



# Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

Wednesday, March 17, 2004

**REVISED 03/17/2004**

Barbara Sylvester  
Brown & Caldwell  
201 East Washington Street  
Suite 500  
Phoenix, AZ 85004

TEL: (602) 567-4000

FAX: (602) 567-4001

RE: Florence Copper Well Field/21622.008

Order No.: 04010803

Dear Barbara Sylvester:

*This report was revised on 3/17/04 to report the cation/anion balance as % difference and to report total xylenes by EPA Method 8260.*

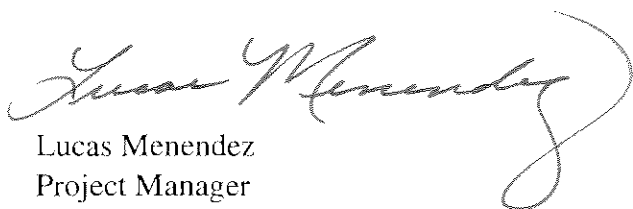
Aerotech Environmental received 1 sample(s) on 1/12/2004 for the analyses presented in the following report.

This report includes the following information:

- Case Narrative.
- Analytical Report: includes test results, report limit (Limit), any applicable data qualifier (Qual), units, dilution factor (DF), and date analyzed.
- QC Summary Report.

This communication is intended only for the individual or entity to whom it is directed. It may contain information that is privileged, confidential, or otherwise exempt from disclosure under applicable law. Dissemination, distribution, or copying of this communication by anyone other than the intended recipient, or a duly designated employee or agent of such recipient, is prohibited. If you have received this communication in error, please notify us immediately and destroy this message and all attachments thereto. If you have any questions regarding these test results, please do not hesitate to call.

Sincerely,



Lucas Menendez  
Project Manager



# Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

## Aerotech Environmental

Date: 17-Mar-04

**CLIENT:** Brown & Caldwell  
**Project:** Florence Copper Well Field/21622.008  
**Lab Order:** 04010803

## CASE NARRATIVE

Samples were analyzed using methods outlined in references such as:

Standard Methods for the Examination of Water and Wastewater, 19th Edition, 1995.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, Revised March 1983.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition.

40 CFR, Part 136, Revised 1995. Appendix A to Part 136 - Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater.

NIOSH Manual of Analytical Methods, Fourth Edition, 1994.

Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition, 1999.

Aerotech Environmental Laboratories (AEL) holds Arizona certification no. AZ0610 and AEL-Tucson holds Arizona certification no. AZ0609.

Aerotech Laboratories, Inc. (AEL division - Laboratory ID 154268) is accredited by the American Industrial Hygiene Association (AIHA) in the industrial hygiene program for the analytical techniques noted on the scope of accreditation. AEL participates in the AIHA Environmental Lead Proficiency Analytical Testing (ELPAT) program for lead in soil, paint chips and dust wipes.

### Analytical Comments:

All method blanks and laboratory control spikes met EPA method and/or laboratory quality control objectives for the analyses included in this report.

Method 8015 was performed by Del Mar Analytical in Phoenix, AZ (AZ0426). A copy of their report is enclosed.

### Data Qualifiers:

Listed below are the data qualifiers used in your analytical report to explain any analytical or quality control issues. You will find them noted in your report under the column header "QUAL". Any quality control deficiencies that cannot be adequately described by these qualifiers will be addressed in the analytical comments section of this case narrative.

D2 Sample required dilution due to high concentration of target analyte.



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**CLIENT:** Brown & Caldwell  
**Project:** Florence Copper Well Field/21622.008  
**Lab Order:** 04010803

## CASE NARRATIVE

M6 Matrix spike recovery was high. Data reported per ADEQ policy 0154.000.

N1 See case narrative.

N1- Method 300.0

The sample selected as the duplicate and matrix spike contained high concentrations of chloride and/or sulfate. The analyte concentration in the sample is disproportionate to the spike level and it was not practical to analyze the sample at a dilution, as the spike would be diluted out. The LCS/LCSD were recovered acceptably demonstrating that the analytical process was in control.



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## Aerotech Environmental

## Analytical Report

Date: 17-Mar-04

CLIENT: Brown & Caldwell

Client Sample ID: BHP-2

Lab Order: 04010803

Tag Number:

Project: Florence Copper Well Field/21622.008

Collection Date: 1/12/2004 12:20:00 PM

Lab ID: 04010803-01A

Matrix: DRINKING WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>CATION/ANION BALANCE</b>		<b>CALC</b>				Analyst: <b>S S</b>
Cation/Anion Balance	3.88	0		%	1	1/26/2004
<b>ANIONS BY ION CHROMATOGRAPHY</b>		<b>E300</b>				Analyst: <b>LB</b>
Chloride	140	4.0	D2	mg/L	2	1/20/2004 5:20:00 AM
Fluoride	0.69	0.40		mg/L	1	1/20/2004 5:03:00 AM
Nitrogen, Nitrate (As N)	0.65	0.20		mg/L	1	1/13/2004 6:01:00 PM
Sulfate	67	2.0		mg/L	1	1/13/2004 6:01:00 PM
<b>ALKALINITY</b>		<b>M2320 B</b>				Analyst: <b>L M</b>
Alkalinity, Bicarbonate (As CaCO <sub>3</sub> )	140	2.0		mg/L CaCO <sub>3</sub>	1	1/19/2004 11:55:00 AM
Alkalinity, Carbonate (As CaCO <sub>3</sub> )	< 2.0	2.0		mg/L CaCO <sub>3</sub>	1	1/19/2004 11:55:00 AM
Alkalinity, Hydroxide (As CaCO <sub>3</sub> )	< 2.0	2.0		mg/L CaCO <sub>3</sub>	1	1/19/2004 11:55:00 AM
Alkalinity, Total (As CaCO <sub>3</sub> )	140	6.0		mg/L CaCO <sub>3</sub>	1	1/19/2004 11:55:00 AM
<b>PH</b>		<b>E150.1</b>				Analyst: <b>T S</b>
pH	7.58	2.00		pH units	1	1/13/2004 10:00:00 AM
<b>RESIDUE, FILTERABLE</b>		<b>M2540 C</b>				Analyst: <b>AC</b>
Total Dissolved Solids	470	10		mg/L	1	1/15/2004

Footnotes: All analysis performed at AEL Phoenix laboratory unless indicated by footnotes.

(1) AEL - Tucson Laboratory

(2) AEL - Knudsen Laboratory



# Aerotech Environmental Laboratories

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## Aerotech Environmental

## Analytical Report

Date: 17-Mar-04

**CLIENT:** Brown & Caldwell  
**Lab Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008  
**Lab ID:** 04010803-01B

**Client Sample ID:** BHP-2  
**Tag Number:**  
**Collection Date:** 1/12/2004 12:20:00 PM  
**Matrix:** DRINKING WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>ICP METALS, DISSOLVED</b>		<b>E200.7</b>		<b>Analyst: TD</b>		
Aluminum, Dissolved	< 0.10	0.10		mg/L	1	1/21/2004
Beryllium, Dissolved	< 0.0010	0.0010		mg/L	1	1/21/2004
Calcium, Dissolved	61	2.0		mg/L	1	1/21/2004
Iron, Dissolved	< 0.050	0.050		mg/L	1	1/21/2004
Magnesium, Dissolved	13	0.25		mg/L	1	1/21/2004
Potassium, Dissolved	7.4	2.0		mg/L	1	1/21/2004
Sodium, Dissolved	92	2.0		mg/L	1	1/21/2004
Zinc, Dissolved	< 0.050	0.050		mg/L	1	1/21/2004
<b>ICP/MS METALS, DISSOLVED</b>		<b>E200.8</b>		<b>Analyst: HK</b>		
Antimony, Dissolved	< 0.0010	0.0010		mg/L	1	1/21/2004 12:07:06 PM
Arsenic, Dissolved	0.0021	0.0010		mg/L	1	1/21/2004 12:07:06 PM
Barium	0.039	0.0010		mg/L	1	1/21/2004 12:07:06 PM
Cadmium, Dissolved	< 0.0010	0.0010		mg/L	1	1/21/2004 12:07:06 PM
Chromium, Dissolved	0.0020	0.0010		mg/L	1	1/21/2004 12:07:06 PM
Cobalt, Dissolved	0.0047	0.0010		mg/L	1	1/21/2004 12:07:06 PM
Copper, Dissolved	0.040	0.0010		mg/L	1	1/21/2004 12:07:06 PM
Lead, Dissolved	< 0.0010	0.0010		mg/L	1	1/21/2004 12:07:06 PM
Manganese, Dissolved	0.0069	0.0025		mg/L	1	1/21/2004 12:07:06 PM
Nickel, Dissolved	0.0038	0.0010		mg/L	1	1/21/2004 12:07:06 PM
Selenium, Dissolved	< 0.0010	0.0010		mg/L	1	1/21/2004 12:07:06 PM
Thallium, Dissolved	< 0.0010	0.0010		mg/L	1	1/21/2004 12:07:06 PM
<b>MERCURY, DISSOLVED</b>		<b>E245.1</b>		<b>Analyst: CU</b>		
Mercury	< 0.00020	0.00020		mg/L	1	1/14/2004 2:54:59 PM

**Footnotes:** All analysis performed at AEL Phoenix laboratory unless indicated by footnotes.

(1) AEL - Tucson Laboratory

(2) AEL - Knudsen Laboratory



# Aerotech Environmental Laboratories

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## Aerotech Environmental

## Analytical Report

Date: 17-Mar-04

CLIENT: Brown & Caldwell

Client Sample ID: BHP-2

Lab Order: 04010803

Tag Number:

Project: Florence Copper Well Field/21622.008

Collection Date: 1/12/2004 12:20:00 PM

Lab ID: 04010803-01D

Matrix: DRINKING WATER

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>PURGEABLE ORGANIC COMPOUNDS</b>		<b>E524.2</b>		Analyst: JR		
Benzene	< 0.00050	0.00050		mg/L	1	1/15/2004
Ethylbenzene	< 0.00050	0.00050		mg/L	1	1/15/2004
m,p-Xylene	< 0.00050	0.00050		mg/L	1	1/15/2004
o-Xylene	< 0.00050	0.00050		mg/L	1	1/15/2004
Toluene	< 0.00050	0.00050		mg/L	1	1/15/2004
Total Xylene	< 0.0010	0.0010		mg/L	1	1/15/2004
Surr: 1,2-Dichlorobenzene-d4	118	70-130		%REC	1	1/15/2004
Surr: 4-Bromofluorobenzene	116	70-130		%REC	1	1/15/2004

Footnotes: All analysis performed at AEL Phoenix laboratory unless indicated by footnotes.

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# Aerotech Environmental Laboratories

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Aerotech Environmental

Date: 17-Mar-04

CLIENT: Brown & Caldwell

Work Order: 04010803

Project: Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7\_DISS

Sample ID	MB-16081	SampType: MBLK	TestCode: 200.7_DISS	Units: mg/L	Prep Date: 1/13/2004	RunNo: 42989					
Client ID:	Batch ID: 16081	TestNo: E200.7	Analysis Date: 1/15/2004			SeqNo: 508547					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum, Dissolved	< 0.10	0.10									
Beryllium, Dissolved	< 0.0010	0.0010									
Calcium, Dissolved	< 2.0	2.0									
Iron, Dissolved	< 0.050	0.050									
Magnesium, Dissolved	< 0.25	0.25									
Potassium, Dissolved	< 2.0	2.0									
Sodium, Dissolved	< 2.0	2.0									
Zinc, Dissolved	< 0.050	0.050									

Sample ID	LCS-16081	SampType: LCS	TestCode: 200.7_DISS	Units: mg/L	Prep Date: 1/13/2004	RunNo: 42989					
Client ID:	Batch ID: 16081	TestNo: E200.7	Analysis Date: 1/15/2004			SeqNo: 508544					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum, Dissolved	1.000	0.10	1	0	100	85	115				
Beryllium, Dissolved	0.5040	0.0010	0.5	0	101	85	115				
Calcium, Dissolved	10.40	2.0	10.5	0	99.0	85	115				
Iron, Dissolved	0.4990	0.050	0.5	0	99.8	85	115				
Magnesium, Dissolved	10.70	0.25	10.5	0	102	85	115				
Potassium, Dissolved	11.30	2.0	10	0	113	85	115				
Sodium, Dissolved	10.20	2.0	10	0	102	85	115				
Zinc, Dissolved	0.5170	0.050	0.5	0	103	85	115				

Sample ID	LCSD-16081	SampType: LCSD	TestCode: 200.7_DISS	Units: mg/L	Prep Date: 1/13/2004	RunNo: 42989					
Client ID:	Batch ID: 16081	TestNo: E200.7	Analysis Date: 1/15/2004			SeqNo: 508545					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Aluminum, Dissolved	0.9980	0.10	1	0	99.8	85	115	1.000	0.200	20	
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Qualifiers: E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

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# Aerotech Environmental Laboratories

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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.7\_DISS

Sample ID <b>LCSD-16081</b>	SampType: <b>LCSD</b>	TestCode: <b>200.7_DISS</b>	Units: <b>mg/L</b>	Prep Date: <b>1/13/2004</b>	RunNo: <b>42989</b>
Client ID:	Batch ID: <b>16081</b>	TestNo: <b>E200.7</b>		Analysis Date: <b>1/15/2004</b>	SeqNo: <b>508545</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Beryllium, Dissolved	0.5020	0.0010	0.5	0	100	85	115	0.5040	0.398	20	
Calcium, Dissolved	10.40	2.0	10.5	0	99.0	85	115	10.40	0	20	
Iron, Dissolved	0.4980	0.050	0.5	0	99.6	85	115	0.4990	0.201	20	
Magnesium, Dissolved	10.60	0.25	10.5	0	101	85	115	10.70	0.939	20	
Potassium, Dissolved	11.30	2.0	10	0	113	85	115	11.30	0	20	
Sodium, Dissolved	10.20	2.0	10	0	102	85	115	10.20	0	20	
Zinc, Dissolved	0.5160	0.050	0.5	0	103	85	115	0.5170	0.194	20	

Sample ID <b>04010802-10A MS</b>	SampType: <b>MS</b>	TestCode: <b>200.7_DISS</b>	Units: <b>mg/L</b>	Prep Date: <b>1/13/2004</b>	RunNo: <b>42989</b>
Client ID:	Batch ID: <b>16081</b>	TestNo: <b>E200.7</b>		Analysis Date: <b>1/15/2004</b>	SeqNo: <b>508538</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum, Dissolved	1.060	0.10	1	0	106	70	130				
Beryllium, Dissolved	0.5040	0.0010	0.5	0	101	70	130				
Calcium, Dissolved	51.30	2.0	10.5	42.00	88.6	70	130				
Iron, Dissolved	0.6550	0.050	0.5	0.1480	101	70	130				
Magnesium, Dissolved	19.00	0.25	10.5	8.630	98.8	70	130				
Potassium, Dissolved	24.00	2.0	10	8.360	156	70	130				M6
Sodium, Dissolved	128.0	2.0	10	112.0	160	70	130				M6
Zinc, Dissolved	0.5310	0.050	0.5	0	106	70	130				

Sample ID <b>04010802-10A MSD</b>	SampType: <b>MSD</b>	TestCode: <b>200.7_DISS</b>	Units: <b>mg/L</b>	Prep Date: <b>1/13/2004</b>	RunNo: <b>42989</b>
Client ID:	Batch ID: <b>16081</b>	TestNo: <b>E200.7</b>		Analysis Date: <b>1/15/2004</b>	SeqNo: <b>508539</b>

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum, Dissolved	1.040	0.10	1	0	104	70	130	1.060	1.90	20	
Beryllium, Dissolved	0.5060	0.0010	0.5	0	101	70	130	0.5040	0.396	20	
Calcium, Dissolved	51.50	2.0	10.5	42.00	90.5	70	130	51.30	0.389	20	
Iron, Dissolved	0.6470	0.050	0.5	0.1480	99.8	70	130	0.6550	1.23	20	

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits





# Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.7\_DISS

Sample ID	04010802-10A MSD	SampType:	MSD	TestCode:	200.7_DISS	Units:	mg/L	Prep Date:	1/13/2004	RunNo:	42989
Client ID:		Batch ID:	16081	TestNo:	E200.7			Analysis Date:	1/15/2004	SeqNo:	508539
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium, Dissolved	18.80	0.25	10.5	8.630	96.9	70	130	19.00	1.06	20	
Potassium, Dissolved	24.10	2.0	10	8.360	157	70	130	24.00	0.416	20	M6
Sodium, Dissolved	125.0	2.0	10	112.0	130	70	130	128.0	2.37	20	
Zinc, Dissolved	0.5240	0.050	0.5	0	105	70	130	0.5310	1.33	20	

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# Aerotech Environmental Laboratories

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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_DISS

Sample ID	MB-16120	SampType: MBLK	TestCode: 200.8_DISS	Units: mg/L	Prep Date: 1/15/2004	RunNo: 43186					
Client ID:		Batch ID: 16120	TestNo: E200.8		Analysis Date: 1/21/2004	SeqNo: 511577					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony, Dissolved	< 0.0010	0.0010									
Arsenic, Dissolved	< 0.0010	0.0010									
Barium	< 0.0010	0.0010									
Cadmium, Dissolved	< 0.0010	0.0010									
Chromium, Dissolved	< 0.0010	0.0010									
Cobalt, Dissolved	< 0.0010	0.0010									
Copper, Dissolved	< 0.0010	0.0010									
Lead, Dissolved	< 0.0010	0.0010									
Manganese, Dissolved	< 0.0050	0.0050									
Nickel, Dissolved	< 0.0010	0.0010									
Selenium, Dissolved	< 0.0010	0.0010									
Thallium, Dissolved	< 0.0010	0.0010									

Sample ID	LCS-16120	SampType: LCS	TestCode: 200.8_DISS	Units: mg/L	Prep Date: 1/15/2004	RunNo: 43186					
Client ID:		Batch ID: 16120	TestNo: E200.8		Analysis Date: 1/21/2004	SeqNo: 511575					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony, Dissolved	0.05587	0.0010	0.05	0	112	85	115				
Arsenic, Dissolved	0.04987	0.0010	0.05	0	99.7	85	115				
Barium	0.05462	0.0010	0.05	0	109	85	115				
Cadmium, Dissolved	0.05525	0.0010	0.05	0	110	85	115				
Chromium, Dissolved	0.05157	0.0010	0.05	0	103	85	115				
Cobalt, Dissolved	0.05250	0.0010	0.05	0	105	85	115				
Copper, Dissolved	0.05337	0.0010	0.05	0	107	85	115				
Lead, Dissolved	0.05384	0.0010	0.05	0	108	85	115				
Manganese, Dissolved	0.05351	0.0050	0.05	0	107	85	115				
Nickel, Dissolved	0.05317	0.0010	0.05	0	106	85	115				
Selenium, Dissolved	0.05099	0.0010	0.05	0	102	85	115				
Thallium, Dissolved	0.05534	0.0010	0.05	0	111	85	115				

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits



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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_DISS

Sample ID	LCSD-16120	SampType: LCSD	TestCode: 200.8_DISS	Units: mg/L	Prep Date: 1/15/2004	RunNo: 43186					
Client ID:		Batch ID: 16120	TestNo: E200.8		Analysis Date: 1/21/2004	SeqNo: 511576					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony, Dissolved	0.05514	0.0010	0.05	0	110	85	115	0.05587	1.32	20	
Arsenic, Dissolved	0.05048	0.0010	0.05	0	101	85	115	0.04987	1.22	20	
Barium	0.05439	0.0010	0.05	0	109	85	115	0.05462	0.422	20	
Cadmium, Dissolved	0.05529	0.0010	0.05	0	111	85	115	0.05525	0.0724	20	
Chromium, Dissolved	0.05187	0.0010	0.05	0	104	85	115	0.05157	0.580	20	
Cobalt, Dissolved	0.05222	0.0010	0.05	0	104	85	115	0.05250	0.535	20	
Copper, Dissolved	0.05334	0.0010	0.05	0	107	85	115	0.05337	0.0562	20	
Lead, Dissolved	0.05388	0.0010	0.05	0	108	85	115	0.05384	0.0743	20	
Manganese, Dissolved	0.05364	0.0050	0.05	0	107	85	115	0.05351	0.243	20	
Nickel, Dissolved	0.05303	0.0010	0.05	0	106	85	115	0.05317	0.264	20	
Selenium, Dissolved	0.05092	0.0010	0.05	0	102	85	115	0.05099	0.137	20	
Thallium, Dissolved	0.05517	0.0010	0.05	0	110	85	115	0.05534	0.308	20	

Sample ID	04010803-01B MS	SampType:	MS	TestCode:	200.8_DISS	Units:	mg/L	Prep Date:	1/15/2004	RunNo:	43186
Client ID:	BHP-2	Batch ID:	16120	TestNo:	E200.8			Analysis Date:	1/21/2004	SeqNo:	511572
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony, Dissolved	0.05070	0.0010	0.05	0	101	70	130				
Arsenic, Dissolved	0.05413	0.0010	0.05	0.002090	104	70	130				
Barium	0.08890	0.0010	0.05	0.03886	100	70	130				
Cadmium, Dissolved	0.04786	0.0010	0.05	0	95.7	70	130				
Chromium, Dissolved	0.04609	0.0010	0.05	0.002050	88.1	70	130				
Cobalt, Dissolved	0.04920	0.0010	0.05	0.004690	89.0	70	130				
Copper, Dissolved	0.08205	0.0010	0.05	0.03956	85.0	70	130				
Lead, Dissolved	0.04440	0.0010	0.05	0	88.8	70	130				
Manganese, Dissolved	0.05320	0.0050	0.05	0.006890	92.6	70	130				
Nickel, Dissolved	0.04675	0.0010	0.05	0.003750	86.0	70	130				
Selenium, Dissolved	0.05426	0.0010	0.05	0	109	70	130				
Thallium, Dissolved	0.04196	0.0010	0.05	0	83.9	70	130				

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits



# Aerotech Environmental Laboratories

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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 200.8\_DISS

Sample ID	04010803-01B MSD	SampType: MSD	TestCode: 200.8_DISS	Units: mg/L	Prep Date: 1/15/2004	RunNo: 43186					
Client ID:	BHP-2	Batch ID: 16120	TestNo: E200.8		Analysis Date: 1/21/2004	SeqNo: 511573					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Antimony, Dissolved	0.05050	0.0010	0.05	0	101	70	130	0.05070	0.395	20	
Arsenic, Dissolved	0.05297	0.0010	0.05	0.002090	102	70	130	0.05413	2.17	20	
Barium	0.07885	0.0010	0.05	0.03886	80.0	70	130	0.08890	12.0	20	
Cadmium, Dissolved	0.04853	0.0010	0.05	0	97.1	70	130	0.04786	1.39	20	
Chromium, Dissolved	0.04471	0.0010	0.05	0.002050	85.3	70	130	0.04609	3.04	20	
Cobalt, Dissolved	0.04795	0.0010	0.05	0.004690	86.5	70	130	0.04920	2.57	20	
Copper, Dissolved	0.07723	0.0010	0.05	0.03956	75.3	70	130	0.08205	6.05	20	
Lead, Dissolved	0.04411	0.0010	0.05	0	88.2	70	130	0.04440	0.655	20	
Manganese, Dissolved	0.05207	0.0050	0.05	0.006890	90.4	70	130	0.05320	2.15	20	
Nickel, Dissolved	0.04572	0.0010	0.05	0.003750	83.9	70	130	0.04675	2.23	20	
Selenium, Dissolved	0.05403	0.0010	0.05	0	108	70	130	0.05426	0.425	20	
Thallium, Dissolved	0.04272	0.0010	0.05	0	85.4	70	130	0.04196	1.79	20	

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 245.1\_W\_DISS

Sample ID	MB-16099	SampType: MBLK	TestCode: 245.1_W_DIS	Units: mg/L	Prep Date: 1/14/2004	RunNo: 42932						
Client ID:		Batch ID: 16099	TestNo: E245.1		Analysis Date: 1/14/2004	SeqNo: 507590						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		< 0.00020	0.00020									

Sample ID	LCS-16099	SampType: LCS	TestCode: 245.1_W_DIS	Units: mg/L	Prep Date: 1/14/2004	RunNo: 42932						
Client ID:		Batch ID: 16099	TestNo: E245.1		Analysis Date: 1/14/2004	SeqNo: 507591						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.005350	0.00020	0.005	0	107	85	115				

Sample ID	LCSD-16099	SampType: LCSD	TestCode: 245.1_W_DIS	Units: mg/L	Prep Date: 1/14/2004	RunNo: 42932						
Client ID:		Batch ID: 16099	TestNo: E245.1		Analysis Date: 1/14/2004	SeqNo: 507592						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.005550	0.00020	0.005	0	111	85	115	0.005350	3.67	20	

Sample ID	04010803-01BMS	SampType: MS	TestCode: 245.1_W_DIS	Units: mg/L	Prep Date: 1/14/2004	RunNo: 42932						
Client ID:	BHP-2	Batch ID: 16099	TestNo: E245.1		Analysis Date: 1/14/2004	SeqNo: 507594						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.005370	0.00020	0.005	0	107	70	130				

Sample ID	04010803-01BMSD	SampType: MSD	TestCode: 245.1_W_DIS	Units: mg/L	Prep Date: 1/14/2004	RunNo: 42932						
Client ID:	BHP-2	Batch ID: 16099	TestNo: E245.1		Analysis Date: 1/14/2004	SeqNo: 507595						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Mercury		0.005200	0.00020	0.005	0	104	70	130	0.005370	3.22	20	

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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W

Sample ID	MB-R43013	SampType:	MBLK	TestCode:	300_W	Units:	mg/L	Prep Date:		RunNo:	43013			
Client ID:		Batch ID:	R43013	TestNo:	E300			Analysis Date:	1/13/2004	SeqNo:	508768			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 2.0		2.0										
Nitrogen, Nitrate (As N)		< 0.20		0.20										
Sulfate		< 2.0		2.0										

Sample ID	MB-R43207	SampType:	MBLK	TestCode:	300_W	Units:	mg/L	Prep Date:		RunNo:	43207			
Client ID:		Batch ID:	R43207	TestNo:	E300			Analysis Date:	1/19/2004	SeqNo:	511874			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		< 2.0		2.0										
Fluoride		< 0.40		0.40										
Sulfate		< 2.0		2.0										

Sample ID	LCS-R43013	SampType:	LCS	TestCode:	300_W	Units:	mg/L	Prep Date:		RunNo:	43013			
Client ID:		Batch ID:	R43013	TestNo:	E300			Analysis Date:	1/13/2004	SeqNo:	508769			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		9.690		2.0	10	0		96.9	90	110				
Nitrogen, Nitrate (As N)		1.960		0.20	2	0		98.0	90	110				
Sulfate		9.820		2.0	10	0		98.2	90	110				

Sample ID	LCS-R43207	SampType:	LCS	TestCode:	300_W	Units:	mg/L	Prep Date:		RunNo:	43207			
Client ID:		Batch ID:	R43207	TestNo:	E300			Analysis Date:	1/19/2004	SeqNo:	511875			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride		9.300		2.0	10	0		93.0	90	110				N1
Fluoride		1.860		0.40	2	0		93.0	90	110				
Sulfate		9.930		2.0	10	0		99.3	90	110				N1

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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W

Sample ID	LCSD-R43013	SampType: LCSD	TestCode: 300_W	Units: mg/L	Prep Date:	RunNo: 43013					
Client ID:		Batch ID: R43013	TestNo: E300		Analysis Date: 1/13/2004	SeqNo: 508780					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	9.820	2.0	10	0	98.2	90	110	9.690	1.33	20	
Nitrogen, Nitrate (As N)	1.990	0.20	2	0	99.5	90	110	1.960	1.52	20	
Sulfate	10.05	2.0	10	0	100	90	110	9.820	2.32	20	

Sample ID	LCSD-R43207	SampType: LCSD	TestCode: 300_W	Units: mg/L	Prep Date:	RunNo: 43207					
Client ID:		Batch ID: R43207	TestNo: E300		Analysis Date: 1/20/2004	SeqNo: 511884					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	9.250	2.0	10	0	92.5	90	110	9.300	0.539	20	N1
Fluoride	1.810	0.40	2	0	90.5	90	110	1.860	2.72	20	
Sulfate	9.800	2.0	10	0	98.0	90	110	9.930	1.32	20	N1

Sample ID	04010803-01AMS	SampType: MS	TestCode: 300_W	Units: mg/L	Prep Date:	RunNo: 43013					
Client ID:	BHP-2	Batch ID: R43013	TestNo: E300		Analysis Date: 1/13/2004	SeqNo: 508772					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	2.320	0.20	2	0.6500	83.5	80	120				
Sulfate	79.26	2.0	10	67.44	118	80	120				

Sample ID	04010910-01AMS	SampType: MS	TestCode: 300_W	Units: mg/L	Prep Date:	RunNo: 43207					
Client ID:		Batch ID: R43207	TestNo: E300		Analysis Date: 1/20/2004	SeqNo: 511882					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride	2.410	0.40	2	0.6700	87.0	80	120				

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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 300\_W

Sample ID	04010803-01ADUP	SampType:	DUP	TestCode:	300_W	Units:	mg/L	Prep Date:		RunNo:	43013	
Client ID:	BHP-2	Batch ID:	R43013	TestNo:	E300			Analysis Date:	1/13/2004	SeqNo:	508771	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)		0.6400	0.20						0.6500	1.55	20	
Sulfate		68.83	2.0						67.44	2.04	20	

Sample ID	04010910-01ADUP	SampType:	DUP	TestCode:	300_W	Units:	mg/L	Prep Date:		RunNo:	43207	
Client ID:		Batch ID:	R43207	TestNo:	E300			Analysis Date:	1/20/2004	SeqNo:	511881	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoride		0.6900	0.40						0.6700	2.94	20	

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** 524\_W\_SDWA

Sample ID	MB-R42987	SampType:	MBLK	TestCode:	524_W_SDW	Units:	mg/L	Prep Date:		RunNo:	42987		
Client ID:		Batch ID:	R42987	TestNo:	E524.2			Analysis Date:	1/15/2004	SeqNo:	508476		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	< 0.00050	0.00050									
Ethylbenzene	< 0.00050	0.00050									
m,p-Xylene	< 0.00050	0.00050									
o-Xylene	< 0.00050	0.00050									
Toluene	< 0.00050	0.00050									
Surr: 1,2-Dichlorobenzene-d4	0.005700	0	0.005	0	114	70	130				
Surr: 4-Bromofluorobenzene	0.005670	0	0.005	0	113	70	130				

Sample ID	LCS-R42987	SampType:	LCS	TestCode:	524_W_SDW	Units:	mg/L	Prep Date:		RunNo:	42987			
Client ID:		Batch ID:	R42987	TestNo:	E524.2			Analysis Date:	1/15/2004	SeqNo:	508477			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	0.005470	0.00050	0.005	0	109	70	130				
Ethylbenzene	0.005380	0.00050	0.005	0	108	70	130				
m,p-Xylene	0.01101	0.00050	0.01	0	110	70	130				
o-Xylene	0.005470	0.00050	0.005	0	109	70	130				
Toluene	0.005310	0.00050	0.005	0	106	70	130				
Surr: 1,2-Dichlorobenzene-d4	0.005800	0	0.005	0	116	70	130				
Surr: 4-Bromofluorobenzene	0.005700	0	0.005	0	114	70	130				

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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** ALKALINITY

Sample ID	MB-R43086	SampType:	MBLK	TestCode:	ALKALINITY	Units:	mg/L CaCO3	Prep Date:		RunNo:	43086	
Client ID:		Batch ID:	R43086	TestNo:	M2320 B			Analysis Date:	1/19/2004	SeqNo:	509709	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)		< 2.0	2.0									
Alkalinity, Carbonate (As CaCO3)		< 2.0	2.0									
Alkalinity, Hydroxide (As CaCO3)		< 2.0	2.0									
Alkalinity, Total (As CaCO3)		< 6.0	6.0									

Sample ID	MB-R43086	SampType:	MBLK		TestCode:	ALKALINITY		Units:	mg/L CaCO3		Prep Date:			RunNo:	43086	
Client ID:		Batch ID:	R43086		TestNo:	M2320 B					Analysis Date:	1/19/2004		SeqNo:	509722	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val		%RPD	RPDLimit	Qual			
Alkalinity, Bicarbonate (As CaCO3)		< 2.0	2.0													
Alkalinity, Carbonate (As CaCO3)		< 2.0	2.0													
Alkalinity, Hydroxide (As CaCO3)		< 2.0	2.0													
Alkalinity, Total (As CaCO3)		< 6.0	6.0													

Sample ID	LCS-R43086	SampType:	LCS	TestCode:	ALKALINITY	Units:	mg/L CaCO3	Prep Date:		RunNo:	43086			
Client ID:		Batch ID:	R43086	TestNo:	M2320 B			Analysis Date:	1/19/2004	SeqNo:	509710			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)		252.0		6.0	250	0		101	90	110				

Sample ID	LCS-R43086	SampType:	LCS	TestCode:	ALKALINITY	Units:	mg/L CaCO3	Prep Date:		RunNo:	43086			
Client ID:		Batch ID:	R43086	TestNo:	M2320 B			Analysis Date:	1/19/2004	SeqNo:	509723			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)		256.0		6.0	250	0		102	90	110				

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

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# Aerotech Environmental Laboratories

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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode: ALKALINITY**

Sample ID	04010803-01ADUP	SampType:	DUP	TestCode:	ALKALINITY	Units:	mg/L CaCO3	Prep Date:		RunNo:	43086
Client ID:	BHP-2	Batch ID:	R43086	TestNo:	M2320 B			Analysis Date:	1/19/2004	SeqNo:	509714
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	136.0	2.0						136.0	0	20	
Alkalinity, Carbonate (As CaCO3)	< 2.0	2.0						0	0	20	
Alkalinity, Hydroxide (As CaCO3)	< 2.0	2.0						0	0	20	
Alkalinity, Total (As CaCO3)	136.0	6.0						136.0	0	20	

Sample ID	04011015-01ADUP	SampType:	DUP	TestCode:	ALKALINITY	Units:	mg/L CaCO3	Prep Date:		RunNo:	43086
Client ID:		Batch ID:	R43086	TestNo:	M2320 B			Analysis Date:	1/19/2004	SeqNo:	509727
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	156.0	2.0						158.0	1.27	20	
Alkalinity, Carbonate (As CaCO3)	< 2.0	2.0						0	0	20	
Alkalinity, Hydroxide (As CaCO3)	< 2.0	2.0						0	0	20	
Alkalinity, Total (As CaCO3)	156.0	6.0						158.0	1.27	20	

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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** PH\_W

Sample ID	LCS-R42880	SampType: LCS	TestCode: PH_W	Units: pH units	Prep Date:	RunNo: 42880						
Client ID:		Batch ID: R42880	TestNo: E150.1		Analysis Date: 1/13/2004	SeqNo: 507083						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH		7.000	2.00	7	0	100	99.28	100.72				

Sample ID	LCSD-R42880	SampType: LCSD	TestCode: PH_W	Units: pH units	Prep Date:	RunNo: 42880						
Client ID:		Batch ID: R42880	TestNo: E150.1		Analysis Date: 1/13/2004	SeqNo: 507104						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH		7.030	2.00	7	0	100	99.28	100.72	7.000	0.428	10	

Sample ID	04010832-01ADUP	SampType: DUP	TestCode: PH_W	Units: pH units	Prep Date:	RunNo: 42880						
Client ID:		Batch ID: R42880	TestNo: E150.1		Analysis Date: 1/13/2004	SeqNo: 507281						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH		6.970	2.00						7.000	0.429	10	

Sample ID	04010803-01ADUP	SampType: DUP	TestCode: PH_W	Units: pH units	Prep Date:	RunNo: 42880						
Client ID:	BHP-2	Batch ID: R42880	TestNo: E150.1		Analysis Date: 1/13/2004	SeqNo: 509069						
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH		7.590	2.00						7.580	0.132	10	

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

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**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** S\_TDS

Sample ID	MB-R43048	SampType:	MBLK	TestCode:	S_TDS	Units:	mg/L	Prep Date:		RunNo:	43048		
Client ID:		Batch ID:	R43048	TestNo:	M2540 C			Analysis Date:	1/15/2004	SeqNo:	509146		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids < 10 10

Sample ID	MB2-R43048	SampType: MBLK	TestCode: S_TDS	Units: mg/L	Prep Date:	RunNo: 43048					
Client ID:	Batch ID: R43048	TestNo: M2540 C	Analysis Date: 1/15/2004	SeqNo: 509169							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids < 10 10

Sample ID	LCS2-R43048	SampType:	LCS	TestCode:	S_TDS	Units:	mg/L	Prep Date:		RunNo:	43048		
Client ID:		Batch ID:	R43048	TestNo:	M2540 C			Analysis Date:	1/15/2004	SeqNo:	509170		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids 978.0 10 1000 0 97.8 90 110

Sample ID	LCS-R43048	SampType:	LCS	TestCode:	S_TDS	Units:	mg/L	Prep Date:		RunNo:	43048		
Client ID:		Batch ID:	R43048	TestNo:	M2540 C			Analysis Date:	1/15/2004	SeqNo:	509172		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids 976.0 10 1000 0 97.6 90 110

Sample ID	LCSD2-R43048	SampType: LCSD	TestCode: S_TDS	Units: mg/L	Prep Date:	RunNo: 43048					
Client ID:	Batch ID: R43048	TestNo: M2540 C	Analysis Date: 1/15/2004	SeqNo: 509171							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Total Dissolved Solids 984.0 10 1000 0 98.4 90 110 978.0 0.612 10

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
 ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits



# Aerotech Environmental Laboratories

a division of Aerotech Laboratories, Inc.

**CLIENT:** Brown & Caldwell  
**Work Order:** 04010803  
**Project:** Florence Copper Well Field/21622.008

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** S\_TDS

Sample ID	LCSD-R43048	SampType:	LCSD	TestCode:	S_TDS	Units:	mg/L	Prep Date:		RunNo:	43048	
Client ID:		Batch ID:	R43048	TestNo:	M2540 C			Analysis Date:	1/15/2004	SeqNo:	509173	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids		985.0	10	1000	0	98.5	90	110	976.0	0.918	10	

Sample ID	04010858-01ADUP	SampType:	DUP	TestCode:	S_TDS	Units:	mg/L	Prep Date:		RunNo:	43048	
Client ID:		Batch ID:	R43048	TestNo:	M2540 C			Analysis Date:	1/15/2004	SeqNo:	509158	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids		402.0	10						389.0	3.29	10	

Sample ID	04010972-03ADUP	SampType:	DUP	TestCode:	S_TDS	Units:	mg/L	Prep Date:		RunNo:	43048	
Client ID:		Batch ID:	R43048	TestNo:	M2540 C			Analysis Date:	1/15/2004	SeqNo:	509168	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids		226.0	10						222.0	1.79	10	

**Qualifiers:** E Value above quantitation range H Holding times for preparation or analysis exceeded J Analyte detected below quantitation limits  
ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits

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Accession Number: <u>0-401-0803</u>		Checklist completed by: <u>T. MacArthur</u> <u>1-12-04</u>	
Client Name: <u>Brown &amp; Caldwell</u>		Signature/Date	
Matrix: <u>DW</u>	Carrier Name: <u>Barb S.</u>	Date/Time Rec'd: <u>1-9-04</u>	By: <u>tm</u>

Temperature of Samples? 1.5 °C Circle one: Blue Ice Wet Ice Not Present

	Yes	No	Not Present	Containers:
Shipping container/cooler in good condition?	<input checked="" type="checkbox"/>			Brass Sleeve _____
Custody seals intact on shipping container/cooler?			<input checked="" type="checkbox"/>	Glass Jar _____
Custody seals intact on sample containers?			<input checked="" type="checkbox"/>	Methanol _____
Chain of Custody present and relinquished/received properly?	<input checked="" type="checkbox"/>			Plastic Bag _____
Chain of Custody agrees with sample labels?	<input checked="" type="checkbox"/>			
Samples in proper containers/bottles?	<input checked="" type="checkbox"/>			
Sample containers intact?	<input checked="" type="checkbox"/>			
All samples received within holding time?	<input checked="" type="checkbox"/>			
Do different containers of the same sample vary in appearance?		<input checked="" type="checkbox"/>	If Yes, Contact PM	
40mL vials for volatiles & SOC's received with zero headspace?	<input checked="" type="checkbox"/>			

Total number of bottles received: 8 IH sample media: \_\_\_\_\_

Number of containers received by preservative (by sample number):

Preservative	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A-General	3														
B-HNO3	1														
C-H2SO4	1														
D-HCl	3														
E-Na2S2O3															
F-NaOH															
G-Sulfide															
H-Na Sulfite															
I-MCAA															
J-Methanol															
K-HAA															
L-Other															

\*If more than 15 samples are rec'd, please continue on separate sheet(s)

Water-pH acceptable upon receipt? Yes ☒ No ☐ N/A ☐

Preservative & pH	pH of samples upon receipt	If sample received with improper pH, list sample number and adjustments
Metals <2	2.2	
Nutrients <2	2.2	
Total Phenols <2		
413 (O&G) <2		
418 (TPH) <2		
Cyanide >12		
Sulfide >9		

Any No response must be detailed in the comments section below. Please continue on back if you run out of space.

Comments: <u>1 No trip blank</u>
Corrective Action:







## LABORATORY REPORT

Prepared For: Aerotech Laboratories, Inc.-Tempe  
4645 E. Cotton Center Blvd. Bldg 3 #189  
Phoenix, AZ 85044  
Attention: Lucas Menendez

Project: 0-401-0803/2863

Sampled: 01/12/04  
Received: 01/13/04  
Issued: 01/20/04

AZ DHS #AZ0426

*The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. All soil samples are reported on a wet weight basis unless otherwise noted in the report. This Laboratory Report is confidential and is intended for the sole use of Del Mar Analytical and its client. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical. The Chain of Custody, 1 page, is included and is an integral part of this report.  
This entire report was reviewed and approved for release.*


## CASE NARRATIVE

SAMPLE RECEIPT: Samples were received intact, at 6°C, on ice and with chain of custody documentation.  
HOLDING TIMES: Holding times were met.  
PRESERVATION: Samples requiring preservation were verified prior to sample analysis.  
QA/QC CRITERIA: All analyses met method criteria, except as noted in the report with data qualifiers.  
COMMENTS: No significant observations were made.  
SUBCONTRACTED: No analyses were subcontracted to an outside laboratory.

LABORATORY ID  
PNA0207-01

CLIENT ID  
BHP-2

MATRIX  
Water

  
Del Mar Analytical - Phoenix  
Linda Eshelman  
Project Manager



Aerotech Laboratories, Inc.-Tempe  
4645 E. Cotton Center Blvd. Bldg 3 #189  
Phoenix, AZ 85044  
Attention: Lucas Menendez

Project ID: 0-401-0803/2863

Report Number: PNA0207

Sampled: 01/12/04  
Received: 01/13/04

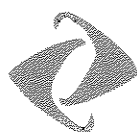
## EXTRACTABLE FUEL HYDROCARBONS (EPA 3510/8015B)

Analyte	Method	Batch	Reporting Limit	Sample Result	Dilution Factor	Date Extracted	Date Analyzed	Data Qualifiers
Sample ID: PNA0207-01 (BHP-2 - Water)								
Reporting Units: mg/l								
DRO (C10-C22)	EPA 8015B	P4A1404	0.25	ND	1	1/14/2004	1/15/2004	
ORO (C22-C32)	EPA 8015B	P4A1404	0.25	ND	1	1/14/2004	1/15/2004	
Total (C10-C32)	EPA 8015B	P4A1404	0.50	ND	1	1/14/2004	1/15/2004	
Surrogate: n-Docosane (75-125%)				104 %				

Del Mar Analytical - Phoenix  
Linda Eshelman  
Project Manager

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PNA0207 <Page 2 of 4>



Aerotech Laboratories, Inc.-Tempe  
 4645 E. Cotton Center Blvd. Bldg 3 #189  
 Phoenix, AZ 85044  
 Attention: Lucas Menendez

Project ID: 0-401-0803/2863

Report Number: PNA0207

Sampled: 01/12/04  
 Received: 01/13/04

## METHOD BLANK/QC DATA

### EXTRACTABLE FUEL HYDROCARBONS (EPA 3510/8015B)

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC Limits	RPD RPD	RPD Limit	Data Qualifiers
<b>Batch: P4A1404 Extracted: 01/14/04</b>									
<b>Blank Analyzed: 01/15/04 (P4A1404-BLK1)</b>									
DRO (C10-C22)	ND	0.25	mg/l						
ORO (C22-C32)	ND	0.25	mg/l						
Total (C10-C32)	ND	0.50	mg/l						
Surrogate: n-Docosane	0.392		mg/l	0.400		98 75-125			
<b>LCS Analyzed: 01/15/04 (P4A1404-BS1)</b>									
DRO (C10-C22)	1.86	0.25	mg/l	2.00		93 60-120			
ORO (C22-C32)	1.97	0.25	mg/l	2.00		98 55-130			
Surrogate: n-Docosane	0.453		mg/l	0.400		113 75-125			
<b>LCS Dup Analyzed: 01/15/04 (P4A1404-BSD1)</b>									
DRO (C10-C22)	1.98	0.25	mg/l	2.00		99 60-120	6	20	
ORO (C22-C32)	2.07	0.25	mg/l	2.00		104 55-130	5	20	
Surrogate: n-Docosane	0.387		mg/l	0.400		97 75-125			

**Del Mar Analytical - Phoenix**  
 Linda Eshelman  
 Project Manager



Del Mar Analytical

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## DATA QUALIFIERS AND DEFINITIONS

**ND** Analyte NOT DETECTED at or above the reporting limit or MDL, if MDL is specified.  
**RPD** Relative Percent Difference

## ADDITIONAL COMMENTS

**For Extractable Fuel Hydrocarbons (EFH, DRO, ORO) :**

Unless otherwise noted, Extractable Fuel Hydrocarbons (EFH, DRO, ORO) are quantitated against a Diesel Fuel Standard.

**Del Mar Analytical - Phoenix**  
Linda Eshelman  
Project Manager



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