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NAS PENSACOLA
5090.3a

ADDITIONAL GROUNDWATER SAMPLING WITH TRANSMITTAL SITE 15 NAS PENSACOLA FL
9/19/1997
ABB

ABB

19 September 1997

Mr. Eric Nuzie
Florida Department of Environmental Protection
2600 Blairstone Road
Tallahassee, Florida 32301

Subject: **Additional Groundwater Sampling at Site 15, Former Building 2662W**
Naval Aviation Depot, Pensacola, Florida
Navy CLEAN Contract # N62467-89-D-0317/008

Dear Mr. Nuzie,

This letter summarizes the results of the most recent groundwater sampling activities occurring at Site 15, Former Building 2662W, Naval Aviation Depot (NADEP), Pensacola, Florida. The groundwater sampling activities, which were discussed during several phone calls with John Mitchell of FDEP, Andy Hutto of SOUTHDIV, Pamela J. Wagner of ABB-ES, and myself on July 18th and 21st, 1997, took place on August 25, 1997. This field work was performed in response to previous comments concerning the CAR Addenda and for the specific purpose of continuing to move closer to site closeout.

Purging and Sampling Select Site Monitoring Wells
Groundwater samples were collected from monitoring wells MW-2, MW-3, MW-6, and MW-16 and analyzed for total lead as requested by FDEP in their comments to the CAR Addendum dated December 1996. Before sample collection, water level data was collected and the well volume was calculated for each monitoring well. All four site monitoring wells were purged using a quiescent sampling technique with Teflon™ tubing and a peristaltic pump. Groundwater quality measurements - pH, conductivity, temperature, and turbidity - were collected and recorded in the Site 15 fieldbook throughout the purge process. Each monitoring well was purged until groundwater quality parameters stabilized and at least ten well volumes had been removed from the well. Groundwater samples were then collected using the peristaltic pump and Teflon™ tubing, properly preserved, and placed on ice. Because turbidity levels did not fall below 5 Nephelometric Turbidity Units (NTU) in three monitoring wells (MW-2, MW-3, and MW-6), an additional unpreserved lead sample was collected from each of the three turbid wells. The unpreserved lead sample was filtered and preserved at the laboratory and analyzed for dissolved lead. All groundwater samples were shipped by overnight carrier to Quanterra, Inc. in Tampa, Florida, for analysis.

Groundwater Sampling Results
Groundwater analytical laboratory results are summarized in Table 1, Attachment A, and presented in Figure 1, Attachment A. Laboratory analytical data sheets are presented in Attachment B.

The groundwater at Site 15 is regulated under Chapter 62-770, Florida Administrative Code (FAC). The most recently established cleanup target level for lead is 15 micrograms per liter (μg/L) (Chapter 62-770, July/August 1997). When the investigation at Site 15 first began the lead target level was 50

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μg/L. Lead concentrations exceeding the 1997 cleanup target level were detected in three of the four samples collected from Site 15. Samples from only one monitoring well, however, exceeded 50 μg/L.

The total and dissolved lead concentrations detected in the sample collected from MW-6 were 130 μg/L and 96.0 μg/L, respectively. Total and dissolved lead concentrations detected in the sample collected from MW-3 were 34.6 μg/L and 26.0 μg/L, respectively. Finally, the total and dissolved lead concentrations detected in the sample collected from MW-2 were 34.8 μg/L and 28.0 μg/L, respectively. Lead was not detected in the sample collected from MW-16.

Site History and Lead Concentrations

During the original contamination assessment completed in 1994, 51 groundwater samples were collected from 40 site monitoring wells and analyzed for total lead (ABB-ES, April 1994). Of these samples, lead was detected in only three samples. The highest lead concentration was 9 μg/L. Lead was dismissed as a chemical of concern. Soil remediation was recommended for Site 15. After the remediation was completed, monitoring wells were re-installed and sampled for the complete Kerosene Analytical Group, including lead.

The soil remedial action included the removal and treatment of site soil, as well as the use of backfill soil to return Site 15 to grade. Analyses of soil used to backfill the excavation revealed that approximately one-third of the thermally treated soil exceeded the 108 ppm total lead limit specified in Chapter 62-775.410, FAC. The soil did not, however, exceed the 400 ppm guidance concentration for residential land use quoted by FDEP (ABB-ES, 1995). Backfill soil used at Site 15 is a mixture of clay and sand.

Conclusions

Lead concentrations exceeding the 1997 cleanup target level of 15 μg/L were detected in only the samples collected from MW-2, MW-3 and MW-6. Only the lead concentrations detected in MW-6 exceeded the earlier lead target level of 50 μg/L.

Despite the use of quiescent purge and sampling techniques, the turbidity in the groundwater samples collected from these wells did not fall below 5 NTU. The groundwater purged from these wells was brown (MW-2), gray (MW-3), and red (MW-6). The groundwater purged from MW-6 was also visibly cloudy at the time of sampling and the laboratory reported visible turbidity after filtering the dissolved lead sample. In addition, MW-6 is located within the previous excavation area and therefore is surrounded by the clay/sand backfill material. Monitoring wells MW-2 and MW-3 are located in areas that were previously marshy and contained organic materials.

Because of the unusual coloration of the groundwater in these monitoring wells and the surrounding soil types, it is suspected that high lead concentrations are the result of lead adsorbed to suspended sediment in the groundwater. Field experience has shown that some sediment will pass through 0.45-micron metals filters. According to J. D. Hem (USGS, 1976 and 1980), lead may adsorb to organic and inorganic sediment surfaces. This tends to cause detectable concentrations of lead in surface and groundwater.

Based on the site history, previous sampling data, and the presence of suspended sediments in the

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groundwater, it is unlikely that the contamination originally present at Site 15 is the cause of the elevated lead concentrations detected during this sampling event.

Recommendation

The original 1994 sampling data does not suggest that lead contamination, as a result of leaking storage tanks, was present at Site 15. Current data suggests that lead present in the site soil may be adsorbing to suspended sediments resulting in the concentrations of lead detected in the groundwater. Based on this information No Further Action for Site 15, former Building 2662W, is recommended.

If you require additional information, please do not hesitate to call either of us at (850) 656-1293.

Sincerely,

ABB ENVIRONMENTAL SERVICES, INC.

Kathy Hodak
Project Manager

Pamela J. Wagner, P.G.
Senior Geolgist

cc: John Mitchell, FDEP
Andy Hutto, Southdiv
Dean Spencer, NADEP
File

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ATTACHMENT A

TABLE and FIGURE

Table 1
Summary of Groundwater Sampling Results,
August 25, 1997

Site 2662W, Former Building 2662W,
Naval Aviation Depot,
Pensacola, Florida

Well ID	Sample ID	Total Lead[1]	Dissolved Lead[2]	Turbidity[3]
PEN-2662W-2	15G00200	34.8	28.0	6.31
PEN-2662W-3	15G00300	34.6	26.0	7.70
PEN-2662W-6	[4]15G00600	130	96.0	22.1
PEN-2662W-16	15G01600	bdl	na	0.74

[1] Total lead samples are unfiltered and field preserved.
[2] Dissolved lead samples are filtered and preserved at the laboratory.
[3] Turbidity is a field-measure water quality parameter indicating suspended particles in the groundwater. Turbidity is measured in Nephelometric Turbidity Units (NTU).
[4] Visible turbidity was reported for this sample even after filtering by the laboratory.

Notes: ID = identification.
Concentrations reported in parts per billion.
bdl = below method detection limits.
na = not analyzed.

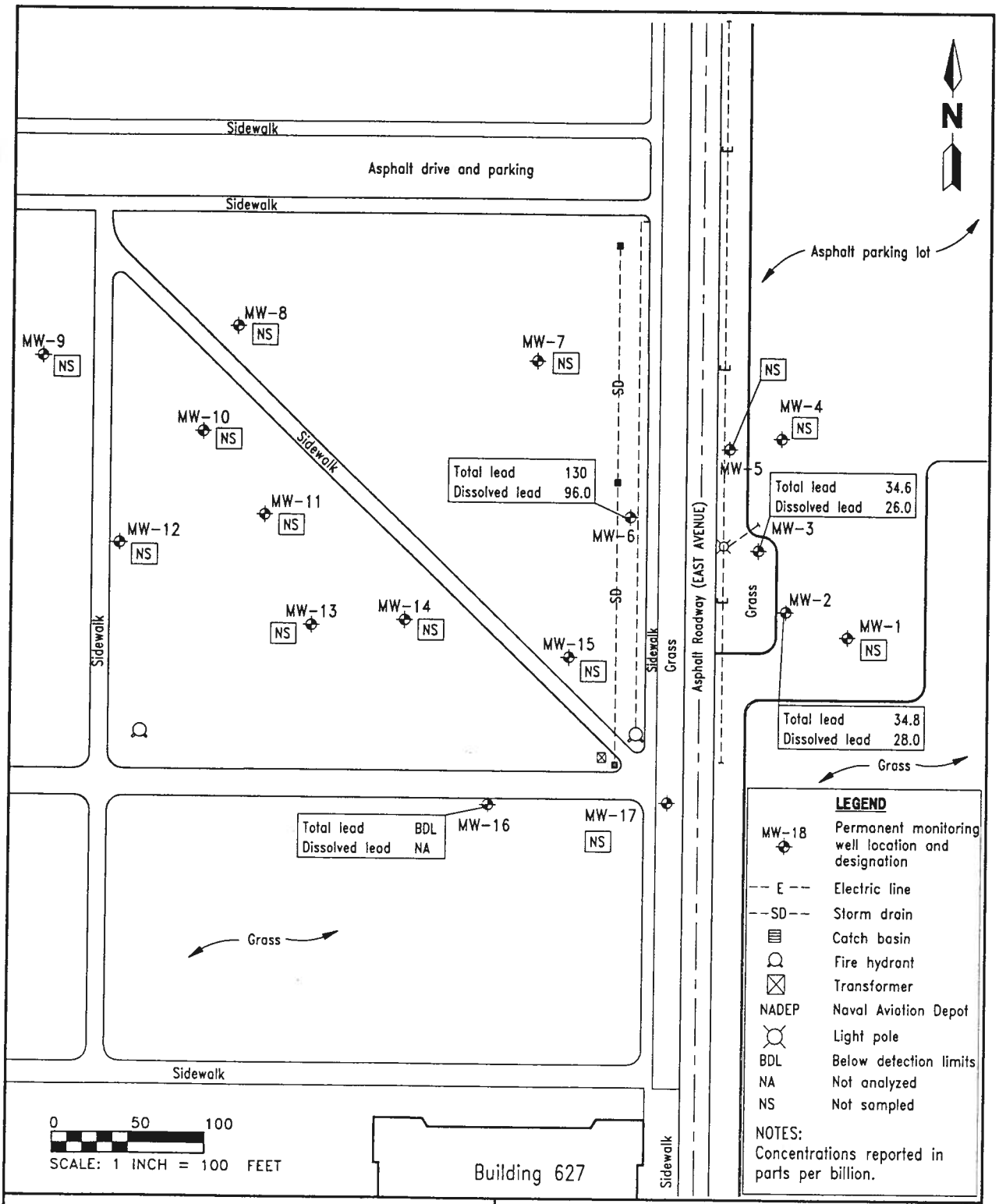

FIGURE 1
MONITORING WELL LOCATION MAP AND GROUNDWATER SAMPLING ANALYTICAL RESULTS

H:\PEN\CAR2662W.DWG, NAB-PDP 09/17/97 15:38:24, AutoCAD R12

SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND

SITE 15, FORMER BUILDING 2662W

NADEP PENSACOLA
PENSACOLA, FLORIDA

ATTACHMENT B

GROUNDWATER ANALYTICAL DATA SHEETS

Quanterra Environmental Services

Quanterra Incorporated
5910 Breckenridge Parkway, Suite H
Tampa, Florida 33610

813 621-0784 Telephone
813 623-6021 Fax

ANALYTICAL REPORT

SITE 2662

Pam Wagner

ABB Environmental Services

QUANTERRA INCORPORATED

Certification Numbers: E84059,HRS84297
FDEP CompQAP: 870270G

Nancy Robertson
Project Manager

August 29, 1997

Quanterra
Environmental Services

Quanterra Incorporated
5910 Breckenridge Parkway, Suite H
Tampa, Florida 33610

813 621-0784 Telephone
813 623-6021 Fax

September 10, 1997

Pamela Wagner
ABB Environmental Services
2590 Executive Center Circle E
Tallahassee, FL 32301

Subject: Dissolved Lead

Dear Pamela:

Per your request, the sample for dissolved lead, ID# 15 G00600, was filtered in the laboratory upon receipt. The sample at this time appeared turbid with apparent suspended particles. Please let me know if I can be of any further assistance.

Sincerely,

Nancy Robertson

Nancy Robertson
Project Manager

Quanterra Environmental Services

EXECUTIVE SUMMARY - Detection Highlights

B7H270135

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
15G00200 08/25/97 15:55 001				
Lead	34.8	5.0	ug/L	MCAWW 239.2
15G00200 08/25/97 15:55 002				
Lead - DISSOLVED	28.0	20.0	ug/L	MCAWW 239.2
15G00300 08/25/97 15:55 003				
Lead	34.6	5.0	ug/L	MCAWW 239.2
15G00300 08/25/97 15:55 004				
Lead - DISSOLVED	26.0	10.0	ug/L	MCAWW 239.2
15G00600 08/26/97 10:30 005				
Lead	130	25.0	ug/L	MCAWW 239.2
15G00600 08/26/97 10:30 006				
Lead - DISSOLVED	96.0	25.0	ug/L	MCAWW 239.2

Quanterra
Environmental Services

METHODS SUMMARY

B7H270135

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Dissolved Lead (GFAA)	MCAWW 239.2	MCAWW 239.2
Lead (AA, Furnace Technique)	MCAWW 239.2	MCAWW 239.2

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

Quanterra
Environmental Services

SAMPLE SUMMARY

B7H270135

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
CCGL6	001	15G00200	08/25/97	15:55
CCGL7	002	15G00200	08/25/97	15:55
CCGL8	003	15G00300	08/25/97	15:55
CCGL9	004	15G00300	08/25/97	15:55
CCGLA	005	15G00600	08/26/97	10:30
CCGLD	006	15G00600	08/26/97	10:30
CCGLF	007	15G01600	08/26/97	09:05

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Quanterra
Environmental Services

Chain-of-Custody

Quanterra
Environmental Services

TAMPA LABORATORY
CONDITION UPON RECEIPT FORM

Client: ABB-ES **Project Name/Lot #:** Site 2662
Date Received: 8/27/97 **Received By:** Carol McNulty
CUR Completed By: Carol McNulty

Cooler/Shipping information:
TYPE: Quanterra Cooler X Client Cooler ___ Quanterra Shipper ___ Box ___ Other ___/___

Cooler ID/Track #					
Temp (Celsius)	4°				
Cooler ID/Track #					
Temp (Celsius)					

Any "NO" responses or discrepancies should be explained in the "Comments" section below.

CHECKLIST	YES	NO	NA
1. Were custody seals on shipping container(s) intact? Check "NA" if hand delivered. Circle One: CUSTODY SEAL SAVED UNABLE TO SAVE CUSTODY SEAL	✓		
2. Were custody papers properly included with samples?	✓		
Were custody papers properly filled out (ink, signed, match labels)?	✓		
Did all bottles arrive in good condition (unbroken)?	✓		
Were all bottle labels complete (sample #, date, signed, analysis, preservatives)?	✓		
6. Were correct bottles used for the tests indicated?	✓		
7. Were proper sample preservation techniques indicated?	✓		
8. Were samples received within adequate holding times? If "NO", complete 8.a. or 8.b.	✓		
a. Was sample hold time exceeded (NCM required)?			
b. Did the samples arrive with more than half the hold time exceeded (NCM required)?			
9. Were all VOA bottles checked for the presence of air bubbles? If air bubbles were found, indicate in comment section.			✓
10. Were samples in direct contact with wet ice? If "NO", circle one: NO ICE BLUE ICE	✓		
11. Were the samples received with a temperature blank? NOTE TEMPERATURE ABOVE If "NO", circle one: UNABLE TO DETERMINE TEMP TEMP TAKEN FROM THE COOLER ICE/WATER NEAR SAMPLES		✓	
12. Were sample pHs checked and recorded by S.R. (see back for Page 2 - Sample pH)? *TOC and VOA samples are checked by laboratory analysts.*	✓		
13. Were samples accepted into the laboratory?	✓		

Comments:

Project Manager initials/date reviewed: 8-28-97

Corrective Action:

Corrective Action completed by/date:

Quanterra Environmental Services

TAMPA LABORATORY
CONDITION UPON RECEIPT - SAMPLE pH

Date: 8-27-97 **Initials:** Cam

Lot # (if not noted on page 1): B7H270135

SAMPLE ID	METALS	DISS METALS	TRPH	AMMONIA	COD	CYANIDE	TOX	HARDNESS	TKN/NITROGEN	O&G	PHENOLS	NO2/NO3	H*ERB/PEST/PCB	SULFIDE	PHOSPHORUS	
Container	(P,G)	(P,G)	(G)	(P,G)	(P,G)	(P,G)	(G)	(P,G)	(P,G)	(G)	(G)	(P,G)	(G)	(P,G)	(P,G)	
Preservative	HNO_3	HNO_3	HCl	H_2SO_4	H_2SO_4	NaOH	H_2SO_4	H_2SO_4/HNO_3	H_2SO_4	H_2SO_4/HCl	H_2SO_4	H_2SO_4	None	Zn Acetate NaOH	H_2SO_4	
Required pH	< 2	< 2	< 2	< 2	< 2	> 12	< 2	< 2	< 2	< 2	< 2	< 2	5 to 9	> 9	< 2	
4 00200	<2	6														
00300	<2	6														
00400	<2	6														
01600	<2															

*Only 1 unpreserved bottle per sample is checked for pH.

000006

Chain of Custody Record

Quanterra Environmental Services

QUA 4124 1

Client: ABB-ES

Project Manager: KATHY HODAK

Date: 8-26-97

Chain Of Custody Number: 66975

Address: 2590 Executive Center Cir. E.

Telephone Number (Area Code)/Fax Number: (850) 656 1293

Lab Number:

Page 1 of 1

City: Tallahassee | State: FL | Zip Code: 32311

Site Contact: Pamela Wagner

Lab Contact: NANCY

Project Name: Site 2662

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Analysis (Attach list if more space is needed)

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Aqueous	Sed.	Soil		Containers & Preservatives: Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH		LEAD 239.2	Filter/preserve	Special Instructions/ Conditions of Receipt
15G00200	8-25-97	1555			✓		1		1					✓	✓	
15G00300	8-25-97	1555			✓		1		1					✓	✓	
15G00600	8-26-97	1030			✓		1		1					✓	✓	
15G01600	8-26-97	0905			✓				1					✓		

Possible Hazard Identification: ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required: ☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☒ 21 Days ☐ Other ____

QC Requirements (Specify): Sample w/ 2 bottles have one preserved bottle and one unpreserved bottle. Please filter and preserve the unpreserved bottle.

		Date	Time
1 Relinquished By	[signature]	8-26-97	1100
2 Relinquished By			
3 Relinquished By			

		Date	Time
1 Received By			
2 Received By	Carol McNulty	8/27/97	1030
3 Received By			

Comments: check pH on all samples.

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Sample Results

ABB ENVIRONMENTAL SERVICES

Client Sample ID: 15G00200

TOTAL Metals

Lot-Sample #...: B7H270135-001 **Matrix.....:** WATER
Date Sampled...: 08/25/97 **Date Received..:** 08/27/97

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 7239226						
Lead	**34.8**	**5.0**	**ug/L**	**MCAWW 239.2**	**08/27-08/28/97**	**CCGL6101**

Dilution Factor: 1
Analysis Time..: 11:28 Analyst ID.....: 001863 Instrument ID..: F1

ABB ENVIRONMENTAL SERVICES

Client Sample ID: 15G00200

DISSOLVED Metals

Lot-Sample #...: B7H270135-002 **Matrix.....:** WATER
Date Sampled...: 08/25/97 **Date Received..:** 08/27/97

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 7239226						
Lead	**28.0**	**20.0**	**ug/L**	**MCAWW 239.2**	**08/27-08/28/97**	**CCGL7101**

Dilution Factor: 4
Analysis Time..: 12:56 Analyst ID.....: 001863 Instrument ID..: F1

ABB ENVIRONMENTAL SERVICES

Client Sample ID: 15G00300

TOTAL Metals

Lot-Sample #...: B7H270135-003 **Matrix.....:** WATER
Date Sampled...: 08/25/97 **Date Received..:** 08/27/97

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 7239226						
Lead	**34.6**	**5.0**	**ug/L**	**MCAWW 239.2**	**08/27-08/28/97**	**CCGL8101**

Dilution Factor: 1
Analysis Time..: 11:52 Analyst ID.....: 001863 Instrument ID..: F1

ABB ENVIRONMENTAL SERVICES

Client Sample ID: 15G00300

DISSOLVED Metals

Lot-Sample #...: B7H270135-004 **Matrix.....:** WATER
Date Sampled...: 08/25/97 **Date Received..:** 08/27/97

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 7239226						
Lead	**26.0**	**10.0**	**ug/L**	**MCAWW 239.2**	**08/27-08/28/97**	**CCGL9101**

Dilution Factor: 2
Analysis Time..: 13:01 Analyst ID.....: 001863 Instrument ID..: F1

ABB ENVIRONMENTAL SERVICES

Client Sample ID: 15G00600

TOTAL Metals

Lot-Sample #...: B7H270135-005 **Matrix.....:** WATER
Date Sampled...: 08/26/97 **Date Received..:** 08/27/97

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 7239226						
Lead	**130**	**25.0**	**ug/L**	**MCAWW 239.2**	**08/27-08/28/97**	**CCGLA101**

Dilution Factor: 5
Analysis Time..: 13:05 Analyst ID.....: 001863 Instrument ID..: F1

ABB ENVIRONMENTAL SERVICES

Client Sample ID: 15G00600

DISSOLVED Metals

Lot-Sample #...: B7H270135-006 **Matrix.....:** WATER
Date Sampled...: 08/26/97 **Date Received..:** 08/27/97

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 7239226						
Lead	**96.0**	**25.0**	**ug/L**	**MCAWW 239.2**	**08/27-08/28/97**	**CCGLD101**

Dilution Factor: 5
Analysis Time..: 13:54 Analyst ID.....: 001863 Instrument ID..: F1

ABB ENVIRONMENTAL SERVICES

Client Sample ID: 15G01600

TOTAL Metals

Lot-Sample #...: B7H270135-007 **Matrix.....:** WATER
Date Sampled...: 08/26/97 **Date Received..:** 08/27/97

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 7239226						
Lead	ND	5.0	ug/L	MCAWW 239.2	08/27-08/28/97	CCGLF101

Dilution Factor: 1
Analysis Time..: 13:20 Analyst ID.....: 001863 Instrument ID..: F1

Quality Control Results

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: B7H270135 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: B7H270000-226 **Prep Batch #...:** 7239226						
Lead	ND	5.0	ug/L	MCAWW 239.2	08/27-08/28/97	CCGVA101

Dilution Factor: 1

Analysis Time..: 10:42 Analyst ID.....: 001863 Instrument ID..: F1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

DISSOLVED Metals

Client Lot #...: B7H270135 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: B7H270000-226 **Prep Batch #...:** 7239226						
Lead	ND	5.0	ug/L	MCAWW 239.2	08/27-08/28/97	CCGVA103

Dilution Factor: 1

Analysis Time..: 10:42 Analyst ID.....: 001863 Instrument ID..: F1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: B7H270135 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: B7H270000-226 **Prep Batch #...:** 7239226							
Lead	40.0	45.6	ug/L	114	MCAWW 239.2	08/27-08/28/97	CCGVA102

Dilution Factor: 1 Instrument ID..: F1 Analyst ID.....: 001863

Analysis Time..: 10:47

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

DISSOLVED Metals

Client Lot #...: B7H270135 **Matrix.....:** WATER

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: B7H270000-226 **Prep Batch #...:** 7239226							
Lead	40.0	45.6	ug/L	114	MCAWW 239.2	08/27-08/28/97	CCGVA104

Dilution Factor: 1 Instrument ID..: F1 Analyst ID.....: 001863

Analysis Time..: 10:47

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: B7H270135 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: B7H270000-226 **Prep Batch #...:** 7239226					
Lead	114	(83 - 119)	MCAWW 239.2	08/27-08/28/97	CCGVA102

Dilution Factor: 1 Instrument ID..: F1 Analyst ID.....: 001863

Analysis Time..: 10:47

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

DISSOLVED Metals

Client Lot #...: B7H270135 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: B7H270000-226 **Prep Batch #...:** 7239226					
Lead	114	(83 - 119)	MCAWW 239.2	08/27-08/28/97	CCGVA104

Dilution Factor: 1 Instrument ID..: F1 Analyst ID.....: 001863

Analysis Time..: 10:47

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: B7H270135 **Matrix.....:** WATER
Date Sampled...: 08/25/97 **Date Received..:** 08/27/97

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	RPD	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: B7H270135-001 **Prep Batch #...:** 7239226									
Lead									
	34.8	40.0	81.2	ug/L	116		MCAWW 239.2	08/27-08/28/97	CCGL6102
	34.8	40.0	77.0	ug/L	106	5.3	MCAWW 239.2	08/27-08/28/97	CCGL6103

Dilution Factor: 2
Analysis Time..: 12:51 Instrument ID..: F1 Analyst ID.....: 001863

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: B7H270135 **Matrix.....:** WATER
Date Sampled...: 08/25/97 **Date Received..:** 08/27/97

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: B7H270135-001 **Prep Batch #...:** 7239226							
Lead	116	(55 - 137)			MCAWW 239.2	08/27-08/28/97	CCGL6102
	106	(55 - 137)	5.3	(0-11)	MCAWW 239.2	08/27-08/28/97	CCGL6103

Dilution Factor: 2
Analysis Time..: 12:51 Instrument ID..: F1 Analyst ID.....: 001863

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Raw Data
GFAA

Data Review Checklist - GFAA

Run File: 0828PbR1
Run Date: 8-28-97
Instrument: F1 PE 5100Z
Analyst: RCM

Element: As (Pb) Se Tl Sb Cr Ag Cd

Modifier: (Pd) Ni

Batch #s: 7239226-W

Standards Summary

Standards Acid Matrix: 5 % HNO_3

	Standard	CCV	ICV	Post spike
Lab ID	M2372	M2372 1/2	M2373	M2371
Source	Quant	—	—	→
Exp. Date	9/6/97	8/28/97	9/6/97	9/6/97

Review Items

A. Calibration/Instrument Run QC	Yes	No*	N/A	2nd Level
1. Instrument Calibrated per Mfg. instructions or client requirements?	✓			✓
2. ICV/CCV analyzed at appropriate frequency and within control limits? (90-110%)	✓			✓
3. ICB/CCB analyzed at appropriate frequency and within +/- RL?	✓			✓
4. One standard analyzed at or below RL?	✓			✓
B. Sample Results				
1. Was analysis done within hold time?	✓			✓
2. Reporting limits raised where appropriate ?	✓			✓
3. All reported results bracketed by in control QC?	✓			✓
4. Were all samples reported within calibration range?	✓			✓
C. Preparation/Matrix QC				
1. LCS done per batch and within QC limits?	✓			✓
2. Method blank done per batch and within +/- RL?	✓			✓
3. MS/MSD done per batch and within QC limits?	✓			✓
4. Post spikes not meeting post spike tree limits diluted appropriately or run by MSA?	✓			✓
D. Other				
1. Are all nonconformances documented appropriately?	✓			✓
2. Current MDL data on file?	✓			✓
3. Calculations checked for errors? (1st Level 100 %; 2nd Level 100%)	✓			✓
4. Date/time of analysis verified as correct?	✓			✓

*A No response requires a comment

Comments:

Analyst: [signature] Date: 8/28/97

2nd Level Review: [signature] Date: 8/28/97

RCD 8/28/97 F1

Element File: PB60.8EL Element: Pb Wavelength: 283.3
Date: 08/28/97 Time: 09:25 Slit: 0.70 L
Data File: 0828PBR1.DAT ID/Wt File: UNTITLED
Technique: HGA Calib. Type: Linear Energy: 65

Pb ID: Calib. Blank Seq. No.: 00001 A/S Pos.: 0 Date: 08/28/97

Pb ID: Standard 1 Seq. No.: 00002 A/S Pos.: 1 Date: 08/28/97

Standard number 1 applied. [3.000]
Correlation coefficient: 1.00000 Slope: 0.0054

Pb ID: Standard 2 Seq. No.: 00003 A/S Pos.: 2 Date: 08/28/97

Standard number 2 applied. [15.000]
Correlation coefficient: 0.99999 Slope: 0.0055

Pb ID: Standard 3 Seq. No.: 00004 A/S Pos.: 3 Date: 08/28/97

Standard number 3 applied. [30.000]
Correlation coefficient: 0.99976 Slope: 0.0054

Pb ID: Standard 4 Seq. No.: 00005 A/S Pos.: 36 Date: 08/28/97

Standard number 4 applied. [60.000]
Correlation coefficient: 0.99927 Slope: 0.0052

Pb ID: ICV M2373 Seq. No.: 00006 A/S Pos.: 4 Date: 08/28/97

Pb ID: ICB Seq. No.: 00007 A/S Pos.: 5 Date: 08/28/97

Pb ID: CCV M2372 1/2 Seq. No.: 00008 A/S Pos.: 37 Date: 08/28/97

Pb ID: CCB Seq. No.: 00009 A/S Pos.: 40 Date: 08/28/97

Pb ID: CCGVAB 7239226 Seq. No.: 00010 A/S Pos.: 6 Date: 08/28/97

Pb ID: CCGVABA PBWA Seq. No.: 00011 A/S Pos.: 7 Date: 08/28/97

Pb ID: CCGVAC LCSW Seq. No.: 00012 A/S Pos.: 8 Date: 08/28/97

Pb ID: CCEQE Seq. No.: 00013 A/S Pos.: 9 Date: 08/28/97

Pb	ID: CCEQEA	Seq. No.: 00014	A/S Pos.: 10	Date: 08/28/97
Pb	ID: CCEQK	Seq. No.: 00015	A/S Pos.: 11	Date: 08/28/97
Pb	ID: CCEQK	Seq. No.: 00016	A/S Pos.: 11	Date: 08/28/97
Pb	ID: CCEQKA	Seq. No.: 00017	A/S Pos.: 12	Date: 08/28/97
Pb	ID: CCEQKA	Seq. No.: 00018	A/S Pos.: 12	Date: 08/28/97
Pb	ID: CCEQL	Seq. No.: 00019	A/S Pos.: 13	Date: 08/28/97
Pb	ID: CCEQLA	Seq. No.: 00020	A/S Pos.: 14	Date: 08/28/97
Pb	ID: CCF4Q	Seq. No.: 00021	A/S Pos.: 15	Date: 08/28/97
Pb	ID: CCF4QA	Seq. No.: 00022	A/S Pos.: 16	Date: 08/28/97
Pb	ID: CCV M2372 1/2	Seq. No.: 00023	A/S Pos.: 37	Date: 08/28/97
Pb	ID: CCB	Seq. No.: 00024	A/S Pos.: 40	Date: 08/28/97
Pb	ID: CCF4T	Seq. No.: 00025	A/S Pos.: 17	Date: 08/28/97
Pb	ID: CCF4TA	Seq. No.: 00026	A/S Pos.: 18	Date: 08/28/97
Pb	ID: CCGL6P 1/5 S.D.	Seq. No.: 00027	A/S Pos.: 19	Date: 08/28/97
Pb	ID: CCGL6PA 1/5 S.D	Seq. No.: 00028	A/S Pos.: 20	Date: 08/28/97
Pb	ID: CCGL6	Seq. No.: 00029	A/S Pos.: 21	Date: 08/28/97
Pb	ID: CCGL6A	Seq. No.: 00030	A/S Pos.: 22	Date: 08/28/97
Pb	ID: CCGL6S MS	Seq. No.: 00031	A/S Pos.: 23	Date: 08/28/97
Pb	ID: CCGL6S MS	Seq. No.: 00032	A/S Pos.: 23	Date: 08/28/97

b	ID: CCGL6D MSD	Seq. No.: 00033	A/S Pos.: 24	Date: 08/28/97
Pb	ID: CCGL6D MSD	Seq. No.: 00034	A/S Pos.: 24	Date: 08/28/97
Pb	ID: CCGL7	Seq. No.: 00035	A/S Pos.: 25	Date: 08/28/97
Pb	ID: CCGL7A	Seq. No.: 00036	A/S Pos.: 26	Date: 08/28/97
Pb	ID: CCV M2372 1/2	Seq. No.: 00037	A/S Pos.: 37	Date: 08/28/97
Pb	ID: CCB	Seq. No.: 00038	A/S Pos.: 40	Date: 08/28/97
Pb	ID: CCGL8	Seq. No.: 00039	A/S Pos.: 27	Date: 08/28/97
Pb	ID: CCGL8A	Seq. No.: 00040	A/S Pos.: 28	Date: 08/28/97
Pb	ID: CCGL9	Seq. No.: 00041	A/S Pos.: 29	Date: 08/28/97
b	ID: CCGL9A	Seq. No.: 00042	A/S Pos.: 30	Date: 08/28/97
Pb	ID: CCGLA	Seq. No.: 00043	A/S Pos.: 31	Date: 08/28/97
Pb	ID: CCGLA	Seq. No.: 00044	A/S Pos.: 31	Date: 08/28/97
Pb	ID: CCGLAA	Seq. No.: 00045	A/S Pos.: 32	Date: 08/28/97
Pb	ID: CCGLAA	Seq. No.: 00046	A/S Pos.: 32	Date: 08/28/97
Pb	ID: CCGLD	Seq. No.: 00047	A/S Pos.: 33	Date: 08/28/97
Pb	ID: CCGLD	Seq. No.: 00048	A/S Pos.: 33	Date: 08/28/97
Pb	ID: CCGLDA	Seq. No.: 00049	A/S Pos.: 34	Date: 08/28/97
Pb	ID: CCGLDA	Seq. No.: 00050	A/S Pos.: 34	Date: 08/28/97

Pb	ID: CCGLF	Seq. No.: 00051	A/S Pos.: 35	Date: 08/28/97
Pb	ID: CCGLFA	Seq. No.: 00052	A/S Pos.: 39	Date: 08/28/97
Pb	ID: CCV M2372 1/2	Seq. No.: 00053	A/S Pos.: 37	Date: 08/28/97
Pb	ID: CCB	Seq. No.: 00054	A/S Pos.: 40	Date: 08/28/97
Pb	ID: CCEQK 1/4	Seq. No.: 00055	A/S Pos.: 6	Date: 08/28/97
Pb	ID: CCEQKA 1/4	Seq. No.: 00056	A/S Pos.: 7	Date: 08/28/97
Pb	ID: CCGL6S MS 1/2	Seq. No.: 00057	A/S Pos.: 8	Date: 08/28/97
Pb	ID: CCGL6D 1/2 MSD	Seq. No.: 00058	A/S Pos.: 9	Date: 08/28/97
Pb	ID: CCGL7 1/4	Seq. No.: 00059	A/S Pos.: 10	Date: 08/28/97
Pb	ID: CCGL7A 1/4	Seq. No.: 00060	A/S Pos.: 11	Date: 08/28/97
Pb	ID: CCGL9 1/2	Seq. No.: 00061	A/S Pos.: 12	Date: 08/28/97
Pb	ID: CCGL9A 1/2	Seq. No.: 00062	A/S Pos.: 13	Date: 08/28/97
Pb	ID: CCGLA 1/5	Seq. No.: 00063	A/S Pos.: 14	Date: 08/28/97
Pb	ID: CCGLAA 1/5	Seq. No.: 00064	A/S Pos.: 15	Date: 08/28/97
Pb	ID: CCGLD 1/5	Seq. No.: 00065	A/S Pos.: 16	Date: 08/28/97
Pb	ID: CCV M2372 1/2	Seq. No.: 00066	A/S Pos.: 37	Date: 08/28/97
Pb	ID: CCB	Seq. No.: 00067	A/S Pos.: 40	Date: 08/28/97
Pb	ID: CCGLDA 1/5	Seq. No.: 00068	A/S Pos.: 17	Date: 08/28/97
Pb	ID: CCGLF X1	Seq. No.: 00069	A/S Pos.: 18	Date: 08/28/97

b	ID: CCGLFA X1	Seq. No.: 00070	A/S Pos.: 19	Date: 08/28/97
Pb	ID: CCV M2372 1/2	Seq. No.: 00071	A/S Pos.: 37	Date: 08/28/97
Pb	ID: CCB	Seq. No.: 00072	A/S Pos.: 40	Date: 08/28/97
Pb	ID: CCGLD 1/5	Seq. No.: 00073	A/S Pos.: 16	Date: 08/28/97
Pb	ID: CCGLDA 1/5	Seq. No.: 00074	A/S Pos.: 17	Date: 08/28/97
Pb	ID: CCV M2372 1/2	Seq. No.: 00075	A/S Pos.: 37	Date: 08/28/97
Pb	ID: CCB	Seq. No.: 00076	A/S Pos.: 40	Date: 08/28/97

Element File: PB6U.GEL	Element: Pb	Wavelength: 283.3
Date: 08/28/97	Time: 09:25	Slit: 0.7 L
Data File: 0828PBR1.DAT	ID/Wt File: UNTITLED	Lamp Current: 10
Technique: HGA	Calib. Type: Linear	Energy: 64

Pb ID: Calib. Blank Seq. No.: 00001 A/S Pos.: 0 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 0
Replicate 1 Time: 09:28
Peak Area (A-s): 0.003 Peak Height (A): 0.005
Background Pk Area (A-s): 0.003 Background Pk Height (A): 0.006
Blank Corrected Pk Area (A-s): 0.000
Concentration (ug/L): 0.0

Auto-zero performed.

Pb ID: Standard 1 Seq. No.: 00002 A/S Pos.: 1 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 1
Replicate 1 Time: 09:30
Peak Area (A-s): 0.019 Peak Height (A): 0.024
Background Pk Area (A-s): 0.007 Background Pk Height (A): 0.006

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Blank Corrected Pk Area (A-s): 0.016
Concentration (ug/L): 3.1

Standard number 1 applied. [3.0]
Correlation coefficient: 1.00000 Slope: 0.0054

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Pb ID: Standard 2 Seq. No.: 00003 A/S Pos.: 2 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 2
Replicate 1 Time: 09:33
Peak Area (A-s): 0.085 Peak Height (A): 0.117
Background Pk Area (A-s): 0.019 Background Pk Height (A): 0.022
Blank Corrected Pk Area (A-s): 0.083
Concentration (ug/L): 15.2

Standard number 2 applied. [15.0]
Correlation coefficient: 0.99999 Slope: 0.0055

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Pb ID: Standard 3 Seq. No.: 00004 A/S Pos.: 3 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 3
Replicate 1 Time: 09:35
Peak Area (A-s): 0.163 Peak Height (A): 0.235
Background Pk Area (A-s): 0.033 Background Pk Height (A): 0.042
Blank Corrected Pk Area (A-s): 0.160
Concentration (ug/L): 29.1

Standard number 3 applied. [30.0]
Correlation coefficient: 0.99976 Slope: 0.0054

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Pb ID: Standard 4 Seq. No.: 00005 A/S Pos.: 36 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 36
Replicate 1 Time: 09:38
Peak Area (A-s): 0.308 Peak Height (A): 0.417
Background Pk Area (A-s): 0.059 Background Pk Height (A): 0.079
Blank Corrected Pk Area (A-s): 0.306
Concentration (ug/L): 56.9

Standard number 4 applied. [60.0]
Correlation coefficient: 0.99927 Slope: 0.0052
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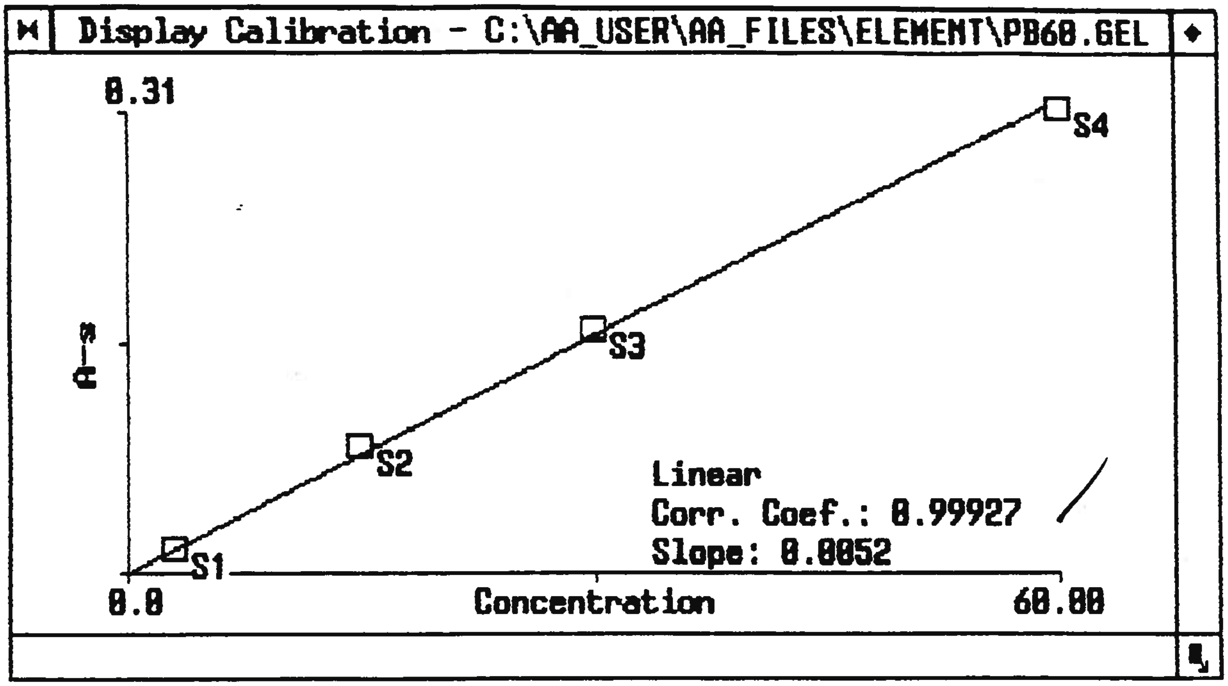

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Pb ID: ICV M2373 Seq. No.: 00006 A/S Pos.: 4 Date: 08/28/97

L dispensed: 5 from 38, 20 from 4
Replicate 1 Time: 09:44
Peak Area (A-s): 0.108 Peak Height (A): 0.152
Background Pk Area (A-s): 0.022 Background Pk Height (A): 0.030
Blank Corrected Pk Area (A-s): 0.105
Concentration (ug/L): 20.3 101.5

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Pb ID: ICB Seq. No.: 00007 A/S Pos.: 5 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 5
Replicate 1 Time: 09:47
Peak Area (A-s): 0.002 Peak Height (A): 0.004
Background Pk Area (A-s): 0.004 Background Pk Height (A): 0.005
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.2

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Pb ID: CCV M2372 1/2 Seq. No.: 00008 A/S Pos.: 37 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 37
Replicate 1 Time: 09:49
Peak Area (A-s): 0.165 Peak Height (A): 0.226
Background Pk Area (A-s): 0.034 Background Pk Height (A): 0.042
Blank Corrected Pk Area (A-s): 0.162
Concentration (ug/L): 31.4 104.7

C sample is within range 26.9 - 33.2
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Pb ID: CCB Seq. No.: 00009 A/S Pos.: 40 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 40
Replicate 1 Time: 09:51
Peak Area (A-s): 0.002 Peak Height (A): 0.004
Background Pk Area (A-s): 0.005 Background Pk Height (A): 0.005
Blank Corrected Pk Area (A-s): -0.001
Concentration (ug/L): -0.1

QC sample is within range -3.0 - 3.0

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Pb ID: CCGVAB 7239226 Seq. No.: 00010 A/S Pos.: 6 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 6
Replicate 1 Time: 10:42
Peak Area (A-s): 0.021 Peak Height (A): 0.025
Background Pk Area (A-s): 0.007 Background Pk Height (A): 0.007
Blank Corrected Pk Area (A-s): 0.018
Concentration (ug/L): 3.5

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Pb ID: CCGVABA PBWA Seq. No.: 00011 A/S Pos.: 7 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 7
Replicate 1 Time: 10:45
Peak Area (A-s): 0.128 Peak Height (A): 0.169
Background Pk Area (A-s): 0.025 Background Pk Height (A): 0.031
Blank Corrected Pk Area (A-s): 0.126
Concentration (ug/L): 24.4 104.5

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Pb ID: CCGVAC LCSW Seq. No.: 00012 A/S Pos.: 8 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 8
Replicate 1 Time: 10:47
Peak Area (A-s): 0.238 Peak Height (A): 0.303
Background Pk Area (A-s): 0.044 Background Pk Height (A): 0.056
Blank Corrected Pk Area (A-s): 0.235
Concentration (ug/L): 45.6 114.0

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Pb ID: CCEQE Seq. No.: 00013 A/S Pos.: 9 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 9
Replicate 1 Time: 10:49
Peak Area (A-s): 0.023 Peak Height (A): 0.028
Background Pk Area (A-s): 0.008 Background Pk Height (A): 0.007
Blank Corrected Pk Area (A-s): 0.021
Concentration (ug/L): 4.0

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Pb ID: CCEQEA Seq. No.: 00014 A/S Pos.: 10 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 10
Replicate 1 Time: 10:52
Peak Area (A-s): 0.131 Peak Height (A): 0.148
Background Pk Area (A-s): 0.027 Background Pk Height (A): 0.028

Blank Corrected Pk Area (A-s): 0.129
Concentration (ug/L): 25.0   105.0

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Pb   ID: CCEQK   Seq. No.: 00015   A/S Pos.: 11   Date: 08/28/97

uL dispensed: 5 from 38, 20 from 11
Sample abs. is greater than that of the largest standard.
Replicate 1   Time: 10:54
Peak Area (A-s): 0.354   Peak Height (A): 0.655
Background Pk Area (A-s): 0.144   Background Pk Height (A): 0.139
Blank Corrected Pk Area (A-s): 0.351
Concentration (ug/L): 68.0   D.1

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Pb   ID: CCEQK   Seq. No.: 00016   A/S Pos.: 11   Date: 08/28/97

uL dispensed: 5 from 38, 4 from 11
Replicate 1   Time: 10:56
Peak Area (A-s): 0.095   Peak Height (A): 0.187
Background Pk Area (A-s): 0.022   Background Pk Height (A): 0.034
Blank Corrected Pk Area (A-s): 0.092
Concentration (ug/L): 17.9   Corrected Conc (ug/L): 89.

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Pb   ID: CCEQKA   Seq. No.: 00017   A/S Pos.: 12   Date: 08/28/97

uL dispensed: 5 from 38, 20 from 12
Sample abs. is greater than that of the largest standard.
Replicate 1   Time: 10:59
Peak Area (A-s): 0.415   Peak Height (A): 0.757
Background Pk Area (A-s): 0.150   Background Pk Height (A): 0.171
Blank Corrected Pk Area (A-s): 0.413
Concentration (ug/L): 79.9

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Pb   ID: CCEQKA   Seq. No.: 00018   A/S Pos.: 12   Date: 08/28/97

uL dispensed: 5 from 38, 4 from 12
Replicate 1   Time: 11:01
Peak Area (A-s): 0.119   Peak Height (A): 0.230
Background Pk Area (A-s): 0.028   Background Pk Height (A): 0.046
Blank Corrected Pk Area (A-s): 0.117
Concentration (ug/L): 22.6   Corrected Conc (ug/L): 113.   120

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Pb   ID: CCEQL   Seq. No.: 00019   A/S Pos.: 13   Date: 08/28/97

uL dispensed: 5 from 38, 20 from 13
Replicate 1   Time: 11:04
Peak Area (A-s): 0.050   Peak Height (A): 0.096
Background Pk Area (A-s): 0.015   Background Pk Height (A): 0.020
Blank Corrected Pk Area (A-s): 0.047
Concentration (ug/L): 9.2

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Pb   ID: CCEQLA   Seq. No.: 00020   A/S Pos.: 14   Date: 08/28/97

uL dispensed: 5 from 38, 20 from 14

Replicate 1
Peak Area (A-s): 0.153
Background Pk Area (A-s): 0.032
Blank Corrected Pk Area (A-s): 0.150
Concentration (ug/L): 29.1 99.5

Time: 11:06
Peak Height (A): 0.293
Background Pk Height (A): 0.054

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Pb ID: CCF40 Seq. No.: 00021 A/S Pos.: 15 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 15
Replicate 1
Peak Area (A-s): 0.121
Background Pk Area (A-s): 0.032
Blank Corrected Pk Area (A-s): 0.119
Concentration (ug/L): 23.0

Time: 11:08
Peak Height (A): 0.296
Background Pk Height (A): 0.055

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Pb ID: CCF40A Seq. No.: 00022 A/S Pos.: 16 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 16
Replicate 1
Peak Area (A-s): 0.223
Background Pk Area (A-s): 0.050
Blank Corrected Pk Area (A-s): 0.220
Concentration (ug/L): 42.6 98.0

Time: 11:11
Peak Height (A): 0.518
Background Pk Height (A): 0.108

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Pb ID: CCV M2372 1/2 Seq. No.: 00023 A/S Pos.: 37 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 37
Replicate 1
Peak Area (A-s): 0.169
Background Pk Area (A-s): 0.034
Blank Corrected Pk Area (A-s): 0.166
Concentration (ug/L): 32.1 107.

Time: 11:13
Peak Height (A): 0.228
Background Pk Height (A): 0.043

QC sample is within range 26.9 - 33.2

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Pb ID: CCB Seq. No.: 00024 A/S Pos.: 40 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 40
Replicate 1
Peak Area (A-s): 0.002
Background Pk Area (A-s): 0.004
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.0 /0

Time: 11:16
Peak Height (A): 0.006
Background Pk Height (A): 0.005

QC sample is within range -3.0 - 3.0

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Pb ID: CCF4T Seq. No.: 00025 A/S Pos.: 17 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 17
Replicate 1
Peak Area (A-s): 0.066
Background Pk Area (A-s): 0.015
Blank Corrected Pk Area (A-s): 0.063
Concentration (ug/L): 12.3

Time: 11:18
Peak Height (A): 0.109
Background Pk Height (A): 0.022
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Pb ID: CCF4TA Seq. No.: 00026 A/S Pos.: 18 Date: 08/28/97

. dispensed: 5 from 38, 20 from 18
eplicate 1 Time: 11:21
Peak Area (A-s): 0.172 Peak Height (A): 0.270
Background Pk Area (A-s): 0.036 Background Pk Height (A): 0.053
Blank Corrected Pk Area (A-s): 0.169 ✓
Concentration (ug/L): 32.8 102.5

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Pb ID: CCGL6P 1/5 S.D. Seq. No.: 00027 A/S Pos.: 19 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 19
Replicate 1 Time: 11:23
Peak Area (A-s): 0.040 Peak Height (A): 0.046
Background Pk Area (A-s): 0.011 Background Pk Height (A): 0.012
Blank Corrected Pk Area (A-s): 0.037
Concentration (ug/L): 7.1 x5= 35.5 ✓

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Pb ID: CCGL6PA 1/5 S.D Seq. No.: 00028 A/S Pos.: 20 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 20
Replicate 1 Time: 11:26
Peak Area (A-s): 0.142 Peak Height (A): 0.163
Background Pk Area (A-s): 0.028 Background Pk Height (A): 0.030
Blank Corrected Pk Area (A-s): 0.140
Concentration (ug/L): 27.1 100

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b ID: CCGL6 Seq. No.: 00029 A/S Pos.: 21 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 21
Replicate 1 Time: 11:28
Peak Area (A-s): 0.182 Peak Height (A): 0.247
Background Pk Area (A-s): 0.043 Background Pk Height (A): 0.044
Blank Corrected Pk Area (A-s): 0.180
Concentration (ug/L): 34.8

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Pb ID: CCGL6A Seq. No.: 00030 A/S Pos.: 22 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 22
Replicate 1 Time: 11:31
Peak Area (A-s): 0.271 Peak Height (A): 0.378
Background Pk Area (A-s): 0.058 Background Pk Height (A): 0.070
Blank Corrected Pk Area (A-s): 0.269
Concentration (ug/L): 52.0 86.0

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Pb ID: CCGL6S MS Seq. No.: 00031 A/S Pos.: 23 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 23
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 11:33
Peak Area (A-s): 0.389 Peak Height (A): 0.486
ackground Pk Area (A-s): 0.081 Background Pk Height (A): 0.095
Blank Corrected Pk Area (A-s): 0.386

Concentration (ug/L): 74.8 D.1

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Pb ID: CCGL6S MS Seq. No.: 00032 A/S Pos.: 23 Date: 08/28/97

uL dispensed: 5 from 38, 4 from 23
Replicate 1 Time: 11:35
Peak Area (A-s): 0.108 Peak Height (A): 0.129
Background Pk Area (A-s): 0.021 Background Pk Height (A): 0.023
Blank Corrected Pk Area (A-s): 0.105
Concentration (ug/L): 20.4 Corrected Conc (ug/L): 102.

~~~~~~

Pb ID: CCGL6D MSD Seq. No.: 00033 A/S Pos.: 24 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 24
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 11:38
Peak Area (A-s): 0.377 Peak Height (A): 0.540
Background Pk Area (A-s): 0.081 Background Pk Height (A): 0.108
Blank Corrected Pk Area (A-s): 0.374
Concentration (ug/L): 72.4

~~~~~~

Pb ID: CCGL6D MSD Seq. No.: 00034 A/S Pos.: 24 Date: 08/28/97

uL dispensed: 5 from 38, 4 from 24
Replicate 1 Time: 11:40
Peak Area (A-s): 0.101 Peak Height (A): 0.127
Background Pk Area (A-s): 0.022 Background Pk Height (A): 0.024
Blank Corrected Pk Area (A-s): 0.098
Concentration (ug/L): 19.0 ✓ Corrected Conc (ug/L): 95.

~~~~~~

Pb ID: CCGL7 Seq. No.: 00035 A/S Pos.: 25 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 25
Replicate 1 Time: 11:43
Peak Area (A-s): 0.143 Peak Height (A): 0.208
Background Pk Area (A-s): 0.036 Background Pk Height (A): 0.038
Blank Corrected Pk Area (A-s): 0.140
Concentration (ug/L): 27.1 D.1

~~~~~~

Pb ID: CCGL7A Seq. No.: 00036 A/S Pos.: 26 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 26
Replicate 1 Time: 11:45
Peak Area (A-s): 0.189 Peak Height (A): 0.299
Background Pk Area (A-s): 0.053 Background Pk Height (A): 0.056
Blank Corrected Pk Area (A-s): 0.186
Concentration (ug/L): 36.0 44.5

~~~~~~

Pb ID: CCV M2372 1/2 Seq. No.: 00037 A/S Pos.: 37 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 37
Replicate 1 Time: 11:47
Peak Area (A-s): 0.164 Peak Height (A): 0.222

Background Pk Area (A-s): 0.032   Background Pk Height (A): 0.041
Blank Corrected Pk Area (A-s): 0.161
Concentration (ug/L): 31.2   104.0

QC sample is within range 26.9 - 33.2

~~~~~~

Pb   ID: CCB   Seq. No.: 00038   A/S Pos.: 40   Date: 08/28/97

uL dispensed: 5 from 38, 20 from 40
Replicate 1   Time: 11:50
Peak Area (A-s): 0.002   Peak Height (A): 0.005
Background Pk Area (A-s): 0.003   Background Pk Height (A): 0.005
Blank Corrected Pk Area (A-s): -0.001 ✓
Concentration (ug/L): -0.1

QC sample is within range -3.0 - 3.0

~~~~~~

Pb   ID: CCGL8   Seq. No.: 00039   A/S Pos.: 27   Date: 08/28/97

uL dispensed: 5 from 38, 20 from 27
Replicate 1   Time: 11:52
Peak Area (A-s): 0.181   Peak Height (A): 0.377
Background Pk Area (A-s): 0.064   Background Pk Height (A): 0.754
Blank Corrected Pk Area (A-s): 0.179
Concentration (ug/L): 34.6

~~~~~~

Pb   ID: CCGL8A   Seq. No.: 00040   A/S Pos.: 28   Date: 08/28/97

uL dispensed: 5 from 38, 20 from 28
Replicate 1   Time: 11:55
Peak Area (A-s): 0.270   Peak Height (A): 0.371
Background Pk Area (A-s): 0.053   Background Pk Height (A): 0.070
Blank Corrected Pk Area (A-s): 0.267
Concentration (ug/L): 51.8   86.

~~~~~~

Pb   ID: CCGL9   Seq. No.: 00041   A/S Pos.: 29   Date: 08/28/97

uL dispensed: 5 from 38, 20 from 29
Replicate 1   Time: 11:57
Peak Area (A-s): 0.111   Peak Height (A): 0.167
Background Pk Area (A-s): 0.036   Background Pk Height (A): 0.031
Blank Corrected Pk Area (A-s): 0.108
Concentration (ug/L): 20.9   Dil

~~~~~~

Pb   ID: CCGL9A   Seq. No.: 00042   A/S Pos.: 30   Date: 08/28/97

uL dispensed: 5 from 38, 20 from 30
Replicate 1   Time: 11:59
Peak Area (A-s): 0.188   Peak Height (A): 0.305
Background Pk Area (A-s): 0.049   Background Pk Height (A): 0.057
Blank Corrected Pk Area (A-s): 0.185
Concentration (ug/L): 35.8

74.5
~~~~~~

Pb ID: CCGLA Seq. No.: 00043 A/S Pos.: 31 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 31
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 12:02
Peak Area (A-s): 0.475 Peak Height (A): 0.612
Background Pk Area (A-s): 0.115 Background Pk Height (A): 0.125
Blank Corrected Pk Area (A-s): 0.472
Concentration (ug/L): 91.5

Pb ID: CCGLA Seq. No.: 00044 A/S Pos.: 31 Date: 08/28/97

uL dispensed: 5 from 38, 4 from 31
Replicate 1 Time: 12:04
Peak Area (A-s): 0.072 Peak Height (A): 0.117
Background Pk Area (A-s): 0.017 Background Pk Height (A): 0.021
Blank Corrected Pk Area (A-s): 0.069
Concentration (ug/L): 13.3 Corrected Conc (ug/L): 67.

Pb ID: CCGLAA Seq. No.: 00045 A/S Pos.: 32 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 32
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 12:07
Peak Area (A-s): 0.617 Peak Height (A): 0.774
Background Pk Area (A-s): 0.133 Background Pk Height (A): 0.172
Blank Corrected Pk Area (A-s): 0.614
Concentration (ug/L): 119.0

Pb ID: CCGLAA Seq. No.: 00046 A/S Pos.: 32 Date: 08/28/97

uL dispensed: 5 from 38, 4 from 32
Replicate 1 Time: 12:09
Peak Area (A-s): 0.064 Peak Height (A): 0.116
Background Pk Area (A-s): 0.015 Background Pk Height (A): 0.021
Blank Corrected Pk Area (A-s): 0.061
Concentration (ug/L): 11.8 Corrected Conc (ug/L): 59.

Pb ID: CCGLD Seq. No.: 00047 A/S Pos.: 33 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 33
Sample abs. is greater than that of the largest standard.
Replicate 1 Time: 12:12
Peak Area (A-s): 0.449 Peak Height (A): 0.600
Background Pk Area (A-s): 0.095 Background Pk Height (A): 0.121
Blank Corrected Pk Area (A-s): 0.446
Concentration (ug/L): 86.4

Pb ID: CCGLD Seq. No.: 00048 A/S Pos.: 33 Date: 08/28/97

uL dispensed: 5 from 38, 4 from 33
Replicate 1 Time: 12:14
Peak Area (A-s): 0.064 Peak Height (A): 0.122

Background Pk Area (A-s): 0.016 | Background Pk Height (A): 0.022
Blank Corrected Pk Area (A-s): 0.061
Concentration (ug/L): 11.9 | Corrected Conc (ug/L): 59.

~~~~~~

Pb ID: CCGLDA Seq. No.: 00049 A/S Pos.: 34 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 34
Sample abs. is greater than that of the largest standard.
Replicate 1 | Time: 12:17
Peak Area (A-s): 0.515 | Peak Height (A): 0.673
Background Pk Area (A-s): 0.109 | Background Pk Height (A): 0.139
Blank Corrected Pk Area (A-s): 0.512
Concentration (ug/L): 99.2

~~~~~~

Pb ID: CCGLDA Seq. No.: 00050 A/S Pos.: 34 Date: 08/28/97

uL dispensed: 5 from 38, 4 from 34
Replicate 1 | Time: 12:19
Peak Area (A-s): 0.114 | Peak Height (A): 0.159
Background Pk Area (A-s): 0.027 | Background Pk Height (A): 0.030
Blank Corrected Pk Area (A-s): 0.112
Concentration (ug/L): 21.6 | Corrected Conc (ug/L): 108.

~~~~~~

Pb ID: CCGLF Seq. No.: 00051 A/S Pos.: 35 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 35
Replicate 1 | Time: 12:22
Peak Area (A-s): 0.018 | Peak Height (A): 0.028
Background Pk Area (A-s): 0.009 | Background Pk Height (A): 0.007
Blank Corrected Pk Area (A-s): 0.015
Concentration (ug/L): 2.9 Rerun.

~~~~~~

Pb ID: CCGLFA Seq. No.: 00052 A/S Pos.: 39 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 39
Replicate 1 | Time: 12:24
Peak Area (A-s): 0.087 | Peak Height (A): 0.133
Background Pk Area (A-s): 0.024 | Background Pk Height (A): 0.025
Blank Corrected Pk Area (A-s): 0.084
Concentration (ug/L): 16.3 67.

~~~~~~

Pb ID: CCV M2372 1/2 Seq. No.: 00053 A/S Pos.: 37 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 37
Replicate 1 | Time: 12:26
Peak Area (A-s): 0.163 | Peak Height (A): 0.218
Background Pk Area (A-s): 0.032 | Background Pk Height (A): 0.038
Blank Corrected Pk Area (A-s): 0.160
Concentration (ug/L): 31.0 103.3

QC sample is within range 26.9 - 33.2
~~~~~~

Pb ID: CCB Seq. No.: 00054 A/S Pos.: 40 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 40

Replicate 1

Time: 12:29

Peak Area (A-s): 0.002

Peak Height (A): 0.005

Background Pk Area (A-s): 0.004

Background Pk Height (A): 0.005

Blank Corrected Pk Area (A-s): -0.001

Concentration (ug/L): -0.2

QC sample is within range -3.0 - 3.0

Pb ID: CCEQK 1/4 Seq. No.: 00055 A/S Pos.: 6 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 6
Replicate 1 Time: 12:47
Peak Area (A-s): 0.101 Peak Height (A): 0.226
Background Pk Area (A-s): 0.025 Background Pk Height (A): 0.043
Blank Corrected Pk Area (A-s): 0.099
Concentration (ug/L): 19.1 x4 = 76.4

Pb ID: CCEQKA 1/4 Seq. No.: 00056 A/S Pos.: 7 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 7
Replicate 1 Time: 12:49
Peak Area (A-s): 0.199 Peak Height (A): 0.426
Background Pk Area (A-s): 0.045 Background Pk Height (A): 0.082
Blank Corrected Pk Area (A-s): 0.196
Concentration (ug/L): 38.0 94.5

Pb ID: CCGL6S MS 1/2 Seq. No.: 00057 A/S Pos.: 8 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 8
Replicate 1 Time: 12:51
Peak Area (A-s): 0.212 Peak Height (A): 0.274
Background Pk Area (A-s): 0.042 Background Pk Height (A): 0.049
Blank Corrected Pk Area (A-s): 0.210
Concentration (ug/L): 40.6 x2 = 81.6

Pb ID: CCGL6D 1/2 MSD Seq. No.: 00058 A/S Pos.: 9 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 9
Replicate 1 Time: 12:54
Peak Area (A-s): 0.201 Peak Height (A): 0.267
Background Pk Area (A-s): 0.041 Background Pk Height (A): 0.049
Blank Corrected Pk Area (A-s): 0.199
Concentration (ug/L): 38.5 x2 = 77

Pb ID: CCGL7 1/4 Seq. No.: 00059 A/S Pos.: 10 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 10
Replicate 1 Time: 12:56
Peak Area (A-s): 0.039 Peak Height (A): 0.049
Background Pk Area (A-s): 0.011 Background Pk Height (A): 0.011

Blank Corrected Pk Area (A-s): 0.036
Concentration (ug/L): 7.0 x4 = 28

~~~~~~

Pb ID: CCGL7A 1/4 Seq. No.: 00060 A/S Pos.: 11 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 11
Replicate 1 Time: 12:58
Peak Area (A-s): 0.141 Peak Height (A): 0.181
Background Pk Area (A-s): 0.028 Background Pk Height (A): 0.032
Blank Corrected Pk Area (A-s): 0.138
Concentration (ug/L): 26.7 98.5

~~~~~~

Pb ID: CCGL9 1/2 Seq. No.: 00061 A/S Pos.: 12 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 12
Replicate 1 Time: 13:01
Peak Area (A-s): 0.070 Peak Height (A): 0.087
Background Pk Area (A-s): 0.017 Background Pk Height (A): 0.016
Blank Corrected Pk Area (A-s): 0.067
Concentration (ug/L): 13.0 x2 = 26

~~~~~~

Pb ID: CCGL9A 1/2 Seq. No.: 00062 A/S Pos.: 13 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 13
Replicate 1 Time: 13:03
Peak Area (A-s): 0.169 Peak Height (A): 0.222
Background Pk Area (A-s): 0.034 Background Pk Height (A): 0.041
Blank Corrected Pk Area (A-s): 0.166
Concentration (ug/L): 32.1 95.5

~~~~~~

Pb ID: CCGLA 1/5 Seq. No.: 00063 A/S Pos.: 14 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 14
Replicate 1 Time: 13:05
Peak Area (A-s): 0.136 Peak Height (A): 0.175
Background Pk Area (A-s): 0.026 Background Pk Height (A): 0.031
Blank Corrected Pk Area (A-s): 0.134
Concentration (ug/L): 25.9 x5 = 129.5

~~~~~~

Pb ID: CCGLAA 1/5 Seq. No.: 00064 A/S Pos.: 15 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 15
Replicate 1 Time: 13:08
Peak Area (A-s): 0.233 Peak Height (A): 0.297
Background Pk Area (A-s): 0.042 Background Pk Height (A): 0.054
Blank Corrected Pk Area (A-s): 0.230
Concentration (ug/L): 44.6 93.4

~~~~~~

Pb ID: CCGLD 1/5 Seq. No.: 00065 A/S Pos.: 16 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 16
Replicate 1 Time: 13:10
Peak Area (A-s): 0.104 Peak Height (A): 0.135

Rerun w/ Post Spike

Background Pk Area (A-s): 0.023 Background Pk Height (A): 0.023
Blank Corrected Pk Area (A-s): 0.101
Concentration (ug/L): 19.6

~~~~~~

Pb ID: CCV M2372 1/2 Seq. No.: 00066 A/S Pos.: 37 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 37
Replicate 1 Time: 13:13
Peak Area (A-s): 0.171 Peak Height (A): 0.219
Background Pk Area (A-s): 0.032 Background Pk Height (A): 0.038
Blank Corrected Pk Area (A-s): 0.168
Concentration (ug/L): 32.6 108.7

QC sample is within range 26.9 - 33.2

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Pb ID: CCB Seq. No.: 00067 A/S Pos.: 40 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 40
Replicate 1 Time: 13:15
Peak Area (A-s): 0.001 Peak Height (A): 0.004
Background Pk Area (A-s): 0.005 Background Pk Height (A): 0.006
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.4 ✓

QC sample is within range -3.0 - 3.0

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Pb ID: CCGLDA 1/5 Seq. No.: 00068 A/S Pos.: 17 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 17
Replicate 1 Time: 13:18
Peak Area (A-s): 0.202 Peak Height (A): 0.242
Background Pk Area (A-s): 0.040 Background Pk Height (A): 0.044
Blank Corrected Pk Area (A-s): 0.200
Concentration (ug/L): 38.7 Rerun

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Pb ID: CCGLF X1 Seq. No.: 00069 A/S Pos.: 18 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 18
Replicate 1 Time: 13:20
Peak Area (A-s): 0.017 Peak Height (A): 0.028
Background Pk Area (A-s): 0.008 Background Pk Height (A): 0.007
Blank Corrected Pk Area (A-s): 0.015
Concentration (ug/L): 2.8

~~~~~~

Pb ID: CCGLFA X1 Seq. No.: 00070 A/S Pos.: 19 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 19
Replicate 1 Time: 13:22
Peak Area (A-s): 0.125 Peak Height (A): 0.198
Background Pk Area (A-s): 0.026 Background Pk Height (A): 0.038
Blank Corrected Pk Area (A-s): 0.122
Concentration (ug/L): 23.7

104.5
~~~~~~

Pb ID: CCV M2372 1/2 Seq. No.: 00071 A/S Pos.: 37 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 37
Replicate 1
Peak Area (A-s): 0.170
Background Pk Area (A-s): 0.032
Blank Corrected Pk Area (A-s): 0.168
Concentration (ug/L): 32.5 108.3

Time: 13:25
Peak Height (A): 0.207
Background Pk Height (A): 0.037

QC sample is within range 26.9 - 33.2

Pb ID: CCB Seq. No.: 00072 A/S Pos.: 40 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 40
Replicate 1
Peak Area (A-s): 0.003
Background Pk Area (A-s): 0.004
Blank Corrected Pk Area (A-s): -0.000
Concentration (ug/L): -0.0 ✓

Time: 13:27
Peak Height (A): 0.005
Background Pk Height (A): 0.005

QC sample is within range -3.0 - 3.0

Pb ID: CCGLD 1/5 Seq. No.: 00073 A/S Pos.: 16 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 16
Replicate 1
Peak Area (A-s): 0.102
Background Pk Area (A-s): 0.021
Blank Corrected Pk Area (A-s): 0.099
Concentration (ug/L): 19.2 x5= 96

Time: 13:54
Peak Height (A): 0.112
Background Pk Height (A): 0.021

Pb ID: CCGLDA 1/5 Seq. No.: 00074 A/S Pos.: 17 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 17
Replicate 1
Peak Area (A-s): 0.201
Background Pk Area (A-s): 0.040
Blank Corrected Pk Area (A-s): 0.199
Concentration (ug/L): 38.5 96.5

Time: 13:57
Peak Height (A): 0.234
Background Pk Height (A): 0.042

Pb ID: CCV M2372 1/2 Seq. No.: 00075 A/S Pos.: 37 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 37
Replicate 1
Peak Area (A-s): 0.166
Background Pk Area (A-s): 0.034
Blank Corrected Pk Area (A-s): 0.163
Concentration (ug/L): 31.6 105.3

Time: 13:59
Peak Height (A): 0.230
Background Pk Height (A): 0.041

QC sample is within range 26.9 - 33.2

Pb ID: CCB Seq. No.: 00076 A/S Pos.: 40 Date: 08/28/97

uL dispensed: 5 from 38, 20 from 40
Replicate 1
Peak Area (A-s): 0.001
Background Pk Area (A-s): 0.006
Blank Corrected Pk Area (A-s): -0.002
Concentration (ug/L): -0.3

Time: 14:01
Peak Height (A): 0.005
Background Pk Height (A): 0.006

QC sample is within range -3.0 - 3.0

Miscellaneous Data

Metals Prep Data Review Checklist

Project Information
Batch #: 7239226
Prep Date: 8/27/97

Standards Summary
See prep spiking sheet.

Review Items

A. Spiking Form Documentation	Yes	No*	N/A	2nd Level
1. Prep date on prep summary matches actual prep date?	✓			✓
2. Analyst and witness (if available) initials documented?	✓			✓
3. Hot plate or water bath temperatures checked and consistent with requirements in SOPs?	✓			✓
4. Acid lot #s verified as current?	✓			✓
5. Spiking Std #s documented and expiration dates verified as current?	✓			✓
B. Preparation/Matrix QC				
1. LCS done per batch?	✓			✓
2. Method blank done per batch?	✓			✓
3. MS/MSD (or LCS/LCSD) done per batch?	✓			✓
C. Other				
1. Are all nonconformances documented appropriately?	✓			✓
2. Was preparation done within hold time?	✓			✓
3. All initial and final volumes consistent with SOPs or deviation narrated?	✓			✓

*A No response requires a comment

Comments: _____

Analyst: _____ Date: 8/27/97

2nd Level Review: _____ Date: 8/28/97

METALS PREP SPIKING FORM - AQUEOUS

Batch # : 7239226

Prep Date: 8/27/97

Hot Plate Temp 1: 93°C

Hot Plate Temp 2: 93°C

Hot Plate Temp 3: —

Witness: —

Analyst: GF

Time: 2100

Time: 2100

Time: —

Acid Lot Numbers:

HNO_3: 6623 KTXE

HCL: 5587 KTKE

H_2O_2: —

ICP

LCS, LCSD (If required), MS/MSD done on: —, —

0.5 mL of M — into 50mL. Exp. Date: —

0.5 mL of M — into 50mL. Exp. Date: —

0.5 mL of M — into 50mL. Exp. Date: —

GFAA

LCS, LCSD (If required), MS/MSD done on: CCGL6, —

0.2 mL of M 2369 into 50mL. Exp. Date: 9/6/97

Comments:

pH is determined at sample receipt.

RQC057

Quanterra Incorporated
METALS PREP LOG/BATCH SUMMARY

Run Date: 8/27/97
Time: 20:24:48

BATCH NUMBER: **7239226**

PREP DATE: 8/27/97
DUE DATE 9/04/97

INITIALS: GF

LOT NUMBER	WORK ORDER	QC	ICP/WEIGHT	HG/WEIGHT		GFA/WEIGHT	FLA/WEIGHT
B7H220182	CCEQE	14	g	g	PB	g	g
WATER	TO DUE DATE:		9/04/97				
B7H220182	CCEQK	14	g	g	PB	g	g
WATER	TO DUE DATE:		9/04/97				
B7H220182	CCEQL	14	g	g	PB	g	g
WATER	DI DUE DATE:		9/04/97				
B7H230106	CCF4Q	14	g	g	PB	g	g
WATER	TO DUE DATE:		9/05/97				
B7H230106	CCF4T	14	g	g	PB	g	g
WATER	DI DUE DATE:		9/05/97				
B7H270135	CCGL6	14	g	g	PB	g	g
WATER	TO DUE DATE:		9/09/97				
	CCGL6S		g	g		g	g
	CCGL6D		g	g		g	g
B7H270135	CCGL7	14	g	g	PB	g	g
WATER	DI DUE DATE:		9/09/97				
B7H270135	CCGL8	14	g	g	PB	g	g
WATER	TO DUE DATE:		9/09/97				
B7H270135	CCGL9	14	g	g	PB	g	g
WATER	DI DUE DATE:		9/09/97				
B7H270135	CCGLA	14	g	g	PB	g	g
WATER	TO DUE DATE:		9/09/97				
B7H270135	CCGLD	14	g	g	PB	g	g
WATER	DI DUE DATE:		9/09/97				
B7H270135	CCGLF	14	g	g	PB	g	g
WATER	TO DUE DATE:		9/09/97				
B7H270000	CCGVAB	14	g	g	PB	g	g
WATER	DUE DATE:		07/00/00				
	CCGVAC		g	g		g	g

000052

RQC057

Quanterra Incorporated
METALS PREP LOG/BATCH SUMMARY

Run Date: 8/27/97
Time: 20:24:48

BATCH NUMBER: **7239226**

PREP DATE: 8/27/97
DUE DATE 9/04/97

INITIALS: GC

LEVEL 2
BLANK AND CHECK STANDARD ON BATCH _____
MS/MSD AND PDS ON BATCH _____
CURVE PREPPED FOR HG _____
CORRECT SPIKES ADDED _____
SPIKING SOLUTIONS DOCUMENTED ON BATCH LOG _____

COMMENTS: Digested samples 50mls / 50mls
B-BLANK/C-LCS/D-MSD/I-REANALYSIS/L-LCSD/P-SERIAL DLTN/S-MS/X-SAMP DUP/Y-SAMP CONF/Z-PDS
SPIKING WITNESSED BY _____

ICP ELEMENTS WITHIN THE BATCH:

MS/MSD 1:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 2:	ICP - 1	ICP - 2	GFAA	HG	ODD
MS/MSD 3:	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK :	ICP - 1	ICP - 2	GFAA	HG	ODD
CHECK DUP:	ICP - 1	ICP - 2	GFAA	HG	ODD
STANDARD NUMBERS	_____	_____	____	___	___

000052