	99958.3	100000.0	0.0%	ug/L
Na	98724.0	100000.0	1.3%	ug/L

All elements within 10 % of true value.

R. Dilg
6-16-93

DUPLICATE

Sample SF1187 93ZE33S40 Operator

Date Analyzed 06/15/93 File RUN106

Sample Correction 0.18796 Duplicate Correction 0.203

Element	Units	Sample	Duplicate	Difference	RPD
Ag	mg/kg	-0.7	-0.7	0.0	1 U
Alhigh	mg/kg	12300.0	11500.0	-800.0	4000 U
Allow	mg/kg	11308.4	10553.9	0.0	-7 %
As	mg/kg	-4.4	3.6	8.0	15 U
Ba	mg/kg	48.0	45.3	-2.7	-6 %
Be	mg/kg	0.9	0.6	-0.3	0 U
Cahigh	mg/kg	68400.0	72800.0	4400.0	6 %
Cd2144	mg/kg	0.3	0.1	-0.2	2 U
Cd	mg/kg	0.7	1.2	0.5	2 U
Co	mg/kg	10.4	10.4	0.0	1 U
Cr2061	mg/kg	21.8	23.7	1.9	2 U
Cr	mg/kg	19.3	21.2	1.9	9 %
Cu	mg/kg	23.3	22.7	-0.6	1 U
Mglow	mg/kg	29400.0	31500.0	2100.0	7 %
Mghigh	mg/kg	36100.0	38400.0	2300.0	6 %
Felow	mg/kg	22248.4	22338.9	90.5	0 %
Fehigh	mg/kg	25000.0	25100.0	100.0	4000 U
K	mg/kg	3100.0	2700.0	-400.0	1000 U
Li	mg/kg	26.9	26.0	-0.9	4 U
Mn	mg/kg	486.2	497.0	10.8	2 %
Mo	mg/kg	1.4	1.1	-0.3	3 U
Na	mg/kg	700.0	600.0	-100.0	0 U
Ni	mg/kg	26.8	28.6	1.8	4 U
Pb1822	mg/kg	6.9	15.6	8.7	28 U
Pb	mg/kg	15.0	11.0	-4.0	15 U
Sn	mg/kg	1.3	0.0	-1.3	8 U
Sr	mg/kg	52.7	51.3	-1.4	2 U
V	mg/kg	23.1	20.6	-2.5	-12 %
Znlow	mg/kg	58.3	55.4	-2.9	8 U

All duplicate values are within either 20% relative percent difference or the detection limit of each other.

R. Dilg
6-16-93

SPIKE COMPARISON

Sample SF1187 93ZE33S40 Analyzed by

Date Analyzed 06/15/93 File RUN106 SMP1

Sample correction factor 0.18796 Spike correction factor 0.18580

Element	Units	Sample	Spike	Spike Added	Recovery
Ag	mg/kg	-0.7	16.3	19	89%
As	mg/kg	-4.4	54.3	56	105%
B	mg/kg	37.7	200.3	186	87%
Ba	mg/kg	48.0	131.4	93	90%
Be	mg/kg	0.9	9.7	9	98%
Cd2144	mg/kg	0.3	15.9	19	82%
Cd	mg/kg	0.7	17.6	19	89%
Co	mg/kg	10.4	92.5	93	88%
Cr2061	mg/kg	21.8	103.5	93	88%
Cr	mg/kg	19.3	99.6	93	86%
Cu	mg/kg	23.3	108.5	93	92%
Li	mg/kg	26.9	113.0	93	93%
Mn	mg/kg	486.2	805.2	372	86%
Ni	mg/kg	26.8	110.1	93	90%
Pb1822	mg/kg	6.9	184.7	186	96%
Pb	mg/kg	15.0	181.2	186	89%
Sr	mg/kg	52.7	223.4	186	92%
V	mg/kg	23.1	107.1	93	90%
Znlow	mg/kg	58.3	223.1	186	89%

All spike recoveries are within 20% of the expected value.

R. Dilg
6-16-93

SAMPLE REPORT

Sample SF1187 LCS EPA 0287 File name RUN106

Date analyzed 06/15/93 Correction factor 0.18580

Element	Unit	Concentration	
Silver	mg/kg	26.	
Aluminum	mg/kg	290.	
Barium	mg/kg	5.5	
Beryllium	mg/kg	21.	
Calcium	mg/kg	200000.	
Cadmium	mg/kg	47.	
Cobalt	mg/kg	150.	
Chromium	mg/kg	100.	
Copper	mg/kg	7300.	
Magnesium	mg/kg	~~68000.~~ 120000.	
Iron	mg/kg	20000.	
Potassium	mg/kg	900.	U
Manganese	mg/kg	220.	
Sodium	mg/kg	200.	U
Nickel	mg/kg	64.	
Lead	mg/kg	230.	
Vanadium	mg/kg	70.	
Zinc	mg/kg	170.	

RD 6-25-93

ALL VALUES ARE WITHIN CONTROL LIMITS.

SF1187

Element	Meas.	"True"	%Dev.	Control Limits	
Ag	26	22.2	17.12%	15.5	29
Al	290	325	-10.77%	225	424
As		917	-100.00%	635	1199
B			ERR		
Ba	5.5	4.8	14.58%	0	40
Be	21	19.4	8.25%	16.5	22.3
Ca	200000	196200	1.94%	166800	225600
Cd	47	45.4	3.52%	35.7	55.1
Co	150	144	4.17%	125	162
Cr	100	99.6	0.40%	79.2	120
Cu	7300	6910	5.64%	6006	7820
Mg	123000	118100	4.15%	100400	129900
Fe	20000	22430	-10.83%	17770	27080
K		50	-100.00%	0	1000
Li			ERR		
Mn	220	208	5.77%	177	239
Mo			ERR		
Na		50	-100.00%	0	1000
Ni	64	60.9	5.09%	49.2	72.6
Pb	230	236	-2.54%	188	285
Sb		211	-100.00%	127	294
Se		39.2	-100.00%	19.1	59.4
Sn			ERR		
Sr			ERR		
Ti			ERR		
Tl		39	-100.00%	24.6	53.5
V	70	65.8	6.38%	51.7	79.9
Zn	170	187	-9.09%	138	236

Run 106 Q. Dilg 6-16-93

Method: TJA61Y Standard: blnk

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Avge	.01182	.00885	.00014	.00885	-.00053	.00176	.0001
SDev	.00085	.00021	.00014	.00021	.00020	.00015	.0001
%RSD	7.1627	2.3228	99.775	2.3228	-37.579	8.6486	50.49
#1	.01274	.00863	.00028	.00863	-.00077	.00167	.0001
#2	.01164	.00887	.00000	.00887	-.00042	.00194	.0001
#3	.01108	.00904	.00014	.00904	-.00042	.00168	.0002

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Avge	.06387	.12939	.00086	.00304	.00918	-.00023	.00179
SDev	.00022	.00058	.00016	.00029	.00118	.00040	.00015
%RSD	.34761	.44636	18.237	9.4666	12.834	-173.21	8.5932
#1	.06391	.12873	.00077	.00272	.01003	.00000	.00167
#2	.06363	.12962	.00104	.00326	.00783	.00000	.00173
#3	.06407	.12982	.00077	.00315	.00967	-.00070	.00196

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Avge	.00381	.00019	.03312	.01333	.01414	.28506	.00437
SDev	.00053	.00004	.00028	.00015	.00013	.00309	.00005
%RSD	13.934	21.213	.83045	1.1077	.88203	1.0825	1.1388
#1	.00432	.00021	.03293	.01337	.01420	.28372	.00432
#2	.00326	.00021	.03299	.01317	.01400	.28287	.00437
#3	.00386	.00014	.03344	.01346	.01423	.28859	.00442

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Avge	.01519	.00084	.01563	-.00329	-.00109	.00785	.00046
SDev	.00014	.00073	.00022	.00125	.00070	.00126	.00008
%RSD	.91616	87.648	1.3905	-37.875	-63.972	16.036	17.254
#1	.01532	.00153	.01539	-.00348	-.00035	.00836	.00056
#2	.01504	.00007	.01580	-.00444	-.00173	.00642	.00042
#3	.01521	.00091	.01570	-.00196	-.00119	.00877	.00042

Elem	Sr	Ti	V	Znlow
Avge	.00420	.00174	-.00174	.00894
SDev	.00004	.00018	.00038	.00033
%RSD	1.0492	10.157	-21.755	3.6849
#1	.00425	.00188	-.00181	.00877
#2	.00416	.00180	-.00208	.00873
#3	.00421	.00154	-.00133	.00932

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14352	--	--	--	--	--	--
SDev	81.06171	--	--	--	--	--	--
%RSD	.5648112	--	--	--	--	--	--
#1	14363	--	--	--	--	--	--
#2	14427	--	--	--	--	--	--

#3	14266	--	--	--	--	--	--

Method: TJA61Y Standard: Ag_only

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Avge	1.7786	.01166	.00223	.01166	-.00065	.00177	.0000
SDev	.0072	.00025	.00025	.00025	.00010	.00016	.0001
%RSD	.40475	2.1427	11.372	2.1427	-15.566	9.2021	173.2
#1	1.7845	.01166	.00204	.01166	-.00063	.00176	.0000
#2	1.7806	.01190	.00252	.01190	-.00056	.00161	.0001
#3	1.7706	.01140	.00214	.01140	-.00076	.00194	.0000

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Avge	.06514	.13146	.00088	.00226	.00947	.00052	.00207
SDev	.00043	.00024	.00004	.00006	.00019	.00105	.00024
%RSD	.65584	.18540	4.3783	2.4584	1.9891	202.19	11.651
#1	.06563	.13118	.00091	.00232	.00963	.00112	.00225
#2	.06497	.13163	.00084	.00224	.00952	.00112	.00217
#3	.06482	.13158	.00090	.00221	.00926	-.00069	.00180

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Avge	.00754	.00060	.03341	.01524	.01436	.28813	.00437
SDev	.00017	.00004	.00045	.00014	.00022	.00540	.00008
%RSD	2.2829	6.1409	1.3444	.94612	1.5516	1.8740	1.7781
#1	.00773	.00056	.03373	.01518	.01447	.29005	.00443
#2	.00749	.00063	.03361	.01540	.01449	.29231	.00441
#3	.00739	.00062	.03290	.01513	.01410	.28203	.00428

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Avge	.01552	.00109	.01621	-.00308	-.00063	.00538	.00042
SDev	.00015	.00057	.00011	.00121	.00066	.00048	.00031
%RSD	.98227	51.659	.69281	-39.313	-106.16	8.8533	72.916
#1	.01560	.00169	.01609	-.00323	.00014	.00562	.00028
#2	.01561	.00056	.01624	-.00420	-.00098	.00483	.00077
#3	.01534	.00104	.01631	-.00180	-.00104	.00569	.00021

Elem	Sr	Ti	V	Znlow
Avge	.00430	.00230	-.00146	.01314
SDev	.00008	.00038	.00083	.00037
%RSD	1.7929	16.381	-56.902	2.8032
#1	.00436	.00274	-.00070	.01272
#2	.00434	.00210	-.00133	.01337
#3	.00422	.00207	-.00235	.01334

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14328	--	--	--	--	--	--
SDev	125.3089	--	--	--	--	--	--

%RSD	.8745536	--	--	--	--	--	--
#1	14232	--	--	--	--	--	--
#2	14283	--	--	--	--	--	--
#3	14470	--	--	--	--	--	--

Method: TJA61Y Standard: ten1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Avge	.20406	.01325	.00117	.01325	.16010	.00424	.0003
SDev	.02761	.00025	.00025	.00025	.00036	.00018	.0002
%RSD	13.529	1.9127	21.649	1.9127	.22431	4.2902	48.12
#1	.23399	.01345	.00120	.01345	.16050	.00415	.0001
#2	.19862	.01334	.00141	.01334	.16002	.00445	.0004
#3	.17958	.01296	.00091	.01296	.15979	.00411	.0003

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Avge	.06518	.13263	.00080	.05324	5.9811	2.4921	1.1279
SDev	.00066	.00041	.00003	.00066	.0091	.0046	.0034
%RSD	1.0144	.30590	4.4294	1.2382	.15215	.18612	.30417
#1	.06532	.13269	.00077	.05251	5.9706	2.4899	1.1269
#2	.06576	.13300	.00078	.05341	5.9874	2.4974	1.1317
#3	.06446	.13220	.00084	.05380	5.9852	2.4890	1.1251

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Avge	.00857	1.0225	.25306	.01664	.01952	.28730	.44510
SDev	.00044	.0021	.00058	.00018	.00027	.00635	.00113
%RSD	5.0948	.20767	.22823	1.0644	1.3641	2.2104	.25406
#1	.00817	1.0218	.25348	.01668	.01936	.28924	.44516
#2	.00903	1.0249	.25330	.01679	.01983	.29246	.44390
#3	.00850	1.0208	.25240	.01645	.01937	.28021	.44620

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Avge	.01662	2.6762	3.1498	-.00280	.22073	1.1820	.27858
SDev	.00016	.0039	.0029	.00140	.00174	.0064	.00188
%RSD	.94247	.14438	.09312	-50.084	.78736	.54369	.67294
#1	.01675	2.6803	3.1465	-.00253	.21948	1.1746	.27932
#2	.01665	2.6756	3.1507	-.00155	.22000	1.1856	.27997
#3	.01645	2.6726	3.1521	-.00432	.22272	1.1859	.27645

Elem	Sr	Ti	V	Znlow
Avge	7.5164	.00194	.00365	.01196
SDev	.0058	.00015	.00032	.00034
%RSD	.07671	7.6391	8.7870	2.8067
#1	7.5194	.00211	.00345	.01176
#2	7.5097	.00183	.00402	.01235
#3	7.5199	.00188	.00348	.01178

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED

Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14243	--	--	--	--	--	--
SDev	94.12226	--	--	--	--	--	--
%RSD	.6608317	--	--	--	--	--	--
#1	14206	--	--	--	--	--	--
#2	14173	--	--	--	--	--	--
#3	14350	--	--	--	--	--	--

Method: TJA61Y Standard: ten2

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Avge	.01603	.01927	.00147	.01927	-.00041	.98081	.0013
SDev	.00063	.00015	.00004	.00015	.00036	.00756	.0001
%RSD	3.9044	.75774	2.7492	.75774	-86.603	.77065	6.176
#1	.01574	.01919	.00145	.01919	-.00062	.97439	.0014
#2	.01560	.01918	.00144	.01918	.00000	.98914	.0012
#3	.01675	.01944	.00152	.01944	-.00062	.97891	.0014

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Avge	52.381	1.2551	.36745	2.4259	.01298	.00418	.00230
SDev	.035	.0007	.00066	.0032	.00069	.00174	.00032
%RSD	.06750	.05180	.17920	.13326	5.3391	41.545	14.095
#1	52.366	1.2559	.36804	2.4272	.01353	.00387	.00242
#2	52.355	1.2546	.36674	2.4223	.01320	.00605	.00254
#3	52.421	1.2550	.36756	2.4284	.01220	.00262	.00193

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Avge	4.0707	.00101	.03573	.01755	.04471	2.1364	.00441
SDev	.0070	.00011	.00015	.00028	.00026	.0048	.00007
%RSD	.17290	10.469	.42398	1.6030	.58136	.22635	1.6608
#1	4.0785	.00110	.03590	.01740	.04501	2.1387	.00449
#2	4.0687	.00103	.03560	.01787	.04454	2.1308	.00440
#3	4.0649	.00090	.03570	.01737	.04459	2.1396	.00434

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Avge	7.8744	.00073	.01810	.95244	-.00053	.00515	.00044
SDev	.0021	.00099	.00035	.00480	.00055	.00127	.00011
%RSD	.02702	134.75	1.9423	.50390	-104.56	24.677	24.268
#1	7.8759	.00000	.01850	.94767	-.00048	.00563	.00055
#2	7.8720	.00034	.01787	.95237	.00000	.00612	.00041
#3	7.8752	.00186	.01792	.95727	-.00110	.00371	.00034

Elem	Sr	Ti	V	Znlow
Avge	.00643	.00211	4.2706	3.8904
SDev	.00070	.00024	.0039	.0057
%RSD	10.907	11.532	.09218	.14531
#1	.00718	.00235	4.2722	3.8951
#2	.00632	.00213	4.2735	3.8841
#3	.00579	.00186	4.2661	3.8921

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14515	--	--	--	--	--	--
SDev	32.86842	--	--	--	--	--	--
%RSD	.2264497	--	--	--	--	--	--
#1	14485	--	--	--	--	--	--
#2	14550	--	--	--	--	--	--
#3	14509	--	--	--	--	--	--

Method: TJA61Y Standard: ten3

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Avge	.01040	.38533	.28127	.38533	-.00039	.00306	12.32
SDev	.00102	.00009	.00200	.00009	.00067	.00070	.01
%RSD	9.8296	.02245	.70939	.02245	-170.71	22.903	.0892
#1	.00935	.38542	.27958	.38542	.00034	.00362	12.34
#2	.01047	.38526	.28074	.38526	-.00096	.00227	12.31
#3	.01139	.38530	.28347	.38530	-.00055	.00329	12.32

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Avge	.07516	.12976	.00096	.00297	.02302	-.00014	.00160
SDev	.00259	.00053	.00006	.00064	.00137	.00024	.00036
%RSD	3.4437	.40715	6.6664	21.462	5.9304	-173.21	23.627
#1	.07814	.12918	.00102	.00362	.02436	.00000	.00177
#2	.07392	.13021	.00090	.00234	.02163	.00000	.00186
#3	.07342	.12990	.00096	.00295	.02306	-.00041	.00117

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Avge	.00464	5.0288	1.1331	1.1885	.05894	.28472	.00434
SDev	.00034	.0143	.0020	.0024	.00029	.00243	.00005
%RSD	7.3197	.28498	.17217	.20606	.48523	.85316	1.0671
#1	.00457	5.0126	1.1309	1.1858	.05869	.28218	.00430
#2	.00434	5.0400	1.1346	1.1906	.05925	.28701	.00434
#3	.00501	5.0338	1.1339	1.1893	.05888	.28498	.00439

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Avge	.01964	.00039	.01623	-.00251	.00041	.00655	.00092
SDev	.00019	.00065	.00039	.00138	.00012	.00185	.00018
%RSD	.98694	167.97	2.3823	-54.910	29.302	28.219	19.339
#1	.01979	.00041	.01583	-.00232	.00034	.00803	.00075
#2	.01970	.00103	.01660	-.00124	.00055	.00715	.00110
#3	.01942	-.00027	.01626	-.00398	.00034	.00448	.00089

Elem	Sr	Ti	V	Znlow
Avge	.00462	4.4869	-.00466	.00889
SDev	.00002	.0011	.00013	.00019
%RSD	.46527	.02420	-2.7824	2.1692

#1	.00464	4.4881	-.00464	.00894
#2	.00462	4.4862	-.00455	.00868
#3	.00460	4.4863	-.00480	.00906

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14581	--	--	--	--	--	--
SDev	69.81643	--	--	--	--	--	--
%RSD	.4788288	--	--	--	--	--	--
#1	14654	--	--	--	--	--	--
#2	14515	--	--	--	--	--	--
#3	14573	--	--	--	--	--	--

Method: TJA61Y Standard: Ca

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Avge	.00328	.01221	.00230	.01221	-.00060	.00304	.0111
SDev	.00177	.00017	.00021	.00017	.00041	.00090	.0010
%RSD	53.856	1.3872	9.1711	1.3872	-68.046	29.558	9.310
#1	.00186	.01209	.00250	.01209	-.00093	.00229	.0122
#2	.00273	.01213	.00208	.01213	-.00072	.00280	.0108
#3	.00526	.01240	.00231	.01240	-.00014	.00404	.0102

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Avge	.07018	46.204	.00098	.00234	.00960	-.00010	.00156
SDev	.00054	.111	.00011	.00064	.00060	.00082	.00015
%RSD	.77535	.23924	10.794	27.381	6.2823	-841.36	9.9280
#1	.07074	46.094	.00107	.00308	.00894	.00014	.00150
#2	.07015	46.201	.00101	.00208	.01012	.00057	.00144
#3	.06965	46.315	.00087	.00187	.00973	-.00101	.00173

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Avge	.00785	.00316	.08976	.02401	.02233	.29213	.00457
SDev	.00031	.00037	.00065	.00010	.00028	.00201	.00005
%RSD	3.9450	11.636	.72226	.43375	1.2347	.68623	1.0013
#1	.00808	.00358	.08912	.02389	.02203	.28982	.00458
#2	.00797	.00302	.08975	.02405	.02240	.29310	.00452
#3	.00750	.00288	.09042	.02408	.02257	.29346	.00461

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Avge	.02542	.00048	.02329	-.00307	-.00019	.00837	.00041
SDev	.00022	.00082	.00039	.00099	.00015	.00119	.00037
%RSD	.86488	170.67	1.6573	-32.311	-78.081	14.189	90.730
#1	.02525	.00072	.02317	-.00229	-.00014	.00931	.00050
#2	.02535	-.00043	.02298	-.00273	-.00036	.00704	.00000
#3	.02567	.00115	.02372	-.00418	-.00007	.00878	.00072

Elem	Sr	Ti	V	Znlow
Avge	.00984	.00419	-.00070	.01546

SDev	.00004	.00019	.00058	.00019
%RSD	.40228	4.6107	-83.974	1.2106
#1	.00980	.00429	-.00036	.01566
#2	.00984	.00431	-.00036	.01529
#3	.00988	.00397	-.00137	.01543

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	13926	--	--	--	--	--	--
SDev	56.01190	--	--	--	--	--	--
%RSD	.4022206	--	--	--	--	--	--
#1	13981	--	--	--	--	--	--
#2	13927	--	--	--	--	--	--
#3	13869	--	--	--	--	--	--

Method: TJA61Y Standard: alfe

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Avge	-.02060	13.818	6.3927	13.818	-.00118	.00188	.0015
SDev	.00147	.007	.0317	.007	.00088	.00011	.0001
%RSD	-7.1389	.04776	.49557	.04776	-75.196	5.6115	5.481
#1	-.02225	13.825	6.3769	13.825	-.00052	.00200	.0015
#2	-.02009	13.813	6.3721	13.813	-.00083	.00179	.0014
#3	-.01944	13.816	6.4292	13.816	-.00218	.00186	.0014

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Avge	.05973	.14620	.00447	.00257	.02297	.00437	.00158
SDev	.00027	.00394	.00007	.00048	.00182	.00102	.00003
%RSD	.44617	2.6978	1.6323	18.500	7.9307	23.317	1.9753
#1	.05998	.15067	.00445	.00213	.02103	.00477	.00155
#2	.05945	.14469	.00442	.00307	.02323	.00512	.00160
#3	.05974	.14322	.00456	.00250	.02464	.00321	.00160

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Avge	.00781	.00210	.03352	41.778	1.5369	.26639	.00411
SDev	.00013	.00008	.00021	.045	.0023	.00198	.00008
%RSD	1.6330	3.9195	.63829	.10731	.14843	.74238	1.8485
#1	.00793	.00219	.03367	41.827	1.5384	.26741	.00419
#2	.00768	.00205	.03328	41.738	1.5343	.26411	.00410
#3	.00783	.00205	.03362	41.770	1.5381	.26768	.00404

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Avge	.03924	.00407	.01867	-.00304	.02513	-.05003	-.00323
SDev	.00015	.00126	.00018	.00099	.00032	.00231	.00019
%RSD	.37644	31.067	.95090	-32.591	1.2586	-4.6245	-5.8236
#1	.03941	.00497	.01883	-.00193	.02477	-.05167	-.00322
#2	.03917	.00262	.01869	-.00333	.02528	-.04738	-.00346
#3	.03914	.00462	.01848	-.00385	.02535	-.05103	-.00306

Elem	Sr	Ti	V	Znlow
Avge	.00435	.00240	-.00017	.03415
SDev	.00005	.00033	.00035	.00146
%RSD	1.1843	13.858	-206.42	4.2599
#1	.00439	.00271	-.00052	.03464
#2	.00429	.00205	-.00019	.03251
#3	.00436	.00244	.00019	.03529

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	15571	--	--	--	--	--	--
SDev	61.97849	--	--	--	--	--	--
%RSD	.3980295	--	--	--	--	--	--
#1	15504	--	--	--	--	--	--
#2	15626	--	--	--	--	--	--
#3	15584	--	--	--	--	--	--

Standardization Report Tue 06-15-93 01:41:03 PM page 1

Method: TJA61Y

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date Standardized
Ag	328.068	Ag_only	blnk	566.011	-6.69048	06/15/93 01:20:37
Alhigh	308.215	alfe	blnk	28.9662	-.256332	06/15/93 01:37:52
Al1670	167.081	ten3	blnk	35571.3	-4.96441	06/15/93 01:31:14
Allow	308.215	ten3	blnk	26562.0	-235.056	06/15/93 01:31:14
As	189.042	ten1	blnk	62252.1	33.2494	06/15/93 01:23:52
B	249.678	ten2	blnk	10214.0	-18.0246	06/15/93 01:27:09
Ba	455.403	ten3	blnk	811.506	-.113300	06/15/93 01:31:14
Be	313.042	ten2	blnk	191.143	-12.2085	06/15/93 01:27:09
Cahigh	317.933	Ca	blnk	8.68163	-1.12332	06/15/93 01:31:29
Cd2144	214.438	ten2	blnk	27278.7	-23.4291	06/15/93 01:27:09
Cd	228.802	ten2	blnk	4127.29	-12.5572	06/15/93 01:27:09
Co	228.616	ten1	blnk	1674.51	-15.3673	06/15/93 01:23:52
Cr2061	206.149	ten1	blnk	4012.32	.937501	06/15/93 01:23:52
Cr	267.716	ten1	blnk	8880.03	-15.8850	06/15/93 01:23:52
Cu	324.765	ten2	blnk	2458.90	-9.36820	06/15/93 01:27:09
Mglow	279.553	ten1	blnk	9.78152	-.001816	06/15/93 01:23:52
Mghigh	383.231	ten3	blnk	45.4552	-1.50550	06/15/93 01:31:14
Felow	259.940	ten3	blnk	8509.09	-113.443	06/15/93 01:31:14
Fehigh	271.441	alfe	blnk	262.676	-3.71550	06/15/93 01:37:52
K	766.490	ten2	blnk	54.0163	-15.3978	06/15/93 01:27:09
Li	670.780	ten1	blnk	22689.3	-99.0732	06/15/93 01:23:52
Mn	257.610	ten2	blnk	1272.40	-19.3274	06/15/93 01:27:09
Mo	202.030	ten1	blnk	3737.87	-3.13020	06/15/93 01:23:52
Na	589.590	ten1	blnk	31.9066	-.498723	06/15/93 01:23:52
Ni	231.604	ten2	blnk	10463.2	34.4588	06/15/93 01:27:09
Pb1822	182.203	ten1	blnk	45080.9	49.1776	06/15/93 01:23:52
Pb	220.353	ten1	blnk	8516.56	-66.8646	06/15/93 01:23:52
Sn	189.989	ten1	blnk	35956.6	-16.7013	06/15/93 01:23:52
Sr	421.552	ten1	blnk	1331.18	-5.59613	06/15/93 01:23:52
Ti	337.280	ten3	blnk	2229.59	-3.88256	06/15/93 01:31:14
V	290.882	ten2	blnk	2340.64	4.07386	06/15/93 01:27:09
Znlow	213.856	ten2	blnk	2576.34	-23.0402	06/15/93 01:27:09

Method: TJA61Y Sample Name: MO IEC Operator:
Run Time: 06/15/93 13:44:43
Comment: 20 ppm
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-3.1184	.49754	302.81	456.25	8.8612	644.16	.8278
SDev	.7205	.00763	9.51	6.99	41.997	19.80	.1163
%RSD	-23.104	1.5329	3.1395	1.5329	473.94	3.0743	14.05
#1	-3.2039	.50604	303.79	464.04	55.037	634.02	.7388
#2	-2.3590	.49130	311.80	450.52	-1.3977	666.98	.9594
#3	-3.7923	.49528	292.86	454.17	-27.056	631.48	.7851

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.24579	.04203	L-4.4426	-.49281	7.8924	L2.0449	-34.422
SDev	.09191	.00087	1.9644	.55638	1.8871	2.8880	1.616
%RSD	37.394	2.0752	-44.218	-112.90	23.911	141.23	-4.6934
#1	.34168	.04104	L-2.4249	-.13431	5.7311	L.37579	-33.289
#2	.15847	.04237	L-6.3491	-.21036	9.2133	L.37923	-36.272
#3	.23721	.04268	L-4.5537	-1.1338	8.7330	L5.3796	-33.704

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	16.413	.01112	.06655	45.463	.36686	.08144	.39728
SDev	.753	.00008	.00532	5.928	.03333	.14744	.57506
%RSD	4.5865	.67257	7.9941	13.040	9.0839	181.05	144.75
#1	16.450	.01119	.07267	52.140	.40319	.21421	.98457
#2	17.147	.01111	.06301	43.431	.35970	.10735	.37200
#3	15.643	.01104	.06398	40.818	.33770	-.07725	-.16472

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	.77203	20210.	.58922	-12.604	L-32.367	8.1833	5.8096
SDev	.17562	21.	.02153	6.948	9.195	14.240	8.9745
%RSD	22.748	.10212	3.6534	-55.128	-28.407	174.01	154.48
#1	.89054	20188.	.58225	-9.4858	L-23.401	2.9698	8.4678
#2	.85528	20229.	.61337	-7.7609	L-41.775	24.295	-4.1938
#3	.57027	20212.	.57204	-20.565	L-31.926	-2.7151	13.155

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	.23978	2.3759	23.563	13.652
SDev	.03374	.4893	.563	1.509
%RSD	14.070	20.595	2.3898	11.052
#1	.27424	2.8284	22.916	14.471
#2	.23830	1.8566	23.940	11.911
#3	.20681	2.4427	23.833	14.574

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED

Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14371	--	--	--	--	--	--
SDev	83.05019	--	--	--	--	--	--
%RSD	.5779147	--	--	--	--	--	--
#1	14286	--	--	--	--	--	--
#2	14374	--	--	--	--	--	--
#3	14452	--	--	--	--	--	--

Method: TJA61Y Sample Name: AL IEC Operator:
Run Time: 06/15/93 13:50:03
Comment: 400 ppm
Mode: CONC Corr. Factor: .0025

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.00110	1.0057	586.91	922.27	.05075	1.4532	.0049
SDev	.00115	.0019	6.02	1.71	.06308	.0238	.0010
%RSD	-104.55	.18524	1.0256	.18525	124.30	1.6372	20.45
#1	.00021	1.0075	593.16	923.92	.12275	1.4634	.0058
#2	-.00194	1.0038	581.14	920.51	.00524	1.4260	.0050
#3	-.00156	1.0059	586.44	922.38	.02424	1.4702	.0038

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.00251	.00006	L.10062	-.00751	-.00460	L.01938	.00833
SDev	.00055	.00002	.00140	.00378	.00388	.01058	.01005
%RSD	-21.829	31.250	1.3895	-50.369	-84.386	54.608	120.71
#1	-.00199	.00007	L.10205	-.00315	-.00058	L.00745	-.00297
#2	-.00308	.00004	L.09926	-.00945	-.00490	L.02305	.01167
#3	-.00247	.00008	L.10054	-.00992	-.00832	L.02765	.01628

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	.00516	.00004	-.00024	.05327	-.00056	-.00331	-.01626
SDev	.00161	.00000	.00006	.00507	.00013	.00050	.00297
%RSD	31.228	.99033	-26.478	9.5098	-22.431	-15.253	-18.271
#1	.00671	.00004	-.00018	.05764	-.00047	-.00276	-.01298
#2	.00350	.00004	-.00030	.04772	-.00070	-.00375	-.01706
#3	.00527	.00004	-.00024	.05444	-.00051	-.00341	-.01876

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	.02948	.02599	.00145	.00484	L.09463	-1.2802	.00162
SDev	.00090	.00306	.00002	.04591	.16226	.0417	.01793
%RSD	3.0400	11.769	1.5639	949.12	171.47	-3.2600	1103.8
#1	.03045	.02846	.00144	-.00044	L.02968	-1.3249	-.01886
#2	.02868	.02257	.00147	-.03820	L-.02510	-1.2733	.01447
#3	.02931	.02694	.00143	.05316	L.27930	-1.2423	.00926

Elem	Sr	Ti	V	Znlow

Units	ug/L	ug/L	ug/L	ug/L
Avge	-.00055	.00284	-.00134	.02477
SDev	.00012	.00151	.00729	.00570
%RSD	-21.339	53.083	-544.14	22.999
#1	-.00043	.00378	.00609	.03055
#2	-.00067	.00110	-.00848	.02459
#3	-.00056	.00365	-.00162	.01916

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	15851	--	--	--	--	--	--
SDev	139.1199	--	--	--	--	--	--
%RSD	.8776540	--	--	--	--	--	--
#1	15709	--	--	--	--	--	--
#2	15987	--	--	--	--	--	--
#3	15858	--	--	--	--	--	--

Method: TJA61Y Sample Name: FE IEC Operator:
Run Time: 06/15/93 13:54:19
Comment: 400 ppm
Mode: CONC Corr. Factor: .0025

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.05313	.00022	L3.0390	.20392	-.26650	.20728	.0006
SDev	.00196	.00008	.0883	.07077	.03232	.02009	.0002
%RSD	-3.6891	34.707	2.9066	34.707	-12.129	9.6902	25.48
#1	-.05245	.00031	L3.1124	.28508	-.25059	.22165	.0006
#2	-.05534	.00019	L2.9410	.17158	-.24521	.18433	.0005
#3	-.05160	.00017	L3.0636	.15508	-.30370	.21586	.0006

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.00015	.00001	L.16492	-.00420	.06473	L.02254	-.00765
SDev	.00043	.00000	.00224	.00431	.00323	.01270	.00283
%RSD	-285.67	28.156	1.3562	-102.60	4.9843	56.324	-36.968
#1	-.00001	.00002	L.16314	.00001	.06669	L.03010	-.00439
#2	-.00063	.00002	L.16420	-.00401	.06101	L.02965	-.00950
#3	.00019	.00001	L.16743	-.00860	.06650	L.00788	-.00906

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	.00252	.00001	.00022	968.84	1.0930	.00002	-.00198
SDev	.00327	.00000	.00007	2.73	.0035	.00096	.00218
%RSD	129.69	1.1765	31.732	.28223	.32129	4955.9	-110.16
#1	.00422	.00001	.00023	970.04	1.0941	.00045	-.00050
#2	-.00125	.00001	.00014	965.72	1.0890	-.00108	-.00448
#3	.00459	.00001	.00028	970.78	1.0958	.00069	-.00096

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	.05171	.01960	.00020	.03569	L3.2974	.03470	-.33861
SDev	.00134	.00774	.00003	.02039	.0950	.01566	.06063
%RSD	2.5978	39.496	13.265	57.139	2.8811	45.121	-17.906
#1	.05224	.01350	.00023	.01377	L3.2334	.01683	-.40861
#2	.05018	.01698	.00019	.05410	L3.2523	.04129	-.30481
#3	.05271	.02830	.00019	.03919	L3.4066	.04599	-.30242

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	.00096	.00282	.01611	.13179
SDev	.00022	.00227	.00488	.00155
%RSD	23.132	80.335	30.274	1.1724
#1	.00097	.00533	.01666	.13264
#2	.00073	.00092	.01098	.13001
#3	.00117	.00222	.02069	.13273

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14545	--	--	--	--	--	--
SDev	129.7421	--	--	--	--	--	--
%RSD	.8920045	--	--	--	--	--	--
#1	14457	--	--	--	--	--	--
#2	14694	--	--	--	--	--	--
#3	14484	--	--	--	--	--	--

Method: TJA61Y Sample Name: AS IEC Operator:
Run Time: 06/15/93 13:58:56
Comment: 20 ppm
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.28627	.23693	238.98	217.27	20023.	582.92	1.717
SDev	1.74651	.01063	7.41	9.75	124.	5.40	.100
%RSD	-610.09	4.4872	3.0995	4.4872	.61862	.92583	5.831
#1	1.2987	.24920	239.89	228.51	20026.	582.09	1.805
#2	-2.1587	.23129	231.16	212.10	19898.	588.68	1.608
#3	.00117	.23031	245.88	211.19	20146.	577.98	1.738

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.05459	.01315	L2.9349	407.50	-.57611	L1.6818	3.1272
SDev	.15213	.00057	.2127	4.74	1.86900	3.2452	1.7676
%RSD	278.67	4.3114	7.2458	1.1620	-324.42	192.96	56.524
#1	.19146	.01274	L3.1250	405.57	-.11488	L.37954	4.4906
#2	-.10920	.01380	L2.7053	404.04	1.0191	L-.70993	1.1301
#3	.08151	.01290	L2.9745	412.90	-2.6325	L5.3759	3.7611

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	1.4956	.01056	.01018	71.075	.11090	-.00516	.13102
SDev	.0876	.00042	.02349	23.032	.07662	.28540	1.6080
%RSD	5.8593	3.9531	230.71	32.406	69.091	-5531.7	1227.3
#1	1.5739	.01043	.03053	97.184	.19305	.20014	1.8943
#2	1.4009	.01023	-.01552	62.410	.04139	-.33106	-1.2545
#3	1.5119	.01103	.01554	53.632	.09825	.11544	-.24678

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	.46609	1.3499	.49984	-10.817	L-.78919	-19.949	-7.5926
SDev	.28934	3.1412	.01863	2.554	35.2838	15.519	1.4958
%RSD	62.079	232.70	3.7280	-23.613	-4470.9	-77.796	-19.701
#1	.75559	4.6668	.50404	-13.558	L-19.782	-20.422	-6.7008
#2	.17690	.96245	.47946	-8.5024	L39.923	-35.226	-9.3197
#3	.46579	-1.5796	.51601	-10.392	L-22.508	-4.1983	-6.7578

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	.19331	1.2475	.84839	4.8766
SDev	.04670	.0518	1.2326	.9390
%RSD	24.158	4.1554	145.28	19.254
#1	.23506	1.2333	1.4699	4.0094
#2	.14288	1.3050	-.57121	5.8737
#3	.20200	1.2043	1.6465	4.7466

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14486	--	--	--	--	--	--
SDev	117.1082	--	--	--	--	--	--
%RSD	.8084048	--	--	--	--	--	--
#1	14382	--	--	--	--	--	--
#2	14613	--	--	--	--	--	--
#3	14464	--	--	--	--	--	--

Method: TJA61Y Sample Name: BA IEC Operator:
Run Time: 06/15/93 14:02:15
Comment: 20 ppm
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.60937	.22498	212.17	206.31	-19.782	479.66	20150.
SDev	.74149	.00478	8.71	4.38	39.106	10.78	32.
%RSD	121.68	2.1224	4.1066	2.1224	-197.68	2.2476	.1584
#1	.96983	.22677	221.16	207.95	24.739	479.06	20190.

#2	-.24343	.21957	203.76	201.35	-35.509	469.20	20140.
#3	1.1017	.22861	211.59	209.63	-48.576	490.73	20130.

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.03604	.02198	L-.26828	-.24989	15.543	L4.3577	2.6653
SDev	.14942	.00209	.93442	3.07359	3.044	3.0433	1.0273
%RSD	414.62	9.5066	-348.30	-1230.0	19.586	69.837	38.920
#1	-.13633	.02316	L.81033	2.1126	12.331	L.9375	1.7173
#2	.12882	.01957	L-.83182	-3.7248	18.386	L5.3692	2.5052
#3	.11561	.02322	L-.78336	.86256	15.910	L6.7665	3.7733

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	1.8049	.01390	.02712	20.320	.04667	.05465	-.65008
SDev	.7566	.00043	.02366	3.002	.06823	.39696	.63078
%RSD	41.916	3.1256	87.231	14.775	146.19	726.36	-97.032
#1	1.8927	.01356	.00139	23.237	-.01684	-.39287	-1.3681
#2	2.5138	.01439	.03206	20.484	.03806	.19256	-.39687
#3	1.0083	.01375	.04793	17.239	.11880	.36426	-.18525

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	.47327	1.5095	.46055	3.7401	L50.224	-10.825	2.2957
SDev	.27712	2.7995	.00791	9.1939	21.186	13.845	3.8925
%RSD	58.554	185.45	1.7169	245.82	42.182	-127.90	169.55
#1	.15423	-.83076	.46960	.12979	L43.015	-4.9925	-1.9549
#2	.61140	4.6108	.45500	-3.1007	L74.074	-.84995	3.1560
#3	.65416	.74860	.45704	14.191	L33.584	-26.632	5.6861

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	.39235	1.3914	-.60294	9.7263
SDev	.08292	.8039	2.61162	2.0159
%RSD	21.135	57.778	-433.15	20.726
#1	.31819	.53700	-.24584	7.4250
#2	.37698	1.5044	1.8118	10.573
#3	.48188	2.1329	-3.3747	11.180

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14524	--	--	--	--	--	--
SDev	93.38273	--	--	--	--	--	--
%RSD	.6429694	--	--	--	--	--	--
#1	14630	--	--	--	--	--	--
#2	14486	--	--	--	--	--	--
#3	14455	--	--	--	--	--	--

Method: TJA61Y Sample Name: CU IEC Operator:
Run Time: 06/15/93 14:05:47
Comment: 20 ppm
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.18593	.22232	222.82	203.86	-7.9100	609.55	8.425
SDev	.75693	.00677	3.10	6.21	2.7849	7.12	1.191
%RSD	407.10	3.0442	1.3926	3.0442	-35.207	1.1680	14.14
#1	.24810	.21450	226.32	196.70	-4.6964	612.18	9.395
#2	-.60016	.22607	221.76	207.31	-9.4154	601.49	8.785
#3	.90987	.22637	220.39	207.58	-9.6181	614.99	7.095

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.18864	.01992	L.20526	-2.3098	.32240	L.39401	2.9421
SDev	.19341	.00447	2.3107	1.6437	2.3325	.94135	1.3259
%RSD	-102.53	22.417	1125.7	-71.161	723.48	238.92	45.067
#1	-.36322	.01679	L-1.2588	-.81686	-1.3044	L-.69297	1.5563
#2	-.22196	.02503	L-.99443	-4.0712	2.9948	L.9375	4.1987
#3	.01927	.01793	L2.8690	-2.0414	-.72316	L.9375	3.0711

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	19960.	.01022	.01018	12.419	.03843	.08549	-.81583
SDev	29.	.00010	.01730	.759	.06740	.27604	1.61104
%RSD	.14643	1.0050	169.93	6.1085	175.39	322.88	-197.47
#1	19984.	.01011	-.00623	11.614	-.03287	-.19349	-2.2615
#2	19969.	.01025	.00853	12.522	.04705	.09148	-1.1070
#3	19928.	.01031	.02824	13.121	.10111	.35849	.92092

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	.39327	-.39074	.53681	1.5891	L49.214	-10.804	-2.8162
SDev	.30069	2.64653	.00909	6.8738	26.726	20.145	8.5184
%RSD	76.459	-677.32	1.6940	432.56	54.306	-186.45	-302.48
#1	.06229	-2.6239	.52990	-5.2255	L33.911	-28.630	5.2160
#2	.46792	-1.0808	.53342	1.4722	L80.074	-14.833	-1.9155
#3	.64959	2.5325	.54711	8.5206	L33.656	11.051	-11.749

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	.22958	1.7631	-1.1986	78.256
SDev	.13966	.9604	1.6209	3.074
%RSD	60.832	54.473	-135.23	3.9278
#1	.08380	.79860	-3.0598	75.372
#2	.24276	1.7713	-.09697	81.489
#3	.36217	2.7193	-.43914	77.906

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED

Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14626	--	--	--	--	--	--
SDev	125.2238	--	--	--	--	--	--
%RSD	.8561726	--	--	--	--	--	--
#1	14765	--	--	--	--	--	--
#2	14591	--	--	--	--	--	--
#3	14522	--	--	--	--	--	--

Method: TJA61Y Sample Name: NI IEC Operator:
Run Time: 06/15/93 14:09:05
Comment: 20 ppm
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.11374	.23205	228.31	212.79	-2.3933	562.34	2.299
SDev	.76265	.00601	8.37	5.51	27.9882	9.27	.487
%RSD	670.52	2.5889	3.6654	2.5889	-1169.4	1.6481	21.17
#1	.72827	.22724	237.97	208.38	-31.167	563.98	2.798
#2	.35274	.23878	223.65	218.96	24.737	570.68	2.273
#3	-.73979	.23013	223.31	211.03	-.74961	552.36	1.826

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.01910	.00526	L-1.6141	-8.8805	9.7209	L-2.2746	3.3883
SDev	.12520	.00371	1.1311	.2673	2.7102	1.1302	1.2522
%RSD	655.51	70.457	-70.077	-3.0097	27.880	-49.688	36.957
#1	.05438	.00201	L-.84741	-9.1406	6.9271	L-3.4911	3.1051
#2	-.11996	.00447	L-2.9132	-8.6066	12.339	L-1.2571	4.7578
#3	.12287	.00930	L-1.0817	-8.8943	9.8966	L-2.0756	2.3019

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	7.7168	.00712	.01283	9.0366	.02944	-.06728	-1.0982
SDev	1.8548	.00036	.01114	1.5326	.03713	.16543	.5533
%RSD	24.036	5.0212	86.851	16.960	126.11	-245.88	-50.382
#1	9.7995	.00696	.02472	10.413	.07171	.11473	-.46494
#2	7.1074	.00688	.01112	9.3120	.00213	-.10809	-1.3414
#3	6.2433	.00753	.00264	7.3850	.01448	-.20849	-1.4882

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	.32479	-4.5781	.45917	20675.	L14.221	-3.7502	.57852
SDev	.23805	1.0306	.01121	64.	40.127	19.4125	11.369
%RSD	73.294	-22.512	2.4408	.30886	282.17	-517.63	1965.2
#1	.59765	-3.3881	.47195	20610.	L27.408	18.660	10.584
#2	.15956	-5.1747	.45459	20738.	L46.095	-15.374	-11.784
#3	.21716	-5.1716	.45098	20679.	L-30.840	-14.537	2.9364

Elem	Sr	Ti	V	Znlow

Units	ug/L	ug/L	ug/L	ug/L
Avge	.15205	.54655	-.52218	76.260
SDev	.03246	.74194	1.32100	.539
%RSD	21.350	135.75	-252.98	.70709
#1	.18920	-.19119	.52157	76.843
#2	.13778	.53821	-2.0074	75.779
#3	.12916	1.2926	-.08074	76.158

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14590	--	--	--	--	--	--
SDev	82.14621	--	--	--	--	--	--
%RSD	.5630309	--	--	--	--	--	--
#1	14496	--	--	--	--	--	--
#2	14626	--	--	--	--	--	--
#3	14648	--	--	--	--	--	--

Method: TJA61Y Sample Name: MN IEC Operator:
Run Time: 06/15/93 14:12:22
Comment: 20 ppm
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	2.3623	.22798	202.71	209.06	-10.591	456.71	.8271
SDev	.5088	.00665	3.01	6.10	6.500	4.05	.2226
%RSD	21.537	2.9185	1.4851	2.9185	-61.369	.88700	26.92
#1	2.6928	.23177	206.16	212.54	-17.714	461.39	1.049
#2	2.6175	.23187	201.35	212.63	-4.9812	454.52	.8281
#3	1.7764	.22030	200.62	202.01	-9.0789	454.24	.6040

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.05898	.03062	L-.49979	-2.1518	-.07347	L1.6650	-5.1936
SDev	.07760	.00473	1.09942	1.4664	2.58783	1.2601	.3405
%RSD	-131.57	15.430	-219.98	-68.145	-3522.5	75.680	-6.5555
#1	-.00290	.02866	L-1.0970	-2.7022	-1.5445	L.9375	-5.5861
#2	-.02649	.03601	L.76898	-3.2634	2.9146	L.9375	-4.9781
#3	-.14754	.02719	L-1.1714	-.48992	-1.5905	L3.1200	-5.0167

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	3.2006	.01352	.00211	49.710	.07968	-.06158	-1.6564
SDev	.5235	.00003	.00561	10.565	.02485	.10101	.1936
%RSD	16.358	.22544	266.65	21.253	31.183	-164.02	-11.688
#1	3.7164	.01353	.00781	43.875	.08361	.03910	-1.5548
#2	3.2157	.01354	.00192	61.906	.10232	-.06094	-1.5348
#3	2.6697	.01348	-.00341	43.350	.05310	-.16291	-1.8797

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	20570.	.94774	.40659	9.2620	L31.765	-22.040	-9.3362
SDev	17.	1.7895	.01050	4.3739	9.405	4.864	12.2570
%RSD	.08462	188.81	2.5824	47.225	29.607	-22.068	-131.28
#1	20573.	.94989	.40898	13.044	L39.951	-21.213	2.9230
#2	20586.	2.7361	.41569	4.4722	L21.492	-27.264	-9.3407
#3	20552.	-.84280	.39511	10.270	L33.851	-17.643	-21.591

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	.11929	.47270	.30010	13.013
SDev	.01136	.62640	2.1634	.913
%RSD	9.5216	132.52	720.89	7.0161
#1	.12526	.68066	-1.0360	12.640
#2	.12643	-.23123	2.7961	14.053
#3	.10620	.96866	-.85983	12.346

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14673	--	--	--	--	--	--
SDev	29.19475	--	--	--	--	--	--
%RSD	.1989647	--	--	--	--	--	--
#1	14658	--	--	--	--	--	--
#2	14655	--	--	--	--	--	--
#3	14707	--	--	--	--	--	--

Method: TJA61Y Sample Name: TI IEC Operator:
Run Time: 06/15/93 14:15:43
Comment: 20 ppm
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.52471	.14981	209.30	137.37	-20.839	526.16	.1475
SDev	1.2870	.01179	11.96	10.81	23.109	21.40	.1415
%RSD	245.29	7.8714	5.7122	7.8714	-110.89	4.0681	95.92
#1	1.0374	.16312	203.53	149.58	-5.3846	535.57	.2784
#2	-.93966	.14068	223.04	129.01	-47.405	541.26	-.0026
#3	1.4763	.14562	201.32	133.53	-9.7276	501.67	.1668

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.37664	.00953	L-6.5559	-2.5444	29.240	L-1.2747	3.4570
SDev	.11776	.00370	.1148	2.1291	1.339	1.6631	7.6532
%RSD	31.267	38.822	-1.7511	-83.676	4.5795	-130.47	[illegible]
#1	.39200	.01352	L-6.4998	-3.1654	29.088	L-2.9359	12.282
#2	.25195	.00621	L-6.6880	-.17392	30.649	L.39030	-1.3524
#3	.48597	.00886	L-6.4800	-4.2941	27.984	L-1.2785	-.55873

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	-7.1153	.00827	.03470	18.145	.16599	.10288	-.31085
SDev	.3503	.00007	.02421	2.535	.04340	.14058	1.33183
%RSD	-4.9231	.82985	69.773	13.973	26.144	136.65	-428.45
#1	-7.5031	.00830	.05230	20.336	.17882	.15674	1.0588
#2	-7.0208	.00819	.00709	15.368	.11762	-.05667	-1.6013
#3	-6.8219	.00831	.04471	18.731	.20153	.20856	-.39006

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	9.4143	1.9352	.45519	1.9213	L23.444	-12.080	48.379
SDev	1.6125	3.0244	.01027	14.505	44.575	16.985	20.077
%RSD	17.128	156.28	2.2550	754.95	190.14	-140.60	41.499
#1	11.206	2.5403	.46054	14.257	L-9.8858	-10.151	70.078
#2	8.9577	-1.3460	.44335	-14.058	L6.1409	-29.946	44.595
#3	8.0794	4.6113	.46167	5.5649	L74.076	3.8583	30.463

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	.16764	20110.	-17.212	2.9845
SDev	.03922	13.	.971	1.0365
%RSD	23.393	.06388	-5.6440	34.731
#1	.18680	20122.	-16.101	1.8313
#2	.12253	20096.	-17.633	3.8387
#3	.19359	20111.	-17.902	3.2834

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14551	--	--	--	--	--	--
SDev	99.37974	--	--	--	--	--	--
%RSD	.6829910	--	--	--	--	--	--
#1	14502	--	--	--	--	--	--
#2	14665	--	--	--	--	--	--
#3	14485	--	--	--	--	--	--

Method: TJA61Y Sample Name: ZN IEC Operator:
Run Time: 06/15/93 14:20:22
Comment: 20 ppm
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.64006	.18740	194.87	171.84	-.95906	418.11	1.413
SDev	1.18537	.00406	9.38	3.72	22.1766	6.32	.226
%RSD	-185.20	2.1667	4.8137	2.1667	-2312.3	1.5105	15.97
#1	-.71859	.18622	204.62	170.76	-13.666	415.14	1.277

#2	-1.7842	.18406	185.91	168.78	-13.859	425.36	1.673
#3	.58262	.19192	194.09	175.99	24.648	413.82	1.288

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.15698	.01189	L.33717	-2.9930	2.2193	30.841	2.4460
SDev	.06500	.00842	2.0777	2.0920	.8593	.876	1.6789
%RSD	41.406	70.834	616.22	-69.896	38.722	2.8407	68.639
#1	.08823	.00441	L2.7357	-4.0741	1.9560	30.351	1.7583
#2	.16529	.02101	L-.90955	-4.3231	3.1794	31.852	1.2202
#3	.21743	.01024	L-.81465	-.58165	1.5224	30.320	4.3596

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	1.4586	.01097	-.00231	4.8102	-.02279	-.17072	-.72857
SDev	.1963	.00005	.02729	1.4642	.06080	.32889	1.97032
%RSD	13.455	.48515	-1180.5	30.439	-266.81	-192.65	-270.44
#1	1.4135	.01092	-.03247	3.7346	-.08021	-.46894	-2.6950
#2	1.2888	.01097	.00488	4.2183	-.02907	-.22524	-.78629
#3	1.6735	.01102	.02066	6.4777	.04091	.18202	1.2456

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	1.2434	1.5857	.42467	-.55127	L39.882	-11.975	.60425
SDev	.0883	.6122	.00281	8.05500	6.171	13.543	7.4002
%RSD	7.1051	38.610	.66194	-1461.2	15.473	-113.10	1224.7
#1	1.2457	1.2233	.42158	-7.1187	L33.735	-25.771	.54290
#2	1.3306	1.2413	.42538	-2.9715	L46.076	-11.456	8.0349
#3	1.1540	2.2926	.42707	8.4364	L39.834	1.3015	-6.7651

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	.08227	5.6254	-.38103	20234.
SDev	.17909	1.0815	1.16397	242.
%RSD	217.67	19.225	-305.48	1.1946
#1	-.12404	5.8937	.22519	19981.
#2	.17328	6.5475	-1.7230	20259.
#3	.19759	4.4351	.35472	20463.

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14536	--	--	--	--	--	--
SDev	60.50069	--	--	--	--	--	--
%RSD	.4162223	--	--	--	--	--	--
#1	14596	--	--	--	--	--	--
#2	14536	--	--	--	--	--	--
#3	14475	--	--	--	--	--	--

Method: TJA61Y Sample Name: V IEC Operator:
Run Time: 06/15/93 14:23:31
Comment: 20 ppm
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-2.8376	.69717	252.84	639.31	4.1774	650.56	2.312
SDev	.9827	.01168	10.62	10.71	31.327	3.13	.041
%RSD	-34.632	1.6759	4.1995	1.6759	749.93	.48038	1.793
#1	-3.7884	.70805	265.05	649.28	-24.783	653.93	2.264
#2	-2.8986	.68482	247.64	627.98	-.11414	647.76	2.333
#3	-1.8258	.69864	245.82	640.65	37.429	649.97	2.339

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	156.39	.00609	L-4.5668	1.1611	-1.9544	L1.4838	2.7373
SDev	.25	.00402	1.1149	1.1989	2.0021	5.1160	2.1620
%RSD	.15699	66.020	-24.414	103.25	-102.44	344.80	78.983
#1	156.11	.00221	L-5.2651	-.19017	-4.2173	L-3.3372	.67120
#2	156.49	.01023	L-5.1544	2.0972	-1.2327	L6.8510	2.5568
#3	156.58	.00582	L-3.2810	1.5764	-.41334	L.9375	4.9839

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	-.64872	.00996	-.03751	12.949	16.127	-.60454	-2.9249
SDev	.15912	.00005	.01996	1.390	.120	.28065	1.2086
%RSD	-24.529	.51035	-53.200	10.732	.74381	-46.424	-41.323
#1	-.69050	.00991	-.05873	12.340	15.997	-.87765	-3.8924
#2	-.47287	.00998	-.03469	11.967	16.152	-.61905	-3.3121
#3	-.78277	.01001	-.01912	14.539	16.233	-.31692	-1.5700

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	.42371	-1.7971	.59712	-.56622	L28.072	-50.411	3.3785
SDev	.13570	2.0386	.00950	7.54487	2.926	6.316	12.428
%RSD	32.026	-113.44	1.5913	-1332.5	10.425	-12.529	367.87
#1	.32871	-.89017	.60605	7.9838	L25.163	-52.768	-7.1243
#2	.36330	-4.1318	.58713	-3.3929	L28.037	-55.209	.16052
#3	.57912	-.36940	.59818	-6.2896	L31.016	-43.255	17.099

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	.04487	2.4330	20206.	10.855
SDev	.07091	.2438	46.	2.697
%RSD	158.02	10.021	.22649	24.849
#1	-.01189	2.2043	20158.	12.642
#2	.02215	2.6896	20210.	12.169
#3	.12436	2.4051	20249.	7.7520

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED

Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14946	--	--	--	--	--	--
SDev	64.62972	--	--	--	--	--	--
%RSD	.4324215	--	--	--	--	--	--
#1	15018	--	--	--	--	--	--
#2	14927	--	--	--	--	--	--
#3	14893	--	--	--	--	--	--

Element:	Ag	Al	Al	2Al	As
Wavelength:	328.068	308.215	167.081/2	308.215	189.042/2
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	5	1	2	2	0
Affecting Element:	Cd	V	Be	Mo	--n/a--
k1 factor:	0	0	0	.022813	--n/a--
k2 factor:	0	0	0	0	--n/a--
use?:	NO	NO	YES	YES	--n/a--
Affecting Element:	Fehigh	--n/a--	Fehigh	V	--n/a--
k1 factor:	-.05313	--n/a--	0	.031966	--n/a--
k2 factor:	0	--n/a--	0	0	--n/a--
use?:	YES	--n/a--	YES	YES	--n/a--
Affecting Element:	Mo	--n/a--	--n/a--	--n/a--	--n/a--
k1 factor:	0	--n/a--	--n/a--	--n/a--	--n/a--
k2 factor:	0	--n/a--	--n/a--	--n/a--	--n/a--
use?:	NO	--n/a--	--n/a--	--n/a--	--n/a--
Affecting Element:	Mn	--n/a--	--n/a--	--n/a--	--n/a--
k1 factor:	.000118	--n/a--	--n/a--	--n/a--	--n/a--
k2 factor:	0	--n/a--	--n/a--	--n/a--	--n/a--
use?:	YES	--n/a--	--n/a--	--n/a--	--n/a--
Affecting Element:	Ti	--n/a--	--n/a--	--n/a--	--n/a--
k1 factor:	0	--n/a--	--n/a--	--n/a--	--n/a--
k2 factor:	0	--n/a--	--n/a--	--n/a--	--n/a--
use?:	NO	--n/a--	--n/a--	--n/a--	--n/a--

Element:	B	Ba	Be	Ca	Cd
Wavelength:	249.678/2	455.403	313.042	317.933	214.438
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	0	0	1	0	3
Affecting Element:	--n/a--	--n/a--	V	--n/a--	Fehigh
k1 factor:	--n/a--	--n/a--	.007819	--n/a--	.16492
k2 factor:	--n/a--	--n/a--	0	--n/a--	0
use?:	--n/a--	--n/a--	YES	--n/a--	YES
Affecting Element:	--n/a--	--n/a--	--n/a--	--n/a--	Alhigh
k1 factor:	--n/a--	--n/a--	--n/a--	--n/a--	.10062
k2 factor:	--n/a--	--n/a--	--n/a--	--n/a--	0
use?:	--n/a--	--n/a--	--n/a--	--n/a--	YES

Affecting Element:	--n/a--	--n/a--	--n/a--	--n/a--	Ti
k1 factor:	--n/a--	--n/a--	--n/a--	--n/a--	-.00033
k2 factor:	--n/a--	--n/a--	--n/a--	--n/a--	0
use?:	--n/a--	--n/a--	--n/a--	--n/a--	YES

Element:	Cd	Co	Cr	Cr	Cu
Wavelength:	228.802/2	228.616	206.149	267.716	324.765
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	2	3	1	2	2
Affecting Element:	As	Ba	Znlow	Mo	Mo
k1 factor:	.020375	.000777	.001542	-.00172	.000821
k2 factor:	0	0	0	0	0
use?:	YES	NO	YES	YES	YES
Affecting Element:	Ni	Fehigh	--n/a--	V	Ti
k1 factor:	-.00044	.06473	--n/a--	.000136	-.00035
k2 factor:	0	0	--n/a--	0	0
use?:	YES	YES	--n/a--	YES	YES
Affecting Element:	--n/a--	Ti	--n/a--	--n/a--	--n/a--
k1 factor:	--n/a--	.001462	--n/a--	--n/a--	--n/a--
k2 factor:	--n/a--	0	--n/a--	--n/a--	--n/a--
use?:	--n/a--	YES	--n/a--	--n/a--	--n/a--

Element:	Mg	Mg	Fe	Fe	K
Wavelength:	279.553	383.231	259.940	271.441	766.490
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	1	0	3	1	0
Affecting Element:	Mn	--n/a--	Alhigh	V	--n/a--
k1 factor:	0	--n/a--	.05327	0	--n/a--
k2 factor:	0	--n/a--	0	0	--n/a--
use?:	NO	--n/a--	YES	NO	--n/a--
Affecting Element:	--n/a--	--n/a--	Mo	--n/a--	--n/a--
k1 factor:	--n/a--	--n/a--	.002273	--n/a--	--n/a--
k2 factor:	--n/a--	--n/a--	0	--n/a--	--n/a--
use?:	--n/a--	--n/a--	YES	--n/a--	--n/a--
Affecting Element:	--n/a--	--n/a--	Mn	--n/a--	--n/a--
k1 factor:	--n/a--	--n/a--	.002485	--n/a--	--n/a--
k2 factor:	--n/a--	--n/a--	0	--n/a--	--n/a--
use?:	--n/a--	--n/a--	YES	--n/a--	--n/a--

Element:	Li	Mn	Mo	Na	Ni
Wavelength:	670.780	257.610	202.030	589.590	231.604/2
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	2	4	0	0	0
Affecting Element:	Ti	Fehigh	--n/a--	--n/a--	--n/a--
k1 factor:	0	.05171	--n/a--	--n/a--	--n/a--
k2 factor:	0	0	--n/a--	--n/a--	--n/a--
use?:	YES	YES	--n/a--	--n/a--	--n/a--
Affecting Element:	V	Alhigh	--n/a--	--n/a--	--n/a--
k1 factor:	0	.02948	--n/a--	--n/a--	--n/a--
k2 factor:	0	0	--n/a--	--n/a--	--n/a--
use?:	NO	YES	--n/a--	--n/a--	--n/a--
Affecting Element:	--n/a--	Cahigh	--n/a--	--n/a--	--n/a--
k1 factor:	--n/a--	0	--n/a--	--n/a--	--n/a--
k2 factor:	--n/a--	0	--n/a--	--n/a--	--n/a--
use?:	--n/a--	YES	--n/a--	--n/a--	--n/a--
Affecting Element:	--n/a--	Mghigh	--n/a--	--n/a--	--n/a--
k1 factor:	--n/a--	0	--n/a--	--n/a--	--n/a--
k2 factor:	--n/a--	0	--n/a--	--n/a--	--n/a--
use?:	--n/a--	YES	--n/a--	--n/a--	--n/a--

Element:	Pb	Pb	Sn	Sr	Ti
Wavelength:	182.203	220.353	189.989	421.552	337.280
Use IECs:	YES	YES	YES	YES	YES
Number of IECs:	1	1	1	1	0
Affecting Element:	Fehigh	Alhigh	Fehigh	Cahigh	--n/a--
k1 factor:	3.2974	-1.2802	-.33861	0	--n/a--
k2 factor:	0	0	0	0	--n/a--
use?:	YES	YES	YES	NO	--n/a--

Element:	V	Zn
Wavelength:	290.882	213.856/2
Use IECs:	YES	YES
Number of IECs:	3	3
Affecting Element:	Cr	Cu
k1 factor:	0	.003913
k2 factor:	0	0
use?:	YES	YES

Affecting Element:	Mo	Fehigh
k1 factor:	.001179	.13179
k2 factor:	0	0
use?:	YES	YES

Affecting Element:	Ti	Ni
k1 factor:	-.00086	0
k2 factor:	0	0
use?:	YES	YES

Method: TJA61Y Sample Name: INSTR BLANK 1 Operator:
Run Time: 06/15/93 14:40:56
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-1.5827	-.01064	L-1.7169	-9.8044	-31.676	-8.5367	-.0768
SDev	1.0462	.00503	3.7405	4.5573	14.705	2.0652	.1677
%RSD	-66.101	-47.313	-217.86	-46.482	-46.423	-24.192	-218.4
#1	-.73875	-.00539	L2.3729	-5.0947	-30.955	-10.299	-.1133
#2	-1.2562	-.01110	L-4.9644	-10.126	-17.345	-6.2645	-.2232
#3	-2.7533	-.01542	L-2.5592	-14.192	-46.728	-9.0462	.1062

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.11657	-.01687	L.71696	.25350	.87032	L2.5825	.02274
SDev	.05892	.00592	1.8842	.88880	3.5268	1.4423	.89277
%RSD	50.549	-35.116	262.81	350.61	405.23	55.848	3926.6
#1	.15669	-.01006	L.96295	.55657	3.8604	L3.1467	-.00781
#2	.04892	-.02084	L2.4661	-.74719	1.7696	L.94339	-.85436
#3	.14410	-.01970	L-1.2782	.95112	-3.0191	L3.6573	.93039

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	-.44581	.00196	-.04481	19.779	-.10549	-.50259	-2.3357
SDev	.52176	.00040	.01255	32.615	.06407	.25979	1.5056
%RSD	-117.04	20.659	-27.997	164.90	-60.737	-51.690	-64.460
#1	-.23937	.00222	-.03033	1.2247	-.04915	-.21501	-.79038
#2	-1.0392	.00216	-.05241	.67314	-.17519	-.72030	-3.7982
#3	-.05886	.00149	-.05170	57.439	-.09213	-.57246	-2.4186

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	-.36323	.18261	-.02835	-7.3020	L45.445	-20.364	1.2044
SDev	.27129	2.6500	.01284	2.1584	24.507	12.957	12.272
%RSD	-74.687	1451.2	-45.298	-29.559	53.928	-63.626	1018.9
#1	-.07781	1.7529	-.01389	-7.2674	L49.340	-14.337	3.0602
#2	-.61774	-2.8770	-.03844	-9.4774	L19.223	-35.237	-11.890
#3	-.39414	1.6720	-.03271	-5.1611	L67.771	-11.518	12.443

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	-.22277	.37277	1.4314	-3.2095
SDev	.04683	1.3597	1.8716	1.5743
%RSD	-21.020	364.76	130.75	-49.050
#1	-.19601	1.9428	3.5907	-1.4216
#2	-.27683	-.40944	.27228	-3.8192
#3	-.19546	-.41508	.43135	-4.3878

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED

Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14699	--	--	--	--	--	--
SDev	135.0568	--	--	--	--	--	--
%RSD	.9187953	--	--	--	--	--	--
#1	14544	--	--	--	--	--	--
#2	14765	--	--	--	--	--	--
#3	14789	--	--	--	--	--	--

Method: TJA61Y Sample Name: AQC EV1&2 1 Operator:
Run Time: 06/15/93 14:44:39
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	472.20	5.5429	6001.3	4810.5	5006.5	5007.0	4996.
SDev	2.47	.0116	73.4	10.4	37.1	27.3	6.
%RSD	.52358	.20998	1.2236	.21564	.74157	.54599	.1185
#1	472.16	5.5509	5956.6	4817.7	5047.2	5017.3	4998.
#2	469.75	5.5295	5961.2	4798.6	4997.9	4976.0	5001.
#3	474.69	5.5482	6086.0	4815.1	4974.4	5027.6	4990.

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	5023.5	4.8165	5002.0	4997.3	4935.1	5074.7	5009.0
SDev	5.8	.0233	13.2	30.4	.7	31.1	20.4
%RSD	.11561	.48467	.26358	.60781	.01359	.61242	.40707
#1	5021.7	4.8103	4996.4	4999.5	4934.4	5059.9	5006.2
#2	5018.7	4.7970	4992.6	4965.9	4935.7	5053.8	4990.2
#3	5029.9	4.8424	5017.1	5026.6	4935.4	5110.4	5030.7

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	4872.0	5.0484	5.0400	4960.9	10.061	-.46096	5057.4
SDev	2.1	.0141	.0200	10.6	.045	.18910	32.9
%RSD	.04396	.27860	.39737	.21345	.44936	-41.024	.65102
#1	4870.9	5.0416	5.0265	4958.9	10.036	-.40275	5046.7
#2	4874.5	5.0390	5.0306	4951.5	10.034	-.67233	5094.3
#3	4870.7	5.0646	5.0630	4972.4	10.113	-.30781	5031.1

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	4951.1	4923.4	.02840	5082.7	5068.7	5011.8	4919.7
SDev	12.6	9.9	.01386	23.4	44.3	17.5	27.3
%RSD	.25473	.20093	48.813	.45956	.87495	.34905	.55479
#1	4946.2	4926.2	.01739	5055.7	5084.2	5002.8	4888.2
#2	4941.6	4912.4	.02385	5097.1	5018.7	5000.6	4935.9
#3	4965.4	4931.6	.04397	5095.2	5103.2	5031.9	4935.1

Elem	Sr	Ti	V	Znlow

Units	ug/L	ug/L	ug/L	ug/L
Avge	5028.3	5039.0	5006.9	5004.2
SDev	6.4	2.8	2.9	29.0
%RSD	.12633	.05638	.05772	.57864
#1	5031.1	5042.2	5008.5	4999.5
#2	5032.7	5037.8	5003.6	4977.8
#3	5021.0	5036.9	5008.7	5035.2

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14891	--	--	--	--	--	--
SDev	71.80761	--	--	--	--	--	--
%RSD	.4822108	--	--	--	--	--	--
#1	14899	--	--	--	--	--	--
#2	14959	--	--	--	--	--	--
#3	14816	--	--	--	--	--	--

Method: TJA61Y Sample Name: HIGH AQC EV3 1 Operator:
Run Time: 06/15/93 14:48:08
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-2.4559	106.93	102040.	98058.	-40.442	-1.0561	1.769
SDev	.7867	.22	857.	206.	6.685	4.0770	.350
%RSD	-32.032	.20958	.84009	.20968	-16.530	-386.03	19.80
#1	-3.3642	106.69	101150.	97830.	-34.260	-2.7943	2.087
#2	-1.9886	107.00	102090.	98115.	-47.537	3.6019	1.827
#3	-2.0149	107.12	102860.	98229.	-39.530	-3.9761	1.394

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	1.8281	95.532	Q-2.3577	.74810	.96696	Q14.784	-2.7381
SDev	.3803	.546	.8757	2.0112	.94696	3.995	.7095
%RSD	20.802	.57197	-37.141	268.84	97.931	27.022	-25.911
#1	2.2209	94.952	Q-1.3580	2.9610	1.1750	Q14.485	-3.2287
#2	1.8016	95.608	Q-2.9890	.25184	-.06673	Q18.920	-1.9246
#3	1.4617	96.037	Q-2.7261	-.96852	1.7926	Q10.947	-3.0611

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	2.8823	55.710	59.607	94331.	104.39	100.28	1.1115
SDev	.5785	.280	.225	331.	.56	.33	.4756
%RSD	20.071	.50193	.37667	.35090	.53182	.32884	42.789
#1	3.4577	55.414	59.351	93972.	103.78	100.04	.88640
#2	2.8884	55.748	59.700	94397.	104.52	100.14	1.6579
#3	2.3007	55.969	59.770	94624.	104.87	100.65	.79027

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	8.1765	5.6082	99.817	-6.0057	-26.132	11.907	2.2389
SDev	.2623	5.0799	.279	7.6765	37.464	23.127	14.849
%RSD	3.2085	90.580	.27994	-127.82	-143.36	194.23	663.24
#1	8.3820	10.297	100.07	-13.765	-24.154	-9.8211	3.8184
#2	8.2665	6.3160	99.859	1.5849	-64.547	9.3252	16.236
#3	7.8810	.21155	99.520	-5.8369	10.304	36.217	-13.537

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	5.9456	4.1328	5.0863	93474.
SDev	.3705	.8984	1.8631	642.
%RSD	6.2320	21.739	36.630	.68689
#1	6.3135	4.2778	5.3346	92798.
#2	5.9509	4.9499	3.1115	93549.
#3	5.5725	3.1707	6.8128	94075.

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14645	--	--	--	--	--	--
SDev	106.5661	--	--	--	--	--	--
%RSD	.7276455	--	--	--	--	--	--
#1	14754	--	--	--	--	--	--
#2	14641	--	--	--	--	--	--
#3	14541	--	--	--	--	--	--

Method: TJA61Y Standard: blnk

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Avge	.01151	.00987	.00092	.00987	-.00097	.00144	.0005
SDev	.00106	.00009	.00030	.00009	.00014	.00038	.0001
%RSD	9.1985	.93417	32.535	.93417	-13.999	26.316	27.92
#1	.01117	.00996	.00094	.00996	-.00101	.00108	.0005
#2	.01270	.00987	.00121	.00987	-.00107	.00141	.0006
#3	.01066	.00978	.00061	.00978	-.00081	.00183	.0003

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Avge	.06523	.12925	.00090	.00310	.00996	-.00007	.00189
SDev	.00071	.00055	.00004	.00026	.00046	.00041	.00018
%RSD	1.0849	.42765	4.1644	8.4235	4.6568	-614.67	9.7547
#1	.06569	.12890	.00094	.00303	.01043	.00020	.00168
#2	.06442	.12897	.00087	.00289	.00994	-.00054	.00195
#3	.06559	.12989	.00088	.00339	.00951	.00014	.00204

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Avge	.00358	.00171	.03249	.01576	.01383	.27634	.00432
SDev	.00008	.00020	.00035	.00029	.00020	.00300	.00009
%RSD	2.3574	11.603	1.0685	1.8124	1.4137	1.0851	2.1110

#1	.00350	.00188	.03217	.01609	.01373	.27341	.00431
#2	.00356	.00175	.03244	.01565	.01370	.27621	.00423
#3	.00367	.00149	.03286	.01555	.01405	.27940	.00441

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Avge	.01500	.00173	.01581	-.00324	-.00043	.00655	.00040
SDev	.00002	.00060	.00012	.00002	.00051	.00097	.00036
%RSD	.10906	34.906	.75306	-.57151	-118.71	14.821	88.220
#1	.01501	.00182	.01568	-.00323	-.00094	.00653	.00067
#2	.01498	.00228	.01592	-.00322	-.00040	.00559	.00054
#3	.01501	.00109	.01582	-.00326	.00007	.00754	.00000

Elem	Sr	Ti	V	Znlow
Avge	.00432	.00176	-.00218	.01684
SDev	.00003	.00048	.00056	.00168
%RSD	.57151	27.399	-25.517	9.9537
#1	.00431	.00128	-.00188	.01871
#2	.00430	.00175	-.00282	.01632
#3	.00435	.00224	-.00183	.01548

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14824	--	--	--	--	--	--
SDev	84.48077	--	--	--	--	--	--
%RSD	.5698919	--	--	--	--	--	--
#1	14857	--	--	--	--	--	--
#2	14887	--	--	--	--	--	--
#3	14728	--	--	--	--	--	--

Method: TJA61Y Standard: Ag_only

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Avge	1.7655	.01190	.00290	.01190	-.00029	.00209	.0002
SDev	.0109	.00008	.00024	.00008	.00010	.00045	.0002
%RSD	.61675	.64517	8.2285	.64517	-34.801	21.671	68.95
#1	1.7541	.01194	.00309	.01194	-.00040	.00161	.0003
#2	1.7668	.01181	.00263	.01181	-.00020	.00216	.0001
#3	1.7758	.01194	.00299	.01194	-.00027	.00251	.0004

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Avge	.06421	.12921	.00083	.00288	.00994	-.00040	.00214
SDev	.00081	.00042	.00004	.00052	.00118	.00036	.00024
%RSD	1.2600	.32384	4.7205	18.131	11.904	-88.040	11.386
#1	.06361	.12882	.00081	.00235	.01114	-.00067	.00188
#2	.06390	.12916	.00088	.00290	.00877	.00000	.00236
#3	.06513	.12966	.00081	.00339	.00991	-.00054	.00217

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li

Avge	.00675	.00110	.03259	.01541	.01388	.28039	.00127
SDev	.00056	.00010	.00033	.00008	.00023	.00302	.00006
%RSD	8.2475	8.9641	1.0227	.51075	1.6288	1.0769	1.4207
#1	.00738	.00121	.03221	.01543	.01362	.27724	.00423
#2	.00634	.00101	.03280	.01532	.01397	.28065	.00425
#3	.00651	.00109	.03277	.01547	.01404	.28326	.00434

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Avge	.01518	.00139	.01597	-.00333	-.00063	.00640	.00018
SDev	.00020	.00085	.00006	.00022	.00064	.00106	.00014
%RSD	1.2818	61.272	.36885	-6.5554	-101.72	16.578	77.606
#1	.01503	.00107	.01590	-.00309	-.00040	.00620	.00034
#2	.01512	.00236	.01599	-.00351	-.00013	.00546	.00013
#3	.01540	.00075	.01601	-.00339	-.00136	.00755	.00007

Elem	Sr	Ti	V	Znlow
Avge	.00421	.00167	-.00198	.01531
SDev	.00005	.00036	.00013	.00094
%RSD	1.0859	21.302	-6.5801	6.1349
#1	.00416	.00127	-.00208	.01637
#2	.00425	.00175	-.00202	.01458
#3	.00421	.00197	-.00183	.01499

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14821	--	--	--	--	--	--
SDev	82.51263	--	--	--	--	--	--
%RSD	.5567403	--	--	--	--	--	--
#1	14904	--	--	--	--	--	--
#2	14819	--	--	--	--	--	--
#3	14739	--	--	--	--	--	--

Method: TJA61Y

Element	Wavelen	High std	Low std	Slope	Y-intercept	Date standardized
Ag	328.068	Ag_only	blnk	570.113	-6.56177	06/15/93 02:54:28

Method: TJA61Y Sample Name: INSTR BLANK 1A Operator:
Run Time: 06/15/93 14:59:27
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.88181	.01078	L1.4829	9.8948	7.8768	-7.1340	-.2601
SDev	.73532	.00744	5.0448	6.7130	29.652	7.0101	.0835
%RSD	-83.387	69.024	340.19	67.844	376.45	-98.264	-32.11
#1	-.06313	.01861	L-2.5353	16.952	-13.512	.80755	-.1687
#2	-1.0962	.00990	L7.1445	9.1421	41.726	-12.461	-.2790
#3	-1.4861	.00381	L-.16040	3.5899	-4.5837	-9.7480	-.3325

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.17277	-.02565	L-1.7721	-2.8065	.07466	L.12758	.01516
SDev	.18230	.00235	2.9471	1.1618	1.7636	2.1304	1.8276
%RSD	105.52	-9.1580	-166.31	-41.396	2362.2	1669.8	12054.
#1	.31198	-.02300	L.79494	-4.1103	.30029	L2.5820	1.0953
#2	.23992	-.02748	L-1.1209	-1.8813	-1.7909	L-1.2427	1.0452
#3	-.03358	-.02646	L-4.9903	-2.4278	1.7146	L-.95656	-2.0950

Elem	Cu	Mglow	Mghigh	Felow	Fehign	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	-1.0117	.00195	-.04626	-3.1784	-.10326	-.38344	-1.9215
SDev	.2134	.00038	.01286	.1732	.04243	.15222	.5628
%RSD	-21.097	19.438	-27.805	-5.4480	-41.097	-39.698	-29.290
#1	-.80508	.00219	-.03420	-3.0430	-.05625	-.32607	-1.4615
#2	-.99873	.00151	-.04480	-3.3735	-.13875	-.26824	-1.7539
#3	-1.2314	.00215	-.05980	-3.1187	-.11476	-.55600	-2.5491

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	-.47061	.26146	-.02594	4.5786	L28.012	-3.6561	5.2707
SDev	.07539	1.1886	.01390	8.0173	21.446	2.7054	12.732
%RSD	-16.020	454.58	-53.573	175.10	76.559	-73.997	241.57
#1	-.55714	.95379	-.01720	-4.1244	L27.814	-6.7725	-1.9880
#2	-.43558	.94156	-.01865	11.663	L6.6658	-1.9108	19.972
#3	-.41910	-1.1110	-.04196	6.1971	L49.556	-2.2849	-2.1720

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	-.16768	.10985	-.58502	-1.7764
SDev	.03145	.90411	3.07713	1.5250
%RSD	-18.755	823.05	-525.99	-85.849
#1	-.14198	1.1418	2.9549	-.33452
#2	-.15832	-.54303	-2.6207	-3.3727
#3	-.20275	-.26921	-2.0892	-1.6218

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED

Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14714	--	--	--	--	--	--
SDev	85.44199	--	--	--	--	--	--
%RSD	.5806981	--	--	--	--	--	--
#1	14644	--	--	--	--	--	--
#2	14688	--	--	--	--	--	--
#3	14809	--	--	--	--	--	--

Method: TJA61Y Sample Name: AQC EV1&2 1A Operator:
Run Time: 06/15/93 15:02:43
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	477.31	5.5586	6173.9	4824.7	5081.9	4977.8	4991.
SDev	3.20	.0195	48.0	17.2	31.0	14.5	6.
%RSD	.67100	.35020	.77798	.35559	.61088	.29121	.1156
#1	474.09	5.5431	6121.9	4811.5	5053.6	4961.1	4998.
#2	480.50	5.5522	6183.4	4818.4	5115.1	4987.6	4987.
#3	477.34	5.5804	6216.5	4844.1	5077.0	4984.6	4990.

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	5020.3	4.8458	5047.2	5043.4	4962.8	5082.0	5009.0
SDev	4.2	.0420	43.8	42.1	29.3	8.2	21.0
%RSD	.08420	.86737	.86835	.83556	.58968	.16045	.41949
#1	5015.4	4.7983	4996.9	4996.8	4929.0	5073.8	4985.9
#2	5022.5	4.8611	5076.5	5078.9	4979.0	5082.1	5014.0
#3	5022.9	4.8781	5068.3	5054.5	4980.4	5090.1	5027.0

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	4867.7	5.0712	5.0534	4979.4	10.117	-.29660	5016.3
SDev	5.2	.0209	.0258	16.3	.115	.16237	9.9
%RSD	.10673	.41294	.51047	.32705	1.1349	-54.743	.19670
#1	4864.7	5.0473	5.0249	4960.6	10.015	-.47202	5026.8
#2	4873.7	5.0801	5.0752	4988.5	10.094	-.26622	5007.2
#3	4864.7	5.0862	5.0602	4989.1	10.242	-.15157	5015.0

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	4962.5	4941.8	.02529	5090.7	5101.6	5009.5	4973.9
SDev	17.5	21.9	.01281	41.8	47.4	47.8	29.9
%RSD	.35220	.44302	50.643	.82108	.92831	.95435	.60014
#1	4942.8	4918.6	.01463	5044.3	5132.5	4960.8	4950.9
#2	4968.5	4944.7	.03950	5125.4	5125.3	5011.2	4963.3
#3	4976.2	4962.1	.02175	5102.5	5047.1	5056.4	5007.6

Elem	Sr	Ti	V	Znlow

Units	ug/L	ug/L	ug/L	ug/L
Avge	5011.4	5040.4	4999.3	5047.6
SDev	7.3	4.9	13.7	48.4
%RSD	.14529	.09725	.27359	.95836
#1	5019.7	5038.6	4983.8	4994.0
#2	5006.1	5036.7	5009.4	5060.5
#3	5008.4	5046.0	5004.8	5088.2

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14838	--	--	--	--	--	--
SDev	122.2825	--	--	--	--	--	--
%RSD	.8241169	--	--	--	--	--	--
#1	14979	--	--	--	--	--	--
#2	14761	--	--	--	--	--	--
#3	14774	--	--	--	--	--	--

Method: TJA61Y Sample Name: 93ZE33S40 Operator:
Run Time: 06/15/93 15:06:54
Comment: SF1187
Mode: CONC Corr. Factor: .18797

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.66021	12.333	12487.	11308.	-4.3813	37.716	47.97
SDev	.21390	.011	49.	10.	5.6132	.776	.12
%RSD	-32.398	.09300	.39499	.09269	-128.12	2.0565	.2599
#1	-.88581	12.321	12543.	11297.	-4.8959	38.281	48.04
#2	-.46034	12.343	12467.	11318.	1.4715	38.034	48.05
#3	-.63448	12.335	12451.	11310.	-9.7194	36.831	47.83

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.86309	68.425	L.26485	.71701	10.391	21.850	19.296
SDev	.04702	.183	.20254	.62582	.791	.142	.486
%RSD	5.4476	.26678	76.473	87.282	7.6141	.85033	2.5205
#1	.84819	68.322	L.03123	.49601	9.4781	21.686	19.725
#2	.91575	68.318	L.37239	1.4233	10.873	21.954	19.396
#3	.82533	68.636	L.39094	.23168	10.823	21.907	18.767

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	23.250	29.410	36.075	22248.	24.966	3.0653	26.886
SDev	.023	.102	.037	38.	.053	.0397	.096
%RSD	.09805	.34558	.10187	.17243	.21123	1.2957	.35570
#1	23.224	29.340	36.034	22223.	24.913	3.0611	26.934
#2	23.262	29.364	36.090	22230.	24.965	3.0279	26.949
#3	23.265	29.527	36.103	22293.	25.019	3.1070	26.776

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	486.24	1.4054	.66946	26.839	L6.9498	15.020	1.3226
SDev	.91	1.3059	.00439	.242	6.8328	2.129	2.3500
%RSD	.18775	92.922	.65577	.90329	98.317	14.171	177.67
#1	485.59	.31987	.66441	26.817	L14.728	16.438	3.9169
#2	485.85	2.8546	.67161	27.091	L4.2043	12.572	.71423
#3	487.29	1.0417	.67236	26.608	L1.9168	16.050	-.66330

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	52.655	46.874	23.120	58.256
SDev	.103	.347	.307	.784
%RSD	.19491	.73960	1.3291	1.3463
#1	52.676	47.116	22.897	59.015
#2	52.746	46.477	23.470	57.449
#3	52.544	47.028	22.991	58.305

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14682	--	--	--	--	--	--
SDev	23.51595	--	--	--	--	--	--
%RSD	.1601686	--	--	--	--	--	--
#1	14698	--	--	--	--	--	--
#2	14693	--	--	--	--	--	--
#3	14655	--	--	--	--	--	--

Method: TJA61Y Sample Name: 93ZE33S40 DUP Operator:
Run Time: 06/15/93 15:10:47
Comment: SF1187
Mode: CONC Corr. Factor: .202511

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.68056	11.510	11887.	10554.	3.6479	18.276	45.27
SDev	.22422	.019	67.	18.	11.875	2.308	.05
%RSD	-32.947	.16749	.56066	.16724	325.53	12.626	.1204
#1	-.86743	11.494	11830.	10540.	6.7334	20.926	45.33
#2	-.43193	11.531	11960.	10574.	13.675	16.710	45.22
#3	-.74231	11.504	11870.	10548.	-9.4652	17.192	45.25

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.64325	72.770	L.10266	1.2045	10.415	23.714	21.153
SDev	.05716	.487	.45231	.1154	.402	1.067	.255
%RSD	8.8864	.66862	440.58	9.5803	3.8551	4.4986	1.1938
#1	.60320	72.503	L-.32599	1.1131	10.107	22.485	21.304
#2	.70872	73.331	L.57541	1.3341	10.869	24.265	21.293
#3	.61784	72.475	L.05857	1.1663	10.269	24.393	20.861

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	22.722	31.514	38.415	22339.	25.146	2.6645	25.961
SDev	.187	.251	.074	91.	.153	.0671	.138
%RSD	.82339	.79599	.19365	.40644	.60819	2.5184	.52967
#1	22.921	31.343	38.371	22281.	25.042	2.6108	25.845
#2	22.550	31.802	38.501	22443.	25.321	2.7397	26.113
#3	22.695	31.397	38.373	22292.	25.073	2.6431	25.925

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	496.97	1.1227	.62950	28.596	L15.627	10.997	.01198
SDev	2.44	.9772	.00505	1.784	10.337	1.200	1.0338
%RSD	.49008	87.040	.80293	6.2383	66.153	10.912	8629.0
#1	495.47	.38812	.63531	28.721	L3.8064	10.921	-.30984
#2	499.78	2.2318	.62707	30.314	L20.096	9.8371	-.82265
#3	495.67	.74826	.62612	26.753	L22.978	12.234	1.1684

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	51.282	27.930	20.603	55.354
SDev	.066	.781	.208	.473
%RSD	.12944	2.7974	1.0082	.85504
#1	51.334	27.500	20.400	55.343
#2	51.305	28.832	20.815	55.833
#3	51.207	27.458	20.594	54.887

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14709	--	--	--	--	--	--
SDev	157.5764	--	--	--	--	--	--
%RSD	1.071268	--	--	--	--	--	--
#1	14813	--	--	--	--	--	--
#2	14528	--	--	--	--	--	--
#3	14787	--	--	--	--	--	--

Method: TJA61Y Sample Name: 93ZE33S40 SPIKE Operator:
Run Time: 06/15/93 15:14:14
Comment: SF1187
Mode: CONC Corr. Factor: .185805

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	16.286	11.303	11585.	10361.	54.269	200.34	131.4
SDev	.190	.006	59.	5.	6.088	.96	.1
%RSD	1.1646	.05278	.50877	.05247	11.219	.47987	.0612
#1	16.259	11.308	11552.	10366.	48.157	199.35	131.4

#2	16.111	11.296	11549.	10355.	60.333	201.27	131.4
#3	16.488	11.304	11653.	10362.	54.316	200.40	131.3

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	9.6668	68.598	15.858	17.614	92.541	103.52	99.566
SDev	.0491	.052	.219	1.011	.742	.96	.228
%RSD	.50787	.07591	1.3786	5.7425	.80158	.92696	.22896
#1	9.6431	68.553	15.696	17.610	91.928	104.63	99.480
#2	9.7232	68.585	15.771	18.628	92.328	103.04	99.394
#3	9.6340	68.655	16.107	16.605	93.366	102.90	99.825

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	108.51	29.472	36.436	20668.	23.260	2.9726	113.03
SDev	.38	.058	.046	23.	.035	.0070	.61
%RSD	.34894	.19743	.12582	.10995	.14881	.23706	.54233
#1	108.43	29.414	36.401	20642.	23.229	2.9645	113.56
#2	108.93	29.471	36.419	20676.	23.297	2.9770	113.18
#3	108.18	29.530	36.488	20686.	23.253	2.9763	112.36

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	805.23	2.4098	.59149	110.12	184.71	181.21	1.8804
SDev	1.15	.9423	.00388	3.24	4.07	2.94	1.0109
%RSD	.14247	39.102	.65607	2.9449	2.2029	1.6251	53.763
#1	803.92	3.3343	.59200	113.50	182.25	184.52	1.2985
#2	805.71	1.4507	.58738	109.82	189.41	180.22	3.0477
#3	806.05	2.4443	.59509	107.03	182.48	178.88	1.2949

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	223.44	163.60	107.08	223.12
SDev	.04	1.16	.54	.39
%RSD	.01821	.70762	.50163	.17371
#1	223.49	162.78	107.12	223.17
#2	223.41	164.93	106.53	223.48
#3	223.43	163.09	107.60	222.71

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	15395	--	--	--	--	--	--
SDev	30.02222	--	--	--	--	--	--
%RSD	.1950085	--	--	--	--	--	--
#1	15430	--	--	--	--	--	--
#2	15378	--	--	--	--	--	--
#3	15378	--	--	--	--	--	--

Method: TJA61Y Sample Name: 93ZE33D40 Operator:
Run Time: 06/15/93 15:19:02
Comment: SF1187
Mode: CONC Corr. Factor: .210349

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.73514	12.304	12801.	11282.	7.6285	27.306	47.96
SDev	.06563	.002	49.	2.	11.207	.730	.06
%RSD	-8.9273	.01766	.38421	.01755	146.91	2.6747	.1184
#1	-.80313	12.306	12809.	11284.	13.230	27.050	47.94
#2	-.67216	12.305	12749.	11283.	-5.2752	28.130	47.92
#3	-.73012	12.302	12846.	11280.	14.931	26.738	48.03

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	.63157	68.222	L.07627	.70593	9.6862	20.372	18.238
SDev	.05053	.312	.65141	.70869	.7099	.650	.763
%RSD	8.0009	.45675	854.10	100.39	7.3286	3.1912	4.1854
#1	.67710	68.558	L-.23023	.52671	10.066	21.123	18.133
#2	.57720	67.943	L-.36536	1.4870	8.8673	19.992	17.533
#3	.64041	68.163	L.82439	.10406	10.126	20.002	19.049

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	21.591	30.043	35.817	20705.	23.249	3.0437	25.396
SDev	.311	.140	.056	50.	.096	.0730	.244
%RSD	1.4390	.46746	.15570	.24253	.41482	2.3972	.96176
#1	21.939	30.181	35.875	20754.	23.284	3.0718	25.591
#2	21.343	29.900	35.764	20654.	23.140	2.9608	25.475
#3	21.489	30.049	35.812	20706.	23.323	3.0984	25.122

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	474.24	1.1281	.69476	24.962	L26.828	16.626	-.06252
SDev	1.55	.4102	.00331	3.278	1.795	2.650	5.63542
%RSD	.32643	36.361	.47691	13.133	6.6908	15.942	-9013.7
#1	475.82	1.3207	.69094	27.013	L27.757	19.552	-2.8326
#2	472.73	.65708	.69642	26.692	L27.969	14.388	-3.7766
#3	474.16	1.4066	.69692	21.181	L24.759	15.937	6.4218

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	52.503	51.692	25.061	57.469
SDev	.064	.440	.609	.601
%RSD	.12229	.85203	2.4312	1.0466
#1	52.505	51.861	25.754	57.957
#2	52.438	51.192	24.823	56.797
#3	52.566	52.023	24.607	57.652

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED

Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14830	--	--	--	--	--	--
SDev	122.6091	--	--	--	--	--	--
%RSD	.8267642	--	--	--	--	--	--
#1	14699	--	--	--	--	--	--
#2	14942	--	--	--	--	--	--
#3	14849	--	--	--	--	--	--

Method: TJA61Y Sample Name: LCS EPA 0287 Operator:
Run Time: 06/15/93 15:23:31
Comment: SF1187
Mode: CONC Corr. Factor: .185805

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	26.290	.31873	394.34	289.14	984.73	12.427	5.494
SDev	.199	.00127	3.32	1.15	11.63	2.298	.016
%RSD	.75879	.39756	.84100	.39743	1.1805	18.491	.2857
#1	26.111	.31727	398.10	287.82	977.51	13.258	5.478
#2	26.255	.31934	393.09	289.68	978.54	9.8292	5.492
#3	26.505	.31957	391.82	289.92	998.14	14.194	5.510

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	21.168	195.82	44.329	47.326	148.77	111.14	102.10
SDev	.046	.71	.199	.499	1.20	.15	.97
%RSD	.21714	.36094	.44907	1.0536	.80986	.13483	.95431
#1	21.124	195.17	44.306	47.760	147.63	111.03	102.18
#2	21.215	196.58	44.142	47.438	148.64	111.09	103.03
#3	21.165	195.71	44.539	46.781	150.03	111.31	101.08

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	7293.8	68.192	123.26	20216.	23.536	.11081	1.9640
SDev	7.9	.309	.14	52.	.090	.02799	.2048
%RSD	.10878	.45311	.11618	.25637	.38050	25.257	10.429
#1	7302.0	67.929	123.23	20161.	23.445	.07859	1.7421
#2	7293.3	68.532	123.42	20264.	23.625	.12913	2.1459
#3	7286.2	68.116	123.14	20223.	23.539	.12470	2.0041

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	222.20	39.711	.13449	64.205	248.77	232.96	5.6845
SDev	.69	.729	.00207	1.683	7.31	6.07	2.2298
%RSD	.30981	1.8349	1.5390	2.6210	2.9374	2.6059	39.227
#1	221.50	39.662	.13621	63.301	255.82	225.99	3.3619
#2	222.88	40.462	.13506	66.146	249.28	237.09	5.8834
#3	222.22	39.007	.13219	63.167	241.23	235.81	7.8082

Elem	Sr	Ti	V	Znlow

Units	ug/L	ug/L	ug/L	ug/L
Avge	60.456	16.422	69.639	174.76
SDev	.116	.191	.428	1.07
%RSD	.19241	1.1605	.61507	.61135
#1	60.436	16.490	69.162	174.14
#2	60.352	16.569	69.764	175.99
#3	60.582	16.207	69.991	174.15

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	13589	--	--	--	--	--	--
SDev	47.79121	--	--	--	--	--	--
%RSD	.3516904	--	--	--	--	--	--
#1	13599	--	--	--	--	--	--
#2	13537	--	--	--	--	--	--
#3	13631	--	--	--	--	--	--

Method: TJA61Y Sample Name: DIGESTION BLANK ~~INSTR BLANK 1A~~ 6-16-93 Operator:
Run Time: 06/15/93 15:29:19
Comment: RUN 106
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.96972	.01972	L17.242	18.040	34.546	-10.737	.1402
SDev	.56485	.00352	7.183	3.301	34.879	2.554	.0825
%RSD	-58.249	17.851	41.660	18.297	100.96	-23.790	58.88
#1	-.52694	.01591	L23.489	14.501	74.745	-7.8120	.2113
#2	-1.6059	.02286	L18.845	21.034	16.582	-11.872	.0497
#3	-.77636	.02037	L9.3933	18.586	12.310	-12.528	.1597

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.04665	.05972	L-.27683	-2.3969	-1.1943	L.12370	.37270
SDev	.04111	.01209	1.06914	3.4856	.6393	2.5599	1.3049
%RSD	-88.136	20.241	-386.20	-145.42	-53.529	2069.4	350.12
#1	-.08147	.07343	L.23135	.50021	-1.7405	L3.0758	-1.0808
#2	-.05719	.05515	L-1.5053	-6.2651	-1.3514	L-1.4813	.75544
#3	-.00129	.05059	L.44344	-1.4259	-.49113	L-1.2235	1.4434

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	2.2093	.04925	-.00609	14.548	-.11594	-.38726	-2.8576
SDev	.1461	.00670	.01016	1.448	.02541	.16636	1.2893
%RSD	6.6126	13.612	-166.84	9.9544	-21.916	-42.956	-45.120
#1	2.2661	.05687	-.01477	15.870	-.14358	-.57771	-3.7909
#2	2.3186	.04663	-.00858	13.000	-.09359	-.31374	-3.3955
#3	2.0434	.04425	.00508	14.773	-.11066	-.27034	-1.3864

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	-.43730	1.6238	.03748	-1.9727	L16.376	-25.001	-1.5064
SDev	.17982	2.6429	.01137	1.5028	29.580	7.104	12.3513
%RSD	-41.121	162.76	30.337	-76.180	180.64	-28.413	-819.93
#1	-.57634	3.5971	.04574	-1.8088	L-7.4438	-19.077	-4.7660
#2	-.50134	-1.3789	.02451	-.55859	L49.486	-32.877	12.148
#3	-.23423	2.6533	.04218	-3.5508	L7.0848	-23.051	-11.901

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	-.07001	.19825	.05112	1.0011
SDev	.10545	.18796	1.1891	.1410
%RSD	-150.62	94.812	2326.1	14.084
#1	-.09467	-.01845	.32509	.84072
#2	-.16094	.29606	-1.2510	1.1054
#3	.04559	.31714	1.0793	1.0573

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14936	--	--	--	--	--	--
SDev	68.60272	--	--	--	--	--	--
%RSD	.4593214	--	--	--	--	--	--
#1	15002	--	--	--	--	--	--
#2	14940	--	--	--	--	--	--
#3	14865	--	--	--	--	--	--

Method: TJA61Y Sample Name: INSTR BLANK 2 Operator:
Run Time: 06/15/93 15:32:42
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.79397	.00656	L-.18203	6.0924	5.3370	-11.156	-.2588
SDev	1.15204	.00495	2.38910	4.5534	27.895	4.292	.0316
%RSD	-145.10	75.484	-1312.4	74.740	522.68	-38.476	-12.20
#1	.13206	.01027	L2.2048	9.5097	12.338	-15.966	-.2223
#2	-2.0841	.00847	L-2.5734	7.8442	29.065	-9.7858	-.2769
#3	-.42991	.00094	L-.17753	.92323	-25.392	-7.7158	-.2771

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-.04385	-.03598	L-2.0126	-2.5839	-1.5120	L2.1129	1.2256
SDev	.04330	.00799	1.0644	1.7390	.5939	1.5811	.9174
%RSD	-98.748	-22.204	-52.889	-67.300	-39.282	74.834	74.839
#1	-.08430	-.02681	L-1.4108	-1.9900	-1.8571	L1.4825	.22046
#2	-.04907	-.03965	L-3.2416	-1.2197	-1.8527	L.94416	2.0175
#3	.00182	-.04147	L-1.3854	-4.5421	-.82618	L3.9119	1.4394

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	-1.1011	.00936	-.04886	-.93376	-.13064	-.42174	-1.9579
SDev	.7588	.00196	.01350	.74395	.03278	.12757	.9401
%RSD	-68.908	20.982	-27.623	-79.673	-25.094	-30.250	-48.014
#1	-1.7681	.01133	-.06107	-1.3947	-.16844	-.56283	-3.0419
#2	-.27564	.00936	-.05113	-1.3311	-.11356	-.38784	-1.4652
#3	-1.2596	.00740	-.03437	-.07550	-.10993	-.31454	-1.3667

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	-.53021	-1.9576	-.02181	3.5055	L35.475	-1.9366	2.5962
SDev	.27272	.6319	.00467	6.1510	22.219	11.0181	6.4205
%RSD	-51.435	-32.282	-21.415	175.47	62.631	-568.94	247.30
#1	-.59851	-1.3724	-.01643	10.559	L10.361	.41786	-2.2646
#2	-.76229	-2.6277	-.02475	.69975	L43.492	-13.942	.17873
#3	-.22984	-1.8727	-.02427	-.74237	L52.573	7.7140	9.8745

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	-.22656	.06466	-1.0638	-3.7352
SDev	.00422	.31334	.7240	.6203
%RSD	-1.8609	484.61	-68.055	-16.607
#1	-.23029	.16171	-1.8998	-3.7989
#2	-.22740	-.28572	-.64326	-4.3212
#3	-.22198	.31799	-.64840	-3.0855

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14875	--	--	--	--	--	--
SDev	11.67619	--	--	--	--	--	--
%RSD	.0784971	--	--	--	--	--	--
#1	14885	--	--	--	--	--	--
#2	14877	--	--	--	--	--	--
#3	14862	--	--	--	--	--	--

Method: TJA61Y Sample Name: AQC EV1&2 2 Operator:
Run Time: 06/15/93 15:36:14
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	476.59	5.5257	6350.9	4795.6	5086.3	5028.2	4991.
SDev	1.87	.0181	35.9	16.6	125.3	8.8	3.
%RSD	.39273	.32674	.56578	.34571	2.4643	.17499	.0665
#1	475.65	5.5162	6321.3	4787.5	4988.2	5029.5	4993.

#2	478.75	5.5144	6390.9	4784.7	5227.5	5018.9	4987.
#3	475.38	5.5465	6340.4	4814.7	5043.2	5036.3	4992.

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	5017.8	4.7501	5046.8	5052.1	4943.5	5084.0	4997.4
SDev	5.2	.0149	29.0	36.1	18.1	10.5	23.3
%RSD	.10285	.31264	.57455	.71438	.36642	.20591	.46567
#1	5012.1	4.7403	5026.0	5034.5	4929.8	5073.2	4980.7
#2	5022.2	4.7671	5079.9	5093.7	4964.0	5094.2	5024.0
#3	5019.0	4.7428	5034.4	5028.3	4936.7	5084.4	4987.5

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	4798.0	5.0717	4.9849	4962.4	10.094	-.53124	5017.2
SDev	2.2	.0160	.0291	14.0	.070	.20330	34.6
%RSD	.04523	.31539	.58412	.28240	.69200	-38.269	.68888
#1	4800.4	5.0592	4.9516	4953.4	10.014	-.75902	5054.6
#2	4797.3	5.0897	5.0055	4978.5	10.146	-.36816	4986.4
#3	4796.3	5.0662	4.9976	4955.2	10.122	-.46653	5010.7

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	4945.8	4943.0	.03136	5084.9	5150.7	4986.3	4927.9
SDev	14.6	14.3	.00796	27.7	19.7	21.3	37.4
%RSD	.29570	.28865	25.370	.54508	.38232	.42808	.75815
#1	4935.4	4926.5	.03327	5073.6	5143.5	4967.7	4885.1
#2	4962.5	4950.5	.02262	5116.5	5135.7	4981.6	4954.1
#3	4939.6	4951.9	.03818	5064.6	5173.0	5009.6	4944.4

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	4993.3	5033.0	4964.8	5034.4
SDev	4.1	1.9	11.2	27.2
%RSD	.08236	.03753	.22555	.54024
#1	4997.9	5034.9	4957.7	5010.5
#2	4989.9	5033.1	4977.7	5064.0
#3	4992.2	5031.1	4959.1	5028.7

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED
Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	15027	--	--	--	--	--	--
SDev	90.74323	--	--	--	--	--	--
%RSD	.6038545	--	--	--	--	--	--
#1	15114	--	--	--	--	--	--
#2	14933	--	--	--	--	--	--
#3	15035	--	--	--	--	--	--

Method: TJA61Y Sample Name: HIGH AQC EV3 2 Operator:
Run Time: 06/15/93 15:39:45
Comment:
Mode: CONC Corr. Factor: 1

Elem	Ag	Alhigh	Al1670	Allow	As	B	Ba
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	-2.0335	106.42	108580.	97584.	-26.443	3.8486	1.682
SDev	.8665	.07	137.	65.	66.050	4.6723	.591
%RSD	-42.613	.06675	.12620	.06672	-249.78	121.40	35.15
#1	-1.9386	106.34	108660.	97516.	-90.149	.12741	2.216
#2	-1.2183	106.48	108650.	97645.	-30.906	2.3262	1.782
#3	-2.9435	106.43	108420.	97592.	41.725	9.0922	1.047

Elem	Be	Cahigh	Cd2144	Cd	Co	Cr2061	Cr
Units	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L	ug/L
Avge	1.8394	95.159	Q-4.6613	3.3245	.41670	Q17.490	-2.7106
SDev	.6002	.247	.1827	3.2380	3.9344	1.004	2.4952
%RSD	32.631	.25916	-3.9195	97.397	944.18	5.7421	-92.055
#1	2.2297	95.032	Q-4.6492	2.8248	3.8812	Q18.562	-1.3039
#2	2.1402	95.443	Q-4.4849	6.7833	1.2295	Q16.570	-1.2363
#3	1.1483	95.001	Q-4.8497	.36547	-3.8606	Q17.339	-5.5915

Elem	Cu	Mglow	Mghigh	Felow	Fehigh	K	Li
Units	ug/L	Mg/L	Mg/L	ug/L	Mg/L	Mg/L	ug/L
Avge	3.1274	56.156	59.118	94407.	104.03	99.958	2.8034
SDev	.9715	.114	.067	106.	.21	.188	1.8202
%RSD	31.064	.20261	.11393	.11253	.20557	.18847	64.929
#1	3.7366	56.101	59.043	94323.	103.90	99.923	4.8354
#2	3.6386	56.287	59.174	94526.	104.28	99.790	2.2531
#3	2.0071	56.080	59.136	94371.	103.91	100.16	1.3219

Elem	Mn	Mo	Na	Ni	Pb1822	Pb	Sn
Units	ug/L	ug/L	Mg/L	ug/L	ug/L	ug/L	ug/L
Avge	8.2912	7.4244	98.724	3.8972	-34.995	11.976	-6.0780
SDev	.4240	3.0784	.317	12.328	35.541	8.593	9.8565
%RSD	5.1142	41.464	.32067	316.32	-101.56	71.755	-162.17
#1	8.6928	8.1115	98.623	8.7121	-.70456	18.172	3.7355
#2	8.3330	4.0605	98.470	-10.111	-71.667	2.1659	-15.977
#3	7.8478	10.101	99.079	13.091	-32.613	15.589	-5.9925

Elem	Sr	Ti	V	Znlow
Units	ug/L	ug/L	ug/L	ug/L
Avge	5.8735	4.7079	3.2208	94473.
SDev	.5377	.8732	2.1850	296.
%RSD	9.1550	18.547	67.839	.31372
#1	6.3235	5.1089	1.5089	94394.
#2	6.0191	5.3085	5.6818	94801.
#3	5.2780	3.7062	2.4718	94224.

IntStd	1	2	3	4	5	6	7
Mode	*Counts	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED	NOTUSED

Elem	Y	--	--	--	--	--	--
Wavlen	371.080	--	--	--	--	--	--
Avge	14625	--	--	--	--	--	--
SDev	67.63875	--	--	--	--	--	--
%RSD	.4624872	--	--	--	--	--	--
#1	14630	--	--	--	--	--	--
#2	14555	--	--	--	--	--	--
#3	14690	--	--	--	--	--	--

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: JUN 28 1993

Subject: Review of Region 5 Data for H.O.D LANDFILL

From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To:

Attached are the results for H.O.D LANDFILL
CRL request number SF1187
for analyses for Total Dissolved Solids(TDS), Alkalinity, Sulfate, Chloride , Total Organic Carbon(TOC), Ammonia(NH_3) and Nitrate-Nitrite Nitrogen(NO_3-NO_2-N)
Results are reported for sample designations: Water samples 93ZE33S36, 93ZE33S37, 93ZE33D37, 93ZE33S39, 93ZE33D39, 93ZE06R60, and 93ZE06R64.

Results Status:
(X) Acceptable for Use: TDS, Alkalinity, Sulfate, Chloride, TOC, NH_3
NO_3-NO_2-N
(X) Data Qualified, but Acceptable for use: NO_3-NO_2-N sample 93ZE33S39 and 93ZE33D39; all TDS results
( ) Data Unacceptable for Use:

(X) Sewer Disposal Criteria Met;

The portion of samples 93ZE33S36, 93ZE33S37, 93ZE33D37, 93ZE33S39, 93ZE33D39, 93ZE06R60, and 93ZE06R64 which were analyzed for TOC, Ammonia, and Nitrate-Nitrite Nitrogen are preserved with sulfuric acid. They should be neutralized and filtered prior to disposal down the drain.

The portion of samples 93ZE33S36, 93ZE33S37, 93ZE33D37, 93ZE33S39, 93ZE33D39, 93ZE06R60, and 93ZE06R64 which were analyzed for Total Dissolved Solids(TDS), Alkalinity, Sulfate, and Chloride are unpreserved. They should be filtered prior to disposal down the drain.

Comments on Data Quality by Reviewer:

All the Alkalinity, Sulfate, Chloride, Total Organic Carbon and Ammonia results are acceptable for use.

Total Dissolved Solids(TDS):

The holding time for TDS was exceeded. The laboratory received inadequate notification for the sample to be processed and analyzed in a timely fashion. The TDS results for these samples could be biased low.

Nitrate-Nitrite Nitrogen:

The spike recovery for sample 93ZE33S39 and 93ZE33D39 were found to be out of control. A spike of the sample was analyzed after a negative interference was observed for both samples. The spike recoveries were found to be 0.726mg N/L and 1.024mg N/L for the undiluted samples 93ZE33S39 and 93ZE33D39 respectively. The control limit for this audit is 2 $\pm$ 0.25mg N/L. The interference effect was also observed at 10 fold dilution for both samples and at 100 fold dilution for sample 93ZE33S39.

The Nitrate-Nitrite Nitrogen results for samples 93ZE33S39 and 93ZE33D39 are estimated due to interference. The detection limit is elevated due to the dilution factor. Use the data with caution.

All the remaining sample results are acceptable.

Comments by Laboratory Director or Quality Control Coordinator:

Francis A. Avanya 6/25/93

Team Leader and Date (X) Reviewed ( ) Unreviewed

John V. Moore for JHA 25 June 93

Section Chief and Date (X) Reviewed ( ) Unreviewed

John V. Moore for JHA 25 June 93

QC Coordinator and Date (X) Reviewed ( ) Unreviewed

Sylvia Griffin 6-28-93

Data Management Coordinator and Date Received

Date Transmitted JUN 2 8 1993

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Received by and Date

Comments:

MEMORANDUM **SL-10C**

Date: June 1, 1993

Subject: Samples Collected May 12 - 13, 1993 from H.O.D. Landfill by Ecology and Environment to be analyzed for Nitrate.

From: Jane M. Sattelberg, Chemist
Central Regional Laboratory

To: File: SF1187

When these samples were initially analyzed, two samples (93ZE33S39 and 93ZE33D39) showed a negative interference. All the samples were repeated at two different dilutions and with each sample spiked at both dilutions and with no dilution. The spikes for the following samples were all well within range when run without dilution: 93ZE33S36, 93ZE33S37 and, 93ZE33D37. The reported results are based on the results obtained for these samples without dilution.

The spike values for samples 93ZE33S39 and 93ZE33D39 were out of the control ranges for both dilutions and with no dilution. The results for these two samples are estimated to be the detection limit multiplied by the highest dilution factor.

D930001187

TFA301

DAY 1

③

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/~~2~~3/93

DU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER HARDNESS	WATER TDS mg/L	WATER ALKALINITY MG CACO3/L MIN74011	WATER SULFATE MG SO4/L MIN74112	WATER CHLORIDE MG CL/L MIN74213	
93ZE33S39	L1 +MSD		2,620	1900	510	198	5031733
↓ D39	L1D		2,670	1800	495	203	5031710
~~93ZE06R61~~	~~LFB01~~						LK
93ZE33S36	W7D		422	200	116	5	5031621
93ZE33S37	US6D		370	220	88	9	5031645
93ZE33D37	DUS6D		368	220	89	9	5031664
93ZE06R60	MWFB01		5u	5u	4u	3u	5031683
			vch 05-20-93	Francis A. Burgess 6/25/93	vch 06-07-93	vch 06-07-93	

D930001187

DAY 2

③

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

TFA301

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/~~18~~ 4/93

BU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY _____ CONTRACTOR E&E.

Jun for MA
25 Jun 93

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER HARDNESS	WATER TDS	WATER ALKALINITY MG CACO3/L MIN74011	WATER SULFATE MG SO4/L MIN74112	WATER CHLORIDE MG CL/L MIN74213	
~~93ZE33S39~~	~~L1 + MSD~~	X	X	X	X	X	
~~↓ D39~~	~~L1D~~	X	X	X	X	X	LK
93ZE06R64	LFB01		5u	5u	4u	3u	5-031724
93ZE06R64	LFB01	X	Vcs 5-20-93	Frances A. Arvage 6/25/93	Vcs 06-07-93	Vcs 06-07-93	5-031725

D93000 1187 TFA301 DM1

(2)

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 4/23/93

DU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER CHEMICAL OXYGEN DEMAND MG COD/L MIN7336	WATER TOTAL ORGANIC C ARBON MG C/L MIN7307	WATER BIOCHEMICAL OXYGEN DEMAND MG BOD5/L MIN7356	WATER RESIDUE-FILTERABLE MG/L MIN7342	WATER RESIDUE-NONFILTERABLE MG/L MIN7372
93ZE33536	W7Δ		X 4.			
37	U56Δ		X 3 u			
D37	DU56Δ		X 3 u			
93ZE06R60	MWFB01		X 3 u			
			5.2643 sms			

5-031623
5-031647
5-031671
5-031685

CRL V.2: 3/89

D930001187

TFA301 DAY1

(2)

NM for JHA 15 June 93

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM MINERALS-NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/~~2~~3/93

DU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CWL LOG NUMBER	SAMPLE DESCRIPTION	WATER CHEMICAL OXYGEN DEMAND MG COD/L MIN7336	WATER TOTAL ORGANIC C ARBON MG C/L MIN7387	WATER BIOCHEMICAL OXYGEN DEMAND MG BOD5/L MIN7346	WATER RESIDUE-FILTERABLE MG/L MIN7342	WATER RESIDUE-NONFILTERABLE MG/L MIN7372
93ZE33539	L1 + MSD		600			5031698
↓ D39	L1D		560			5031712
~~93ZE06R64~~	~~LFB01~~					LK
			5-26-93 JMS			

CRL V.2: 1/89

D93000 1187 TFA 301 DAY 2

(2)

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM MINERALS-NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER CHEMICAL OXYGEN DEMAND MG COD/L MIN7330	WATER TOTAL ORGANIC C AMMUN MG C/L MIN7307	WATER BIOCHEMICAL OXYGEN DEMAND MG BOD5/L MIN7306	WATER RESIDUE-FILTERABLE MG/L MIN7342	WATER RESIDUE-NONFILTERABLE MG/L MIN7372
93ZE33539	L1 + MSD		X			
039	L1D		X			
3ZE06R64	LFB01		X 3 U 5-26-93 JMS			

LK

5-031726

CRL V.3: 1/89

D930001187 TFA301 DAY 1

①

Norfolk
LT Jones

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/3/93

DW NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER NITRATE & Nitrite TL MG N/L MIN7284	WATER AMMONIA MG N/L MIN7244	WATER NITROGEN MG N/L MIN7304	WATER TOTAL PHOSPHORUS MG P/L MIN7315	WATER TOTAL DISSOLVED PHOSPHORUS MG P/L MIN7325	
93ZE33S39	L1 FMSD		73.9				5-031700
V. D39	L1D		64.7				5-031714
93ZE06R64	LFB01						LK
93ZE33S36	W7D		0.93				5-031625
93ZE33S37	US6D		0.84				5-031649
93ZE33D37	DUS6D		0.84				5-031673
93ZE06R60	MWFB01		0.05 U				5-031687
			6-1-93 JMS				

D930001187

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

TFA301 DAY 1

①

Jun for HA 25 Jun 93

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/3/93

LAB NUMBER TFA DATASET NUMBER 1187 STUDY H.O.d. Landfill PRIORITY N CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER NITRATE & Nitrite TL MG N/L MIN7284	WATER AMMONIA MG N/L MIN7244	WATER [redacted] MG N/L MIN7384	WATER TOTAL PHOSPHORUS MG P/L MIN7315	WATER TOTAL DISSOLVED PHOSPHORUS MG P/L MIN7325	
93ZE33S36	W7D	X 0.10U					5-031624
37	US6D	X 0.10U					5-031648
D37	DUS6D	X 0.10U					5-031672
93ZE06R60	MWFB01	X 0.10U					5-031686
[redacted]							
93ZE33S39	L1+MSD	X 10U					5-031699
93ZE33D39	L1D	X 10U					5-031713
		6-1-93 JMS					

MAY 0 '93 14:15

D930001187 TFA301 DAY 2

①

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH ARCS SAMPLING DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/~~18~~ 4/93

DW NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR F&E

CRL LUG NUMBER	SAMPLE DESCRIPTION	WATER NITRATE & Nitrite TI MG N/L MIN7284	WATER AMMONIA MG N/L MIN7284	WATER TOTAL KJELDAHL NITROGEN MG N/L MIN7304	WATER TOTAL PHOSPHORUS MG P/L MIN7315	WATER TOTAL DISSOLVED PHOSPHORUS MG P/L MIN7325	
~~93ZE33539~~	~~L1 + MSD~~						LK
~~J D39~~	~~L1D~~						
93ZE06R64	LFB01	0.10U	0.05U				5-031727
		6-1-93 JMS	~~6~~ 6-1-93 JMS				
	tag #	5-031727	5-031728				
			6-1-93 JMS				

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: JMS
PARAMETER NAME ----: NH3
DATE OF ANALYSIS --: 05-27-1993

DATA SET NUMBER ---: SF1187
DU NUMBER ---------: SF

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -1.09940E-02
+4.48815E-02 * SIGNAL

COEFFICIENT OF DETERMINATION : .9998913

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	-0.011
2	+22.000	+1.000	+0.976
3	+44.500	+2.000	+1.986
4	+91.000	+4.000	+4.073
5	+222.500	+10.000	+9.975

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION		
REAG. BLK	+0.000		-0.011	Target 0±0.05
8 AQC	+179.500		+8.045	Target 8±0.5
SF1187	~~+0.000~~		~~-0.011~~	
93ZE33S36	+21.000		+0.931	
93ZE33S36 SPK	+137.000		+6.137	5.206 Target 5±0.40
93ZE33S36 DUP	+23.000		+1.021	Δ = 0.090 Target Δ ≤ 0.10
93ZE33S37	+19.000		+0.841	
93ZE33D37	+19.000		+0.841	Δ = 0 Target Δ ≤ 0.10
*93ZE33S39 1/10	+165.000	73.94	+7.394	
93ZE33D39 1/10	+144.500	64.74	+6.474	Δ = 0.92 RPD = 13% Target Δ ≤ 0.20 RPD ≤ 10
93ZE33R60	+0.000		-0.011	Target 0±0.05
93ZE33R64	+0.500		+0.011	
REAG. BLK	+0.000		-0.011	
8 AQC	+181.000		+8.112	Target 8±0.5

* Sample 93ZE33S39 appears to have more sediment and is darker than sample 93ZE33D39 when shaken.

Samples run with nitrate/nitrite samples using the bottles submitted for nitrate/nitrite analyses

JMS 5-27-93

FOA 6/21/93

U.S. Environmental Protection Agency Region V

Superfund Document Management System (SDMS)

Lab Data Reference Sheet

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CENTRAL REGIONAL LABORATORY
QUALITY CONTROL SUMMARY FORM FOR SULFATE IN WATER
METHOD 375.2 DNS
(HIGH LEVEL, COLORIMETRIC, AUTOMATED, METHYLTHYMOL BLUE,AA II)

DATASET NUMBER: SF 1187

CALIBRATION RANGE: 0.0 to 300.0 mg/L

DATE OF ANALYSIS	CRL SAMPLE I.D NUMBER	AQC Limits: 50 ± 6 mg/L	AQC Limits: 100 ± 11 mg/L	REAGENT BLANK Limits: 0 ± 4 mg/L	FIELD BLANK Limits: 0 ± 4 mg/L	LABORATORY DUPLICATE AUDIT	
						CRL SAMPLE I.D NUMBER	Limits: Δ ≤ 6 mg/L RPD ≤ 4.6%
06-04-93	93ZE06 R60 R64 93ZE33S37 D37, S36, S39 * D39	47.9 51.2	98.3 102	4 4	4 (R60) 4 (R64)	SAMPLE 93ZE33S37 S37 DUP	88.383 90.902 Δ= 2 RPD=
COMMENTS:							

DATE OF ANALYSIS	FIELD DUPLICATE AUDIT NA		LABORATORY SPIKE AUDIT		FIELD SPIKE AUDIT NA	
	CRL SAMPLE I.D NUMBER	Limits: Δ ≤ 6 mg/L RPD ≤ 4.6%	CRL SAMPLE I.D NUMBER	Limits: 98 ± 9%	CRL SAMPLE I.D NUMBER	Limits: 98 ± 9%
06-04-93	SAMPLE DUP	Δ= RPD=	SAMPLE 93ZE33S37 S37 SPK	88.383 183.320 Recovery= 94.9 mg/L %Recovery= 94.9	SAMPLE SPK	Recovery= mg/L %Recovery=
COMMENTS:						

ANALYST: Jorge C. Santos DATE: 06-07-93

TEAM LEADER: Francis A. Avagyan DATE: 6/21/93

5/13/92FAA

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: VCS
PARAMETER NAME ----: SULFATE analy.
DATE OF ANALYSIS --: 06-05-1993

DATA SET NUMBER ---: SF1187
DU NUMBER ---------: TFA

DEGREE OF FIT : 3

EQUATION : CONCENTRATION = +3.58154E+00
+1.67563E+01 * SIGNAL
-6.68335E-01 * SIGNAL^2
+2.62604E-02 * SIGNAL^3

COEFFICIENT OF DETERMINATION : .9990888

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	+3.581
2	+1.200	+25.000	+22.772
3	+2.800	+50.000	+45.836
4	+7.600	+100.000	+103.854
5	+18.300	+250.000	+247.340
6	+20.900	+300.000	+301.593

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION	SO_4^{2-} mg/L
REAG.BLANK	+0.000	+3.581	4
AQC-50mg/L	+2.950	+47.870	47.9
AQC-100mg/L	+7.100	+98.259	98.3
SF1187	~~+0.000~~	~~+3.581~~	
93ZE06R60	+0.000	+3.581	4
93ZE06R64	+0.000	+3.581	4
93ZE33S37	+6.230	+88.383	88
S37dup	+6.450	+90.902	91
S37spk.	+14.300	+183.320	183
S37spk.(re.)	+14.300	+183.320	183
93ZE33D37	+6.300	+89.186	89
93ZE33S36	+8.650	+115.513	116
S39 1:2	+13.300	+170.000	x 3 = 510
S39 1:2(re.)	+13.150	+168.071	x 3 = 504
D39 1:2	+14.100	+180.588	x 3 = 542
D39 1:2(re)	+12.900	+164.893	x 3 = 495
REAG.BLANK	+0.000	+3.581	4
AQC-50mg/L	+3.200	+51.218	51.2
AQC-100mg/L	+7.400	+101.621	102

Completed by: Vergel C. Santos
6-7-93

CENTRAL REGIONAL LABORATORY
QUALITY CONTROL SUMMARY FORM FOR CHLORIDE
IN WATER
METHOD 325.2 DNS
(HIGH LEVEL, COLORIMETRIC, AUTOMATED, FERRICYANIDE, AA II)

DATASET NUMBER: SF1187

CALIBRATION RANGE: 0.0 to 200.0 mg/L

DATE OF ANALYSIS	CRL SAMPLE I.D NUMBER	AQC Limits: 50 ± 6 mg/L	AQC Limits: 100 ± 7 mg/L	REAGENT BLANK Limits: 0 ± 3 mg/L	FIELD BLANK Limits: 0 ± 3 mg/L	LABORATORY DUPLICATE AUDIT	
						CRL SAMPLE I.D NUMBER	Limits: Δ ≤ 1.6 mg/L RPD ≤ 4.6%
06-04-93	93ZE06R60 R64	49.8	102	0	0 (R60)	SAMPLE 93ZE33S37	8.601
		50.6	104	0	0 (R64)	S37- DUP	8.601
	93ZE33S37 D37, S36, S39, D39						Δ= 0
							RPD=
COMMENTS:							

DATE OF ANALYSIS	FIELD DUPLICATE AUDIT NA		LABORATORY SPIKE AUDIT		FIELD SPIKE AUDIT NA	
	CRL SAMPLE I.D NUMBER	Limits: Δ ≤ 1.6 mg/L RPD ≤ 4.6%	CRL SAMPLE I.D NUMBER	Limits: 97 ± 8%	CRL SAMPLE I.D NUMBER	Limits: 97 ± 8%
06-04-93	SAMPLE		SAMPLE 93ZE33S37	8.601	SAMPLE	
	DUP		S37- SPK	107.594	SPK	
		Δ=		Recovery= 99.0 mg/L		Recovery= mg/L
		RPD=		%Recovery= 99.0		%Recovery=
COMMENTS:						

ANALYST: Vergel C. Santos DATE: 06-07-93

TEAM LEADER: Francis A. Arenas DATE: 6/21/93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: VCS
DATA SET NUMBER ---: SF1187
PARAMETER NAME ----: CHLORIDE anals.
DU NUMBER ---------: TFA
DATE OF ANALYSIS --: 06-05-1993

DEGREE OF FIT : 2

EQUATION : CONCENTRATION = +1.20239E-01
+8.03580E+00 * SIGNAL
+3.91970E-02 * SIGNAL^2

COEFFICIENT OF DETERMINATION : .9995998

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	+0.120
2	+3.000	+25.000	+24.580
3	+6.000	+50.000	+49.746
4	+12.000	+100.000	+102.194
5	+16.950	+150.000	+147.588
6	+22.500	+200.000	+200.769

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION	Cl mg/L
REAG.BLANK	+0.000	+0.120	0
AQC-50mg/L	+6.000	+49.746	49.8
AQC-100mg/L	+12.000	+102.194	102
SF1187	~~+0.000~~	~~+0.120~~	
93ZE06R60	+0.000	+0.120	0
93ZE06R64	+0.000	+0.120	0
93ZE06S37	+1.050	+8.601	9
S37dup.	+1.050	+8.601	9
S37spk.	+12.600	+107.594	108
S37spk.(re.)	+12.550	+107.143	107
93ZE33D37	+1.100	+9.007	9
93ZE33S36	+0.600	+4.955	5
S39 1:2	+7.950	+66.482	x3 = 199
S39 1:2(re.)	+7.800	+65.184	x3 = 196
93ZE33S39	+22.200	+197.832	= 198
D39 1:2	+8.100	+67.781	x3 = 203
D39 1:2(re.)	+8.000	+66.915	x3 = 201
93ZE33D39	+22.500	+200.769	= 201
REAG.BLANK	+0.000	+0.120	0
AQC-50mg/L	+6.100	+50.597	50.6
AQC-100mg/L	+12.150	+103.541	104

Computed by: Vergel C Santa
06-07-93

DATA REQUEST # SF1187

TECHNICON WHEEL PATTERN

PARAMETER: SO_4^{2-} + Cl^- DATE: 06-04-93 STD CAL SETTING: _____

1	Primer	1	
2	Blank	2	
3	Std. 0 mg/L	3	
4	Std. 25 SO_4^{2-} + Cl^-	4	
5	Std. 50	5	
6	Std. 100	6	
7	Std. 250 SO_4^{2-} + 150 Cl^-	7	
8	Std. 300 SO_4^{2-} + 200 Cl^-	8	
9	Blank	9	
10	Reagent Blank	10	
11	AQC 50 mg/L SO_4^{2-} + Cl^-	11	
12	AQC 100 "	12	
13	Blank	13	
14	932E06 R60	14	
15	" R64	15	
16	932E33 S37	16	
17	" D37	17	
18	" S36	18	
19	" S39	19	
20	" D39	20	
21	Blank	21	
22	932E33 S37 dup.	22	
23	" S37 spk.	23	
24	932E33 S39 (1:2)	24	
25	" D39 (1:2)	25	
26	" S39 (1:2) re.	26	
27	" D39 (1:2) re.	27	
28	Blank	28	
29	Blank	29	
30	Blank	30	
31	932E33 S37 spk. - re.	31	
32	Blank	32	
33	Reagent Blank	33	
34	AQC 50 mg/L SO_4^{2-} + Cl^-	34	
35	AQC 100 mg/L SO_4^{2-} + Cl^-	35	
36		36	
37		37	
38		38	
39		39	
40		40	

	GAIN	BASELINE
SO_4^{2-}	4'36	15.5
Cl^-	5'26	10.5

Completed by: Virgil C. Santa
06-07-93

U.S. Environmental Protection Agency Region V

Superfund Document Management System (SDMS)

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ANALYSIS FOR ALKALINITY: Dataset SF1178

Sample ID Number	pH	Sample Volume (ml)	Initial Buret Volume (ml)	Final Buret Volume (ml)	Volume of 0.02N H_2SO_4 Consumed (ml)	Alkalinity (mg $CaCO_3$/L)	
R-BLANK	5.920	100	0.00	0.15	0.15	10	
LOW AQC	7.848	100	2.00	4.20	2.20	22	
HIGH AQC	10.352	100	4.20	14.50	10.30	103	
93ZE33S36	7.919	100	0.00	19.60	19.60	196	
93ZE33S37	7.833	100	19.60	42.00	22.40	224	
93ZE33D37	7.791	100	0.00	22.20	22.20	222	
93ZE33S39	6.686	100	0.00	190.80	190.80	1908	
93ZE33D39	6.678	30	0.00	53.50	53.50	1783.3	
93ZE33R60	5.705	100	4.35	4.50	0.15	1.5	
93ZE33R64	5.734	100	4.55	4.75	0.20	2.0	
93ZE33S36	7.931	100	5.00	25.20	20.20	202	Duplicate

R-Blank Limit = 0 ± 5 mg $CaCO_3$/L
Low AQC Limit = 20 ± 5 mg $CaCO_3$/L
High AQC Limit = 100 ± 10 mg $CaCO_3$/L

Duplicate Sample 93ZE33S36 Δ = 6 mg $CaCO_3$/L and RPD = 3%
Target $\Delta \leq$ 5 mg $CaCO_3$/L or RPD $\leq$ 10%
The duplicate result is acceptable on the basis of the RPD limits.

Francis A. Arianyo
6/14/93

ALKALINITY SF1178 5/18/93

Control Standard pH = 5.00 found 4.991
pH = 7.00 6.992

~~R-Blank~~	pH	Volume (ml)	Initial Volume (ml)	Final Volume (ml)
R-BLANK	5.92	100	0.00	0.15
CSL (20ppm)	7.848	"	2.00	4.20
CSH (100ppm)	10.352	"	4.20	14.50
93CS03502	7.823	"	14.50	32.70
93ZE33S36	7.919	"	0.00	19.60
93ZE33S37	7.833	"	19.60	42.00
93ZE33D37	7.791	"	0.00	22.20
93ZE33S39	6.686	"	0.00	150 + 40.8ml
93ZE33D39	6.678	30ml	0.00	50 + 3.5
93ZE33R60	5.705	100	4.35	4.50
93ZE33R64	5.734	"	4.55	4.75
~~93ZE33S37~~	~~7.841~~	~~"~~		
93ZE33S36	7.931	"	5.00	25.20

Francis A Owonga
6/21/93

COMPUTATION SHEET

OFFICE

DATA SET # SF1187 SAMPLE ID # 93ZE33 93ZE06 *

FILE NO.

SUBJECT

TOTAL DISSOLVED SOLID

COMPUTATION ANALYST - Vergel C. Santos DATE OF ANALYSIS: 5-18-93

COMPUTED BY | CHECKED BY | DATE | PAGE OF PAGES

(1) DISH #	(2) SAMPLE ID	(3) FINAL Wt. (g)	(4) INITIAL Wt. (g)	(5) SAMPLE Wt. (mg)	(6) Vol. USED. ml.	(7) TDS mg/L	(8) QUALITY CONTROL OR COMMENTS	(9)	(10) RANGES
1	Blank	74.0738	74.0736	0.2	50	4	Target	0 ± 5 mg/L	
2	AQC-9920	74.5591	74.4924	66.7	50	1,334	Target	1340 ±	130 mg/L
3	R60	87.3932	87.3932	0	50	0	Target	0 ± 5	mg/L
4	R64	73.0902	73.0900	0.2	50	4	Target	0 ± 5	mg/L
5	S37	74.0237	74.0052	18.5	50	370	Δ = 36	RPD =	9.2%
6	S37-dup	76.2730	76.2527	20.3	50	406	Target	RPD ≤	10%
7	D37	77.2695	77.2511	18.4	50	368			
8	S36	76.8155	76.7944	21.1	50	422			
9	S39	82.0511	81.9857	65.4	25	2,616			
10	D39	76.7524	76.6857	66.7	25	2,668			

Completed by: Vergel C. Santos
05-26-93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: JMS
PARAMETER NAME ----: TOC
DATE OF ANALYSIS --: 05-25-1993

DATA SET NUMBER ---: SF1187
DU NUMBER ---------: SF

DEGREE OF FIT : 2

EQUATION : CONCENTRATION = -1.45633E+00
+3.64285E-01 * SIGNAL
+3.58932E-04 * SIGNAL^2

COEFFICIENT OF DETERMINATION : .9996686

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+3.750	+0.000	-0.086
2	+55.250	+20.000	+19.766
3	+105.500	+40.000	+40.970
4	+146.750	+60.000	+59.732
5	+186.750	+80.000	+79.091
6	+228.500	+100.000	+100.523

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION	
REAG. BLK	+3.500	-0.177	Target 0±3
20 AQC	+57.000	+20.474	Target 20±3
80 AQC	+201.500	+86.520	Target 83±6
SF1187	~~+0.000~~	~~-1.457~~	
93ZE33S36	+15.250	+4.182	
93ZE33S37	+12.000	+2.966	
93ZE33D37 SPK	+36.750	+12.415	9.449 Target 10±1.5
93ZE33D37 DUP	+11.000	+2.594	Δ=0.372 Target Δ≤3
93ZE33D37	5-25 JMS ~~+112.000~~ 12.000	5-25 JMS ~~+43.845~~ 2.966	Δ=0 Target Δ≤3
93ZE33R60	+5.250	+0.466	Target 0±3
93ZE33R64	+5.000	+0.374	
93ZE33S39 1/10	+146.300	595.20 +59.520	
93ZE33D39 1/10	+138.500	558.82 +55.882	Δ=3.638 RPD=6.3% Target Δ≤3, RPD≤10%
REAG. BLK	+4.000	+0.006	Target 0±3
20 AQC	+58.500	+21.082	Target 20±3
80 AQC	+200.750	+86.138	Target 83±6

JMS 5-25-93

U.S. Environmental Protection Agency Region V

Superfund Document Management System (SDMS)

Lab Data Reference Sheet

Please contact the Superfund Records Manager for further information.

I. Unscannable item due to format

✓ Graph

___ Mail receipts

___ Sample tags

II. Image Quality (Pages follow / No. of pages ____)

___ Resolution / Contrast

MEMORANDUM **SL-10C**

Date: June 1, 1993

Subject: Samples Collected May 12 - 13, 1993 from H.O.D. Landfill by Ecology and Environment to be analyzed for Nitrate.

From: Jane M. Sattelberg, Chemist
Central Regional Laboratory

To: File: SF1187

When these samples were initially analyzed, two samples (93ZE33S39 and 93ZE33D39) showed a negative interference. All the samples were repeated at two different dilutions and with each sample spiked at both dilutions and with no dilution. The spikes for the following samples were all well within range when run without dilution: 93ZE33S36, 93ZE33S37 and, 93ZE33D37. The reported results are based on the results obtained for these samples without dilution.

The spike values for samples 93ZE33S39 and 93ZE33D39 were out of the control ranges for both dilutions and with no dilution. The results for these two samples are estimated to be the detection limit multiplied by the highest dilution factor.

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: JMS
PARAMETER NAME ----: NO3
DATE OF ANALYSIS --: ~~06-01~~ 5-27-1993

DATA SET NUMBER ---: SF1187
DU NUMBER ---------: SF

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -4.86856E-02
+3.97314E-02 * SIGNAL

COEFFICIENT OF DETERMINATION : .9998231

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	-0.049
2	+26.000	+1.000	+0.984
3	+52.000	+2.000	+2.017
4	+104.000	+4.000	+4.083
5	+252.000	+10.000	+9.963

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION	
REAG. BLK	+0.000	-0.049	Target 0±0.1
AQC	+51.000	+1.977	Target 2±0.15
SF1187	~~+0.000~~	~~-0.049~~	
93ZE33S36 0.1/10	+0.500	-0.029	
93ZE33S36 0.1/10SPK	+52.000	+2.017	Target 2±0.25
93ZE33S36 0.1/10DUP	+0.500	-0.029	Δ = 0 Target Δ ≤ 0.1
93ZE33S37 0.1/10	+0.000	-0.049	
93ZE33S37 0.1/10SPK	+49.500	+1.918	Target 2±0.25
93ZE33D37 0.1/10	+0.500	-0.029	
93ZE33D37 0.1/10SPK	+47.500	+1.838	Target 2±0.25
93ZE33S39 0.1/10	-2.000	-0.129	
93ZE33S39 0.1/10SPK	+43.500	+1.679	Target 2±0.25 - out of range
93ZE33S39 0.1/10	-1.500	-0.109	
93ZE33S39 0.1/10SPK	+44.500	+1.719	Target 2±0.25 - out of range
93ZE33D39 0.1/10	+1.000	-0.009	Δ = 0.1 Target Δ ≤ 0.10
93ZE33D39 0.1/10SPK	+49.000	+1.898	Target 2±0.25
93ZE33R60	+0.000	-0.049	Target 0±0.1
93ZE33R64	+0.000	-0.049	
93ZE33S36 1/10	+0.000	-0.049	
93ZE33S36 1/10SPK	+52.000	+2.017	Target 2±0.25
93ZE33S36 1/10DUP	+1.500	+0.010	Δ = 0.059 Target Δ ≤ 0.1
93ZE33S37 1/10	+0.500	-0.029	
93ZE33S37 1/10SPK	+52.000	+2.017	Target 2±0.25

93Z[illegible]	1/10	+1.000	-0.009	
93ZE33D37	1/10 SPK	+51.000	+1.977	Target 2±0.25
93ZE33S39	1/10	-8.000	-0.367	
93ZE33S39	1/10 SPK	+30.000	+1.143	Target 2±0.25 - out of range
~~+~~		~~+3.000~~	~~+0.070~~	6-1-93 JMS
93ZE33D39	1/10	-4.000	-0.208	
93ZE33D39	1/10 SPK	+43.000	+1.659	Target 2±0.25 - out of range
93ZE33S36		+0.000	-0.049	
93ZE33S36	SPK	+50.000	+1.937	Target 2±0.25
93ZE33S36	DUP	+1.000	-0.009	Δ = 0.040 Target ≤0.10
93ZE33S37		+0.000	-0.049	
93ZE33S37	SPK	+53.000	+2.057	Target 2±0.25
93ZE33D37		+0.000	-0.049	Δ=0 Target Δ≤0.10
93ZE33D37	SPK	+54.500	+2.116	Target 2±0.25
93ZE33S39		-8.000	-0.367	
93ZE33S39	SPK	+19.500	+0.726	Target 2±0.25 - out of range
93ZE33D39		-7.500	-0.347	Δ=0.02 Target Δ≤0.10
93ZE33D39	SPK	+27.000	+1.024	Target 2±0.25 - out of range
REAG. BLK		+0.000	-0.049	Target 0±0.1
AQC		+49.000	+1.898	Target 2±0.15

JMS
6-1-93

U.S. Environmental Protection Agency Region V

Superfund Document Management System (SDMS)

Lab Data Reference Sheet

Please contact the Superfund Records Manager for further information.

I. Unscannable item due to format

✓ Graph

___ Mail receipts

___ Sample tags

II. Image Quality (Pages follow / No. of pages ____)

___ Resolution / Contrast

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: JUN 2 8 1993

Subject: Review of Region 5 Data for H.O.D LANDFILL

From: Charles T. Elly, Director Chuck E Elly
Region 5 Central Regional Laboratory

To:

Attached are the results for H.O.D LANDFILL
CRL request number SF1187
for analyses for Cyanide
Results are reported for sample designations: Water samples: 93ZE33S36, 93ZE33S37, 93ZE33D37, 93ZE33S38, 93ZE33D38, 93ZE33S39, 93ZE33D39, 93ZE06R60, and 93ZE06R64; Soil samples: 93ZE33S40 and 93ZE33D40.

Results Status:
(X) Acceptable for Use: Cyanide
(X) Data Qualified, but Acceptable for use: 93ZE33S39 and 93ZE33D39
( ) Data Unacceptable for Use:

(X) Sewer Disposal Criteria Met;

The portion of samples 93ZE33S36, 93ZE33S37, 93ZE33D37, 93ZE33S38, 93ZE33D38, 93ZE33S39, 93ZE33D39, 93ZE06R60, and 93ZE06R64 which were analyzed for cyanide are preserved with sodium hydroxide.

Samples 93ZE33S36, 93ZE33S37, 93ZE33D37, 93ZE33S38, 93ZE33D38, 93ZE06R60, and 93ZE06R64 should be neutralized and filtered prior to disposal down the drain. The concentration for cyanide in these samples are less than the detection limit. Samples 93ZE33S39 and 93ZE33D39 should be disposed of in a drum.

The portion of samples Soil samples 93ZE33S40 and 93ZE33D40 which were collected and analyzed for cyanide should be disposed of in a drum.

Comments on Data Quality by Reviewer:

Water Samples:

The circuit breaker problems were traced to defective heating mantles. These mantles were replaced with new ones or with other mantles in which were in good working conditions.

The holding time for sample 93ZE33S39 and 93ZE33D39 were exceeded. All the quality control audits associated with the analysis were in control. The cyanide results for these samples are usable but could be biased low.

Soil Samples:

All the soil sample results are acceptable for use.

Comments by Laboratory Director or Quality Control Coordinator:

~~The samples were redistilled after obtaining poor recovery on the designated MS.~~ JVM 25 Jun 93

Francis A. Awanya 6/24/93

Team Leader and Date (X) Reviewed ( ) Unreviewed

John V. Morris for JHA 25 June 93

Section Chief and Date (X) Reviewed ( ) Unreviewed

John V. Morris for JHA 25 June 93

QC Coordinator and Date (X) Reviewed ( ) Unreviewed

Sylvia Griffin 6-28-93

Data Management Coordinator and Date Received

Date Transmitted JUN 28 1993

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Received by and Date

Comments:

ESAT-5-014.6

LOCKHEED ESAT CONTRACT
DATA SET CUSTODY TRANSFER FORM

DATA SET NUMBER SF 1187 CHARGE NUMBER 232-51-107

SITE NAME: H.O.D LANDFILL TID NUMBER 05-93-05-06

PARAMETER: CN MATRIX: WATER

SF DU/ACT NO: TFA 301 Y ____ /C ____

SAMPLE NUMBERS: 93ZE33S36, 93ZE33S37, 93ZE33D37, 93ZE33S39, 93ZE33D39, 93ZE06R60, 93ZE33S38, 93ZE33D38, 93ZE06R62, 93ZE06R64

NUMBER OF SAMPLES: 10

ESAT APPROVALS:

L. Finkelberg / M. Fletcher 6-7-93	5-28-93	Timothy J. Meszaros	6/7/93
Analyst	Date	Task Group Leader	Date
Lewis Kray	6/14/93	Dennis Miller	6/14/93
QA/QC Coordinator	Date	ESAT Team Manager	Date

COMMENTS: ____

The above identified data set was transferred from ESAT custody to the custody of the U.S. EPA Region V Central Regional Laboratory in its entirety on the indicated date relinquished.

Timothy J. Meszaros	6/15/93	Francis A. Awanya	6/15/93
Relinquished by	Date	Received by	Date

EPA APPROVALS:

Francis A. Awanya	6/24/93
EPA Task Monitor	Date

[X] Reviewed
[ ] Unreviewed
[X] Accepted
[ ] Rejected
[ ] Returned: ____ Date

COMMENTS: The holding time for cyanide was exceeded for samples 93ZE33S39 and D39

Francis A. Awanya for JHA Jr	6/24/93	[X] Reviewed	[ ] Unreviewed
Section Chief	Date		
[signature] for JHA	25 Jun 93	Sylvia Griffin	6/28/93 / 6/28/93
ESAT DPO	Date	DATA COORDINATOR/RECD/TRANSMTD	

A COPY OF THIS CUSTODY TRANSFER FORM WITH A RECEIVED BY EPA SIGNATURE IS TO BE FILED WITH THE AOC IN THE TID FILE. THE ORIGINAL CUSTODY TRANSFER ACCOMPANIES THE DATA SET TO BE APPROVED BY THE EPA AND A COMPLETED COPY RETURNED TO ESAT.

FOO 6/22/93

ESAT-5-007.0

Data Set: SF1187 Site Name: H.O.D. LANDFILL

Date Generated: 5/20-27/93 Method Number: 335.2

TID Number: 05-93-05-06 Author: M. FLETCHER

CASE NARRATIVE

The 10 water samples were initially distilled on 5/20-21/93 and analyzed on 5/24/93. The samples distilled on 5/20/93; 93ZE33S36-38 and 93ZE06R64 were acceptable. The samples distilled on 5/21/93; 93ZE33S39, 93ZE33D39, 93ZE33D38, 93ZE06R60, and 93ZE06R62 were not acceptable due to low recoveries of the matrix spike(25 %) and the distilled AQC(83 %). Sample 93ZE33S39 was designated as a MSD. The sample contained a black thick precipitate and was very odorous. The analyst suspects interference as a cause for the very low recovery of the matrix spike. During the distillation the analyst experienced circuit breaker problems with the heating mantle containing the AQC and suspects this to be the cause of the low AQC recovery.

The affected water samples; 93ZE33S39, 93ZE33D39, 93ZE33D38, 93ZE06R60, and 93ZE06R62 were redistilled along with the soil samples; 93ZE33S40 and 93ZE33D40, on 5/24-25/93. The redistilled water samples and the soil samples were analyzed on 5/25/93. Sample 93ZE33D38 was chosen as the matrix spike and the duplicate due to the low volume of sample 93ZE33S38. The analyst experienced circuit breaker problems throughout the distillation. The samples were not acceptable due to the low recoveries of the AQC and the soil matrix spike.

The water samples 93ZE33S39,93ZE33D39, 93ZE06R60, and 93ZE06R62 were redistilled on 5/26/93 and the results were acceptable. Sample 93ZE33D39 was chosen as the matrix spike and duplicate due to low volume of sample 93ZE33S39. Sample 93ZE33D38 was depleted and per Francis Awanya's instructions, the best value for the sample was to be used when reporting the results. The result for 93ZE33D38 was taken from the initial analyses on 5/24/93. The soil samples were not acceptable due to the low recovery of the soil matrix spike. Since there were circuit breaker problems the analyst could not determine if the low recovery was from an improper distillation or interference. The soil samples, 93ZE33S40 and 93ZE33D40 were redistilled 5/28/93. The soils were analyzed on 6/1/93 and the results were acceptable.

Reviewed by: M. Fletcher / L. Finkelburg Lockheed/ESAT
Date: 6-11-93

FAA 6/22/93

ESAT-5-007.0

Data Set: SF1187 Site Name: H.O.D. LANDFILL

Date Generated: 5/20-27/93 Method Number: 335.2

TID Number: 05-93-05-06 Author: M. FLETCHER

CASE NARRATIVE

The 10 water samples were initially distilled on 5/20-21/93 and analyzed on 5/24/93. The samples distilled on 5/20/93; 93ZE33S36-38 and 93ZE06R64 were acceptable. The samples distilled on 5/21/93; 93ZE33S39, 93ZE33D39, 93ZE33D38, 93ZE06R60, and 93ZE06R62 were not acceptable due to low recoveries of the matrix spike(25 %) and the distilled AQC(83 %). Sample 93ZE33S39 was designated as a MSD. The sample contained a black thick precipitate and was very odorous. The analyst suspects interference as a cause for the very low recovery of the matrix spike. During the distillation the analyst experienced circuit breaker problems with the heating mantle containing the AQC and suspects this to be the cause of the low AQC recovery.

The affected water samples; 93ZE33S39, 93ZE33D39, 93ZE33D38, 93ZE06R60, and 93ZE06R62 were redistilled along with the soil samples; 93ZE33S40 and 93ZE33D40, on 5/24-25/93. The redistilled water samples and the soil samples were analyzed on 5/25/93. Sample 93ZE33D38 was chosen as the matrix spike and the duplicate due to the low volume of sample 93ZE33S38. The analyst experienced circuit breaker problems throughout the distillation. The samples were not acceptable due to the low recoveries of the AQC and the soil matrix spike.

The water samples 93ZE33S39,93ZE33D39, 93ZE06R60, and 93ZE06R62 were redistilled on 5/26/93 and the results were acceptable. Sample 93ZE33D39 was chosen as the matrix spike and duplicate due to low volume of sample 93ZE33S39. Sample 93ZE33D38 was depleted and per Francis Awanya's instructions, the best value for the sample was to be used when reporting the results. The result for 93ZE33D38 was taken from the initial analyses on 5/24/93. The soil samples were not acceptable due to the low recovery of the soil matrix spike. Since there were circuit breaker problems the analyst could not determine if the low recovery was from an improper distillation or interference. The soil samples, 93ZE33S40 and 93ZE33D40 were redistilled 5/28/93. The soils were analyzed on 6/1/93 and the results were acceptable.

L. Finke 6-11-93

Reviewed by: M. Fletcher Lockheed/ESAT

Date: 6-11-93

D930001187 TFA301 FAA 6/22/93

DIM 1

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/23/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR E&E —

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 76020	WATER CR^{+6} UG CR^{+6}/L MIN 74616	WATER MERCURY UG HG/L MIN 74717
93ZE33S36	5031-620 W7D+MSD		X 8u			
37	USGD 5031643		X 8u			
D37	DUSGD 5013668		X 8u			
93ZE06R60	MWFB01 5013-682		X 8u			
93ZE33S36	W7D+MSD 5031619					X
93ZE33S37	USGD 5031644					X
93ZE33D37	DUSGD 5031667					X
93ZE06R60	MWFB01 5013680		L. Finkelberg			X
			M. Fletcher			
			6-7-93			
	SHIPMENT	IS NOT	COMPLETE			

D93000 1187

TFA301 DRY2 FAA 6/22/93

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER _____ DATA SET NUMBER _____ STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 75020	WATER CR^{+6} UG CR^{+6}/L MIN 74616	WATER MERCURY UG HG/L MIN 74717
93ZE33S38	5-031-750 SW1+MSD		X 8u			X
↓ D38	SW1D 5-031760		X 8u			X
93ZE06R62	SWFB01 5-031769		X 8u			X
93ZE33S38	SW1+MSD 5-031752		L. Finke [illegible] M. Fletcher			X
93ZE33D38	SW1D 5-031761		6-7-93			X
93ZE06R62	SWFB01 5-031770					X

D930001187 TFA301 DAY 2 FAA 6/22/93

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 75020	WATER CR^{+6} UG CR^{+6}/L MIN 74616	WATER MERCURY UG HG/L MIN 74717
~~93ZE33S39~~	~~L1 + MSD~~		X			X
~~↓ D39~~	~~L1D~~		X			X
93ZE06R64	L.FB01 5-031722		X 8 u			X
93ZE06R64	LBB01 5-031723		L. Finkelberg			X
			M. Fletcher			
			6-7-93			

Shipment Not Complete

D930001187

FAA 6/22/93

TFA301

DAY1

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/~~2~~3/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 75020	WATER CR^{+6} UG CR^{+6}/L MIN 74816	WATER MERCURY UG HG/L MIN 74717
93ZE33S39	5-031695 L1 + MSD		X 13			
↓ D39	5-031708 L1D		X 14			
LK ~~93ZE06R64~~	~~L.FB01~~		X			
93ZE33S39	L1+MSD 5-031696					X
93ZE33D39	L1D 5-031709		L. Finkelberg			X
			M. Fletcher			
			6-7-93			

Shipment NOT complete

FAA 6/22/93

D93000 1187 TFA301 DAY 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/14/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

FAA 6/22/93

CU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLID S CHEMICAL OXYGEN DEMAND MG COD/KG (DRY) MIN43327	SEDIMENTS SOLID S MERCURY MG HG/KG (DRY) MIN44728	SEDIMENTS SOLID S ~~PHENOLICS~~ TOC MG PHENOL/KG (DRY) MIN44829	SEDIMENTS SOLID S CYANIDE MG CN/KG (DRY) MIN44930	
93ZE33S40	SD1 + MSD		X	X	X 0.91U	5-148219
√ D40	SD1D		X	X	X 0.74U	5-148221
S40	SD1 + MSD			X		5-148220
D40	SD1 DUPLICATE			X	L. Finkelberg	5-148222
					M. Fletcher	
					6-8-93	

D930001187 Cooler # 62

..ONMENTAL PROTECTION AGENCY
Office of Enforcement

CHAIN OF CUSTODY RECORD

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

PROJ. NO.: G7030
PROJECT NAME: HOD Landfill RI/FS (Ø)
AMPLERS: (Signature) Linda Knorz

LOW Concentration Groundwater
SHEET 5 OF 6
REMARKS SF1187

TA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA (HCL)	Extractable	Metals (HNO3)	Cyanide (NaOH)	Mercury (K2Cr2O7 HNO3)	Alkalinity/Chloride/Sulfate/TDS	Hardness (HNO3)	TOC (H2SO4)	Nitrate/Nitrite (H2SO4)	Ammonia/Nitrogen (H2SO4)	TAG NUMBERS
33539	5/12/93	1630		X	L1 + MSD	24	8	8	1	1	1	1	1	1	1	1	031688-031700/031629-33
																	031733, 031637-41

Metals are Filtered

CRL Tracking Form in Cooler # 62

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Linda Knorz	5/12/93 1800	William Sugar			
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) William Sugar	Date / Time 5/13/93 4:35pm	Remarks HAND DELIVERED	

Custody Seals: 32447-48

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 00637

ONMENTAL PROTECTION AGENCY
Office of Enforcement

D930001187 COOLER # 99

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: ZG7030
PROJECT NAME: HOD Landfill RI/FS (0)
SAMPLERS: (Signature) Linda Krorz

LOW Concentrations Groundwater SHEET 6 OF 6

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	VOA (HCl)	Extractable	Metals (HNO_3)	Cyanide (NaOH)	Mercury ($K_2Cr_2O_7$ HNO_3)	Alkalinity/sulfate/chloride/TDS	Hardness (HNO_3)	TOC (H_2SO_4)	Nitrate/nitrogen (H_2SO_4)	Ammonia/nitrogen (H_2SO_4)	REMARKS SF1187 TAG NUMBERS
ZE33D39	5/12/93			X	LID	14	3	3	1	1	1	1	1	1	1	1	031701-14
ZE06R65	5/12/93	0800		X	LTB01	2	2										031729-30

METALS ARE Filtered

CRL Tracking Form in Cooler # 62

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Linda Krorz	5/12/93 1800	William Snyder Jr			
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) William Snyder Jr	Date / Time 5/13/93 4:35pm	Remarks HAND DELIVERED Custody Seals: 32449-50	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 00638

L. FINKELBERG
6-7-93

L. FINKELBERG
6-12-93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: LFINKELBERG DATA SET NUMBER ---: SF1187
PARAMETER NAME ----: CN DU NUMBER ---------:
DATE OF ANALYSIS --: 06-07-1993

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -1.96141E+00
+2.37976E+00 * SIGNAL

FAA 6/22/93

COEFFICIENT OF DETERMINATION : .999975

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+1.000	+0.000	+0.418
2	+11.300	+25.000	+24.929
3	+21.800	+50.000	+49.917
4	+42.600	+100.000	+99.416
5	+85.000	+200.000	+200.318

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION ug/L		LIMITS ug/L
BLANK UND	+1.000	+0.418		0 ± 8
BLANK D 5-20-93	+0.000	-1.962		0 ± 8
AQC UND	+45.000	+105.127	rec = 105	100 ± 15
AQC D 5-20-93	+46.000	+107.507	rec = 107	100 ± 15
BLANK UND	+1.000	+0.418		0 ± 8
93ZE33S36	+0.200	-1.486	8 u	~~0 ± 8~~ L.F. 6-7-93
93ZE33S36 DUP	+0.000	-1.962	8u	Δ ± 15
93ZE33S36 SPIKE	+42.200	+98.464	rec. = 98	100 ± 15
93ZE33S37	+0.000	-1.962	8 u	
93ZE33D37	+0.000	-1.962	8u	
93ZE33S38	+0.000	-1.962	8u	Δ ± 15
93ZE33S38 DUP	+0.000	-1.962	8u	
93ZE33S38 SPIKE	+45.500	+106.317	rec. 106	100 ± 15
93ZE06R64	+0.000	-1.962	8u	
AQC UND	+45.200	+105.603	rec = 106	100 ± 15
AQC D 5-20-93	+46.000	+107.507	rec = 107	100 ± 15
BLANK UND	+1.000	+0.418		0 ± 8
BLANK D 5-20-93	+1.000	+0.418		0 ± 8
BLANK UND	+0.000	-1.962		0 ± 8
BLANK D 5-21-93	+0.000	-1.962		0 ± 8

SF1187

				LIMITS ug/L
AQC UND	+45.000	+105.127	rec = 105	100 ± 15
AQC D 5-21-93	+36.000	+83.709	rec = 84 *	100 ± 15
BLANK UND	+1.000	+0.418		0 ± 8
93ZE33S39	+2.500	+3.987	8 u	0 ± 15
93ZE33S39 DUP	+2.400	+3.750	8 u	
93ZE33S39 SPIKE	+11.500	+25.405	rec = 25 *	100 ± 15
93ZE33D39	+3.000	+5.177	8 u	
93ZE33D38	+0.000	-1.962	8 u	
93ZE06R60	+0.000	-1.962	8 u	
93ZE06R62	+0.000	-1.962	8 u	
BLANK UND	+1.000	+0.418		0 ± 8
BLANK D 5-21-93	+0.000	-1.962		0 ± 8
AQC UND	+45.000	+105.127	rec = 105	100 ± 15
AQC D 5-21-93	+35.800	+83.233	rec = 83 *	100 ± 15
BLANK UND	+0.500	-0.772		0 ± 8
BLANK D 5-21-93	+0.500	-0.772		0 ± 8
BLANK UND	+0.500	-0.772		0 ± 8

* Data unusable because AQC < 85% and matrix spike recovery is out of control (< 85%).

FAA 6/22/93

6-12-93
L. F. Inkelberg
M. Fletcher 6-7-

FAA 6/22/93

CYANIDE AUTO UV METHOD,
Manual Distillation

Element: cyanide

Analyst L. Finkelberg M. Fletcher

Date 6-8-93

Data Set 1187

Pos	ID	Spike	DF	Comment
1	Prim			
2	Prim			
3	Blank			undistilled
4	Blank			distilled
5	Standard 0 ug/l			undistilled
6	Standard 25 ug/l			undistilled
7	Standard 50 ug/l			undistilled
8	Standard 100 ug/l			undistilled
9	Standard 200 ug/l			undistilled
10	Blank			undistilled
11	Blank			distilled
12	CS 100 ug/l			undistilled
13	CS 100 ug/l			distilled
14	Blank und			
15	93E33536			
16	536			duplicate
17	536			spike
18	537			
19	537			
20	538			
21	538			duplicate
22	538			spike
23	93E06R64			
24	AQC und			L. Finkelberg
25	AQC dis - 5-20-93			6-12-93
26	Blk und			
27	Blk dis 5-20/93			

cnl

FAA 6/22/93

CYANIDE MANUAL DISTILLATION

L. Finkelberg

Element: cyanide

Analyst M. Fletcher

Date 6-8-93

Data Set SF1187

Pos	ID	Spike	DF	Comment
28	Blank und			
29	Blank dis 5-21-93			
30	A&C und			
31	AQC dis 5-21			
32	Blank und			
33	93ZE33539			
34	539			duplicate
35	539			spike
36	D39			
37	D38			
38	93ZE06 R6D			
39	R62			
40	Blank und			
	~~Start Wheel 2~~ MF 6-8-93			
1	Blank d 5-21-93			
2	AQC und			
3	AQC dis 5-21-93			
4	Blank und			
5	Blank dis 5-21-93			
6	Blank und			
7				
8				L. Finkelberg
9				6-12-93
10				
11				
12				
13				

cn4

FAA 6/92 143

GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK

NO. TEN 011-0173-01

5-24-93.

CN analysis

SF.1187

WATER

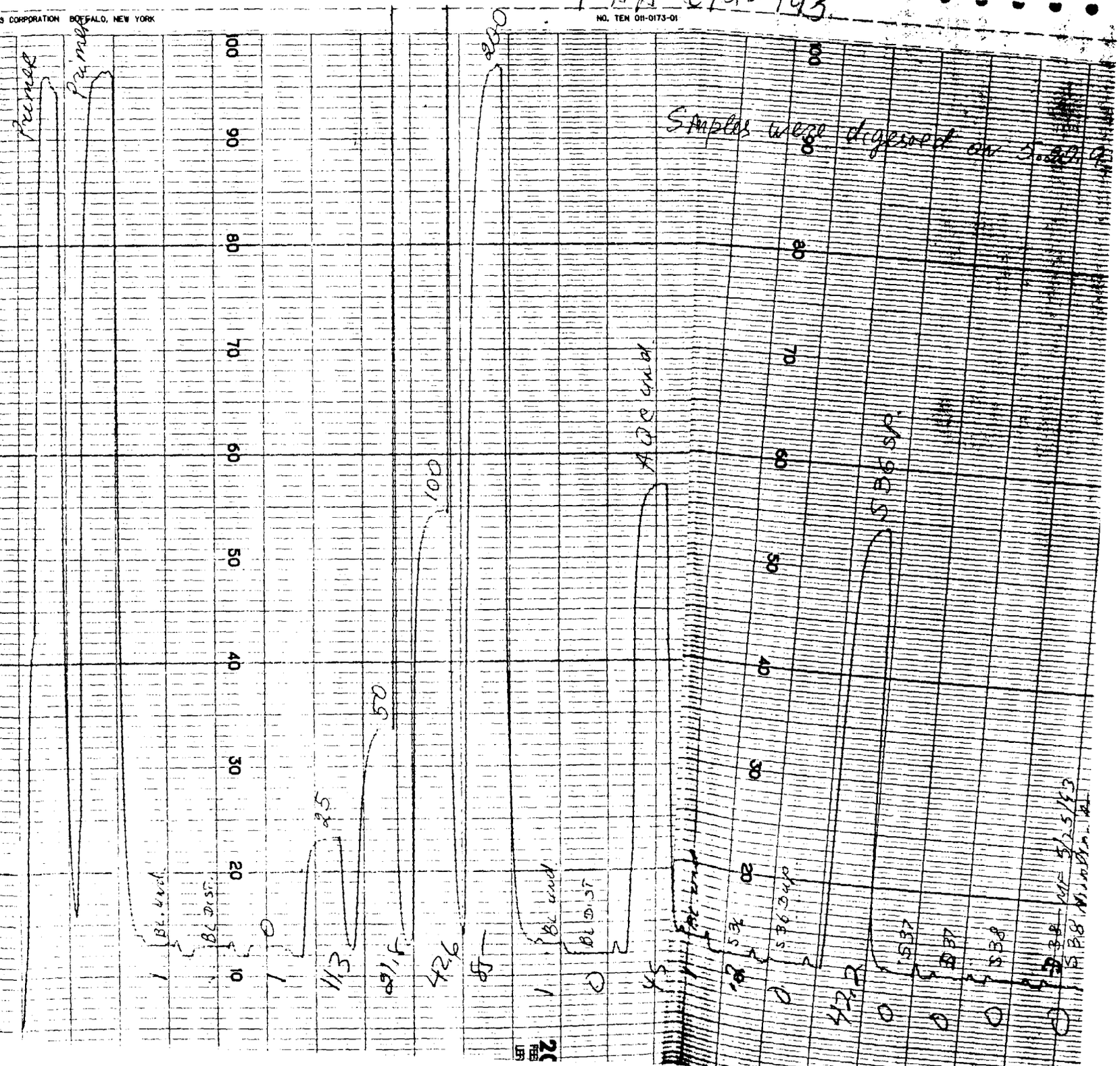
L. Finzelberg

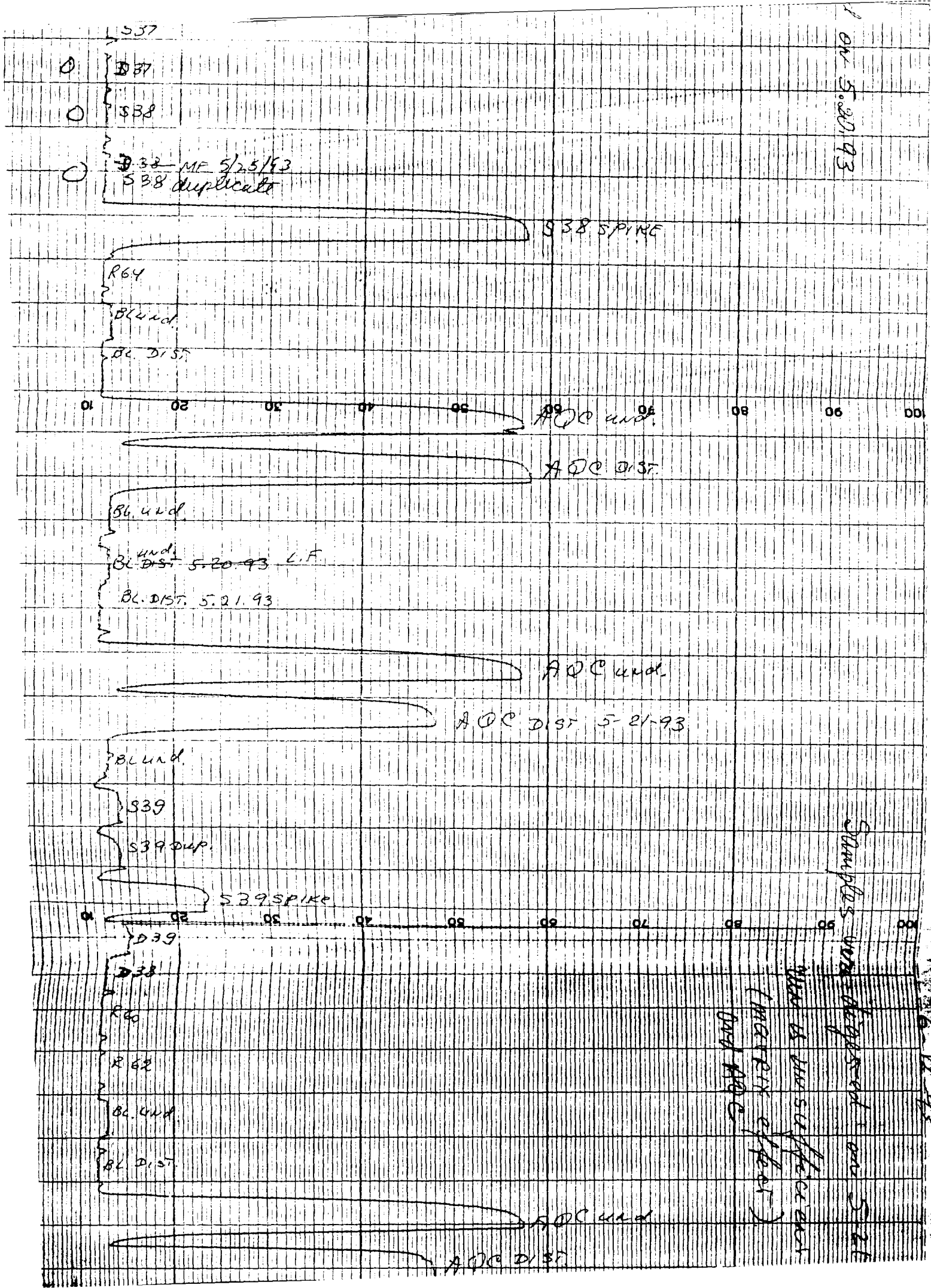
METHOD 335.2

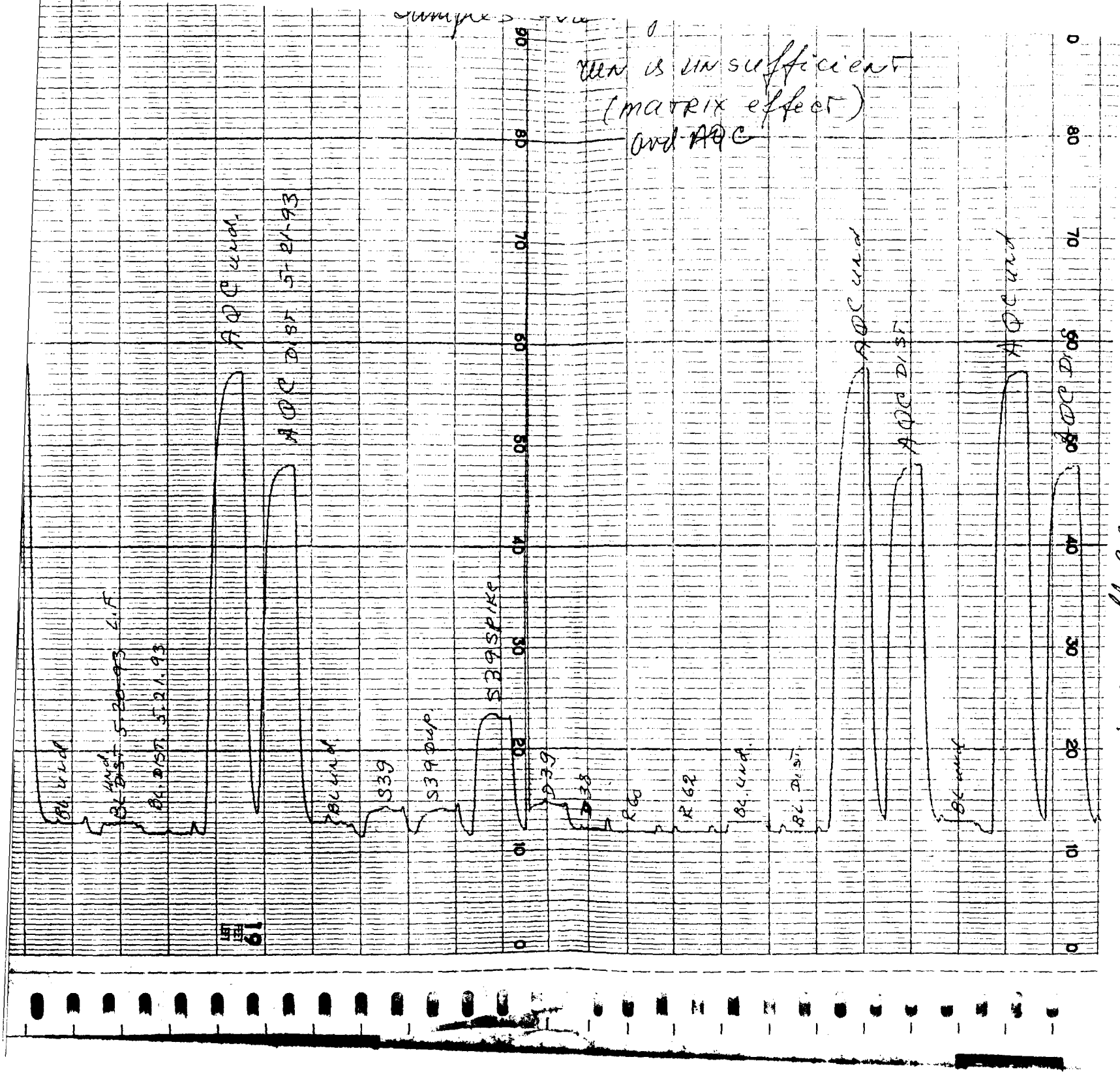
L. Finzelberg

6-12-93

Samples were digested on 5-28-93




S37
D37
S38
D38 MF 5/25/93
S38 duplicate
S38 SPIKE
R64
BL und.
BL. DIST.
AQC und.
AQC DIST.
BL. und.
BL und. DIST. 5.20.93 L.F.
BL. DIST. 5.21.93
AQC und.
AQC DIST 5-21-93
BL und.
S39
S39 Dup.
S39 SPIKE
D39
D38
R60
R62
BL. und.
BL. DIST.
AQC und.
AQC DIST.
10
20
30
40
50
60
70
80
90
100
on 5.20.93
Samples were digested on 5-21
Un is un sufficient
(matrix effect)
and AQC
PRINTED IN U.S.A.
GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK



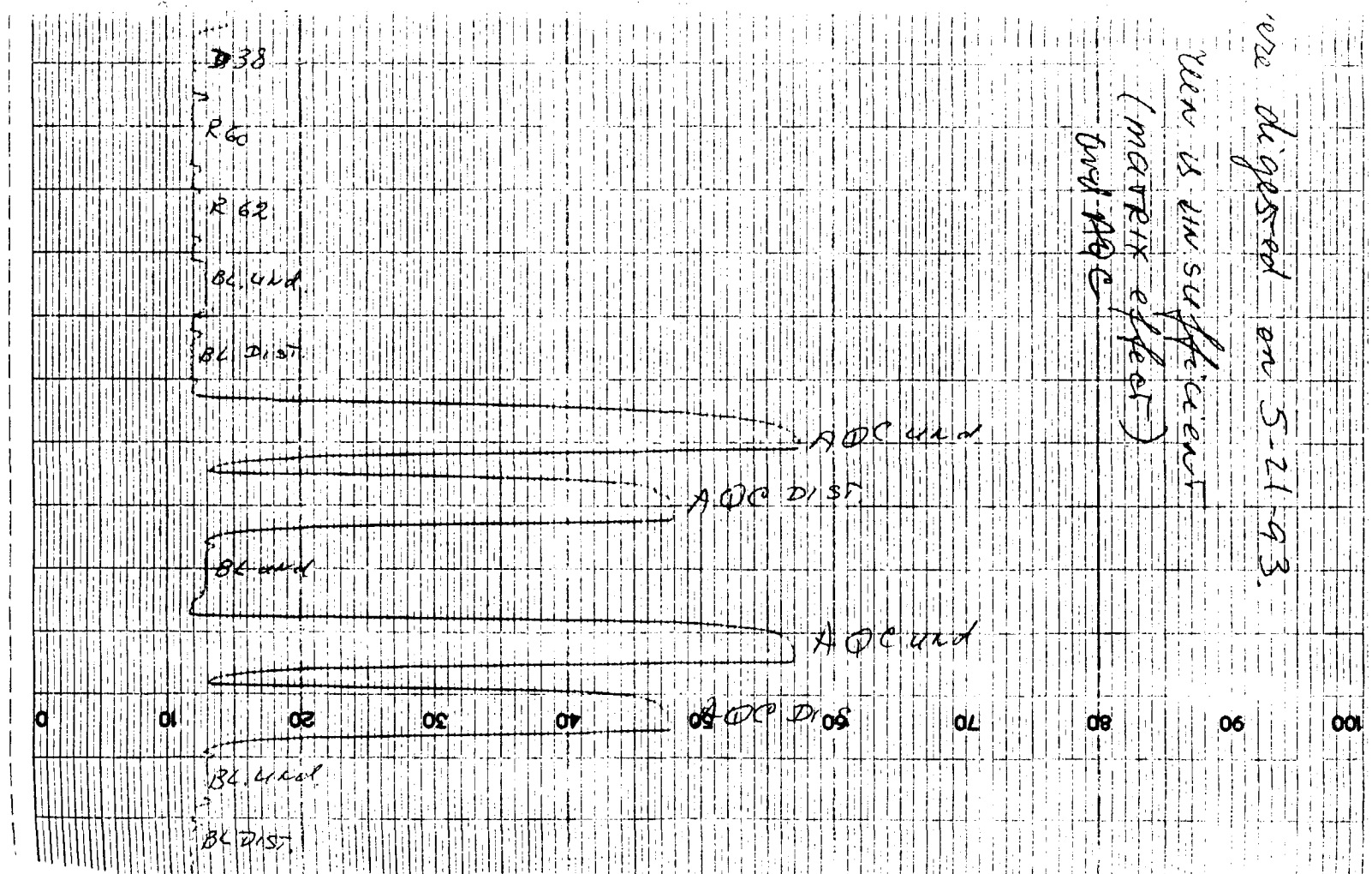
FAA 6/22/93

L. Finkelberg
6-12-93

FAA 6/22/93

L. Finkelberg
6-12-93

[redacted]



were digested on 5-21-93.
run is unsufficient
(matrix effect)
and AQC

[redacted]

[redacted]

L. FINKELBERG
L.FINKELBERG 6-12-93
6-7-93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: LFINKELBERG DATA SET NUMBER ---: SF1187
PARAMETER NAME ----: CN DU NUMBER ---------:
DATE OF ANALYSIS --: 06-07-1993

FAA 6/22/93

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -1.21741E+00
+2.85031E+00 * SIGNAL

COEFFICIENT OF DETERMINATION : .9998904

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	-1.218
2	+9.500	+25.000	+25.860
3	+18.200	+50.000	+50.658
4	+35.500	+100.000	+99.968
5	+70.500	+200.000	+199.729

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION		LIMITS ug/L
BLANK UND	+0.000	-1.218		0 ± 8
BLANK D	+0.200	-0.648		0 ± 8
AQC UND	+37.800	+106.524	rec = 106	100 ± 15
AQC D	+36.700	+103.389	rec = 103	100 ± 15
93ZE33S40	+0.400	-0.078	} 8u MG/KG	mg/kg
93ZE33S40 DUP	+0.400	-0.078		Δ ± 15
93ZE33S40 SPIKE	+28.200	+79.161	R = 79 *	100 ± 15
93ZE33D40	+0.500	+0.207	8u	ug/L
93ZE33S39	+5.000	+13.034	}	Δ ± 15
93ZE33D39	+5.500	+14.459		
93ZE33D39 DUP	+4.500	+11.609		
93ZE33D39 SPIKE	+32.500	+91.417	rec = 91	100 ± 15
93ZE06R60	+0.500	+0.207	8u	
93ZE06R62	+0.300	-0.363	8u	LIMITS ug/L
AQC UND	+38.000	+107.094	L.F. 6-7-93 }	
~~AQC D~~ operator	~~+0.000~~ error	~~-1.218~~	wrong samples	
BLANK UND	+0.000	-1.218		0 ± 8
BLANK D	+0.200	-0.648		0 ± 8
AQC UND	+38.000	+107.094	rec = 107	100 ± 15
AQC D	+36.900	+103.959	rec = 104	100 ± 15

LIMITS

0±8

BLANK UND +0.500 +0.207

* Soil data are unuseable due to low matrix spike recovery (<85%).

M. Fletcher 6-8-93
L. Finkelberg 6-12-93

FAA 6/22/93

FAA 6/22/93

CYANIDE AUTO UV METHOD,
Manual Distillation

Element: cyanide

Date 6-8-93

Analyst L. Finkelberg M. Fleller

Data Set SF1187

Pos	ID	Spike	DF	Comment
1	Prim			
2	Prim			
3	Blank			undistilled
4	Blank			distilled
5	Standard 0 ug/l			undistilled
6	Standard 25 ug/l			undistilled
7	Standard 50 ug/l			undistilled
8	Standard 100 ug/l			undistilled
9	Standard 200 ug/l			undistilled
10	Blank			undistilled
11	Blank			distilled
12	CS 100 ug/l			undistilled
13	CS 100 ug/l			distilled
14	93ZE33540			soil
15	S40			soil duplicate
16	S40			soil spike
17	D40			soil
18	S34			
19	D34			
20	D39			duplicate
21	MF6/8/93 ~~R60~~ D34			spike
22	R60			
23	R62			
24	AQC und			TV=100ml/l wrong sample
25	Blank und			
26	Blank dist			
27	AQC und			

cnl
L. Finkelberg
6-12-93

FAA 6/22/93

L. Finkelberg

CYANIDE MANUAL DISTILLATION

Element: cyanide

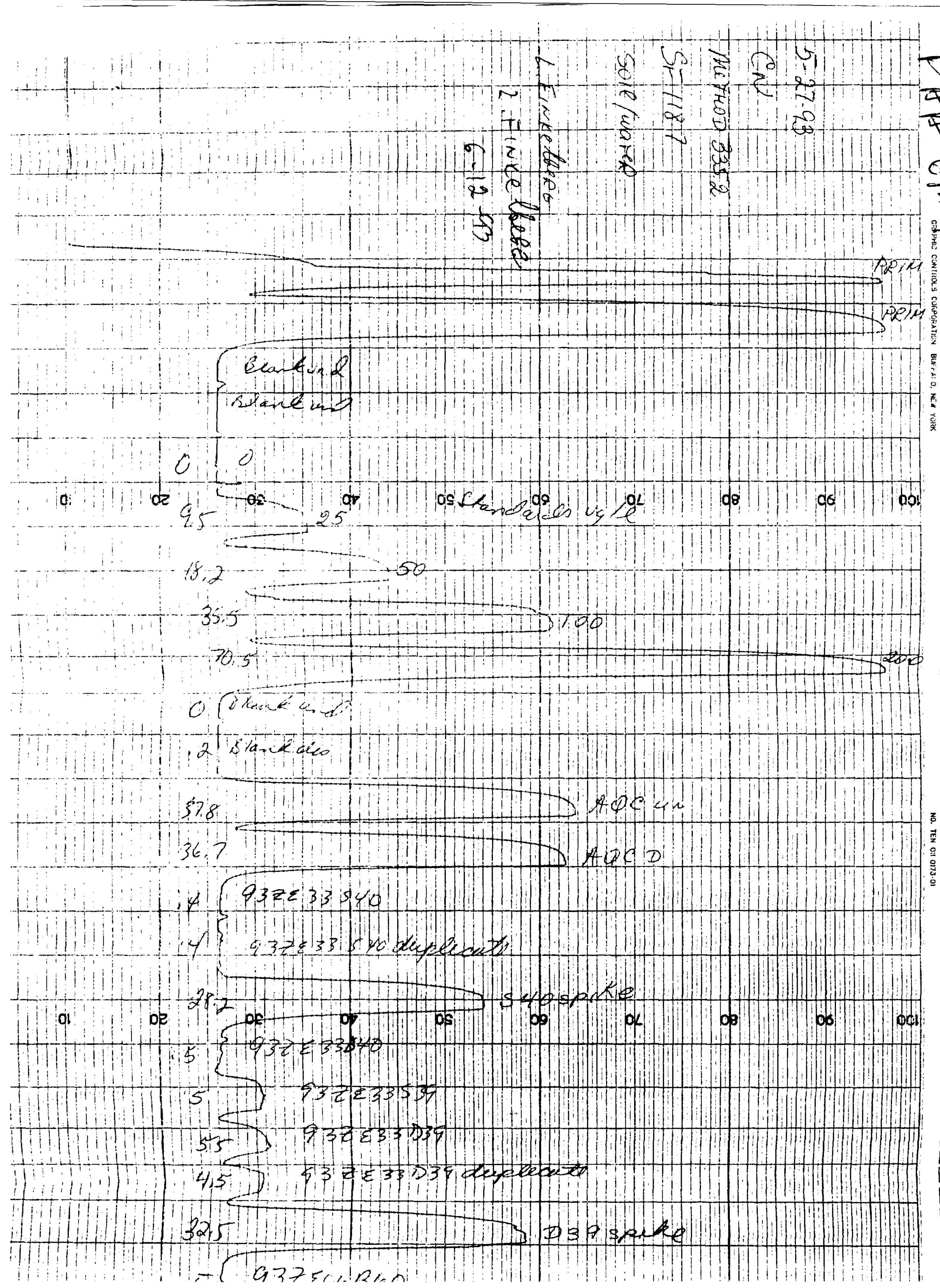
Analyst M. Flickly

Date 6-8-93

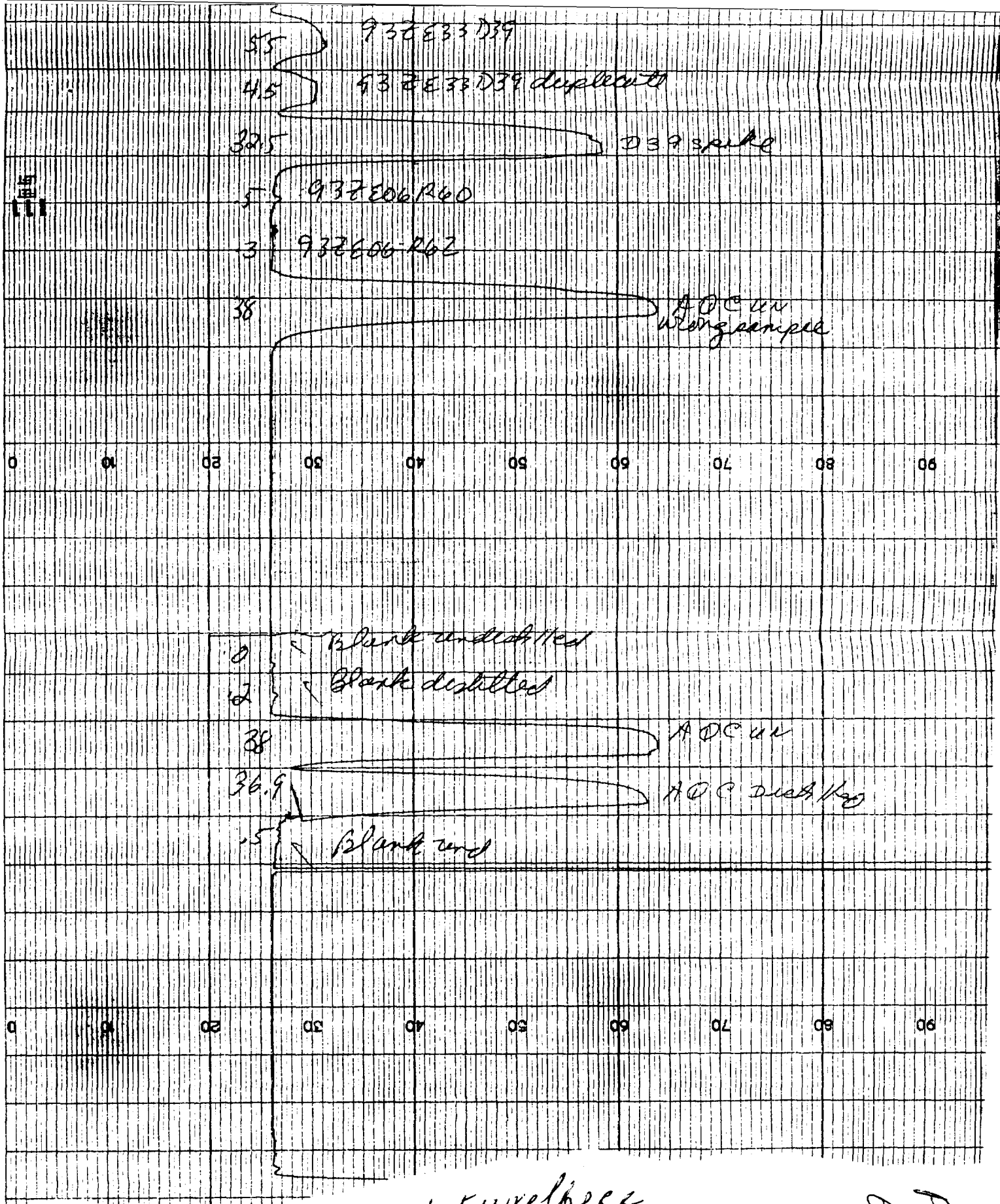
Data Set SF1187

Pos	ID	Spike	DF	Comment
28	Blank mud			
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
Start Wheel 2				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				L. Finkelberg
13				6-12-93

cn4



FMM 6/22/93
5-27-93
CN
METHOD 335.2
SF-1187
Soil/water
1 Fincke/Pole
2 Fincke/Pole
6-12-93
GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK
NO. TEN 011 0173-01
PRIM
PRIM
Blank und
Blank und
0
0
Standards ug/l
9.5
25
18.2
50
35.5
100
70.5
200
0
Blank und
.2
Blank dis
37.8
AQC un
36.7
AQC D
.4
93ZE33S40
.4
93ZE33S40 duplicate
28.2
S40 spike
5
93ZE33S40
5
93ZE33S39
5.5
93ZE33D39
4.5
93ZE33D39 duplicate
32.5
D39 spike
10
20
30
40
50
60
70
80
90
100



L. Finkelberg
6-12-93

6/23/93

L. Finkelberg
6-7-93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: LFINKELBERG DATA SET NUMBER ---: SF1187/1191
PARAMETER NAME ----: CN DU NUMBER ---------:
DATE OF ANALYSIS --: 06-07-1993

M. Fletcher
6-11-93

DEGREE OF FIT : 1

FAA 6/22/93

SF1187

EQUATION : CONCENTRATION = -2.40436E+00
+2.65629E+00 * SIGNAL

L. Finkelberg
6-12-93

COEFFICIENT OF DETERMINATION : .9995622

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	-2.405
2	+11.000	+25.000	+26.814
3	+20.200	+50.000	+51.252
4	+38.500	+100.000	+99.862
5	+76.000	+200.000	+199.473

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION ug/L		LIMITS ug/L
BLANK UND	+0.800	-0.280		0 ± 8
BLANK D	+0.900	-0.014		0 ± 8
AQC UND	+40.900	+106.237 rec. 106		100 ± 15
AQC D	+38.000	+98.534 rec = 98	Limits mg/kg	100 ± 15
93ZE33S40	+1.000	+0.251 } MF 6/8/93 ~~0.029~~ mg/kg → 0.9 mg/kg	SF 1187	~~mg/kg~~ ug/L
93ZE33S40 DUP	+1.000	+0.251 } ~~0.030~~ mg/kg 0.950 mg/kg		Δ ± 15
93ZE33S40 SPIKE	+38.000	+98.534 rec = 98 6/8/93 11.8 mg/kg	← Spike limits 10.2-13.7	100 ± 15
93ZE33D40	+1.000	+0.251 ~~0.023~~ mg/kg 0.74 mg/kg		
BLANK UND	+1.000	+0.251		0 ± 8
BLANK D	+1.200	+0.783		0 ± 8
AQC UND	+40.500	+105.175 rec = 105		100 ± 15
AQC D	+38.500	+99.862 rec. = 100		100 ± 15
93ZF53S02	+0.700	-0.545 } 8u	SF 1191	Δ ± 15
93ZF53S02 DUP	+0.500	-1.077 }		
93ZF53S02 SPIKE	+39.500	+102.519 rec 103		100 ± 15
93ZF53D02	+1.000	+0.251 8u		
93ZF53R03	+1.000	+0.251 8u		
93ZF53S13	+1.000	+0.251 8u }		~~Δ ± 15~~ MF 6/8/93
93ZF53D13	+1.000	+0.251 8u }		
93ZF53S12	+1.000	+0.251 8u		

SF 1191

M. Fletcher 6/11-93

				LIMITS 48/L
93ZF53S11	+1.200	+0.783	8u	
93ZF53S03	+1.100	+0.517	8u	
93ZF53R01	+1.000	+0.251	8u	
BLANK UND	+1.000	+0.251		0±8
BLANK D	+1.000	+0.251		0±8
ADC UND	+41.200	+107.034	rec = 107	100±15
ADC D	+39.500	+102.519	rec 103	100±15
BLANK UND	+1.000	+0.251		0±8
BLANK D	+1.000	+0.251		0±8
BLANK UND	+1.000	+0.251		0±8

FAA 6/22/93

SF1187

L. Finkelberg 6-8-93
M. Fletcher 6-8-93

L. Finkelberg
6-12-93

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* SEDCAL * CSC VERSION 1.00 *

NAME OF ANALYST ----: M. FLETCHER

DATE OF ANALYSIS ---: 06-23-1993

M. Fletcher
6-22-93

SEDIMENT CALCULATION FOR CYANIDE

SAMPLE NO.	% SOLID	WET WT(GMS)	DRY WT(GM/L)	SED CONC(UG/L)	SED CONC(MG/KG)
**********	*******	**********	**********	**********	**********
93ZE33S40	74.10	2.96	8.77	8.00	0.912
93ZE33S40D	76.80	2.74	8.42	8.00	0.950
93ZE33D40	77.20	3.49	10.78	8.00	0.742
93ZE33S40S	74.10	2.82	8.36	98.53	11.788

J Radl 6/3/93 $\boxed{6-3-93}$

% Solids SF 1187

in oven - 11:15 6-3-93
out oven - 11:15 6-4-93

Balance ck 6/3/93

1g - 1.0030 50g - 50.0164
5g - 5.0016 100g - 100.0016
20g 20.0094

Sample ID	Empty Tare wt (g)	Tare + wet wt (g)	Wet JR 6/3/93 sample wt (g)	Tare + dry JR 6/3/93 sample wt (g)	dry sample wt (g)	% solids (g)	comments
Blank	23.661	—		23.661	0.0	—	
93ZE33S40	23.929	33.974	10.045	31.674	7.445	74.1	
93ZE33S40 dup	23.656	34.211	10.555	31.759	8.103	76.8	
93ZE33D40	22.225	33.359	11.134	30.821	8.596	77.2	

Balance ck 6/4/93

1g - 1.0029 50g - 50.0164
5g - 5.0015 100g - 100.0018
20g - 20.0094

J. Radl. 6/4/93
L. Finkelberg 6-8-93
M. Fletcher 6-8-93

M. Fletcher 6-11-93
L. Finkelberg 6-12-93

FAA 6/22/93

L. Finkelberg 6-12-93

FBB 6/22/93 M. Fletcher 6-11-93

CYANIDE AUTO UV METHOD,
Manual Distillation

Element: cyanide

Analyst L. Finkelberg M. Fletcher

Date 6-8-93

Data Set SF1187/1191

Pos	ID	Spike	DF	Comment
1	Prim			
2	Prim			
3	Blank			undistilled
4	Blank			distilled
5	Standard 0 ug/l			undistilled
6	Standard 25 ug/l			undistilled
7	Standard 50 ug/l			undistilled
8	Standard 100 ug/l			undistilled
9	Standard 200 ug/l			undistilled
10	Blank			undistilled
11	Blank			distilled
12	CS 100 ug/l			undistilled
13	CS 100 ug/l			distilled
14	93ZE3540			SF1187
15	S40			duplicate
16	S40			spike
17	D40			
18	Blank und			
19	Blank d			
20	AQC und			
21	AQC d			
22	93ZF53502			
23	S02			duplicate SF1191
24	S02			spike
25	D02			
26	R03			
27	S13			

cnl

L. Finkelberg 6-12-93
M. Fletcher 6/1/93

CYANIDE MANUAL DISTILLATION

L. Finkelberg

Element: cyanide

Analyst M. Fletcher

Date 6-8-93

Data Set SF1187/1191

Pos	ID	Spike	DF	Comment
28	A93ZF53D13			SF1191
29	" S12			
30	S11			
31	S03			
32	R01			
33	Blank und			
34	Blank dis			
35	AQC und			
36	AQC dis			
37	Blank und			
38	Blank d			
39	Blank und			
40				
	Start Wheel 2			
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				

cn4

FAA 6/22/93

M. Fletcher 6-11-93

SF 1187

TCN 01 0173-01

PRINTED IN U.S.A.

6-1-93

CN analysis

SF 119 (water)

SF 1187 (soil)

METHOD 335.2

SOIL/WATER

DESTILLATION ON

5-28-93

L. Finkelberg

L. Finkelberg

6-12-93

PR 1187

PR 1187

200 µg/L

100 µg/L

50 µg/L

25 µg/L

BL

BL

D

11.0

20.3

88.5

76.0

BL and

BL D

40.9

38.0

1.0 540

1.0 540 Dupe

38.0

1.0 D 540

BL and

BL D SOIL

40.5

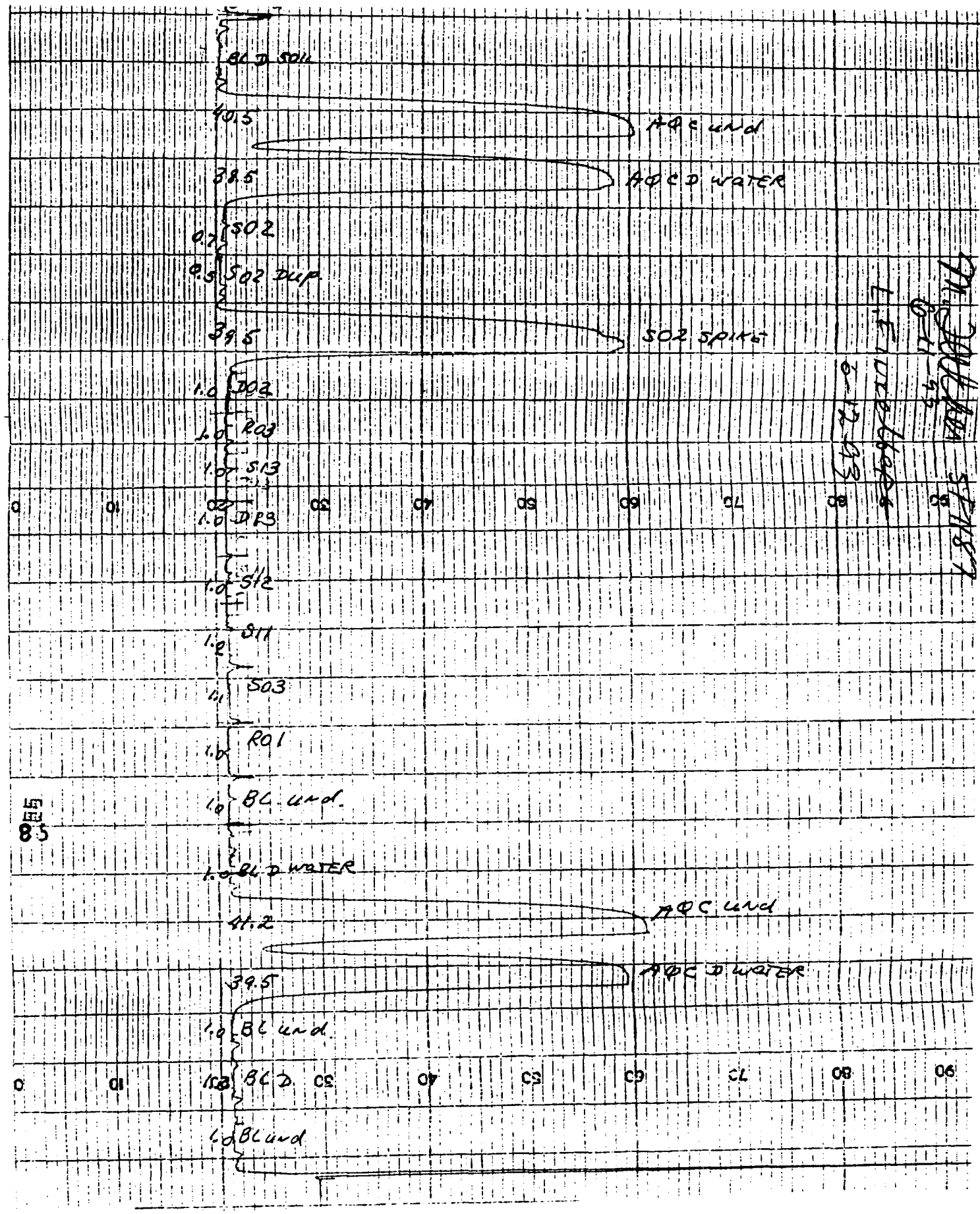
38.5

100 µg/L and

50 µg/L D SOIL

5 KG SPIKE

100 µg/L and


BLD SOIL
40.5
AQC und
38.5
AQCD WATER
0.7
SO2
0.5
SO2 DUP
39.5
SO2 SPIKE
1.0
DO2
1.0
RO3
1.0
S13
1.0
DP3
1.0
S12
1.0
S11
1.0
SO3
1.0
RO1
1.0
BL und
1.0
BLD WATER
41.2
AQC und
39.5
AQCD WATER
1.0
BL und
1.0
BLD
1.0
BL und
0
10
20
30
40
50
60
70
80
90

Data Set: SF1187 Site Name: H.O.D. LANDFILL

Date Generated: 5/20-27/93 Method Number: 335.2

TID Number: 05-93-05-06 Author: M. FLETCHER

CASE NARRATIVE

The 10 water samples were initially distilled on 5/20-21/93 and analyzed on 5/24/93. The samples distilled on 5/20/93; 93ZE33S36-38 and 93ZE06R64 were acceptable. The samples distilled on 5/21/93; 93ZE33S39, 93ZE33D39, 93ZE33D38, 93ZE06R60, and 93ZE06R62 were not acceptable due to low recoveries of the matrix spike(25 %) and the distilled AQC(83 %). Sample 93ZE33S39 was designated as a MSD. The sample contained a black thick precipitate and was very odorous. The analyst suspects interference as a cause for the very low recovery of the matrix spike. During the distillation the analyst experienced circuit breaker problems with the heating mantle containing the AQC and suspects this to be the cause of the low AQC recovery.

The affected water samples; 93ZE33S39, 93ZE33D39, 93ZE33D38, 93ZE06R60, and 93ZE06R62 were redistilled along with the soil samples; 93ZE33S40 and 93ZE33D40, on 5/24-25/93. The redistilled water samples and the soil samples were analyzed on 5/25/93. Sample 93ZE33D38 was chosen as the matrix spike and the duplicate due to the low volume of sample 93ZE33S38. The analyst experienced circuit breaker problems throughout the distillation. The samples were not acceptable due to the low recoveries of the AQC and the soil matrix spike.

The water samples 93ZE33S39,93ZE33D39, 93ZE06R60, and 93ZE06R62 were redistilled on 5/26/93 and the results were acceptable. Sample 93ZE33D39 was chosen as the matrix spike and duplicate due to low volume of sample 93ZE33S39. Sample 93ZE33D38 was depleted and per Francis Awanya's instructions, the best value for the sample was to be used when reporting the results. The result for 93ZE33D38 was taken from the initial analyses on 5/24/93. The soil samples were not acceptable due to the low recovery of the soil matrix spike. Since there were circuit breaker problems the analyst could not determine if the low recovery was from an improper distillation or interference. The soil samples, 93ZE33S40 and 93ZE33D40 were redistilled 5/28/93. The soils were analyzed on 6/1/93 and the results were acceptable.

Reviewed by: M. Fletcher Lockheed/ESAT
Date: 6-11-93

FAA 6/22/93

D930001187 TFA301 FAA 6/22/93

0141

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/3/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR E&E —

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 76020	WATER CR^{+6} UG CR^{+6}/L MIN 74816	WATER MERCURY UG HG/L MIN 74717
93ZE33S36	5031620 W7D+MSD		X 8u			
37	USGD 5031643		X 8u			
D37	DUSGD 5013668		X 8u			
93ZE06R60	MWFB01 5013682		X 8u			
93ZE33S36	W7D+MSD 5031619					X
93ZE33S37	USGD 5031644					X
93ZE33D37	DUSGD 5031667					X
93ZE06R60	MWFB01 5013680		L. Finkelberg			X
			M. Fleetham			
			6-7-93			
			L. Finkelberg 6-11-93			
	SHIPMENT	IS NOT	COMPLETE			

D93000 1187

FAA 6/22/93

TFA301 DRY2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER _____ DATA SET NUMBER _____ STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — F&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 78020	WATER CR^{+6} UG CR^{+6}/L MIN 74616	WATER MERCURY UG HG/L MIN 74717
93ZE33S38	5-031756 SW1+MSD		X 8u			X
↓ D38	SW1D 5-031760		X 8u			X
93ZE06R62	SWFB01 5-031769		X 8u			X
93ZE33S38	SW1+MSD 5-031752		L. Finkelberg M. Fletcher			X
93ZE33D38	SW1D 5-031761		6-7-93			X
93ZE06R62	SWFB01 5-031770					X
				L. Finkelberg 6-11-93		

D930001187 TFA301 DAY 2 FAA 6/22/93

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.D.L. Landfill PRIORITY — CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74819	WATER GROSS ALPHA P CI/L MIN 78020	WATER CR^{+6} UG CR^{+6}/L MIN 74816	WATER MERCURY UG HG/L MIN 74717
93ZE33539	L1-HSD		X			X
↓ D39	L1D		X			X
93ZE06R64	L.FBD15-031722		X 8u			X
93ZE06R64	LGB01 5-031723		L.Finkelberg M.Fletcher 6-7-93			X
			L.Finkelberg 6-12-93	Shipment NOT complete		

D930001187

TFA301 FAA 6/22/93

DM1

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE ~~6/8~~ 3/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 78020	WATER CR^{+6} UG CR^{+6}/L MIN 74816	WATER MERCURY UG HG/L MIN 74717
93ZE33S39	5-031695 L1 + MSD		X 13			
↓ D39	5-031708 L1D		X 14			
LK ~~93ZE06R61~~	~~L.FB01~~		X			
93ZE33S39	L1+MSD 5-031696					X
93ZE33D39	L1D 5-031709		L.Finkelberg			X
			M. Fletcher			
			6-7-93			
			L.Finkelberg 6-12-93			
			Shipment NOT complete			

FAA 6/22/93

D930001187

TFA301 Day 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/14/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

CU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CAL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLID S CHEMICAL OXYGEN DEMAND MG COD/KG (DRY) MIN43327	SEDIMENTS SOLID S MERCURY MG HG/KG (DRY) MIN44728	SEDIMENTS SOLID S ~~PHENOLICS~~ TOC MG PHENOL/KG (DRY) MIN44829	SEDIMENTS SOLID S CYANIDE MG CN/KG (DRY) MIN44930	
93ZE33S40	SD1 + MSD		X	X	X 0.91U	5-148219
D40	SD1D		X	X	X 0.74U	5-148221
S40	SD1 + MSD			X		5-148220
D40	SD1 DUPLICATE			X	L. Finkelberg	5-148222
					M. Fletcher	
					6-8-93	
					L. Finkelberg	
					6-12-93	

L. FINKELBERG
6-7-93
L. FINKELBERG
6-12-93

FAA 6/22/93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: LFINKELBERG DATA SET NUMBER ---: SF1187
PARAMETER NAME ----: CN DU NUMBER ---------:
DATE OF ANALYSIS --: 06-07-1993

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -1.96141E+00
+2.37976E+00 * SIGNAL

COEFFICIENT OF DETERMINATION : .999975

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+1.000	+0.000	+0.418
2	+11.300	+25.000	+24.929
3	+21.800	+50.000	+49.917
4	+42.600	+100.000	+99.416
5	+85.000	+200.000	+200.318

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION ug/L		LIMITS ug/L
BLANK UND	+1.000	+0.418		0 ± 8
BLANK D 5-20-93	+0.000	-1.962		0 ± 8
AQC UND	+45.000	+105.127	rec = 105	100 ± 15
AQC D 5-20-93	+46.000	+107.507	rec = 107	100 ± 15
BLANK UND	+1.000	+0.418		0 ± 8
93ZE33S36	+0.200	-1.486	8 u	~~0 ± 8~~ L.F. 6-7-93
93ZE33S36 DUP	+0.000	-1.962	8u	Δ ± 15
93ZE33S36 SPIKE	+42.200	+98.464	rec. = 98	100 ± 15
93ZE33S37	+0.000	-1.962	8 u	
93ZE33D37	+0.000	-1.962	8u	
93ZE33S38	+0.000	-1.962	8u	Δ ± 15
93ZE33S38 DUP	+0.000	-1.962	8u	
93ZE33S38 SPIKE	+45.500	+106.317	rec. 106	100 ± 15
93ZE06R64	+0.000	-1.962	8u	
AQC UND	+45.200	+105.603	rec = 106	100 ± 15
AQC D 5-20-93	+46.000	+107.507	rec = 107	100 ± 15
BLANK UND	+1.000	+0.418		0 ± 8
BLANK D 5-20-93	+1.000	+0.418		0 ± 8
BLANK UND	+0.000	-1.962		0 ± 8
BLANK D 5-21-93	+0.000	-1.962		0 ± 8

SF1187

				LIMITS ug/L
AQC UND	+45.000	+105.127	rec = 105	100 ± 15
AQC D 5-21-93	+36.000	+83.709	rec = 84 *	100 ± 15
BLANK UND	+1.000	+0.418		0 ± 8
93ZE33S39	+2.500	+3.987	8 u	Δ ± 15
93ZE33S39 DUP	+2.400	+3.750	8 u	
93ZE33S39 SPIKE	+11.500	+25.405	rec = 25 *	100 ± 15
93ZE33D39	+3.000	+5.177	8 u	
93ZE33D38	+0.000	-1.962	8 u	
93ZE06R60	+0.000	-1.962	8 u	
93ZE06R62	+0.000	-1.962	8 u	
BLANK UND	+1.000	+0.418		0 ± 8
BLANK D 5-21-93	+0.000	-1.962		0 ± 8
AQC UND	+45.000	+105.127	rec = 105	100 ± 15
AQC D 5-21-93	+35.800	+83.233	rec = 83 *	100 ± 15
BLANK UND	+0.500	-0.772		0 ± 8
BLANK D 5-21-93	+0.500	-0.772		0 ± 8
BLANK UND	+0.500	-0.772		0 ± 8

* Data unusable because AQC < 85% and matrix spike recovery is out of control (< 85%).

FMA 6/22/93

M. Fletcher 6-7-93
L. Finkelter
6-12-93

FAA 6/22/93

CYANIDE AUTO UV METHOD,
Manual Distillation

Element: cyanide

Analyst L. Finkelberg M. Fletcher

Date 6-8-93

Data Set 1187

Pos	ID	Spike	DF	Comment
1	Prim			
2	Prim			
3	Blank			undistilled
4	Blank			distilled
5	Standard 0 ug/l			undistilled
6	Standard 25 ug/l			undistilled
7	Standard 50 ug/l			undistilled
8	Standard 100 ug/l			undistilled
9	Standard 200 ug/l			undistilled
10	Blank			undistilled
11	Blank			distilled
12	CS 100 ug/l			undistilled
13	CS 100 ug/l			distilled
14	Blank und			
15	93E33536			
16	536			duplicate
17	536			spike
18	537			
19	537			
20	538			
21	538			duplicate
22	538			spike
23	93E06R64			
24	AQC und			L. Finkelberg
25	AQC dis - 5-20-93			6-12-93
26	Blk und			
27	Blk dis 5-20/93			

cnl

FAA 6/22/93

CYANIDE MANUAL DISTILLATION

L. Finkelberg

Element: cyanide

Analyst M. Fletcher

Date 6-8-93

Data Set SF1187

Pos	ID	Spike	DF	Comment
28	Blank und			
29	Blank dis 5-21-93			
30	A&C und			
31	AQC dis 5-21			
32	Blank und			
33	93ZE33539			
34	539			duplicate
35	539			spike
36	D39			
37	D38			
38	93ZE06 R6D			
39	R62			
40	Blank und			
	~~Start Wheel 2~~ MF 6-8-93			
1	Blank d 5-21-93			
2	AQC und			
3	AQC dis 5-21-93			
4	Blank und			
5	Blank dis 5-21-93			
6	Blank und			
7				L. Finkelberg
8				6-12-93
9				
10				
11				
12				
13				

cn4

GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK FHA 6/22/93 NO. TEN 011-0173-01

5-24-93.

CN analysis

SF.1187

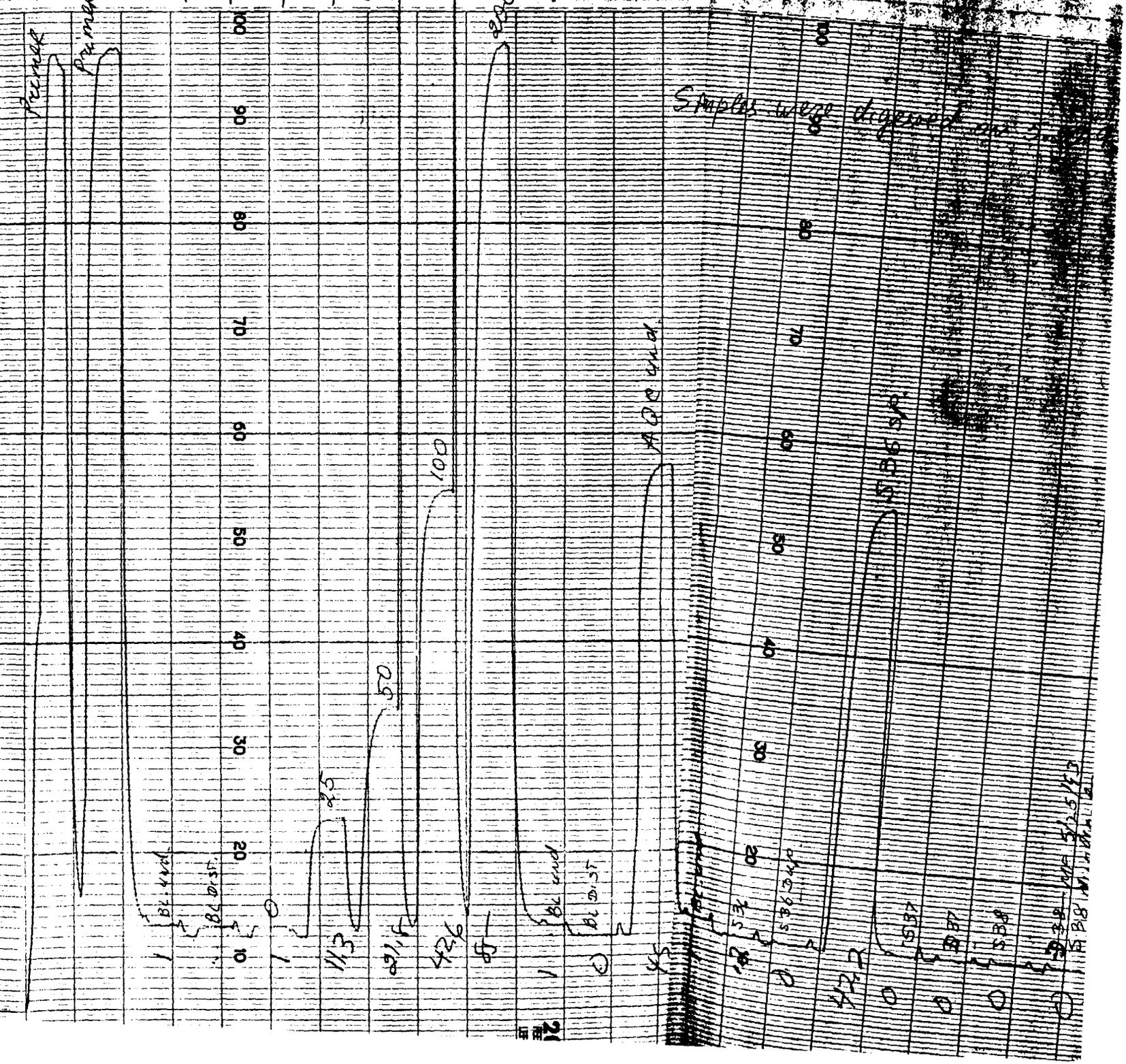
Water

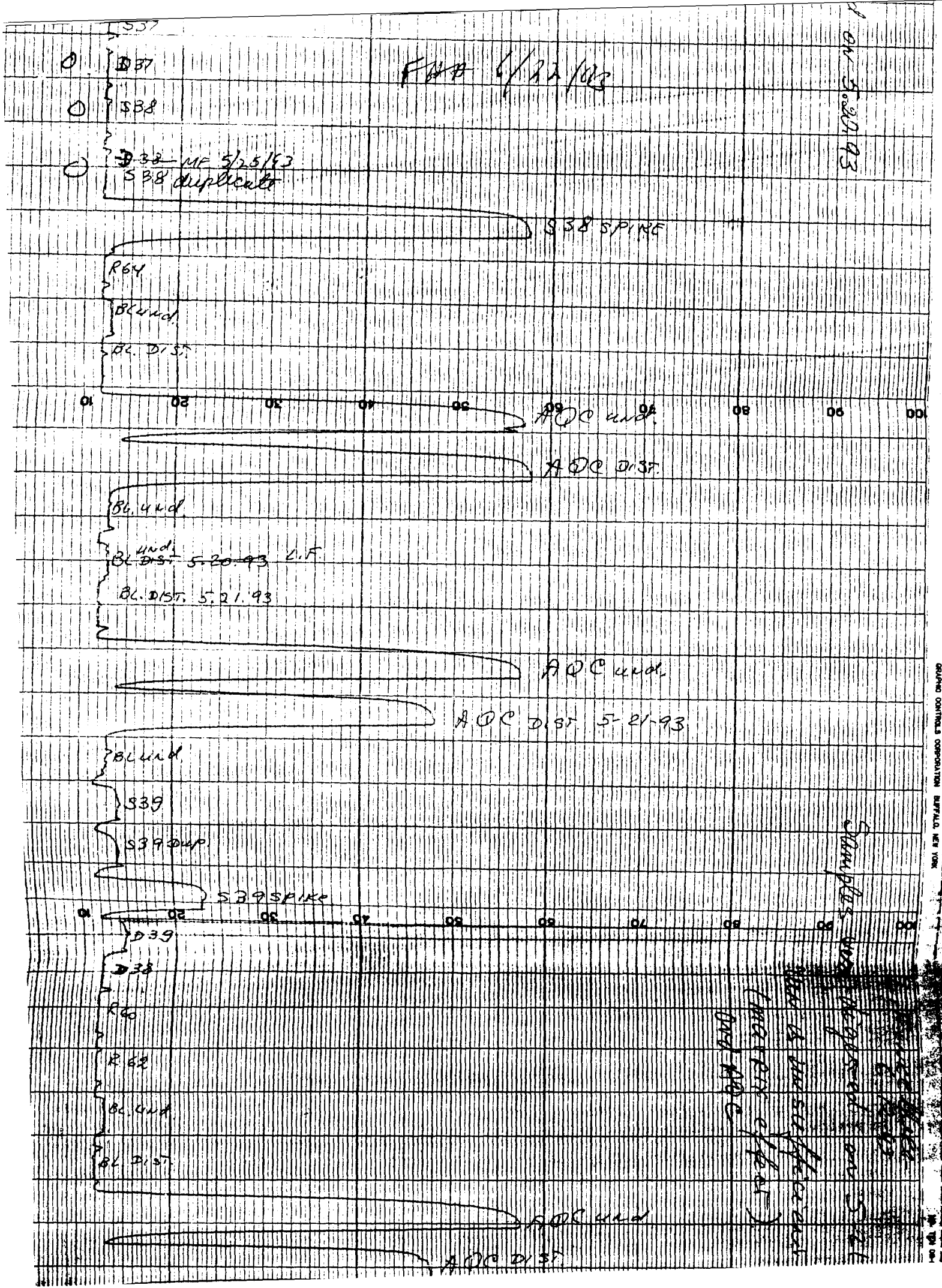
L. Finkelberg

METHOD 335.2

L. Finkelberg

6-12-93





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GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK

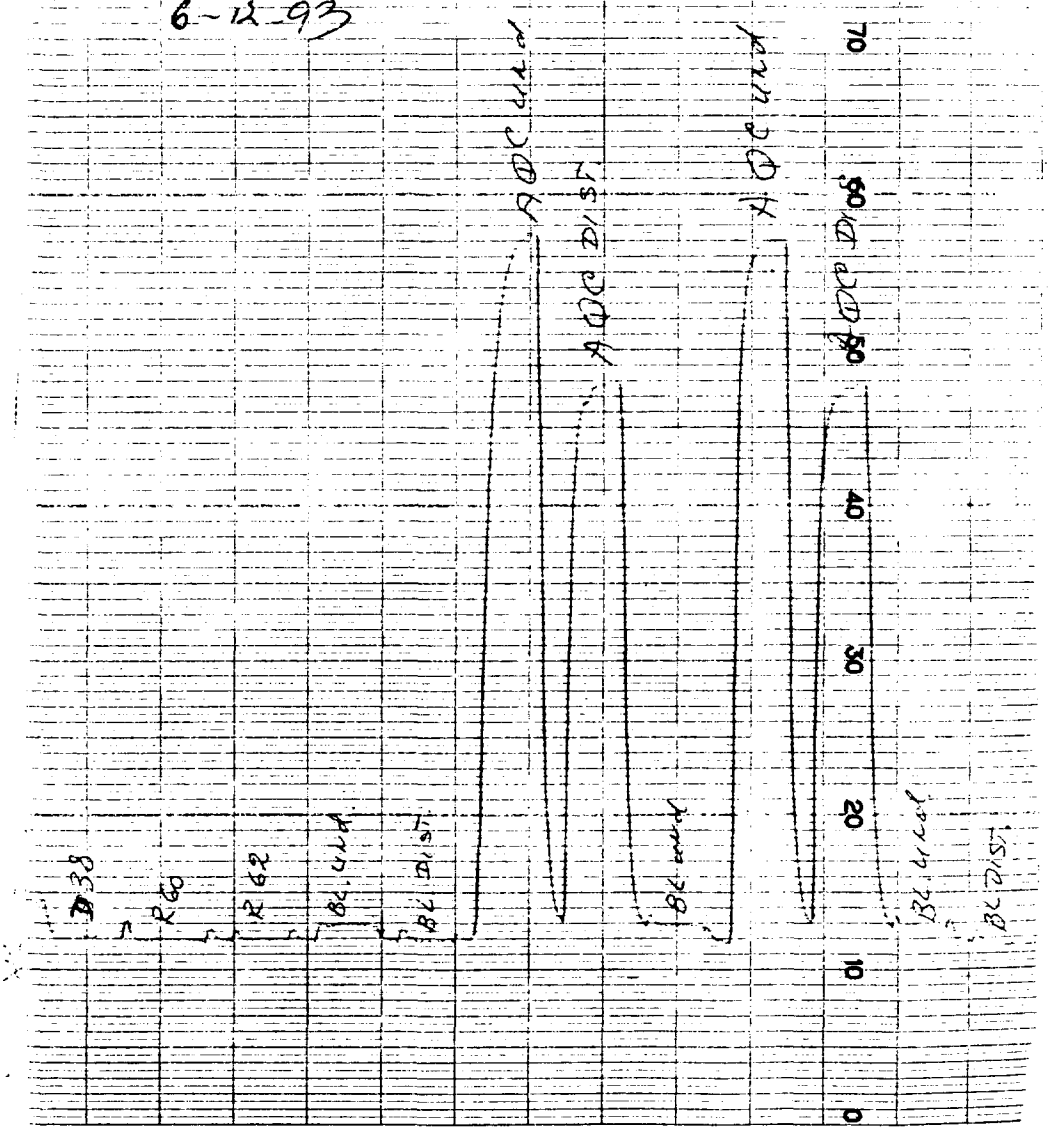
Summers well
Was in surface cement
(matrix effect)
Good pipe
L. Fineke
6-12-93
FAA 6/24/93
19
Before
AOC dist 5-21-93
Before
AOC dist 5-21-93
AOC dist 5-21-93
AOC dist 5-21-93

NO. TEN 011-0173-01

were digested on 5-21-93.

run is insufficient
(matrix effect)
and AQC

L. Finkelberg
6-12-93



FHA 6/22/93

FAA 6/22/93

L. Finkelberg
6-7-93

M. Fletcher
6-11-93

SF1187

L. Finkelberg
6-12-93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: LFINKELBERG DATA SET NUMBER ---: SF1187/1191
PARAMETER NAME ----: CN DU NUMBER ---------:
DATE OF ANALYSIS --: 06-07-1993

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -2.40436E+00
+2.65629E+00 * SIGNAL

COEFFICIENT OF DETERMINATION : .9995622

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	-2.405
2	+11.000	+25.000	+26.814
3	+20.200	+50.000	+51.252
4	+38.500	+100.000	+99.862
5	+76.000	+200.000	+199.473

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION ug/L		LIMITS ug/L
BLANK UND	+0.800	-0.280		0 ± 8
BLANK D	+0.900	-0.014		0 ± 8
AQC UND	+40.900	+106.237 rec. 106		100 ± 15
AQC D	+38.000	+98.534 rec = 98	Limits mg/kg	100 ± 15
93ZE33S40	+1.000	+0.251 } SF 1187 MF 6/8/93 ~~0.024~~ mg/kg → 0.9 mg/kg		~~mg/kg~~ ug/L
93ZE33S40 DUP	+1.000	+0.251 } ~~0.030~~ mg/kg 0.950 mg/kg		Δ ± 15
93ZE33S40 SPIKE	+38.000	+98.534 rec = 98 6/8/93 11.8 mg/kg	← Spike limits 10.2-13.7	100 ± 15
93ZE33D40	+1.000	+0.251 ~~0.023~~ mg/kg 6/8/93 0.74 mg/kg		
BLANK UND	+1.000	+0.251		0 ± 8
BLANK D	+1.200	+0.783		0 ± 8
AQC UND	+40.500	+105.175 rec = 105		100 ± 15
AQC D	+38.500	+99.862 rec. = 100		100 ± 15
93ZF53S02	+0.700	-0.545 } 8u SF 1191		Δ ± 15
93ZF53S02 DUP	+0.500	-1.077 }		
93ZF53S02 SPIKE	+39.500	+102.519 rec 103		100 ± 15
93ZF53D02	+1.000	+0.251 8u		
93ZF53R03	+1.000	+0.251 8u		
93ZF53S13	+1.000	+0.251 8u }		~~Δ ± 15~~
93ZF53D13	+1.000	+0.251 8u }		MF 6/8/93
93ZF53S12	+1.000	+0.251 8u		

SF 1191

M. Fletcher 6-11-93

				LIMITS 48/L
93ZF53S11	+1.200	+0.783	8u	
93ZF53S03	+1.100	+0.517	8u	
93ZF53R01	+1.000	+0.251	8u	
BLANK UND	+1.000	+0.251		0±8
BLANK D	+1.000	+0.251		0±8
AQC UND	+41.200	+107.034	rec = 107	100±15
AQC D	+39.500	+102.519	rec 103	100±15
BLANK UND	+1.000	+0.251		0±8
BLANK D	+1.000	+0.251		0±8
BLANK UND	+1.000	+0.251		0±8

SF1187

L. Finkelberg 6-8-93
M. Fletcher 6-8-93
L. Finkelberg
6-12-93

FAA 6/22/93

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* SEDCAL * CSC VERSION 1.00 *

NAME OF ANALYST ----: M. FLETCHER

DATE OF ANALYSIS ---: 06-23-1993

M. Fletcher 6-23-93

SEDIMENT CALCULATION FOR CYANIDE

SAMPLE NO.	% SOLID	WET WT(GMS)	DRY WT(GM/L)	SED CONC(UG/L)	SED CONC(MG/KG)
**********	*******	**********	**********	**********	**********
93ZE33S40	74.10	2.96	8.77	8.00	0.912
93ZE33S40D	76.80	2.74	8.42	8.00	0.950
93ZE33D40	77.20	3.49	10.78	8.00	0.742
93ZE33S40S	74.10	2.82	8.36	98.53	11.788

J Rolli 6/3/93

6-3-93

% Solids SF 1187

in oven - 11:15 6-3-93
out oven - 11:15 6-4-93

Balance ck 6/3/93

1g - 1.0030 50g - 50.0164
5g - 5.0016 100g - 100.0016
20g 20.0094

Sample ID	Empty Tare wt (g)	Tare + wet wt (g)	wet sample wt (g)	Tare + dry sample wt (g)	dry sample wt (g)	% Solids (g)	comments
Blank	23.661	—		23.661	0.0	—	
93ZE33S40	23.929	33.974	10.045	31.674	7.445	74.1	
93ZE33S40 dup	23.656	34.211	10.555	31.759	8.103	76.8	
93ZE33D40	22.225	33.359	11.134	30.821	8.596	77.2	

Balance ck 6/4/93

1g - 1.0029 50g - 50.0164
5g - 5.0015 100g - 100.0018
20g - 20.0094

J. Rolli 6/4/93

L. Finkelberg 6-8-93
M. Fletcher 6-8-93

M. Fletcher 6-11-93
L. Finkelberg 6-12-93

FAA 6/22/93

L. Finkelberg 6-12-93
M. Fletcher 6-11-93

CYANIDE AUTO UV METHOD,
Manual Distillation

Element: cyanide
Date 6-8-93

Analyst L. Finkelberg / M. Fletcher
Data Set SF1187/1191

Pos	ID	Spike	DF	Comment
1	Prim			
2	Prim			
3	Blank			undistilled
4	Blank			distilled
5	Standard 0 ug/l			undistilled
6	Standard 25 ug/l			undistilled
7	Standard 50 ug/l			undistilled
8	Standard 100 ug/l			undistilled
9	Standard 200 ug/l			undistilled
10	Blank			undistilled
11	Blank			distilled
12	CS 100 ug/l			undistilled
13	CS 100 ug/l			distilled
14	93E3540			SF1187
15	S40			duplicate spike
16	S40			
17	D40			
18	Blank und			
19	Blank d			
20	AQC und			
21	AQC d			
22	93F53502			SF1191
23	S02			duplicate spike
24	S02			
25	D02			
26	R03			
27	S13			

cnl

FAA 6/22/93

L. Finkelberg 6-12-93
M. Fletcher 6/1/93

CYANIDE MANUAL DISTILLATION

L. Finkelberg

Element: cyanide

Analyst M. Fletcher

Date 6-8-93

Data Set SF1187/1191

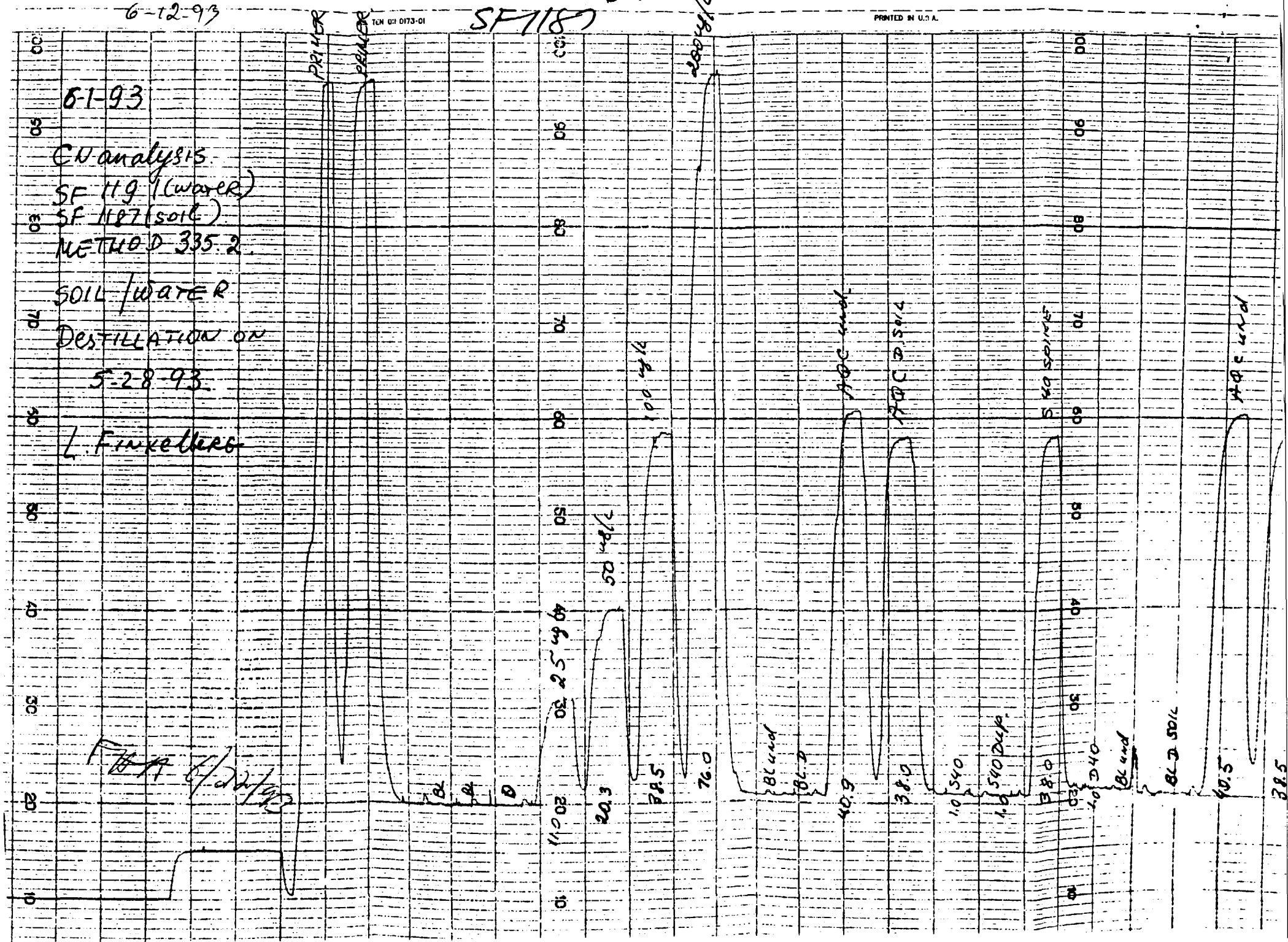
Pos	ID	Spike	DF	Comment
28	AQ3ZF53D13			SF1191
29	" S12			
30	S11			
31	S03			
32	R01			
33	Blank und			
34	Blank dis			
35	AQC und			
36	AQC dis			
37	Blank und			
38	Blank d			
39	Blank und			
40				
	Start Wheel 2			
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				

cn4

FAA 6/22/03

L. Finkelberg
6-12-93

M. Fletcher 6-11-93
SF1187



BCD SOIL

40.5 AQC und

38.5 AQCD WATER

0.7 SO2

0.5 SO2 DUP

39.5 SO2 SPIKE

1.0 DO2

1.0 RO3

1.0 SR3

1.0 DR3

1.0 SR2

1.0 SR1

1.0 SO3

1.0 RO1

1.0 BC und

1.0 BCD WATER

41.2 AQC und

39.5 AQCD WATER

1.0 BC und

1.0 BCD

1.0 BC und

85

FAA 6/22/93

L. Finkelberg
6-7-93
L. Finkelberg
6-11-93

FAA 6/22/93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: LFINKELBERG DATA SET NUMBER ---: SF1187
PARAMETER NAME ----: CN DU NUMBER ---------:
DATE OF ANALYSIS --: 06-07-1993

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -1.21741E+00
+2.85031E+00 * SIGNAL

COEFFICIENT OF DETERMINATION : .9998904

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	-1.218
2	+9.500	+25.000	+25.860
3	+18.200	+50.000	+50.658
4	+35.500	+100.000	+99.968
5	+70.500	+200.000	+199.729

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION		LIMITS ug/L
BLANK UND	+0.000	-1.218		0 ± 8
BLANK D	+0.200	-0.648		0 ± 8
AQC UND	+37.800	+106.524	rec = 106	100 ± 15
AQC D	+36.700	+103.389	rec = 103	100 ± 15
93ZE33S40	+0.400	-0.078	MG/KG 8u	mg/kg A ± 15
93ZE33S40 DUP	+0.400	-0.078		
93ZE33S40 SPIKE	+28.200	+79.161	R = 79 *	100 ± 15
93ZE33D40	+0.500	+0.207	8u	ug/L
93ZE33S39	+5.000	+13.034		A ± 15
93ZE33D39	+5.500	+14.459		
93ZE33D39 DUP	+4.500	+11.609		
93ZE33D39 SPIKE	+32.500	+91.417	rec = 91	100 ± 15
93ZE06R60	+0.500	+0.207	8u	
93ZE06R62	+0.300	-0.363	8u	LIMITS ug/L
AQC UND	+38.000	+107.094	L.F. 6-7-93	
~~AQC D~~ operator error	~~+0.000~~	~~-1.218~~	wrong samples	
BLANK UND	+0.000	-1.218		0 ± 8
BLANK D	+0.200	-0.648		0 ± 8
AQC UND	+38.000	+107.094	rec = 107	100 ± 15
AQC D	+36.900	+103.959	rec = 104	100 ± 15

LIMITS
0±8

BLANK UND +0.500 +0.207

* Soil data are unuseable due to low matrix spike recovery (<85%).

M. Fletcher 6-8-93
L. Finkelberg
6-11-93

FAA 6/22/93

CYANIDE AUTO UV METHOD,
Manual Distillation
L. Finkelberg
6-12-93

Element: cyanide
Date 6-8-93

Analyst L. Finkelberg M. Fleiberg
Data Set SF1187

Pos	ID	Spike	DF	Comment
1	Prim			
2	Prim			
3	Blank			undistilled
4	Blank			distilled
5	Standard 0 ug/l			undistilled
6	Standard 25 ug/l			undistilled
7	Standard 50 ug/l			undistilled
8	Standard 100 ug/l			undistilled
9	Standard 200 ug/l			undistilled
10	Blank			undistilled
11	Blank			distilled
12	CS 100 ug/l			undistilled
13	CS 100 ug/l			distilled
14	93ZE33S40			soil
15	S40			soil duplicate
16	S40			soil spike
17	D40			soil
18	S39			
19	D39			
20	D39			duplicate
21	MF 6/8/93 ~~R60~~ D39			spike
22	R60			
23	R62			
24	AQC und			TV=100ug/l wrong sample
25	Blank und			
26	Blank dist			
27	AQC und			

cnl

FAA 6/22/93

CYANIDE MANUAL DISTILLATION

L. Finkelberg

L. Finkelberg 6-12-93

Element: cyanide

Analyst M. Fletcher

Date 6-8-93

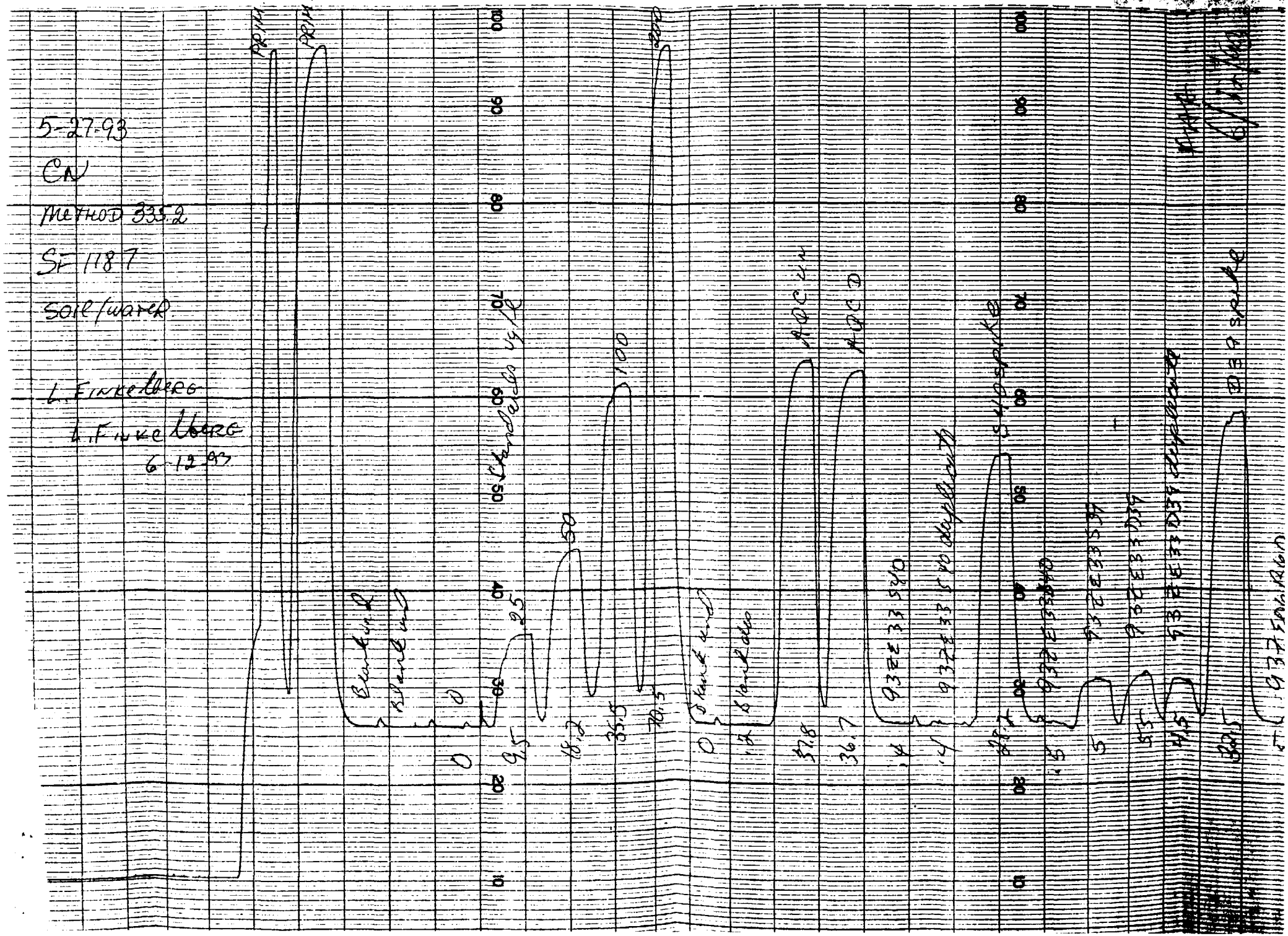
Data Set SF1187

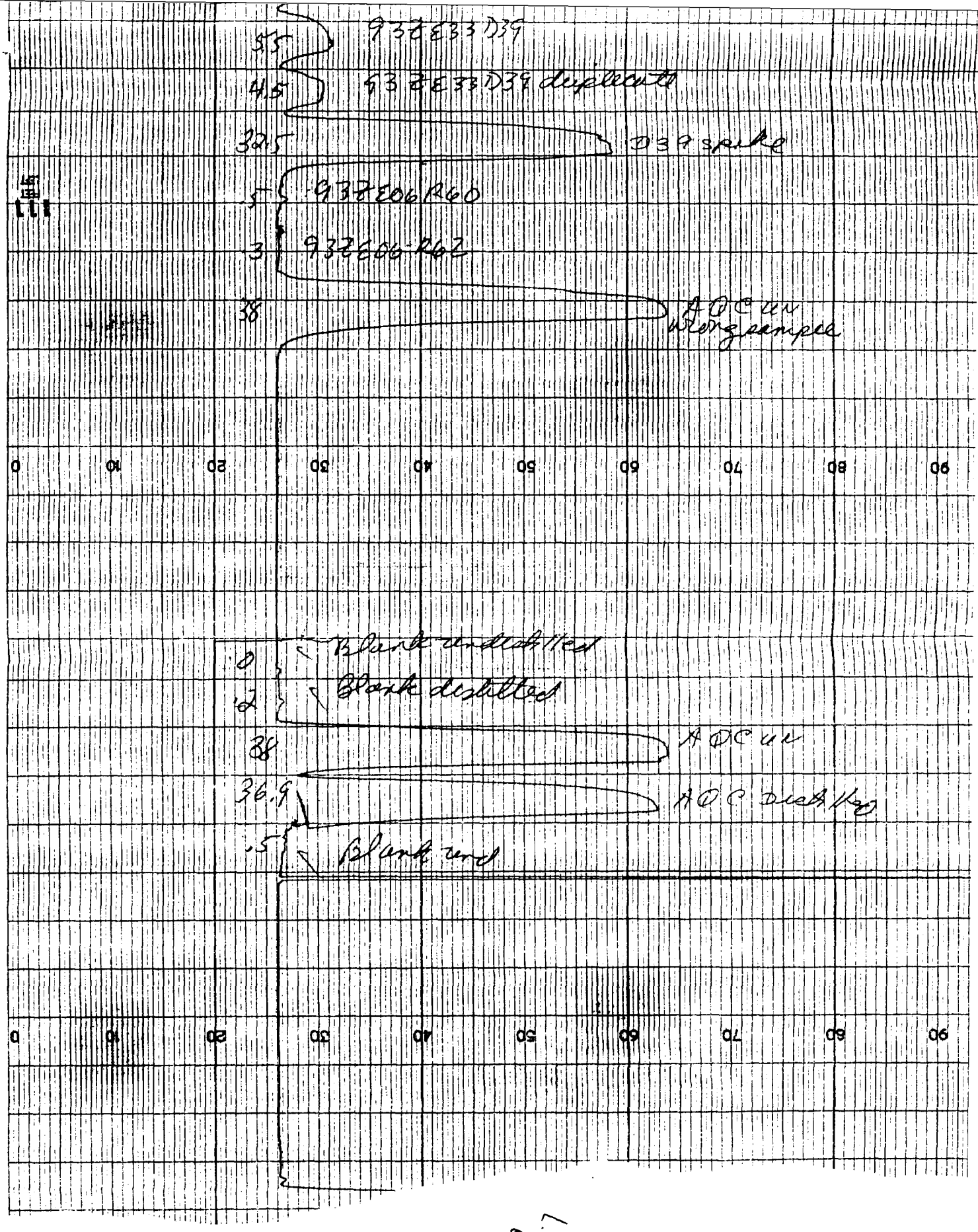
Pos	ID	Spike	DF	Comment
28	Blank mud			
29	"			
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
Start Wheel 2				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				

cn4

FAA 6/22/93

GRAPHIC CONTROLS CORPORATION BUFFALO, NEW YORK NO. TEN 011-0173-01





L. Finkelberg
6-12-93

FAA
6/22/93

FAA 6/22/93

L. Finkelberg

6-7-93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: LFINKELBERG DATA SET NUMBER ---: SF1187
PARAMETER NAME ----: CN DU NUMBER ---------:
DATE OF ANALYSIS --: 06-07-1993

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -1.21741E+00
+2.85031E+00 * SIGNAL

COEFFICIENT OF DETERMINATION : .9998904

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	-1.218
2	+9.500	+25.000	+25.860
3	+18.200	+50.000	+50.658
4	+35.500	+100.000	+99.968
5	+70.500	+200.000	+199.729

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION		LIMITS ug/L
BLANK UND	+0.000	-1.218		0 ± 8
BLANK D	+0.200	-0.648		0 ± 8
AQC UND	+37.800	+106.524	rec = 106	100 ± 15
AQC D	+36.700	+103.389	rec = 103	100 ± 15
93ZE33S40	+0.400	-0.078	MG/KG	mg/kg
93ZE33S40 DUP	+0.400	-0.078	8u	A ± 15
93ZE33S40 SPIKE	+28.200	+79.161	R = 79 *	100 ± 15
93ZE33D40	+0.500	+0.207	8u	ug/L
93ZE33S39	+5.000	+13.034		A ± 15
93ZE33D39	+5.500	+14.459		
93ZE33D39 DUP	+4.500	+11.609		
93ZE33D39 SPIKE	+32.500	+91.417	Rec = 91	100 ± 15
93ZE06R60	+0.500	+0.207	8u	
93ZE06R62	+0.300	-0.363	8u	
AQC UND	+38.000	+107.094	L.F. 6-7-93	LIMITS ug/L
~~AQC D~~ operator	~~+0.000~~ error	~~-1.218~~	wrong samples	
BLANK UND	+0.000	-1.218		0 ± 8
BLANK D	+0.200	-0.648		0 ± 8
AQC UND	+38.000	+107.094	rec = 107	100 ± 15
AQC D	+36.900	+103.959	rec = 104	100 ± 15

LIMITS
0±8

BLANK UND	+0.500	+0.207

* Soil data are unuseable due to low matrix spike recovery (<85%).

Mr Fletcher 6-8-93

FMA 6/22/93

FBB 6/22/93

CYANIDE AUTO UV METHOD,
Manual Distillation

Element: cyanide

Analyst L. Finkelberg M. Fleders

Date 6-8-93

Data Set SF1187

Pos	ID	Spike	DF	Comment
1	Prim			
2	Prim			
3	Blank			undistilled
4	Blank			distilled
5	Standard 0 ug/l			undistilled
6	Standard 25 ug/l			undistilled
7	Standard 50 ug/l			undistilled
8	Standard 100 ug/l			undistilled
9	Standard 200 ug/l			undistilled
10	Blank			undistilled
11	Blank			distilled
12	CS 100 ug/l			undistilled
13	CS 100 ug/l			distilled
14	93ZE33540			soil
15	S40			soil duplicate
16	S40			soil spike
17	D40			soil
18	S34			
19	D34			
20	D34			duplicate
21	MF 6/18/93 ~~R60~~ D34			spike
22	R60			
23	R62			
24	AQC und			TV = 100 ug/l wrong sample
25	Blank und			
26	Blank dist			
27	AQC und			

cnl

FDB 6/22/93

CYANIDE MANUAL DISTILLATION

L. Finzelberg

Element: cyanide

Analyst M. Fleckley

Date 6-8-93

Data Set SF1187

Pos	ID	Spike	DF	Comment
28	Blank mud			
29				
30				
31				
32				
33				
34				
35				
36				
37				
38				
39				
40				
Start Wheel 2				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				

COMPUTATION SHEET

FHA 6/22/93

FILE NO

SF 1187 Method 335.2

CN

L. Finkelberg

CHECKED BY | DATE 6-8-93 | PAGE OF PAGES

	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		CONCENTR. ug/L		CONCENTR. mg/kg	LIMITS			
0	0							
25	9.5							
50	18.2							
100	35.5							
200	70.5							
BLANK und	0.0	-1.218			0 ± 8			
BLANK DIST	0.2	-0.648			0 ± 8			
AQC und	37.8	106.524	rec=106		100 ± 15			
AQC DIST	36.7	103.389	rec = 103		100 ± 15			
93ZE33 S40	0.4	-0.078			Δ ± 15			
93ZE33S40 Dup	0.4	-0.078	8cc					
93ZE33S40sp	28.2	79.161	* rec. 79		100 ± 15			
93ZE33 D40	0.5	0.207						
93ZE33 S39	5.0	13.034			Δ ± 15			
93ZE33 D39	5.5	14.459						
93ZE33 D39 Dup	4.5	11.609						
93ZE33D39 sp.	32.5	91.417			100 ± 15			
93ZE06 R60	0.5	0.207						
93ZE06 R62	0.3	-0.363						
AQC und	38.0	107.094	wrong sample					
BLANK und	0.0	-1.218			0 ± 8			
BLANK DIST	0.2	-0.648			0 ± 8			
AQC und	38.0	107.094	rec. 107		100 ± 15			
AQC DIST	36.9	103.959	rec. 104		100 ± 15			
BLANK und	0.5	0.207			0 ± 8			

* Soil data are unuseable due to low matrix spike recovery (<85%).

U.S. Environmental Protection Agency Region V

Superfund Document Management System (SDMS)

Lab Data Reference Sheet

Please contact the Superfund Records Manager for further information.

I. Unscannable item due to format

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L. Finkelberg
6-7-93

M. Fletcher
6-11-93

SF1187

FAA 6/22/93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: LFINKELBERG DATA SET NUMBER ---: SF1187/1191
PARAMETER NAME ----: CN DU NUMBER ---------:
DATE OF ANALYSIS --: 06-07-1993

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -2.40436E+00
+2.65629E+00 * SIGNAL

COEFFICIENT OF DETERMINATION : .9995622

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	-2.405
2	+11.000	+25.000	+26.814
3	+20.200	+50.000	+51.252
4	+38.500	+100.000	+99.862
5	+76.000	+200.000	+199.473

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION ug/L		LIMITS ug/L
BLANK UND	+0.800	-0.280		0 ± 8
BLANK D	+0.900	-0.014		0 ± 8
AQC UND	+40.900	+106.237 rec. 106		100 ± 15
AQC D	+38.000	+98.534 rec = 98	Limits mg/kg	100 ± 15
93ZE33S40	+1.000	+0.251 } MF 6/8/93 ~~0.029~~ mg/kg → 0.9 mg/kg	SF 1187	~~mg/kg~~ ug/L
93ZE33S40 DUP	+1.000	+0.251 } ~~0.030~~ mg/kg 0.950 mg/kg		Δ ± 15
93ZE33S40 SPIKE	+38.000	+98.534 rec = 98 6/8/93 11.8 mg/kg	← Spike limits 10.2-13.7	100 ± 15
93ZE33D40	+1.000	+0.251 ~~0.023~~ mg/kg 0.74 mg/kg		
BLANK UND	+1.000	+0.251		0 ± 8
BLANK D	+1.200	+0.783		0 ± 8
AQC UND	+40.500	+105.175 rec = 105		100 ± 15
AQC D	+38.500	+99.862 rec. = 100		100 ± 15
93ZF53S02	+0.700	-0.545 } 8u	SF 1191	Δ ± 15
93ZF53S02 DUP	+0.500	-1.077 }		
93ZF53S02 SPIKE	+39.500	+102.519 rec 103		100 ± 15
93ZF53D02	+1.000	+0.251 8u		
93ZF53R03	+1.000	+0.251 8u		
93ZF53S13	+1.000	+0.251 8u }		~~Δ ± 15~~
93ZF53D13	+1.000	+0.251 8u }		MF 6/8/93
93ZF53S12	+1.000	+0.251 8u		

SF 1191

M. Fletcher 6/11-93

				LIMITS 48/L
93ZF53S11	+1.200	+0.783	8u	
93ZF53S03	+1.100	+0.517	8u	
93ZF53R01	+1.000	+0.251	8u	
BLANK UND	+1.000	+0.251		0±8
BLANK D	+1.000	+0.251		0±8
AQC UND	+41.200	+107.034	rec = 107	100±15
AQC D	+39.500	+102.519	rec 103	100±15
BLANK UND	+1.000	+0.251		0±8
BLANK D	+1.000	+0.251		0±8
BLANK UND	+1.000	+0.251		0±8

FAA 6/22/93

SF1187

L. Finneberg 6-8-93
M. Fletcher 6-8-93

SF1187 **COMPUTATION SHEET** M. Fletcher 6-11-93

OFFICE			FILE NO
SUBJECT SF 1187/1191			FAA 6/22/93
COMPUTATION			
COMPUTED BY	CHECKED BY	DATE 6-8-93	PAGE OF PAGES

(1)	(2)	(3)	(4) CONCENTR. ug/L	(5) CONCENTR. mg/kg	(6) LIMITS ug/l	(7)	(8) PH	(9) CHLORINE SCREEN	(10) sulfide
0		0							
25		11							
50		20.2							
100		38.5							
200		76.0							
BLANK	und	0.8	-0.280		0 ± 8				
BLANK	DIST	0.9	-0.014		0 ± 8				
AQC	und	40.9	106.237	rec=106 ug/l	100 ± 15				
AQC	DIST	38.0	98.534	rec=98 ug/l	100 ± 15				
93ZE33	S40	1.0	0.251	0.029 *	A ± 15 ug/l		7 11	none	none
93ZE33	S40 Dup	1.0	0.251	0.030 *					
93ZE33	S40 SP	38.0	98.534	rec=98	100 ± 15				
93ZE33	D40	1.0	0.251	0.023 *					
BLANK	und	1.0	0.251		0 ± 8				
BLANK	DIST	1.2	0.783		0 ± 8				
AQC	und	40.5	105.175		100 ± 15				
AQC	DIST	38.5	99.862		100 ± 15				
93ZF53	S02	0.7	-0.545		A ± 15		7 11	NONE	NONE
93ZF53	S02 Dup	0.5	-1.077						
93ZF53	S02 Spike	39.5	102.519	rec=102	100 ± 15				
93ZF53	D02	1.0	0.251						
93ZF53	R03	1.0	0.251						
93ZF53	S13	1.0	0.251						
93ZF53	D13	1.0	0.251						
93ZF53	S12	1.0	0.251						
93ZF53	S11	1.2	0.783						
93ZF53	S03	1.1	0.517						
93ZF53	R01	1.0	0.251						
BLANK	und	1.0	0.251		0 ± 8				
BLANK	DIST	1.0	0.251		0 ± 8				
AQC	und	41.2	107.034		100 ± 15				
AQC	DIST	39.5	102.519		100 ± 15				
BLANK	und	1.0	0.251		0 ± 8				
BLANK	DIST	1.0	0.251		0 ± 8				
BLANK	und.	1.0	0.251		0 ± 8				

* mg/kg for soils above based on actual ug/l concentration
For reporting purposes the data on the data
report sheets uses the IDL in calculation of 8 ug/l

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* SEDCAL * CSC VERSION 1.00 *

NAME OF ANALYST ----: M. FLETCHER

DATE OF ANALYSIS ---: 06-23-1993

M. Fletcher 6-23-93

L. Finkelberg

SEDIMENT CALCULATION FOR CYANIDE

SAMPLE NO.	% SOLID	WET WT(GMS)	DRY WT(GM/L)	SED CONC(UG/L)	SED CONC(MG/KG)
**********	*******	**********	**********	**********	**********
93ZE33S40	74.10	2.96	8.77	8.00	0.912
93ZE33S40D	76.80	2.74	8.42	8.00	0.950
93ZE33D40	77.20	3.49	10.78	8.00	0.742
93ZE33S40S	74.10	2.82	8.36	98.53	11.788

J Rodli 6/3/93

6-3-93

% Solids SF 1187

in oven - 11:15 6-3-93
out oven - 11:15 6-4-93

Balance ck 6/3/93

1g - 1.0030 50g - 50.0164
5g - 5.0016 100g - 100.0016
20g 20.0094

Sample ID	Empty Tare wt (g)	Tare + wet wt (g)	Wet wt ~~Tare wt~~ 6/3/93 sample wt (g)	Tare + dry wt JR 6/3/93 sample wt (g)	dry sample wt (g)	% solids (g)	comments
Blank	23.661	—		23.661	0.0	—	
93ZE33S40	23.929	33.974	10.045	31.674	7.445	74.1	
93ZE33S40 dup	23.656	34.211	10.555	31.759	8.103	76.8	
93ZE33D40	22.225	33.359	11.134	30.821	8.596	77.2	

Balance ck 6/4/93

1g - 1.0029 50g - 50.0164
5g - 5.0015 100g - 100.0018
20g - 20.0094

J. Rodli 6/4/93

L. Finkelberg 6-8-93
M. Fletcher 6-8 93

M. Fletcher 6-11-93

FAA 6/22/93

M. Fletcher 6-11-93

L. Finkelberg

CYANIDE AUTO UV METHOD,
Manual Distillation

Element: cyanide

Analyst M. Fletcher

Date 6-8-93

Data Set SF1187/1191

Pos	ID	Spike	DF	Comment
1	Prim			
2	Prim			
3	Blank			undistilled
4	Blank			distilled
5	Standard 0 ug/l			undistilled
6	Standard 25 ug/l			undistilled
7	Standard 50 ug/l			undistilled
8	Standard 100 ug/l			undistilled
9	Standard 200 ug/l			undistilled
10	Blank			undistilled
11	Blank			distilled
12	CS 100 ug/l			undistilled
13	CS 100 ug/l			distilled
14	93E53540			SF1187
15	S40			duplicate
16	S40			spike
17	D40			
18	Blank und			
19	Blank d			
20	AQC und			
21	AQC d			
22	93E53502			
23	S02			duplicate SF1191
24	S02			spike
25	D02			
26	R03			
27	S13			

cnl

FAA 6/22/93

M. Fletcher 6/1/93

L. Finkelberg

CYANIDE MANUAL DISTILLATION

Element: cyanide

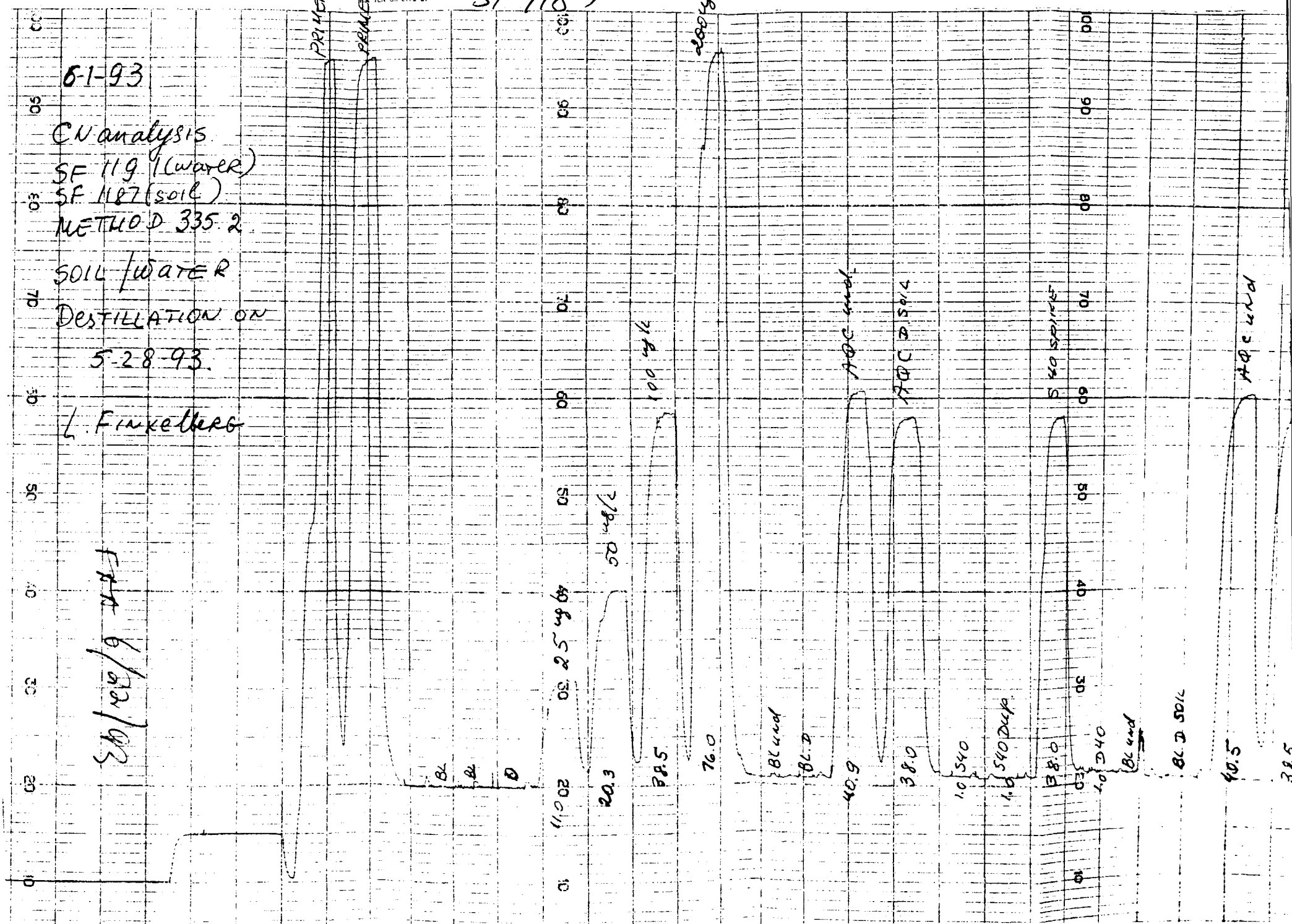
Analyst M. Fletcher

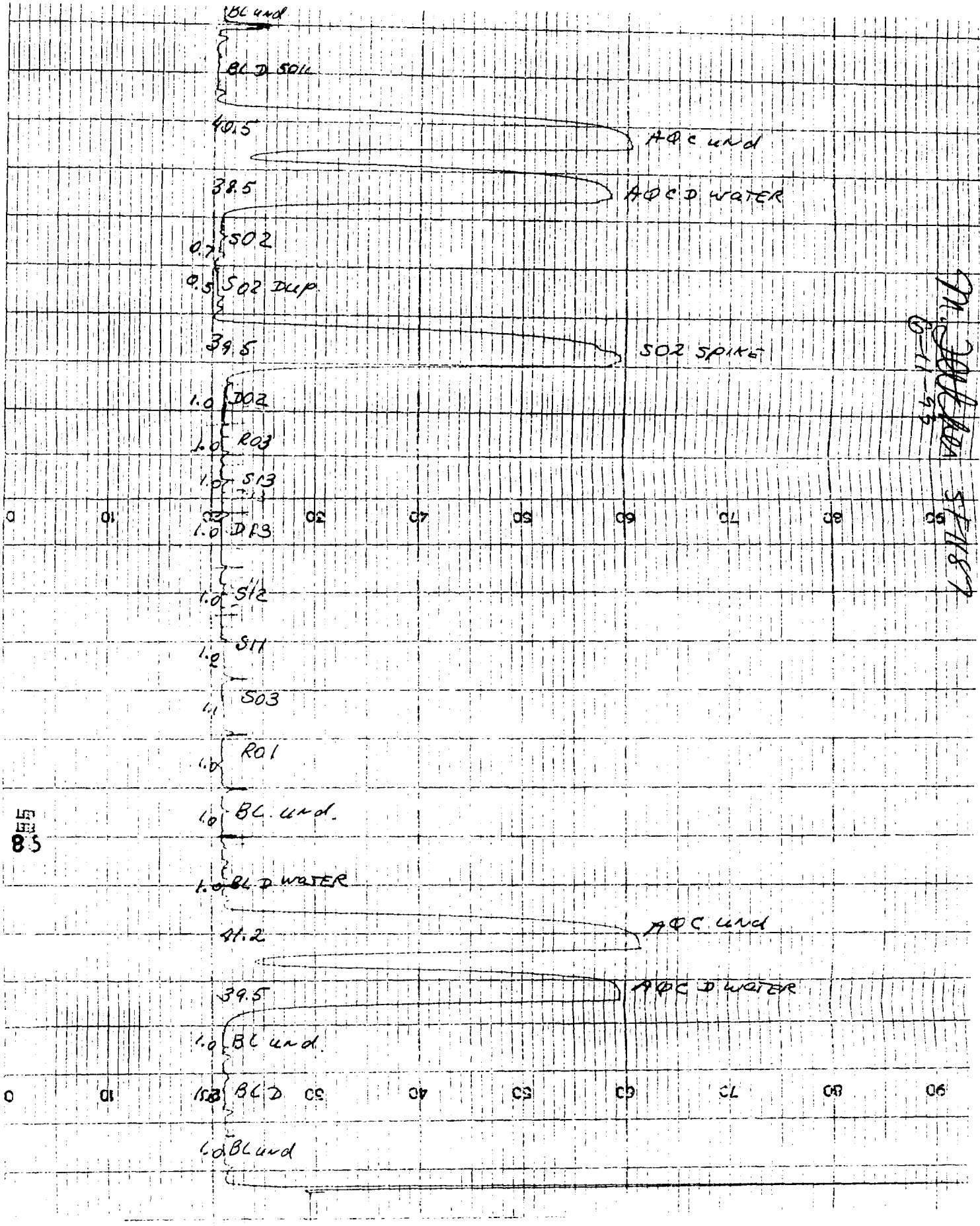
Date 6-8-93

Data Set SF1187/1191

Pos	ID	Spike	DF	Comment
28	A93ZF53D13			SF1191
29	" S12			
30	S11			
31	S03			
32	R01			
33	Blank und			
34	Blank dis			
35	AGC und			
36	AGC dis			
37	Blank und			
38	Blank d			
39	Blank und			
40				
	Start Wheel 2			
1				FDA 6/22/93
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				

M. Fletcher 6-11-93
SF1187




BC und
BCD SOIL
40.5
APC und
38.5
APCD WATER
0.7
SO2
0.5
SO2 DUP
39.5
SO2 SPIKE
1.0
DO2
1.0
RO3
1.0
S13
1.0
DP3
1.0
S12
S11
1.0
S03
RO1
1.0
BC. und.
1.0
BCD WATER
41.2
APC und
39.5
APCD WATER
1.0
BC und.
1.0
BCD
1.0
BC und

L. FINKELBERG
6-7-93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: LFINKELBERG DATA SET NUMBER ---: SF1187
PARAMETER NAME ----: CN DU NUMBER ---------:
DATE OF ANALYSIS --: 06-07-1993

FAA 6/22/93

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -1.96141E+00
+2.37976E+00 * SIGNAL

COEFFICIENT OF DETERMINATION : .999975

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+1.000	+0.000	+0.418
2	+11.300	+25.000	+24.929
3	+21.800	+50.000	+49.917
4	+42.600	+100.000	+99.416
5	+85.000	+200.000	+200.318

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION ug/L		LIMITS ug/L
BLANK UND	+1.000	+0.418		0 ± 8
BLANK D 5-20-93	+0.000	-1.962		0 ± 8
AQC UND	+45.000	+105.127	rec = 105	100 ± 15
AQC D 5-20-93	+46.000	+107.507	rec = 107	100 ± 15
BLANK UND	+1.000	+0.418		0 ± 8
93ZE33S36	+0.200	-1.486	8u	~~0 ± 8~~ L.F. 6-7-93
93ZE33S36 DUP	+0.000	-1.962	8u	4 ± 15
93ZE33S36 SPIKE	+42.200	+98.464	rec. = 98	100 ± 15
93ZE33S37	+0.000	-1.962	8u	
93ZE33D37	+0.000	-1.962	8u	
93ZE33S38	+0.000	-1.962	8u	4 ± 15
93ZE33S38 DUP	+0.000	-1.962	8u	
93ZE33S38 SPIKE	+45.500	+106.317	rec. 106	100 ± 15
93ZE06R64	+0.000	-1.962	8u	
AQC UND	+45.200	+105.603	rec = 106	100 ± 15
AQC D 5-20-93	+46.000	+107.507	rec = 107	100 ± 15
BLANK UND	+1.000	+0.418		0 ± 8
BLANK D 5-20-93	+1.000	+0.418		0 ± 8
BLANK UND	+0.000	-1.962		0 ± 8
BLANK D 5-21-93	+0.000	-1.962		0 ± 8

SF1187

				LIMITS ug/L
AQC UND	+45.000	+105.127	rec = 105	100 ± 15
AQC D 5-21-93	+36.000	+83.709	rec = 84 *	100 ± 15
BLANK UND	+1.000	+0.418		0 ± 8
93ZE33S39	+2.500	+3.987	8 u	0 ± 15
93ZE33S39 DUP	+2.400	+3.750	8 u	
93ZE33S39 SPIKE	+11.500	+25.405	rec = 25 *	100 ± 15
93ZE33D39	+3.000	+5.177	8 u	
93ZE33D38	+0.000	-1.962	8 u	
93ZE06R60	+0.000	-1.962	8 u	
93ZE06R62	+0.000	-1.962	8 u	
BLANK UND	+1.000	+0.418		0 ± 8
BLANK D 5-21-93	+0.000	-1.962		0 ± 8
AQC UND	+45.000	+105.127	rec = 105	100 ± 15
AQC D 5-21-93	+35.800	+83.233	rec = 83 *	100 ± 15
BLANK UND	+0.500	-0.772		0 ± 8
BLANK D 5-21-93	+0.500	-0.772		0 ± 8
BLANK UND	+0.500	-0.772		0 ± 8

* Data unusable because AQC < 85% and matrix spike recovery is out of control (< 85%).

FAA 6/22/93

M. Fletcher 6-7-93

FAA 6/22/93

CYANIDE AUTO UV METHOD,
Manual Distillation

L. Finkelberg

Element: cyanide

Analyst M. Fletcher

Date 6-8-93

Data Set 1187

Pos	ID	Spike	DF	Comment
1	Prim			
2	Prim			
3	Blank			undistilled
4	Blank			distilled
5	Standard 0 ug/l			undistilled
6	Standard 25 ug/l			undistilled
7	Standard 50 ug/l			undistilled
8	Standard 100 ug/l			undistilled
9	Standard 200 ug/l			undistilled
10	Blank			undistilled
11	Blank			distilled
12	CS 100 ug/l			undistilled
13	CS 100 ug/l			distilled
14	Blank und			
15	93ZE33S36			
16	S36			duplicate
17	S36			spike
18	S37			
19	S37			
20	S38			
21	S38			duplicate
22	S38			spike
23	93ZE06R64			
24	AQC und			
25	AQC dis - 5-20-93			
26	Blk und			
27	Blk dis 5-20/93			

cnl

FAF 6/22/93

CYANIDE MANUAL DISTILLATION

L. Finkelberg

Element: cyanide

Analyst M. Fletcher

Date 6-8-93

Data Set SF1187

Pos	ID	Spike	DF	Comment
28	Blank und			
29	Blank dis 5-21-93			
30	AQC und			
31	AQC dis 5-21			
32	Blank und			
33	93ZE33539			
34	539			duplicate
35	539			spike
36	D39			
37	D38			
38	93ZE06 R60			
39	R62			
40	Blank und			
	~~Start Wheel 2~~ MF 6-8-93			
1	Blank d 5-21-93			
2	AQC und			
3	AQC dis 5-21-93			
4	Blank und			
5	Blank dis 5-21-93			
6	Blank und			
7				
8				
9				
10				
11				
12				
13				

cn4

U.S. Environmental Protection Agency Region V

Superfund Document Management System (SDMS)

Lab Data Reference Sheet

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: JUN 28 1993

Subject: Review of Region 5 Data for H.O.D LANDFILL

From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To:

Attached are the results for H.O.D LANDFILL
CRL request number SF1187
for analyses for Mercury
Results are reported for sample designations: Water samples: 93ZE33S36, 93ZE33S37, 93ZE33D37, 93ZE33S38, 93ZE33D38, 93ZE33S39, 93ZE33D39, 93ZE06R60, and 93ZE06R64; Soil samples: 93ZE33S40 and 93ZE33D40.

Results Status:
(X) Acceptable for Use: Mercury
(X) Data Qualified, but Acceptable for use: 93ZE33S39 and 93ZE33D39
( ) Data Unacceptable for Use:

(X) Sewer Disposal Criteria Met;

The portion of samples 93ZE33S36, 93ZE33S37, 93ZE33D37, 93ZE33S38, 93ZE33D38, 93ZE33S39, 93ZE33D39, 93ZE06R60, and 93ZE06R64 which were analyzed for mercury are preserved with nitric acid-potassium dichromate preservative. They should be disposed of in a drum due to the toxicity of the preservative.

The portion of Soil samples: 93ZE33S40 and 93ZE33D40 which were collected and analyzed for cyanide should be disposed of in a drum.

Comments on Data Quality by Reviewer:

Water Samples:

The matrix spike recovery for sample 93ZE33S39(recovery = 66.9%) was found to be out of control. A 1/2 dilution of the sample was spiked(recovery = 81.8%) was also out of control. The control limit for this audit is 100 ± 15%. This sample was indicated by the field for spiking. Another sample was selected and spiked. The spike recovery for the second sample was in control. This indicates that there was no spiking problem but a matrix interference exist for sample 93ZE33S39. The mercury result for this sample is estimated. Use the data with caution. The remaining mercury results for the water samples are acceptable for use.

Soil Samples:

All the mercury results for the soil samples are acceptable for use.

Comments by Laboratory Director or Quality Control Coordinator:

Francis A. Awanya 6/24/93

Team Leader and Date (X) Reviewed ( ) Unreviewed

John V. Morris for JHA 25 June 93

Section Chief and Date (X) Reviewed ( ) Unreviewed

John V. Morris for JHA 25 June 93

QC Coordinator and Date (X) Reviewed ( ) Unreviewed

Sylvia Griffin 6-28-93

Data Management Coordinator and Date Received

Date Transmitted JUN 28 1993

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Received by and Date

Comments:

ESAT-5-014.6

LOCKHEED ESAT CONTRACT
DATA SET CUSTODY TRANSFER FORM

DATA SET NUMBER SF 1187 CHARGE NUMBER 232-51-107

SITE NAME: H.O.D. Landfill TID NUMBER 05-93-05-06

PARAMETER: Hg MATRIX: Soil & water

SF DU/ACT NO: TFA 301 Y ____ /C ____

SAMPLE NUMBERS: Soils - S93ZE33S40 & D40

waters - 93ZE33S36, S37, S38, S39, D37, D38, D39, R60, R62 & R64

NUMBER OF SAMPLES: 12

ESAT APPROVALS:

J. Redlin 6/15/93
Analyst Date

Timothy J. Meszaros 6/15/93
Task Group Leader Date

Lewis Kray 6/15/93
QA/QC Coordinator Date

Dennis Miller 6/15/93
ESAT Team Manager Date

COMMENTS: Original Hg solids data with SF 1168.

The above identified data set was transferred from ESAT custody to the custody of the U.S. EPA Region V Central Regional Laboratory in its entirety on the indicated date relinquished.

Timothy J. Meszaros 6/17/93
Relinquished by Date

Francis A. Awanya 6/17/93
Received by Date

EPA APPROVALS:

Francis A. Awanya 6/22/93
EPA Task Monitor Date

[X] Reviewed
[ ] Unreviewed
[X] Accepted
[ ] Rejected
[ ] Returned: 6/22/93
Date

COMMENTS:

John V. Moore for HA 25 June 93
Section Chief Date

[X] Reviewed [ ] Unreviewed

ESAT DPO Date

Sylvia Griffin 6/28/93 6/28/93
DATA COORDINATOR/RECD/TRANSMTD

A COPY OF THIS CUSTODY TRANSFER FORM WITH A RECEIVED BY EPA SIGNATURE IS TO BE FILED WITH THE AOC IN THE TID FILE. THE ORIGINAL CUSTODY TRANSFER ACCOMPANIES THE DATA SET TO BE APPROVED BY THE EPA AND A COMPLETED COPY RETURNED TO ESAT.

ESAT-5-007.0

Data Set: SF 1187 Site Name: H.O.D. LANDFILL

Date Generated: 6/8/93 Method Number: EPA 245.2 * DNS

TID Number: 05-93-05-06 Author: JAMES REDLIN

CASE NARRATIVE

WATER SAMPLES

SF 1187 contains 10 water samples (93ZE33S36-S39, D37-D39, R60, R62 and R64).

The Hg spike recovery (66.9%) for 93ZE33S39 was below the CRL QA/QC guidelines. The assay of a 1/2 diluted sample that was then spiked (recovery 81.8%) was also below CRL QA/QC guidelines. This indicates strong interference problems within the sample matrix of samples 93ZE33S39 and D39. After consultation with Francis Awanya, CRL, since the other QA/QC Hg spike data were acceptable, the spike QA/QC requirements were met and the sample concentrations for 93ZE33S39 and D39 were reported as 0.1 U.

SOIL SAMPLES

SF 1187 contains 2 soil samples (93ZE33S40 and D40) that did not have any assay problems.

FAA 6/22/93

Reviewed by: J. Redlin Lockheed/ESAT
Date: 5/14/93

J. Redlin
6/7/93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: J REDLIN
PARAMETER NAME ----: HG
DATE OF ANALYSIS --: ~~06-04-1993~~ 6-3-1993

DATA SET NUMBER ---: SF 1187
DU NUMBER ---------: TFA 301

JR 6/7/93

JR 6/7/93

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -1.25004E-02
+1.64302E-03 * SIGNAL

COEFFICIENT OF DETERMINATION : .9963262

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION, µg	CALCULATED
1	+6.200	+0.000	-0.003
2	+24.500	+0.025	+0.027
3	+38.000	+0.050	+0.049
4	+54.500	+0.075	+0.077
5	+67.000	+0.100	+0.097

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION µg	Final Concentration mg/Kg		Limits µg	
BLANK	+7.500	-0.001			0.0 ± 0.005	
CS-3 ORGANIC	+40.500	+0.054			0.050 ± 10%	
CS-4 INORGANIC	+56.500	+0.080			0.075 ± 10%	
93ZB08S01	+9.000	+0.002	0.03 u	for information only		SF1165
93ZB08S01 LAB S	+35.000	+0.045	%R = 89.8%		100 ± 20%	↓
93ZE33S40	+12.500	+0.008	0.04			SF1187
93ZE33S40 LAB D	+9.500	+0.003	Δ = 0.005		Δ < 0.01	↓
93ZE33S40 LAB S	+41.000	+0.054	%R = 92.6		100 ± 20%	
93ZE33D40	+12.500	+0.008	0.05			
CS-3 ORGANIC	+40.000	+0.053			0.050 ± 10%	
CS-4 INORGANIC	+56.500	+0.080			0.075 ± 10%	
93DI06S03	+7.800	+0.000	0.04 u			SF1168
93DI06S03 LAB D	+7.000	-0.001	0.04 u		Δ < 0.01	↓
93DI06S03 LAB S	+43.000	+0.058	%R = 116.0		100 ± 20%	
CS-3 ORGANIC	+39.500	+0.052			0.050 ± 10%	
CS-4 INORGANIC	+56.000	+0.079			0.075 ± 10%	

FAA 6/22/93

J. Rodlin
6/7/93

MERCURY - AUTOMATED COLD VAPOR

Element: mercury

Analyst J. Rodlin

Date 6-3-93

Data Set SF 1187 JR 6/7/93

Pos	ID	Spike	DF	Comment
1	Standard 0.0 µg			
2	Standard 0.025 µg			
3	Standard 0.050 µg			
4	Standard 0.075 µg			
5	Standard 0.100 µg			
6	Blank			
7	CS-3 organic			0.050 µg
8	CS-4 inorganic			0.075 µg
9	93Z B08 S01			SF 1165
10	93Z B08 S01 Lab spk	0.050		Lab spk
11	93Z E33 S40			SF 1187
12	93Z E33 S40 Lab dup			Lab dup
13	93Z E33 S40 Lab spk	0.050		Lab spk
14	93Z E33 D40			
15	CS-3 organic			0.050 µg
16	CS-4 inorganic			0.075 µg
17	930I 06 S03			SF 1168
18	930I 06 S03 Lab dup			Lab dup
19	930I 06 S03 Lab spk	0.050		Lab spk
20	900I 06 S03			not used
21	900I 06 S03		3	not used
22	900I 06 S03 Lab dup		3	Lab dup not used
23	900I 06 S03 Lab spk	0.050	3	Lab spk not used
24	CS-3 organic			0.050 µg
25	CS-4 inorganic			0.075 µg
26				
27	FAA 6/22/93			

Dataset Number: SF 1187

Site Name: H.O.D. LANDFILL

Date Generated: 6/03/93

Method Number: EPA 245.2 * DNS

Author: James Redlin

TID Number: 05-93-05-06

SAMPLE CALCULATION:

$$mg/Kg = \frac{\mu g}{grams} \times \frac{100}{\%\ solid} \times \frac{mls\ of\ digest}{50.0\ mls}$$

93ZE33S40:

$$mg/Kg = \frac{0.008\ \mu g}{0.2845\ grams} \times \frac{100}{74.1\%} \times \frac{50.5\ mls\ of\ digest}{50.0\ mls} = 0.038$$

93ZE33S40 DUPLICATE:

$$mg/Kg = \frac{0.005\ U\ \mu g}{0.1981\ grams} \times \frac{100}{74.1\%} \times \frac{50.5\ mls\ of\ digest}{50.0\ mls} = 0.034\ U$$

93ZE33S40 SPIKE:

$$mg/Kg = \frac{0.054\ \mu g}{0.2840\ grams} \times \frac{100}{74.1\%} \times \frac{51.0\ mls\ of\ digest}{50.0\ mls} = 0.262$$

SPIKE AMOUNT:

$$mg/Kg = \frac{0.050\ \mu g}{0.2840\ grams} \times \frac{100}{74.1\%} \times \frac{51.0\ mls\ of\ digest}{50.0\ mls} = 0.242$$

Reviewed by: J. Redlin Lockheed/ESAT
Date: 6/7/93

FAA 6/22/93

5/27/93

JR 6/7/93

Hg Soils SF ~~1165~~/~~1168~~/1187

	Sample	wt ~~sample~~ + tare	wt sample + tare	wt of empty bot	wt of sample
SF1165	93ZB08S01	0.5381	0.7533	0.5387	0.2146
	93ZB08S01 sp	0.5387	0.7391	0.5388	0.2003
SF1168	930I06S03	0.5315	0.6699	0.5318	0.1381 x
	930I06S03 dup	0.5318	0.6754	0.5320	0.1434 x
	930I06S03 spl	0.5320	0.6595	0.5320	0.1275 x
	900I08S03	0.5415	0.6572	0.5418	0.1154 xx
	900I08S03 dup	0.5418	0.6665	0.5422	0.1243 xx
	900I08S03 spl	0.5422	0.6508	0.5422	0.1086 xx
SF1187	93ZE33S40	0.5352	0.8906	0.6061	0.2845 x
	93ZE33S40 dup	0.5284	0.7762	0.5781	0.1981 x
	93ZE33S40 sp	0.5301	0.8385	0.5545	0.2840 x
	93ZE33D40	0.5358	0.9245	0.7105	0.2140 x

sp. lu = + 0.5 ml spiking solution (0.050 µg)

x added 0.5 ml preservative solution to tubes.

xx added 1.0 ml preservative solution to tubes.

J. Rodlin 5/27/93

J. Rodlin 6/7/93

J. Rodlin 6/7/93

FAA 6/22/93

J. Redli 6/3/93

6-3-93 ~~[illegible]~~

% Solids SF 1187

in oven - 11:15 6-3-93
out oven - 11:15 6-4-93

Balance ck 6/3/93

1g - 1.0030 50g - 50.0164
5g - 5.0016 100g - 100.0016
20g 20.0094

Sample ID	Empty Tare wt (g)	Tare + wet wt (g)	wet JR 6/3/93 ~~Tare + dry~~ sample wt (g)	~~Tare + dry~~ JR 6/3/93 ~~wet~~ sample wt (g)	dry sample wt (g)	% solids (g)	comments
Blank	23.661	—		23.661	0.0	—	
93ZE33S40	23.929	33.974	10.045	31.674	7.445	74.1	
93ZE33S40 dup	23.656	34.211	10.555	31.759	8.103	76.8	
93ZE33D40	22.225	33.359	11.134	30.821	8.596	77.2	

Balance ck 6/4/93

1g - 1.0029 50g - 50.0164
5g - 5.0015 100g - 100.0018
20g - 20.0094

J. Redli 6/4/93

J. Redli 6/7/93
J. Redli 6/7/93

FHA 6/22/93

J. Redlin 6/14/93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: J REDLIN
PARAMETER NAME ----: HG
DATE OF ANALYSIS --: ~~06-14-1993~~ 6-8-1993 JR 6/14/93

DATA SET NUMBER ---: SF 1187
DU NUMBER ---------: TFA 301

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -9.48520E-02
+2.96386E-02 * SIGNAL

COEFFICIENT OF DETERMINATION : .997043

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION, ug/L	CALCULATED
1	+1.500	+0.000	-0.051
2	+21.800	+0.500	+0.551
3	+38.200	+1.000	+1.037
4	+53.400	+1.500	+1.487
5	+69.800	+2.000	+1.973

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION, ug/L		Limits ug/L	
BLANK	+1.500	-0.051		<0.1	
CS-1 ORGANIC	+58.000	+1.624 rec: 1.6		1.5±0.2	
CS-2 INORGANIC	+56.500	+1.579 rec: 1.6		1.5±0.2	
93ZE33S36	+1.800	-0.042 0.1 u			SF1187
93ZE33S36 LAB DUP	+1.000	-0.066	Δ=0.03	Δ<0.15	
93ZE33S36 LAB SPK	+37.000	+1.001	R=1.00	1.00±0.15	
93ZE33S37	+0.000	-0.095 0.1 u			
93ZE33D37	+0.000	-0.095 0.1 u			
93ZE33R60	+0.000	-0.095 0.1 u			
93ZE33S39	+1.000	-0.066 0.1 u			
93ZE33S39 LAB DUP	+1.500	-0.051	Δ=0.02	Δ<0.15 } For information only	
93ZE33S39 LAB SPK	+25.800	+0.669	R=0.67	1.00±0.15 }	
93ZE33D39	+1.500	-0.051 0.1 u			
93ZE33S39 LAB SPK	+28.500	+0.749	R=0.75	1.00±0.15 } For information only	
93ZE33R64	+0.000	-0.095 0.1 u			
93ZE33S38	+0.000	-0.095 0.1 u			
93ZE33S38 LAB DUP	+0.000	-0.095	Δ=0.00	Δ<0.15 } For information only	
93ZE33S38 LAB SPK	+34.800	+0.936	R=0.94	1.00±0.15 }	
93ZE33D38	+1.000	-0.066 0.1 u			
93ZE33R62	+0.000	-0.095 0.1 u			✓
BLANK	+1.500	-0.051		<0.1	
CS-1 ORGANIC	+55.800	+1.558 rec: 1.6		1.5±0.2	
CS-2 INORGANIC	+49.800	+1.381 rec: 1.4		1.5±0.2	
93ZE33S39	+3.400	+0.005		} For information only	SF1187
93ZE33S39 LAB SPK	+30.800	+0.818	R=0.82	1.00±0.15 }	↓
BLANK	+1.500	-0.051		<0.1	
CS-1 ORGANIC	+56.400	+1.576 rec: 1.6		1.5±0.2	
CS-2 INORGANIC	+51.500	+1.431 rec: 1.4		1.5±0.2	

FAA 6/22/93

MERCURY by AUTOMATED COLD VAPOR

Element: mercury

Analyst J. Rodlin

Date 6-8-93

Data Set SF 1187

Pos	ID	Spike	DF	Comment
1	Standard 0 ug/l			
2	Standard 0 ug/l			
3	Standard 0.5 ug/l			
4	Standard 0.5 ug/l			
5	Standard 1.0 ug/l			
6	Standard 1.0 ug/l			
7	Standard 1.5 ug/l			
8	Standard 1.5 ug/l			
9	Standard 2.0 ug/l			
10	Standard 2.0 ug/l			
11	Blank			
12	Blank			
13	CS-organic			1.5 ug/l
14	CS-organic			1.5 ug/l
15	CS-inorganic			1.5 ug/l
16	CS-inorganic			1.5 ug/l
17	93ZE33S36			
18	93ZE33S36			
19	93ZE33S36 dup			lab dup
20	93ZE33S36 dup			lab dup
21	93ZE33S36 spk	1.00		lab spk
22	93ZE33S36 spk	1.00		lab spk
23	93ZE33S37			
24	93ZE33S37			
25	93ZE33D37			
26	93ZE33D37			
27	93ZE33R60			

hg1

FAA 6/22/93

MERCURE by AUTOMATED COLD VAPOR

Element: mercury

Analyst J. Rolli

Date 6-8-93

Data Set SF 1187

Pos	ID	Spike	DF	Comment
28	93ZE33 R60			SF1187
29	93ZE33 S39			
30	93ZE33 S39			
31	93ZE33 S39 dup			lab dup For information only
32	93ZE33 S39 dup			lab dup
33	93ZE33 S39 spk	1.00		lab spk rerun
34	93ZE33 S39 spk	1.00		lab spk
35	93ZE33 D39			
36	93ZE33 D39			
37	93ZE33 S39 spk			lab spk For information only ~~one rerun~~
38	93ZE33 S39 spk			lab spk
39	93ZE33 R64			
40	93ZE33 R64			
	Start Wheel 2			
1	93ZE33 S38			SF1187
2	93ZE33 S38			
3	93ZE33 S38 dup			lab dup For information only
4	93ZE33 S38 dup			lab dup
5	93ZE33 S38 spk	1.00		lab spk
6	93ZE33 S38 spk	1.00		lab spk
7	93ZE33 D38			
8	93ZE33 D38			
9	93ZE33 R62			
10	93ZE33 R62			
11	Blank			
12	Blank			
13	CS-1 organic			1.5 µg/L

hg2

FAA 6/22/93

MERCURY - AUTOMATED COLD VAPOR

Element: mercury

Analyst J. Rollin

Date 6-8-93

Data Set SF1187

Pos	ID	Spike	DF	Comment
14	CS-1 organic			1.5 µg/L
15	CS-2 inorganic			1.5 µg/L
16	CS-2 inorganic			1.5 µg/L
17	93ZE33S39		2	For information only SF1187
18	93ZE33S39		2	
19	93ZE33S39 spk		2	Lab spk
20	93ZE33S39 spk		2	Lab spk
21	Blank			
22	Blank			
23	CS-1 organic			1.5 µg/L
24	CS-1 organic			1.5 µg/L
25	CS-2 inorganic			1.5 µg/L
26	CS-2 inorganic			1.5 µg/L
27				
28				
29				
30				
31				
32				
33				
34				
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38				
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cn5

FAA 6/22/93

U.S. Environmental Protection Agency Region V

Superfund Document Management System (SDMS)

Lab Data Reference Sheet

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TFA301

DAY 1

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/3/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR E&E —

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 75020	WATER CR^{+6} UG CR^{+6}/L MIN 74616	WATER MERCURY UG HG/L MIN 74717
93ZE33S36	5031-620 W7D+MSD		X			
37	US6D 5031643		X			
D37	DUS6D 5013668		X			
93ZE06R60	MWFB01 5013-682		X			
93ZE33S36	W7D+MSD 5031619					X 0.1 u
93ZE33S37	US6D 5031644					X 0.1 u
93ZE33D37	DUS6D 5031667					X 0.1 u
93ZE06R60	MWFB01 5013680					X 0.1 u
			Assayed by EPA Method 245.2 * DNS			
			Cold Vapor, Automated			
			James Redlin 6/9/93			
	SHIPMENT	IS NOT	COMPLETE			

FAA 6/22/93

D93000187

TFA301 DRY2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER _____ DATA SET NUMBER _____ STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — F&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 78020	WATER CR^{+6} UG CR^{+6}/L MIN 74616	WATER MERCURY UG HG/L MIN 74717
93ZE33S38	5-031-750 SW1+MSD		X			
↓ D38	SW1D 5-031760		X			
93ZE06R62	SWFB01 5-031769		X			
93ZE33S38	SW1+MSD 5-031752					X 0.1u
93ZE33D38	SW1D 5-031761					X 0.1u
93ZE06R62	SWFB01 5-031770					X 0.1u
			Assayed By		EPA Method	245.2 * DMS
			Cold vapor, Automated			
			James Rolli 6/9/93			

FAA 6/22/93

D930001187

TFA301 DAY1

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/3/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 75020	WATER CR^{+6} UG CR^{+6}/L MIN 74616	WATER MERCURY UG HG/L MIN 74717
93ZE33S39	5-031695 L1 + MSD		X			
↓ D39	5-031708 L1D		X			
LK ~~93ZE06R61~~	~~L.FB01~~		X			
93ZE33S39	L1+MSD 5-031696					X 0.1 u
93ZE33D39	L1D 5-031709					X 0.1 u

Assayed by EPA method 245.2 * DNS
Cold Vapor, Automated
Shipment NOT complete
J. Rodlin 6/9/93

FAA 6/22/93

D9300011187 TFA301 DAY 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.D.L. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74819	WATER GROSS ALPHA P CI/L MIN 75020	WATER CR+6 UG CR+6/L MIN 74816	WATER MERCURY UG HG/L MIN 74717
93ZE33539	L1-MSD		X			X
↓ D39	L1D		X			X
93ZE06R6H	L.FB015031722		X			X
93ZE06R64	LGB01 5031723					X 0.1 U
			Assayed	by EPA	Method	245.2 * DNS
				Cold	Vapor,	Automated
				James	Rollin	6/9/93
				Shipment	NOT	
				Complete		

FAA 6/22/9

D93000187 TFA301 CAY 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS-NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/14/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

CU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLIDS CHEMICAL OXYGEN DEMAND MG CHO/KG (DRY) M1443327	SEDIMENTS SOLIDS MERCURY UG HG/KG (DRY) M1444728	SEDIMENTS SOLIDS ~~PHENOLICS~~ TOC UG PHENOL/KG (DRY) M1444829	SEDIMENTS SOLIDS CYANIDE MG CN/KG (DRY) M1444930	
93ZE33540	SD1 +MSD		X 0.04		X	5-148219
✓ D40	SD1D		X 0.05		X	5-148221
S40	SD1 +MSD	Assayed	By EPA Method			5-148220
D40	SD1 DUPLICATE	245.2 * DMS	H_2SO_4 - HNO_3			5-148222
		Predigestion (Cold	Vapor,			
		Automated)				
		James Rodda		6/9/93		

FAA 6/22/93

J. Redlin 6/7/93
J. Redlin 6/14/93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: J REDLIN
PARAMETER NAME ----: HG
DATE OF ANALYSIS --: ~~06-04-1993~~ 6-3-1993

DATA SET NUMBER ---: SF 1187 JR 6/7/93
DU NUMBER ---------: TFA 301
JR 6/7/93

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -1.25004E-02
+1.64302E-03 * SIGNAL

COEFFICIENT OF DETERMINATION : .9963262

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION, µg	CALCULATED
1	+6.200	+0.000	-0.003
2	+24.500	+0.025	+0.027
3	+38.000	+0.050	+0.049
4	+54.500	+0.075	+0.077
5	+67.000	+0.100	+0.097

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION µg	Final Concentration mg/Kg	Limits µg	
BLANK	+7.500	-0.001		0.0 ± 0.005	
CS-3 ORGANIC	+40.500	+0.054		0.050 ± 10%	
CS-4 INORGANIC	+56.500	+0.080		0.075 ± 10%	
932B08S01	+9.000	+0.002	0.03 u		SF1165
932B08S01 LAB S	+35.000	+0.045	%R = 89.8% } For information only	100 ± 20%	↓
932E33S40	+12.500	+0.008	0.04		SF1167
932E33S40 LAB D	+9.500	+0.003	Δ = 0.005	Δ < 0.01	↓
932E33S40 LAB S	+41.000	+0.054	%R = 92.6	100 ± 20%	
932E33D40	+12.500	+0.008	0.05		
CS-3 ORGANIC	+40.000	+0.053		0.050 ± 10%	
CS-4 INORGANIC	+56.500	+0.080		0.075 ± 10%	
930106S03	+7.800	+0.000	0.04 u		SF1168
930106S03 LAB D	+7.000	-0.001	0.04 u	Δ < 0.01	↓
930106S03 LAB S	+43.000	+0.058	%R = 116.0	100 ± 20%	
CS-3 ORGANIC	+39.500	+0.052		0.050 ± 10%	
CS-4 INORGANIC	+56.000	+0.079		0.075 ± 10%	

FHA 6/22/93

J. Rodlin 6/14/93 J. Rodlin 6/7/93

MERCURY - AUTOMATED COLD VAPOR

Element: mercury

Analyst J. Rodlin

Date 6-3-93

Data Set SF 1187 JR 6/7/93

Pos	ID	Spike	DF	Comment
1	Standard 0.0 µg			
2	Standard 0.025 µg			
3	Standard 0.050 µg			
4	Standard 0.075 µg			
5	Standard 0.100 µg			
6	Blank			
7	CS-3 organic			0.050 µg
8	CS-4 inorganic			0.075 µg
9	93Z B08 S01			SF 1165
10	93Z B08 S01 Lab spk	0.050		Lab spk
11	93Z E33 S40			SF 1187
12	93Z E33 S40 Lab dup			Lab dup
13	93Z E33 S40 Lab spk	0.050		Lab spk
14	93Z E33 D40			
15	CS-3 organic			0.050 µg
16	CS-4 inorganic			0.075 µg
17	930I 06 S03			SF 1168
18	930I 06 S03 Lab dup			Lab dup
19	930I 06 S03 Lab spk	0.050		Lab spk
20	900I 06 S03			not used
21	900I 06 S03		3	not used
22	900I 06 S03 Lab dup		3	Lab dup not used
23	900I 06 S03 Lab spk	0.050	3	Lab spk not used
24	CS-3 organic			0.050 µg
25	CS-4 inorganic			0.075 µg
26				
27				

FAA 6/22/93

J. Redlin 6/14/93

ESAT-5-007.0

Dataset Number: SF 1187

Site Name: H.O.D. LANDFILL

Date Generated: 6/03/93

Method Number: EPA 245.2 * DNS

Author: James Redlin

TID Number: 05-93-05-06

SAMPLE CALCULATION:

$$\text{mg/Kg} = \frac{\mu g}{\text{grams}} \times \frac{100}{\%\ \text{solid}} \times \frac{\text{mls of digest}}{50.0\ \text{mls}}$$

93ZE33S40:

$$\text{mg/Kg} = \frac{0.008\ \mu g}{0.2845\ \text{grams}} \times \frac{100}{74.1\%} \times \frac{50.5\ \text{mls of digest}}{50.0\ \text{mls}} = 0.038$$

93ZE33S40 DUPLICATE:

$$\text{mg/Kg} = \frac{0.005\ U\ \mu g}{0.1981\ \text{grams}} \times \frac{100}{74.1\%} \times \frac{50.5\ \text{mls of digest}}{50.0\ \text{mls}} = 0.034\ U$$

93ZE33S40 SPIKE:

$$\text{mg/Kg} = \frac{0.054\ \mu g}{0.2840\ \text{grams}} \times \frac{100}{74.1\%} \times \frac{51.0\ \text{mls of digest}}{50.0\ \text{mls}} = 0.262$$

SPIKE AMOUNT:

$$\text{mg/Kg} = \frac{0.050\ \mu g}{0.2840\ \text{grams}} \times \frac{100}{74.1\%} \times \frac{51.0\ \text{mls of digest}}{50.0\ \text{mls}} = 0.242$$

Reviewed by: J. Redlin Lockheed/ESAT
Date: 6/7/93

FDA 6/22/93

5/27/93

JR 6/7/93

Hg Soils SF ~~1165~~/~~1168~~/1187 J. Rodlin

6/14/93

	Sample	wt ~~sample~~ + tare	wt sample + tare	wt of empty bot	wt of sample
F1165	93ZB08S01	0.5381	0.7533	0.5387	0.2146
	93ZB08S01 sp	0.5387	0.7391	0.5388	0.2003
F1168	930I06S03	0.5315	0.6699	0.5318	0.1381 x
	930I06S03 dup	0.5318	0.6754	0.5320	0.1434 x
	930I06S03 spk	0.5320	0.6595	0.5320	0.1275 x
	900I08S03	0.5415	0.6572	0.5418	0.1154 xx
	900I08S03 dup	0.5418	0.6665	0.5422	0.1243 xx
	900I08S03 spk	0.5422	0.6508	0.5422	0.1086 xx
SF1187	93ZE33S40	0.5352	0.8906	0.6061	0.2845 x
	93ZE33S40 dup	0.5284	0.7762	0.5781	0.1981 x
	93ZE33S40 sp	0.5301	0.8385	0.5545	0.2840 x
	93ZE33D40	0.5358	0.9245	0.7105	0.2140 x

sp. lu = + 0.5 ml spiking solution (0.050 µg)

* added 0.5 ml preservative solution to tubes.

xx added 1.0 ml preservative solution to tubes.

J. Rodlin 5/27/93

J. Rodlin 6/7/93

J. Rodlin 6/7/93

FAA 6/22/93

J. Rodli 6/3/93

6-3-93

J. Rodli 6/14/93

% Solids SF 1187

in oven - 11:15 6-3-93

out oven - 11:15 6-4-93

Balance ck 6/3/93

1g - 1.0030 50g - 50.0164

5g - 5.0016 100g - 100.0016

20g 20.0094

Sample ID	Empty Tare wt (g)	Tare + wet wt (g)	Wet wt ~~Tare + dry~~ 6/3/93 sample wt (g)	~~Tare + dry~~ 6/3/93 sample wt (g)	dry sample wt (g)	% solids (g)	comments
Blank	23.661	—		23.661	0.0	—	
93ZE33S40	23.929	33.974	10.045	31.674	7.445	74.1	
93ZE33S40 dup	23.656	34.211	10.555	31.759	8.103	76.8	
93ZE33D40	22.225	33.359	11.134	30.821	8.596	77.2	

Balance ck 6/4/93

1g - 1.0029 50g - 50.0164

5g - 5.0015 100g - 100.0018

20g - 20.0094

J. Rodli 6/4/93

J. Rodli 6/7/93

J. Rodli 6/7/93

FAA 6/22/93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

J. Redlin 6/14/93

NAME OF ANALYST ---: J REDLIN
PARAMETER NAME ----: HG
DATE OF ANALYSIS --: ~~06-14-1993~~ 6-8-1993 JR 6/14/93

DATA SET NUMBER ---: SF 1187
DU NUMBER ---------: TFA 301

J. Redlin 6/14/93

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -9.48520E-02
+2.96386E-02 * SIGNAL

COEFFICIENT OF DETERMINATION : .997043

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION, µg/L	CALCULATED
1	+1.500	+0.000	-0.051
2	+21.800	+0.500	+0.551
3	+38.200	+1.000	+1.037
4	+53.400	+1.500	+1.487
5	+69.800	+2.000	+1.973

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION, µg/L		Limits µg/L	
BLANK	+1.500	-0.051		<0.1	
CS-1 ORGANIC	+58.000	+1.624 rec: 1.6		1.5±0.2	
CS-2 INORGANIC	+56.500	+1.579 rec: 1.6		1.5±0.2	
93ZE33S36	+1.800	-0.042 0.1 u			SF1187
93ZE33S36 LAB DUP	+1.000	-0.066	Δ=0.03	Δ<0.15	
93ZE33S36 LAB SPK	+37.000	+1.001	R=1.00	1.00±0.15	
93ZE33S37	+0.000	-0.095 0.1 u			
93ZE33D37	+0.000	-0.095 0.1 u			
93ZE33R60	+0.000	-0.095 0.1 u			
93ZE33S39	+1.000	-0.066 0.1 u			
93ZE33S39 LAB DUP	+1.500	-0.051	Δ=0.02	Δ<0.15	For information only
93ZE33S39 LAB SPK	+25.800	+0.669	R=0.67	1.00±0.15	
93ZE33D39	+1.500	-0.051 0.1 u			
93ZE33S39 LAB SPK	+28.500	+0.749	R=0.75	1.00±0.15	For information only
93ZE33R64	+0.000	-0.095 0.1 u			
93ZE33S38	+0.000	-0.095 0.1 u			
93ZE33S38 LAB DUP	+0.000	-0.095	Δ=0.00	Δ<0.15	For information only
93ZE33S38 LAB SPK	+34.800	+0.936	R=0.94	1.00±0.15	
93ZE33D38	+1.000	-0.066 0.1 u			
93ZE33R62	+0.000	-0.095 0.1 u			
BLANK	+1.500	-0.051		<0.1	
CS-1 ORGANIC	+55.800	+1.558 rec=1.6		1.5±0.2	
CS-2 INORGANIC	+49.800	+1.381 rec=1.4		1.5±0.2	
93ZE33S39	+3.400	+0.005		For information only	SF1187
93ZE33S39 LAB SPK	+30.800	+0.818	R=0.82	1.00±0.15	
BLANK	+1.500	-0.051		<0.1	
CS-1 ORGANIC	+56.400	+1.576 rec=1.6		1.5±0.2	
CS-2 INORGANIC	+51.500	+1.431 rec=1.4		1.5±0.2	

FAA 6/22/93

J. Rodlin 6/14/93

MERCURY by AUTOMATED COLD VAPOR

Element: mercury

Analyst J. Rodlin

Date 6-8-93

Data Set SF 1187

Pos	ID	Spike	DF	Comment
1	Standard 0 ug/l			
2	Standard 0 ug/l			
3	Standard 0.5 ug/l			
4	Standard 0.5 ug/l			
5	Standard 1.0 ug/l			
6	Standard 1.0 ug/l			
7	Standard 1.5 ug/l			
8	Standard 1.5 ug/l			
9	Standard 2.0 ug/l			
10	Standard 2.0 ug/l			
11	Blank			
12	Blank			
13	CS-organic			1.5 ug/l
14	CS-organic			1.5 ug/l
15	CS-inorganic			1.5 ug/l
16	CS-inorganic			1.5 ug/l
17	93ZE33S36			
18	93ZE33S36			
19	93ZE33S36 dup			lab dup
20	93ZE33S36 dup			lab dup
21	93ZE33S36 spk	1.00		lab spk
22	93ZE33S36 spk	1.00		lab spk
23	93ZE33S37			
24	93ZE33S37			
25	93ZE33D37			
26	93ZE33D37			
27	93ZE33R60			

hg1

FAA 6/22/93

J. Rodli 6/14/93

MERCURE by AUTOMATED COLD VAPOR

Element: mercury

Analyst J. Rodli

Date 6-8-93

Data Set SF 1187

Pos	ID	Spike	DF	Comment
28	93ZE33 R60			SF1187
29	93ZE33 S39			
30	93ZE33 S39			
31	93ZE33 S39 dup			lab dup For information only
32	93ZE33 S39 dup			lab dup
33	93ZE33 S39 spk	1.00		lab spk rerun
34	93ZE33 S39 spk	1.00		lab spk
35	93ZE33 D39			
36	93ZE33 D39			
37	93ZE33 S39 spk			lab spk For information only ~~only rerun~~
38	93ZE33 S39 spk			lab spk
39	93ZE33 R64			
40	93ZE33 R64			
	Start Wheel 2			
1	93ZE33 S38			SF1187
2	93ZE33 S38			
3	93ZE33 S38 dup			lab dup For information only
4	93ZE33 S38 dup			lab dup
5	93ZE33 S38 spk	1.00		lab spk
6	93ZE33 S38 spk	1.00		lab spk
7	93ZE33 D38			
8	93ZE33 D38			
9	93ZE33 R62			
10	93ZE33 R62			
11	Blank			
12	Blank			
13	CS-1 organic			1.5 µg/L

hg2

FAA 6/22/93

J. Rodler 6/14/93

MERCURY - AUTOMATED COLD VAPOR

Element: mercury

Analyst J. Rodler

Date 6-8-93

Data Set SF1187

Pos	ID	Spike	DF	Comment
14	CS-1 organic			1.5 µg/L
15	CS-2 inorganic			1.5 µg/L
16	CS-2 inorganic			1.5 µg/L
17	93ZE33S39		2	For information only SF1187
18	93ZE33S39		2	
19	93ZE33S39 spk		2	Lab spk
20	93ZE33S39 spk		2	Lab spk
21	Blank			
22	Blank			
23	CS-1 organic			1.5 µg/L
24	CS-1 organic			1.5 µg/L
25	CS-2 inorganic			1.5 µg/L
26	CS-2 inorganic			1.5 µg/L
27				
28				
29				
30				
31				
32				
33				
34				
35				
35				
37				
38				
39				
40				

cn5

FHA 6/22/93

J. Redlin 6/15/93

ESAT-5-007.0

Data Set: SF 1187 Site Name: H.O.D. LANDFILL

Date Generated: 6/8/93 Method Number: EPA 245.2 * DNS

TID Number: 05-93-05-06 Author: JAMES REDLIN

CASE NARRATIVE

WATER SAMPLES

SF 1187 contains 10 water samples (93ZE33S36-S39, D37-D39, R60, R62 and R64).

The Hg spike recovery (66.9%) for 93ZE33S39 was below the CRL QA/QC guidelines. The assay of a 1/2 diluted sample that was then spiked (recovery 81.8%) was also below CRL QA/QC guidelines. This indicates strong interference problems within the sample matrix of samples 93ZE33S39 and D39. After consultation with Francis Awanya, CRL, since the other QA/QC Hg spike data were acceptable, the spike QA/QC requirements were met and the sample concentrations for 93ZE33S39 and D39 were reported as 0.1 U.

SOIL SAMPLES

SF 1187 contains 2 soil samples (93ZE33S40 and D40) that did not have any assay problems.

FAA 6/22/93

Reviewed by: J. Redlin Lockheed/ESAT

Date: 5/14/93

D930001187 TFA301 DM1

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/13/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR E&E —

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 76020	WATER CR^{+6} UG CR^{+6}/L MIN 74616	WATER MERCURY UG HG/L MIN 74717
93ZE33S36	5031620 W7D+MSD		X			
37	US6D 5031643		X			
D37	DUS6D 5013668		X			
93ZE06R60	MWFB01 5013682		X			
93ZE33S36	W7D+MSD 5031619					X 0.1 u
93ZE33S37	US6D 5031644					X 0.1 u
93ZE33D37	DUS6D 5031667					X 0.1 u
93ZE06R60	MWFB01 5013680					X 0.1 u
			Assayed by EPA Method 245.2 * DNS			
			Cold Vapor Automated			
			James Rollin		6/9/93	
			J Rollin	6/15/93		
	SHIPMENT	IS NOT	COMPLETE			

FAA 6/22/93

D9300 4187

TFA301 DAY2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER _____ DATA SET NUMBER _____ STUDY H.O.D. LANDFILL PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 78020	WATER CR^{+6} UG CR^{+6}/L MIN 74816	WATER MERCURY UG HG/L MIN 74717
93ZE33S38	5-031750 SW1+MSD		X			
↓ D38	SW1D 5-031760		X			
93ZE06R62	SWFB01 5-031769		X			
93ZE33S38	SW1+MSD 5-031752					X 0.1u
93ZE33D38	SW1D 5-031761					X 0.1u
93ZE06R62	SWFB01 5-031770					X 0.1u
			Assayed By		EPA Method	245.2 x DMS
			Cold vapor, Automated			
			James Rollin 6/9/93			
			J Rollin 6/15/93			

FRA 6/22/93

D930001187

TFA301 DAY1

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/12/93 LAB ARRIVAL DATE 5/13/93 DUE DATE 6/~~2~~3/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 75020	WATER CR^{+6} UG CR^{+6}/L MIN 74616	WATER MERCURY UG HG/L MIN 74717
93ZE33S39	5-031695 L1 + MSD		X			
↓ D39	5-031708 L1D		X			
LK ~~93ZE06R64~~	~~L.FB01~~		X			
93ZE33S39	L1+MSD 5-031696					X 0.1 u
93ZE33D39	L1D 5-031709					X 0.1 u
			Assayed by EPA method 245.2 * DNS			
				Cold Vapor, Automated		

Shipment Completed

NOT J. Rodler 6/9/93

J. Rodler 6/15/93

FAA 6/22/93

D9300011187 TFA301 DAY 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLE DATE 5/13/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

DU NUMBER TFA DATA SET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY — CONTRACTOR — E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 78020	WATER CR^{+6} UG CR^{+6}/L MIN 74816	WATER MERCURY UG HG/L MIN 74717
93ZE33539	L1-HSD		X			X
↓ 539	L1D		X			X
93ZE06R6H	LFB015031722		X			X
93ZE06R64	LGB01 5031723					X 0.1 U
			Assayed	by EPA	Method	245.2 * DNS
				Cold	Vapor,	Automated
				James Rollin		6/9/93
					NOT	J. Rollin 6/15/93
			Shipment			
			Complete			

FAA 6/22/93

D9300011187 TFA301 CAY 2

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM PHENALS-NUTRIENTS

DIVISION/BRANCH ARCS/SUPERFUND SAMPLING DATE 5/14/93 LAB ARRIVAL DATE 5/14/93 DUE DATE 6/4/93

CU NUMBER TFA DATASET NUMBER 1187 STUDY H.O.D. Landfill PRIORITY N CONTRACTOR E&E

CRL LOG NUMBER	SAMPLE DESCRIPTION	SEDIMENTS SOLIDS CHEMICAL OXYGEN DEMAND MG CHO/KG (DRY) MIN93327	SEDIMENTS SOLIDS MERCURY UG HG/KG (DRY) MIN94728	SEDIMENTS SOLIDS ~~PHENOLICS~~ TOC UG PHENOL/KG (DRY) MIN94829	SEDIMENTS SOLIDS CYANIDE MG CN/KG (DRY) MIN94930	
93ZE33540	SD1 +MSD		0.04			5-148219
↓ D40	SD1D		0.05			5-148221
S40	SD1 +MSD	Assayed	By EPA Method			5-148220
D40	SD1 DUPLICATE	245.2 × DMS	H_2SO_4 -	HNO_3		5-148222
		Predigestion (Cold	Vapor,			
		Automated)				
		James Rodda		6/9/93		
		J. Rodda 6/15/93				

FAA 6/22/93

J. Redlin 6/7/93

J. Redlin 6/15/93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: J REDLIN
PARAMETER NAME ----: HG
DATE OF ANALYSIS --: ~~06-04-1993~~ 6-3-1993 JR 6/7/93

DATA SET NUMBER ---: SF 1187 JR 6/7/93
DU NUMBER ---------: TFA 301

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -1.25004E-02
+1.64302E-03 * SIGNAL

COEFFICIENT OF DETERMINATION : .9963262

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION, µg	CALCULATED
1	+6.200	+0.000	-0.003
2	+24.500	+0.025	+0.027
3	+38.000	+0.050	+0.049
4	+54.500	+0.075	+0.077
5	+67.000	+0.100	+0.097

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION µg	Final Concentration mg/kg		Limits µg	
BLANK	+7.500	-0.001			0.0 ± 0.005	
CS-3 ORGANIC	+40.500	+0.054			0.050 ± 10%	
CS-4 INORGANIC	+56.500	+0.080			0.075 ± 10%	
93ZB08S01	+9.000	+0.002	0.03 u	For information only		SF116
93ZB08S01 LAB S	+35.000	+0.045	%R = 89.8%		100 ± 20%	↓
93ZE33S40	+12.500	+0.008	0.04			SF118
93ZE33S40 LAB D	+9.500	+0.003	Δ = 0.005		Δ < 0.01	↓
93ZE33S40 LAB S	+41.000	+0.054	%R = 92.6		100 ± 20%	
93ZE33D40	+12.500	+0.008	0.05			
CS-3 ORGANIC	+40.000	+0.053			0.050 ± 10%	
CS-4 INORGANIC	+56.500	+0.080			0.075 ± 10%	
93OI06S03	+7.800	+0.000	0.04 u			SF116
93OI06S03 LAB D	+7.000	-0.001	0.04 u		Δ < 0.01	↓
93OI06S03 LAB S	+43.000	+0.058	%R = 116.0		100 ± 20%	
CS-3 ORGANIC	+39.500	+0.052			0.050 ± 10%	
CS-4 INORGANIC	+56.000	+0.079			0.075 ± 10%	

FAA 6/22/93

J. Rodlin 6/14/93 J. Rodlin 6/7/93 J. Rodlin 6/15/93

MERCURY - AUTOMATED COLD VAPOR

Element: mercury

Analyst J. Rodlin

Date 6-3-93

Data Set SF 1187 JR 6/7/93

Pos	ID	Spike	DF	Comment
1	Standard 0.0 µg			
2	Standard 0.025 µg			
3	Standard 0.050 µg			
4	Standard 0.075 µg			
5	Standard 0.100 µg			
6	Blank			
7	CS-3 organic			0.050 µg
8	CS-4 inorganic			0.075 µg
9	93ZB08S01			SF 1165
10	93ZB08S01 Lab spk	0.050		Lab spk
11	93ZE33S40			SF 1187
12	93ZE33S40 Lab dup			Lab dup
13	93ZE33S40 Lab spk	0.050		Lab spk
14	93ZE33D40			
15	CS-3 organic			0.050 µg
16	CS-4 inorganic			0.075 µg
17	930I06S03			SF 1168
18	930I06S03 Lab dup			Lab dup
19	930I06S03 Lab spk	0.050		Lab spk
20	900I06S03			not used
21	900I06S03		3	not used
22	900I06S03 Lab dup		3	Lab dup not used
23	900I06S03 Lab spk	0.050	3	Lab spk not used
24	CS-3 organic			0.050 µg
25	CS-4 inorganic			0.075 µg
26				
27				

FDA 6/22/93

J. Redlin 6/14/93

ESAT-5-007.0

J. Redlin 6/15/93

Dataset Number: SF 1187

Site Name: H.O.D. LANDFILL

Date Generated: 6/03/93

Method Number: EPA 245.2 * DNS

Author: James Redlin

TID Number: 05-93-05-06

SAMPLE CALCULATION:

$$\text{mg/Kg} = \frac{\mu g}{\text{grams}} \times \frac{100}{\%\ \text{solid}} \times \frac{\text{mls of digest}}{50.0\ \text{mls}}$$

93ZE33S40:

$$\text{mg/Kg} = \frac{0.008\ \mu g}{0.2845\ \text{grams}} \times \frac{100}{74.1\%} \times \frac{50.5\ \text{mls of digest}}{50.0\ \text{mls}} = 0.038$$

93ZE33S40 DUPLICATE:

$$\text{mg/Kg} = \frac{0.005\ U\ \mu g}{0.1981\ \text{grams}} \times \frac{100}{74.1\%} \times \frac{50.5\ \text{mls of digest}}{50.0\ \text{mls}} = 0.034\ U$$

93ZE33S40 SPIKE:

$$\text{mg/Kg} = \frac{0.054\ \mu g}{0.2840\ \text{grams}} \times \frac{100}{74.1\%} \times \frac{51.0\ \text{mls of digest}}{50.0\ \text{mls}} = 0.262$$

SPIKE AMOUNT:

$$\text{mg/Kg} = \frac{0.050\ \mu g}{0.2840\ \text{grams}} \times \frac{100}{74.1\%} \times \frac{51.0\ \text{mls of digest}}{50.0\ \text{mls}} = 0.242$$

Reviewed by: J. Redlin Lockheed/ESAT

Date: 6/7/93

FAA 6/22/93

5/27/93

Hg Soils SF ~~1165~~ JR 6/7/93 / 1168 / 1187 J. Rodlin

J. Rodlin 6/14/93

J. Rodlin 6/15/93

	Sample	wt ~~sample~~ + tare	wt sample + tare	wt of empty bot	wt of sample
SF1165	93ZB08S01	0.5381	0.7533	0.5387	0.2146
	93ZB08S01 sp	0.5387	0.7391	0.5388	0.2003
SF1168	930I06S03	0.5315	0.6699	0.5318	0.1381 x
	930I06S03 dup	0.5318	0.6754	0.5320	0.1434 x
	930I06S03 spl	0.5320	0.6595	0.5320	0.1275 x
	900I08S03	0.5415	0.6572	0.5418	0.1154 xx
	900I08S03 dup	0.5418	0.6665	0.5422	0.1243 xx
	900I08S03 spl	0.5422	0.6508	0.5422	0.1086 xx
SF1187	93ZE33S40	0.5352	0.8906	0.6061	0.2845 x
	93ZE33S40 dup	0.5284	0.7762	0.5781	0.1981 x
	93ZE33S40 sp	0.5301	0.8385	0.5545	0.2840 x
	93ZE33D40	0.5358	0.9245	0.7105	0.2140 x

sp. lu = + 0.5 ml spiking solution (0.050 µg)

x added 0.5 ml preservation solution to tubes.

xx added 1.0 ml preservative solution to tubes.

J. Rodlin 5/27/93

J. Rodlin 6/7/93

J. Rodlin 6/7/93

FAA 6/22/93

J Rodli 6/3/93

6-3-93

J. Rodli 6/14/93

% Solids SF 1187

in oven - 11:15 6-3-93

out oven - 11:15 6-4-93

J Rodli 6/15/93

Balance ck 6/3/93

1g - 1.0030 50g - 50.0164

5g - 5.0016 100g - 100.0016

20g 20.0094

Sample ID	Empty Tare wt (g)	Tare + wet wt (g)	Wet wt ~~Tare + dry~~ 6/3/93 sample wt (g)	Tare + dry JR 6/3/93 sample wt (g)	dry sample wt (g)	% solids (g)	comment
Blank	23.661	—		23.661	0.0	—	
93ZE33S40	23.929	33.974	10.045	31.674	7.445	74.1	
93ZE33S40 dup	23.656	34.211	10.555	31.759	8.103	76.8	
93ZE33D40	22.225	33.359	11.134	30.821	8.596	77.2	

Balance ck 6/4/93

1g - 1.0029 50g - 50.0164

5g - 5.0015 100g - 100.0018

20g - 20.0094

J. Rodli 6/4/93

J. Rodli 6/7/93

J. Rodli 6/7/93

FAA 6/22/93

J. Redlin 6/14/93

* REGRESSION ANALYSIS * CSC VERSION 2.00 *

NAME OF ANALYST ---: J REDLIN
PARAMETER NAME ----: HG
DATE OF ANALYSIS --: ~~06-14-1993~~ 6-8-1993 JR 6/14/93

DATA SET NUMBER ---: SF 1187
DU NUMBER ---------: TFA 301

J. Redlin 6/14/93
J. Redlin 6/15/93

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -9.48520E-02
+2.96386E-02 * SIGNAL

COEFFICIENT OF DETERMINATION : .997043

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION, µg/L	CALCULATED
1	+1.500	+0.000	-0.051
2	+21.800	+0.500	+0.551
3	+38.200	+1.000	+1.037
4	+53.400	+1.500	+1.487
5	+69.800	+2.000	+1.973

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION, µg/L		Limits µg/L	
BLANK	+1.500	-0.051		<0.1	
CS-1 ORGANIC	+58.000	+1.624 rec: 1.6		1.5±0.2	
CS-2 INORGANIC	+56.500	+1.579 rec: 1.6		1.5±0.2	
93ZE33S36	+1.800	-0.042 0.1 u			SF1187
93ZE33S36 LAB DUP	+1.000	-0.066	Δ=0.03	Δ<0.15	
93ZE33S36 LAB SPK	+37.000	+1.001	R=1.00	1.00±0.15	
93ZE33S37	+0.000	-0.095 0.1 u			
93ZE33D37	+0.000	-0.095 0.1 u			
93ZE33R60	+0.000	-0.095 0.1 u			
93ZE33S39	+1.000	-0.066 0.1 u			
93ZE33S39 LAB DUP	+1.500	-0.051	Δ=0.02	Δ<0.15	For information only
93ZE33S39 LAB SPK	+25.800	+0.669	R=0.67	1.00±0.15	
93ZE33D39	+1.500	-0.051 0.1 u			
93ZE33S39 LAB SPK	+28.500	+0.749	R=0.75	1.00±0.15	For information only
93ZE33R64	+0.000	-0.095 0.1 u			
93ZE33S38	+0.000	-0.095 0.1 u			
93ZE33S38 LAB DUP	+0.000	-0.095	Δ=0.00	Δ<0.15	For information only
93ZE33S38 LAB SPK	+34.800	+0.936	R=0.94	1.00±0.15	
93ZE33D38	+1.000	-0.066 0.1 u			
93ZE33R62	+0.000	-0.095 0.1 u			
BLANK	+1.500	-0.051		<0.1	
CS-1 ORGANIC	+55.800	+1.558 rec: 1.6		1.5±0.2	
CS-2 INORGANIC	+49.800	+1.381 rec: 1.4		1.5±0.2	
93ZE33S39	+3.400	+0.005		For information only	SF1187
93ZE33S39 LAB SPK	+30.800	+0.818	R=0.82	1.00±0.15	
BLANK	+1.500	-0.051		<0.1	
CS-1 ORGANIC	+56.400	+1.576 rec: 1.6		1.5±0.2	
CS-2 INORGANIC	+51.500	+1.431 rec: 1.4		1.5±0.2	

FAA 6/22/93

J. Rodlin 6/14/93

MERCURY by AUTOMATED COLD VAPOR

Element: mercury

Analyst J. Rodlin

Date 6-8-93

Data Set SF 1187

Pos	ID	Spike	DF	Comment
1	Standard 0 ug/l			J. Rodlin 6/15/93
2	Standard 0 ug/l			
3	Standard 0.5 ug/l			
4	Standard 0.5 ug/l			
5	Standard 1.0 ug/l			
6	Standard 1.0 ug/l			
7	Standard 1.5 ug/l			
8	Standard 1.5 ug/l			
9	Standard 2.0 ug/l			
10	Standard 2.0 ug/l			
11	Blank			
12	Blank			
13	CS-organic			1.5 ug/l
14	CS-organic			1.5 ug/l
15	CS-inorganic			1.5 ug/l
16	CS-inorganic			1.5 ug/l
17	93ZE33S36			
18	93ZE33S36			
19	93ZE33S36 dup			lab dup
20	93ZE33S36 dup			lab dup
21	93ZE33S36 spk	1.00		lab spk
22	93ZE33S36 spk	1.00		lab spk
23	93ZE33S37			
24	93ZE33S37			
25	93ZE33D37			
26	93ZE33D37			
27	93ZE33R60			

hg1

FAA 6/22/93

J. Rodli 6/14/93

MERCURE by AUTOMATED COLD VAPOR

Element: mercury

Analyst J. Rodli

Date 6-8-93

Data Set SF 1187

Pos	ID	Spike	DF	Comment
28	93ZE33 R60			J. Rodli 6/15/93 SF1187
29	93ZE33 S39			
30	93ZE33 S39			
31	93ZE33 S39 dup			lab dup For information only
32	93ZE33 S39 dup			lab dup
33	93ZE33 S39 spk	1.00		lab spk rerun
34	93ZE33 S39 spk	1.00		lab spk
35	93ZE33 D39			
36	93ZE33 D39			
37	93ZE33 S39 spk			lab spk For information only ~~rerun~~
38	93ZE33 S39 spk			lab spk
39	93ZE33 R64			
40	93ZE33 R64			
	Start Wheel 2			
1	93ZE33 S38			SF1187
2	93ZE33 S38			
3	93ZE33 S38 dup			lab dup For information only
4	93ZE33 S38 dup			lab dup
5	93ZE33 S38 spk	1.00		lab spk
6	93ZE33 S38 spk	1.00		lab spk
7	93ZE33 D38			
8	93ZE33 D38			
9	93ZE33 R62			
10	93ZE33 R62			
11	Blank			
12	Blank			
13	CS-1 organic			1.5 µg/L

hg2

J. Redlin 6/14/93

MERCURY - AUTOMATED COLD VAPOR J. Redlin 6/15/93

Element: mercury

Analyst J. Redlin

Date 6-8-93

Data Set SF1187

Pos	ID	Spike	DF	Comment
14	CS-1 organic			1.5 µg/L
15	CS-2 inorganic			1.5 µg/L
16	CS-2 inorganic			1.5 µg/L
17	93ZE33S39		2	For information only SF1187
18	93ZE33S39		2	
19	93ZE33S39 spk		2	Lab spk
20	93ZE33S39 spk		2	Lab spk
21	Blank			
22	Blank			
23	CS-1 organic			1.5 µg/L
24	CS-1 organic			1.5 µg/L
25	CS-2 inorganic			1.5 µg/L
26	CS-2 inorganic			1.5 µg/L
27				
28				
29				
30				
31				
32				
33				
34				
35				
35				
37				
38				
39				
40				

cn5

FAA 6/22/93