11, February 2002

Richard A. Poulin Smith & Lowney, P.L.L.C. 2317 East John Street Seattle, WA 98112

RE: Case 1

Dear Mr. Poulin:

Please find enclosed a sample custody record (COC) and a set of analytical results for the above referenced project. Analytical Resources, Inc. accepted nine water samples on 28, January 2002. Samples were received intact and there were no discrepancies between the container labels and the COC.

Analysis for the requested parameters proceeded without incident. Quality control analysis results are included for your review.

Copies of the reports and all associated raw data will be kept on file at ARI. If you have any questions or require additional information, please contact your project manager.

Sincerely,

ANALYICAL RESOURCES, INC.

Client Services
400 Ninth Avenue North
Seattle, WA 98109

Project Manager: Susan Snyder

cc: file EB25

Exhibit 360
Date 150
Witness 17/19
Diare Mills, Court Recorder

Chain of Custody Record & Laboratory Analysis Request Page ___ of ___



Analytical Resources, Incorporate Analytical Chemists and Consultan 400 Ninth Avenue North Seattle, WA 98109-4708

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Report to: Ling Wing	Proj Name	CASE	1		I			Aı	nalyse	s Reo	uested					
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Sample No: Method Blank

Lab Sample ID: 013002MB

QC Report No: EB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1194 Matrix: Water

Project: CASE 1

Date Sampled: NA

Date Received: NA

Data Release Authorized: C/r Reported: 02/01/02

Date Analyzed: 01/30/02

Conc/Dilution Factor: 1:1

CAS Number	Analyte	mg/L
107-21-1	Ethylene Glycol	5.0 U
57-55-6	Propylene Glycol	5.0 U

Glycol Surrogate Recovery

Cyclohexanone

110%

Data Qualifiers

- Indicates an estimated value when that result is less than the calculated detection limit.
- Indicates a value above the linear range of the detector. Dilution Required
- Indicates no value reported due to saturation of the detector. S
- Indicates the surrogate was diluted out. D
- Indicates compound was analyzed for, but not detected at the U given detection limit.
- Found in associated method blank В
- Indicates compound was not analyzed. NA
- Indicates no recovery due to interferences.
- Indicates a raised reporting limit due to matrix interferences. The analyte may be present at or below the listed concentration, but in the opinion of the analyst, confirmation was inadequate.



Sample No: 001

Lab Sample ID: EB25A

QC Report No: EB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1194

Project: CASE 1

Matrix: Water

Date Sampled: 01/28/02

CH

Date Received: 01/28/02

Data Release Authorized: 2/1/02 Reported: 02/01/02

Date Analyzed: 01/30/02

Conc/Dilution Factor: 1:1

CAS Number	Analyte	mg/L
107-21-1	Ethylene Glycol	5.0 U
57-55-6	Propylene Glycol	13

Glycol Surrogate Recovery

Cyclohexanone

110%

Data Qualifiers

- Indicates an estimated value when that result is less than the calculated detection limit.
- E Indicates a value above the linear range of the detector. Dilution Required
- s Indicates no value reported due to saturation of the detector.
- Indicates the surrogate was diluted out.
- Indicates compound was analyzed for, but not detected at the given detection limit.
- Found in associated method blank
- Indicates compound was not analyzed.
- Indicates no recovery due to interferences.
- Indicates a raised reporting limit due to matrix interferences. The analyte may be present at or below the listed concentration, but in the opinion of the analyst, confirmation was inadequate.



Sample No: 001

MATRIX SPIKE

Lab Sample ID: EB25A-MS

QC Report No: EB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1194 Matrix: Water

Project: CASE 1

Date Sampled: 01/28/02

Date Received: 01/28/02

Data Release Authorized: 2/1/02 Reported: 02/01/02

Date Analyzed: 01/30/02

Conc/Dilution Factor: 1:1

CAS Number	Analyte	mg/L
107-21-1	Ethylene Glycol	
57-55-6	Propylene Glycol	

Glycol Surrogate Recovery

Cyclohexanone

110%

Data Qualifiers

- Indicates an estimated value when that result is less than the calculated detection limit.
- E Indicates a value above the linear range of the detector. Dilution Required
- Indicates no value reported due to saturation of the detector. s
- D Indicates the surrogate was diluted out.
- Indicates compound was analyzed for, but not detected at the given detection limit.
- В Found in associated method blank
- Indicates compound was not analyzed. NA
- Indicates no recovery due to interferences.
- Indicates a raised reporting limit due to matrix interferences. The analyte may be present at or below the listed concentration, but in the opinion of the analyst, confirmation was inadequate.



Sample No: 001

SPIKE DUPLICATE

Lab Sample ID: EB25A-MSD

LIMS ID: 02-1194

Matrix: Water

QC Report No: EB25-Smith & Lowney, P.L.L.C.

Project: CASE 1

Date Sampled: 01/28/02

Date Received: 01/28/02

Data Release Authorized: (/+ Reported: 02/01/02 2/1/02

Date Analyzed: 01/30/02

Conc/Dilution Factor: 1:1

CAS Number	Analyte	mg/L
107-21-1	Ethylene Glycol	
57-55 - 6	Propylene Glycol	

Glycol Surrogate Recovery

Cyclohexanone

106%

Data Qualifiers

- Indicates an estimated value when that result is less than the calculated detection limit.
- Indicates a value above the linear range of the detector. Dilution Required
- Indicates no value reported due to saturation of the detector. S
- Indicates the surrogate was diluted out.
- Indicates compound was analyzed for, but not detected at the given detection limit.
- Found in associated method blank
- Indicates compound was not analyzed. NA
- Indicates no recovery due to interferences.
- Indicates a raised reporting limit due to matrix interferences. The analyte may be present at or below the listed concentration, but in the opinion of the analyst, confirmation was inadequate.



Lab Sample ID: EB25A

QC Report No: BB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1194 Matrix: Water

Project: CASE 1

Sample No: 001

Date Received: 01/28/02

Data Release Authorized: C & Reported: 02/01/02

2/1/02

MATRIX SPIKE/SPIKE DUPLICATE RECOVERY

CONSTITUENT	Sample Value	SPIKE FOUND	SPIKE ADDED	% RECOVERY	RPD
MATRIX SPIKE					
Ethylene Glycol Propylene Glycol	< 5.0 13.0	50.0 70.0	50.0 50.0	100% 114%	
MATRIX SPIKE DUPLICATE			or.		
Ethylene Glycol Propylene Glycol	< 5.0 13.0	68.0 80.0	50.0	136% 134%	31% 16%

Values reported in parts per million (mg/L)

Glycol SPIKE CONTROL LIMITS Percent Recovery 30-160%

FORM-III



Lab Sample ID: EB25SB LIMS ID: 02-1194

QC Report No: EB25-Smith & Lowney, P.L.L.C.
Project: CASE 1

Matrix: Water

Data Release Authorized: C/A
Reported: 02/01/02 2/1/02

LABORATORY CONTROL SAMPLE

CONSTITUENT	SPIKE	SPIKE	%
	FOUND	ADDED	RECOVERY
Ethylene Glycol	49.0	50.0	98.0%
Propylene Glycol	51.0	50.0	102%

GLYCOL SURROGATE RECOVERIES

Cyclohexanone

98.0%

Values reported in parts per million (mg/L)

GLYCOL SPIKE CONTROL LIMITS
Percent Recovery 30-160%

FORM-III



TOTAL METALS

Sample No: Method Blank

Lab Sample ID: BB25MB LIMS ID: 02-1199

QC Report No: EB25-Smith & Lowney, P.L.L.C.

Matrix: Water

Project: CASE 1

Date Sampled: NA

Date Received: NA

Data Release Authorizeds

Reported: 02/07/02

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	77.*	
					·	RL	ug/L
	01/30/02 01/30/02	6010B 200.8	02/01/02	7440-70-2 7440-50-8	Calcium Copper	50	50 y
30104	01/30/02	6010B				0.5	0.5 ช
	01/30/02	200.8	02/01/02	7439-95-4	Magnesium	50	50 ប្
	, 20, 02	200.6	02/05/02	7440-66-6	Zinc	4	4 U

U Analyte undetected at given RL

Reporting Limit



TOTAL METALS

Matrix: Water

Sample No: 004

Lab Sample ID: EB25D LIMS ID: 02-1197

QC Report No: EB25-Smith & Lowney, P.L.L.C.

10

60

Project: CASE 1

Date Sampled: 01/28/02

Date Received: 01/28/02

Zinc

Data Release Authorized

Reported: 02/07/02

Prep Prep Analysis Analysis Meth Date Method Date CAS Number Analyte ug/L 3010A 01/30/02 6010B 02/01/02 7440-70-2 Calcium 50 5,100 200.8 01/30/02 200.8 02/05/02 7440-50-8 Copper 0.5 27.1 3010A 01/30/02 6010B 7439-95-4 02/01/02 Magnesium 50 1,460 200.8 01/30/02 200.8 02/06/02 7440-66-6

Calculated Hardness (mg-CaCO3/L): 19

Analyte undetected at given RL

RLReporting Limit

INORGANICS ANALYSIS DATA SHEET TOTAL METALS



Sample No: 004

Lab Sample ID: EB25D

QC Report No: BB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1197

Project: CASE 1

Matrix: Water

Data Release Authorized

Reported: 02/07/02

Date Received: 01/28/02

MATRIX DUPLICATE QUALITY CONTROL REPORT

Analyte	Sample ug/L	Duplicate ug/L	RPD	Control Limit	Q
Calcium	5100	5000	2.0%	+/- 20 %	
Copper	27.1	27.5	1.5%	+/- 20 %	
Magnesium	1460	1450	0.7%	+/- 20 %	
Zinc	60	. 60	0.0%	÷/- 20 %	

'Q' codes:

^{* =} control limit not met

L = RPD not valid, alternate limit = detection limit

INORGANICS ANALYSIS DATA SHEET TOTAL METALS



Sample No: 004

Lab Sample ID: EB25D LIMS ID: 02-1197

QC Report No: EB25-Smith & Lowney, P.L.L.C.

Project: CASE 1

Matrix: Water

Date Received: 01/28/02

Data Release Authorized

Reported: 02/07/02

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Sample ug/L	Spike ug/L	Spike Added	% Recovery Q
	•			
Calcium	5100	13800	10000	87.0%
Copper	27.1	53.3	25.0	105%
Magnesium	1460	10500	10000	90.4%
Zinc	64	144	80	100%

'Q' codes:

N = control limit not met

 $H \approx R$ not applicable, sample concentration too high

* = RPD control limit not met

NA = Not applicable - analyte not spiked

Control Limits:

Percent Recovery: 75-125%

RPD:

+/-20%



Sample No: 006

TOTAL METALS

Lab Sample ID: EB25F

QC Report No: BB25-Smith & Lowney, P.L.L.C.

Project: CASE 1

LIMS ID: 02-1199 Matrix: Water

Date Sampled: 01/28/02

Date Received: 01/28/02

Data Release Authorized: Reported: 02/07/02

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	ug/L
							ug/11
3010A	01/30/02	6010B	02/01/02	7440-70-2	Calcium	50	11,900
200.8	01/30/02	200.8	02/05/02	7440-50-8	Copper	0.5	8.9
	01/30/02	6010B	02/01/02	7439-95-4	Magnesium	50	2,900
200.8	01/30/02	200.8	02/05/02	7440-66-6	Zinc	4	48

Calculated Hardness (mg-CaCO3/L): 42

Analyte undetected at given RL

RLReporting Limit



Sample No: 008

TOTAL METALS

Lab Sample ID: EB25H

QC Report No: EB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1201

Project: CASE 1

Matrix: Water

Date Sampled: 01/28/02

Date Received: 01/28/02

Data Release Authorized:

Reported: 02/07/02

Meth D	ate	Analysis Method	Analysis Date	CAS Number	Analyte	RL	ug/L
			-				-3/-
3010A 01	/30/02	5010B	02/01/02	7440-70-2	Calcium	50	39,900
200.8 01	/30/02	200.8	02/05/02	7440-50-8	Copper	2	260
3010A 01	/30/02	6010B	02/01/02	7439-95-4	Magnesium	50	2,810
200.8 01	/30/02	200.8	02/05/02	7440-66-6	Zinc	20	330

Analyte undetected at given RL

Reporting Limit

METALS ANALYSIS DATA SHEET TOTAL METALS



Sample No: 006

QC Report No: EB25-Smith & Lowney, P.L.L.C.

Project: CASE 1

Project:

Lab Sample ID: EB25LCS

Data Release Authorized Reported: 02/07/02

LIMS ID: 02-1199

Matrix: Water

Date Received: 01/28/02

BLANK SPIKE QUALITY CONTROL REPORT

Analyte	Spike ug/L	Spike Added	Recovery	Q
Calcium	10200	10000	102%	
Copper	25.6	25.0	102%	
Magnesium	10300	10000	103%	
Zinc	79.0	80.0	98.8%	

'Q' codes:

N = control limit not met

Control Limits:

80-120%

FORM-VII



DISSOLVED METALS

Sample No: Method Blank

Lab Sample ID: EB25MB

QC Report No: EB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1200 Matrix: Water

Project: CASE 1

Date Sampled: NA

Date Received: NA

Data Release Authorized

Reported: 02/07/02

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	ug/L
6010B	01/30/02	6010B	02/01/02	7440-70-2	Calcium	50	50 U
200.8	01/30/02	200.8	02/05/02	7440-50-8	Copper	0.5	0.5 17
6010B	01/30/02	6010B	02/01/02	7439-95-4	Magnesium	50	50 U
200.8	01/30/02	200.8	02/05/02	7440-66-6	Zinc	4	4 U

Analyte undetected at given RL

Reporting Limit

FORM-I · ·



Sample No: 003

DISSOLVED METALS

Lab Sample ID: EB25C

QC Report No: RB25-Smith & Lowney, P.L.L.C.

Project: CASE 1

LIMS ID: 02-1196 Matrix: Water

Date Sampled: 01/28/02

Date Received: 01/28/02

Data Release Authorized

Reported: 02/07/02

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	ug/L
6010B	01/30/02	6010B	02/01/02	7440-70-2	Calcium	50	4,620
200.8	01/30/02	200.8	02/05/02	7440-50-8	Copper	0.5	6.3
6010B	01/30/02	6010B	02/01/02	7439-95-4	Magnesium	50	1,030
200.8	01/30/02	200.8	02/05/02	7440-66-6	Zinc	4	27

U Analyte undetected at given RL

RL Reporting Limit

INORGANICS ANALYSIS DATA SHEET DISSOLVED METALS



Sample No: 003

Lab Sample ID: EB25C

QC Report No: EB25-Smith & Lowney, P.L.L.C.

Project: CASE 1

LIMS ID: 02-1156 Matrix: Water

Date Received: 01/28/02

Data Release Authorized:

Reported: 02/07/02

MATRIX DUPLICATE QUALITY CONTROL REPORT

	Sample Duplicate		Control			
Analyte	ug/L	ug/L	RPD	Limit	Q	
Calcium	4620	4590	0.7%	+/- 20 %		
Copper	6.3	6.2	1.6%	+/- 20 %		
Magnesium	1030	1030	0.0%	+/- 20 %		
Zinc	27	26	3.8%	+/- 20 %		

'Q' codes:

* = control limit not met

L = RPD not valid, alternate limit = detection limit

INORGANICS ANALYSIS DATA SHEET DISSOLVED METALS



Sample No: 003

Lab Sample ID: EB25C

QC Report No: EB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1196

Project: CASE 1

Matrix: Water

Date Received: 01/28/02

Data Release Authorized

Reported: 02/07/02

MATRIX SPIKE QUALITY CONTROL REPORT

Analyte	Sample ug/L	Spike ug/L	Spike Added	% Recovery	Q
	-5, -	<u> </u>	110000	RECOVELY	
Calcium	4620	14700	10000	101\$	
Copper	6.3	30,4	25.0	96.4%	
Magnesium	1030	11300	10000	103%	
Zinc	27	. 100	80	91.2%	

'Q' codes:

N = control limit not met

H = %R not applicable, sample concentration too high

* = RPD control limit not met

NA = Not applicable - analyte not spiked

Control Limits:

Percent Recovery: 75-125%

+/-20%



DISSOLVED METALS

Sample No: 005

Lab Sample ID: EB25E

QC Report No: EB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1198

Project: CASE 1

Matrix: Water

Date Sampled: 01/28/02

Date Received: 01/28/02

Data Release Authorized:

Reported: 02/07/02

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	ug/L
				CALL ALLEGA	anday se		<u> 1971</u>
6010B	01/30/02	6010B	02/01/02	7440-70-2	Calcium	50	12,000
200.8	01/30/02	200.8	02/05/02	7440-50-8	Copper	0.5	5.8
6010B	01/30/02	6010B	02/01/02	7439-95-4	Magnesium	50	2,830
200.8	01/30/02	200.8	02/05/02	7440-66-6	Zinc	4	32

Analyte undetected at given RL

RL Reporting Limit



DISSOLVED METALS

Sample No: 007

Lab Sample ID: EB25G

QC Report No: EB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1200

Project: CASE 1

Matrix: Water

Date Sampled: 01/28/02

Date Received: 01/28/02

Data Release Authorize

Reported: 02/07/02

Prep Meth	Prep Date	Analysis Method	Analysis Date	CAS Number	Analyte	RL	ng/L
6010B	01/30/02	6010B	02/01/02	7440-70-2	Calcium	50	44,100
200.8	01/30/02	200.8	02/05/02	7440-50-8	Copper	2	223
6010B	01/30/02	6010B	02/01/02	7439-95-4	Magnesium	50	3,000
200.8	01/30/02	200.8	02/05/02	7440-66-6	Zinc	20	290

U Analyte undetected at given RL

RL Reporting Limit



METALS ANALYSIS DATA SHEET DISSOLVED METALS

Sample No: 007

Lab Sample ID: EB25LCS

QC Report No: EB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1200

Project: CASE 1

Matrix: Water

Date Received: 01/28/02

Data Release Authorized

Reported: 02/07/02

BLANK SPIKE QUALITY CONTROL REPORT

	Spike	Spike	8	
Analyte	ug/L	Added	Recovery	Q
				_
Calcium	10300	10000	103%	
Copper	23.6	25.0	94.4%	
Magnesium	10200	10000	102%	
Zinc	, во	80.0	100%	

'Q' codes:

N = control limit not met

Control Limits:

80-120%

FORM-VII



QA Report - Method Blank Analysis

Matrix: Water

QC Report No: EB25-Smith & Lowney, P.L.L.C.

Project: CASE 1

Date Received: NA

Data Release Authorized

Reported: 02/08/02 M-A. Perkins

METHOD BLANK RESULTS CONVENTIONALS

Analysis Date & Batch Constituent Units Result 01/31/02 Total Suspended Solids mg/L 1.0 01312#1

Water MB QA Report Page 1 for EB25 received 01/28/02



Final Report
Laboratory Analysis of Conventional Parameters

Sample No: 001

Lab Sample ID: EB25A

QC Report No: EB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1194

Project: CASE 1

Matrix: Water

Date Sampled: 01/28/02

Data Release Authorized

Date Received: 01/28/02

Reported: 02/08/02 Dr. M.A. Perkins

Analysis
Analyte Date & Batch Method RL Units Result

Total Suspended Solids 01/31/02 EPA 160.2 4.0 mg/L 42
01312#1

RL Analytical reporting limit
Undetected at reported detection limit

Report for EB25 received 01/28/02



Final Report
Laboratory Analysis of Conventional Parameters

Sample No: 002

Lab Sample ID: EB25B

QC Report No: EB25-Smith & Lowney, P.L.L.C.

LIMS ID: 02-1195

Project: CASE 1

Matrix: Water

Date Sampled: 01/28/02

Data Release Authorized:

Date Received: 01/28/02

Reported: 02/08/02 Dr. M.A. Perkins

Analysis

Analyte	Date & Batch	Method	RL	Units	Result	
Total Suspended Solids	01/31/02 01312#1	EPA 160.2	1.1	mg/L	10	

RL Analytical reporting limit
Undetected at reported detection limit

Report for EB25 received 01/28/02



Final Report
Laboratory Analysis of Conventional Parameters

Sample No: 009

Lab Sample ID: EB251 LIMS ID: 02-1202 QC Report No: BB25-Smith & Lowney, P.L.L.C.

Project: CASE 1

Matrix: Water

Date Sampled: 01/28/02

Data Release Authorized: Date Received: 01/28/02

Reported: 02/08/02 Dr. M.A. Perkins

Analysis

	MIGLYSIS				
Analyte	Date & Batch	Method	RL	Units	Result
Total Suspended Solids	01/31/02 01312#1	EPA 160.2	1.1	mg/L	4.6

RL Analytical reporting limit
U Undetected at reported detection limit

Report for EB25 received 01/28/02